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Nabil Mohareb · Antonella Versaci · Yasser Mahgoub ·
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Cities' Vocabularies: The Influences and Formations

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Cities' Vocabularies: The Influences and Formations

A culmination of selected research papers from the Third version of the international conference on Cities' Identities through Architecture and Arts *CITAA* of Pisa, Italy (2019)

Springer

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Series Editor's Foreword

Ancient cities are known for the diversity of their form, function and geography as well as the elusive environments in which creative individuals were fostered. The basis of successful city formation, or rather the explanation by which cities were known to rise, has been identified as good environment with strong social organization. Archeologists, in their attempts to explain ancient urbanism, have characterized cities to be notable for certain factors that range from economic benefit to large dense populations, while some were simply known to be commercial, industrial or trade centers. The very first cities of the world, found in Africa, Asia and the Americas, laid foundations for contemporary urban life. An exploration of the archeological, cultural and architectural development of these urban centers gives insight into the different cultures, worldviews, environments and identities of the world.

It is with no doubt that the physical and visual forms of cities highlight their valuable and unique identities, which are known to be one of their main assets constructed over time. However, with the rapid transformation of the built environment and rapid advancement of societies, the traditional old town is often sacrificed. With transitions to the modern city coupled with globalization, fluid notions of tradition, modernity and identity in relation to the urban environment are formed and profiles of the local culture, identity and sense of place, blurred. As a result, not only is the image of the city influenced, but so is its tourism, education, culture and economic prosperity. With continuous advancements in the field, this book provides updated and valuable knowledge as well as current approaches developed in Contemporary Arts and Architecture to conserve cities' culture and identity.

This publication not only explores the archaeological, cultural and architectural developments that helped shape identities, cultures and environments of different cities, but also investigates the impacts of social, religious and cultural factors on Art and Architecture across time. Through examples of representative cities, buildings and urban spaces as case studies, a variety of holistic approaches to recognizing and preserving cities' identities, as well as preserving their histories and architectural heritage, are introduced. Through focusing designing and planning processes, it contributes to achieving more sustainable cities that respect their heritage and maintain their uniqueness.

This book consists of selected research papers submitted to an international conference organized by international experts for Research Enrichment and Knowledge Exchange (IEREK). Highly experienced editors have contributed to this publication with their expertise and knowledge in the field to ensure that it has been carefully reviewed and is of the highest quality. The content is attributed to the authors as they have generously shared their work with the world and otherwise provided a unique opportunity for an exchange of ideas.

Cairo, Egypt — Mourad Amer

Preface

Heterogeneous in nature, the built environment is a reflection of the different identities constructed in society. Thus, it is important to establish an understanding of the sources of identity in environments of differing kinds and scales. Similarly, studies of values and behavioral patterns provide insight on established ways of living, those affecting and affected by environmental form. Today, we have diverse ways of expressing the self through regional mobility and physical and cultural environments. This book dives further into identity, experience, involvement or belonging as themes that explain the reality of our existence and generate environmental meaning and identity. In a way, this book reveals the unexpressed cultural potentials of urban places. It is an attempt at eliminating the gap between the users of these spaces and decision-makers of urban form to highlight their distinctiveness and identity.

This book consists of five parts that begin by presenting holistic approaches to recognizing city identity and improving the identity of urban contexts. Consecutively, it acknowledges the continuous changes undergone in cities and urban identity, and makes note of the current challenge of maintaining cities' identities nonetheless. By presenting adaptation methods, it becomes an informative tool to transforming old cities into new capitals and regenerating lost identity without alienating the past. However, it does not neglect the significant role played by cultural and urban heritage. Accordingly, the authors of this book provide valuable knowledge on strategies to evaluate and develop cultural heritage as well as the planning decisions and conservation policies. It does not neglect the imminent role of Art and Architecture in forming and strengthening a city's identity or those of urban morphology and spatial transformation in understanding the physical environment.

Through an amalgamation of international case studies, the book offers comprehensive knowledge on the topic of urban identity from different parts of the globe. Research in this volume touches upon recent advances in technologies of city planning and development, developments in urban design and the transition to smart cities. This volume consists of carefully selected research papers prepared for and submitted to the 3rd Edition of the International Conference titled 'Cities Identity through Architecture & Arts', *CITAA*, held in Pisa of Italy in 2019 and organized by IEREK.

Each chapter in this volume has gone through a rigorous peer-review processes in which the editors took the responsibility for the structure of the content of this book and for having diligently worked to produce a high-quality publication. Despite having gone through a thorough review process, the content remains the responsibility of the authors who have generously and eloquently shared their knowledge and ideas.

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Acknowledgements We would like to thank the authors of the research papers that were selected for addition in this book. We would also like to thank the scientific committee of reviewers who contributed with their knowledge and constructive feedback in hopes of ensuring the manuscript is of the best quality possible. A special thanks go to the editors of this book for their foresight in organizing this volume and diligence in doing a professional job in editing it. Finally, we would like to express our appreciation to the IEREK team for supporting the publication of the best research papers submitted to the conference.

Contents

The concept of city identity has been at the center of discourse of researchers, politicians and practitioners from different disciplines. In light of the existence of different conceptualizations and definitions, the identity of a city does not only depend on spatial factors but its formation is also affected by cultural, social and economic factors. Over the years, different frameworks and approaches have developed based on recognized characteristics of the cities and local communities that make up their primary identities as well as the way in which the communities have learned to perceive and deal with those identities. In the latter, associations between memories or symbolic meanings and the urban setting are established.

In this sense, the identity of a city is associated with its characteristics as perceived by its residents or observers. In the third chapter of this part titled "Identifying the Perceptual Image of Distinctive Places Through Storytelling", the authors carry out perceptual studies that include storytelling to analyze and measure the distinctiveness of one of the most important streets of Alexandria, Egypt. By identifying what forms a place's distinctiveness, both, the tangible and intangible aspects of the perceptual image, they were able to examine its means of measurement using a Distinctiveness Referential Scale (DRS).

In the chapter titled "Improving Urban Contexts' Identity via Conducting a Smart Mechanism", the author uses culture, identity and design, digital technologies and parametric design in an attempt to identify, document, understand and communicate original morphologies of digital heritage and cultural landscapes. He uses a matrix, which plays a significant role in the reconstruction and recovery processes, where components are matched with standards or preferences. Once relevant criteria are corresponded, a place is reinterpreted and brought into the cotemporary world in a new and distinct form.

Establishing an understanding of what makes a place unique, and the elements or contents used in the process, is crucial as it brings about an understanding of how an identity of a place can be affected. In other words, changes to a place may encompass a restructuring of its identity and that of residents who had made connections with the place. Physical and social interventions within a city can often be viewed as threats to its identity. In "Dialogical Approach for the City Identity: Examination of Beirut Central District Contemporary Architecture", the author highlights the lack of dialogue between the past and present within newly reconstructed areas and structures. The chapter examines the Beirut Central District as a case study and focuses on its newly constructed zone after the end of the civil war. Through a checklist for an evaluation model of buildings, this chapter aims to prove that an improved city identity can be achieved by taking a dialogical approach between the historical identities and values of cities and new trends.

The first part of this book introduces the different approaches used in exploring, interpreting and maintaining cities identities. Analytical in nature, it provides a clear understanding of how identities are constructed as well as the factors or elements contributing to the formation of a city's identity, from natural to geographical and those artificial.

Domestic Architecture and the City Identity: The Historic City of Homs and Its Traditional Courtyard Houses as a Case Study

Najla Mansour, Tarek Teba, and Alessandro Melis

Abstract

Architecture manifests invaluable knowledge of people life, culture and achievements. Domestic architecture, in particular, is influenced and shaped by cultural and social aspects of local people as well as by different historical and cultural events occurred during the history of the urban environment, the city. Therefore, this paper aims to explore how the traditional domestic architecture of the historic City of Homs in Syria was shaped and how it characterizes the historic City of Homs differently from other counterpart cities in Syria. The historic City of Homs is located in a very strategic location in the middle of Syria connecting different parts of the country. The city was originally found 280 BC and became a very important Greek and Roman settlement. The domestic architecture of the city is dominated by the use of courtyard houses typology as well as the basaltic stone as a building material. Therefore, this paper will focus on the development of the domestic courtyard houses in the city and how this development was shaped by the influence of the Ottoman Empire, French mandate and local social and cultural aspects. Also, the impact that these factors have on the city identity will be investigated. Historic exploration and a detailed analysis of seven courtyard houses from a different period in the city will inform this discussion about the city image and identity.

Keywords

Courtyard houses • Middle Eastern architecture • City identity • Courtyard elements • Architecture identity • Courtyard development • Homs dwellings • Traditional architecture

1 Introduction

The dwellings and housing typologies play an important role in identifying the city and shaping its architectural identity. The courtyard houses have a particular environmental and social response that characterizes the architecture of the Islamic and Middle Eastern countries. They were developed over the years and witnessed many changes that vary depending on the region, the city as well as the variations in the lifestyle. In some cases, these changes affected the whole building's type; in others, they were limited to building's materials or construction techniques. That said, these houses are in danger owing to urban and population growth, which affects the city identity. Besides, the disappearance of the traditional craftsmen profession is another challenge this housing typology is facing in the present time. Therefore, this paper aims to analyse the cultural factors that helped to shape different typologies of the courtyard houses of Homs, Syria; it will analyse how these courtyard houses adopted the transformation of the social life, as well as, the evolution of the city and its population through the years.

The culture and social lifestyle play an important role in the design of domestic architecture and the way it functions. Petruccioli (2006) describes that the typological process is inherent in the evolution of the Mediterranean Islamic courtyard house. He suggests that the courtyard house started as a small unit and then grew by adding more rooms/units attached to the initial cells, making sure that there is still space indoors (the courtyard) that enables practising open-air activities (Petruccioli 2006). He adds that these partly independent units are used as either guest's house or for extended families (Petruccioli 2006). This paper will be discussing in detail the social and cultural influences that affected the development of courtyard houses in Homs and their role in reflecting the identity of the city. However, while explaining the social impact on the design of the traditional dwellings of the city, it is important to explain the

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social evolution and its impact on the design of its courtyard houses through the historical periods.

2 The Identity of the City of Homs: Historical Background

The City of Homs is located in central Syria on the east bank of the Orontes River. The name in English and French is pronounced as *Homs;* Greek and Latin *Emesa* (Dumper 2007). It is halfway on the link between Aleppo and Damascus, about 200 km to the north of the capital city, Damascus. This location is considered a special topographical position as it lies between the foothills of Al-Nassarah Valley "Wadi Al-Nassarah" and the Lebanese mountains to the south. This location guarantees that it receives the relaxing influences of the Mediterranean Sea and its breeze. Consequently, the climate of the City of Homs is very mild, with a high average of rainfall. However, this location is also the reason for the windy environment that characterizes the city, high-speed wind sometimes.

The buildings in the historic town of Homs are mostly courtyard houses with some public buildings and historic churches and mosques. These buildings were built in sculpted basaltic stones coming from the Al-Wa'ar area in the city western countryside. Even during the Byzantine Empire period, the remained churches within the city centre of Homs are proof that this black basalt was used as a building material since then. Therefore, unlike other cities in Syria, the identity of the City of Homs is linked to the use of local stone of black basalt as a main building material and white limestone to decorate the internal and external facades (Fig. 1). This type of architectural style is called "Ablaq" (Al_Zahrawi 2006), and the whole city is coloured by black and white only shaping its particular identity, so it was called throughout history: "*The mother of Black stones*" (Al_Zahrawi 2006; Al_Dandashi 2013) (Fig. 2).

After the Byzantine Empire, the Islamic city plan encouraged the narrow streets and building the houses close to each other. Al-Dbyiat (1995) stresses out that the narrow streets enhance the quality of relationships between inhabitants who are part of the same community in the City of Homs. Moreover, Historic neighbourhoods of the city accommodated both Muslims and Christians who were living together; they had different cultural lifestyle which was reflected in the use of spaces of their houses. We can note that almost all buildings in the city centre date back to the Ayyubid and Mamluk periods (between 1262 and 1516). Furthermore, during the Ottoman Empire (1516–1915), the Ottomans only added decorative elements (such as Masharbia window) and did not influence the structural and architectural elements of the house (Raymond 1985). However, the Ottoman has changed the lifestyle of the city on various levels, which resulted in reshaping the city identity in one way or another as it will be explained in a later section.

This city expansion and transformation during the Ottomans resulted in a function transformation of many traditional dwellings in Homs. Petruccioli (2006) described this type of identity transformation as a natural evolution. For example, few houses in Homs can be considered as great examples that reflect the social transformation introduced during the Ottoman's period. The function of these houses was changed to either schools or hospitals, to adopt the new requirements of the city expansions; however, the architectural elements of the house remained unchanged. This change of characteristics was due to the development of social, functional and urban requirements (Petruccioli 2006).

The expansion of the city normally causes an increase in traffic into the area, which adds technical, infrastructural problems to the original urban fabric. However, this expansion brought a bigger city that played a major trading role during the Ottoman's period, resulting in an evolution in the city identity making it a new target for people to find jobs.

Due to people moving from the countryside to the city for work and education, this expansion continued after the Ottomans, and it is noticeable during the French Mandate (1919–1946) in the old parts of the city of Homs. In Homs city centre, the pressure caused by the expansion of the old centre affected the whole urban context, on both technical and social aspects. This resulted in driving many people to change their houses and other buildings by modifying the floor plans, changing the materials used in roofing, or even modifying the openings to adopt the new needs and requirements. For example, the courtyard houses particularly were affected by many modifications over the years, and most of them changed their function more than once. The Dawama's House can be seen as one of the courtyard houses that reflects this. Its western entrance that opens directly to the courtyard without the use of any corridor could have been added when the building changed its function from residential to educational (Fig. 3). These changes will be analysed in more detail in a later section that studies each case–study house and its transformation process.

In later years after the end of the French Mandate and the independence of Syria, the social life developed, and the whole city's identity was affected by the global movement of architecture. As a result, in the 1970s with the city expansion and the dramatic increase of housing demands, many courtyard houses were demolished in Homs city centre to be replaced with multiple apartment buildings. These blocks did not have any courtyards. Instead, they had only small balconies and windows on the west facade. This proves that the lifestyle at that time witnessed a huge change and kept evolving to reshape the city identity once again. As a result,

people wanted to live separated from their parents in 2-3-bedroom apartment-style accommodation instead of 5-6-bedroom courtyard houses. Also, in most apartments, they no longer have two separate living room spaces to separate males and females. However, the wealthy conservative people who wanted to keep the gender separation in the apartments built their modern houses with two separate living spaces. These social and cultural changes were results of the influence of the French Mandate and the globalization movement at that time. However, this dramatic transformation caused a radical change in the identity of the city of Homs, as the face of the city and its black and white "Ablaq" architecture started to promptly decline and disappear (Figs. 4 and 5).

3 Courtyard Houses in Homs

3.1 Introduction

The courtyard as a house plan type exists in different areas around the world. At first, this type of development logically took place to protect the inhabitants from outside forces, such as invasion of wild animals (Edwards et al. 2006). The courtyards concept as a plan configuration appeared in the Near East around 7000 BC in Neolithic settlements (Gates 2011).

Although courtyard houses in Syria share similar design features, elements which are relevant in one region may have been considered less important in another. For example, the wind catchers have been seen as an essential element of the courtyard houses, while they are absent in the courtyard houses of Homs. By analysing the courtyard houses in Homs, we can outline the following design principles that have been influenced by the cultural life but also influence the environmental performance of the houses themselves, which are:

- Courtyard
- Liwan
- Openings (Doors and Windows)
- Building Material
- Orientation.

3.2 The Development of Courtyard Houses in Homs

Çatalhöyük, Çayönü and Jericho prehistoric sites are considered as a proof that the courtyard houses were not introduced to the Middle Eastern region, rather than being a result of historical events which led to the evolution of this typology since 7000 BC (Edwards et al. 2006; Bicakci 1995). However, this typology still has a lot in common with the more recent developments, which indicates the importance of these common features, and that they are still needed despite the cultural and historical growth that happened since then.

In later years in the Middle East, the courtyard remained the most critical element and the centre of all Islamic Arabian houses. People continued using it in the city of Homs, similarly to other places in the Mediterranean basin in the form of the classical Roman atrium and Greek house (Edwards et al. 2006). Petruccioli (2006) argues that the continuity of Byzantine culture in the region may be the reason behind the spread of the courtyard house. Moreover, since Homs was part of the Byzantine Empire, it is only possible to assume that it was influenced by it. It is believed that in areas that had been abandoned by the Byzantine Empire, the buildings were reconstructed based on a relatively basic type of houses with one cell (Petruccioli 2006). Therefore, the existence of the courtyard houses has always been part of the city and its social influences. The lifestyle and city identity evolution helped to shape the courtyard house's elements and features. In addition, the evolution of the city and its wealth evolved this typology to its latest known design in Homs.

As it was explained earlier, the use of the black and white stones has always been part of the city of Homs and its unique identity, since it was a Byzantine city known as "Emessa". However, the evolution of the city has shaped the buildings and their typologies, not only their architectural elements. With the arrival of Islam to Homs in 632, Muslims adopted the courtyard concept because it suits their religion and their social life, particularly the degree of privacy they were looking for (Semper 1989). Besides, many researchers proposed that the courtyard of an Islamic house represents the Garden of Eden (Campo and AlSayyad 1992; Oliver 2003; Petherbridge 1978). They agree that in the Arab cosmology, the four walls of the courtyard designate the four columns carrying the dome of the sky and the courtyard symbolizes their private piece of sky, so the courtyard has also a cultural dimension. However, in Homs, different religious groups were living together in the same neighbourhood. Furthermore, we can argue that the religious background was not as important as the environment in influencing the courtyard house's design in Homs particularly. By analysing the case study houses, we can identify two different courtyard houses built by two different religious groups (Muslim and Christian). Both types share the general style and are located in the same neighbourhood: Mehi'sh Mansion and Dawaama House (Fig. 6).

As explained in the earlier section, the typology of the houses was forced to evolve during the Ottoman Empire and the French Mandate. This evolution involved the change of

function of many of these houses. The rapid changes of the city and its growth lead to the need for more hospitals, schools and workspace. Therefore, many of these houses were transformed. However, in many cases, the dates of the transformations are not registered, and therefore, they are difficult to track (Taqtaq 1995). Table 1 highlights the functional changes happened in the selected case study houses over the years.

Table 1 gives us an idea of different transformations these houses witnessed in the City of Homs. While most of them kept functioning as residential buildings over the years, others changed their main function based on the owner's decision. Also, some of these houses had to change their function even three times.

These case studies were selected to provide a sample of houses built before and during the Ottoman period in order to allow us to track the Ottoman's influence. However, it was possible to have the plans of only two houses built during the early Mamluk period, while four of the selected houses built during the Ottoman period were selected based on their various sizes (large, medium and small). In addition, one case was selected as it was a house built by a Christian owner during the late Ottoman's period. These variations provide information to track the influence of the tradition, religion and size of the building on its architecture features. Even though a bigger sample could be helpful to provide a more in-depth research, the resources are so limited and not enough data is found about other case studies. Figure 7 shows the location of the selected case study houses on the map.

Changing the function—as mentioned before—led to a real danger of losing the house's identity and affecting its original environmental performance, especially during the French Mandate. Affecting the identity could be seen clearly in "Basha Al-Hosiny's Mansion", as it was transformed into a school, then to a workshop (Taqtaq 1995). Unfortunately, these changes are not registered in detail, and the dates are unknown. However, it is certain that the central fountain was removed when the house was changed into a school, and the southern unit was changed into toilets; this made it easier for the school to be changed into a candy workshop in later years (Taqtaq 1995). Also, the courtyard was helpful as they used it to cool the candy and the roasted nuts in fresh air before selling. However, transforming it into a workshop resulted in using the rooms for cooking, so the steam has caused damage to the spaces (Fig. 8). This new use significantly affected the typology of the house and its features. Nevertheless, this is a living proof of the flexibility that the courtyard typology has to offer. The open private space enabled the workshop to function privately without disrupting the neighbourhood by keeping the noise trapped inside the private space and isolated by the side walls that are a minimum of 1-metre thick.

Additionally, "Abd-Alla Farkouh's House" was transformed into a hospital probably in 1900, and at that time, it is believed that no major changes were done and the typology of the living space remained untouched (Taqtaq 1995). All the rooms in the house were used as emergency and surgery rooms until it was used again as a residential building by "Abd-Alla Farkouh" who donated it to the city council of Homs to be opened as a museum after he passes away (Taqtaq 1995) Fig. 8. Nevertheless, it is unknown if he was the owner when the building was functioning as a hospital and what the reasons behind changing its function back to

Table 1 Selected case studies of courthouses in Homs and their functional evolution (by the author)

House name		Built-in:	Original use	Transformed	Transformed	Current function
		Dated		1st	2nd	
1	Al-Zahrawi Mansion	1049 (Early Mamluk Sultanate: 1226)	Governor House	Residential	–	Museum
2	Mofeed Al Ameen Mansion	EST: 1250-1517 (late Mamluk Sultanate/early Ottomans)	Governor House	–	–	Owned by the City Council
3	Basha Al-Hosiny's Mansion	1879 (Late Ottoman period)	(Multi-function) - mainly Residential	School	Workshop	Workshop
4	Mehi'sh Mansion	1887 (Late Ottoman period)	Residential	–	–	Residential
5	Abd-Alla Farkouh	1892 ((Late Ottoman period))	Residential	Hospital	Residential	Museum
6	Al-Droby's House	1883 (Late Ottoman period)	Residential	–	–	House
7	Dawama's House	1892 (Late Ottoman period)	Residential	School	–	Empty

Table 2 Case study house: liwan location (by the author)

House name			Liwan number.		Liwan's location			
		Dated	G	1st	N	S	E	W
1	Al-Zahrawi Mansion	1049	1	–	x			
2	Mofeed Al Ameen Masion	1250–1517	–	–				
3	Basha Al-Hosin's Masion	1879	1	–				
4	Mehi'sh Mansion	1887	1	2				x
5	Abd-Alla Farkouh	1892	2	1				
6	Al-Droby's House	1883	3	–	x	x		x
7	Dawama's House	1892	1	1				

residential. However, probably, it happened after the opening of the main hospital in the city. At that time, the records show that no changes were done to the house as the owner took good care of it as he was living alone, so it is believed that he used the rooms as guest's rooms only (Taqtaq 1995). This case indicates the flexibility of transforming the house into a hospital with a big number of rooms and open courtyard space that offered internal peaceful garden space for the patients. Therefore, we can conclude that the city evolution and the need of hospitals were welcomed and easily fulfilled by transforming its big houses into hospitals when in need, and they were transformed back when they were no longer required (maybe after the opening of the new hospitals in the city.) (Fig. 9).

Even though many houses were able to aid the city expansion and the requirement for supplementary functional spaces, many of the houses within the city did not change. They remained only residential until the civil war took place in 2011. For example, "Mehi'sh Mansion" and "Al-Droby's House", it is possible that the main residential function of the houses did not change, and they are still owned by families (Taqtaq 1995). However, as they are partly demolished and greatly damaged during the war, this opens many possibilities to either demolishing them or reconstructing and transforming them to traditional restaurants after the war, as it will not be economically efficient to reconstruct them for residential use (Fig. 5).

Moreover, these courtyard houses started to disappear, even before the Syrian crisis of 2011. In some cases, the courtyard houses had to be sold in auctions as more than 50 people inherited their grandfather's house. Therefore, they had to sell it in order to distribute its value. In other cases, new owners did not want the house; they were after its land value due to its strategic location in the city historic centre, and therefore, they demolished the courtyard houses. However, few new owners had different visions. They bought these houses in order to turn them into restaurants reconstructing the traditional atmosphere of these houses. Later, as people noticed that this transformation was a good investment, more houses was saved and preserved, of course with a change of use. The first courtyard house transformed into a restaurant in Homs was around 2000. The new owners of the transformed courtyard houses took real care of them; most were professionally restored, bringing back the old life spirit into the house. This transformation did not affect the house plan, nor the material used, only affected the function and use of space. For example, a house was transformed by an architect from Homs, who aimed to bring back its original features, and it is now called Julia Palace.

When transforming it into restaurants, the courtyard with a fountain in the middle was considered as a perfect space to place the dining tables after transformed. Besides, few tables were placed inside the rooms. In winter, the courtyard was closed by adding a temporary roof; different materials were used to construct this temporary roof from place to another. In most cases, it was textile cover; in other cases, it was glass/framed structure that is removed in summer and placed in winter. In most cases, the basement was transformed into a bar serving different alcoholic drinks to keep it separated from the dining space in the ground floor. The modern social life influences this design consideration in Homs; it also shows respect to people who do not drink alcohol and prefer a calm place to dine along with their families.

As a result of this rapid lifestyle during the difficult conflict time, the courtyard houses in Homs are now endangered and disappearing. This results in real danger of the city losing its original identity, as the black-and-white stones are no longer being used as building materials and all modern attempts to bring these features back had yet failed. It is normal for cities to change its identity over the years, but the Syrian crisis is resulting in severe damage and loss of the courtyard houses; there is a real danger of total disappearance of these houses if the owners and the local policy makers take no action in preserving and bringing them back to life.

Courtyard houses typology in the Middle Eastern region continued to exist for their various uses (protection, functional, or privacy); they share many design features that

remained the same over the years (Semper 1989). Therefore, in order to be able to understand the role of these houses in shaping the city identity, it is important to identify the influence that social aspects and the evolution of the city identity have had on the design features of these houses (e.g. courtyard, liwan, openings, building materials and orientation). The next section, therefore, explores the cultural development of these design features of the courtyard houses in Homs.

3.3 The Cultural Effect on the Architecture Design Principles of the Courtyard Houses in Homs

The courtyard houses in Homs have various architectural elements that made them stand out from their counterparts in the country, and the following section will be devoted to analysing their traditional architectural elements in further details reflecting the social lifestyle influence on the introduction and the development of these elements.

3.3.1 The Courtyard

The courtyard is the most critical element and the centre of all Islamic Arabian houses. As argued earlier, the concept of the courtyard existed in the current Middle East since 7000 BC, and it has endured in the Mediterranean basin in the form of the classical Roman atrium and Greek house. Social, cultural and religious factors have had a significant impact on shaping the courtyard houses in Homs. The need for privacy has had a dominant effect on dividing the interior spaces, designing the external windows and separating family activities from guest spaces within the house. Additionally, the extended family arrangement and the way they used to live together in one house influenced the design of the houses with the possibility of semi-independent units. In many cases (and most of the large houses in Homs), it was possible that some units in the house could function independently yet keeping the strong family ties. For example, Fig. 10 shows the three separate units of Basha Al-Hosin's Mansion. These three units have three different courtyards and function independently. However, the family was living together and sharing a common unit at the heart of the house that maintained the extend family bonds and relations.

Moreover, during the Islamic period, the courtyard house had a sacred significance, as mentioned earlier, as the courtyard symbolizes their private piece of sky (Edwards et al. 2006). Moreover, Gottfried Semper (1989) relates the enclosure of the houses with a southern Mediterranean agricultural society that must struggle to protect themselves from outsiders (Semper 1989). With the arrival of Islam in 632, Muslims adopted the courtyard concept because it suited their religion and their social life, particularly the degree of privacy they were looking for (Elabidin 1998).

Culture and social life in the Islamic cities influenced the courtyard houses in many ways. It had a major impact on the spaces, openings and orientation. According to Edwards et al. (2006), the role of courtyard differs from one region to another in the Arab world and Iran (Edwards et al. 2006). Thus, the courtyard plays key functions in the houses of this region, which are as follows:

- Providing division and organizing spaces of the house.
- Enhancing the privacy of some spaces.
- Fusing the spaces and creating architectural units.
- Allowing better circulation and use of space.
- Becoming the interior garden.
- Encouraging enough ventilation.

In addition to the cultural factor, Petruccioli (2006) analysed the general typological process of the courtyard houses in the Middle East in general. His research suggested that orientation and access are the key factors in developing the courtyard houses of the region. Analysing the exterior and interior windows in the courtyard houses in Homs, we find that this rule is followed in most of the case study houses where they had a southern exposure, and the first floor was in most cases opened to the courtyard from the south allowing maximum daylight to enter the rooms.

The courtyards that were shaped by social and cultural influences have also an environmental impact which varies based on the geometry and the number of courtyards in the house. The Islamic social life, which required women to be separated from men, affected the housing architecture; men and women had separate halls within the house. Each hall had its separate entrance, but both where opened directly onto the courtyard via a covered space called the liwan. These two living spaces are called: Haramlik for women, and Salamlik for men.

However, the use of the courtyard space was always considered the heart of the house; a space was always used for entertaining guests, parties and holding events in summer. Furthermore, with the evolution of the city and its cultural life, as mentioned earlier, few houses were transformed into schools, and the courtyard house played an important role as the interior yard. Whereas, when the courtyard house was transformed into a workshop, its courtyard became the workshop interior yard as explained before. Finally, with the latest evolution of this typology, when the courtyard house started to form a new identity to be considered by the new generation as a "traditional restaurant" rather than a "residential space", the courtyard became the heart of the restaurant and its biggest dining and entertaining space. This points out the flexibility the

courtyard had to offer throughout the years. However, it also concludes that recently, the new generation of Homs, who have never experienced living in a courtyard house, only sees it as a dining space. This means the identity of the courtyard house has now dramatically changed in a way that affects the cities identity as well by referring to these houses as the city's traditional restaurants instead of houses.

3.3.2 Liwan

The liwan is considered one of the most important elements in the traditional courtyard houses influenced by Islamic culture. In addition to culture, it was strongly affected by the orientation of the house, and thus, its location and structure differ between different cities. However, in most courtyard houses in Homs, two living space units can be found connected through a liwan that is open directly to the courtyard. This space has three steps above the courtyard level to keep it dry.

As in some cases, one liwan is enough; in other cases, where the houses are big, three liwans were integrated. For example, in Homs, the remained courtyard houses have more than one liwan; in general, courtyard houses in Homs have two liwans: the main liwan is facing the north in order to avoid the southern sun in summer and get a shaded space to sit in the afternoon, while the second liwan is generally located in the upper floor facing south, to allow the maximum southern sun to help to keep the space warm in winter. Logically, this space is used in winter and abandoned in summer as it will be extremely hot. Moreover, the number of these liwans differs based on the climate requirements and the size of the house.

Analysing the case study houses in Homs, support this theory as this orientation is strongly applied in "Abd-Alla Farkouh's House" and "Al-Droubi's House". However, this typical arrangement was not followed in "Mehi'sh's Mansion", as the liwan is facing east. Also, we note that the liwan disappeared in "Basha Al-Hosny's Mansion", and instead, it has a shaded corridor located in the eastern part of the courtyard in the ground floor. This variation is due to the variation in size and the number of courtyards (Figs. 11, 12, 13 and 14).

The original use of the liwan until the start of the French Mandate in 1918 was strict as a shaded living area. However, with the great evolution in social life, some houses were turned into schools or cultural centres. In these cases, those liwans were used as a stage opened to the courtyard adding few chairs and tables in the courtyard around the fountain and holding concerts, poetry sessions or any other cultural activities. This type of transformation continued after the French Mandate until recently as people were slowly less interested in the literature, so these houses started to be transformed to restaurants in the late 90s early 2000 as explained before (Table 2).

3.3.3 Openings (Doors and Windows)

- The windows

In traditional architecture, in general, the windows as architectural elements were very influenced by culture. Therefore, the exterior windows were built small and above the eye level to make sure the people on the streets cannot see the interior of the houses. However, interior windows were made larger and opened on the courtyard providing proper light and air/ventilation quality for the rooms. Similar to Homs, this rule was followed in all traditional houses in other cities.

In the traditional courtyard houses in Homs, the windows can be classified into two types: (external and internal). The type is located on the external façade of the house with a simple design. This resulted in having the courtyard houses described as a house that is inward looking, and the closed (almost) solid exterior brought further contribution to the identity of the city as "*The mother of Black stones*". The courtyard windows are much larger than the exterior and are styled and provided with some ornaments in some houses. In Homs, they were arched and decorated with white limestone (Fig. 15). At the base of the courtyard, other small and arched windows with no decorations can be seen; these windows enrich the overall design of the internal courtyard facades as well as provide light and ventilation to the basement floor, which was mostly used for storage.

One of the very significant window styles that is very common in Home's Traditional Courtyard houses is Al-Mashrabiya" window. This type of window was very common, not only in Syria but in the whole region because of the high level of privacy that it offers, in addition to controlling the light and solar radiation, reducing the glare and allowing ventilation into the house spaces. Even though the Islamic courtyard houses existed in Homs years before the Ottoman Empire, Elabidin (1998) argues that "Al-Mashrabiya" windows were not very common in Syria (not only in Homs) before the Ottomans. For example, Al-Zahrawi House was built in 1049 by "*Ali Bin Al_Afdal Al_Azhari"* according to a big stone on its interior façade. This house consists of two units; one was built during the "Mamluk Empire" period, whereas the other part was built in the "Ottoman Empire" period. And only the Ottoman' section had the Mashrabia.

Al-Mashrabiya (or Al-Mashrabiyah) is the Arabic name given to a style of projecting window with engraved wooden latticework placed in the first and second floors of a building. It is typically used in all sorts of houses, even in public buildings (Elabidin 1998). This element is considered a very important aspect of privacy and very essential to cover exterior windows because it provides a good view of the

street by the family from the inside without being exposed to the public (Edwards et al. 2006). It represents an important element that was designed in response to the cultural lifestyle and lined to the identity of the courtyard houses in the region. In a male-dominated society where houses were designed based on gender separation, preserving the family's women's privacy was very important. Still, it was also important to keep women able to observe the activities in the neighbourhood. Therefore, the Mashrabiya came as a perfect solution and one of the most favourable styles during the Ottoman's period (Elabidin 1998). However, it is said that Mashrabiya was the ornament of wealthy people because they cost a lot of time and money to be produced (Elabidin 1998).

This type of windows has many styles: the unique one is extruded from the walls and looks like a box attached to the exterior or interior walls, and another style is a flat latticework placed on a flat normal window. The first style was not a very common element in Homs city, unlike Damascus and Aleppo, where it was used intensively (Atassi 1969). The reason behind this is not clear, but maybe as mentioned before, and some houses were built before Ottomans, and possibly, unlike other cities, the builders in Homs did not find it necessary to change the style they used to build; also, they may did not have the required skill, while the second style (flat latticework) was often used possibly because it was easier to produce and attach to a previously built window. In addition to using it in the exterior, they used it to cover some interior windows opened to the courtyard (Figs. 16 and 17).

Moreover, as no courtyard houses were built during the French Mandate, there is no clear proof that the French influenced the design of the windows of the traditional courtyard houses in Homs. Moreover, people started building the multi-flats apartments with small balconies adopting the western style as it is and ignoring the style of the window used in the traditional courtyard houses; as a result, the Mashrabiya disappeared in modern buildings in the city. In addition to the cultural aspect, it is claimed that these traditional windows are considered to have good environmental performance as a shading element that also purifies the air from dust as possible, enhancing the thermal comfort inside the houses. Comparing the windows (located in both interior and exterior facades) in the seven selected cases in Homs and analysing them gives us a clear idea that they follow different systems. As we can see clearly that most of the houses are attached to other houses from three sides, including the north façade (Fig. 17), whereas two of the case studies (Basha Al-Hosiny's Mansion and Mehi'sh Mansion) have their exterior windows placed significantly in the northern side because it is open to the street. It is important to mention that among four case studies located on a corner with two facades facing the street, Basha Al-Hosiny's Mansion is the only case study house with many exterior windows on both the ground and upper floors (Fig. 17). This could be related to the background of the person who built this house. It is believed that it was built in 1878 by a Turkish man called "Mostafa Basha AL-Hosiny Al Turkmani" who came to settle in Homs in the Ottoman's period, and that he has some power and was working in the government (Taqtaq 1995). Therefore, the architecture of this house could be influenced by the Turkish Courtyard House, as these houses tend to have more windows in the exterior facades than Arabian Courtyard Houses built in the same period (Elabidin 1998). Also, as we already mentioned earlier, the Mashrabiya was introduced by Ottomans. In this case study, the flat type of Mashrabiya was used to cover the exterior windows in order to ensure a high level of privacy without blocking the exterior views.

On the other hand, "Mehi'sh Mansion" is the only case study that is almost closed to the outside (having only the large windows in the northern façade as mentioned earlier) (Fig. 18). Although the records show that this house was built in 1887 by a Christian doctor called "Mehi'sh", still this did not influence the window sizes or shapes for this house. This draw attention that religion was not the only factor influencing closing exterior facades, and the cultural aspect was more important for the residents of Homs.

In other cases, with the transformation of the houses, many courtyard houses altered their windows. The reasons for altering these openings differ according to the owner's needs and requirements. For instance, during the French Mandate period (1918–1946), the intense privacy is no longer considered the main concern as before, as France influenced the residents of Syria to become less conservative, and some families modified the windows to allow more sun and daylight inside the rooms. Nonetheless, in many cases, these modifications are considered harmful to the vernacular building because it was changing the typology itself. That said, none of the analysed case study houses in Homs show a sign of window medication during the French Mandate as explained before.

- The doors

In addition to windows, doors were highly influenced by the Islamic culture; not only in Homs, but in the whole region (Edwards et al. 2006). The relatively small, modest exterior door was important at that time to make the neighbourhood have a modest style despite the financial status of the owners (Elabidin 1998).

The entrance is a key feature in courtyard houses in Homs, and its design has changed through history. Before Ottomans, and during the "Mamluk Empire", the main entrance of the courtyard house in Homs had a narrow

Fig. 1 Syria Map—Homs Location

straight corridor with double doors (one at each end), while the typical style of the entrance for houses built during the Ottoman Empire has a narrow winding corridor shaping a corner before entering the main courtyard; this is called "Majaz". It is assumed that Ottomans built their house's entrance in this style to provide a level of security while they lived in Homs to protect themselves from been attacked. By observing this style in Homs, we can find this corner-shaped entrance technique used only in few case studies. For example, in Al-Zahrawi Mansion, the left part was built in the Mamluk Empire, and the entrance is straight and narrow, and the right part was built in the Ottoman Empire, and the entrance has a corner (Fig. 19).

The cornered entrance "Majaz" is not very common in traditional houses in Homs (Elabidin 1998); the reason behind this is related to the period where those houses were built as the majority of traditional houses of Homs existed before the Ottoman Empire. We can deduce that this entrance "Majaz" was influenced by the culture and it was designed to show a blank wall once the exterior door is opened to ensure a high level of privacy; this was clearly inspired by the castle entrance which adds a security reason behind this design; this style is very common in both Roman and Islamic castles for protection against attacks by limiting the space in front of the door to disable the enemy's attempt in braking in. Moreover, from an environmental point of view, it is commonly believed that this shaded entrance typology played a role in cooling the air and purifying it from dust before entering the courtyard.

3.3.4 Building Material

As mentioned earlier throughout this paper, the building material that is unique to Homs old town architecture is black basalt for the main building structure and the white

Fig. 2 A photo of one of the buildings in the city centre of Homs. *Source* Historical Archives of the City of Homs.)

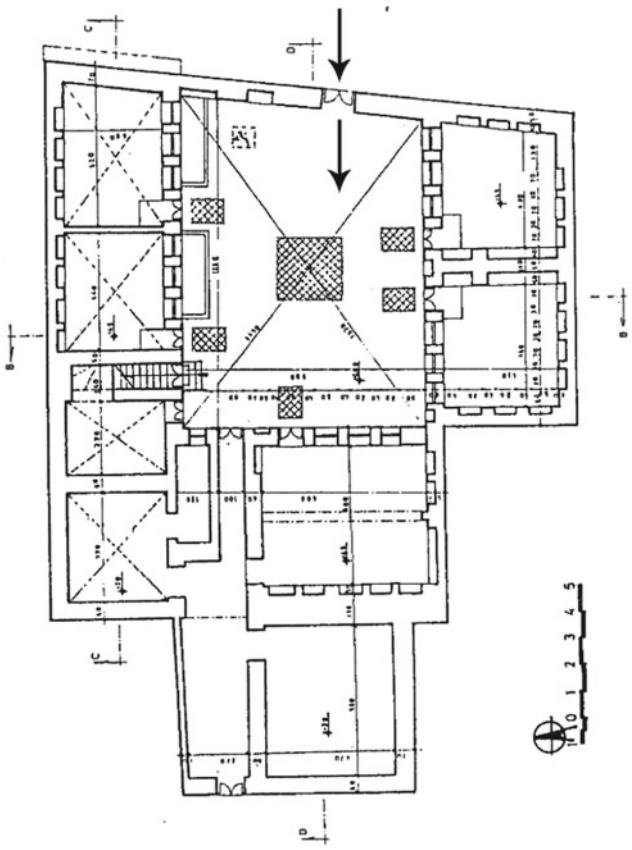

Fig. 3 Dawama House—Ground Floor Plan—shows the direct opening to the entrance (Taqtaq 1995)

limestone for decoration. Besides the importance of creating the identity of the city and its architectural style "Ablaq" (Al_Zahrawi 2006), the use of this building material can be considered sustainable due to its availability in the areas surrounding Homs. In addition to that, there is a general belief that most of the stones used in building the houses during the Islamic period were recycled stones from the previous demolished buildings that were built before them during the Byzantine period, or using the stones from the city walls after the city started expanding outside its historic walls (Al_Dandashi 2013; Al_Zahrawi 2006).

Moreover, in addition to the unique appearance of the material used in building these courtyard houses, it is important to note the thermal mass capacity of the black basalt that could have a huge impact in creating a balanced built environment in the courtyard house and reduce the heat transfer. However, this remains a hypothesis and it must be examined, and future research should provide supportive evidence on this matter.

3.3.5 Building Orientation

Building orientation is very important to the Islamic architecture, as it is required to consider the direction of Macca when praying. Because people do their prayer in their houses as well, houses are preferred to have the walls, in general, orientated facing south or south-east.

In addition to the cultural factor, Petruccioli (2006) analysed the general typological process of the courtyard

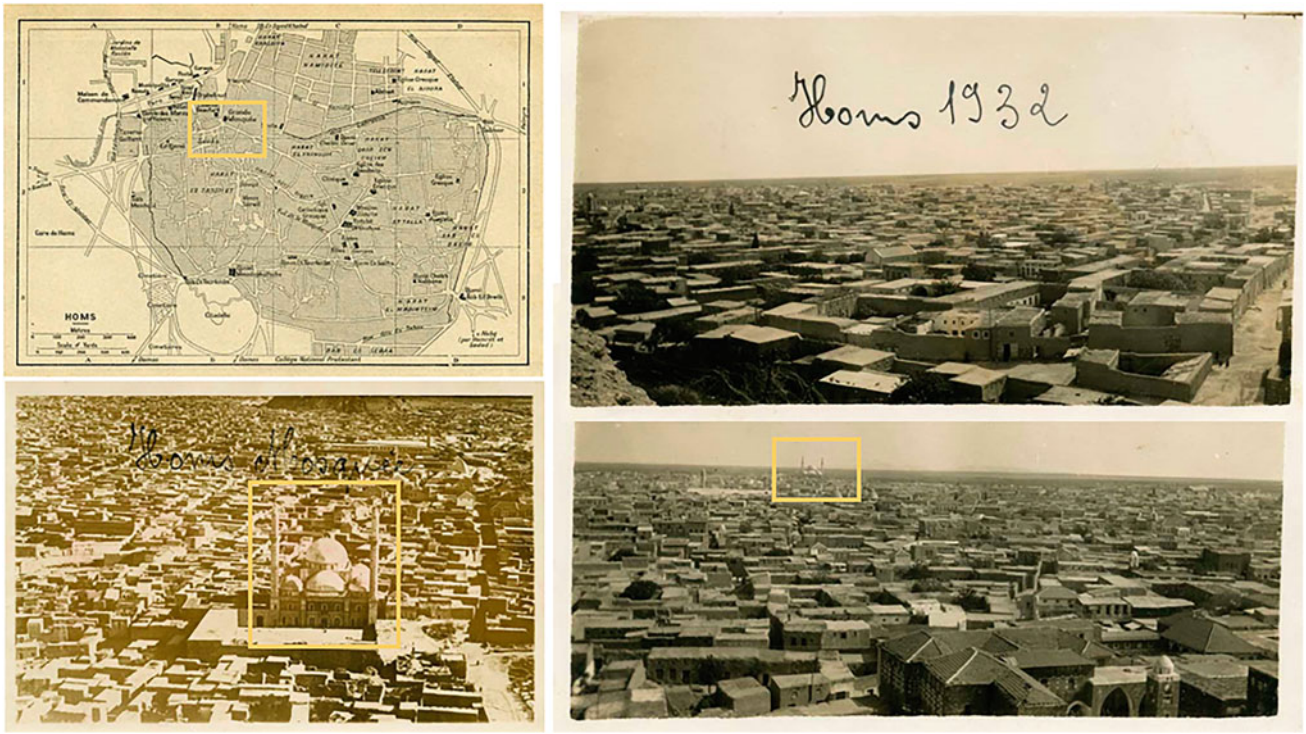

Fig. 4 Postcards from the historical archives of the city shows the courtyard houses in the centre of Homs. These photos are dated back to 1932 (Highlighted is the main mosque of Homs). *Source* Historical Archives of the City of Homs.)

Fig. 5 A photo of Homs main mosque (Ebin Al Walid) in the late 80 s. The photo shows the disappearance of the courtyard houses and highlights the new modern blocks. *Source* Historical Archives of the City of Homs.)

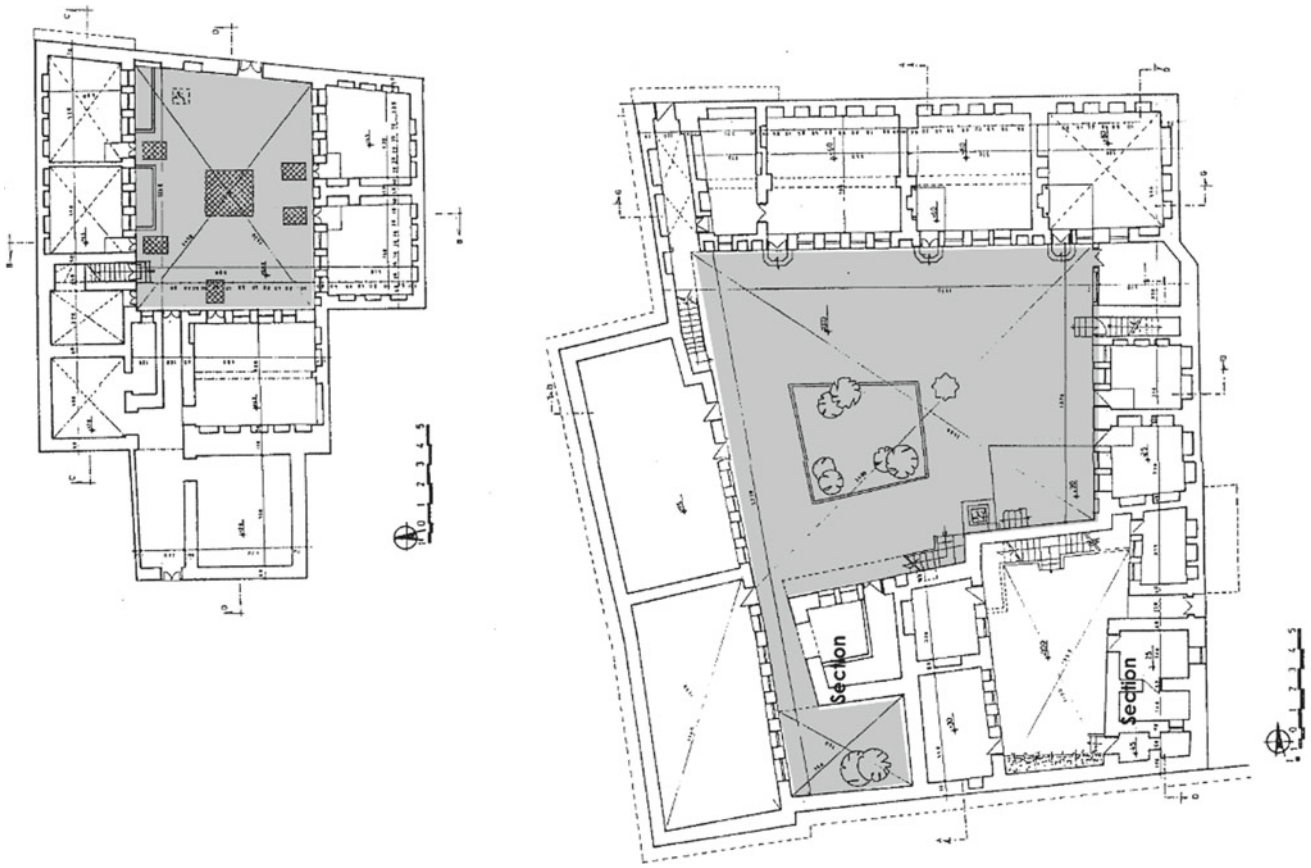

Fig. 6 To the left Dawama's House, Ground and First Floor Plans (Taqtaq 1995).To the right Mehi'sh Mansion, Ground Floor Plan (Taqtaq 1995)

houses in the Middle East and suggested that orientation and access are two key factors in developing the courtyard houses within the region. He suggests that the structure is orientated to allow the highest amount of natural light, which in the Mediterranean basin should be south and south-western exposure. Since orienting the building is more related to the site requirements than to the building itself, this rule is more adhered in rural areas than in towns as there is more free space, unlike the dense cities. By analysing the exterior and interior windows in the courtyard houses in Homs, we find that this rule is followed in most of our case study houses where they had a southern exposure and the first floor was in most cases opened to the courtyard from the south allowing maximum daylight.

4 Discussion and Conclusion

In conclusion, the courtyard houses of Homs played an important role in shaping the architectural identity of the city. At the same time, these courtyard houses evolved to respond to the city evolution and its needs thought-out its historic changes. The courtyard as an architectural element showed great flexibility adopting the need for transformation, by becoming school yard's, hospital's waiting rooms, workshop space, or even restaurant's dining room. While the identity of Homs as a city is recognized by its unique architecture, the social development of the city played an important role in forming and shaping the evolution of this significant architecture. The city's population growth within was not the only reason that drove people to expand their houses. Most of these expansions can be caused by the emergence of new requirements, or by the change of the buildings function. As a result of these expansions, many problems appeared. New standards and services were required in time, which led to influencing the social life as well and people realized that they could replace the houses with bigger modern blocks.

As a result, in the centre of Homs, the courtyard houses started to disappear dramatically, even before the Syrian crisis in 2011. This was due to the social evolution and not only the city growth and the need for building spaces. The disappearance of the traditional architecture of the city resulted in slowly losing its title "the mother of the black

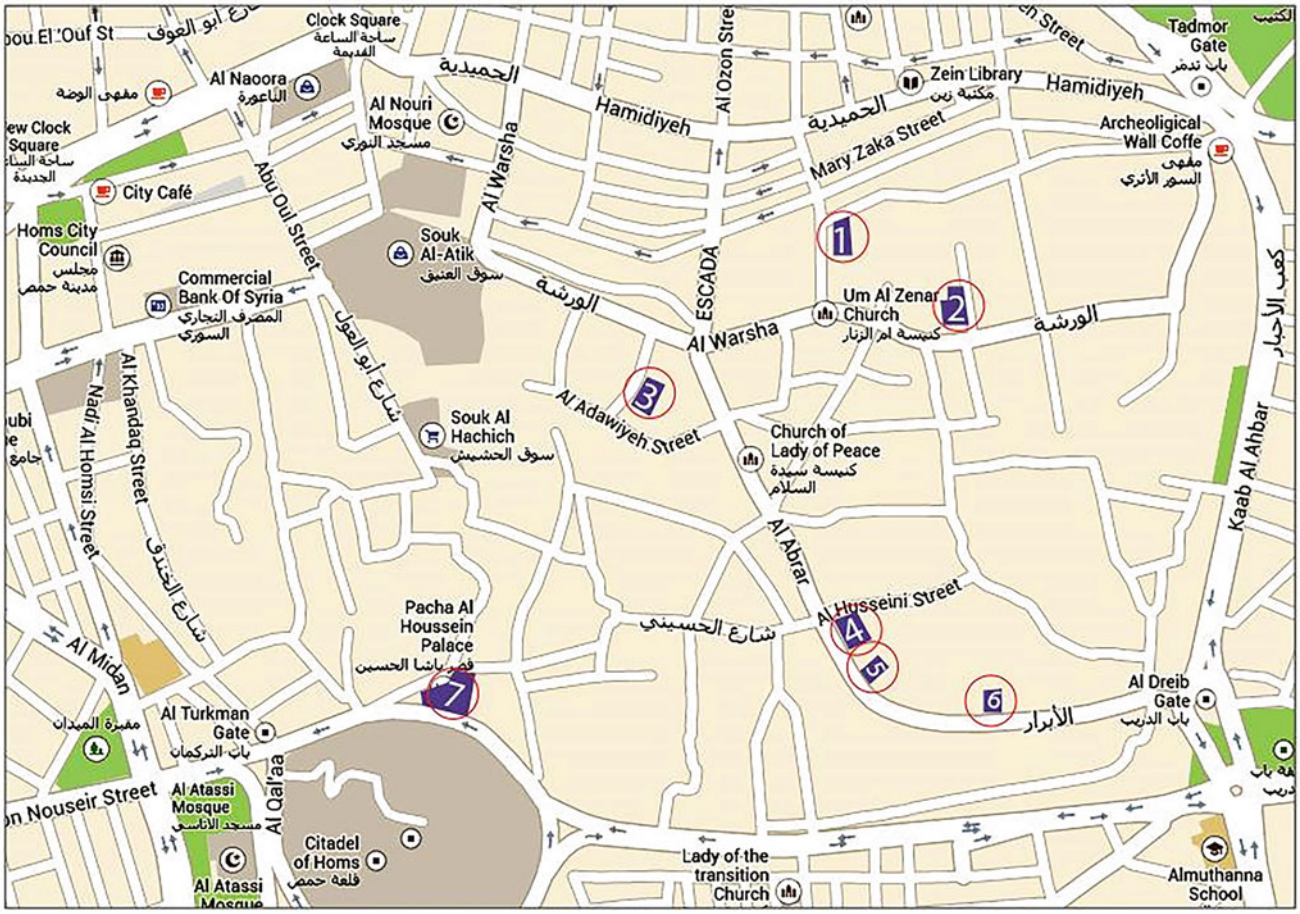

Fig. 7 Case study houses location in Homs (Google Map highlighted by the author)

Fig. 8 Basha Al_Hosiny's Mansion, Homs. *Source* Historical Achieves of the City of Homs.)

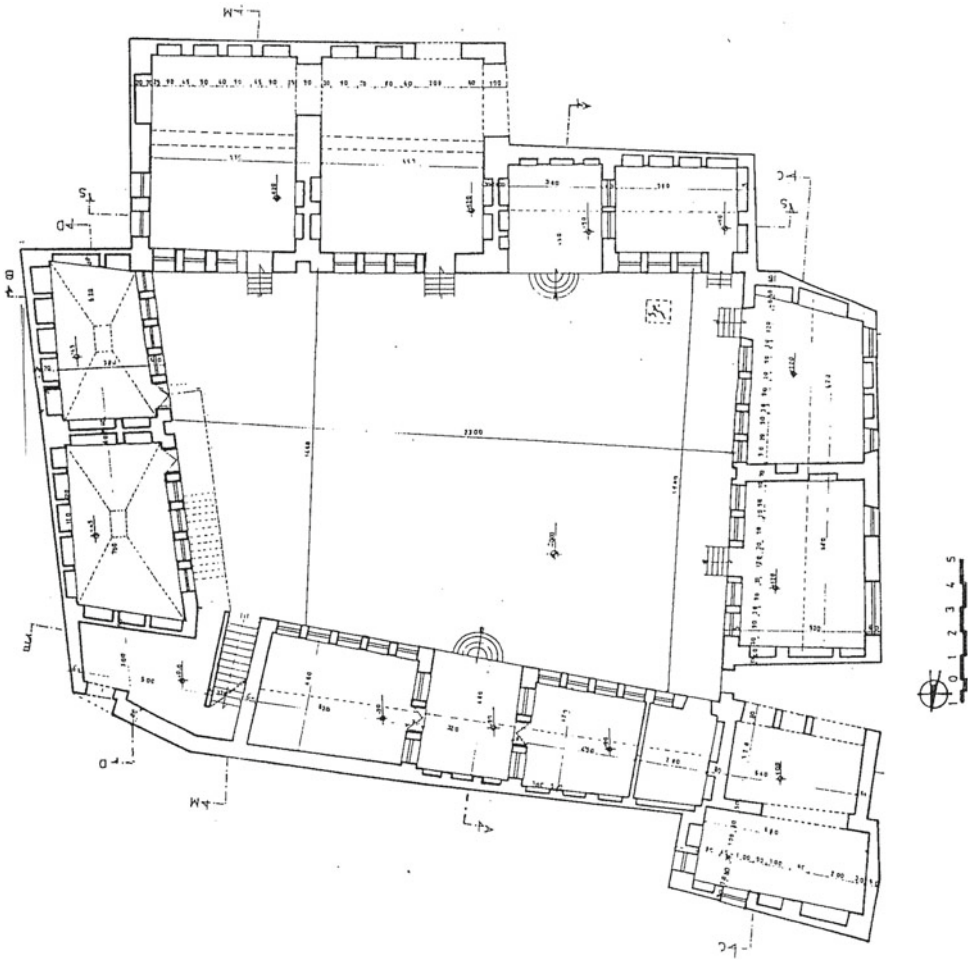

Fig. 9 Abd-Alla Farkouh House_ Ground Floor (Taqtaq 1995)

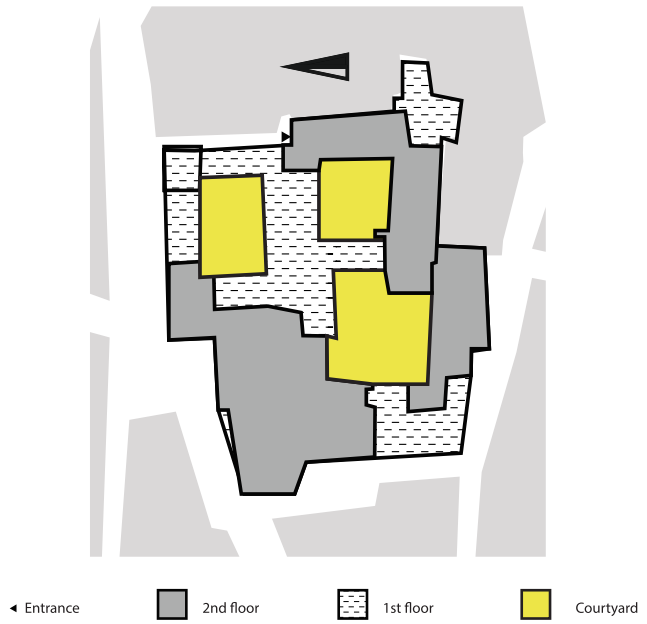

Fig. 10 Basha Al-Hosin's Mansion: three courtyards and three separate units (by author)

stones" (Al_Zahrawi 2006). It is worth mentioning that these traditional courtyard houses are not protected by the city council, nor registered as listed historic buildings. Furthermore, there is no current or previous law that protects them from being demolished by city developers or city planners. Nevertheless, only in the late 90s, few business owners had a different vision of bringing back to the city's original identity and thought about embracing it instead of letting it disappear, by turning its traditional houses into traditional restaurants. In early 2000, the city council started a movement trying to encourage developers to bring back the face of the city and its original architectural identity, which is embraced by the Ablaq Architectural style using black and white stones. However, this movement was not successful; many modern buildings came in black and white using faux stones that are human made in poor industrial technique, as a cladding material for the new buildings, a strategy that failed in matching the original features of the city (Fig. 20).

Despite the city council's attempts to bring its identity back, the remaining traditional houses are still endangered, and the architectural identity of the city is still declining.

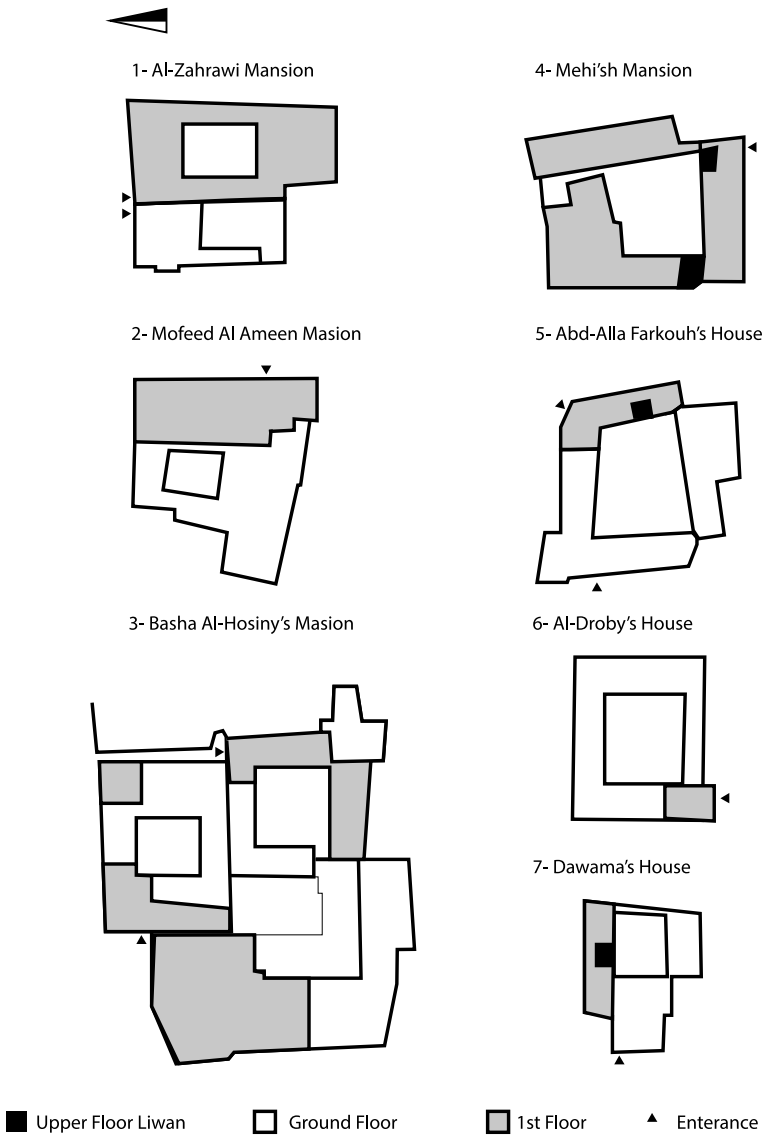

Fig. 11 Liwans in the upper floor (the seven case study houses) (by the author)

However, there is still hope of saving what is left of its traditional houses, or at least to use them as learning reference to inspire the modern architecture of Homs and maybe evolve the typology and take it to its next natural step.

The strong architectural identity of the city of Homs is declining and seriously threatened of disappearing after the war. However, the people are aiming to come back to rebuild their houses, but there is no clear plan or policies on how this is going to contribute to the city's the identity and the process of its regeneration. Therefore, it is recommended to take advantage of this current stage of uncertainty to build a solid base for future regeneration that fits the city evolution and brings its identity back to life on both architectural and social levels.

Thus, this article is the first step to understand the significance of these courtyard houses to the city identity. Therefore, future research should focus on continuing this effort and exploring strategies that could help policy makers, people and business owners understand how this architecture typology can evolve in light of social and economic changes that the country is facing without losing their values. This can attract more studies on preservation and conservation strategies for this architecture as also analytical studies of its environmental characteristics and performance in order to learn from these houses and inform future expansion and reconstruction of the city, especially after the sever destruction happened in Homs due to the conflict. These studies would be invaluable for the post-war reconstruction process in order to achieve culturally routed and environmentally accepted architecture built upon good understanding of the city tangible and intangible heritage and how this architecture and heritage can continue contributing to the city development and identity.

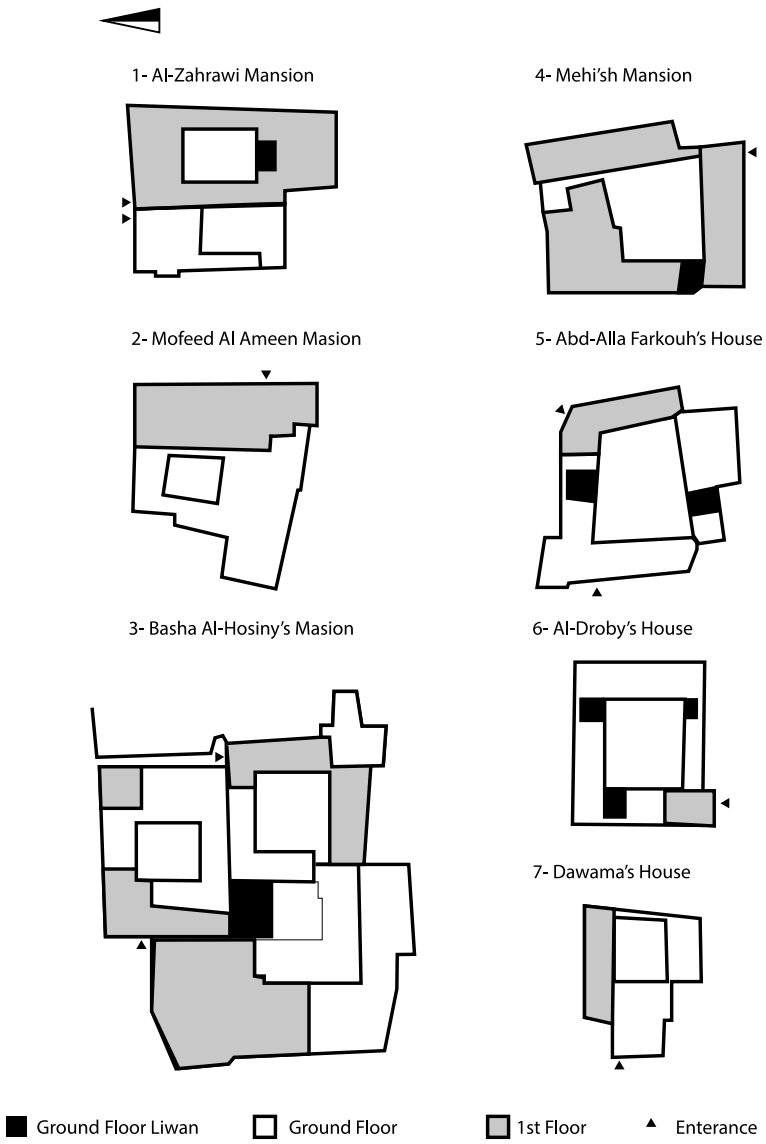

Fig. 12 Liwans in the ground floor (the sven case study houses) (by the author)

Fig. 13 A Liwan in Al Yafi's House (Al Dandashi 2013)

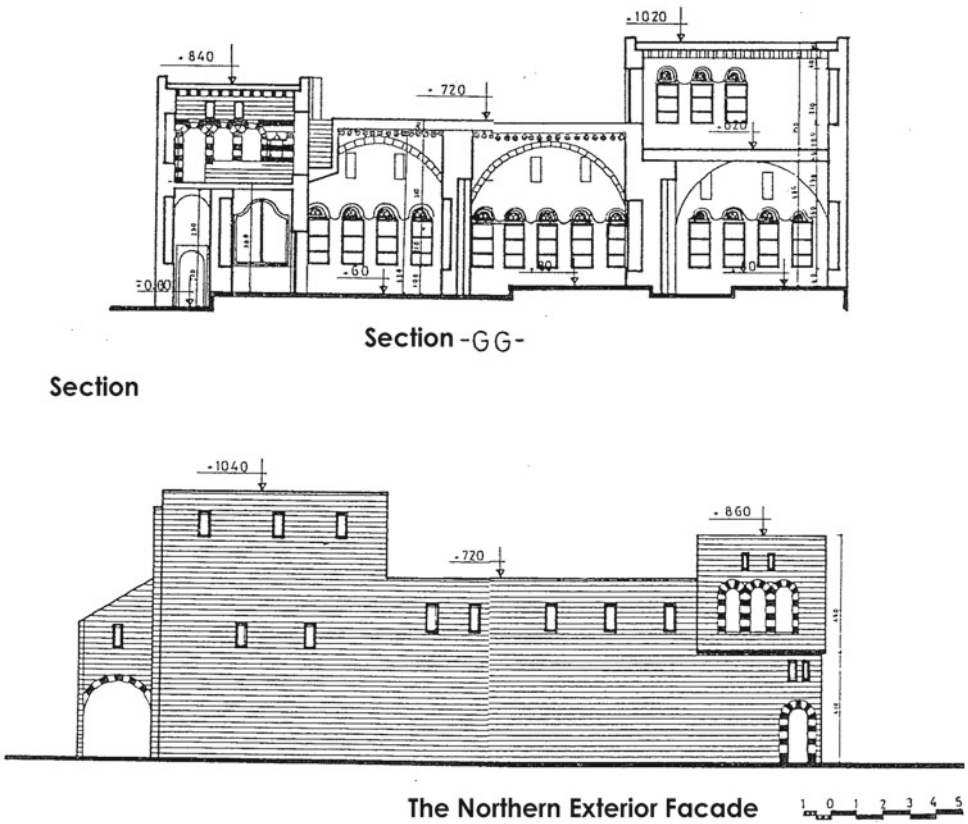

Fig. 14 Mehiesh House, Homs, Syria. A section and an elevation show the exterior and interior windows (Taqtaq 1995)

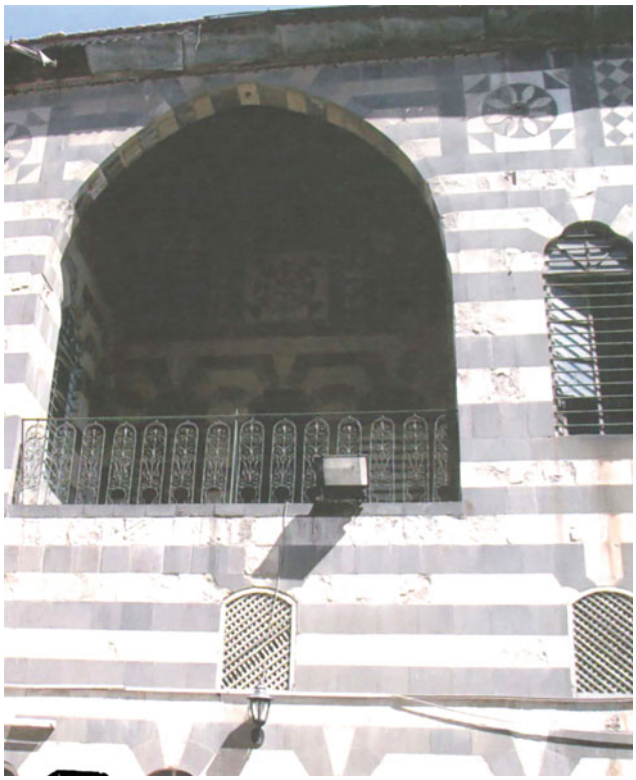

Fig. 15 Courtyard windows in Homs

Fig. 16 Windows latticework in Homs Courtyard house: (Al Dandashi 2013)

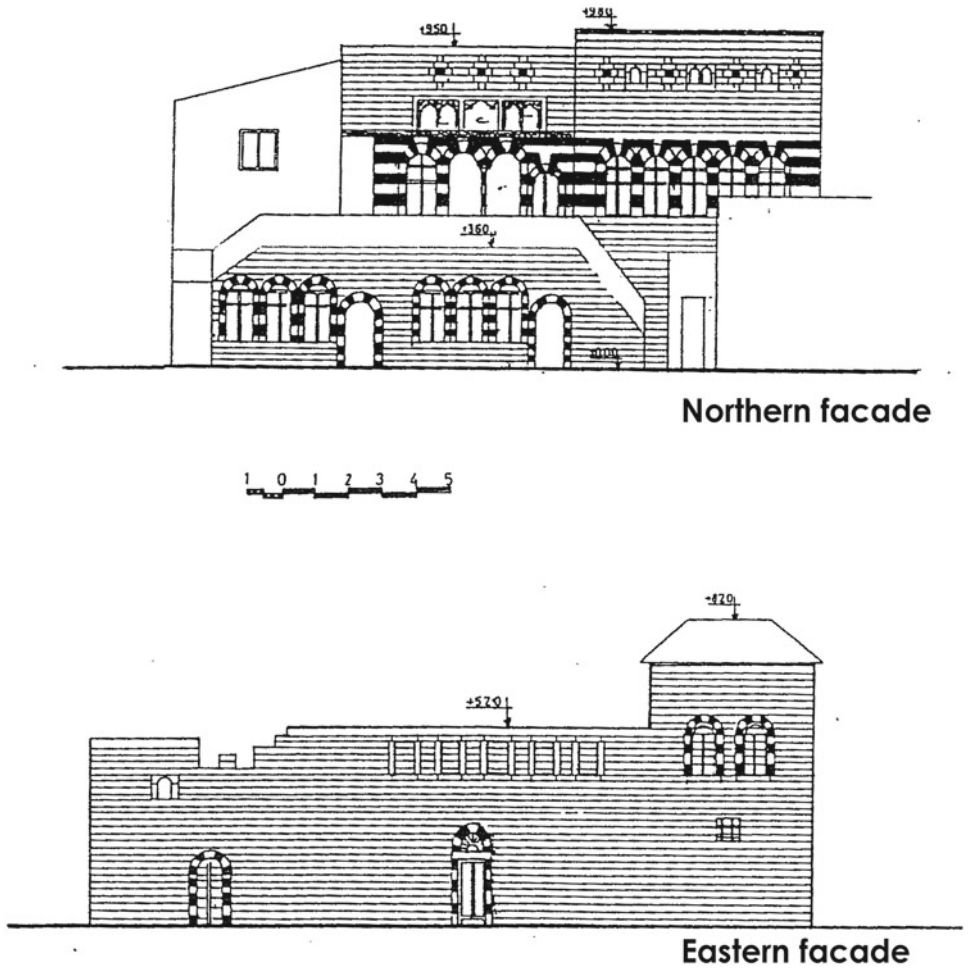

Fig. 17 Mostafa Al Housiny Northern and Eastern Façades (Taqtaq 1995)

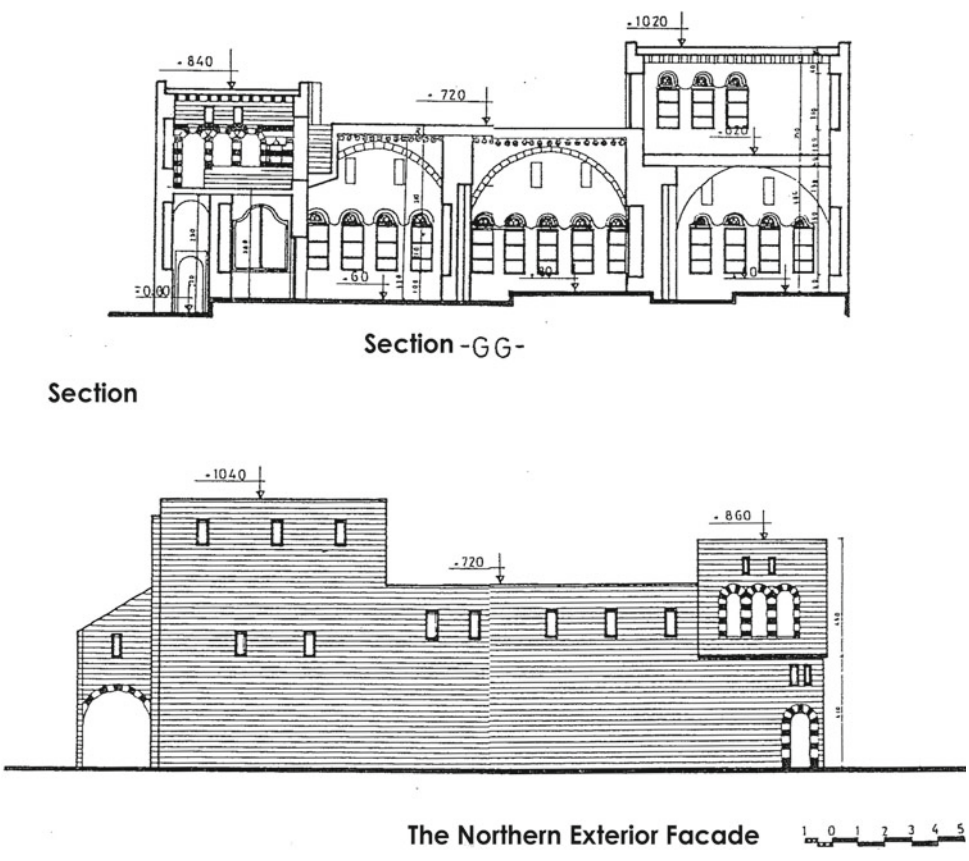

Fig. 18 Mehi'sh Mansion Section the Northern Façade (Taqtaq 1995)

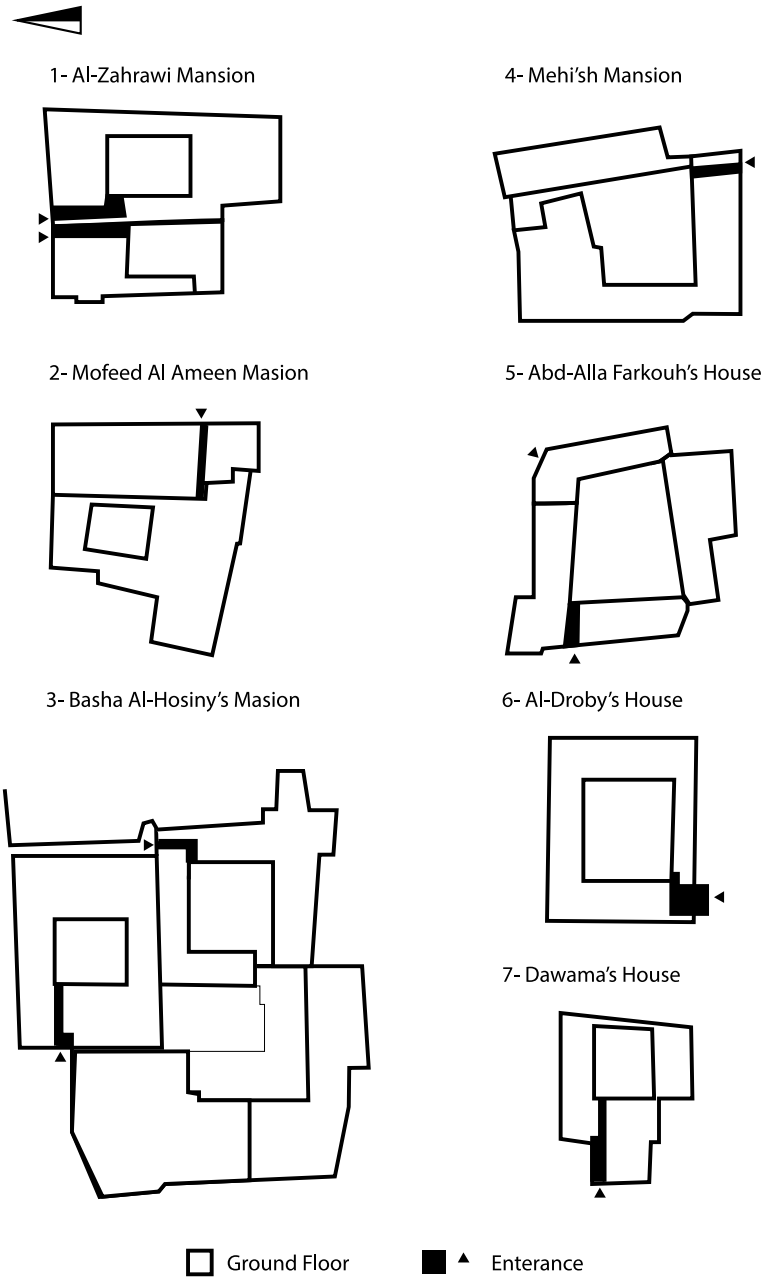

Fig. 19 Main entrances in all case study houses (by the author)

Fig. 20 Attempts to using the Ablaq architecture and apply black and white stones in modern buildings (by the author)

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Dialogical Approach for the City Identity: Examination of Beirut Central District Contemporary Architecture

Roua Jamal Ghosh

Abstract

Beirut is a city with diverse culture, traditions, religions and customs that has faced several occupation periods and wars. These events with the mixture of conditions have affected the architectural and urban forms throughout the years. This research study raises the problematic of the lack in the dialog between the past and the present affecting the shape of the city identity, within the reconstructed zone of the Beirut Central District after the end of the civil war in 1990. The study identifies a checklist for the tangible values of the Architectural Identity to be used as a model for the evaluation of buildings, aiming to prove that a dialogical approach between the ancient identity of a city and its historical values with the new trends controlled by building regulations will produce a better contemporary city identity. The case studies are selected following their locations covering most building typologies in the Beirut Central District. The examination correlates a relation between the architectural features of the buildings and the legislative rules of each plot through an analytical comparative review. It will generate a list of recommendations, for architects targeting a better reproduction of identity within the city of Beirut, moreover it will highlight some architectural factors that should be more controlled in the Detailed design and planning system of the Beirut Central District.

Keywords

Identity • Contemporary architecture • Regulations • Dialog • Tangible values

Nomenclature

BCD	Beirut Central District
C	Maximum land coefficient of exploitation
FAR	Floor Area Ratio
H	Maximum building height

1 Introduction

> Human constructions have a duty to preserve the past and give us the possibility of experiencing and glimpsing the continuum of culture and tradition. (Pallasmaa, 2010)

The Lebanese city identity is imapcted by the historical preservation trends and the contemporary applications. The inflation of modern architecture, and the neglecting of the main attributes that gives the city a character and identity raised the awareness on the dialogic that should be adopted between the past and the present in our urban context. Beirut Central District-BCD, the area of the study, used to be a space for all Lebanese, before the civil war of 1975. By 1991, "Beirut reborn" plan was launched through a private company, to regain the city its regional role as the former financial, trading, educational, cultural and tourism focus of the Middle East. The plan consisted on the restoration of lots of buildings from the eighteenth & nineteenth centuries in addition to developing new constructions. This study examines the architectural attributes of contemporary buildings, guided by the regulations, highliting the role in the formation of unique identity of the city within two contrast sectors or cadastral of the BCD: Sector 1, known as Marfaa cadastral classified under the restored zone, Sector 2 forming the Beirut skyline called the waterfront classified as a new development hotels zone-high density. This research relies on theoretical enquiry, based on literature review, maps, regulations and photographs, having objectives: to raise the importance of the dialog between the past and the

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present in shaping the city identity through a theoretical comparative analysis of the tangible architectural features examining several contemporary buildings, within two cadastral of Beirut Central District. The second objective is to examine the relation between the building regulations and the physical attributes of the contemporary buildings and its effect on the city architectural identity and finally, to highlight the important role of regulations in controlling the contemporary architectural movement within the city.

1.1 City Identity

The city identity is a dynamic process guided by the time and the space. It is shaped with different layers, throughout the years: geography, traditions, culture, architecture, social, etc. Cities continues their evolutions to follow the indispensable changes of urban structures and communities. Maintaining the identity should include considerations of the social, economic and cultural processes managing the new designed cities and neighborhoods (Southworth and Ruggeri 2010). From that fact, it is necessary for planners and architects to sustain the continuity of the city identity values in the new developments.

1.2 Identity Concept Definitions

Identity is a multidisciplinary concept with different definitions in social field, political field, economical, biological, cultural where Castells (2004) defines cultural identity as a process by which social actor's build their own meaning according to cultural attributes. The examination of a community cultural identity loss should be through analyzing the urban traditions and understand their historical processes that produced them (Cavallo and Press 2014). In the urban field, Gürsel (1996) identifies four components for identity: origin or cultural heritage, quality and character of social needs, local features and factors depending on topography and technology. It is a network of relations for psychologists (Fogel 2011). Architecture is considered as an interactive process between the philosophical, sociological, aesthetical, psychological, and many other studies; it forms a part of the community identity depending on the geography of the place, the traditions and the history. For Lynch, identity is a component of the city image, in addition to the structure and the meaning; it is the distinction of an object from other things (Lynch 1960). Moreover, monuments, streets, neighborhoods, buildings, churches, and parks are all material things, but they also evoke specific kinds of meanings and serve as spatial coordinates of identity (Lynch 1972). Place identity is reflected by three components: physical features, activities and functions, place meanings (Relph 1976). Identity in architecture is expressed through three main elements that are: continuity in the social, cultural and religious values (Abdelsalam 2002).

From that definitions, the examination of a city identity, in its tangible and intangible values, should correlate the analysis of the historical and old features and their reflections with the contemporary architectural developments and buidling features.

1.3 City Identity Elements

City is man's principle way of organizing the living space (Lynch 1990). In addition to the basic aspects of its unique physical form, size, density, grain, outline and pattern, each city has its unique identity. Relph proposed three components for the identity shown in Fig. 1: physical features, meanings & activities. It is formed though the history, traditions, culture, language and physical forms. Rapoport (1982) mentions the importance of these tools in process of formulating the identity. The city is considered as the link between the past, present and the future. The development of the city identity is the reflection of the development of all elements forming this city. A city is never ended; it has a constant spatial activity. Some factors can interrupt the continuity of identity, such as war, natural disasters, revolutions, religious events which are mostly related to the social aspects of the community (Alan 2001). From the various definitions of the city identity, different elements are involved in it and interrelates to form its complete concept. On the other hand, Le Corbusier, father of the modernist movement, proposed cities could be anywhere: free of context, history, or tradition. He had no patience for environments that had grown up independently over time. "A city should be treated by its planner as a blank piece of paper, a clean table-cloth, upon which a single, integrated composition is imposed" (Corbusier 1929). His new cities were supposed to be organized, serene, forceful and ordered.

Figure 2 below, show the formation of urban identity components proposed by Orer composed of enviromental and social factors. From that, the city appearance can be controlled by several factors, where authorities, planners and decision makers can be envolved and have an important input in creating public policies for new planning and buildings. Many beautiful old cities are still maintaining their look or identity through the guidance of strong costumes and design consciousness. Moreover, all the regulations of the architectural developments, in terms of zoning, height limitations, specifications of allowable materials, setbacks, building location, etc. should be reviewed and oriented towards the sustainability in identity and the dialog of the visual forms between the old and the new.

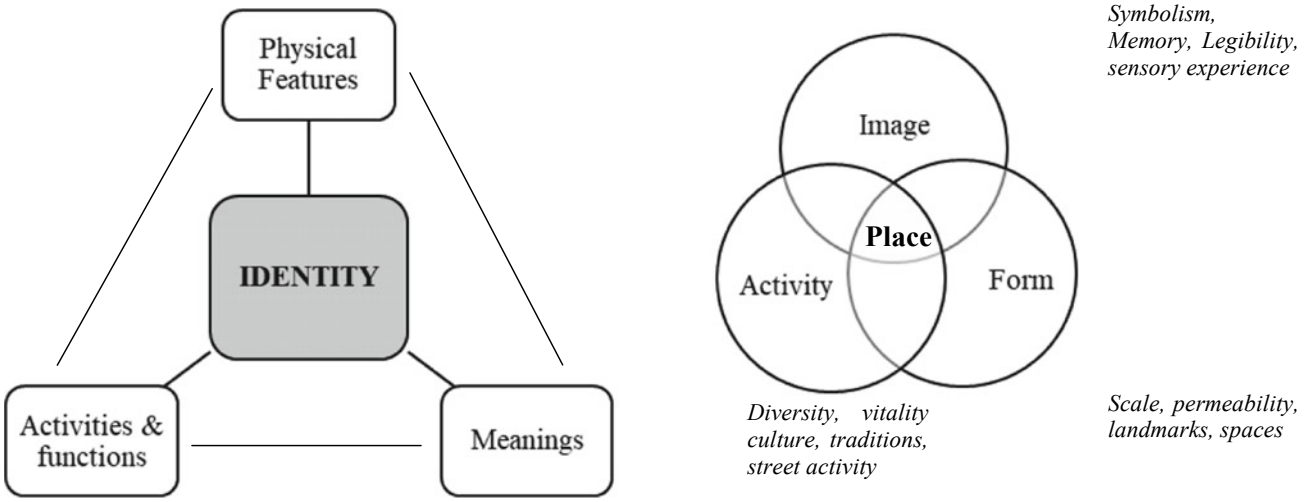


Fig. 1 On the Left-Identity Components (Relph 1976); on the right-Place Identity (Montgomery 1998)

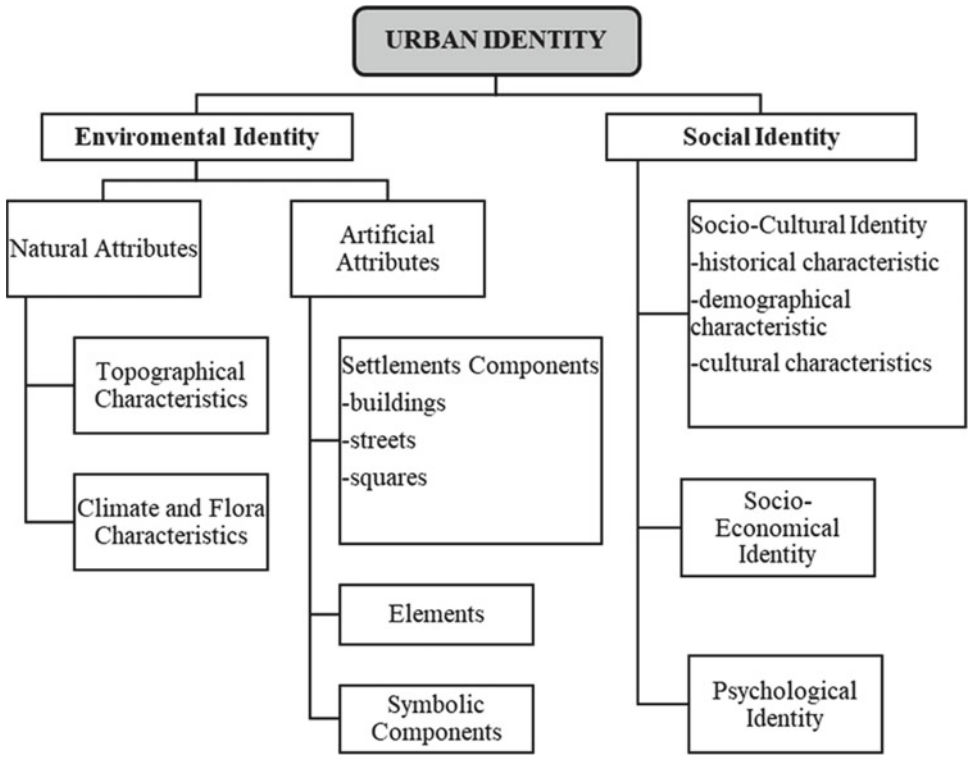


Fig. 2 Formation of urban identity (Örer 1993)

1.4 Architectural Identity of a City

Architecture is a physical tool for transmitting the cultural identity of generations through years. Nations should recognize the importance of controlling the contemporary movement in architecture (Heynen 1999). A wide knowledge of theory and history of architecture is a requisite for an architect (Vitruvius 1960). Seeing an identical style of buildings in several places in the world, without considering the context, the community and the traditions, is changing the objective of the architecture to a commercial and market driven discipline. It's becoming a movement guided by pioneers using a

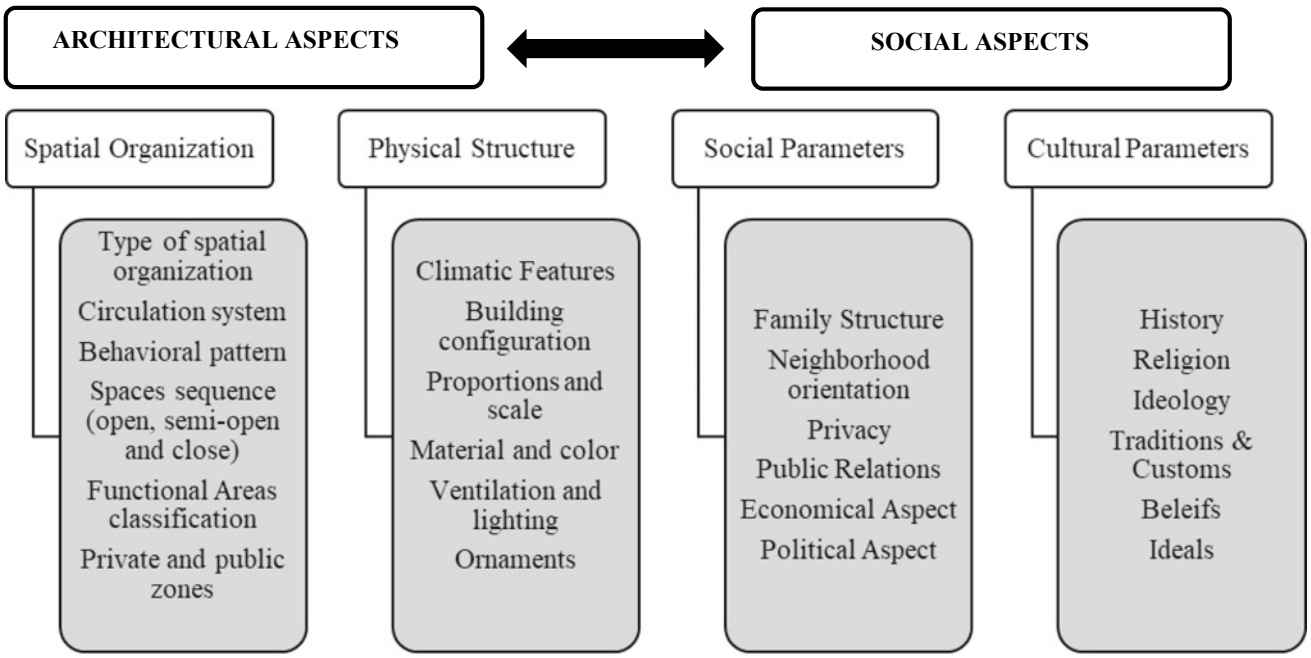


Fig. 3 Conceptual model of semiology approach in architecture (Parsaee 2015)

combination of lines, colors, materials, shapes and masses creating crowded architectural identities in cities.

Based on the conceptual model shown in Fig. 3, the researcher conducted a more detailed model used for the study analysis, having a limited scope: the evaluation of the physical features of the architectural identity of buildings. The focus of the study is to strengthen the role of legistlative regulations that are directly related to the physical features; from that point the focus was limited to the tangible feature only. Figure 4 is summarising the fundamentals of architectural identity, to be used as a model for the evaluation in the focused analysis of the research.

1.5 Architecture of Beirut Central District

Beirut the capital and the largest city of Lebanon, located on the Mediterranean coast, is the center of the Lebanese government, economy and finance. The study will focus on the period starting from 1990, within the central district of Beirut, giving an overview on the rebuilding phase after the civil war, on the regulations of this region and its contemporary architecture.

1.6 Rebuilding of the City Central District After the Civil War

Beirut is a rich city having multiple layers of cultures throughout the history. Due to its strategic geographical location, on the Mediterranean sea, it attracted since 550 BC the Phoenicians, followed later by the Hellenistic, Roman, Byzantine, Arab, Crusader, Mamluk and Ottomans. In the beginning of the twentieth century, and after the collapse of the Ottoman empire, Lebanon was placed under the French Mandate till 1943, the independence date, where Beirut City became the capital of Lebanon. Between 1975 and 1990, the city has faced several destructive wars, that pushed the Lebanese government to proceed with a reconstruction plan to rebuilt the ruined city. A private property was assigned to rebuild the Beirut Central District-BCD, with a total of 4,400,000 sqm, aiming to construct an active, attractive and successful district, restoring the old structures and creating the new developments for a modern city (Figs. 5 and 6).

From the above timeline, Beirut city has faced many factors and circumstances, considered as interruption factors affecting the identity. Therefore, the evaluation of its architectural identity status can be affecting by several causes and can have several faces such us integrity, harmony in change or contrast, etc. Saliba (2010) argues that the conservation of the BCD is varying between preservation of the urban fabric in terms of streets, parcels and the preservation of the buildings. Only 20% as a final result was conserved, maintaining the French Mandate section as buildings and streets (Fig. 7).

1.7 Legislative Regulations in BCD

Beirut city is divided into twelve quarters: Achrafieh, Dar Mreisse, Bachoura, Mazraa, Medawar, Minet El Hosn,

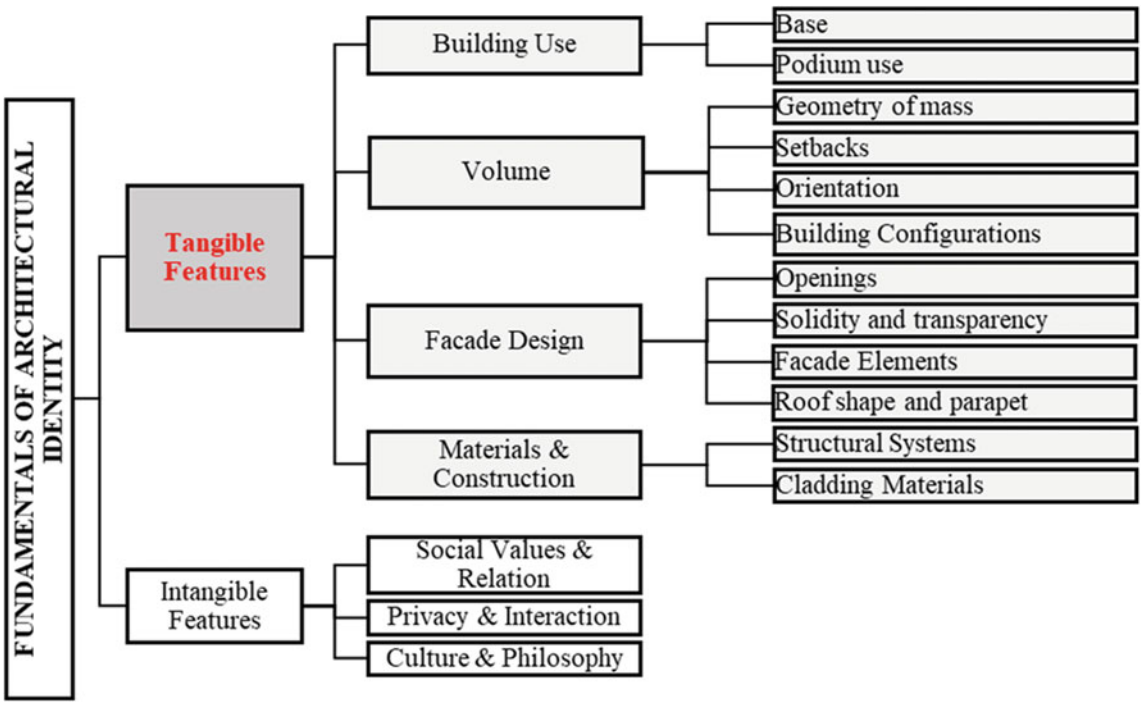
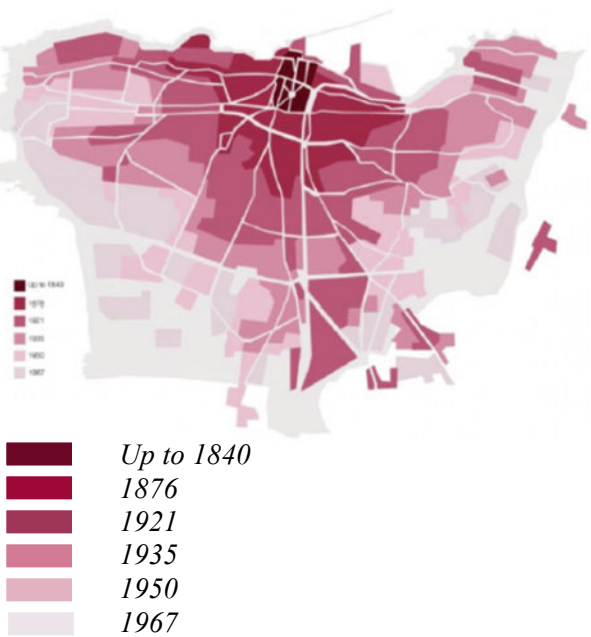
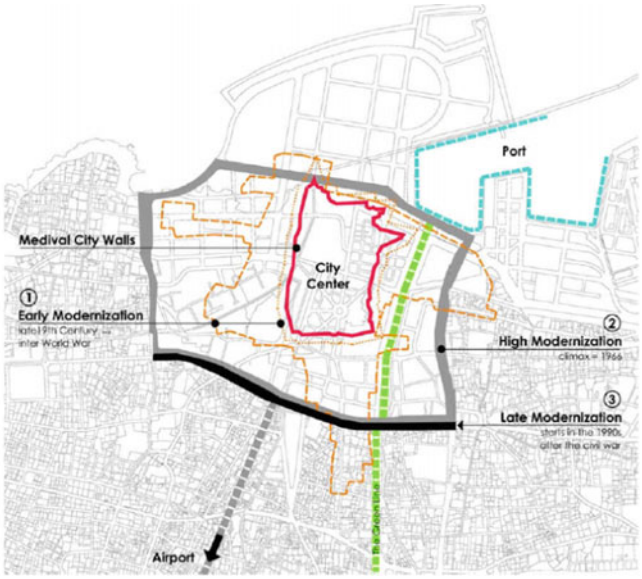


Fig. 4 Fundamentals of architectural Identity. *Source* by the researcher





1- **Early modernization: late of 19th century**
2- **High modernization: early independence period**
3- **Late modernization: after the end of the 15 years of civil war in 1990**

Fig. 5 On the left map of the growth of beirut 1840–1975 (Chami 2013); on the right historical development of the site (Haidar 2016)

Fig. 6 Beirut timeline from 1920 to the present. *Source* Sukkarieh (2015)

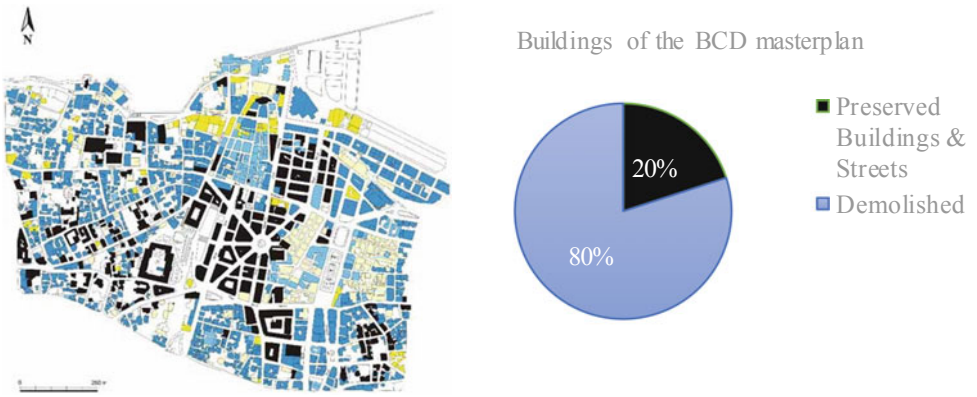


Fig. 7 Demolition and preserved buildings, from 1975 till 1998 (Saliba 2010)

Moussaitbeh, Port, Ras Beirut, Remeil, Saifi and Zuqaq al-Blat distributed in 10 zones. The BCD zone limit is extended over five quarters or cadastral bordered by General Fouad Chehab Ring Road that is dividing the city in two zones: center and peri-center, governed by two different regulatory systems. The private property in charge of the reconstruction of the BCD developed a detailed master plan with guidelines and regulations, different than that adopted in the second part of the city, governed by the Directorate General of Urbanism (DGU) in 1954. New requirements were included in the BCD legislative regulations, more than just the building height and Floor Area Ratio (FAR). It comprises facades regulations like obligatory arcades, or buildings limits foot print in addition to the setbacks, pedestrian links, open spaces, solid and voids, etc. (Fig. 8).

The above map Fig. 9 shows the boundaries of the ten regulatory sectors A, B, C, D, E, F, G, H, I, and J. In reference to the Detailed design and planning system of the Beirut Central District 1994 Directorate General of Urbanism, the general and specific conditions applicable to each regulatory sector may include provisions for all or some of the following items:

1. Physical and architectural characteristics of the sector
2. Permitted uses within buildings and properties
3. Prohibited uses within Buildings and real estate
4. Minimum real estate areas and measurements
5. Surface exploitation rate
6. Building relation with the surrounded public roads
7. Building relation with the neighboring property boundaries
8. Building relation with other building within one property
9. Cover and maximum height of buildings
10. Preserved buildings.

1.8 Contemporary Architecture in BCD

Ottoman and French history are both evident in the city's built environment today. Saliba (2004) considers Beirut's eclectic mix of Western and Eastern architecture as an articulation of its "cultural dualism," which itself constitutes a kind of national style Press. Monroe highlighted this

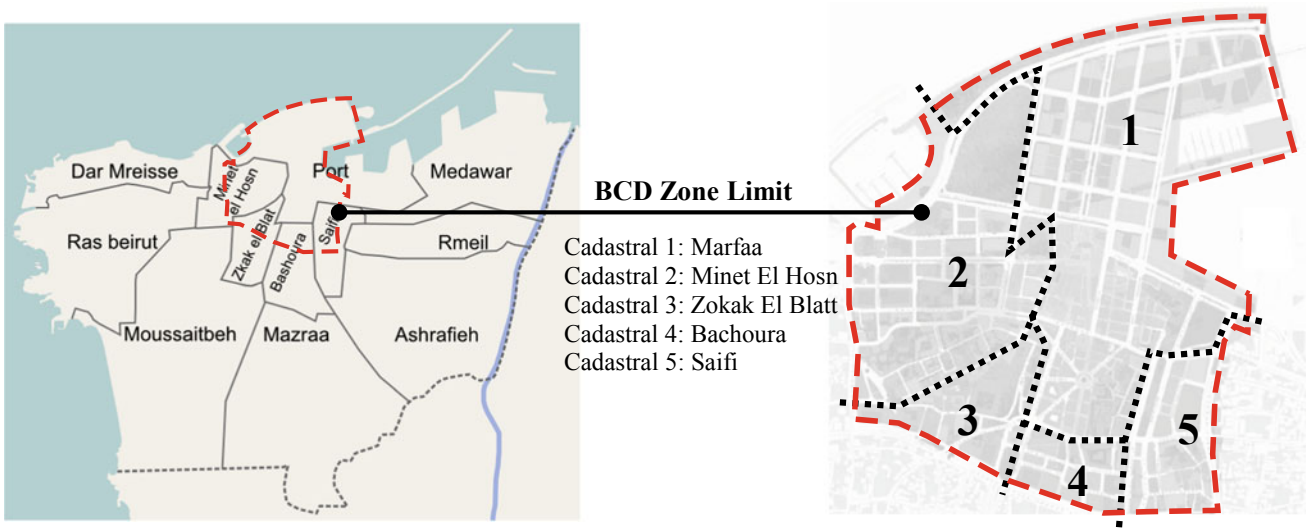


Fig. 8 Beirut capital administrative zoning & divisions (directorate general of urbanism

eclectic architectural mix effect that has late nineteenth- and early twentieth-century European styles mingling with 1960s modernism and the faux-tradition of the city's recently redeveloped downtown (Monroe 2016).

While analyzing the BCD master plan (Fig. 12), 12% is the percentage of the preserved or the retained buildings, 265 buildings and 27 religious and public buildings, distributed in several categories:

- A preservation of the interior and the exterior of the religious buildings
- A preservation of the exterior of buildings while rebuilding the interior in a modern style, integrating elevators for most of office buildings with open plans (Figs. 10, 11 and 12).

The new developed zones were controlled by the master plan and the regulations set by the private property. From that point, the contemporary architecture after 1990 within the BCD is varied and following different styles and schools. A deep examination of the buildings within this area leads to identify the below classifications (Fig. 13):

1. Simulation or restoration is the act of preservation and recovering a historical structure, as it appeared in a specific period of history.
2. Integration is the process of using architectural elements, ornaments and details typically used in the old and integrating it in new structures, responding to the adjacent context and technologies.
3. Analogy is the use of new architectural configurations in terms of shapes and materials, not used before but as final image, the building has an inspiration and a resemblance to the old, without ignoring the historical context.
4. Contrast is when implementing new architectural styles and elements within new developed buildings giving a difference and a divergence from the old within the built context.
5. Iconic or international buildings are those following the new architectural trends in lines, forms, materials and facades, without taking care about the identity, the background of the city, and the context. Identical buildings can be seen in different places in the world.
6. Abandoned buildings are resulted from the successive destructive periods/wars faced by the city of Beirut throughout the years. These buildings are kept without restoration works for different reasons; political, economic, etc.

Some of these classifications and buildings are listed below (Table 1).

From the BCD zoning and planning rules and its contemporary building classification, a conclusion can be made: the master plan objectives and regulations of the BCD are targeting the reservation of the old architectural identity in the zones where restored buildings is high, specifically in zones G, while breaking this dialog, between the past and the present, in strategical zones, like zone B and creating a new language and image of buildings facing the Saint George Marina, to shape a new skyline for Beirut city, hiding its historical core and identity (Fig. 14).

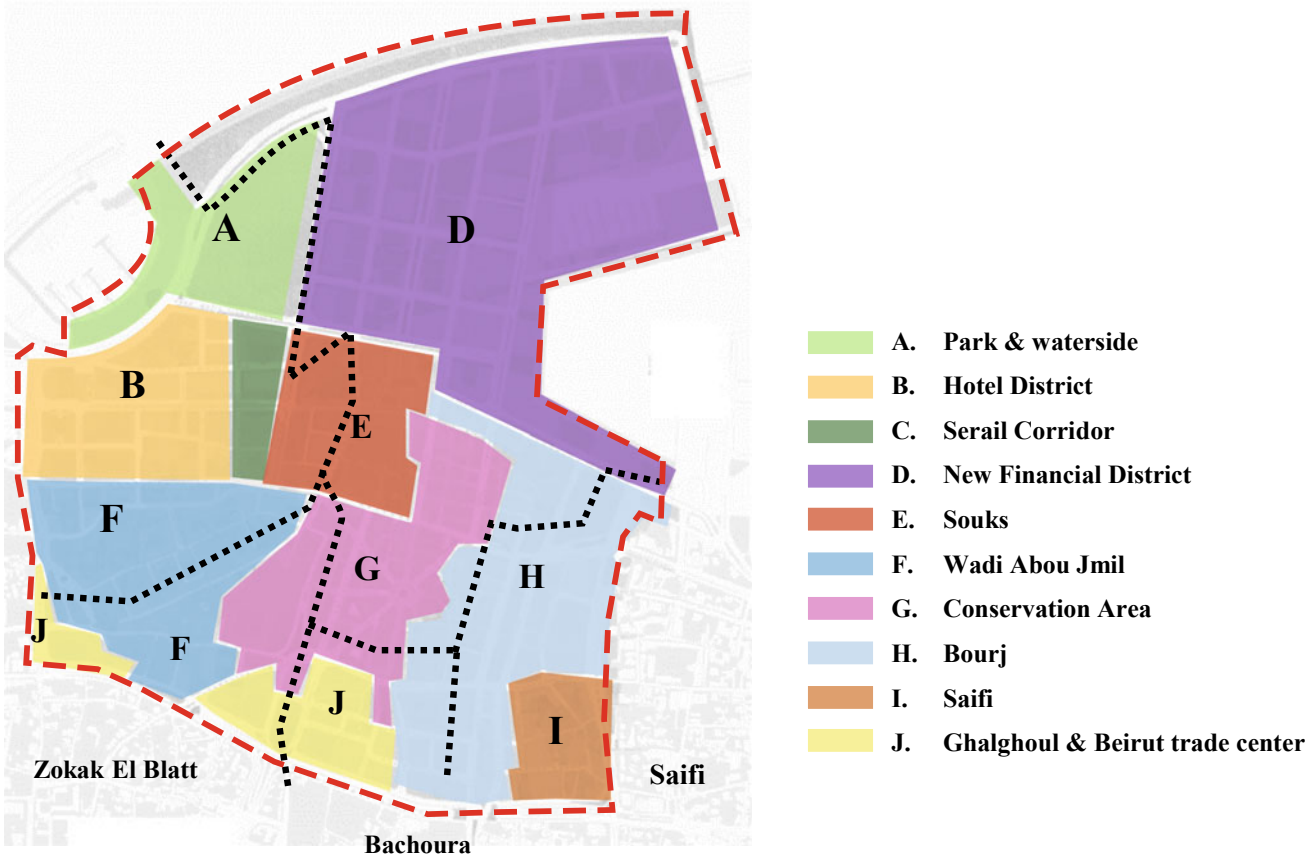


Fig. 9 Beirut central district zoning plan. *Source* Lebanese urban planning)

Fig. 10 Marfaa-Martyr square axis, on the left 1991, on the right 2003. *Source* Solidere.com

Fig. 11 Al Maarad Street, on the left 1991, on the right 2003. *Source* Solidere.com

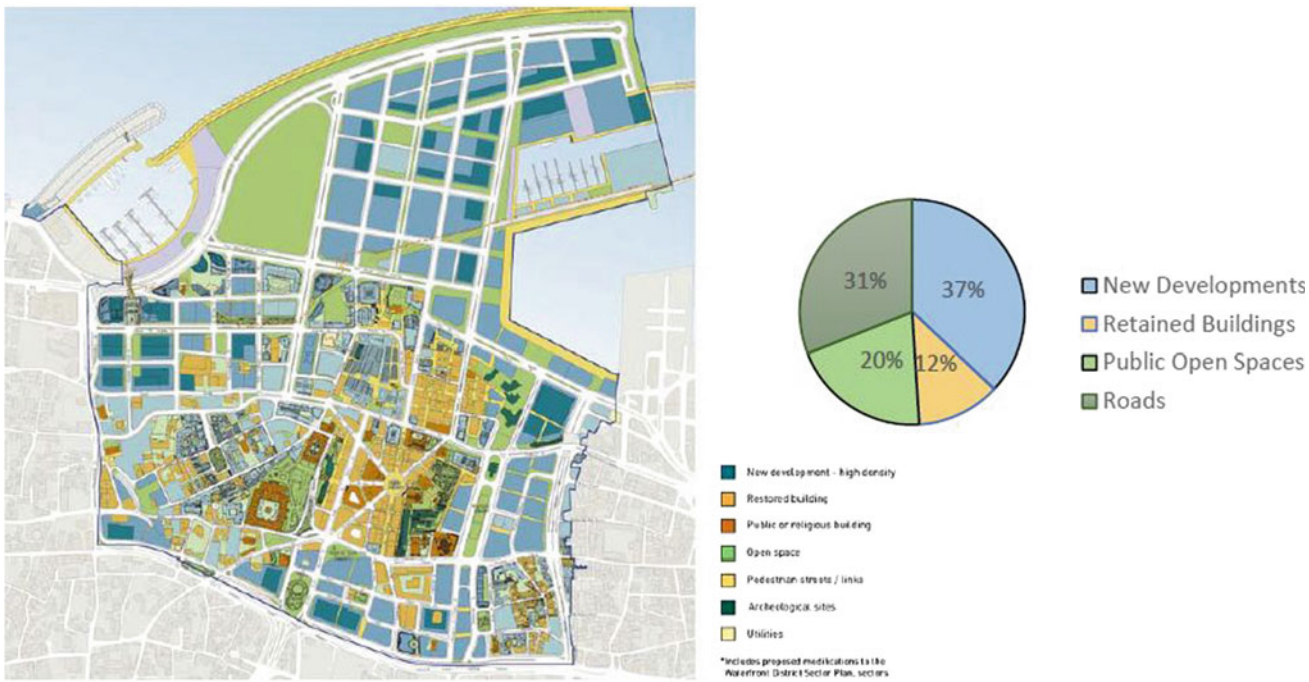


Fig. 12 BCD master plan. *Source* Lebanese urban planning

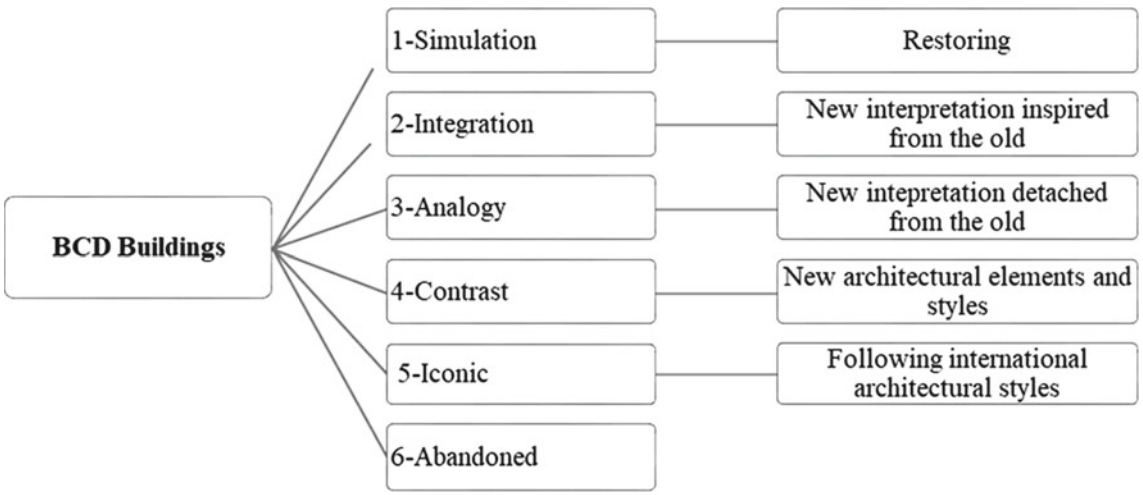
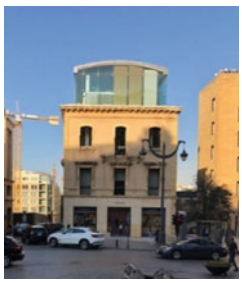
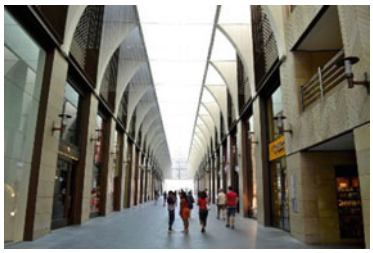


Fig. 13 BCD buildings classification. *Source* by the researcher

Table 1 BCD contemporary buildings classifications

Simulation	Integration	Analogy
 (a1)	 (a2)	 (a3)
Lot number: 3 Zone g Building name: grand serail - Building type: public	Lot number: 800 Zone f Building name: mina el hosn Building type: residential	Lot number: 47 Zone e Building name: beirut souks Building type: retail
Architect/firm: na	Architect/firm: ayman sanioura	Architect/firm: na
 (b1)	 (b2)	 (b3)
Lot number: 440 Zone g Building name: opera house building type: entertainment	Lot number: 224 Zone g Building name: transmed Building type: headquarters offices	Lot numer:1479 Zone e Building name:beirut souks building type: retail
Architect/firm: na	Architect/firm: said bitar	Architect/firm: rafael moneo (spain) and samir khairallah and partners
Contrast	Iconic	Abandoned
 (c1)	 (c2)	 (c3)
Lot number: 1354 Zone b Building name: marina tower Building type: residential	Lot number: 2 Zone e Building name: north souks—department store Building type: retail	Lot number:739 Zone j Building name: the dome city center “the egg” Building type: entertainment
Architect/firm: kohn pedersen, fox associates & dar al-handasah	Architect/firm: zaha hadid and samir khairallah	Architect/firm: joseph philippe karam (1965)

(continued)

Table 1 (continued)

 (d1)	 (d2)	 (d3)
Lot number:2 Zone e Building name: north souks Building type: mix use	Lot number: 1399 Zone b Building name: beirut terraces Building type: residential	Zone h Building name: el murr tower Building type: residential
Architect/firm: valode et pistre (france) and annabel kassar	Architect/firm: herzog et de meuron	Architect/firm: na

Source the researcher—all images source: solidere.com

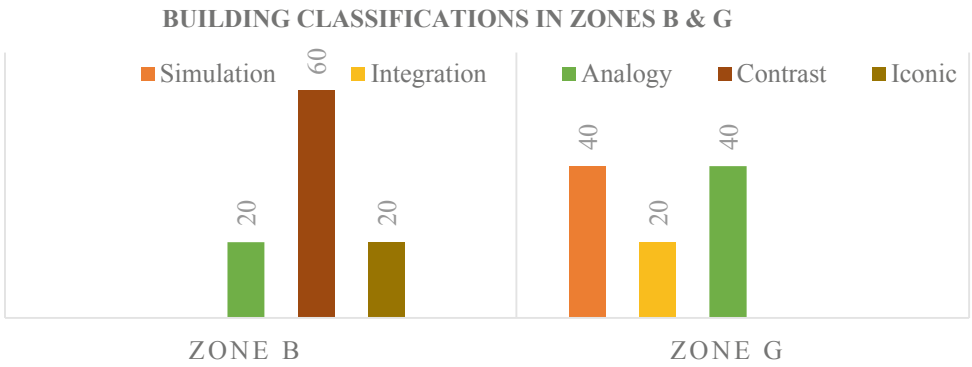


Fig. 14 Graphical presentation of the building classifications in zones B & G. *Source* by the researcher

2 Examination of the theoretical values in city identity of Contemporary Buildings in Beirut Central District

This part of the research focuses on the selection of the case studies, its analysis and values in the city identity. The examination is based on an analytical comparative review of the fundamentals of architectural identity, guided by the researcher. It can be used as a research model for future evaluation of all contemporary buildings of Beirut City, aiming to raise the importance of the dialog between the past and the present in shaping its identity, and controlling it by the regulations.

2.1 Case Studies-Methodology of selection and study

The selected area for the study is Beirut Central District.

Criteria of case studies selection.

Four different buildings are analyzed in this study, following the below criteria's:

- The buildings should have different typologies-simulation, integration, analogy and contrast
- Identical Land use: Residential Buildings
- They are situated in two different and main cadastral; within Marfaa, Zone G where the big portion of restored buildings is located, and in the opposite, within Mina El

Table 2 Buildings from the Zones B & G of the BCD

Cadastral A Marfaa—zone G	Nijmeh square  (a1)	Fosh street  (a2)	Grand serail  (a3)	Al Omari moque  (a4)
Cadastral B Mina El Hosn- Zone B	Marina towers  (b1)	Zaytuna bay  (b2)	Platinum tower  (b3)	3 Beirut  (b4)

Source Solidere.com

Hosn, Zone B characterized by its new developments and Hotels where well-known architects were invited to design, including Arata Isozaki, Herzog & de Meuron, Zaha Hadid, Steven Holl, Renzo Piano as well as local authors, such as Pierre El Khoury, Azmi Fakhuri (Table 2 shows some of the buildings in the two cadastrals).

- The case studies are located on a corner, within a plot surrounded by two streets or more.

Case Study a: Sehnaoui and Haddad Building—Simulation-Located near Beirut Souks, between Fakhry Bey and Allenby Streets, the two adjacent photos show the building after the civil war destruction and its restored status.

Case Study b: Semiramis Building—Integration-Facing Beirut Souks, between Weygand and Abdel Hamid Karame Streets, this building is considered as a replication of the old architecture, by using several elements like circular columns, balconies, the roof patio, etc.

Case Study c: The Dana Building—Analogy-Facing the cornice, between Ahmad Shawki, Wafik Sinno and a tertiary road, this contemporary building is characterized by its new interpretations flowing with its context.

Case Study d: Damac Building—Contrast-Surrounded by 4 roads, Fakhreddine, Daouk, Jbeil and Agrippa roads, DAMAC tower is considered a new style of buildings reflecting the contemporary international movement of architecture. It is considered within the contrast typology and not an iconic because it's volume shape, layering in the facade, orientation, all are factors respecting the surrounded existing buildings and urban forms (Fig. 15).

	Case study a	Case study b	Case study c	Case study d
Neighborhood	Marfaa—zone G	Marfaa—zone G	Minet El hosn—zone B	Minet El hosn—zone B
Lot number	27	1458	1353	1396
Typology	Residential building	Residential building	Residential building	Residential building
Number of floors	5	8	9	28
Construction date	Restored	2007—robert adam architects	2007—Al salaam consulting architects, engineers & planners	2015—DAMAC properties group

2.2 Regulations Overview and Analysis

The selected case studies are located in two different zones within the BCD: zone B and zone G. Each zone has a specified Architectural and Urban Characteristics cited in the

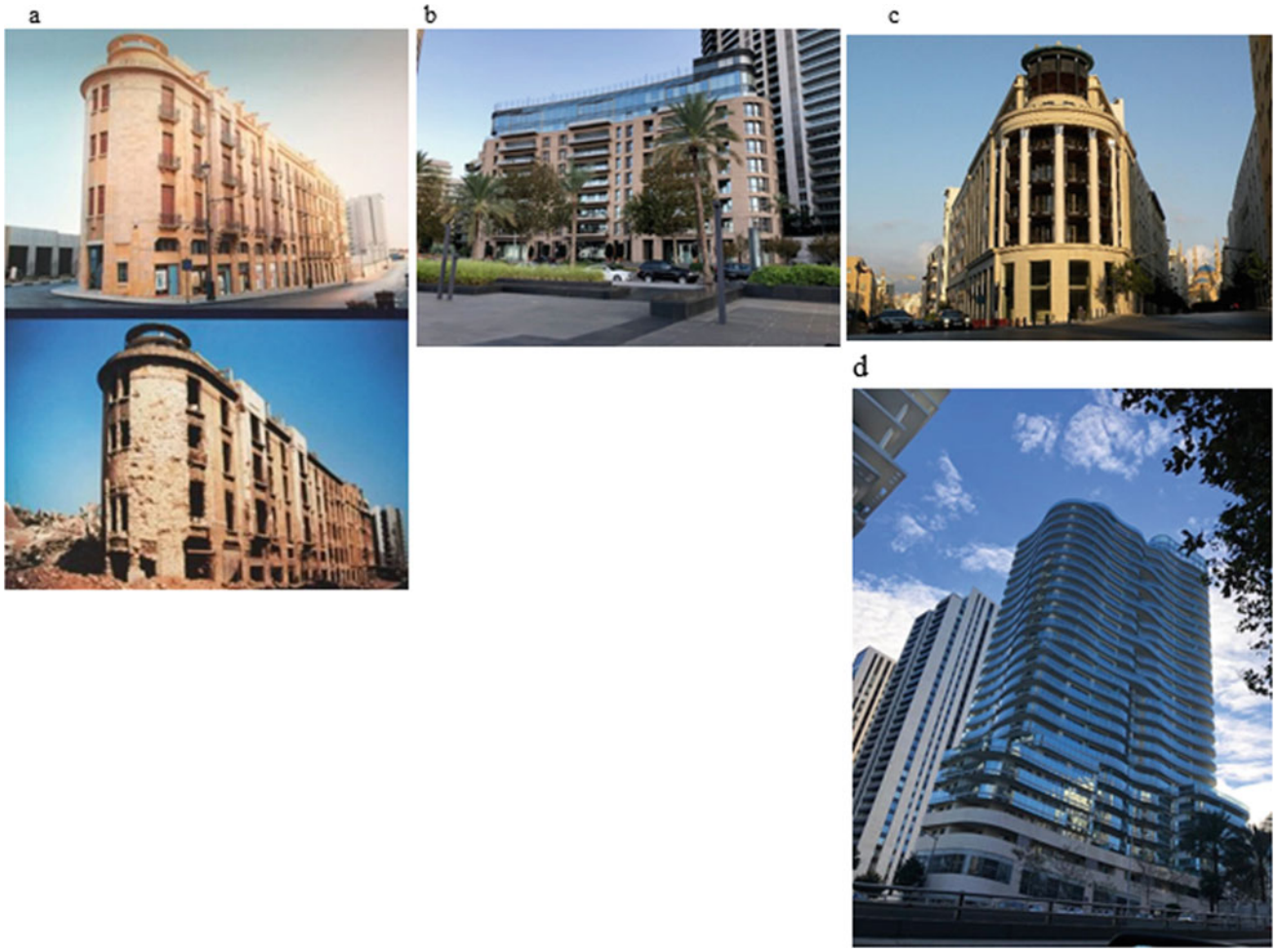


Fig. 15 **a** Sehnaoui and haddad building (source: Solidere.com); **b** The Dana building (source: by the researcher); **c** Semiramis building (source: by the researcher); **d** Damac Tower (source: by the researcher)

decree 4830-Detailed design and planning system of the Beirut Central District 1994. An overview with an assessment of the differences in the regulations of the two zones will be examined respectively (Table 3).

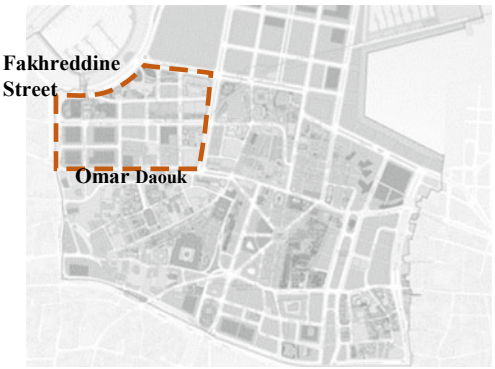
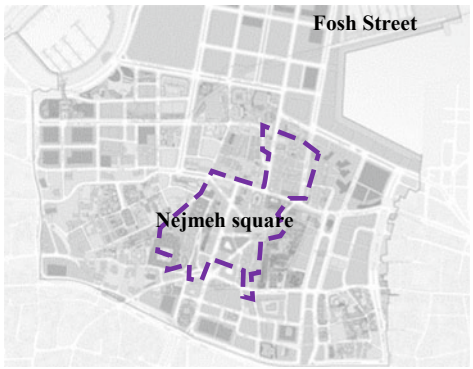
From that review, several items are missing, in the building facades regulation criteria in Zone B, such as opening to solid ratio, natural stone obligations. Moreover, the special location of this zone, being in the center of Beirut, oriented toward the sea with a small number of restored building and having a direct access to the cornice, pushed the planners of the current building regulation to allow the emergence of new trends, new building heights and new building configurations.

3 Evaluation of the Architectural Features of Case Studies

This part will focus on the analysis of the selected case studies, to examine the main architectural attributes or tangible features of the selected contemporary buildings, to highlight the most important tangible features of the city identity that should be taken into consideration in today's architecture, and to examine the influence of the regulations and rules on controlling the new developments.

Following the tangible features of the architectural identity concluded in the paragraph 2.3, Fig. 4 of the research,

Table 3 Overview on the regulations of zones B & G of the BCD

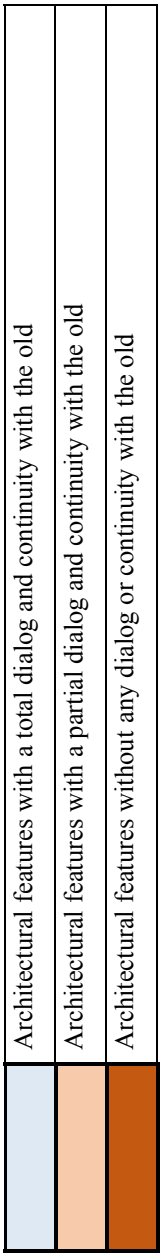
Regulation	Zone B	Zone G
	 (a1)	 (a2)
Sector or zone limits	From the north: Corniche sea, the west: Fakhreddin Street, the south: Omar Daouk Street, the East: Salloum street and its expected extensions	This sector includes the blocks around Al Nejmeh Square and the surrounding streets, including the Grand Serail to the west and Prince Bashir Street in the east. To the north, the blocks between Foch and Wigan street extend to Trieste street
Sector properties	• This sector is characterized by proximity to several major hotels, including Phoenicia, St. George and Holiday Inn. And will be a location in the future for hotels and tourist institutions of all kinds, along with offices and housing. Leisure activities, night clubs and others are expected to revive this sector at night • In terms of architecture, there are many major trends that have taken into consideration the design of the sector: the existence of a small number of buildings that are maintained within the sector, and has been used in the re-planning of internal roads and directing them to highlight the views of the sea and mountains	• Historical nucleus of the commercial uses of all types, offices and public buildings. As well as some housing, the urban nature of this sector stems from the need to preserve the urban heritage as it was before the war, with the necessary improvements that include provision of underground parking, and some services • Keep all the historical building without any modification in height or areas • Restoration of the damaged buildings without modifying its heights or areas • Assigning regulations of new buildings in this sector so they blend with the surrounding
Building uses	Offices, Public and administrative buildings, Construction for commercial use, Hotels and tourist facilities, Residential buildings. Furnished apartments, Cinema and acting halls, Museums and art galleries, Offices of tourist travel agencies, Restaurants	Public and administrative buildings, Offices and banking institutions, Art exhibitions. Construction for commercial use. Residential buildings, Hotels, Furnished apartments, Offices of travel and transport agencies, Restaurants, Construction for public services.
Surface exploitation	Part Ba: The surface investment rate is set at 70%. The surface investment factor can be increased for the development block between the Corniche of the Sea and Ahmed Shawki Street Part Bb: refer to the building code and its applicable decree	The surface exploitation factor is the result of the application of the terms and conditions of the Building Law and its applicable decree
Building heights	The height of the buildings are within 20–30 m	The height of the buildings are exceeding 60 m, following special regulations in terms of building cover and gabarit
Building facades	The facades are following the paragraph 16.2.1 and the assigned codes	Facades of the buildings shall be concentrated on the mandatory construction line, except for the corner property, where a part of its facades may be retracted at the corner of the building under the following conditions: Maximum of 7 m measured from the road line • The body of the building and its base including the cornice are natural stone • Opening to solid ratio should not exceed 20% • Cornice within the building with a height of 19 m to 20 m, bumped 0.5 m from body of the building

Source By the researcher from the Lebanese Decree

the below comparative Table 4, 5, 6 of the four case studies will assess all physical features creating the image of these buildings. All data related to the regulations are extracted from the Appendices. The photographs used are taken by the researcher in the period between November and December 2018.

Some of the used terms in the table and their meanings are for your reference:

- Gabarit: French term that means an outline on a drawing of an object.
- abat-jour: French term that means a device such as a sloping soffit of a lintel or a movable screen for deflecting daylight downward as it enters a window.
- fer-forger: Frech term that means wrought iron.
- Mousharrabieh: French term means wooden lattice (Tables 4, 5 and 6).



3.1 Discussion of the Evaluated Case Studies

As a summary of the analyzed buildings, the three contemporary buildings, case 2, 3 & 4 are compared with the preserved building, the case 1, to assess their dialog and continuity with the old and discuss the reflection of the applied regulations on the actual situation of the contemporary architecture of buildings.

4 Conclusion

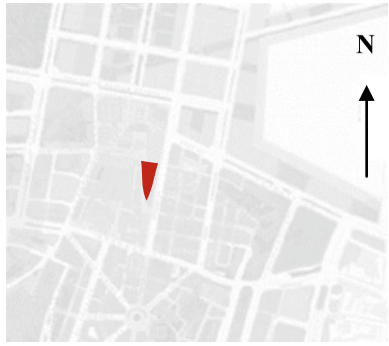
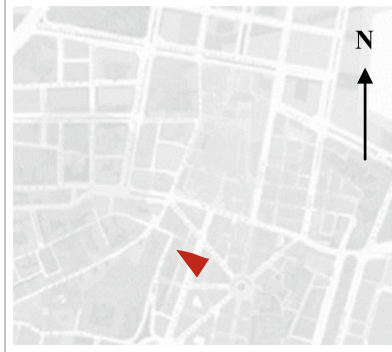
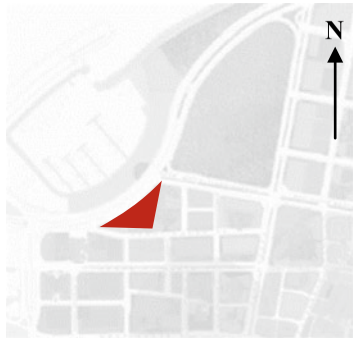
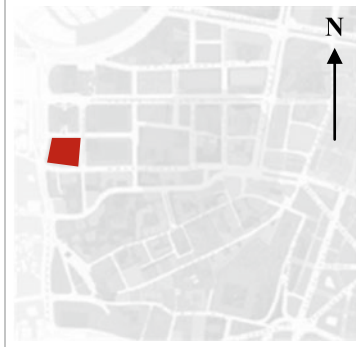
This research has raised the importance of the dialog between the past and the present for the city identity, focusing on the contemporary architecture in the central district of Beirut. Architectural attributes of a building are more than repetitive international facades; it's a relation between human, identity, context and needs. Therefore, controlling the development of the city is very critical and important, and can be accomplished, on first level through the legislative regulations. The researcher selected two zones within the BCD for the comparative analysis, zone B and zone G and was focused on examining the physical aspects of the contemporary architecture, of four building typologies, in relation with the existing regulations for each lot. Moreover, the study was limited in investigating only the tangible values of the architectural identity. In order to examine the complete city identity, a wider scope of study

Table 4 Evaluation of the architectural features of 4 buildings within the BCD—part 1 of 3

		Case 1-sehnaoui and haddad building	Case 2-semiramis building	Case 3-the dana building	Case 4-damac building
			 (a1)		 (a2)
			 (a3)		  (a4) (a5)
Building use	Base	The base of the building is a complete floor	The base of the building is a complete floor	The base of the building is a complete floor	The base of the building is a complete floor
	Podium use	The podium is for commercial use and the entrance to the building from the corner	The podium is commercial use and the entrance to the building	The podium is for the building entrances with a multipurpose room	The podium is for commercial use and the entrance to the building is from the back facade
Volume	Geometry of mass	The mass layout is taking the shape of the plot, respecting the alignment with the adjacent buildings The volume is extended reaching the maximum permitted height, and respecting the gabarit, by implementing a roof	The volume of this building is following the corner plot layout An accentuation on the treatment of the mass in the corner area by using 7 circular columns extended from the first floor to the fifth floor enclosing a semi-circle continuous balcony In addition to the roofing following the same shape of the building respecting the height and regulations It has 2 similar facades	This building is surrounded by 3 roads, making it having a floor plan with a triangular shape No adjacent buildings in the present Extruded volume following the plot layout The mass is composed of a glass block wrapped by stone wall, following a height of 40 m as per the regulations	Surrounded by 4 roads, the mass plan is a rectangular shape Following the regulations, the volume is composed of a podium with 24 m, taking the complete footprint, and a 75 m building with a smaller footprint The corners of the volume were treated by curvatures lines 3 façades of the building are taking the shape of flowing layers forming the floors

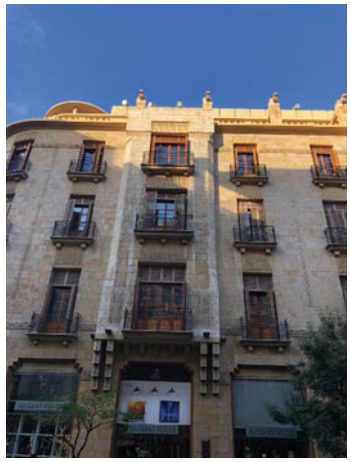
(continued)

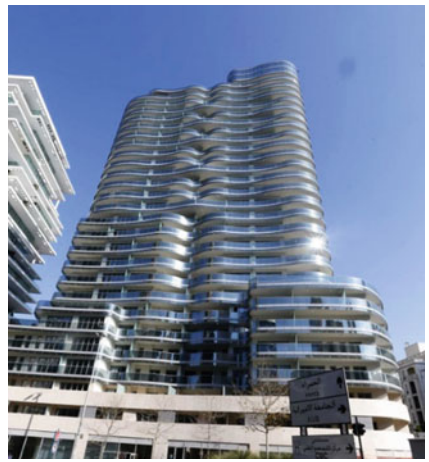
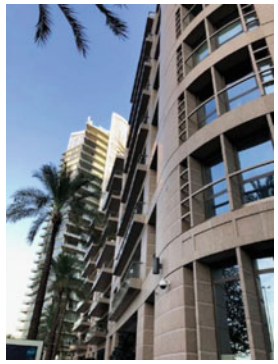
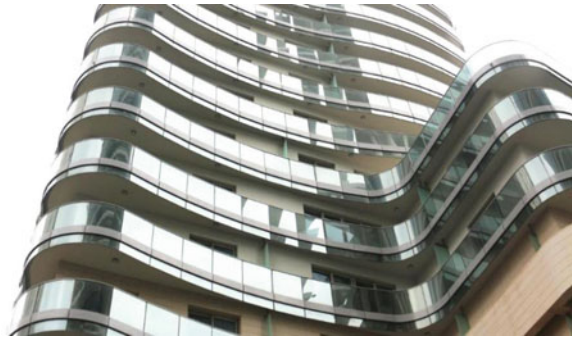
Table 4 (continued)

		following the shape of the mass The building has 2 typical facades, with some differences in the elements			
	Building Configuration	5 floors	8 floors	9 floors 40 m height	28 floors 75 m height
	Setbacks	No setbacks	No setbacks	No setbacks	Setbacks for the podium are 2.5 and 6 m from two parallel roads. Setbacks for the tower are 3 m and 9 m
	Orientation		 (b1) The 2 facades of the buildings are oriented to the east and west		 (b2) The 2 facades of the buildings are oriented to the North and south
N			 (b3) The main facades of the buildings are oriented to the North and south, a third façade is towards the east	N	 (b4) The main facades of the buildings are oriented to the North, south and west. The back elevation is the one toward the east

Source by the researcher

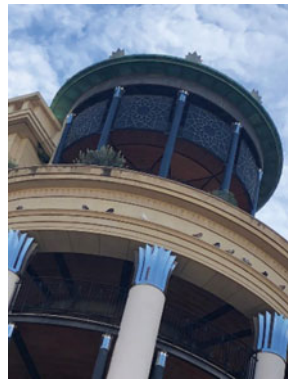
Table 5 Evaluation of the architectural features of 4 buildings within the BCD—part 2 of 3

		Case 1-sehnaoui and haddad building	Case 2-semiramis building
Façade design	Openings	 (a1) The openings are following a vertical and horizontal grid and modules varying between ground floor shops facades, windows and balcony doors A clear vertical grid of 3.2 m is covering all building facades starting from the ground floor including the opening of the shop façade to reach the rest of the floors forming the balconies openings or windows openings	 (a2) The openings are taking 3 forms: windows, balconies and shop facades Balconies are grouped located on the corner A vertical grid of around 3.4 m is guiding the distribution of the shops opening on the ground level and the windows opening on the upper floors
	Solidity & transparency	The solid walls are taking a bigger portion from the façade, forming around 80%	Solidity is taking around 70% from the total surface of the facades
	Facade elements	 (b1) (b2) Wooden abat-jour or external shutters Extruded balconies on stone corbels Stone Cornice with ornamental parapet cresting and frieze-Fer forge Handrails–Stone panels with engraved pattern below openings—Mousharrabieh windows	 (b3) (b4) Circular columns with chrome crowns Stone Cornice along the building Fer forge Handrails Marble panels below openings

		Case 3-the dana building	Case 4-damac building
Façade design	Openings	 (a3) A repetitive and systematic arrangement of the openings can be seen in this building, including balconies and windows The grid façade is along all floors with a stone cladding from the ground floor.	 (a4) This building is composed of a podium and a tower, and for each of them a different interpretation of openings In the first three floors of the podium, windows and shops facades openings are forming the whole façade For the tower, continuous balconies are surrounding the floor plans in a flowing shape, with the absence of any grid
	Solidity & transparency	The transparency dominate in the facades of this building due to its location in front of the marina Zaytuna bay, taking into consideration the traditional style by the use of stone as a cladding material and the grid modules for the arrangement of solid and voids	The continuous glass balconies flowing around the floors are giving the building a transparent look hiding by that the solid external walls of the buildings For the stone cladding podium, a variance between the solid and the glass where the solid form a total of 40% from the façade
	Facade elements	 (b5) Simplicity in elements Using the stones, the same material of the claddings, vertical and horizontal elements were added in front of the openings to reflect a modeling system in the façade	 (b6) Simplicity in elements The main facades of the building are similar to each other's, using the glass continuous handrail for the balconies as a main element on the façade design

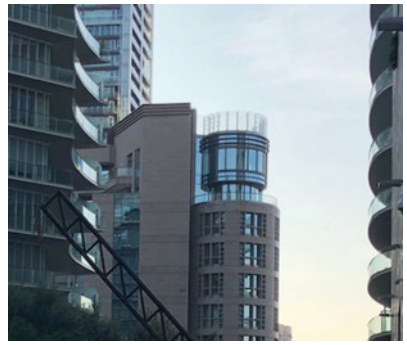
Source By the researcher

Table 6 Evaluation of the architectural features of 4 buildings within the BCD—part 3 of 3

		Case 1-sehnaoui and haddad building	Case 2-semiramis building
Façade design	Roof shape & Parapet	 (a1)  (a2) The roof is taking the shape of the building respecting the gabarit, with using an ornamental parapet A circular patio roofing on columns on the building corner	 (a3)  (a4) The roof is taking the shape of the building respecting the gabarit, with a continuity of the façade grid for the opening For the corner treatment, by smaller columns elevating a circular roof

(continued)

Table 6 (continued)

Materials & construction	Structural Systems	Stone Structure	Reinforced Concrete Structure
	Cladding Materials	Limestone, wood and glass	Limestone, Marble stone, glass and copper
		Case 3-the dana building	Case 4-damac building
Façade design	Roof shape & Parapet	 (a5) (a6) Similar to the two, the roof is taking the shape of the building, by a transparent curved glass block draped in classical stone cladding The parapet is also taking the form of glass and aluminum handrail, blended with the overall building mass A circular mass is elevated on the roof	 (a7) The roof is taking the same shape and materials as the repetitive shapes of floors, respecting the gabarit and the total FAR
Materials & construction	Structural Systems	Reinforced Concrete Structure and steel	Reinforced Concrete Structure and steel
	Cladding Materials	Stone Cladding, glass	Glass, Stone for the podium

Source By the researcher

Table 7 Summary of the evaluation of the architectural identity of the contemporary selected buildings

		SIMULATION Sehnaoui Bldg	NTEGRATION Semiramis Bldg	ANALOGY Dana Building	CONTRAST Damac Building	RESEARCHER DISCUSSION - The effect of regulations on the present situation
BLDG USE	*Base*					As per the regulation, all BCD buildings have same configurations of the base with a change in use
	Podium use					
VOLUME	*Geometry of mass*					The differences in the volume configuration are due to the difference in the height requirements of the case 4 as per the zoning plan regulation
	Building Configuration					
	Setbacks					
FAÇADE DESIGN	*Openings*					The openings are essential elements in the façade. They should be implemented within the podium regulations.
	Solidity & transparency					The introduction of new materials should follow a ratio related to the solidity of facade
	Facade elements					Minimal elements in the façade of case 3 are reflecting a dialog with the old façade of case 1 and the replicated one of case 2. The podium of case 4 missed any treatment.
	Roof shape & Parapet					A continuity in the roof treatment is noticed within the contemporary case studies.
MATERIALS	*Structural Systems*					The structural system is changed due to the technological development.
	Cladding Materials					Although no clear regulations for using the natural stone as cladding in zone B, but case 3 is more integrated with the old facades- Podium regulations should be enhanced

Table 8 Additional regulations in terms of architectural features

Architectural features	Additional regulations
Openings	• Clear grid in the opening arrangement should be incorporated • For the high rise buildings, special guidelines and prototypes should be raised for the lower volume within the height of 24 m
Solidity and transparency	• Conserve a ratio not less than 50% or include restrictions in the podium volume of the high rise buildings
Façade elements	• Maintain some elements as façade obligation treatments can blend the old with the new
Cladding materials	• The use of stone or a material having a similar look in arrangement and color to be uses in specified parts of the buildings

Source By the researcher

uld be considered to comprise all zones of Beirut center and all spatial, architectural, social, cultural and natural factors.

The reconstruction of the BCD has stimulated and created several building typologies: simulation, integration, analogy, contrast, iconic and at last the abandoned. The two typologies that are far from the dialogic approach are the contrast and iconic buildings, where both archetypes are not respecting the existing context, identity and historical architectural attributes due to the absence of control and restrictions in the buildings regulations. With all these technologies and advancements, the main cities struggle will stay: the old or the new. From the comparative table, it was clear that some factors and guidelines that aim toward the dialog and the city identity need improvements: Façade design and materials. Therefore, the recommendation action list will focus on adding a number of criteria to the existing building regulations, related to the main architectural features of the city identity that should be taken into consideration in today's architecture, as the below (Table 8).

In addition to the physical aspects, as it was mentioned before, the reconstruction of a city identity should consider the society in first place, specifically in zones where new developments are taking place of old buildings. A social participation in the new planning and regulations for the destroyed city is efficient in responding, in the future, to the social needs in terms of cultural, memorable, traditional and the economical necessities too, and this an existing problematic in the BCD, to be discussed in future studies, where for many preservation activists, the reconstruction movement transformed the center to a "culture-free ghost town for the rich" as per architect Mona Hallak opinion (Naylor 2015).

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Identifying the Perceptual Image of Distinctive Places Through Storytelling

Omnia El Hosary, Alaa Sarhan, and Yasser Farghaly

Abstract

Every place has its own distinctive image that makes it special and different; however, places are always open to changes in buildings, people, culture and activities. But just as change can enrich a place, it can also affect it negatively by altering its individuality or by removing the characteristics to which people are attached. Each place needs to sustain its distinctive characteristics in pursuit of economic, environmental and social advantage. It is, therefore, important to identify what forms a place's distinctiveness and examine its means of measurement that can be done through identifying people's perception of image and examining what people value about their place. This paper aims to determine the key elements that contribute to a place's local distinctiveness through identifying the tangible and intangible aspects of the perceptual image and its means of measurement. The study was carried in Fouad Street, one of the most unique and important streets in Alexandria, Egypt, to quantitatively and qualitatively measure the street's distinctiveness from different aspects. Methods include perceptual studies using a storytelling technique of people's experiences and perceptions being obtained and analyzed. The paper concludes with a Distinctiveness Referential Scale (DRS) to identify the urban distinctiveness of Fouad Street according to people's perception and images, leading to recommendations to sustain and enhance local urban distinctiveness.

Keywords

Local distinctiveness • Storytelling technique • Place image • Fouad Street

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1 Introduction

Egyptian cities are rich with built, natural and cultural characteristics. While Alexandria is the second largest city in Egypt and is a major economic center and a popular tourist destination, the gradual changes of the city's streets, buildings, monuments and landmarks and the subtle changes of globalization can influence the concept of distinctiveness, affecting people's emotional attachment to their place. People notice and know about their places a wide range of things, not only the special landmarks that define the place but also different aspects that form the places. Some features may seem ordinary and familiar, but when combined they give a place its value and distinctiveness. Place meanings are rooted in the physical setting and the non-physical cultural activities; these have been termed local distinctiveness. The term was coined by Common Ground, an English organization that spent its time and effort to inspire people and communities to protect and promote whatever is distinctive about their places (Common Ground 2017).

The study identifies urban distinctiveness of Fouad Street in Alexandria and its means of measurement through the tangible and intangible aspects of an image as experienced and perceived by people. Urban analysis and perceptual studies are required and are fundamental to define the local distinctiveness of the place. In addition, it is important to define the quality of the place's distinctiveness to suggest the correct actions and tools in enhancing the positive images of the place and reconstructing the negative images people have about it.

2 Literature Review

People perceive places differently. Different characteristics that may seem ordinary and familiar give a place its value and distinctiveness. "Local Distinctiveness is described as an elusive concept. Essentially, it encompasses the unique

N. Mohareb et al. (eds.), *Cities' Vocabularies: The Influences and Formations*,
Advances in Science, Technology & Innovation,
https://doi.org/10.1007/978-3-030-51961-2_3

physical, social and economic characteristics of a place and the interaction of people with those characteristics" (Miller 2009).

The combination of physical, social and economic characteristics forms the distinctiveness of a place. Local distinctiveness primarily consists of six main elements belonging to these three characteristics, which can either be found in combination or, exceptionally alone. These elements are: natural features, man-made structures, cultural identity and people, food and drinks, crafts, and industry and business (Grant et al. 2002). Physical characteristics of distinctiveness comprise man-made structures or built fabric of the settlement and the natural features of the place. These slow-changing elements are the core features that form the foundation of distinctiveness. Other non-physical features, including the social and economic characteristics of distinctiveness related to human enterprise represented in people and their activities, create a change. Unlike the physical characteristics, non-physical features can allow the place to have the capacity to be modified or reinvent distinctiveness (Bauman Lyons Architects 2009).

People and places are intimately connected by a bond that is not physical, because each place has a distinctive identity of its own that is drawn by a self-constructed image, an intangible value that is added to the entity by the individual's mind. In order for people to comprehend their surroundings, they reduce the reality into a few selective impressions producing place images (Carmona et al. 2010). The image of any place is related fundamentally to the study of local distinctiveness, for it is important to seek the ways people comprehend and, hence, get attached to their surroundings. The place image can mean many things, whether a physical resemblance, a mental representation or even a symbolic and metaphorical pictures. In this study, "image" is defined as a person's beliefs, ideals, feelings, expectations and impressions about a place which is "a distinct way of processing and storing multisensory information in working memory" (Echtner & Ritchie 2003).

Many previous researchers have studied the image of a place and its components. A model of image components is proposed by Echtner and Ritchi to help in measuring the image shown in Fig. 1. In this model, the parts of the image can be broken down into two perpendicular axes: The first depends, at one end, on a holistic view of perceiving information, often described as mental picturing, and includes any or all of the five main senses: sight, smell, taste, sound and touch. At the other end is the contrast, characterized by details of information or attributes of the stimuli rather than the holistic impressions. The second axis has at one end the functional characteristics, which represent the tangible aspects of the image that are directly observable or measurable; at the other end are the psychological characteristics, which include the intangible aspects of an image (Echtner and Ritchie 2003).

The measurement of an image must include aspects of both functional attributes and functional holistic impressions; in addition, the psychological attributes and psychological holistic impressions must be measured. Thus, the measurement must include both tangible and intangible aspects of image which are represented in the functional and psychological characteristics, in order to acknowledge the richness and complexity of the urban elements as seen and felt.

One of the techniques used to measure the image of a place is the storytelling technique, which is a narrative method used in obtaining the different perceptual experiences, thus identifying urban or local distinctiveness. In this fictitious storytelling technique, groups of people create the story about a place over a period of time; they are asked to describe a fictitious journey into the place, describing what they see and do on their way. This technique allows participants to map their own perceptions of the tangible and intangible aspects onto the subject of the story, producing rich material for analysis (Field 2002).

The narrative technique of "storytelling" is used widely in business world and has been used in workshops for establishing local distinctiveness such as in Bolton Town by Drew Makie Associate, the research was for providing baseline for the Council's design guidance document on town center development, it identified areas in which policy could help to reinforce local distinctiveness, and results were published in the final report 2006 (Muray et al. 2006).

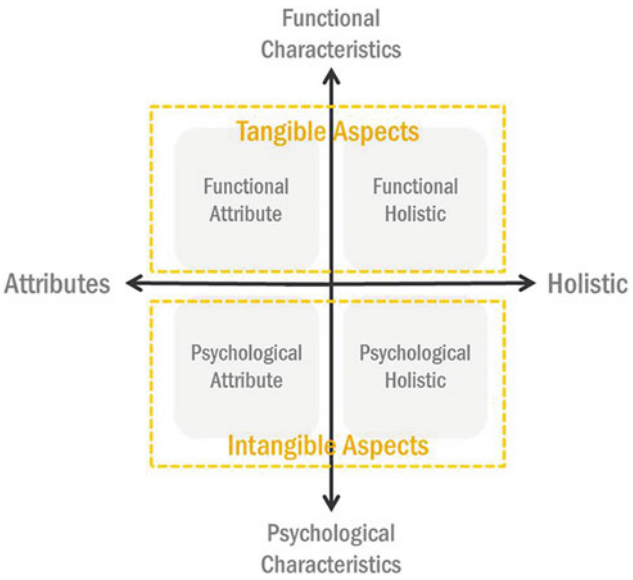

Fig. 1 Image components by Echtner and Ritchi. Modified by the researcher

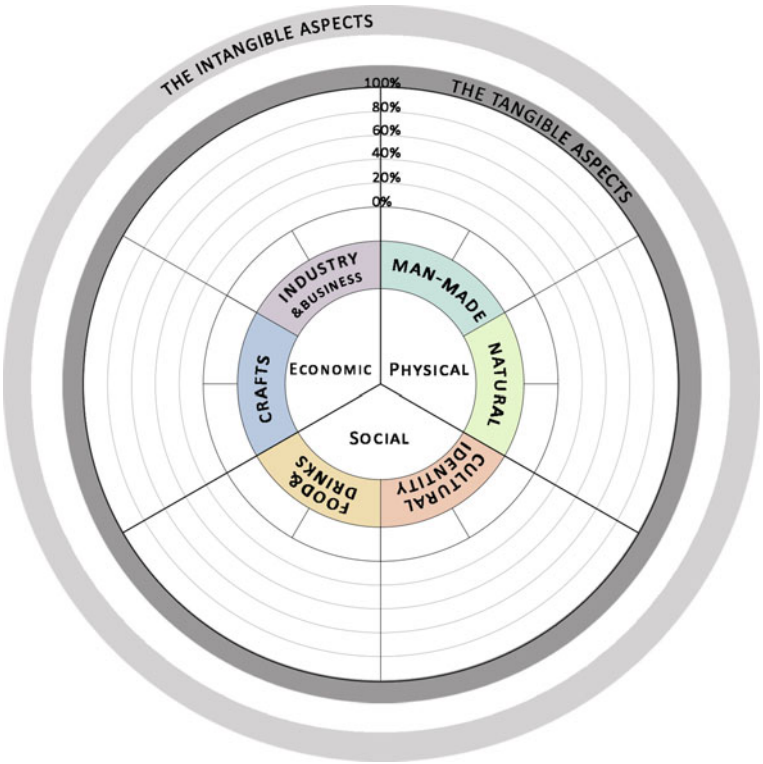

Fig. 2 Referential scale to identify distinctiveness of a place. (By researcher)

The reason for selecting this technique is to make participants react to a place's values and to uncover their attitudes toward the place under study. Moreover, storytelling can be effectively used as a technique for a survey development to help researchers gain a better understanding of related emotions and issues that might otherwise be missed or misunderstood through a more structured method (Harrington and Mickelson 2009).

According to the literature review, the elements of local distinctiveness in both the tangible and intangible aspects could be measured through the storytelling technique and correlated according to the concluded distinctiveness referential scale in Fig. 2.

In this referential scale, the three characteristics (physical, social and economic) are represented equally, but when used to demonstrate the distinctiveness of a place, these characteristics are represented quantitatively and qualitatively. Quantity can be observed as the area taken by each characteristic, while quality can be observed in the percentage of each element within the three main characteristics. This scale can be used to identify and evaluate the local distinctiveness of a place, and to set up recommendations for the elements to be further developed and protected.

3 Methodology

The study was carried in Fouad Street, which is located in the city center of Alexandria, Egypt. It was named after King Fouad I, and it is one of the most important streets in the city of Alexandria. It features a number of landmarks, investment institutions, art houses, museums and old florist shops. The street goes back to Ptolemaic era in the third century BC, and now of course it had undergone many changes, but it is one of the few places left in the city with most of its heritage buildings still intact, despite the new buildings and overcrowded urban center (Awad & El-Tabbakh 2005).

The selected area is located in the central district of Alexandria, cut into the heart of the modern European city and contains some of the city's most amazing nineteenth- and early twentieth-century architecture. It starts from Alexander the Great's statue that is located in the El Saa Square and ends at the Attarin Police Station, located at the intersection of Salah Salem Street and Sidi El Metwally Street.

In the perceptual studies of Fouad Street, an interactive storytelling technique was used. The method and the process

was in follow of Bolton Town report as an example, but with adaptation in order to suit the case of Fouad Street and to gain the information covering the tangible and intangible aspects of people's image.

Participants in groups were asked to describe a touristic journey in Fouad Street, where they spend time with a tourist who is interested in visiting distinctive places in Alexandria, showing what is special about the street and indicating their perceptions as they walk in, describing what they see and do on their way. Incidents are fed into the story at some points, such as asking the participants to stop and look around at various points they prefer in their journey. The materials were used to identify the key elements that in people's opinion from local distinctiveness of Fouad Street and how they perceive it as individual attributes and holistic image. Participants were given sheets in which to record their story. These sheets include:

3.1 A Map of Fouad Street (Fig. 3)

Participants were asked to indicate their routes into and out of the place, mark significant or distinctive attractions, and draw lines around recognizable areas with common characteristics.

3.2 A Table for Journey Stages (Fig. 4)

Participants had the opportunity to explain their stories in their preferable way including the start and the end of the journey.

3.3 A Spider Diagram (Fig. 5)

Used to score from 1 to 10 to each of the elements related to local distinctiveness as mentioned in the literature review.

Within this process, the participants answered a set of questions to measure the components of image proposed by Echtner and Ritchie (1993). The questions included the street's image, characteristics, general atmosphere and unique attractions.

The storytelling technique was based on focus groups that represent different users of the street and were categorized according to the purpose of visit, while using the experience of participants to describe images or characteristics of Fouad Street, pursued activities, adjectives to describe Fouad Street, attractions and general atmosphere. Also, participants were given maps and asked to outline places they thought were significant for both visitors and locals. By the end of this stage, 22 stories were constructed by 90 participants within groups of 3 to 6 persons. The groups reflected a wide range of different age groups Fig. 6, in addition to different users: visitors, non-regular visitors, employees, residents and stakeholders Fig. 7. Participants were split into groups with their common category.

It should also be noted that generally the participants were all educated, and with different education levels such as two groups were architects and another group were high school students.

The information given by stories reveals a spread of attitudes and perceptions related to the local distinctiveness of Fouad Street, and these can define the key elements of which distinctiveness is composed. While they contain tangible aspects, such as mentions of buildings, places and activities that can be categorized and assessed by statistical analysis by the number of times they reoccur across all focus groups, they also contain intangible aspects that are mostly descriptive words that can be analyzed through theming these descriptions (Fig. 8).

4 Results

According to results, participants' answers related to the "Map of Fouad Street" and the "Table of journey stages" were categorized according to the three main characteristics: physical, social and economic along with all the elements related to these characteristics, as follows (Fig. 9) and (Table 1):

Fig. 3 A map for fouad street to identify distinctive places. (By researcher)

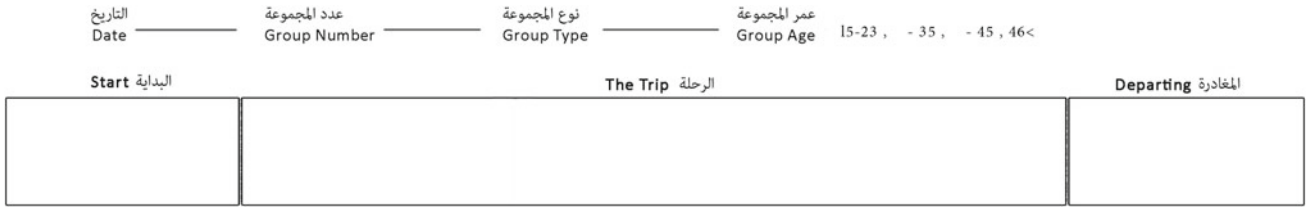

Fig. 3.4 A table of the journey stages. (By researcher)

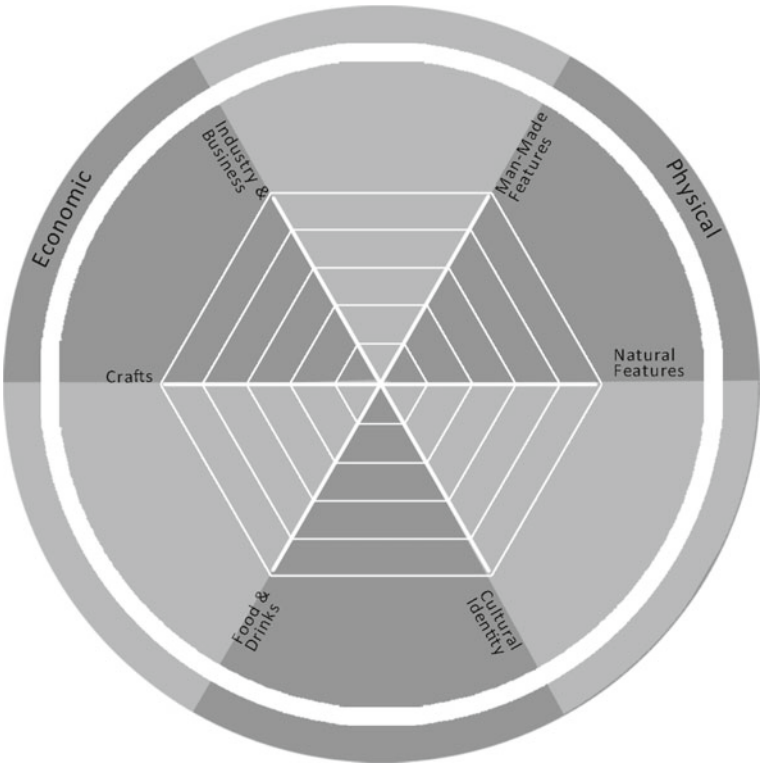

Fig. 5 A spider diagram used to rate elements of distinctiveness. (By researcher)

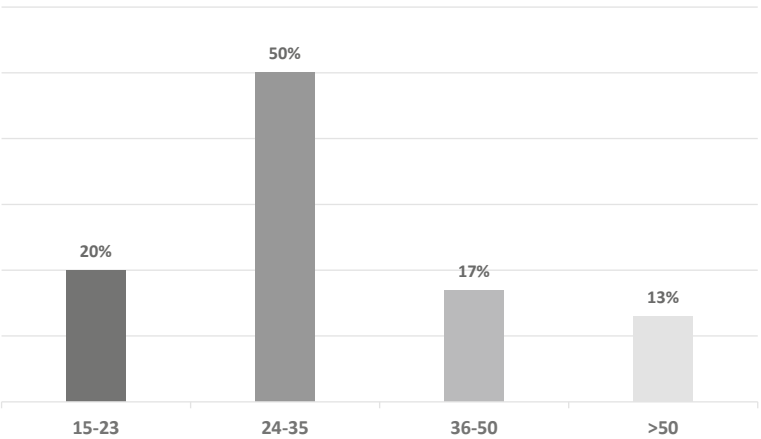

Fig. 6 Participants age groups. (By researcher)

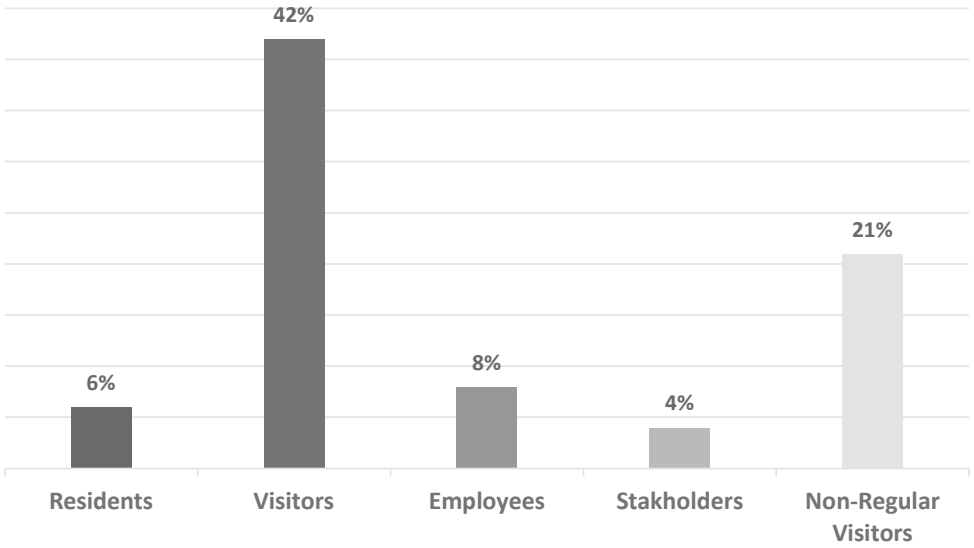

Fig. 7 Participants as users. (By researcher)

Fig. 8 Storytelling in process. (By researcher)

4.1 Physical Characteristics

a. Man-made features Scored the highest, averaging a score of almost (9). Most people mentioned and remarked the architecture and historic features of the street, indicative of these features' distinctiveness to people.

b. Natural features The lowest score is the natural features, which scored (3.8), with most of the score given to the central location of the street, while it was mentioned through people's comment on the street's great location (38%), it was seen as a place to pass through to various places or a popular place to meet friends in a central location. The only space mentioned in this category was Shallalat Gardens (19%); however, it is not located within the context but can be seen within the approach of the street.

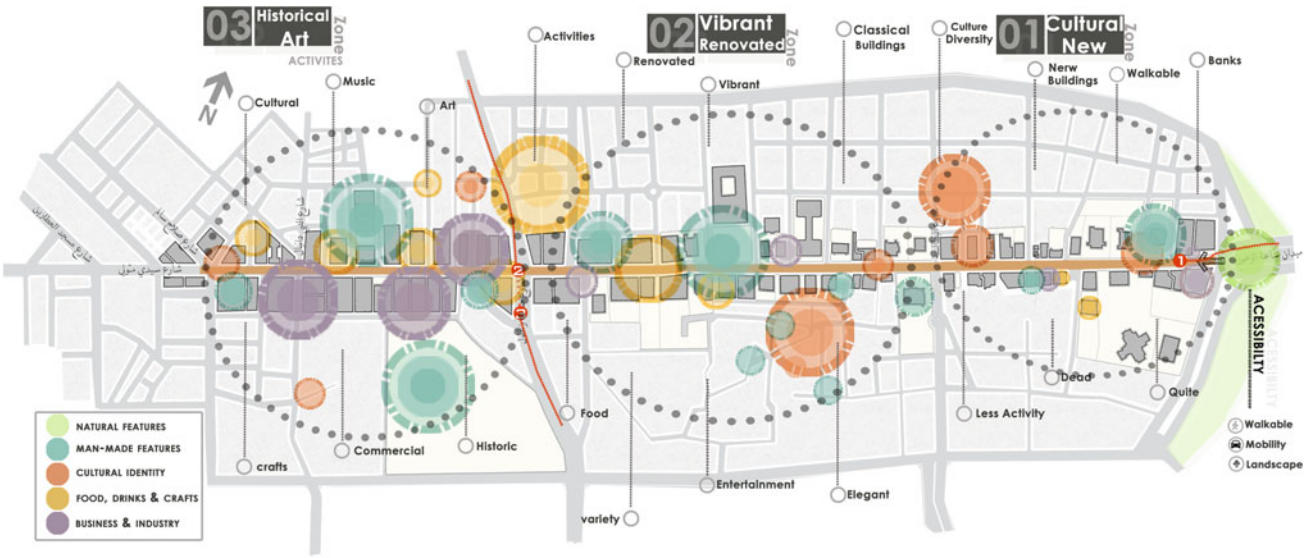

Fig. 9 Map of fouad street categorized according to the main characteristics. (By researcher)

Table 1 Distinctive physical, social and economic characteristics in fouad street. (By researcher)

Physical characteristics		Social characteristics	Economic characteristics		
Man-made structures	%	Cultural identity	%	Crafts	%
Sayed Darwish Theater (SDT)	86	Music (MUS)	71	Leather products (LPR)	48
Roman Theater (RMT)	62	Sayed Darwish Heritage (SDH)	44	Frames and portraits (PNF)	10
National Museum (NMU)	52	Teatro Alexandria (TAL)	40	Handmade carpets (HMC)	5
Horreya Cultural Center (HCC)	48	Culture Centers (CUL)	72	Wood workshops (WDW)	5
Kom El Dekka (KED)	43	Culture Diversity (CUD)	40	**Industry and business**	**%**
Cinema Amir (CAM)	43	Jewish Synagogue (JSY)	19	Bookshops (BKS)	57
Nabi Daniel Street (NDS)	43	San Saba Church (SSC)	19	Banks (BNK)	47
Old Buildings (OBL)	40	Mausoleums (MSL)	14	Flower shops (FLS)	33
Architectural Style (ARS)	36	Graffiti Art (GRA)	14	Furniture galleries (FRG)	29
Greco-Roman Museum (GRM)	33	Kom El Dekka Festival (KDF)	10	Antique shops (AQS)	24
Spanish Consulate (SPC)	29	Nassim El Raqs (NRQ)	5	Admin buildings (ADB)	14
Old City Hall (OCH)	24	Nabi Daniel Mosque (NDM)	5		
Cavafy Museum (CMU)	19	**Food and Drinks**	**%**		
Natural features	**%**	Oriental Food (ORF)	71		
Location (LOC)	38	Nightlife (NTL)	52		
Shallalat Gardens (SGR)	19	New Restaurants (NRS)	52		
		Oriental Cafes (ORC)	19		

4.2 Social Characteristics

a. Cultural identity Achieved the second highest score (7.5) with a multiple religious, educational and cultural identities and events that the street offers, in addition to the impact of the physical features that represent different cultures used to occupy the street.

b. Food and drinks Were given a high rating (7), although responses varied about this element, as participants noted that there is not a significant restaurant that can earn the high scoring but rather the wide variety has the attraction quality. Young people emphasized food outlets, where evening entertainment and lunch or dinner outings dominated stories told by participants aged from 16 to 35. The young people liked the wide range of restaurants variety now available at the street.

4.3 Economic Characteristics

a. Crafts Were given a fairly good rating (4.6), with a large number of leather products, frames, handmade carpets and wood workshop.

b. Industry and Business Were given a good rating (4.8), with a large number of banks and administrative buildings dominating the street, yet they do not impact the distinctiveness of the street.

Moreover, the storytelling resulted in a large number of descriptive words or adjectives whether positive or negative, which can be grouped under several themes (Table 2).

According to the **Spider diagram** used to score different elements of distinctiveness, Fig. 10a shows the mentions of the five main elements of distinctiveness across all stories. The diagram gives an indication of the distinctiveness of the elements without representing their quality. The man-made features scored the maximum; all stories mentioned various buildings, places and architectural features. Different restaurants and cafes, whether they are global cuisines or serve oriental food, also dominated the stories, and those mostly attracted young visitors. However, Fig. 10b shows the results of the spider diagram scores in which participants rated the distinctiveness of the main elements from 0 to 10. The diagram shows the average score for each element; the rating was a point of discussion between participants.

5 Discussion

From a combination of inputs and information from the storytelling, the research could devise the key elements that contribute to the local distinctiveness of Fouad Street. It was clear that most of the respondents had a strong image of Fouad Street. Even the non-regular visitors had general knowledge of the street's location and rich history.

The maps indicated routes taken and areas perceived as having certain characteristics, both positive and negative. It is worth notice that different groups of participants noticed different features and were attracted to different things about the place, which partially reflected their interests. The storytelling identified that there is a mix of activities which draw people to the street in different times; the banks, schools, administrative buildings and the great walkability feature of the street at the day, and restaurants, leisure and concerts at night. This is an indication of the vibrancy and safety of the street all day long. Furthermore, to devise the different importance of elements, the percentage of mentioning each element across all stories is an indication of the degree of its distinctiveness. Likert scale was used to classify the elements distinctiveness, as illustrated in Table 3 in percentages. The elements exceeding the medium degree of distinctiveness contribute to the distinctiveness and are transmitted to the Distinctiveness Referential Scale (DRS).

The distinctive image of Fouad Street according to the most repeated aspects is constructed of tangible aspects, which were mostly perceived positively except for some. A large number of elements were man-made features; however, it is noted that they are all related to cultural

Table 3.2 Descriptive words and their themes of fouad street. (By researcher)

Theme	Descriptions	Frequency (%)
Usability/Accessibility	Walkable, Pedestrian Friendly, Safe, Connected, Social Connection	70
Vibrancy	Active Nightlife, Busy, Vibrant, Crowd, Active, Dead At Times, quiet	48/−28
Identity	Historical, Cultural, Original, Old, Identity, Authentic	55
Emotional	Charming, Clean, Cozy, Calming, Relaxing, Cheerful, Joyful, Intimate, Neat, Nostalgic	46
Diversity	Variety, Diverse	32

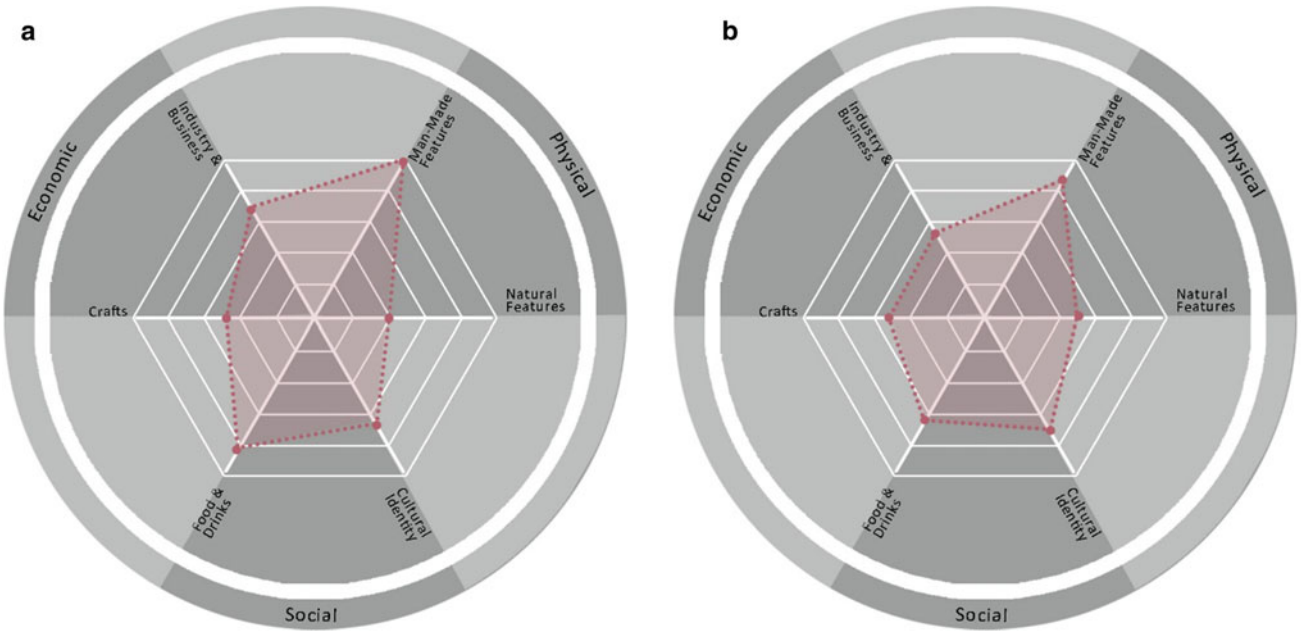

Fig. 10 **a** Distinctiveness elements' strength. **b** Distinctiveness elements' ratings

Table 3.3 Likert scale for elements distinctiveness. (By researcher)

Very weak (0.0–19.9%)	Weak (20–39.9%)	Medium (40–59.9%)	Strong (60–79.9%)	Very strong (80–100%)

activities and identity. The highest percentage was scored by Sayed Darwish Theater. It is distinctive with its architecture and is a great renovation example of heritage buildings. On the other hand, the most negatively perceived element was Kom el Dekka, which was described as deteriorated and not attractive. Cultural identity and people were mentioned with Sayed Darwish heritage presented in his house, café and festival, in addition to Teatro Alexandria and a number of cultural centers such as Goethe Institute. Food and crafts emphasized the oriental food restaurants and the new ones, presenting a wide variety that highlighted the street since these developments, in addition to the leather products that was former mentioned. The bookshops and the banks are mentioned as the main distinctive businesses in the street.

The tangible holistic images of Fouad Street were mostly about music. Many participants mentioned directly the street's relation to music, whether for the Conservatory or Sayed Darwish's Theater and heritage. In addition, participants complemented the buildings' architectural style, the old renovated buildings and the nightlife of the street, but they were also critical of the street having the resources to being a central business district but not a successful one due to the disconnected functional structure. The distinctive image is also constructed of intangible aspects, which can be indicated through the descriptive words and adjectives describing the street's experience, including usability and accessibility, identity and diversity. The advantage of walkability and the high permeability of the street to the pedestrians scored the top between other attributes concerning the historical and diverse aspects. The intangible holistic images of Fouad Street are: vibrant and emotional, as a beautiful authentic street, nostalgic with its European architecture; energetic and vibrant at times; and crowded or busy at others. Finally, the local distinctiveness of Fouad Street is derived from a number of key elements, which can be combined and summarized in the distinctiveness referential scale, as an initial step to be further developed and taken into consideration in design guidance and future propositions to sustain and enhance the local distinctiveness of the place Fig. 3.11.

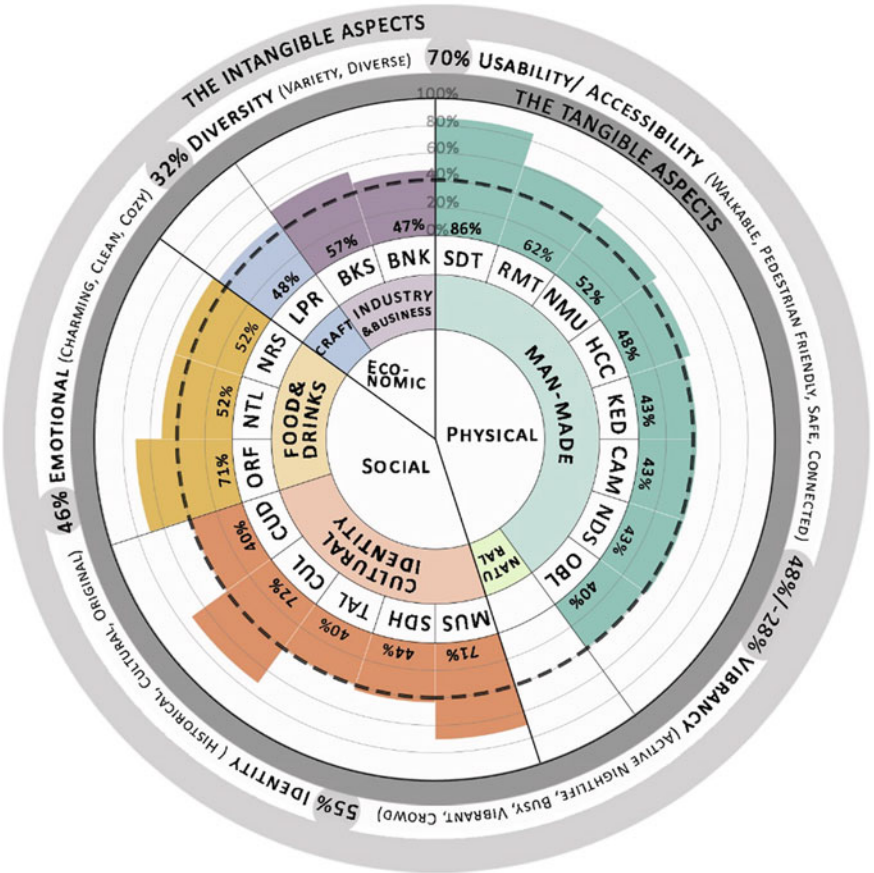

Fig. 11 Distinctiveness referential Scale (DRS) of fouad street. (By researcher)

6 Conclusion

This research presented the storytelling technique to define local distinctiveness, according to people's perceptions and images, in order to identify and evaluate the elements and qualities both tangibly and intangibly that contribute to the local distinctiveness, to ensure the development of place through enhancing these qualities. The value of the perceptual dimension is the emphasis placed on people and how they perceive and evaluate their places, in addition to the clear understanding of people and their engagement to places is important for developing a successful place.

The storytelling technique uses free form descriptions to measure image to gain a better understanding of related emotions and issues that might otherwise be missed or misunderstood through a more structured method. While the attributes are not specified but respondents are allowed to freely describe their impressions, it also succeeded in measuring holistic components in addition to the attributes and also it was effective in capturing the unique features and auras of the place.

Results can then be analyzed, sorted and categorized through the distinctiveness referential scale that primarily consists of the three main characteristics; physical, social and economic, and their elements, each of these elements is perceived by; directly observable or measurable aspects representing the tangible aspects, and their psychological characteristics representing the intangible aspects.

On the other hand, limitations of the storytelling technique must be noted, such as engaging some categories, for example; residents and employees and other individuals, was limited due to delivering their participation in groups was hard or not possible. Moreover, although all cultures and age groups tell stories and can comfortably engage with the technique, not all people were interested or had the time to share their information, but such incidents can happen in other techniques that require people's participation.

Moreover, further techniques that can capture the tangible and intangible aspects of image can be examined and compared to the storytelling technique, in addition to examining other places with the concept of local distinctiveness and applying the Distinctiveness Referential Scale (DRS) to be further developed.

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Improving Urban Contexts' Identity via Conducting a Smart Mechanism

Ali Sadrinia

Abstract

This paper lays the theoretical foundation for a logical framework based on multiple design factors. In the first place, historical traces of cultural landscapes are referenced to re-establish a harmonized settlement in their environments. Here, culture, identity, and design are the agents, whereas the defined matrix of corresponding criteria becomes the medium, and the re-interpretation process will be the result. The matrix can play a critical role in the reconstruction and recovery processes, where it defines projects by matching its components with standards, client preferences, etc. The strategy contributes to digital heritage by identification, documentation, understanding, and communicating the original themes of the place through digital technologies. The design based on distinguished parameters would be extended through parametric design. This is how the digital technologies will enhance interpretation of original morphologies. Once the relevant criteria of a place are corresponded, re-interpretation mechanism conveys traditional (timeless) dimensions of a place into present and future. Thus, the new modifications will become heritage of their own era.

Keywords

Urban-architecture • Cultural landscapes • Sustainability • Identity

1 Introduction

Among dangerous consequences of abusing raw materials, informal settlements, and urban sprawl, the community's vulnerability to disaster risks has been proven to UNESCO (2016). Besides, when cities, which are already struggled with quick and unmanaged urbanization, are confronted to catastrophes and tensions, they will be even more stressed. UNESCO and World Bank (2018) assert that economic crises and low-quality strategies for urban developments have deteriorated urban decay, exceeding building density, mass housing, ruined public facilities, insufficient infrastructure, social class differences, and urban poverty.

In contrast, UNESCO (2016) ascertains that conserving properly the natural and historic landscape upon lessons from traditional knowledge and proficiencies substantially decreases subsequent disaster risks, consolidates the communities' resilience, and saves lives.

Contemporary cities seem to be heterogeneous and often similar to each other more than ever. Due to dependence of the resident's "sense of identification" to regionalism (Trancik 1986), the conception of "identity" is at risk of elimination because of the increasingly disparate extension of cities. UNESCO and World Bank (2018) find contemporary cities in urgent demand to manage complex social, spatial, and economic transformations. This urgency is for maintaining cultural associations to keep the associative values alive.

In order to provide suitable referencing to address complex challenges of contemporary cities, it is important to know the way dynamic cultural landscapes could be interpreted, negotiated, and represented and for whom. In other words, the way cultural practices and a place, its context, setting, and objects that are related needs more investigation.

2 Literature Review

By studying people's daily life, Chombart (1952) corresponded a spine that generates a coherent set of experience and results in a structuring backbone, which directs future urban development. That is why the trace of a city's plan, the design of its streets, is not due to chance. Rossi (1982)

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deduced that there is obedience to rules, whether unconscious or conscious. To this aim, calling historical fabrics "spontaneous" or "organic" is naïve (Rossi 1982) for it is due to lack of sufficient knowledge and scientific precision to scrutinize underlying themes behind them.

Since human civilization, an organized complexity has been generated that is in proportion with human's intellectual development level. Salingaros (2005) argues that in the last century, this process of complexity was denied, and instead there were attempts to reverse it. The simplistic modernist model has destroyed cities since then by eliminating urban complexity.

Despite continuous evolution of cities throughout history, their identity has remained untouched. Because a city is a diverse mix of people and processes, with its own "self-organizing dynamic" (Jacobs 1961). Here, UNESCO and World Bank (2018) believe that culture plays a key role as it is the enabler and driver of the social, environmental, and economic aspects of sustainable development. For this reason, they see culture central to urban "reconstruction" and "recovery" strategies and processes that are, respectively, necessary for "tangible" and "intangible" heritage restoration. Accordingly, "place-based" strategies and policies are applied in reconstruction processes, while "people-centered" approaches are utilized during recovery after a crisis.

In this manner, the city should be recognized as a "cultural construct" (UNESCO and WB 2018) worldwide. Accordingly, a city displays to UNESCO (2009) a relatively interconnected combination of correlations, which have been extracted from culture and identity of its people. In this context, Bianca (2000) refers to morphology as the fundamental forming parameters of urban form which have been drawn on interconnected, profound human attitudes comprising the real factors of corporeal expressions and are the origin of the immaterial attributes emerging through physical manifestation.

Therefore, following approach of Burra Charter (2013), understanding of a city's cultural importance must be prioritized before making policy for managing it. Besides, remarkable relationships between a group of people and their environment should be regarded, maintained, and not diminished. Any attempt that might eventually cause interpretation, reminiscence, and praising of these associations need to be surveyed and executed.

Although invention of new forms of replacement is useless, Smithson (1999) highly doubted whether if the challenge of re-identifying human with his place could be accomplished by reusing historical methods of house-groupings, street systems, open spaces, greenery, etc., since their social reality does not correspond to contemporary society. Ungers and Vieths (1999) add that the planning methods applied in the past can no longer offer strategies suited to today's cities.

UNESCO (2009) also acknowledges this phenomenon because historical social circumstances and cultures that have been terminated cannot be identically reproduced, whereas only analogous systems could be expanded again. The real challenge afterward is to produce fresh and alternative systems that permit revitalization instead of protecting traditions in museums or altering the landscape into an obsolete exterior museum. If traditional knowledge is rediscovered and available kinds of local knowledge are re-analyzed, resurgence of traditional knowledge might happen. Based on Ardalan and Bakhtiar (1973), this is achievable as cities and buildings, analogous to the forms of nature, have within them the heritage of their past and the seeds of their potential future. In this respect, Woods (1975) sees the new will not be realized separate from the present, but effectively as a method of relating to the present buildings.

Based on the English Heritage Historic Landscape Project by Fairclough (1999), prescriptions which intend to turn back to a previous landscape condition through any procedure of restoration are prohibited, as evolution and transformation will have created an unprecedented or improved persistent heritage. Along this approach, Fig. 4.1 demonstrates an attempt to deliberately transform a traditional fabric based on selected design parameters, which are recognized and introduced by designer's decision; access, density, typological pattern, urban block system, and land plot are the physical parameters as tools for this morphological transformation. This primitive attempt sets an example of how a traditional landscape can be transformed via design parameters of a place even in absence of a logical basis.

Here, the design approach is in correlation with ICOMOS (2017) that advocates predicted change, which would often be more convenient than freezing the historical condition, and it is presumably to be more sustainable in the long run. As for Avermaete (2005), this conception creates an open design whose urban structure must be articulated with its environment to settle properly in its urban landscape. The first figure encompasses the ways, while the second one comprises outline of open spaces. The spaces that remain between two figures are the boundaries for the buildings' spatial design. This attitude adjusts the project factors in correlation with the existing patterns. For this reason, the interrelation within various urban design scales—single building, street, neighborhood, and city—and their privacy scale, is reviewed.

The problem, however, is that those few number of design parameters are slected and applied to the project based on arbitrary decision of the designer, while the outcome could have been more sophisticated and inclusive had there been a predetermined rule for design parameters during the design process. That is why the outcome might

Table 4.1 Matrix of cultural landscapes by Ziyaee (2018)

Components of identity	Components of cultural landscape												
	Materials								Immaterials			Links	
	Natural forms				Manmade forms								
	Topography	Vegetation	Climate	Hydrography	Land shape	Access	Buildings	Furniture	Social beliefs	Behavioral pattern	Rules	Time and process	Technique and methods
Forms													
Functions													
Semantics													

not be regarded as a wholistic response to the place. In search for a logical basis, Ziyaee (2018) for the first time establishes a "matrix," whose factors are expected to not only represent the primary qualities of a place identity; but also, include comprehensive urban dimensions. She then combines components of cultural landscapes with the elements of the place identity into a matrix of cultural landscapes (Table 4.1).

Analysis of such matrix provides a preliminary vision about cultural aspects under analyzing urban site, and consequently, furnishes an active system of evaluating identity of the places. The matrix contributes design procedure through the interpretation mechanism where all related data of a reference place can be recorded based on a pre-defined framework that relates each single factor to the other one. It is concise and fundamental, yet basic and finite. That is why it needs to be developed furthermore, so that design can be extracted from the inserted data. To put it another way, in order the matrix could be applied during the reinterpretation process, other criteria should be added to it.

3 Research Methodology

The originality of the work is assured by conducting methodology of "tradition," as a timeless source of inspiration (Nasr 1987), which is conveyed from one generation to its descendants. UNESCO (1972) comprehensively defines tradition as a dynamic entity in response to a society's environment, its interplay between nature and its history, and bestows upon it a sense of identity and permanence.

UNESCO (2009) identifies significant historic periods and crucial themes attached to the landscape in order to perceive correlated specifications and features. Delicate historical study serves to comprehend the specific way in which the "landscape components" interrelate through time, place (space), and functional usage. In addition, this research distinguishes how functions and various processes depend on the landscape and its characteristics through time, involved groups, and the most effective landscape-forming incidents.

The recognized features represent to UNESCO and WB (2018) the urban landscape's thorough components that must be protected and administrated altogether to sustain the integrity of the place. Like an ecosystem, in case one of human-based or natural components is lost, the significance of other features, or in fact the whole site will be diminished. In any case, the landscape dimension and the importance of each feature to it determine the significance of individual features.

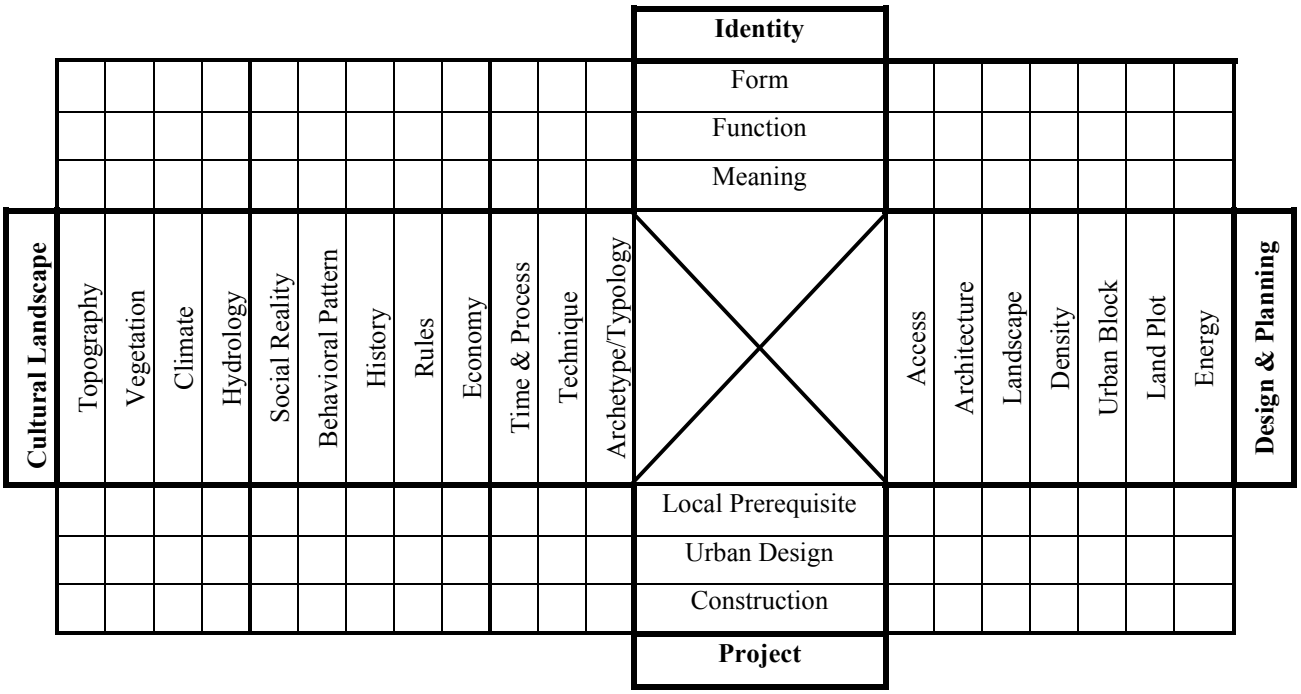
Comprehensive identification of features would inevitably lead to a logical basis to firstly relate them to each other as factors of bigger criteria and then integrate them. This systematic approach is particularly important to establish a multi-criteria framework of urban landscapes.

With detailed evaluation of relations between components of the matrix, minor formulas will be obtained. In case of formulating them all, "urban equilibrium" (Rossi 1982), as a theoretical interpretation of built form, will be obtained.

So far, the following criteria and their parameters or sub-factors have been identified:

A. **Identity**; Relph views identity as a basic concern in reference to the ongoing sameness and uniqueness of things in daily life of people. Identity enables differentiation of every unique object in comparison with the others and was divided into three interrelated components by Relph (1976):
   I. Form: Any naturally existed or manmade environment.
   II. Function: Events, occasions, and functional patterns of one locus.
   III. Meaning: Shaped by reactions and experiences of people in a place.
B. **Cultural landscape**; UNESCO (2009) assumes all variety of emerging interactions between natural environment and mankind as cultural landscape. It entails special methods of sustainable land-use, with attention to specific features and limitations of the reference natural environment, and a particular spiritual bond to nature. Ziyaee (2018) groups its components in three categories:

Table 4.2 Manifold matrix of urban landscapes interrelates factors for interpretation (upper section) and re-interpretation (lower section)



I. Materials (Ziyaee 2018): Topography, vegetation, climate, hydrography.
II. Immaterials: Social reality (UNESCO 2009), behavioral patterns (ICOMOS 2017), history (ICOMOS 2017), rules (Ziyaee 2018), economy (UNESCO and WB 2018).
III. Links: Time and process (Ziyaee 2018), technique and ,ethods (Ziyaee 2018), archetypes and typologies.

C. **Design and planning** entails a change in its natural environment by adjusting to design background and contemporary standards. Therefore, planning phenomenon has to be a natural process, and the designer has to offer a stage for it as Siza (2015) believes designers do not invent anything, but transform reality. Its components assess design of a building from different aspects:

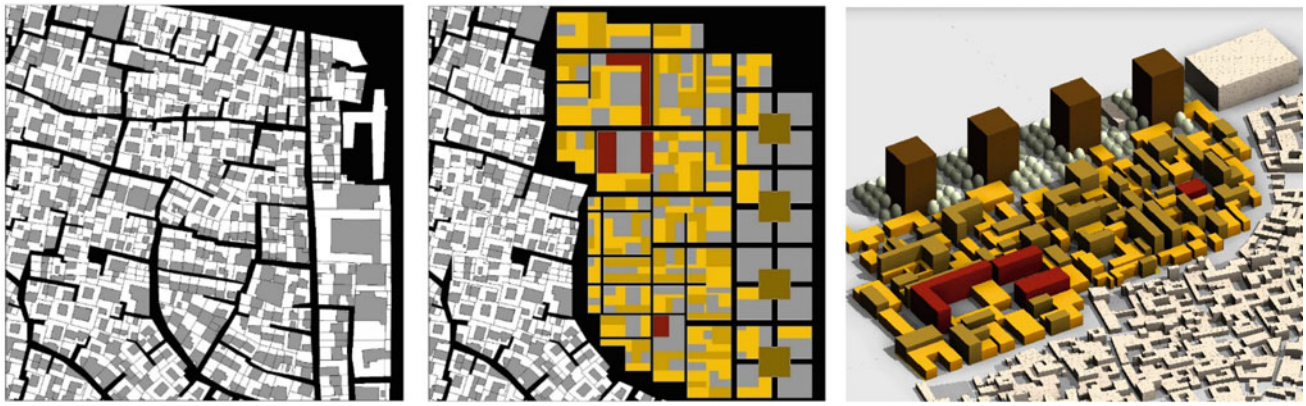
I. Access (ICOMOS 2017);
II. Architecture: Building's properties;
III. Landscape (ICOMOS 2017);
IV. Density: Built and population;
V. Urban block shape and size (Kouwenberg 2013);
VI. Land plot shape and size (Rossi 1982);
VII. Energy and sustainability.

D. **Project** features enable the possibility of defining a project respecting minimum standards, programmatic demands, maximum capacities of the project, preference of the client, etc. It is composed of the following:

I. Local prerequisites;
II. Urban design setting;
III. Constructional considerations.

The general matrix (Table 4.2) interrelates all sub-factors of main criteria to each other. Each parcel of this matrix acts as a code of analysis. The main four criteria—and their sub-factors—are categorized to be interrelated two by two, depending on their relevance. The upper section of the matrix serves for "interpretation" of an urban landscape by coinciding the components of *identity* with components of *cultural landscape* and *design & planning*. On the other hand, "re-interpretation" of the same original landscape into a project will be achieved by coinciding the components of *project* with components of *cultural landscape* and *design & planning*. Similar to physics, "form-to-formula" logic reverses to "formula-to-form" work basis. Thus, the work combines theoretical research with empirical procedures. The new matrix not only accords with the matrix of Ziyaee (2018), but also upgrades it to a more complex version upon which design can be based.

Following objectives of *digital heritage* by UNESCO (2003), the next step is the use of digital technologies to facilitate the interpretation and re-interpretation processes. On the one hand, aerial and satellite documentation can capture, store, manipulate, and represent data during the interpretation process. On the other hand, "parametrics"



(a) Original Morphology (b) Project Design (c) Project Design

Fig. 4.1 A contemporary re-interpretation of traditional morphology by reformulating contextual parameters, which are traditionally associated in design of the historical fabric. The design strategy was to transform the residential fabric into a new iconic urban landscape where embodies a university within it. Shiraz, Iran (Sadrinia 2018). Legend: Open space, Courtyard system, Intervention—low height, Intervention—mid rise (3–5 Levels), Intervention—high rise (5–14 Levels), Large-scale public

(Simitch et al. 2014) provides sufficient technological equipment to form the input data into a multi-criteria design. In this way, the re-interpretation procedure will be feasible. Through the junction between digital heritage and urban landscapes, it will be possible to debate about the relationship between the cultural and natural past, present, and future.

4 Conclusion

The primary objective of this paper is to establish a logical framework based on conventional design rules that have been extracted directly from referencing cultural landscape. It is to preserve legacy of previous generations in order to design through state-of-the-art technology of twenty-first century for the next generations. The achieved matrix is the advanced version of its precedent by Ziyaee (2018) that incorporates local design parameters to obtain spatial planning proposals as well as urban-architectural-scale design solutions.

The following work step will be to manipulate documentation, understanding, and communication of factors of places by means of cutting-edge digital technology. In the end, the digitally formulated matrix contributes to the knowledge of architecture and urban design by moving design procedure another step forward, where it becomes a "smart mechanism." This mechanism restricts arbitrary decision-making for a place, while proposes best design alternatives that comply with all factors of its matrix. This forward-looking recovery strategy would lead to creation of new heritage and establishment of new institutions.

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Analytical Study of the Visual Content of Khuwy's Tomb in Saqqara in Egypt

Heba Abdelaal El Kamshoushy

Abstract

The remarkable tomb of Khuwy, a dignitary from the fifth dynasty is one of the largest and most important discoveries of the era. It contains complete colorful detailed illustrations showing the visual organization and the artistic vision of the ancient Egyptian artist in a unique condition. Therefore, this historical discovery requires the descriptive-analytical study to conclude the development of art in the fifth dynasty, and therefore reveal the inspirational sources of the ancient Egyptian artist, and his understanding of color harmony, grid systems, and mathematical ratios and maintaining a clear evidence of the use of golden ratio implemented to organize the visual content in Khuwy's tomb illustrations.

Keywords

Egyptian arts • Fifth dynasty • Khuwy's tomb • Inspiration source • Color scheme • Grid system • Golden ratio

1 Introduction

On the 13th of April 2019, Egyptian officials have announced the discovery of a remarkably well-preserved tomb found in Saqqara, south of Cairo created for a man named Khuwy, a dignitary from the fifth dynasty, where it was announced in a press conference with publishing detailed pictures of its unique artistic content, to be opened for the visitors soon. "The mission uncovered this tomb while documenting the collection of pyramids that belong to King Djedkarea who was the eighth and penultimate ruler of the fifth dynasty of Egypt in the late twenty-fifth century to mid-twenty-fourth century BC, during the Old Kingdom" (Essam 2019), he ruled for 32 years or more and moved 6 km from Abusir to build the first pyramid in South Saqqara.

Khuwy's tomb is L-shaped and has a small interior tunnel that leads to an antechamber. A main larger chamber with walls covered in remarkable paintings—preserved in a unique condition with bright colors that are related to royalty colors of this period— shows Khuwy facing a table of offerings. Khuwy's tomb leads to another burial room containing the remains of Khuwy's body inside a destroyed limestone coffin (Essam 2019) and also broken canopic jars containing the body organs of the tomb owner Khuwy. Archaeologists have questioned the relation between Khuwy and the King Djedkarea, as the main design of the cemetery, its entrance and north wall illustrations are simulated from the design of the fifth dynasty royal pyramids in Saqqara (Guy 2019).

2 Analysis of the Artistic Scenes

Most of the remains from ancient Egypt came from tombs and temples, as the Egyptians believed in eternity in afterlife that is similar to life on earth, therefore Egyptians required tombs containing the mummy, with the inscribed name and carved painted scenes of food and drink and other desirable services which would provide the dead with magical power. They believed that as long as the mummy is secure his eternal life was assured (Wilson 1986).

Khuwy's tomb contains three walls with different artistic drawings; the front wall (Fig. 1) shows Khuwy sitting on the right-facing before a table of offerings. A decorating border is used around the scene containing a repeated geometric pattern with alternating colors. The space within this border is divided into six horizontal registers in addition to two lower registers below the scene. The offerings occupy the height of the four upper registers. All the figures are drawn from the side (in elevation) in the profile including Khuwy's

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Fig. 1 The front wall of Khuwy's tomb with the main scene of Khuwy sitting on the right-facing the offerings. Photo adapted from Megahed and Vymazalová (2019) republished with permission

figure, and all items are placed on the baseline of each register to maintain balance.

The artist wasn't concerned with giving an illusion of depth to the drawing surface, but he tried to employ some depth cues to show overlapping, that was clear in the relationship of figures and objects they are carrying, the figure of Khuwy's arm passing in front of his body carrying an item shows that it lies between the figure and the viewer, and also the standing figures carrying offerings passing in front of their bodies giving an illusion of depth (Robins 1994). The two lower registers contain no elements or patterns, they are evenly colored to maintain balance in the whole scene and acts as a ground for the composition. The ratio between the height of the lower register colored in yellow and the one above is colored in red maintains the golden ratio as depicted later in this research.

The basic element of Egyptian pictorial art in the fifth dynasty was the single human figure, either standing, seated, or in action. The most important role of the single figure is to act as a main focal point and unify the surrounding smaller elements in the composition (Abrams 1999). The figure of the tomb owner Khuwy is occupying three registers of the main scene of the tomb. The two lower registers are larger in size than the upper four registers in a ratio depicted in this research to be following the exact golden ratio. The lower registers contain scenes of boats carrying offerings and goods for the owner of the tomb Khuwy as Egyptians believed in the actual independent life of images (Wilson 1986).

The hieroglyphic texts shown in the vertical columns above Khuwy's figure—as studied in researches about Egyptian tombs in the fifth dynasty—should include requests for offerings for the dead. The ancient Egyptian artist modified the arrangement of the hieroglyphic texts to adapt his design. The hieroglyphs were not only writing, they were a decoration in themselves. The arrangement of the groups of hieroglyphic texts was ruled by their decorative effect, as signs were grouped to compose a harmonious scheme (Petrie 1999). They also form an integral part of the main artistic composition, as the blocks of hieroglyphs are set against the other elements to maintain balance and complete the scene. The left wall (Fig. 2) contains a secondary scene. A decorating border is used all-around the scene containing geometrical patterns. The scene is divided into main three horizontal registers containing the artworks, and three lower registers with solid colors.

The upper two registers are divided vertically into columns; each column contains a figure carrying offerings, with hieroglyphic texts that should include requests for offerings for the dead. The third horizontal register shows figures larger in size, three of them holding offerings and beside them, a scene of four figures each two of them slaughtering an animal that was also an offering to the tomb owner, while overlapping the figures with the animal they're holding gives an illusion of depth. Repetition of the identical figures creates a row of figures that are depicted along the tomb walls emphasizes a visual transition from one architectural space to the following one (Hawass 2002). The right wall (Fig. 3) is divided into vertical columns. The main centered column is wider in size and contains hieroglyphic texts. The surrounding columns are decorated with geometrical patterns influenced from plants, water waves, and animal skin.

3 Art in the Fifth Dynasty

The fifth dynasty of ancient Egypt dates approximately from 2494 B.C to 2345 B.C, it represents the Dynasties III, IV, and VI under the title of the Old Kingdom (Hawass 2002). The

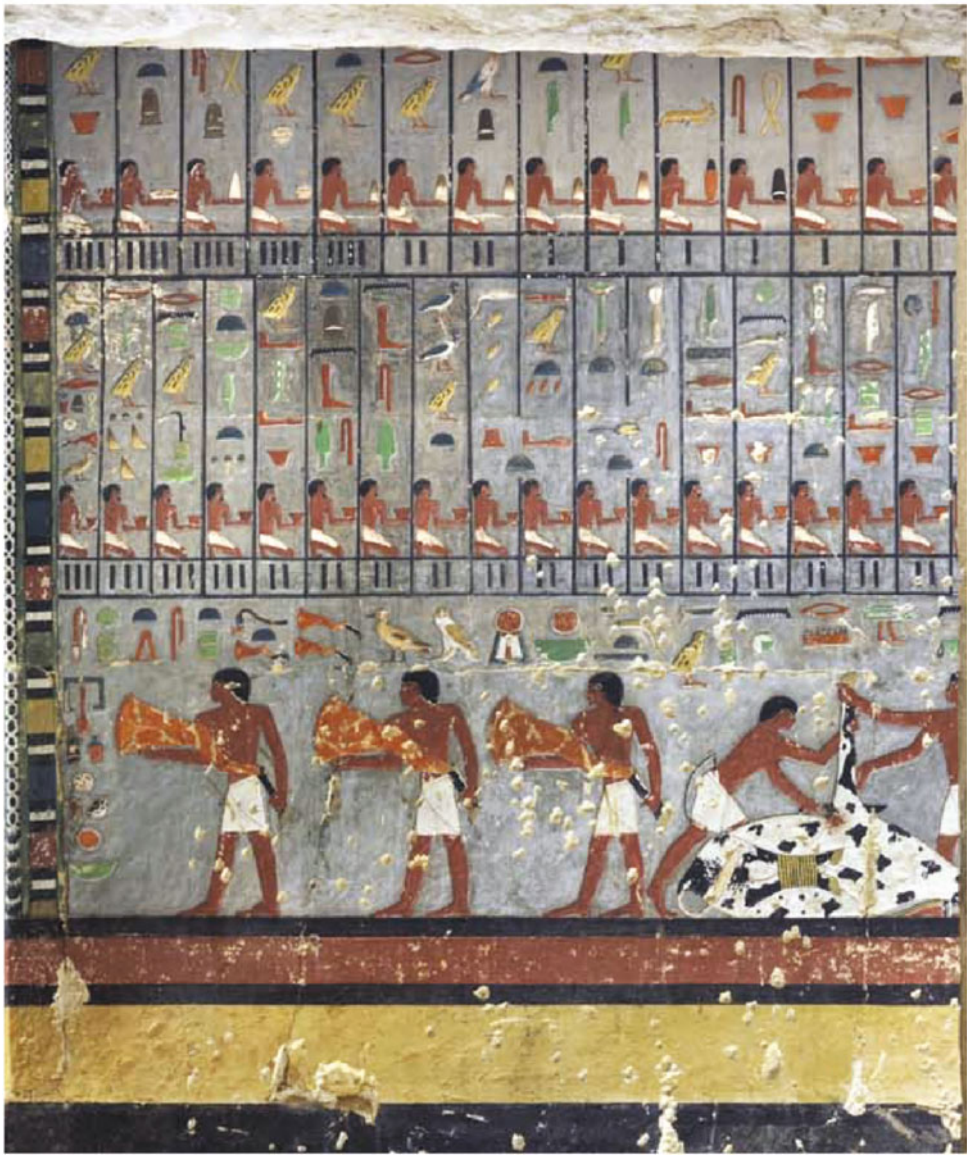


Fig. 2 The left wall contains a secondary scene divided into three main horizontal registers, the first two divided into vertical columns containing figures carrying offerings. Photo adapted from Megahed and Vymazalová (2019) republished with permission

construction of the pyramids and the artistically decorated walls inside the surrounding royal tombs during the reigns of the kings Khufu, Khafra, and Mankaura of the Fourth Dynasty and the early fifth dynasty, 2551 to 2465 B.C was the main influence for the development of art in both the fourth and fifth dynasty in the Giza necropolis. In the fifth dynasty, art took a remarkable and completely unexpected course, as it became elegant, imaginative, and bright, instead of remaining stiff. Due to the changed political situation within Egypt (The journal of Egyptian archaeology 1937).

"The ancient Egyptians had no word that corresponded exactly to our abstract use of the word art, they had words for individual types of monuments that we today regard as examples of Egyptian art statue, or tomb, but there is no reason to believe that these words necessarily included an aesthetic dimension in their meaning" (Robins 2008, p. 12), so Egyptians didn't have the same idea of art as we think of it today. They created images that would function as meaningful parts of the cults of the Egyptian gods and the dead.

4 Color Analysis

4.1 Degradation of Colors

The Egyptian artist in the fifth dynasty used pigments made from inorganic substances, which explains the extraordinary good preservation of most of the colors on the walls of Khuwy's tomb. But even those inorganic pigments are affected by degradation factors through the years, therefore studies of the chemical compositions of pigments used in the fifth dynasty and their effect on the degradation of colors are

Fig. 3 The right wall is divided into vertical columns containing hieroglyphic texts and geometrical patterns influenced from plants, water waves, and animal skin. Photo adapted from Megahed and Vymazalová (2019) republished with permission

important to analyze the original colors used and understand the color scheme chosen by the Egyptian artist in Khuwy's tomb illustrations.

The white color in the fifth dynasty was usually obtained from calcium carbonate. Black color was obtained from carbon, most commonly charcoal which was almost stable in most studies of ancient Egyptian arts. All ranges of colors from light yellow to dark brown were obtained from iron oxide. Blue was obtained from azurite (copper carbonate), which changes to malachite—a different form of copper

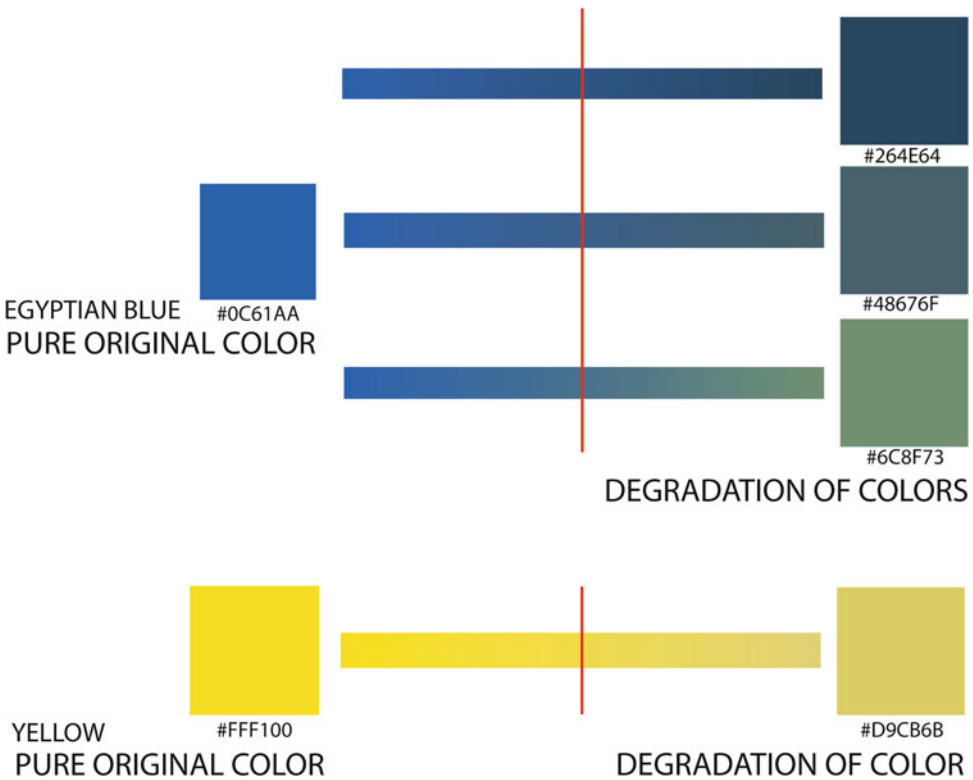


Fig. 4 A virtual assumption of the original colors before degradation. The degradation of colors in Khuwy's tomb, all greens and tints and shades of greens were originally Egyptian blue pigments, and a shade of yellow-green (corn yellow) was pure and vibrant yellow representing gold and sunshine

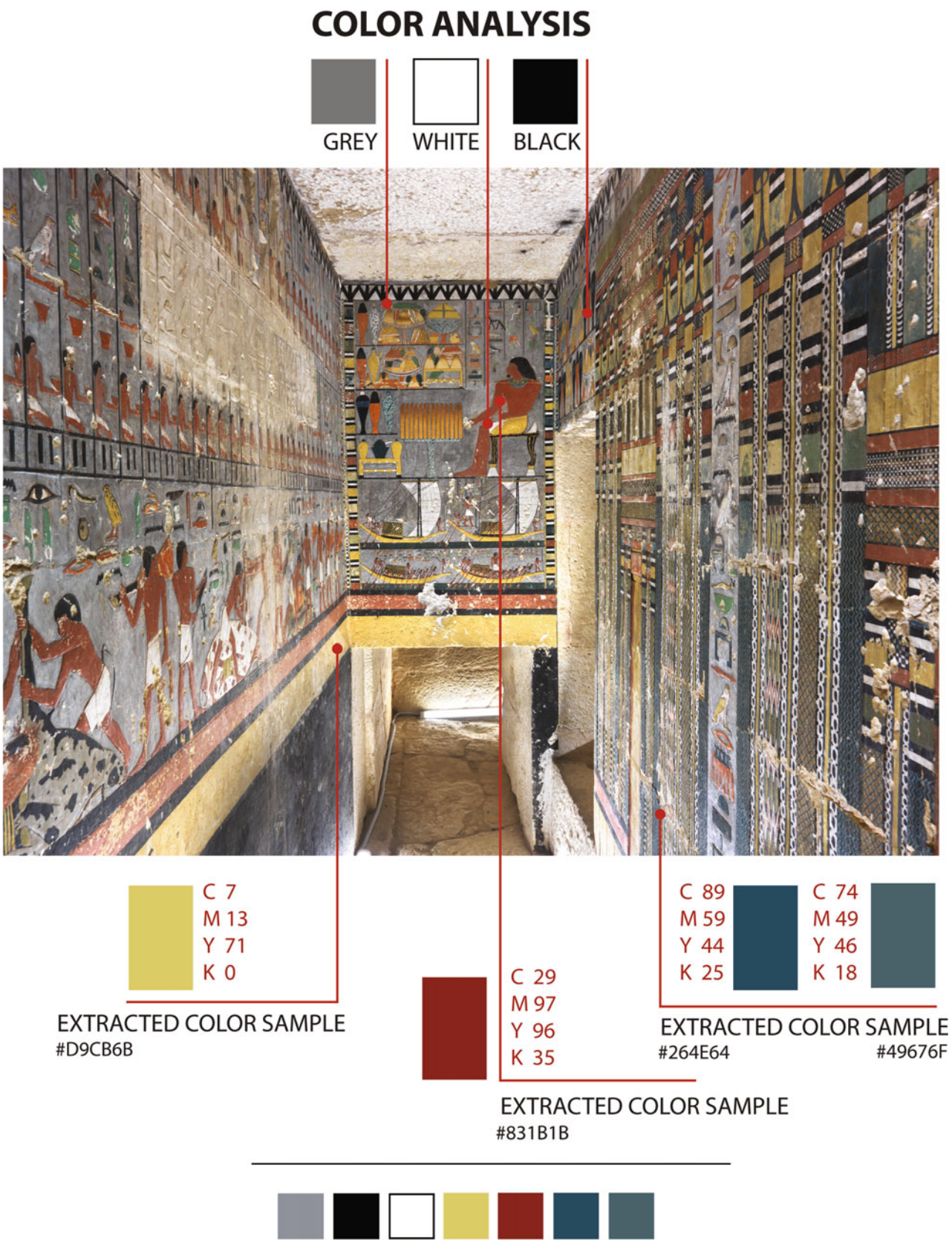


Fig. 5 Digital samples of the colors visible in Khuwy's tomb after degradation; dark shade of brown (Amber, shades of green (olive green), a shade of yellow-green (corn yellow), black, white, and grey. Photo adapted from Megahed and Vymazalová (2019)

carbonate green in color. Orpiment was used to create a bright yellow color that was frequently used to present gold, but it fades overtime to a dull shade of yellow so mostly its bright effect is lost today. Gold color was made from orpiment and was restricted to royal tombs, but usually loses its brightness and fades to off-white through the years (Robins 2008, pp. 12–27).

4.2 The Color Scheme

The colors that can be seen today on the Khuwy's tomb after degradation effects are: a dark shade of brown (Amber), multiple shades of green (olive green), a shade of yellow-green (corn yellow) in addition to black, white and grey (Fig. 5). Digital samples were extracted and analyzed and the result is that the three colors are almost evenly spaced around Newton's color wheel, resembling the tertiary triadic color scheme. Resulting in a harmonious and lively composition.

A virtual assumption of the original colors before degradation has been proposed based on recent researches regarding chemical degradation of Egyptian colors. All greens and tints and shades of greens were originally Egyptian blue pigments, and shades of yellow-green (corn yellow) were pure and vibrant yellow representing gold and sunshine. Gold was restricted to royal tombs, so the white color and tints of yellow were not originally gold color as analyzed in some other royal tombs in the fifth dynasty, but are pure white and pure yellow (Sabbahy 2019, p. 97). The original colors of the color scheme are blue, yellow, and red-brown. The background of the figures was painted in grey, creating a good visual contrast, and easily distinguishing the elements among the background grey color (Figs. 5, 7, and 8).

4.3 Color Inspiration

The question is, was the ancient Egyptian artist aware of the color wheel developed by sir Isaac Newton, the interrelationships between colors in the modern color theory, or the color schemes and color harmony basics? The answer is no, but he obviously had an inspiration source to learn about these principles.

The surrounding geography of Egypt was one of the most important sources of influence for the Egyptian artist. Egypt is situated in a special location enriched by the river Nile that still runs from Africa and splits in Egypt into several channels in the delta and then to the Mediterranean sea, forming a thread of life into the desert (Robins 2008).

This lively surrounding environment was a great inspiration source for him to learn, feel analyze and extract the color harmony from the nature around him, and so he began to build harmonious color schemes for his artistic compositions, resulting in a pleasing arrangement of colors in his elements corresponding to modern theories in color harmony.

4.4 Color Symbolism

While Color symbolism was associated with particular colors related to various cultural aspects. Also, Significant diversity in color symbolism existed between cultures and

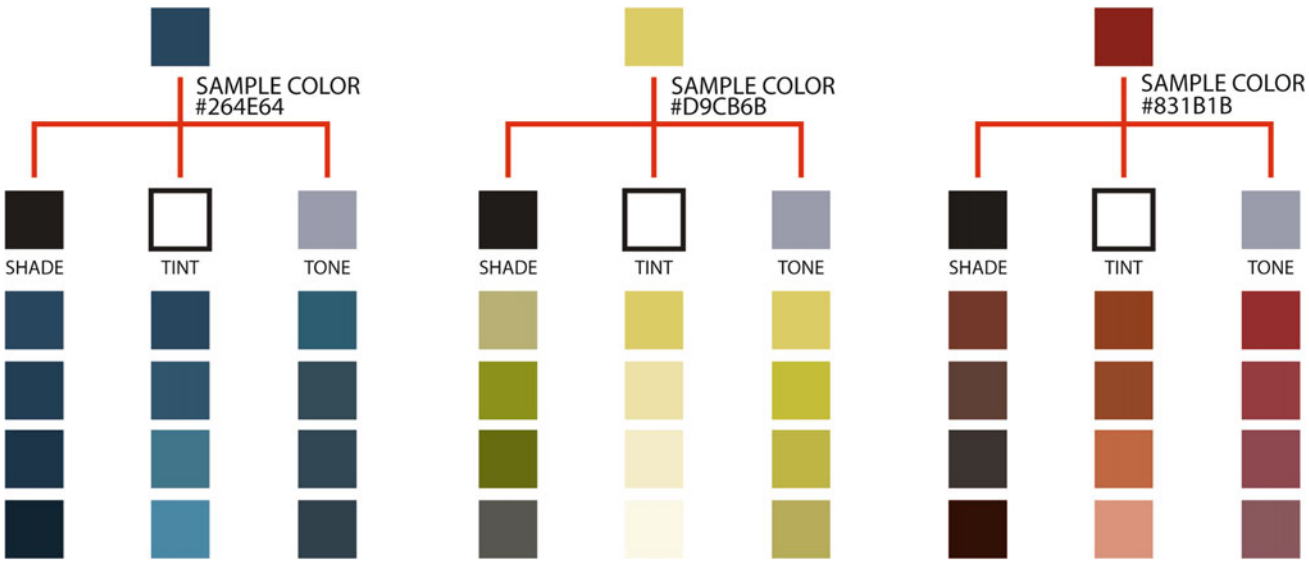


Fig. 6 Tints, tones, and shades extracted from the digital samples of the colors visible in Khuwy's tomb after degradation that were used alternatively by the Egyptian artist in coloring the scene

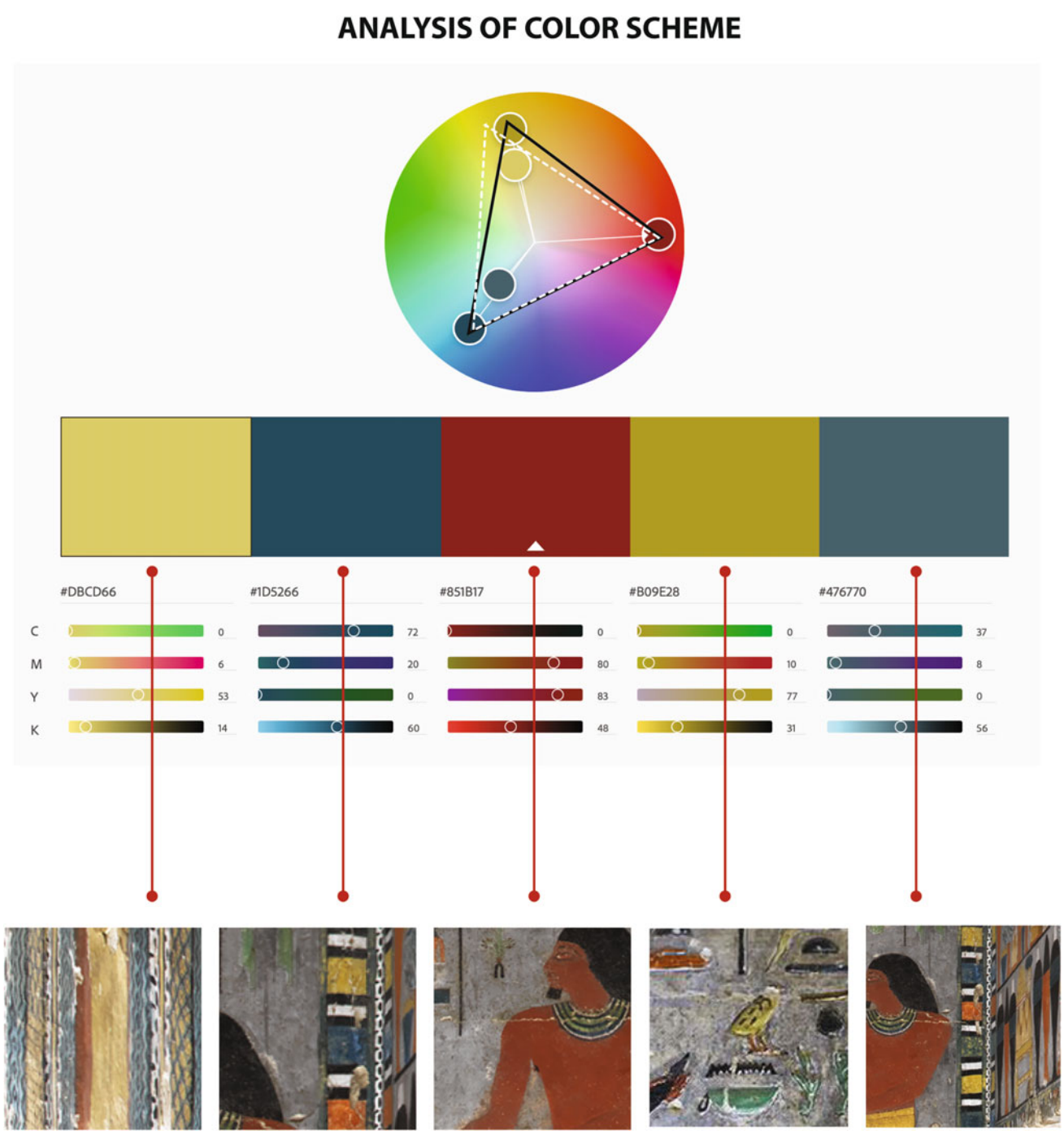


Fig. 7 The analysis of the digital samples of the visible colors after degradation indicates that the three colors are spaced around the color wheel building a triangle—represented by the black triangle in the figure—, the distribution of the colors on the color wheel resembles the distribution of the triadic color scheme which is distinguished by the equal spacing of colors on the wheel forming an exact equilateral triangle when joined with straight lines—represented by the dashed white triangle. When comparing both triangles the result is that the color scheme of Khuwy's tomb is almost following the triadic scheme. Photo adapted from Megahed and Vymazalová (2019)

Egyptian dynasties (Bleicher 2005, p. 18). Colors used on the walls of Khuwy's tomb were not used randomly, they were intended to convey meaning and give the image greater power (Sabbahy 2019).

The illustrations on the walls of the tomb represent the Nobel Khuwy in front of tables of offerings, the most dominant color in the tomb illustrations is yellow which symbolizes gold and precious offerings, and reflects the integrity

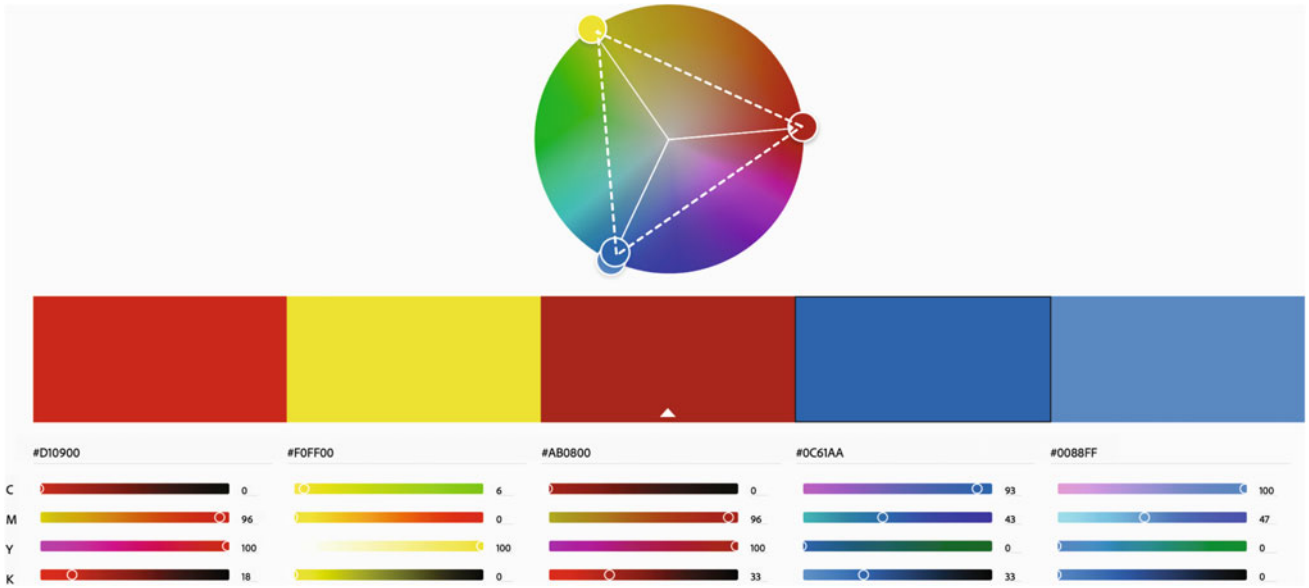


Fig. 8 The analysis of the original suggested colors of Khuwy's tomb, after considering the degradation factors according to the recent researches regarding chemical degradation of Egyptian colors are; Egyptian blue, yellow and red, results in an exact triadic color scheme forming an equilateral triangle on the color wheel

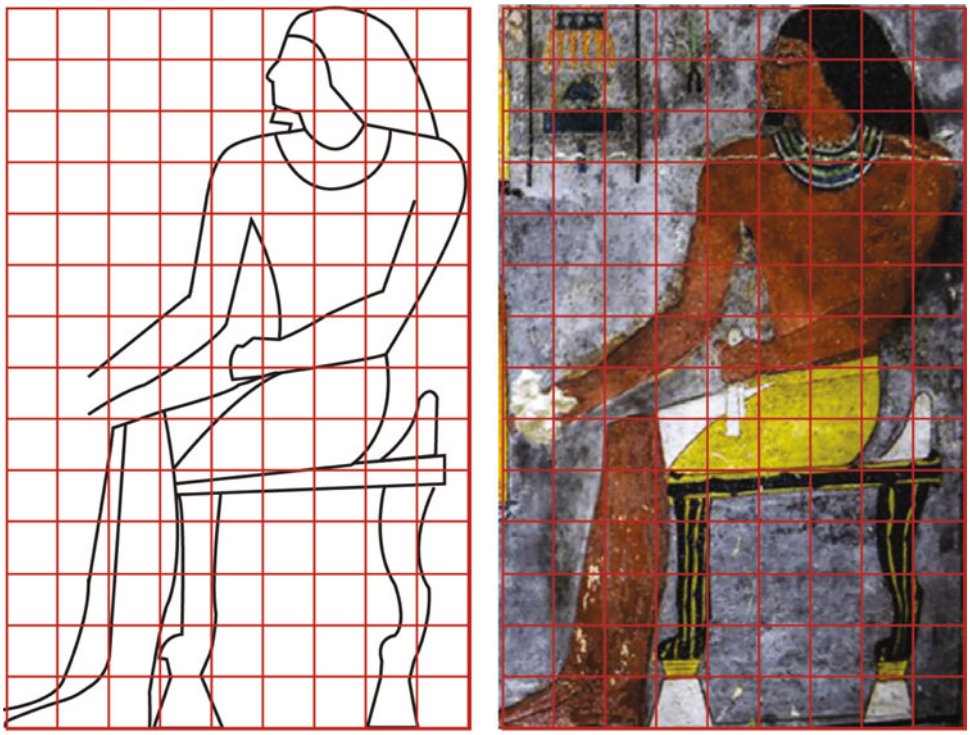


Fig. 9 The main seated figure of Khuwy in the front wall drawn on a 14-squared grid. Following the ancient Egyptian grid and proportions in the fifth dynasty. Photo adapted from Megahed and Vymazalová (2019)

of the scene, the Nobel Khuwy's clothes are colored yellow the color of gold (Sabbahy 2019). The blue color in ancient Egypt was the color of the heavens, the dominion of the gods as well as its significance to the Nile river the source of life in Egypt, the blue color is not as dominant as yellow in Khuwy's tomb, but is used intensively in patterns of water waves that may symbolize the Nile river, the source of life and heavens to the Egyptians, and so to the tomb owner Khuwy. The green on Khuwy's illustrations symbolized fresh growth, new life, and resurrection, it was also the color of the eye of Horus, which had healing and protective powers that the ancient Egyptians believed in (Nicholson and Shaw 2000).

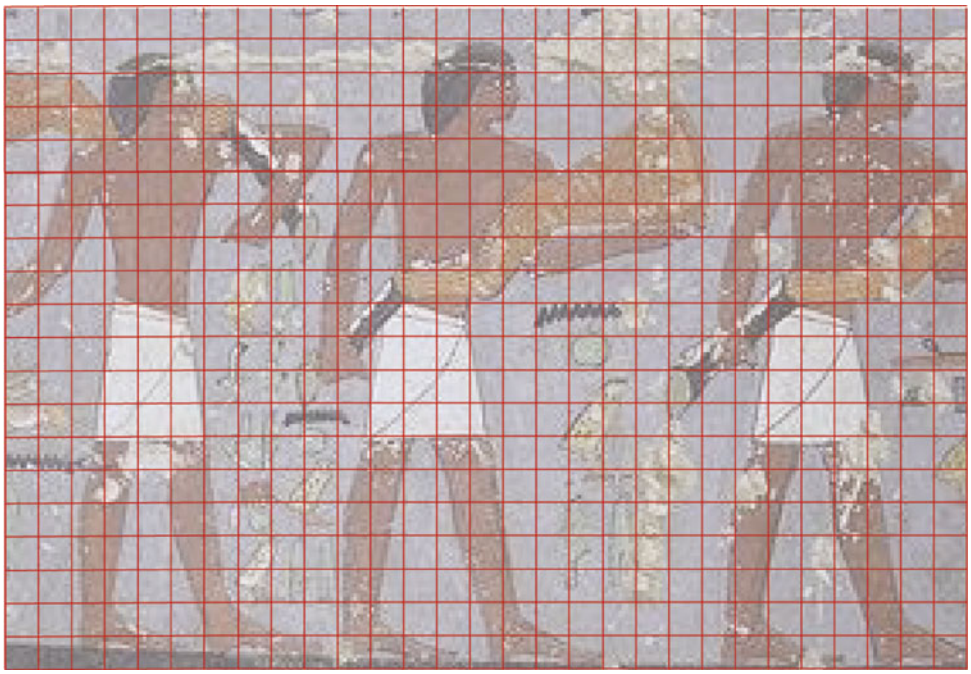


Fig. 10 The standing figures on the right wall drawn on an 18-squared grid. Following the same proportions and grid systems in the fifth dynasty. Photo adapted from Megahed and Vymazalová (2019

5 Analysis of Grid Systems and Mathematical Ratios

5.1 Khuwy's Figure

A grid system is a set of measurements an artist can use to align and size objects within the given format (Madsen 2019). The grid is such a strict mathematical concept. A squared grid was accurately used by the ancient Egyptian artist to draw the figures in all positions that ensured consistent proportions in the representations of human figures and also to layout the composition as a whole. The ancient Egyptian artist used a grid of 14 squares to draw the seated figure of Khuwy and an 18 squared grid for the standing figures, that was the same rules and proportions followed in the fifth dynasty with minor changes in proportions in the following dynasties in the middle and new kingdom (Figs. 9 and 10).

Khuwy's figure—following the Egyptian rules in the fifth dynasty in drawing figures—was illustrated from a dual perspective. The head is drawn in profile, but the human eyes, eyebrows, shoulders, and upper torso were drawn in full view so that the arms, hands, and fingers are visible to the viewer. The abdomen from armpit to the waist, the legs, and feet were all drawn in profile (Bunson 2002).

Through most of the ancient Egyptian dynasties the artist organized the objects according to a scale system, encoding the relative importance of figures, the more important a figure in relation to others the bigger in size it's represented, that's why the figure of Khuwy overlooks the scenes around

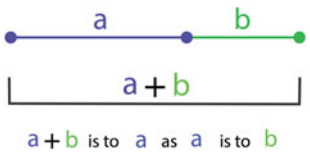
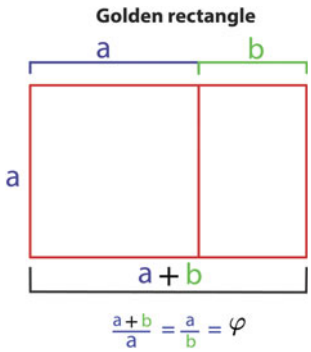


Fig. 11 The golden ratio (phi) represented as a line divided into two segments a and b, such that the entire line is to the longer a segment as the segment is to the shorter b segment (Birch, 2006, p. 2). Graphics adapted from https://en.wikipedia.org/wiki/Golden_ratio

Fig. 12 A golden rectangle with longer side ***a*** and shorter side ***b***, when placed adjacent to a square with sides of length ***a***, will produce a similar golden rectangle with longer side ***a + b*** and shorter side ***a***. This illustrates the relation $\frac{a+b}{a} = \frac{a}{b} = \varphi$ (Birch, 2006, p. 2). Graphics adapted from https://en.wikipedia.org/wiki/Golden_ratio



him and is much larger than other figures presented in the scene. As from at least the early Fourth Dynasty onward artists handled the combination of a large figure with several registers of smaller figures with ever-greater proficiency, and such proficiency requires accurate analysis to exclude the scale system and proportions between the elements, to know more about the ancient Egyptian artist (Abrams 1999).

5.2 The Golden Ratio

"The golden ratio is an irrational number defined to be $(1 + \sqrt{5})/2$ and has a value of 1.61803. It is an accurate ratio between the visual elements that are considered as the most pleasing visible proportion to the human sensation" (Dunlap 1997, p. 2), it exists in many forms surrounding us, in the natural world, the human body proportions and the patterns in many plants (Akhtaruzzaman and Shafie 2011), which is suggested to be a source of inspiration for the Egyptian artist in learning about the golden ratio.

The unique golden ratio "is derived from dividing a line segment so that the ratio of the total length of it to the length of the longer segment is equal to the ratio of the length of the longer segment to the length of the shorter one" (Dunlap 1997, p. 2), then this ratio is considered an accurate golden ratio (Fig. 11). A golden rectangle is constructed from these line segments (Fig. 12), mathematicians believe that a rectangle based on the golden ratio is the most aesthetically pleasing rectangle (Birch 2006).

Many researches have been made on the ancient Egyptian civilization, a civilization with astonishing architectural monuments that have been under investigation for the use of the golden proportions for a long time. As there was evidence of the golden ratio in the great pyramids n Saqqara (Birch, 2006). But none of these studies has investigated the use of golden proportions in the organization of the artistic scenes in the ancient Egyptian illustrations on the walls of tombs and temples, although all of the Egyptian wall arts are visually pleasing and astonishingly organized, the main reason is that most of the illustrations were not preserved through the years in a complete condition which makes geometrical measurements and analysis not accurate.

5.3 Analysis of the Geometric Proportions

An accurate analytical study was applied by the researcher to exclude the proportions between the visual components in Khuwy's tomb. The complete colored elements and the unique condition of Khuwy's tomb provide clear definite measurements of the elements, columns, and rows during the analysis as they are clearly outlined due to the completion of colors, which helped in obtaining accurate results.

Khuwy's tomb contains three walls; the front wall has a decorating border around three sides of it. The space within this border is divided into six horizontal registers in addition to two lower plain registers below the scene.

Calculating the measurements of the horizontal registers and the ratios between them revealed accurate proportions in distributing the elements. The length of the first four registers all-together (the figure of Khuwy on the right and the offerings facing him) to the length of the two registers below them (containing the four boats) reveals golden rectangles (Fig. 13).

The size of Khuwy's figure—occupying a rectangular space in the second, third, and fourth register—when compared to the space in front of him reveals accurate golden

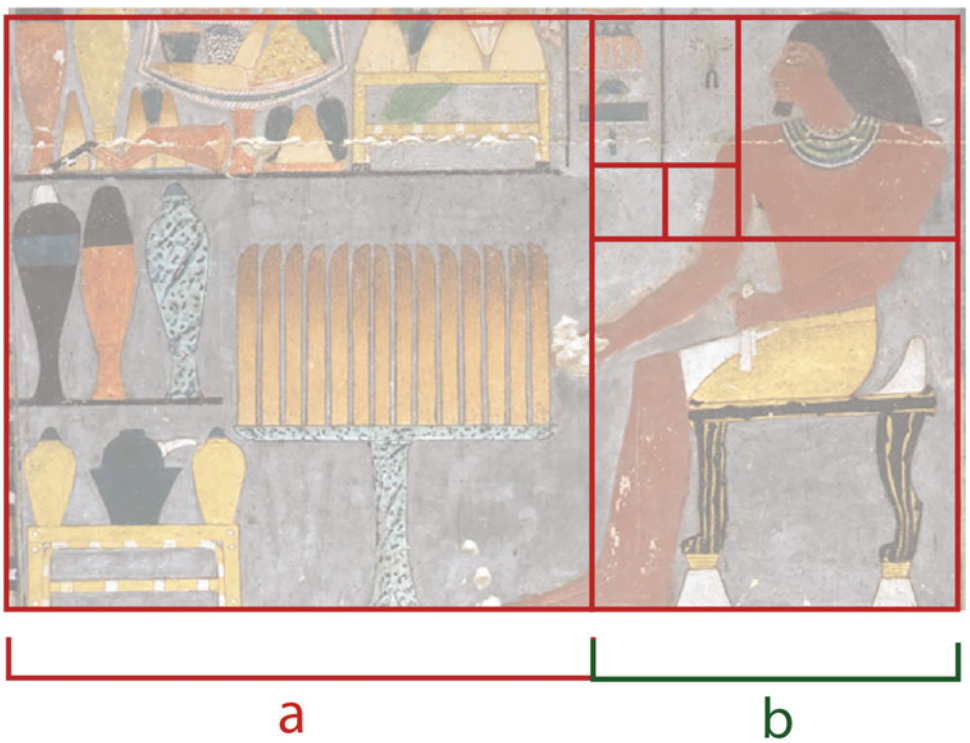


Fig. 13 Accurate golden rectangles in the proportions between Khuwy's figure and the space in front of him containing the offerings. Photo adapted from Megahed and Vymazalová (2019

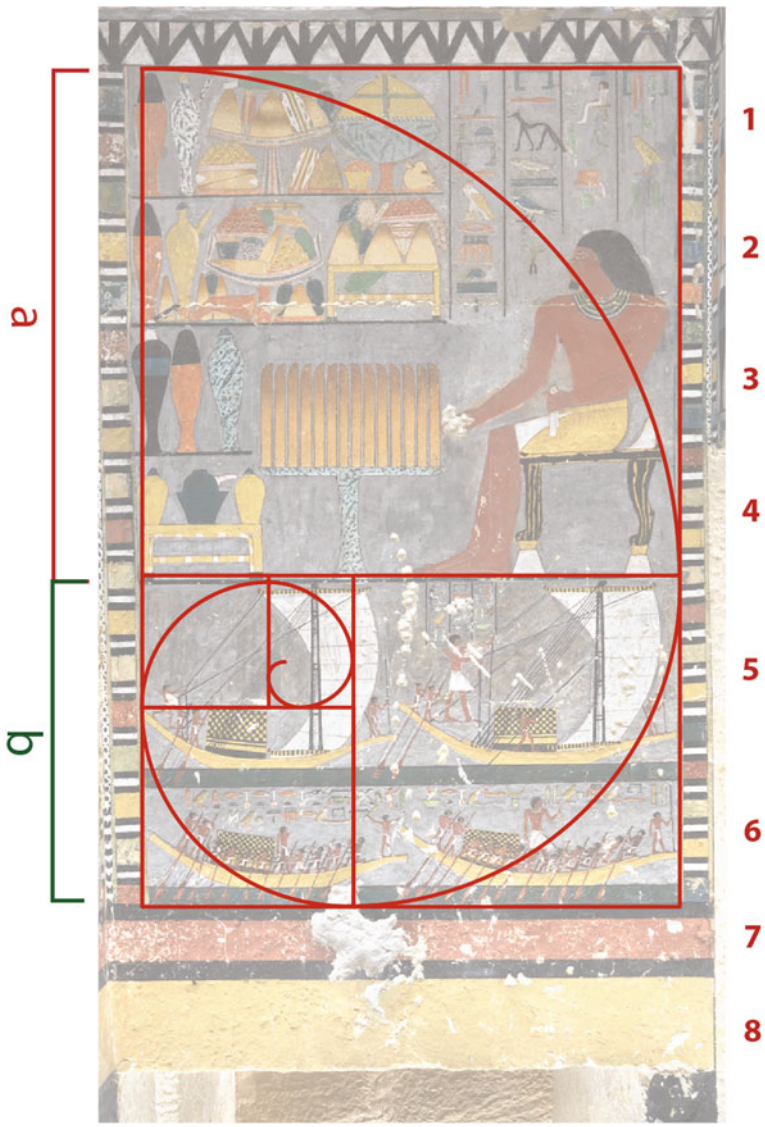


Fig. 14 Golden rectangles between registers (1-2-3-4) altogether to registers (5-6). Photo adapted from Megahed & Vymazalová (2019)

ratio through golden rectangles (Fig. 14). Also, golden ratios were remarkably measured between the height of the fifth to the sixth horizontal registers and the height of seventh brown register to the eighth yellow register (Fig. 15).

The golden ratio indicated between the heights c:d is calculated from the top of the second horizontal black row to the middle of the first horizontal black row (height d) compared in ratio to the height measured from the middle of the first horizontal black row to the end of the wall (height c).

The golden ratio calculated between the heights a:b is measured from bottom of the first horizontal black row to the top of the second horizontal black row (height b) compared in measurement to the (height a) calculated accurately from the top of the second horizontal black row to the bottom of the third horizontal black row resulting in accurate golden ratio indicated between heights a:b.

The golden ratio indicated between e:f is calculated from the bottom of the third horizontal black row to the dashed line indicating the top of the offerings carried on the boats (height f) compared to (height e) measured from the dashed red line to the top of the horizontal row of the boat scene, resulting in accurate golden ratios between e:f.

The boat scene is also organized with accurate golden proportions (Fig. 16) the figure standing on the boat is perfectly centered in a golden square facing the boat sail. The boat sail also follows the curve of the golden spiral, and the height of the boat hull including the offerings box and the horizontal black row below it when compared to the height of the space above them maintains accurate golden ratios (Fig. 17).

The left wall contains a secondary scene where a decorating border is used all-around the scene containing geometrical patterns similar to that in the front wall. The scene is

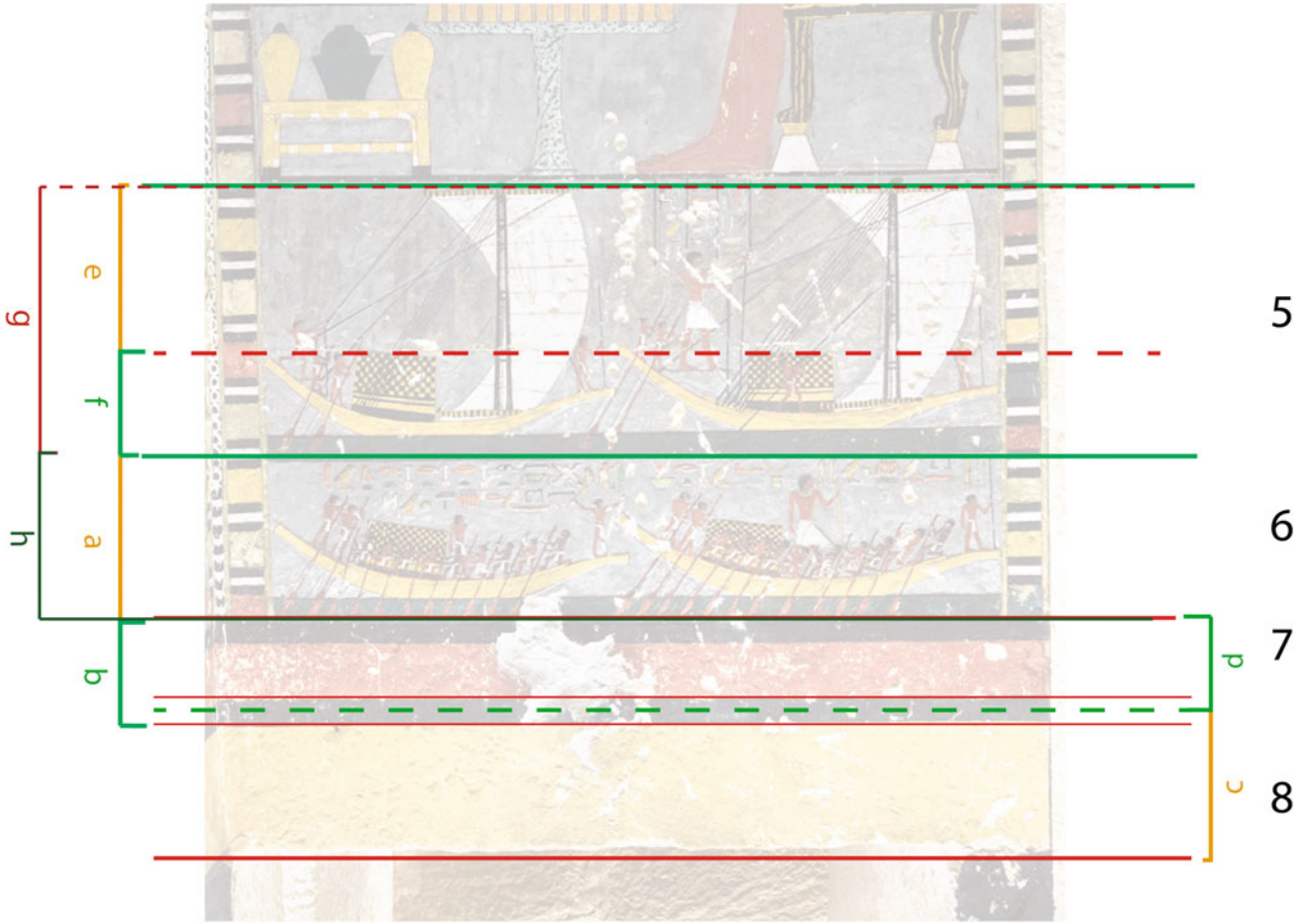


Fig. 15 Golden ratios indicated accurately between the heights of the lower registers in the main scene in the front wall. By geometric calculations ratios between the heights a:b, c:d, e:f and g:h indicates golden proportions. Photo adapted from Megahed and Vymazalová (2019)

divided into main three horizontal registers following the same horizontal lines in the front wall which emphasizes the visual movement through one architectural space to the following one, and therefore maintaining the same heights of the registers and revealing the same accurate golden ratios between their heights following the other walls (Fig. 18).

The upper two registers are divided vertically into columns. Each column contains a kneeling figure and hieroglyphic writings above it. When measuring and analyzing the height of the figure to the space above it in the column it maintains accurate golden ratios (Fig. 19).

The right wall is different in the organization of the scene, as it is not following the same horizontal registers used in the front and left wall, but is divided into vertical columns. The main column wider in size containing hieroglyphic texts is the center of attention that acts as a vertical axis for the scene maintaining symmetrical balance, where columns on the right side are reflected on the left side as a mirror. The right and left columns contain geometric patterns. Clear accurate measurements for all vertical columns have been calculated and analyzed mathematically revealing multiple golden proportions in tremendous accurate measurements (Fig. 17).

6 Geometric Patterns

Patterns were frequently used in the ancient Egyptian arts in the fifth dynasty, but there isn't any real evidence that the patterns themselves had a religious significance, but it is believed that the Egyptians tried to maintain balance and fill the spaces in their work with patterns (Sorensen 2013).

The right wall of Khuwy's tomb contained several geometric patterns filling vertical columns, the patterns are extracted from the surrounding environment as it was a great inspiration source for the Egyptian artist to study and extract patterns from. Water waves, plants, and animal skin were the most obvious patterns in Khuwy's tomb (Fig. 20).

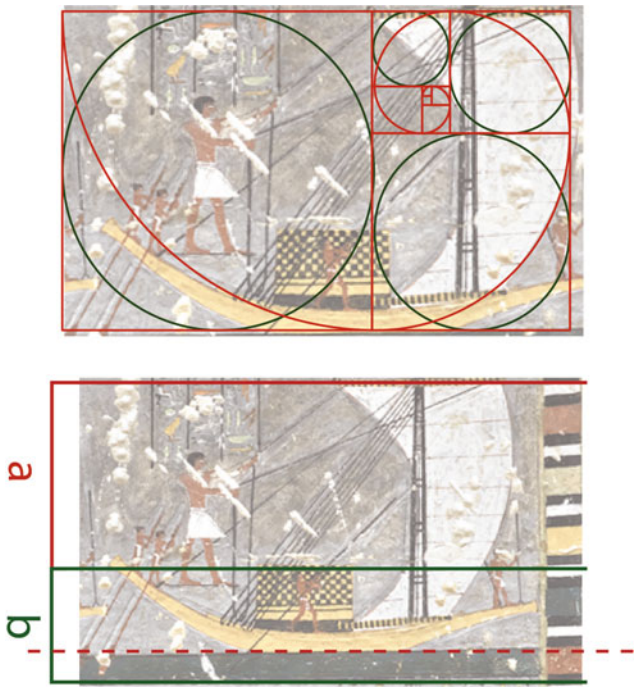


Fig. 16 Accurate golden proportions in the organization of the boat scene. The figure is centered in a golden square facing the sail that is following in its structure the golden spiral. The height (b) measured from the top of the offerings to the bottom of the horizontal black row below the boat hull altogether compared to the height of the space above them (a) follows golden ratios represented in the figure a:b. Photo adapted from Megahed and Vymazalová (2019)

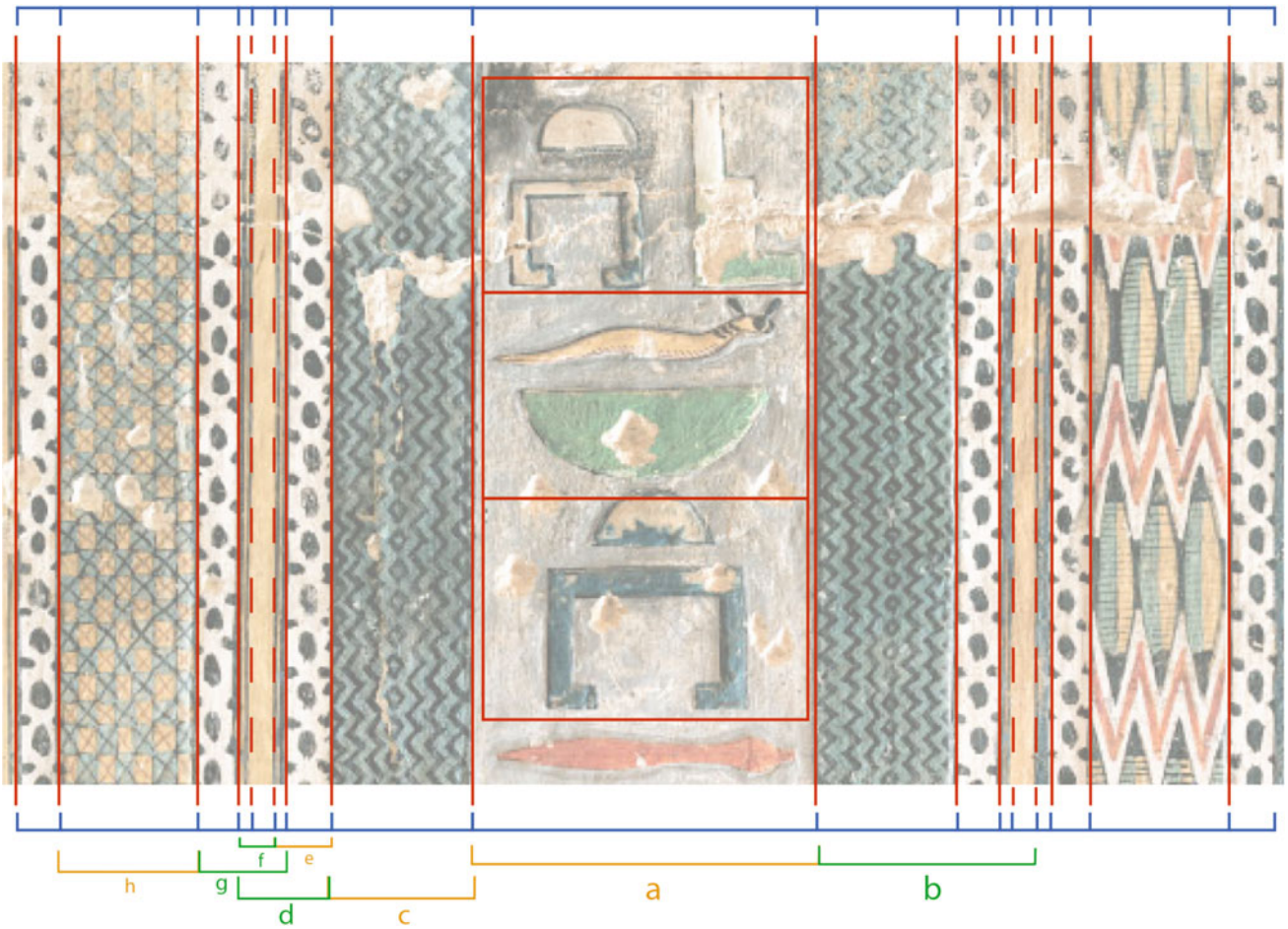


Fig. 17 Calculating the width of the columns and analyzing the ratios between their measurements reveals accurate golden ratios shown in the figure between the width a:b, c:d, e:f and g:h. Photo adapted from Megahed and Vymazalová (2019)

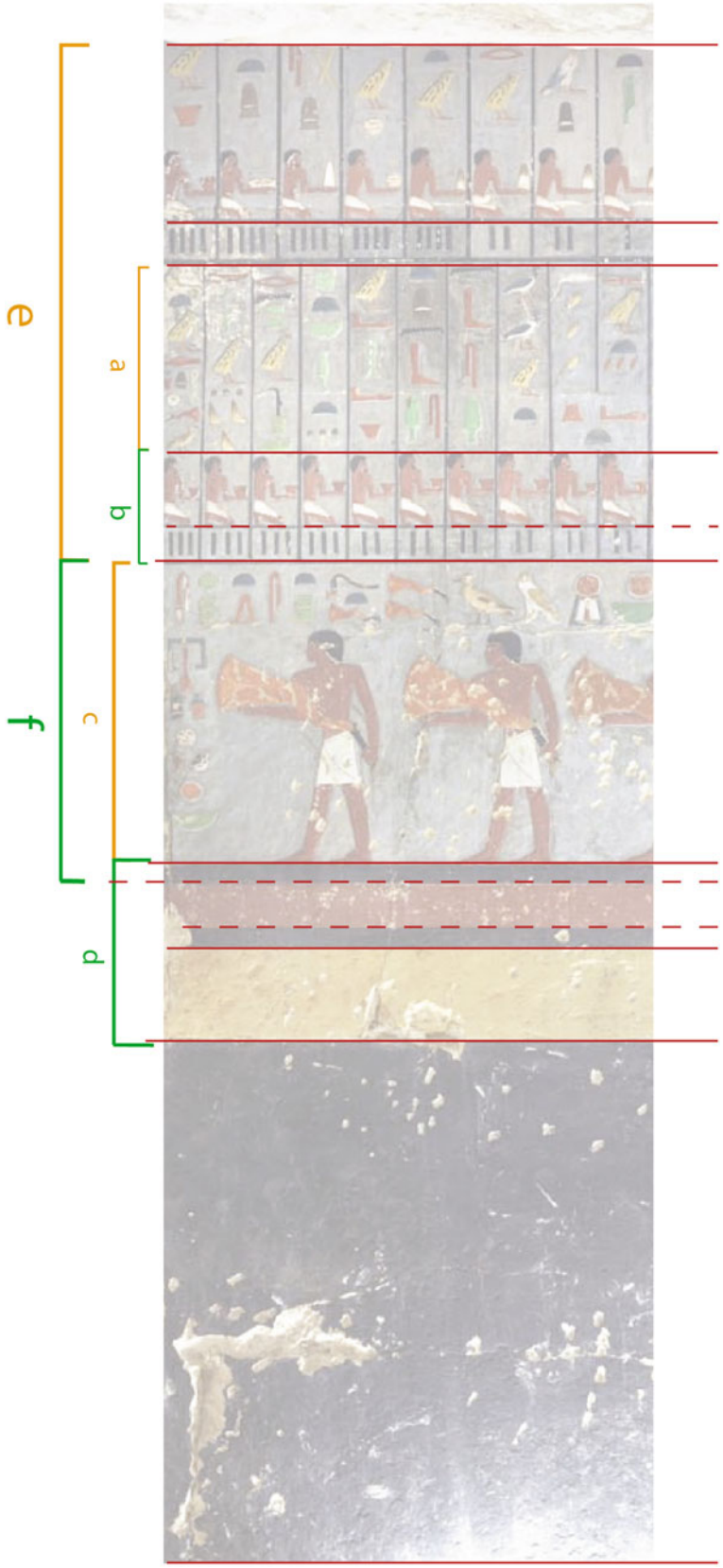


Fig. 18 Geometric measurements of the left wall horizontal registers indicate accurate golden ratios between the heights a:b, c:d, and e:f, following the same proportions on the front wall. Photo adapted from Megahed and Vymazalová (2019)

Fig. 19 The detailed study of the left wall vertical columns in the first and second upper registers shows accurate golden ratios between the heights occupied by the kneeling figures and the space above the figures, a: b. Photo adapted from Megahed and Vymazalová (2019)

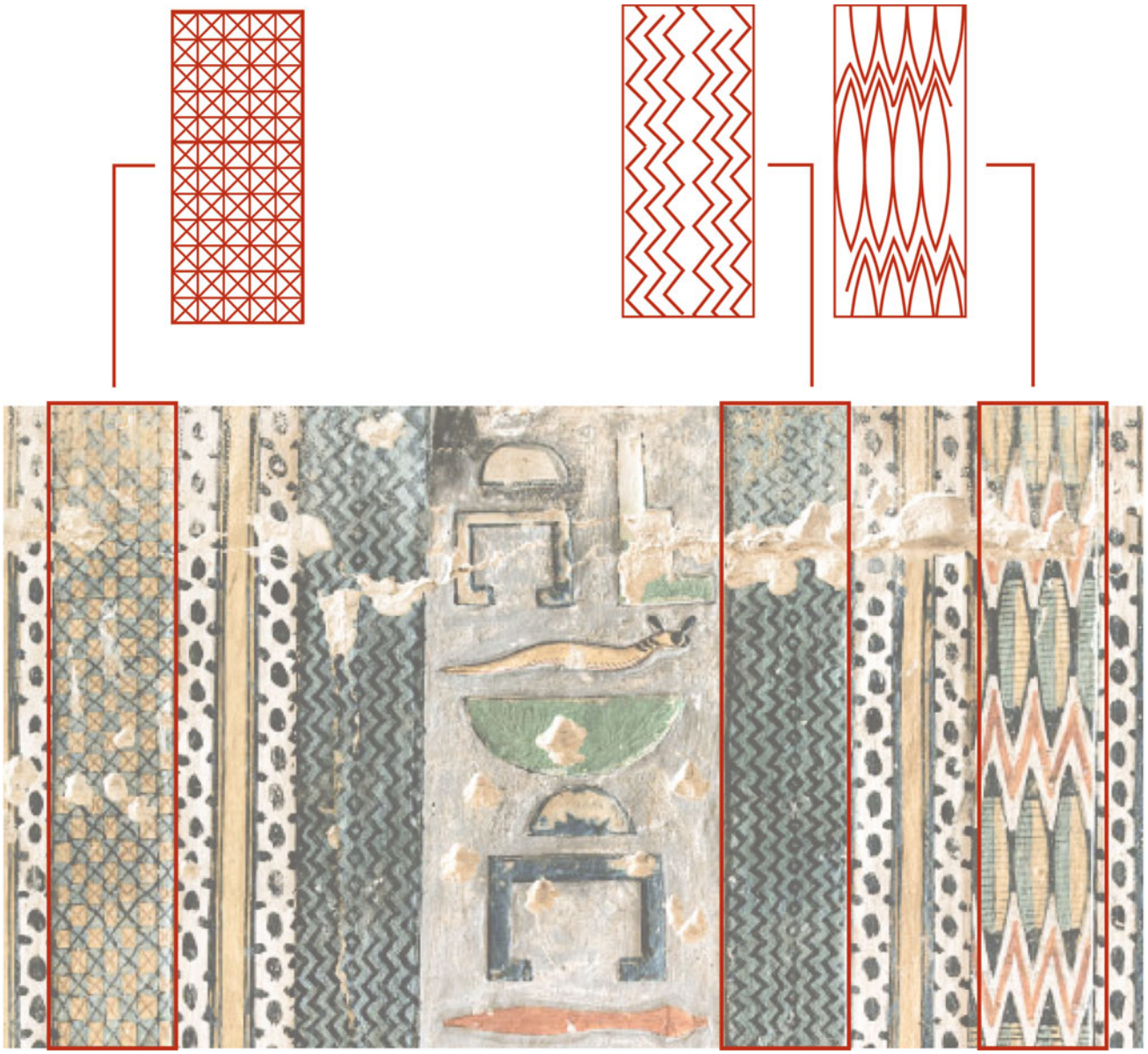


Fig. 20 Extraction of the geometric patterns in Khuwy's tomb. Photo adapted from Megahed and Vymazalová (2019)

7 Conclusion

This research is a progress in the study of art in the fifth dynasty, as it revealed more information about the ancient Egyptian artist and his understanding of color harmony, grid systems, and golden ratios implemented to organize the visual artistic content. The surrounding environment of Egypt was a great inspiration source for the ancient Egyptian artist to learn and feel the color harmony in nature and therefore build remarkable color schemes, which explains the use of the triadic color scheme in Khuwy's tomb. Also, new geometrical patterns have been concluded from Khuwy's tomb inspired by water waves, plants, and animal skin as the Egyptian artist tried to maintain balance and fill the spaces in his work with patterns.

Many researches have been made on the ancient Egyptian civilization to discuss the use of golden ratios in the Egyptian sculptures and architecture, as there was evidence of the golden ratio in the great pyramid complex, but the study of its appliance in the organization of elements in wall arts was not proved. The complete colored elements and the unique condition of Khuwy's tomb provided clear definite measurements of the elements, columns, and rows during the research analysis, as they are clearly outlined due to the completion of colors, which helped in obtaining accurate results, and therefore concluding numerical evidence of the use of golden ratios in all the proportions of the artistic scene in the three walls and in the detailed figures, which is a starting point to the comprehensive studies about the Egyptian artist from the old to the new kingdom.

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Urban Growth and Design: Changes in Cities and Urban Identity

In light of globalization, the increasing needs of populations and rapid economic, technological and social development, changes in urban areas, historic centers and cities have proved inevitable. These changes often occur as discrete adaptations or with radical interventions. In part one, the book establishes an understanding that cities bear witness to different historical periods and incidents across time and possess the unique architectural and urban characteristics of those periods, all of which contribute greatly to their identities. However, as old cities transform into new capitals, and eventually struggle for more capital, challenges of maintaining their identities, making necessary adjustment and adaptation to present needs as well as fears of dislocation and violent discontinuation with the past arise.

In the chapter titled "Psycho-Social Impact of New-Communities Ads in Egypt on Impending Crime Rates", the authors study the effect of gated communities in Egypt, and the advertisements curated to market for them, on crime rates. With a belief that gated communities help in damaging a city's identity and urban fabric through physical segregation, it explores the reasons by which these gated communities came to exist and the effect they had on behavior of even the users.

This part of the book stimulates discussion on how cities are made and re-made, used and abused expressed and projected. It sheds a light on the ambiguity and complexity that is the concept of identity and the factors affecting it as well as how those factors are reflected in a city's architecture. Furthermore, the upcoming chapters showcase recent findings on the ways in which architectural and urban identities can be expressed in contemporary design and modern developments. In chapter "Is It Possible To Define Architectural Identity More Objectively?" Hamed, Hanks & Qi in their quest to define architectural identity more objectively take on the City of Khartoum, the capital of Sudan, as a case study to explore its contemporary architectural identity. Their research has indicated that contemporary architecture has completely disregarded the Sudanese architectural identity in design processes.

Moreover, the chapter titled "Using Sonic Perception to Improve Public Spaces and Develop Place Identity" examines the inclusiveness of features within a city to special needs individuals, specifically the visually impaired. The authors conduct a study where a soundscape method in public areas and facilities is implemented, and a principal component analysis (PCA) was run, to map the most prominent 'sonic dimensions' for the visually impaired in hopes of providing them with guidance, safety and an acoustically comfortable environment.

In the last chapter of this part, "Porous Images: Benjamin Reveals Naples", the failed utopia of modernity, especially in the Mediterranean area, is explored. The author refers to the notion of 'porosity' as a generative power of modernity. This study is an attempt to establish an effective urban approach by using porosity as a tool for urban regeneration. The author identifies four 'porous categories' of urban interpretation and formulates a design approach for the city of Naples.

Psycho-Social Impact of New Communities Ads in Egypt on Impending Crime Rates

Yasmin Moanis and Rasha ALi EL-Ashmawy

Abstract

It is obvious that the impact of the media in Egypt has changed in the last few years due to the political, urban, and social changes that took place in 2011, while it reflects society to a certain degree; it also has the effect of "normalizing" values or behavior. These came to include the advertisements for new settlements and communities in places like new Cairo and new Giza. People at the community level in their search for the concept of safety and isolation, found ads that stressed about the safety of its streets and how to get away from the noise and unsafe, crowded old Cairo to the new one. That is why studying those advertisements of gated communities in Egypt and their influence on the political, social, and behavioral scale, and how they affect the crime rates and behavior of the crime itself will help in future gated communities deign and the greater Cairo region. This paper is about gated communities; but it will discuss the idea of marketing psychology and its impact on the social level of Egyptian citizens, throughout comparative analysis and analysis for the advertisement of the real estate manufacturing media, its impact on the behavior of the users of that gated community and also the impact on the crime type, taking into consideration the study of crime indicators relating to community sustainable development.

Keywords

New housing settlements • New Cairo • Disorder behavior • Crime • GCR • Social impact • Behavior

1 Introduction

The concept of gated communities has been developed through the past three decades in many countries around the world, and many forms of gated spaces have been brought up like privatizing some parks, streets and even properties with some sort of fences or gates, and with the act of urbanization and the urban growth that took place and the efforts to develop the country extensions, this has led to a wide spread of gated communities as a new trend in urban extension for many cities now a days.

The word "gated communities," extensively ranged all around the world; it ranged differently from country to country according to their needs, development of security profile, culture, urbanization, and prestige. As an example of the first attempts of gated communities in the United States of America, it was an experience for the urban elites (Blakely and Snyder 1997a, b). On the other hand, in Latin America, the idea was first discussed for summer resorts and then later as an urban solution for ethnicity (Lentz 2006; Stoyanov and Frantz 2006). In Europe, it first appeared on the coastal line as seasonal accommodation for certain categories of citizens, while, in South Africa, these communities appeared to solve some of the daily problems of high crime rates and ethnic conflicts (Landman and Schönteich 2002).

Many inhabitants try to improve their status as well as their safety perception and prevention of violence in many ways: One of which is through moving to gated communities, changing lifestyles and limitation of movement and social restriction (Lemanski 2004), and by developing those gated communities, based on the safety concept more and more inhabitants will try to reach for those communities that turn their back to the city with no sustainable advancing plan (Table 1).

Gated communities as an urban phenomena were handled by researchers mostly on the urban scale and how to be designed, well maintained and developed to help those communities to be part of the city attached to it. After the

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https://doi.org/10.1007/978-3-030-51961-2_6

Table 1 Point of views of the gated communities' researches

Past research topics on gated communities
Gated communities—a positive housing phenomena
Gated communities—a social balance debate and arguments
Gated communities—development
Gated communities—well-being
Gated communities—impact on the urban development of new cities
Gated communities—experience from different countries
Gated communities—future extension for the gated communities

Source Researcher (see references)

privatization of some of the gated communities that attract the developers to invest in them, some new challenges have faced the gated communities including social balance and ownership (Table 2).

The gated communities in Egypt were first proposed in the early 1980s as a solution for some overpopulation problems, unemployment, urbanization, globalization, and economic restrictions. These private gated communities housing choices targeted low- and middle-income strata and were owned by the government with affordable prices. Then, after a while, it was derived to be a money-making business that attracted the real estate segment and also provide the security needed after 2011 events in Egypt.

Here comes the role of real estate investments and television advertisements to promote safety and well-being inside their gated communities' environment, promising those users that they will find all security needed and more services for them and for their children.

And for that tackling the issue of safety and crime that was developed due to those settlements due to the social segregation in the fabric of the society, it should collaborate with the researches that aim to discuss the issue of gated communities to help in real development process and introduce the safety perception to the urban design as a tool to develop them.

2 Research Method

This research provides an attempt to investigate the safety aspects inside the gated communities and how it was affected by the advertisement and the changes that took place for in the urban fabric from inside and outside. Regarding Egypt, it will discuss the role of real estate advertisements, throughout some analysis for the advertisements of real estates and their influence on people's perception of safety inside those communities and if these are the right way to advertise those communities or not. And to assess the current crime rates of the gated communities' related to those advertisements, and how the gated communities nowadays fulfill the user safety requirement that was first published by the advertisements.

3 Gated Communities

As a fact, gated communities have existed for centuries, starting from the medieval fortress to an apartment building or hotel that restricts entrance by posting a doorman or a security door. Modern gated communities simply accommodate a larger community in single-family homes instead of condos or apartments. If you are interested in buying

Table 2 Illustration of the GC problem definition

	Problem	Target group	Owners	
1980	• Over population • Unemployment • Urbanization • Globalization • Economic restrictions	• Low income • Mid-income	Government	Solving problem
No services provided by the government and infrastructure				
1990	• Non-occupied land • No services offered • Need for foreign investments	•	Above-medium • Rich people • Luxurious people	Real estate factories and organizations
	Increasing problem			

The production of problem starts when the government starts to privatize that land to the real estate companies and turned it to profitable projects for the privet sector

Source Researcher. The Results and Impacts of Egypt's Privatization Program Special Study August 2002

property inside a gated community or avoiding one, all were searching for safety and isolation from enemies and bad condition of outside.

- **Definition**:

Wikipedia	A gated community (or walled community) is a form of residential community or housing estate containing strictly controlled entrances for pedestrians, bicycles, and automobiles, and often characterized by a closed perimeter of walls and fences
Dennis Hartman	Any type of neighborhood that has controlled access using one or more gate that residents or visitors must pass through
S. Roitman PhD	A gated community is a housing development on private roads closed to general traffic by a gate across the primary access. The developments may be surrounded by fences, walls, or other natural barriers that further limit public access
Ed Blakely and Mary Gail Snyder	Residential areas with restricted access in which normally public spaces are privatized. They are security developments with designated perimeters, usually walls or fences, and controlled entrances that are intended to prevent penetration by non-residents. They include new developments and older areas retrofitted with gates and fences, and they are found from the inner cities to the exurbs and from the richest neighborhoods to the poorest
Collins	A gated community is an area of houses and sometimes shops that is surrounded by a wall or fence and has an entrance that is guarded

So it could be defined as "*certain land surrounded by walls or fences, with a certain social neighborhood that in search for healthy, safe, social environment to live in away from outside unsafe conditions*."

- **Types and attracting factors**

Most of the studies that take the gated communities into consideration, divide them into three types: **Lifestyle, prestige**, and **security zone** communities. In theory, the categories represent ideal types that serve particular markets. In practice, they say, communities may show a combination of features from these types (Shehayeb et al. 2007) (Table 3).

"The gated community represents the segregation of the population. Those who are gated are choosing to protect themselves from the rest of the city. This is contrary to the vision of a democratic and open city. The outcome is that the urban pattern becomes more segregated, more differentiated. This is not socially admirable or economically productive"—Joan Clos I Matthieu, Executive Director of UN Human Settlements Program.

This quote for Joan Clos says it all about the gated communities from the types of gated communities mentioned above, and it really represents the idea of isolation for the residents inside that gated communities from the outer area of these communities and that is exactly what the advertising agencies use as a target point to tackle the problem of security disorder, as most of the South African countries did (Landman and Schönteich 2002).

Gated communities are housing concepts that response directly to the factors of attraction that increase the rate of occupancy in these communities: safety, security, privacy, facilities, amenities, limitation of access, rules and regulations, luxury, land ownership, development plans, and management corporation are only some of the attributes that people buy into these communities for (Table 4).

- ***Marketing psychology***

Marketing psychology depends mainly on linking a range of psychological principles into the consumer mind data, to convince the consumer that the data offered by the advertisement is a necessity. Going further, marketing psychology is a way to look for certain arrays of humans and assess how this relates to their purchase decisions (Aune 2011).

Going back to the psychological effect of marketing and advertisement on the consumer, and the twist of the fact "first build then sell" to a "first sell and then build" which led to building an imaginary icon in the consumer's mind before buying. This is evident in the **Turkish case**; the roots of gated communities in Turkey go back to the mid-1970s, as a result of the increase of summer housing in coastal regions in the western and southern Anatolia (Dündar and Özcan 2003). And the basic reason for building these communities goes back to security reasons. In the 1990s, the gated communities were a common social and spatial phenomena. It was one of the first trials of suburbanization that was popular for the modernist emphasis on rational design, ventilation, and greenery (Bozdoğan 1997: 145), many banks started to offer long-term and low-interest credit, to help reduce the huge housing shortage for middle socioeconomic strata following the urbanization that affected the inner rural migration (Bozdoğan 1997; Aysever 2010). However, the bank ended up funding the construction of modern, expensive, and luxurious residential complexes like Ataköy (Fig. 1).

The problem of that gated community started when the bridge that was designed to link the gated community to Sirinevler started to take place over a lower-class district. The concern about safety for the gated community residents resulted in fencing the houses and the green areas, moreover,

Table 3 General typology of the gated communities

Type	Feature	Subtype	Characteristics
Lifestyle	This project emphasizes common amenities and carter to a leisure class with shared interests may reflect small town nostalgia: may be urban villages, luxury villages, or resort villages	• Retirement • Golf and leisure • Suburban new town	• Age-related complexes with suite of amenities and activities • Shared access to amenities for active life style master-planned project with suite of amenities and facilities often in the Sunbelt
Prestige	These projects reflect desire for image, privacy, and control; they focus on exclusivity over community; few shared facilities and amenities	• Enclaves of rich and famous • Top-fifth developments • Executive middle class	• Secured and guarded privacy to restrict access for celebrities and very wealthy; attractive locations • Secured access for the nouveau riche; often have guards • Restricted access; usually without guards
Security zone	These projects reflect fear; involve retrofitting fences and gates on public streets; controlling access	• City perch • Suburban perch • Barricade perch	• Restricted public access in inner city area to limit crime or traffic • Retracted public accesses in inner city are to limit crime or traffic • Closed access to some streets to limit through traffic

Source Blakely and Snyder's (1997a, b)

Table 4 Characteristic of gated communities

Characteristics	Features
Security	• Surrounded by fences and walls • Physical security guard, central monitoring system. • CCTV system
Privacy	• Privatization of public spaces • Private roads • Private amenities
Facilities and amenities	• Residents own and share the facilities and amenities provided—recreational park, swimming pools, golf course, sport center • All facilities are maintained by management corporation
Limitation of access	• Limited public access—controlled by security guard • Access or pass card needed
Rules and regulations	• Residents are restricted by specific rules • Requires to pay management and maintenance fee
Luxury	• Physically housing designed with luxurious lifestyle • Housing type—bungalow, semi-detached, town house, and double/three story terrace • High-class facilities—sport center, swimming pool, club house, golf course
Ownership	• Strata title • Individual title
Development	• Landed properties • High-rise properties • Mixed housing development
Management	• Established under Commissioner of Building of local authorities • Private governing body

Source Said and Martin (2013)

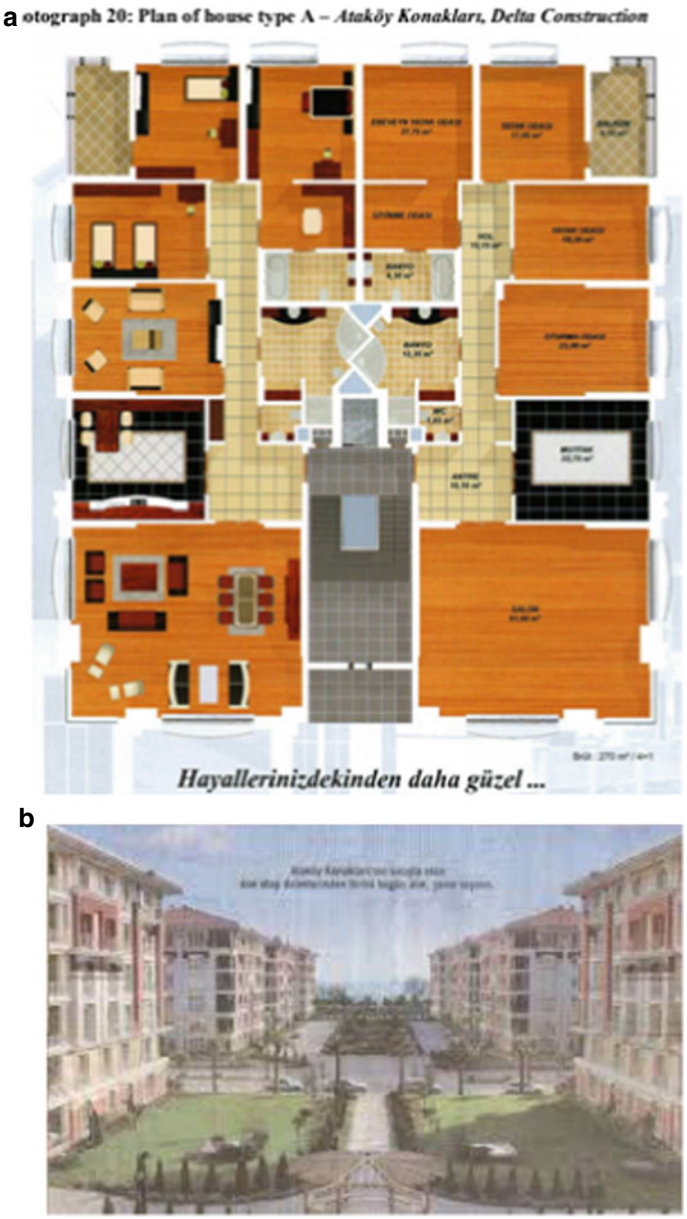

Fig. 1 **a** (Top) and **b** (Bottom) the advertisement of a gated community in Bakırköy. *Source* Çizmeci, Füsun and Ercan, Tugce (2010)

many of the disordered behavior resulted from that social segregation that took place like fingerprinting the flow of the many disordered fingers going to and fro the highly categorized buildings and villas of the wealthy residents. (Aysever 2010).

The Egyptian case: "Not everyone can live inside our community" that is how the media refers to one of the gated communities advertisements in el Sheikh Zayed. And that slogan was taken as proof of how they interview every single one who will enter that community to ensure the total isolation between the rich and wealthy people and the common ones. And that is considered as being social discrimination, as mentioned before, and one factor of revealing of crime.

After the security disorder and the unbalanced political situation in Egypt, the citizens were in a deep need to feel safe again and to increase the security in streets, the advertisement agencies took advantage of this situation and started to tackle the idea of gated communities, and how the closed circuit television (CCTV) system will fill the gap of the security disorder, and they convinced most rich people and mid-income families to come and join their communities to enhance the feeling of safety and privatization and luxury with people like each other.

The appearance of those types of advertisement in that time for different target groups was considered provocative to the middle and low-income citizens, who are always

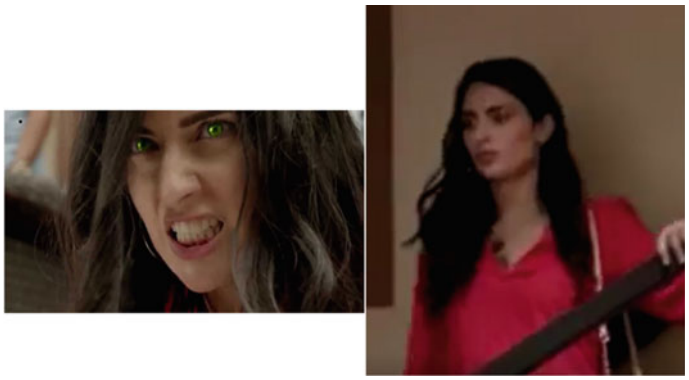

Fig. 2 Violent side of the Ads to convince users to be part of their GCs. *Source* Media advertisement

seeking for a better life for them and their children and searching also for the safe environment to live in.

And as a reason for keeping that advertisement on the TV is that the crime rate inside Sheik Zayed increased dramatically reaching an approximate of 40 robberies in just one day. (**Sheikh Zayed Police Department**), despite the appearance of criminal gang stealing bags on motorbikes, as well as, cars and motorbikes of the resident of that gated community.

The common reason between all those crimes is that most of them are caused as a result of the hatred or the social discrimination and social segregation between the social fabrics of citizens in and out of the gated communities and also by the influence of the advertisement that shaped the image of the main city as not safe and the image of gated community that is much safer and happier (Figs. 2 and 3).

Fig. 3 Violent side of the ad to convince users to be part of their GCs. *Source* Media advertisement of Mountain View. https://alexofarabia.com/2015

Looking back to what happened, we will find that most rich people start to remove themselves from inside Cairo to outside new Cairo, for more luxuries, western and isolated lifestyle and most of the mid-income started to take on loans from banks to improve their lifestyle and to move also to the outside of the old Cairo, which leaves the low income inside the main city to their crowded, unhealthy social environment with unbalanced social segregation.

4 Gated Communities and Security

Actually, there is no reason that makes gated communities safer from any place else; on the other hand, the gated communities as we experience it nowadays, it works as a crime detector as the rich people are enclosed inside that community which eases the work of the criminal to find an easy target. And for the restricted gates and the CCTV system, the natural surveillance is much better to deter crime in any space. Nevertheless, the life inside the gated communities is not as problem-free as promised. The urban phenomenon makes visible the existing social inequalities and intensifies social segregation by creating new barriers between the rich and the poor (Roitman 2005; Hipp 2010).

Gates of the gated communities provide the felling to those who believe that gated communities and property fencing cut down on crime. The thinking is that because security fencing and gates provide limited access to non-residents; it only makes sense that there will be a limited number of property crimes (Fig. 4).

Comics always carry the situation from the society and daily events, gated communities are for some people, some residence is a disease that they have to get rid of, being in a GC or fenced area is compared to being in a prison, and the isolation offered by these communities to the rich people makes them a good target for robbers and thieves.

Fig. 4 Comic shows the unequal social segregation of society because of the GCs presence. *Source* Cartoon Stock. Clay Bennett's Editorial Cartoons Published 2011-05-18 (Image 61154)

5 Reasons to Immigrate to Gated Communities

The main reasons for moving from the city Center of Cairo to the outer skirt of new Cairo as mentioned before, are affected by many reasons;

(1) A desire for security and the fear of crime, especially after January 25, 2011, although the security instructions are planned to do more than just deterring crime. The developers and residents vision for security are not only about searching for a crime-free community, but also annoyance-free from strangers of any kind. The advertisements complete the image for the resident through providing a mental image that being in a gated community removes you away from the low-class residents which make your life harder, unsafe and with no personal privacy as well.
(2) A desire to establish a buffer between individuals and society through creating a generation that feels that they are better and distinguished from others, and that is, the first act of discrimination which in turn will lead to disordered acts to those living outside the community.
(3) A desire for a high-quality living environment with recreational and luxurious facilities.
(4) A desire in a higher class level of infrastructure away from the government rules and complications, including roads pedestrian walkways, high-speed Internet, schools, landscape, security CCTV systems, and educational upgrade.
(5) The need to feel safe with people like you with the same cultural and educational backgrounds. And that was offered by the Ads of the real estate marketing which always harps on the need to leave the unclean, unsafe, inconvenient, unprivet, and undesired communities is the new target for the construction marketing in the new cities of Cairo region, and the government boost that type of development in relation to the private developers because the infrastructure costs are paid by the private sector and end users, so that is why the cost of the units inside that communities could not be afforded by low-income and middle-income families.

6 Sheikh Zayed and 6 October

Both Sheikh Zayed and 6 of October are remote locations on the outskirts of Cairo that consist mainly of gated communities; 6 October was established from the beginning of 1976; it was designed to be a node for attraction for residents of middle-income residents to resolve the problem of urbanization until it became high priced land for certain social level. The city of Zayed was first proposed for two development stages with 2800 Acers, which was planned to provide moderate prices targeting low-income housing and

industrial areas in 1998 the two settlements combined together to be el Sheikh Zayed city. The urban fabric of the city became 9524 acres with about 72% of its total area for residential use (Metwally and Abdalla 2013).

The cities were developed during some phases. It could be observed that the scattering of the commercial centers of the areas inside the city plot, which has been dramatically changed later and transformed to private facilities and dramatically affected the urban as well as the socioeconomic development (Bayoumi 2009).

6 October is around 20 km from Cairo and surrounded by Sheikh Zayed City and the Cairo–Alex desert road. The uniqueness of this city is that it has all the services and facilities as well as hospitals and schools, besides a huge green space. The city was deigned to be near many significant touristic places and utilities projects beside many educational organizations (schools and universities). Recently, 6th of October City is considered one of the most important areas in Egypt due to the huge investments in it (Fig. 5; Table 5).

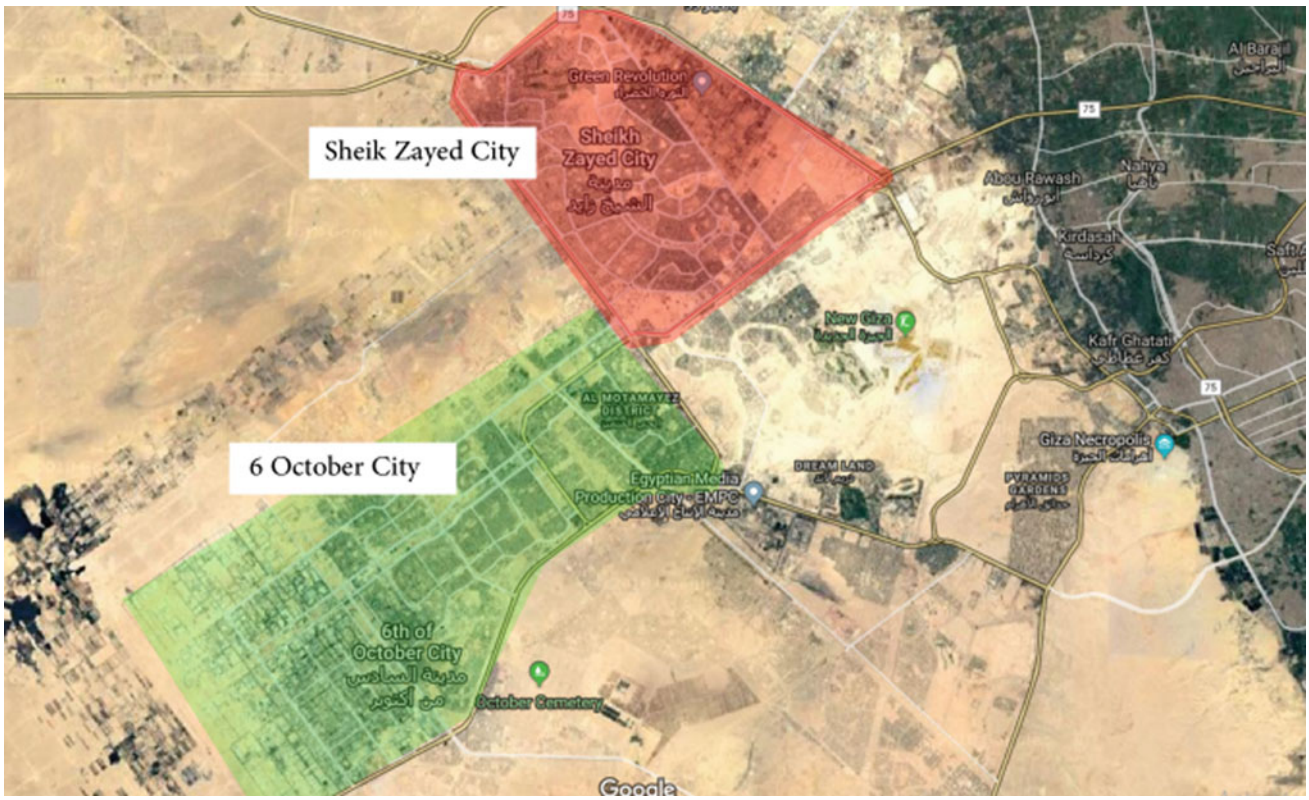

Fig. 5 Map of the two main GCs in new Cairo

Table 5 Main differences between both GCs, level of social level inside according to the proposed prices

Sheik Zayed	6 October
Established by Presidential Decree No. (325) for the year 1995	Established by Presidential Decree No. (504) for the year 1979
The city of Sheikh Zayed was incorporated as an urban area under the administration of the 6th of October and a strategic plan was prepared for the two cities together in 2008	
28 km from the center of Cairo	38 km from the center of Cairo
El Sheikh Zayed offers a variety of residential levels: Economic, Middle, Upper Middle, Upscale, and Luxury housing, but the majority of the city offering is Upscale housing units	6 October offers a very wide variety of residential levels: Economic, Middle, Upper Middle, Upscale, and Luxury housing
Public transportation within the city is limited	Inner transportation tends to be better than New Cairo, for example,
9350 EGP (apartment) 16,800 EGP for(villas)	5500 EGP (apartment) 13,000 EGP (Villa)

Source "Towards an Urban Sector Strategy" Report No.: 44506-EG, June 2008

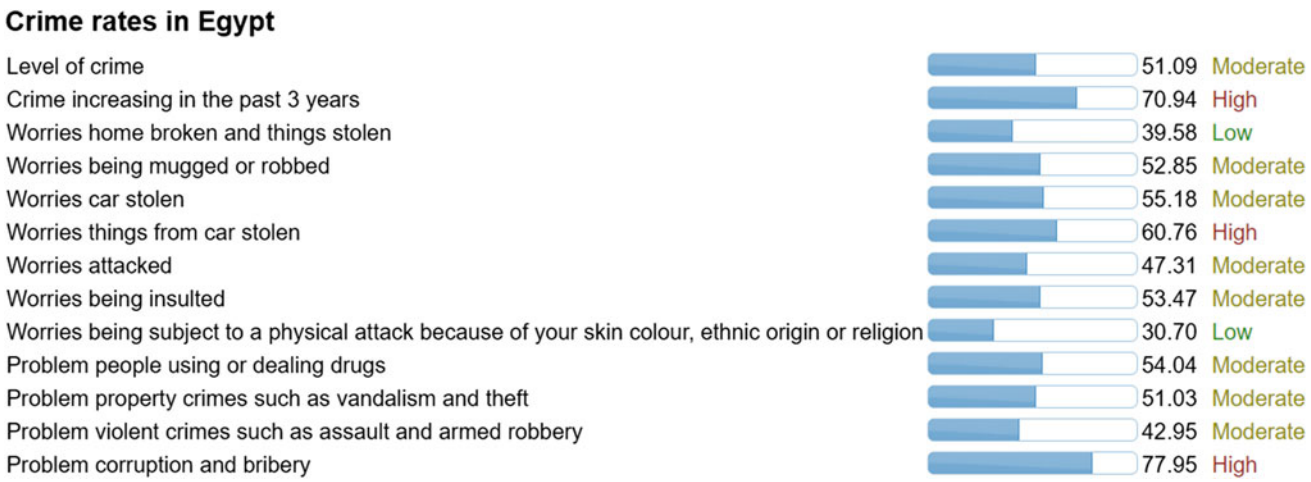

Fig. 6 Crime rates of Egypt in (These data are based on perceptions of visitors of this Web site in the past 3 years.) Contributors: 458. Last update: November 2018. *Source* www.numbeo.com

Then, the location of October City was based on the concept of decentralization and shifting to urbanization to the outer desert; however, since October City was a satellite city, it was well connected to Cairo through main corridors.

In the early years of establishment, the city gained unique attention that attracted demand. Hundreds of public and private sector factories were located in the town. The attention given to the city encouraged housing, industrial, and even regional uses investments leading to higher demands than what the city could then offer in terms of amount and activity (Metwally and Abdalla 2011).

Since most extensions were a direct reaction to the market demands within a policy that longed to attract population and investment in new cities; the extensions in October City were rapidly planned to result in in-cohesive areas that lack integration or comprehensive vision.

7 Spatial Dimension of Crime in New Gated Communities and Cairo

Estimating the crime rates in gated communities inside Cairo is somehow difficult because of the restriction and limitation of the data, mainly because crime statistics are only offered by the governorate and most of them are out of date, related to past years, or not up for public access, and that is because of the lack of community trust in the police and also because the lack of interest of the police to record any appeals less than homicide. However, it could be said that the rate of crime inside Egypt increased in the past 8 years an especially after the last political situation 2011. Through investigating the perception of safety of the users of both gated communities and main city, the numbers are as following (Fig. 6).

Crime has many dimensions that can be evaluated by, and the spatial dimension should be taken into consideration while investigating any crime. Areas can differ from others by their sense of security and crime rates (Perumal et al. 2007). There is a predominant perception, fed by the real estate market, concerning "new communities" or "new cities" such as 6th of October City and Sheikh Zayed, New Cairo and similar areas. This is that organized and neatly planned areas with large streets are better in every way, including being safer, than other areas. At the same time, personal experience and research reveal that new cities are more dangerous to live in than anywhere else (Table 6).

People who experienced living in those communities have many concerns now on crime rates: burglaries, armed assault in public spaces, and drug abuse. Even residents of informal areas who initially adopt the first view, end up telling you about friends and relatives in new cities who experience more crime than in their own neighborhoods, concluding that informal areas are actually safer (Table 7).

8 Research Findings

Throughout the research and by investigating more than one experience of gated communities, with different and similar factors, we can find that most of the examples were designed concerning the short-run implications of gated communities, while few numbers of researches concerned by their long-run implications. Most of the newly designed gated communities are delivered and shaped by global socioeconomic changes, and then advertised by marketing developers ignoring the sense of community and the balanced social fabric of any environment that should be positioned in concentration while designing any new city. The phenomena

Table 6 Spatial distribution of the crimes in the 6th of October City and Sheikh Zayed during the period (2006–2013)

City	Murder		Beat to death		Hit caused disability	
	Number	%	Number	%	Number	%
Dokki	1	3.3	19	1.8	5	7.8
Agouza	5	2.3	56	5.4	11	17.2
Boulak	12	5.6	101	9.7	2	3.1
A1 Haram	17	7.9	55	4.9	10	15.6
Hawamdiyah	20	9.3	42	4	2	3.1
Alwahat	6	2.8	11	1.1	–	–
The 6th of October	12	5.6	12	1.1		–
Warraq	25	11.6	87	17.9	–	
Iinbaba	10	4.7	85	8.1	–	4.7
Giza	20	9.3	42	4	3	7.8
Omrania	1	0.5	12	1.1	5	12.5
Sheikh Zayed	15	7	15	1.4	2	3.1
Abu Nomros	1	0.5	37	3.5	1	1.6
Aussem	20	9.3	62	5.9	–	–
Al Badrasheen	2	1	98	9.4	–	–
A1 Ayat	21	9.8	80	7.7	2	3.1
Alsaf	10	4.7	60	5.7	5	7.8
Atfih	10	4.7	41	3.9	3	4.7
Kerdasa	–	–	14	1.5	2	3.1
Al-Qanater station	–	–	20	1.9	3	4.7
Total	214	100	1045	100	64	100

Source Ministry of Internal Affairs, Public Security Reports on Self-Crime (2006–2013)

Table 7 Chronological development of the self-crimes in Giza Governorate for the period (2006–2013)

Years	2006–2010		2011–2013	
	Number	%	Number	%
Murder	43	13.1	341	56.2
Beat to death	209	63.7	55	9.2
Hit caused disability	13	4	33	5.4
Kidnaping	27	8.2	84	13.8
Rape	18	5.5	44	7.2
Immorality	18	5.5	50	8.2
Total	328	100	607	100

Source Ministry of Internal Affairs, Giza Security Directorate, Public Security Reports on Self-Crime (2006–2013)

of gated comminutes should be studied carefully and should have lots and lots of feasibility studies to come with optimum use for those communities away from economic issues.

The real estate development agencies and their advertisement may be a practical economic way to help gated communities to show up in the short run, and it does not mean that it will also perform in the long-run economic future; our guarantying an active environment or social outcomes. And due to the media that constantly broadcasts images of violence and crime, people have become increasingly afraid and have withdrawn into these fortified colonies which look to be safer and more secure.

A number of factors have contributed to the widespread of gated communities around the world; among the most important factors include the need for privacy, exclusivity, commitment, and the growing desire of the population to separate them from other sectors of society.

The gated community's design should follow the sustainable design criteria that enable the community to improve the quality of life in and to face the action of urbanization while enhancing urban well-being. And that could be possible by the sustainable development of gated communities.

In Egypt, most of the gated communities were first proposed as a solution for the huge act of urbanization and overpopulation over the main cities like Cairo, but instead, it turned to be profitable areas for the investments.

Gated communities help in damaging the city's identity and urban fabric through the physical segregation of the residents by walls and fences. Gated communities should be investigated in future studies from the safety, equality, social harmony, human behavior, and sustainability point of view.

Designing advertisements as easy as it seems could affect the choice of the user in both good and bad way, so when the content of the aid is not ethically reviewed that shows violence and disordered behavior will surely affect the society by negative manner, good content of the aids should provoke equality and social harmony.

9 Conclusion

Although gated communities is a good initiative for any city to develop and extend, to face the problem of the urbanization and over population, but without the sustainable development plan that ensures the effectiveness of the performance of the gated community, and the improving of the residents social and economic life, will turn to be a problem as it was mentioned above.

The research suggests some actions to be taken into consideration while dealing with the profile of new gated communities in cities as to enhance the quality of urban fabric, well-being, and lifestyle.

First, from the real estate point of view; sustainable development policies and criteria offered by the country should be followed and improved every now and then to guarantee the quality of services offered by the agency to the residents. And a long-run development planned should be followed as well.

Second, from the residents' point of view; residents or the future residents of the gated communities should be aware of what gated communities offer and serve, as to make the priorities of his own family and future.

Third, from the government point of view; the government should regulate the evolving of new settlements, each according to the country regulations and policies, in order to maintain the city urban fabric and the social segregation and social balance. And also should regulate the privatization of land on the scale of the private sector industry and marketing scale because most of them does not follow the regulations, such as the right needs of open spaces, land uses, street width, building footprint percentage, and the infrastructure as well (McKenzie 2003).

The government should offer awareness campaigns to help the residents to know more about gated communities and what it offers for their users, and how to know the difference between good and bad ones according to their needs and away from the urban design and regulation.

Fourth, from the developer's point of view; should follow the regulations and policies offered by the country to obtain the gated communities as a sustainable community, and in the same time maintain their profits while generating environmentally sustainable and affordable spaces and facilities.

Fifth, from the advertising agencies point of view; advertising agencies should also follow the ethical rules for obtaining any aid in order to help the target group to choose the right decision that will reflect later on his life and well-being. New and restricted regulations should be generated to help those advertising agencies to be guided and to be charged from the government.

In Egypt, the main target of the new gated community developing system was to overcome the problem of over population and the centralization of Cairo city, but later on it was developed to be private and away from the control of the government with no respect to the regulation and legislations of designing those spaces. Egypt now is facing lots of challenges that threaten the idea of gated communities concerning the safety, economic, social, behavioral, and psychological balance that is point in the right direction to improve the development framework toward a more sustainable and healthy environment.

Some of the gated communities in Egypt after all the advertisements and aids of the real estate offers, follow the slogan of "*the only way to get away from noisy unhealthy environment of Cairo, and come join our healthy safe one*" and that gives the image for the future users that outside that gated community is a complete disaster, new communities are targeted now by the rich people where they can find a safe, attractive, healthy life for them, and moving of the low-income people was restricted and that caused a big discrimination in the social fabric, which will lead to a huge disordered behavior coming out of the un-rich people.

Designing gated communities could be part of a great development process, but leaving the plan without integrating the old cities with the new gated ones, will leave a huge problem in the future that threatens both of them, and the urban fabric will be negatively affected as well.

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Using the Sonic Perception to Improve Public Spaces and Develop a Place Identity

Christina E. Mediastika, Anugrah S. Sudarsono, and Luciana Kristanto

Abstract

A city ideally possesses a unique identity that differs it to others, so both dwellers and visitors are easy to identify places. Features in the city that made it unique shall also be friendly to inclusive users, including those with special needs. It is easily spotted in the cities of emerging countries that people with special needs are hardly accommodated. Visually impaired people, as the most vulnerable community in urban areas, need safe and comfortable accesses to do the activity independently. As the visually impaired people mostly depend on sound and tactile, a series of study using a soundscape method in public areas and public facilities was performed. The objective was to map the most prominent sonic dimension of these people, which provides guidance, safety, and comfortable acoustic environment for them. The data were collected using an off-site and *in situ* method, i.e., at parks, on footpaths, and in shopping malls. The principal component analysis (PCA) was run to extract the data. On the paths and in shopping malls, the soundscape dimensions of the visually impaired is more or less similar to the sighted, where the dimension of pleasantness is the most prominent. At parks, the visually impaired perceived eventfulness soundscape dimension as the most important. The finding is recommended to improve public spaces in the urban areas, which later may also be valuable to develop the place identity using sonic features.

Keywords

Sonic perception • Soundscape dimension • Public spaces • Sighted people • Visually impaired people • Sonic city identity

1 Introduction

The extensive use of technologies and buildings style toward modernism has created similar cities that nearly lost their unique identity. Place identity was defined as "the extent to which a person can recognize or recall a place as being distinct from other places" (Lynch 1960). By this definition, we associate place identity is something evident and visible at first sight. Thus, the eyes are the first sense to recognize a place. The image of the place is composed of the view of urban elements such as monumental buildings, public spaces and other special features (Riza et al. 2012). Most cities or places are identified visually. However, it is possible also to identify the specific features of a city or place using objects within the city that create sound. Hellström (2002) has stipulated how cities can be identified as sonically. Whereas Elmqvist and Pontén (2013) said that "each city may have a unique acoustic profile, the composition of specific natural sounds, signals and noise."

A method to appraise the acoustic environment of a place is called soundscape, at which people listen to the surrounding sound and state their perception toward the sound. The International Standardization Organisation defines soundscape as an acoustic environment as perceived or experienced and or understood by people; in context (ISO 2014). The project that is reported here, using a soundscape method to map the sonic perception of people in public spaces of cities of an emerging country. Parks, shopping malls, and footpaths in Surabaya and Yogyakarta, Indonesia, are the public spaces selected for the study. The types of public places were selected based on the number of urban community to spend

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their spare time for relaxation. In Surabaya, parks and shopping malls are two favourite places for spending leisure time, and footpaths are the most prominent access for those using public transport to reach these two spots. Whereas in Yogyakarta, footpaths and shopping malls are the two most visited places for leisure time. There is a primary footpath in the city centre of Yogyakarta, namely Malioboro, which is used frequently for art performances.

The study reported here is unique since to date soundscape method to study public spaces were all conducted by sighted people (Axelsson et al. 2010; Kang and Zhang 2010; Brambilla et al. 2013; Filipan et al. 2014; Aletta et al. 2016). Those studies extracted soundscape dimensions of public places which differs to soundscape dimensions by visually impaired people (Mediastika et al. 2020). The soundscape of visually impaired people varies not only in its dimension as compared to that of the sighted but also differs according to the local context (Jeon et al. 2018; Mediastika et al. 2020). Visually impaired people were invited to participate in the study as they are more sensitive to sound than the normal-sighted people (González-Mora et al. 1999; Mediastika et al. 2019), they are also typically able to process acoustic information better (Lessard et al. 1998) and that they are considered the most vulnerable group in the urban community. Inviting visually impaired people for the study is hoped to elicit a conclusion from the perspective of these people, which is beneficial for policymakers and urban designers to improve the city to be more empathic. A successful empathic design should involve the perspective of those with special needs in the design (Mediastika 2016).

2 Aim of the Study

The study is aimed to map the most prominent and specific sonic dimension appreciated by visually impaired people, which provides guidance, safety, and comfortable acoustic environment for them.

3 Methods

The study was conducted empirical both off-site and *in-situ* with sighted and visually impaired participants. The off-site method was performed to gather preliminary information of the participants' sonic memory of certain places. The data collected from the off-site survey, which was in a focused group discussion method, was used to construct the questionnaire for the *in-situ* surveys.

4 The Parks

Surabaya is the second-largest city in Indonesia after the capital city; Jakarta. Surabaya has developed more parks with better quality in comparison to other cities in Indonesia. Therefore, other cities always refers to Surabaya in the attempt of providing good urban parks. To date, there is no Indonesia cities has developed parks as massively as Surabaya. Thus, a survey only in Surabaya is considered a sufficient representation of a study about the sonic ambience of parks. Two of the largest, the most iconic, and the most visited parks in Surabaya, namely Taman Bungkul or Bungkul Park and Taman Flora or Flora Park, were selected for the study. With areas of 9000 m^2 (Bungkul, Fig. 1a) and 30,000 m^2 (Flora, Fig. 1b) only, they are considered the largest in Surabaya. Both parks are located within the city centre and are easy to access by city dwellers. For the soundscape survey, Bungkul Park was grouped into 5 routes and spots and Flora Park into 3 routes and spots. Bungkul has more spots to be surveyed due to more variety features in Bungkul Park than in Flora Park.

5 The Shopping Malls

Being the second-largest city and the centre of economic and business activity of the eastern part of Indonesia, many large shopping malls are located in Surabaya. The oldest one and the most iconic is Tunjungan Plaza, which was selected for the study. Besides Tunjungan Plaza, Grand City Mall in Surabaya that declares as a disabled-friendly mall and Malioboro Mall in Yogyakarta were also selected for the study. Both Tunjungan Plaza and Malioboro Mall are located precisely in the city centre of Surabaya and Yogyakarta, respectively. Tunjungan Plaza was opened for public in 1986 (Fig. 2a). It is now the second-largest shopping mall in Surabaya with retail areas of 150.000 m^2 and more than 500 tenants. Whereas Grand City Mall is a medium-size mall located in the heart of Surabaya (Fig. 2b). It was opened for public in 2009. Malioboro Mall (Fig. 2c) is also the oldest and the most iconic mall in Yogyakarta located alongside the most famous street in the city, namely Malioboro. It was opened for public in 1993 and had significantly smaller retail areas compared to the shopping malls as mentioned earlier. It is also located just by the primary footpath of the city, where art performances are frequently held. Each shopping malls were grouped into four routes and spots for the survey.

Fig. 1 **a** Aerial view of Bungkul Park and **b** Flora Park (after https://www.google.co.id/maps/)

Fig. 2 **a** Interior views of Tunjungan Plaza and **b** Grand City Plaza, Surabaya, and **c** Malioboro Mall, Yogyakarta (after www.tunjunganplaza.com and https://surabayatravel.com/grand-city-mall.html)

6 The Footpaths

In urban life, footpaths are critical components of roadway systems. Besides the primary function for pedestrians, footpaths have many other features, such as accommodating street vendors and merchants (Loukaitou-Sideris and Ehrenfeucht 2009), which in some cases might reduce the walkability of pedestrians. Under the Government Regulation of the Republic of Indonesia number 43 dated 1993 (Law Bureau of Republic of Indonesia 2003), a footpath is defined as a facility to support traffic activities and road transportation both on the roadside and adjacent to the road, in the context of safety, security, good order, smooth traffic, and provide convenience for the users. Thus, the keyword of this regulation is convenience, which includes safety and security. Surabaya's footpaths were massively improved in the last ten years. The Surabaya municipality also attempted to accommodate the needs of disabled people, particularly the visually impaired, by installing guiding blocks along the footpaths. However, without careful installation, the placement of guiding blocks is somehow ineffective in many spots. Nine routes and spots of the most improved footpaths in Surabaya were surveyed (Fig. 3).

7 The Participants

The study involved sighted and visually impaired participants. The sighted participants were Petra Christian University (PCU)'s undergraduate students, and the visually impaired

Fig. 3 **a** Snapshots of the footspath at Siola-Tunjungan segments and **b** Darmo segments of Surabaya

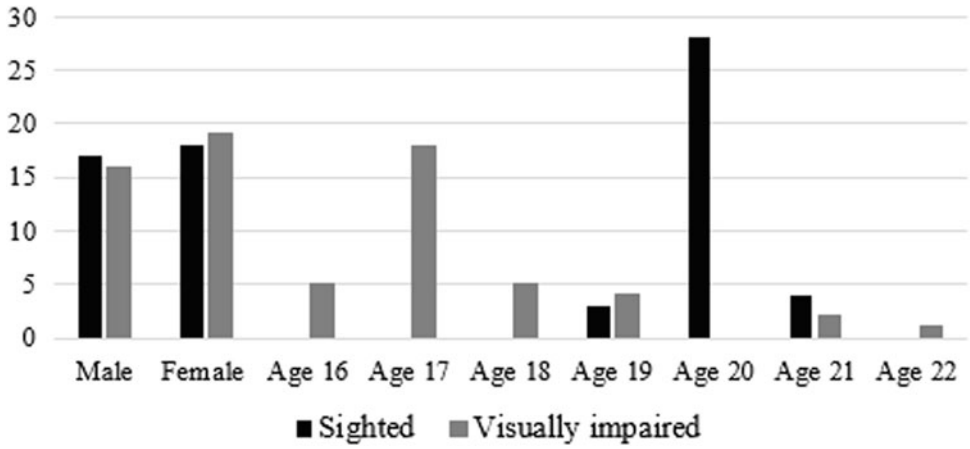

Fig. 4 Demographic background of the participants

were a group of junior and senior high school students of the Foundation of Education for Blind Children, namely YPAB, of Surabaya and Yaketunis Foundation of Yogyakarta. Seventy students in total are involved in this project. The demographic background of the participants is plotted in Fig. 4. The participants have resided in Surabaya and Yogyakarta for a certain period of time, either as locals or as students. The age gap at this point was considered to be within an acceptable range since Ma et al. (2018) showed that studies of soundscape involving broad age range elicited quite identical responses. The project plan to partnering with YPAB was presented to a panel of the independent research ethics committee of the Ministry of Research and Technology and Higher Education of the Republic of Indonesia. It was then granted by the Body of National Unity, Politics, and Community Protection (Bakesbangpol), a body under the Surabaya City Government. The sighted participants were not involved in the footpath survey as the survey at parks, and shopping malls

showed soundscape dimensions of locals in Surabaya and Yogyakarta are identical to studies by Axelsson et al. (2010) and Kang and Zhang (2010). It strengthens the finding of Ma et al. (2018) that studies of soundscape involving various backgrounds also elicited quite identical responses.

8 The Questionnaire

A perceptual measurement of sound quality is a multidimensional problem that includes individual auditory attributes. Therefore, it is reasonable to elicit and use individual attributes emerge from a mixture of interviews and personal experiences. A procedure belongs to a direct elicitation method, namely individual vocabulary techniques introduced by Bech and Zacharov (2007) was referred to construct and validate the attributes used in the questionnaire. It uses the vocabulary developed by the individual subject and a set of principal components representing the common attributes, which is then identified using statistical procedures. Thus, it is reliable to elicit and use individual attributes emerging from a mixture of interviews and personal experiences. Here, the attributes were developed using a focused group discussion (FGD), with two sighted and two visually impaired persons selected from the 35 sighted and 35 visually impaired participants. They were selected based on their frequent experience of visiting parks as well as their ability to communicate and maintain involvement in the discussion. The ability to communicate is essential to creating an agile discussion to produce detail narrations before they were extracted into the attributes for questionnaire items. Attributes emerged from parks, shopping malls and footpaths discussion are listed in Table 1, 2 and 3, respectively. The attributes were validated using principal component analysis (PCA) before it went to the questionnaire, and those, which are below 0.5, were omitted.

The questionnaire was constructed in 3 sections. Each consisted of open-ended, which questions the general impression of the studied objects and closed-ended questions for the soundscape. The closed-ended questions were built on a straightforward bipolar semantic scale of −1 0 1. The −1 scale was used for the attributes that emerged from the FGD, 0 for the neutral response, and 1 for the antonym of the attributes. The use of three-point-scales is still debatable, whether adequate (Jacoby and Matell 1971) or inadequate (Lehmann and Hulbert 1972). Nonetheless, since an experiment of an informal interview using five scales has caused a miscommunication between the visually impaired participants and the interviewers, the use of three-point scales was confirmed. The simplification of the scale, from commonly 5 or 7 points-scale to 3 only, was intended so as the interviewee would shortly grasp the question and be able to answer the item instantly. Furthermore, this method is validated by comparing the result of the soundscape dimension of the regular or sighted participants with the soundscape dimensions from the earlier studies. For the parks and footpaths survey, the antonym of the attributes was indirectly stipulated from the FGD (Tables 1 and 3). Whereas for the shopping malls survey, they were stipulated directly from the FGD as can be seen in Table 2.

Table 1 The attributes used to develop a semantic scale of the closed-ended questionnaire for the park survey

Number	Attributes	
	Sighted	Visually impaired
1	Crowded	Crowded
2	Calm	Calm
3	Nice	Nice
4	Disturbing	Disturbing
5	Comfortable	Comfortable
6	Clamorous	Clamorous
7	Noisy	Noisy
8	Fun	Fun
9	Rough	Rough
10	Unhurried	Unhurried
11	Natural	Natural
12	Dense	Safe
13	Good	Good*
14	Fine	Unclear Direction
15	Full	Full
16	Silence	Far
17	Neat	Slow
18	Relax	Variation*
19	Like	Recognize the location
20	Monotonous	Important sound*
21	–	Scary
22	–	One direction*
23	–	Spacious

Annotation: The principle component analysis shows the score of the asterix (*) was < 0.5
Thus, these attributes were ommited from the constructed questionnaire

By Tables 1 and 2, we see that visually impaired people use more attributes than the sighted to describe their surroundings. It correlates to a study by Gonzales-Mora et al. (1999) who stipulated that blind people are more sensitive to sound than sighted people.

9 The Soundwalk

As the listening method was conducted within a particular area, which is spacious enough, the method was extended into soundwalk. A soundwalk is a method that implies a

Table 2 The attributes used to develop a semantic scale of the close-ended questionnaire for the shopping mall survey

Number	Attributes	
	Sighted	Visually impaired
1	Complete–incomplete	Happy–unhappy
2	Good–bad	Good–bad
3	Crowded–empty	Spacious–narrow
4	Clear signage–unclear	Cool–warm
5	Neat–messy	Noisy–calm
6	Luxurious–slum	Large–small
7	Tight–loose	Luxurious–slum
8	cool–warm	Modern–ancient
9	Comfortable–uncomfortable	Know the location–don't
10	Like–dislike	Slow–loud
11	–	Safe–dangerous
12	–	Clamorous–quiet
13	–	Know the smell–don't*
14	–	Comfortable–uncomfortable
15	–	Like–dislike

Annotation: The principle component analysis shows the score of the asterix (*) was < 0.5
Thus, these attributes were ommited from the constructed questionnaire

Table 3 The attributes used to develop a semantic scale of the closed-ended questionnaire for the footpath survey performed by visually impaired participants only

Number	Attributes	Context
1	Crowded	Soundscape
2	Comfort	Soundscape
3	Noisy	Soundscape
4	Fun	Soundscape
5	Rough	Soundscape
6	Natural	Soundscape
7	Safe	Soundscape
8	Unclear direction	Soundscape
9	Far	Soundscape
10	Slow	Soundscape
11	Know the position	Soundscape
12	Full	Soundscape
13	Scary	Soundscape
14	Spacious	Soundscape
15	Easy	Access
16	Slippery	Access
17	Clear route	Access
18	Near traffic	Access
19	Flat	Access

walk in an area with a focus on listening to the acoustic environment (ISO 2018). The soundwalks were held with the visually impaired participant walked side-by-side the accompanying person. Here, the accompanying persons were the sighted participants. At the parks and shopping malls, the soundwalk was carried out by both sighted and visually impaireds. Whereas on the footpaths only by the visually impaired. The decision not to involve sighted participants was deliberately made as previous studies, and the study at the parks have shown no difference in soundscape

dimensions by the sighted. Thus, for the footpaths, as it was also performed outdoors just like the parks, the data was collected from the visually impaired only. Whereas for shopping malls, as there are limited studies about indoor soundscape to validate the result, the soundwalk in shopping malls was conducted by both the sighted and the visually impaired.

In the places where both participants conducted the soundwalk, the visually impaired was each accompanied by a sighted person. The accompanying persons (interviewers) for the visually impaired participants were the sighted participants in the trial. The natural quietness during the soundwalk was maintained so that the soundscape could be purely perceived. The accompanying persons paid attention only when the participants were about to encounter a dangerous situation, such as towards a significant pavement gap, a massive obstruction, or about to cross the street. The soundwalk was designed to pass the appointed routes and spots, and the interview was conducted after each route. It was designed so as the conversation between interviewer and interviewee does not interfere with the soundscape activity.

10 Findings and Discussion

The data were analysed at a time using PCA with a change of coordinates known as varimax rotation (Field 2000) so that each variable can be associated at most one factor. PCA also used by Axelsson et al. (2010) and Kang and Zhang (2010) to extract their data into soundscape dimensions. The analysis was run for sighted and visually impaired. The soundscape dimensions are selected based on the eigenvalue of the PCA (eigenvalue > 1).

The soundscape dimension terminologies were stipulated based on the grouping of the attributes, which refers to the earlier studies. Axelsson et al. (2010) use pleasantness, eventfulness, and familiarity. Whereas Kang and Zhang (2010) use relaxation, communication, spatiality, and dynamic. Here, 'pleasantness' terminology is used as a similarity to relaxation or comfort and 'eventfulness' as a similarity to communication. Besides two of the most prominent, other soundscape dimensions were also extracted from the data and grouped into dimensions that were named relative to the word that could reflect the terminology that appeared in the group. They are dynamic, danger, direction,

Table 4 The PCA result of the response of sighted participants of the park survey (Kaiser-Meyer-Olkin test = 0.907)

Attributes	Factors		
	25% (1: Pleasantness)	22% (2: Eventfulness)	9% (3: Dynamic)
Crowded	0.184	0.751	−0.057
Calm	0.346	−0.774	0.056
Comfortable	0.695	−0.444	0.039
Disturbing	−0.545	0.515	0.220
Noisy	−0.331	0.780	−0.112
Natural	0.581	−0.400	0.118
Dense	−0.117	0.791	−0.058
Fun	0.804	0.002	0.155
Good	0.817	−0.147	0.062
Rough	−0.562	0.493	−0.020
Unhurried	0.413	−0.580	0.210
Clamorous	−0.467	0.654	−0.133
Fine	0.794	−0.160	0.015
Nice	0.829	−0.160	0.190
Monotonous	−0.264	−0.237	0.622
Silence	0.171	−0.695	0.492
Full	0.037	0.711	−0.388
Neat	0.279	−0.068	0.775
Relax	0.500	−0.380	0.577
Like	0.854	−0.077	0.063

Table 5 The PCA result of the response of visually impaired participants of the park survey (Kaiser-Meyer-Olkin (KMO) test = 0.846)

Attributes	Factors					
	17% (1: Eventfulness)	14% (2: Pleasantness)	8% (3: Danger)	8% (4: Direction)	7% (5: Space)	6% (6: Nature)
Crowded	0.708	0.032	0.107	0.090	0.067	0.220
Calm	−0.626	0.432	0.075	−0.002	0.119	0.130
Nice	−0.036	0.740	−0.097	−0.003	−0.052	0.054
Disturbing	0.346	−0.621	0.229	−0.048	0.085	−0.088
Comfortable	−0.283	0.754	−0.155	−0.033	0.181	0.016
Clamorous	0.753	−0.232	0.062	0.081	0.050	−0.069
Noisy	0.803	−0.194	0.021	−0.012	0.014	−0.152
Fun	−0.107	0.729	−0.153	0.107	0.137	0.045
Rough	0.597	−0.115	0.182	−0.144	−0.154	−0.370
Slow	−0.670	0.142	−0.181	0.103	0.217	0.173
Natural	−0.218	0.053	−0.096	−0.110	0.107	0.616
Safe	−0.151	0.233	−0.711	0.144	0.065	0.117
Unclear direction	0.088	−0.115	0.145	−0.791	0.023	−0.044
Far	−0.076	0.080	0.055	−0.050	0.757	0.253
Slow	−0.137	0.127	−0.092	0.026	0.203	0.578
Recognize the location	0.084	−0.058	0.055	0.810	−0.035	−0.066
Full	0.508	0.177	0.160	−0.083	−0.369	0.331
Scary	0.066	−0.143	0.843	0.016	0.025	0.006
Spacious	0.059	0.360	−0.146	−0.085	0.530	−0.329

space, nature, facility and contour. The naming is a subjective judgement, as was that of Axelsson et al. (2010) and Kang and Zhang (2010).

The extraction of the data of park surveys shows that soundscape dimension of pleasantness was perceived as the most prominent by the sighted participants (Table 4), followed by eventfulness and dynamic dimensions. Whereas visually impaired participants perceived soundscape dimension of eventfulness as the first dimension (Table 5). Again, we see that visually impaired people engaged more to the surrounding than the sighted as they explain the acoustic environment with more dimensions than the sighted. The soundscape dimension of danger and direction emerged uniquely from the visually impaired participants.

Table 6 The PCA result of the response of sighted participants of the shopping mall survey (Kaiser-Meyer-Olkin test = 0.8191)

Attributes	Factors		
	35% (1: Pleasantness)	27% (2: Space)	17% (3: Facility)
Complete–incomplete	0.077	0.096	0.911
Good–bad	0.825	−0.140	0.238
Crowded–empty	−0.139	0.943	0.056
Clear signage–unclear	0.058	−0.456	0.711
Neat–messy	0.502	−0.639	0.290
Luxurious–slum	−0.926	0.188	0.217
Tight–loose	−0.366	0.832	−0.107
Cool–warm	−0.614	0.348	−0.018
Comfortable–uncomfortable	0.691	−0.422	0.251
Like–dislike	0.827	−0.260	0.281

Table 7 The PCA result of the response of visually impaired participants of the shopping mall survey (Kaiser-Meyer-Olkin test = 0.722)

Attributes	Factors				
	31% (1: Pleasantness)	15% (2: Space)	13% (3: Eventfulness)	10% (4: Danger)	8% (5: Direction)
Happy–unhappy	0.903	0.124	0.118	−0.004	0.061
Good–bad	0.892	−0.033	0.098	0.074	0.048
Spacious–narrow	0.066	0.924	0.014	−0.035	0.012
Cool–warm	0.209	0.425	−0.240	0.410	−0.388
Noisy–calm	0.192	0.210	0.756	0.099	0.235
Large–small	0.327	0.855	0.138	−0.021	0.037
Luxurious–slum	0.821	0.207	0.020	−0.147	−0.046
Modern–ancient	0.800	0.089	0.079	0.270	−0.173
Know the location–don't	0.029	0.048	−0.040	0.163	0.864
Slow–loud	0.093	0.032	−0.745	0.160	0.181
Safe–dangerous	−0.139	−0.017	0.132	0.825	0.223
Clamorous–quiet	0.188	0.017	0.764	0.220	−0.078
Comfortable–uncomfortable	0.744	0.357	−0.031	−0.470	0.019
Like–dislike	0.773	0.281	0.006	−0.394	0.041

In the shopping malls, both participants perceived soundscape dimension of pleasantness and space as the first and second dimensions, respectively (Tables 6 and 7). The sighted added soundscape dimension of the facility to the acoustic environment. Whereas, the visually impaired added with eventfulness, danger and direction dimensions. It is

Table 8 The PCA result of the response of visually impaired participants of the footpath survey (Kaiser-Meyer-Olkin test = 0.739)

Attributes	Factors			
	25% (1: Pleasantness)	11% (2: Space)	10% (3: Eventfulness)	9% (4: Contour)
Crowded–uncrowded	0.392	0.127	0.667	−0.050
Comfortable–uncomfortable	0.642	0.070	−0.205	0.401
Noisy–quiet	−0.100	−0.200	0.832	−0.020
Fun–boring	0.621	0.130	−0.070	0.405
Rough–soft	−0.217	−0.587	0.303	−0.126
Natural–artificial	0.317	0.101	0.111	0.426
Safe–dangerous	0.676	−0.020	−0.030	0.080
Unclear direction–clear direction	−0.777	0.080	−0.107	−0.080
Far–near	−0.100	0.722	0.090	−0.249
Slow–fast	−0.010	0.633	−0.060	0.123
Know–don't know the position	0.753	−0.080	0.112	−0.040
Full–empty	−0.189	−0.271	0.713	−0.008
Scary–soothing	−0.714	−0.060	0.249	0.137
Spacious–cramped	0.145	−0.222	−0.138	0.461
Easy–uneasy access	0.733	−0.110	−0.122	0.143
Slippery–coarse	0.462	0.218	0.070	0.327
Clear–unclear route	0.765	0.110	0.060	−0.020
Near–far traffic	0.005	−0.706	0.174	−0.050
Flat–up and down	−0.180	0.131	−0.010	0.847

interesting to learn that within an indoor environment of a shopping mall, the dimension of pleasantness of the visually impaired is not affected by the indoor thermal condition whereas thermal factor is regarded as an important element affecting the dimension of pleasantness perceived by sighted people. In the shopping malls, we also see that the visually impaired captured the surrounding in more detail.

On the footpaths, where the data was collected by visually impaired participants only, we see the soundscape dimension of pleasantness as the most prominent (Table 8). The first dimension of pleasantness is also associated with the dimensions of danger and direction at the same time. Here, the visually impaired participants also perceived a unique soundscape dimension of contour. At places with specific corridors or routes, such as footpaths and shopping malls, the dimension of pleasantness is the most prominent for both participants. However, it was not the case at parks, where the soundscape dimension of the sighted differs from that of the visually impaired. At the parks, where visitors usually do not have a particular route to walk through, soundscape dimension of eventfulness is the most prominent for the visually impaired. At parks or places with free routes to be accessed, an acoustic environment that creates eventfulness information is the key sonic element to guide the visually impaired. The shaded numbers in Tables 4 to 8 represent particular attributes that correlate to the above-mentioned soundscape dimensions.

11 Conclusion

The study has pointed out that soundscape dimensions of pleasantness and eventfulness are the two-most important in parks, shopping malls and on footpaths. These two soundscape dimensions were added by other dimensions, which some of them uniquely elicited by the visually impaired. Here, we learn that visually impaired people describe the acoustic environment in more detail than do sighted people. The visually impaired also use sound to detect danger, to identify the direction or location and to appraise a space. The finding shows that an acoustic environment is also a key element to create urban public places to be more user friendly. Municipalities in emerging countries may adopt people's sonic perception to improve current policies to accommodate dwellers' and visitors' needs inclusively.

Further study to identify specific sound sources and sound characters that may help the visually impaired to live their life independently is recommended. A recorded and simulated soundscape is considered strategic so as the visually impaired participants may add or eliminate sound sources and types and adjust the appropriate loudness level of each sound to provide an excellent acoustic environment to identify danger, direction and space. The sonic dimensions appreciated by the visually impaired and the recommended study that deepens the current findings might also be valuable to shape the type of sound needed in each unique public place to develop the city's sonic identity. Thus, the sonic character, will not serve for identification only, but also to provide guidance, safety, and comfort for city dwellers and visitors inclusively. Nonetheless, the conclusions drawn in this study may not be instantly transferrable to other regions with different parks, shopping malls and footpaths characteristic.

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Is It Possible to Define Architectural Identity More Objectively?

Malathe Hamid, Laura Hanks, and Wang Qi

Abstract

The concept of identity is complex and at the same time ambiguous. Architectural identity, however, is even more complex. This stems from the fact that architecture is the mirror that reflects the different political, cultural, social and economic factors that are shaping the city. In this research, Khartoum, the capital of Sudan is chosen as a case study to explore its contemporary architectural identity. Initial findings from interviewing different parties in the city including architects, academicians and planners highlighted the significant conflict in expressing the Sudanese architectural identity in contemporary architecture. This resulted in a total disregard in considering it in both urban and architectural design processes. While the majority of interviewed participants realised this, only a few undertook certain design approaches to confront it. Therefore, this research argues that it is necessary to confront the ambiguity of architectural identity by simplifying its complexity. In order to achieve this, simpler topics such as the *architectural character* and *architectural features* are introduced then explored as ways to interpret architectural identity more objectively. It could be concluded that addressing the complexity of architectural identity will provide important answers for the future of any contemporary architecture including that of Khartoum.

Keywords

Architectural identity • KCC • Complexity • Ambiguity • Experiential qualities • Objective

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1 Is It Possible to Define Identity?

The early exploration of this research has commenced with the hypothesis that architectural identity could be precisely identified. Within this, general definitions of the term identity were explored. According to the Oxford English Dictionary, identity is '*the characteristics determining who or what a person or thing is*' (Oxford Dictionary 2015). The Cambridge dictionary defines it as: '*who a person is, or the qualities of a person or group that make them different from others*' (Cambridge Dictionary 2013).

Additionally, Fearon (1999, p. 2) distilled the meaning of identity from the analysis of both the current usage in ordinary language and social science discourse. He argues that the term identity is presently used in two senses: social and personal. In the former sense, he defines identity as '*a social category, a set of persons marked by a label and distinguished by rules deciding membership and (alleged) characteristic features or attributes*'. As for the second sense of personal identity; '*an identity is some distinguishing characteristic (or characteristics) that a person takes a special pride in or views as socially consequential but more-or-less unchangeable*'. Lynch (1960, p. 8) interprets the identity of an object as '*its distinction from other things, its recognition as a separable entity. This is called identity, not in the sense of equality with something else, but with the meaning of individuality or oneness*'. Brislin (2012) emphasises that the definition of identity could be either tight or loose, nevertheless, it endows a sense of survival: '*What is identity, that ephemeral and quixotic thing? Draw it too tightly and it is a noose: a boundary marker that defines the separation between individuals or between one group and another; a blunt weapon of differentiation that fuels rippling scales of dispute from neighbourhood argument through to Xenophobia and war. And yet draw identity too loosely and we no longer feel the connection between people and place…. Ironically, that which sustains us might also destroy*

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us. But there is no doubt that a sense of identity is essential to survival—of individual, family, group and neighbourhood' (Brislin, 2012, p. 8). Moreover, identity is strongly linked to the memory as Bandyopadhyay and Montiel (2013, p.xiv) emphasise: '*memory is intimately connected with the construction of identity; it is with the memories we collect throughout our lives that we construct our sense of identity and belonging*'. Nevertheless, Fearon (1999) argues that although the use of the term 'identity' nowadays is a recent social construct that everyone knows how to use properly, it is still difficult to give a short and adequate summary that captures the range of its current meanings. This is because identity is often treated as something '*ineffable and even sacred*' (ibid., p. 4).

Interestingly, when identity is linked to architecture it '*goes beyond the visual appearance of the built environment and involves meanings of those built environments to the people who created them and the people who occupied them*' (Salama, 2005, p. 77). This is because architecture plays a key role in expressing the socio-cultural and political identities through its spatial, physical and representational dimensions (Bandyopadhyay and Montiel 2013). '*While the extent to which architecture still retains the ability to express identity in today's schizophrenic, globalised world is debatable … its role nevertheless continues to be accepted*' (ibid., p. xiv). This is particularly important when an environment possesses a unique character it may be safe to say that this environment has an identity (Salama 2005). He elaborates that '*an environment may be unique due to the use of certain unique forms that are to be found in this environment and nowhere else*' (ibid., p. 79).

However, it could be argued that there are places where the architecture does not have the ability to express any identity, but a chaotic image of different immature and contested identities. An example of these places is Khartoum, the capital city of Sudan with its urban fabric that represents buildings from various styles, heights, colours and materials. The combination of these gives the impression that the situation is not only fluid but also uncontrollable. Consequently, it formed an intriguing example to explore in this research which could also be generalised to similar contexts like Khartoum.

As a first step to achieve this, the possibility of exploring the issue of architectural identity was reviewed in the literature. While architectural identity is about the physical character, personal meanings, memories and the socio-cultural and political identities, the existence of all these dimensions in the definition of identity made it a loose and fluid issue that could be described as not only complex but also, an ambiguous and non-definable issue.

1.1 Ambiguity and Complexity of the Issue of Identity

Identity is a complex issue because it stems from numerous determinants such as those from social and political order (Zarzar 2008). Those determinants are continuously changing, thus identity becomes continuously evolving and not static. Within this, it was important to look for Sudanese writers and intellectuals who discussed the issue of identity in the context of Sudan. Ali (2014), a Sudanese sociologist, on the contrary, argues that identity, in general, is about abstraction, stability and essence. It is unified and does not get affected by time or history. Therefore, he believes that it is not proper to be utilised as a tool to describe social, political or cultural phenomena such as the nation or to understand the society in general. To him, it is completely/wholly an ideological, political, non-scientific and above all an ambiguous tool, which he does not encourage to be used in scientific terms. Rather, he prefers the term 'character'. Consequently, Ali (2014) went on and investigated the illogical attempts of Sudanese government officials to reinterpret the Sudanese identity. He concludes that the current period of the government is the period of inability to solve difficult and real problems, and thus they are escaping the reality to what he calls: '*artificial issues*' such as identity, which he eventually describes as a '*delusion*'.

However, the situation with architectural identity is slightly different as it cannot be easily claimed as an artificial issue. This is due to the fact that architecture is the mirror that reflects the state of the government, people and cultural and social dimensions. While the finding of the ambiguity and complexity of the issue of identity was reached in an early stage of this research; during the first round of data collection, it was important not to disregard it. The more the interviewed architects were unable to find interpretations of what could represent a local architectural identity in their architecture, the more it became important to address this complexity of architectural identity in order to propose important answers for the future of contemporary architecture in Khartoum.

Moreover, it was noted that in the experience of Norberg-Schulz in Khartoum, although in essence, he described the architecture of the place, he avoided mentioning the term 'identity' and preferred to use simpler terms such as *'character'* to describe the physical character of the place and the *'genius loci'* to describe its spirit. He narrated that the genius loci of a place '*is determined by what is visualised, complemented, symbolised or gathered*' (Norberg-Schulz, 1980, p. 58). The *genius loci* are thus about space articulation and character articulation. The latter

includes building materials, colour, degree of openness, and the kind of construction (see Fig. 3). Within this, it could be argued that Norberg-Schulz's avoidance of the term identity resulted from his background as an architectural theorist and his deep realisation of the complexity of the issue of identity. Moreover, it could be related to the fact that he is an outsider who is unlikely to express the architectural identity of a place—because identity strongly relates to variables such as culture which are difficult to be fully grasped by a foreigner.

This finding coincides with Salama (2005, p. 78) who deconstructed identity in certain issues as he argued: '*the discussion of the issue of identity in general and in the Middle East, in particular, would be irrelevant if concepts such as imageability, legibility, Critical Regionalism and environmental meaning are not debated and somehow theorised*'. Hence, it was helpful to search in the literature for the definition of those topics to come closer to identity. Kevin Lynch has introduced the two terms: imageability and legibility in the early 1960s. On one hand, he interprets legibility as the apparent clarity of the cityscape and the legible city as a city '*whose districts or landmarks or pathways are easily identifiable and are easily grouped into an over-all pattern*' (Lynch 1960, p. 3). On the other hand, he defines imageability as '*the quality in a physical object which gives it a high probability of evoking a strong image in any given observer*' (ibid., p. 10). Therefore, he argues that a highly imageable city would seem well-formed, distinct and remarkable and does not necessarily imply something that is '*fixed, limited, precise, unified or regularly ordered, although it might sometimes have these qualities. Nor does it mean apparent at a glance, obvious, patent, or plain*' (ibid.). Therefore, imageability is the quality of both the identity and the structure.

As for Regionalism; Ozkan (2007) agrees with Salama (2005) that identity is related to Regionalism. The former even stresses that it is very hard to talk about identity without going into Regionalism. This is because Critical Regionalism as a notion emerged as an alternative to Postmodernism with the aim of reintroducing the historical knowledge and cultural issues in design (Tzonis and Lefaivre 2003). Moreover, it could also be considered as '*a reaction specifically to internationalism or implicitly to Modernism*' (Ozkan, 2007, p. 103). It called for rethinking architecture through the concept of the region. It is complementary rather than contradictory to trends toward higher technology and a more global economy and culture (Tzonis and Lefaivre 2003). Kenneth Frampton defines the fundamental strategy of Critical Regionalism as: '*to mediate the impact of universal civilisation with elements derived indirectly from the peculiarities of a particular place*' (Frampton 2002, p. 21). Therefore, Regionalism is strongly tied with the characteristics of each particular region, which include aspects of society such as culture, aspects of life and prevalent modes of expression, and the natural environment, which includes climate and topography (Ozkan 2007). It is thus through these aspects that appear the strong link between identity and Regionalism. The difference is that Regionalism has been well defined as a theory with certain requirements and principles such as: resisting the various forms of hegemonic, universal and standardising structures that would diminish local differentiation (Canizaro 2007), that the response to local conditions is more likely to be by necessity and not by choice and that it is a living concept that must grow and change just as regions must be continually re-described (ibid.). On the contrary, architectural identity does not have defined principles; it could be the identity of the architect when recognising his designs as a kind of brand or it could be about reinforcing the identity of an existing place (Zarzar 2008). Additionally, identity refers to perception and it differs from a person to a person on how they perceive a certain building (ibid.) Moreover, identity is about continuation and change and so is a person's life, thus his/her identity changes accordingly and will be reflected in the architecture through the time. Hence, '*if a city loses its current identity, it is simultaneously creating a new one. Change in the direct environment over time is thus part of the creation of a new identity*' (ibid., p. 62).

In this regard and within these different scopes of literature highlighting the complexity of the issue of identity, it was relevant to assimilate that with the argument of Madanipour (1997) about urban design, in that it is a complex and at the same time ambiguous issue. He argued that the ambiguity of urban design stems from the fact that there are many disciplines and professions involved in it, which inevitably overlap with each other. Although some might argue that a degree of ambiguity offers a wider scope for innovation and development, others would argue that by clearly defining a subject we have denied it some flexibility (ibid.). Therefore, he argues that it is difficult to claim to be engaged in urban design without properly defining it. Hence, he highlights that in the search for the meaning of urban design it is important '*to remember to separate complexity from ambiguity*' (ibid., p. 364). He adds '*we should be able to address complexity but we should also do our best to clarify ambiguities*' (ibid.). Similarly, this research utilises the same analogy to describe the issue of architectural identity. It argues that it is substantially important to define the architectural identity of a place instead of neglecting it. Individual efforts from architects are not sufficient, as it should also be at the planning and building legislation levels. Within this, the complexity should be addressed and the ambiguity should be confronted and clarified. Thus, it could be highlighted that confronting the complexity and ambiguity of architectural identity can be achieved by simplifying it, or more accurately, deconstructing it to simpler issues such as architectural character as those adopted by

Norberg-Schulz (1980), Ali (2014), imageability and legibility by Salama (2005), Lynch (1960) and Regionalism by Ozkan (2007).

By returning back to the context of Khartoum and in order to explore the issue of its architectural identity and confront its ambiguity within the scale of the research, the city centre of Khartoum (KCC) has been chosen as a case study. While the selection of the centre will limit the exploration to institutional architecture, it formed a rich context for exploration. This is because the centre is the place that witnessed the majority of the historical events through the history of Khartoum; from colonialism to independence in 1956 to the subsequent political regimes and the various unstable political situations between these periods. Thus, within these changes, and coupled with the rapid architectural transformation around the world during the last century (from Modernism to Postmodernism to Internationalisation), the architecture transformed dramatically in KCC and is now evident in its built environment. However, in order to narrow down the exploration, the period from the 1990s to the present was chosen from the architectural timeline of the city. This specific period has been selected because it has witnessed many changes that are yet to be documented and analysed in the architectural research of Khartoum's institutional architecture.

The exploration commenced with users of the city including architects, planners, architectural students and the general public through a series of interviews and focus groups. Interestingly, however, the exploration began with an overwhelming expectation that participants would be able to comment about the architectural identity—e.g. the architects would have an explanation about the identity they create through their architecture—within the spectrum of those definitions from the literature. However, the findings were completely the opposite. Many participants asked to re-think the word identity; specifically *Sudanese* identity, and questioned what could represent the Sudanese identity in the architecture. On the other hand, some seemed to answer without precisely identifying which dimension of architectural identity they were explaining. This, in essence, relates back to the ambiguity and complexity of the issue of identity and consequently highlighted the necessity to explore it in a different way, which this research will try to achieve.

2 Architectural Identity of Khartoum City Centre (KCC)

Khartoum, the capital of Sudan, is a postcolonial city that despite becoming independent 60 years ago, has an architectural identity that is yet to be defined. While Norberg-Schulz (1980, p. 137) has exuberantly described the genius loci of the place Khartoum, he criticised the architecture of the late 1970s arguing that: '*the impact of the forces of 'modern life' starts to make itself felt…without slightest understanding of the genius loci*'. The situation later became even worse; the period of the 1980s witnessed an opening up of the country following the new-found oil wealth resulting in bringing foreign interests in the country by the 1990s who brought foreign materials with them and an alternative language and scale of buildings (Osman et al. 2014). Therefore, the authors went even further to declare that: '*Architectural production in the country is today characterized by imitation and a rootless character*' *(ibid., p. 10)* (Fig. 1).

Based on this, it was thought to examine firstly: why there appears to be something missing in Khartoum's architectural spirit and the general reasons behind its so-called '*rootless character*'. Apparently, this issue seems to be almost neglected and has not been convincingly studied in recent architectural research in Khartoum. There appears to be an omission in investigating and considering this gap, especially of the period from the 1990s to the present. Therefore, the research commences the exploration of Khartoum's architecture by tackling the issue of its architectural identity. Architectural identity in this sense was chosen as the issue that would be inclusive in overarching the issues of genius loci and architectural character mentioned by Norberg-Schulz (1980) and Osman et al. (2011).

However, with Khartoum being a newly emerging city that was established only 120 years ago, it could be considered as in the period of searching for its architectural identity which is still under construction. Consequently, one early notable finding of architectural identity in Khartoum was that architects had different interpretations of the issue of '*Sudanese* architectural identity' in the current contemporary institutional architecture of KCC and thus, they had different representations. While some consider that it should be a local *Sudanese* identity with elements derived directly from *Sudanese* local culture(s) and traditional architecture, others consider it should be an Islamic identity because Islam is at the heart of the Sudanese culture and others believe that it should be an international identity that responds to forces of globalisation. Paradoxically, within each of these three opinions, there were other interpretations of how these approaches to identity could be achieved.

This highlights that Khartoum's architecture lacks the collective voice of architects that would carefully think about the representation of the local *Sudanese* architectural identity in the architecture. Evidently, through interviews conducted with 26 architects with key roles in the architecture of Khartoum, it was found that efforts and discourses that respond to the current architectural identity were minimal and individualistic –as only three out of the 26 architects are trying to create a local identity that is derived from traditional architecture. The other majority were aiming and

Fig. 1 A contemporary scene of KCC. *Source* Pinterest, n.d

focusing on international globalised architecture. Nevertheless, the exploration will consider that forces of globalisation are inevitable and unavoidable in a rapidly urbanising context like Khartoum. While one could question the necessity of defining a *certain* Sudanese architectural identity in a rapidly changing world and specifying certain urban and architectural character, it nonetheless remains an inevitably important issue for the need for identification in one's own city and recognition amongst other cities in the world where s/he can always refer to a sense of belonging.

This finding was then followed by a notable common perception: that identity in Sudan will always remain an unsolved issue due to the cultural plurality of the country. While this fact is true, the perception is rather over-pessimistic, as a common quote was shared by many architects who were surrendering to the belief that: '*we are living in a dilemma of a lost identity*'. As a result, this perception had affected the practice of architects in their approaches to design and oriented it towards an exploratory manner in expressing culture in the institutional identity, whereas some would disregard expressing the cultural symbolism altogether, those who would express it, show the different cultural representations that reflect the cultural plurality of Sudan. At the other end of the spectrum, others approached expressing culture through locality by adopting local materials and techniques in their designs.

On one hand, the presence of these various trends to express local identity in the architecture of Khartoum represents the lack of collective consensus on the extent to which history and culture can be utilised into the contemporary institutional identity. This is why Bandyopadhyay and Montiel (2013).emphasise that critical positions in architectural identity discourse need to deal with such a volatile and chaotic situation of architectural identity. Yet, on the other hand, the appearance of these various trends is a natural process to search for identity because originally debates on 'local identity' came into prominence during the 1980s, when concerns arose from deep crisis confronting the traditional foundations of culture (Herrle 2008). This crisis was mainly fuelled by the realisation that modernism had failed to deliver on its promises and aesthetics coupled with the disappearance of centralised institutions and collective minds as societies move through globalisation (ibid.). Thus, it is possible to even argue that these different architectural trends are appearing very late in Khartoum and should have appeared earlier. Yet, in a context like KCC, issues such as

the unstable political situation and rapid urbanisation are considered far more serious problems than creating a local architectural identity, nonetheless, controlling those existing approaches to contemporary identity. Inevitably, architectural identity in these contexts, should not be a mere expression of the social and cultural peculiarities of the present time only, but it should also be an instrument to resist the destructive effects of globalisation (Bandyopadhyay and Montiel 2013).

In this regard, El-Sheshtawy and Abul Nagga (2000) argue that in a world now dominated by forces of globalisation, the common discourse on the identity crisis needs to be reconsidered. They believe that a *co-existence model* can be applied by taking into account the forces of modernisation and at the same time responding to the traditional elements in society. However, Mahgoub (2007) argues that in many developing countries architectural identity can hardly be localised since in many places identity entails composite patterns with more than one identity. Derakhshani (2012, p. 31) agrees with this and questions: '*How can multiple layers of identity be located within architecture? How can the architecture of each society become the true representation of its complexity?*'. Therefore, to explore and analyse these identity models it seems inadequate to explore only the 'local architecture' as it does not reflect the dynamic nature of the emergence of local identities in those contexts (Tzonis and Lefaivre 2003). Consequently, Derakhshani (2012) chooses a more 'inclusive' approach, rather than an 'exclusive' approach to exploring architectural identities which can successfully represent the plurality in these contexts. In this sense, he classifies the approaches to identity as:

- Reclaiming the local: through careful borrowing of elements from rich architectural traditions and reuse them to re-create the 'new local'.
- Appropriating the local: when the public and users reinterpret projects in a manner that is different from that which the architect had in mind and find other merits in the architecture.
- Inventing new identities: in newly emerging cities, which might not have rich traditional architecture, through strong, place-specific buildings to represent the country internationally (ibid.).

The review of this literature has thus highlighted that exploring architectural identity in Khartoum has to be in an inclusive approach that would accommodate the extreme plurality of the community and somehow allow for a co-existence model. Therefore, similar to Derakhshani's (2012) classification on the approaches to identity, the approaches of architectural identity in KCC will be listed below. Nevertheless, listing these approaches alone could still be considered as fluid *and largely subjective*, exploration of the issue of architectural identity. Thus a participatory evaluation of these approaches was conducted with participants as users of the place KCC who through their visual and interactive experience with the architecture of KCC were able to interpret architectural identity through meanings, memories, socio-cultural dimensions, political dimensions and most importantly, the physical architectural character; that is exploring architectural identity through the experience of place (see Fig. 2). These dimensions could be named as the variables of architectural identity which are both tangibles (character) and intangibles (meanings, memories, socio-cultural dimension and political dimension).

Yet, with the aim of confronting the complexity of architectural identity, this paper will aim for the more objective exploration for architectural identity and thus it will focus on listing the physical characteristics and features of the architecture of each of the identified approaches, evaluate them and discuss their representation of the sense of identity according to users of the place as follows:

2.1 Imposing New Identities

In Khartoum, the international style and globalised architecture have recently been promoted by the National Islamic Front government as its new image in the contemporary institutional architecture of KCC (Interviews F & M, 2017) and (Centecs and Meffit 2008) as a replacement for the Islamic authentication movement that it imposed in the early 1990s. Nevertheless, coupled with economic limitations, response to the forces of globalisation and internationalisation, clients' preferences, and an immature exploratory architectural practice, this has resulted in an uncertain contemporary institutional architectural identity and an architecture that is based on an obsessive search for 'newness' as referred to by Pallasmaa (2012). This excessive modernity represents an implicit denial of the country's past evidence and the urge to completely wipe and reformulate its history (Osman 2002).

In addition to the governments' ideological image about the institutional architecture of Khartoum, this excessive newness is also supported by private developers who copy new visions from different places and paste them in their architecture. In a way, they are imposing their dreams on the architects under the label of promoting Khartoum to the global market. Therefore, they end up requesting projects that are either excessively modern or incorporate architectural features borrowed from other cultures. This concurs with Derakhshani (2012, p. 30) who explains that '*the speed of transformation in society has led to a disjoint; shifts in tastes and values have introduced new forms of commercial*

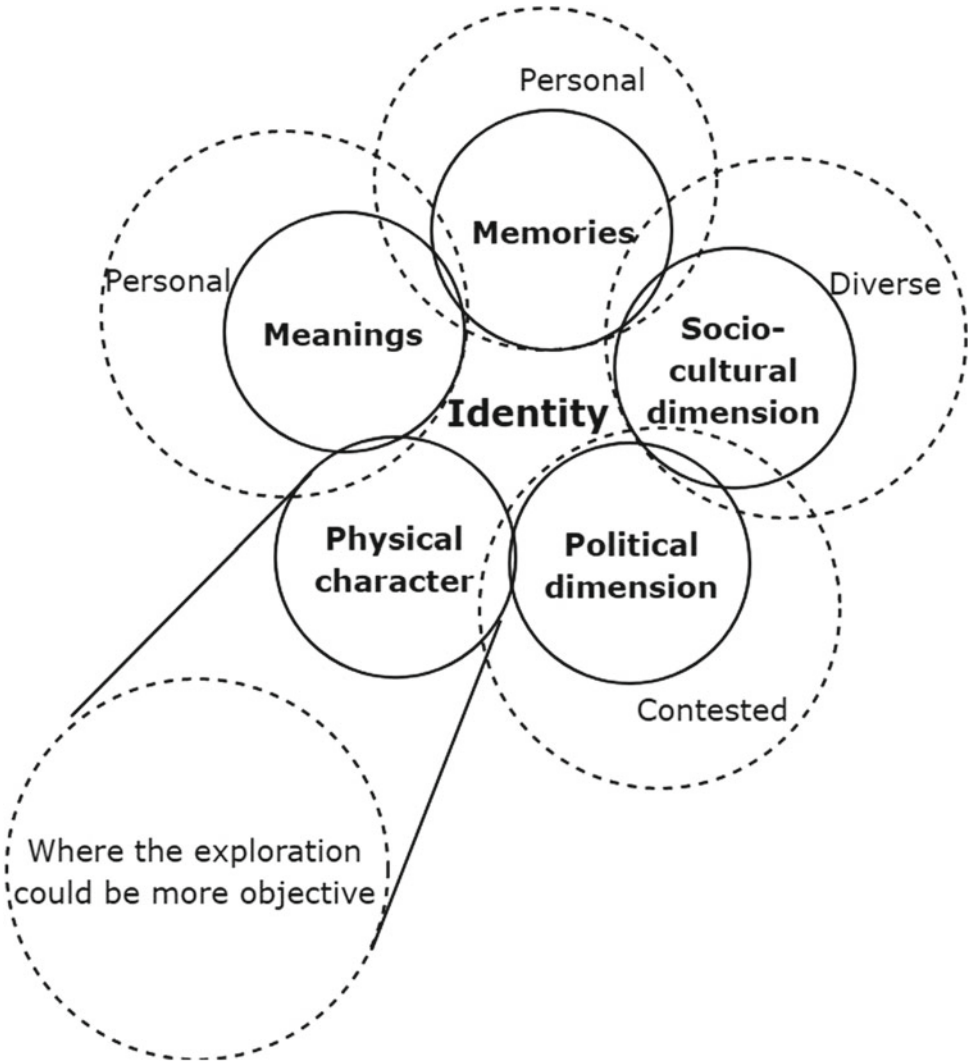

Fig. 2 Variables of architectural identity with the physical character as the focus of this research

and retail structures'. Similarly, in KCC the architectural transformation reflects a relatively dishonest transformation as it is driven by the imposed image on the architecture. Therefore, architects are being put under pressure to create an architecture that represents that image. Consequently, the new built institutional architecture is aesthetically striking, regardless of the physical context. While Adam (2012, p. 176) argues that '*architects are the agents of the symbolic visual markers of identity and, at the top of their profession, have been instrumental in major changes in the built environment*', this role is yet to be implemented in Khartoum. Within this, the observed architectural features of this approach were (see Fig. 3):

- Expensive materials (cladding) and shiny colours
- Monumental Landmark buildings
- Freestanding Isolated glass buildings
- %100 occupation of the plots
- Invasive buildings
- Solid east and west elevations
- Minimum link to the natural landscape
- Unjustified utilisation of architectural features to enforce beautification
- Imported architecture (representing features borrowed from other countries to copy their identity especially in projects with foreign private developers).

While some of these features are prerequisites for the expressive quality required for the institutional architecture based on Norberg-Schulz's (2000) argument that institutional building's features ought to be treated and organised in a systematic and expressive way, some of them are illogical and undermine the sense of identity. This is because the word identity itself always relates to the deep unconscious links to what is local or cultural that provides a sense of rootedness and belonging. Therefore, characteristics such as monumentality, isolation and materials that do not relate to the place provide a sense of alienation rather than

Fig. 3 Examples of buildings from Imposing new identities approach showcasing the architectural characteristics. *Source* The Author

rootedness and are thus far from providing a sense of identity that local people feel belonging to.

2.2 Islamising the Sudanese Identity

Islamising the Sudanese institutional architectural identity in Khartoum appeared as the phenomenon that represents the naïve attempts to represent the notion of Islamic authentication that was adopted by the National Islamic Front government who realised that it is extremely difficult to achieve an architectural identity in such a plural community like Khartoum. Therefore, they chose Islam as the shared accepted factor that can be imposed to unify the architecture, yet deployed it only on the surface of the buildings. The series of observations in KCC captured those attempts and highlighted that their naivety stems from adding elements to superficially impose the Islamic identity. The most common feature, however, is the Arch, which can be found randomly, added in many boundary walls or gates of the governmental institutional buildings. Today is a phenomenon they still persist in the contemporary institutional architecture of KCC and in the capital as a whole (See Fig. 3). Features that represent this approach are (Fig. 4):

- Buildings and boundary walls with borrowed Islamic arches and ornaments
- Imported Islamic arches.

2.3 Reclaiming the Local: A Different Promise?

This approach to architectural identity relates to the efforts of architects who are attempting to revive a sense of local identity in the contemporary institutional architecture of Khartoum. The term 'reclaiming' is adopted from Derakhshani (2012) who described it as the careful borrowing of elements from traditional architecture and their reuse to re-create the 'new local'. In Khartoum, interviews with

Fig. 4 Naive attempts to impose an Islamic institutional architectural identity in KCC following the Islamic authentication notion. *Source* The Author

architects revealed that attempts to reclaim the local are minimum as only three out of 26 interviewed architects with key roles in the architectural practice in Khartoum were expressing a consideration to reclaim a local identity through showing significant sensitivity to the surrounding place and its particularities. Their approaches to this reclamation are either by direct borrowing from traditional architecture to deliver an explicit symbolism or an abstraction from traditional architecture to deliver an implicit symbolism; a metaphor, which is both commonly adopted approaches in Postmodernism to endue buildings with meanings. They, moreover, agree in certain aspects such as the use of local materials and low-rise architecture. The approaches to reclaiming a local institutional architectural identity as observed are as follows:

- Responsive approach
- Abstractive approach
- Eclectic approach.

The first two approaches are relatively similar, as they abstract from the traditional architecture to deliver an implicit symbolism. They depend on appreciating the richness of natural resources in Sudan and use them as local materials; such as timber, bricks and different types of stones from different parts of Sudan. Within this, they bring the philosophy that: '*the expression of materials is the visual symbol of the building*' (Interview 2016). As for the Eclectic approach, it adopts the philosophy of reviving the Sudanese heritage in contemporary architecture through a direct borrowing to achieve an explicit symbolism. This approach

adopts the philosophy that in order to revive history in the architecture and to establish a sense of belonging to a Sudanese architectural identity, it is acceptable to eclectically borrow elements from the Sudanese architecture in different parts of Sudan such as arches from Nubian[1] and colonial architecture, Mashrabia[2] and ornaments such as the Nubian Triangular ornaments and to employ them in contemporary buildings.

The main characteristics of the architecture of these approaches include simplicity of forms, linearity, strong indoor/outdoor spatial integration, incorporation of contemporary structural materials (viz, steel) with local materials, shading and protection from severe climatic conditions and considerable integration within the surrounding urban fabric. This latter quality specifically is the essence of these approaches as they create buildings that mingle with their place. Consequently, their approaches to institutional architecture are more liberal in freeing the building and linking it to the surrounding, either visually or experientially as opposed to the freestanding isolated institutional buildings of the previous two approaches. Those approaches thus, emphasise that local architectural identity is not only visual but to a large extent experiential. Unfortunately, however, these approaches are rare in KCC as being only adopted by private individual architects in small private projects mostly outside KCC (see Fig. 5). The observed features of these approaches were:

- Rectangular forms
- Low-rise heights
- Local building materials
- Earthly colours
- Well-ventilated elevations (through verandas, recesses and openings)
- Shaded elevations (through verandas, recesses and small openings).
- Landscaping well integrated with the building
- Outdoor spaces well linked to the surrounding urban context'
- Symbolic cultural elements borrowed from different parts of Sudan.
- 'Arches': through arches that are copied from different parts around Sudan such as the symbolic Nubian arches, from both colonial architecture and Islamic architecture.

[1]Nuba is a region that spans between southern Egypt to northern Sudan and is considered as a culturally and architecturally very rich region.
[2]Mashrabia: is an architectural element that characterises Arabic architecture. It is a wooden decorated bay that encloses the windows externally to provide privacy. *As a feature it is being* borrowed from the architecture of Suakin 2 in the Eastern part of Sudan.

3 Discussion

It could be argued that both the Responsive and Abstractive approaches could be described as Modern Regionalism or Regional Modernism, which Salama (2005, p. 82) defines as: '*the incorporation of regional visual attributes into modern technology, where the interpretation of the past takes place to form a contemporary image*'. Ozkan (2007) also explains the term and from his definition, one can fairly emphasise that on one hand, such efforts are related as Modern because they respect the qualities of building materials and present functional justifications for forms that constitute buildings. On the other hand, they relate to Regionalism because in essence they utilise the regional qualities in their architecture and are unlike internationalism which demands to reduce the building to skin and bones (ibid.). According to Ozkan (2007, p.109), these approaches could be labelled '*Abstract Regionalism*', which he asserts: '*mainly incorporates the abstract qualities of a building, for example, massing, solids and void, proportions, sense of space, use of light and structural principles in their reinterpreted form*'. As for the Eclectic approach, it could be labelled as what Salama (2005, p. 81) calls '*Historicism or Historical Revivalism*', or as what Ozkan (2007, p. 104) calls '*Vernacularism*' *and* defines as '*bringing a new and contemporary existence to vernacular forms and spatial arrangements*'. Nevertheless, the applicability of this approach in institutional architecture seems to be the most controversial as the validity of borrowed historical features in a contemporary institutional building is rather more debatable.

With the real essence of these approaches abstracted from the local forms of the traditional Sudanese vernacular architecture (see Fig. 6), participants emphasised that a cultural revival and place attachment could be achieved through these approaches. However, this is yet to be achieved in KCC as these approaches are evidently absent from KCC and are being adopted by a few individual architects in private projects. Inevitably, these approaches, if adopted, can give Sudanese people the opportunity to reconstruct missing links to their local architecture in the contemporary institutional architectural identity despite the cultural debate on some of the symbolic representations. And, if applied in KCC, they could provide a better amalgamation with the existing colonial fabric due to their nature of adopting the same local materiality and heights adopted in colonial architecture.

Despite this link to vernacular architecture, sense of rootedness and response to the place, this type of identity is not always applicable to new emerging city centres. This is due to their heights and scale that do not accommodate the capacities of the contemporary institutional architecture of

Fig. 5 Approaches to reclaim local identity in Khartoum: Responsive (above), Abstractive (middle) and Eclectic approach (below). *Sources* Hayder A.Ali Architects, Octantis architects and Ishkanes architects respectively.

city centres nor do they satisfy their expressive qualities. This was emphasised by the different categories of participants in evaluating and prioritizing some of the main features of these approaches such as the heights and the simple rectangular forms as the least applicable to the identity of KCC. On the other hand, they highlighted other intrinsic qualities such as well-ventilated elevations (through verandas, recesses and openings), shaded elevations (through verandas, recesses and small openings) and landscaping well integrated with the building as unique intrinsic qualities that need to be concretised in the architectural identity of KCC more than any other visual cultural representations. Hence, this participatory evaluation in KCC unconsciously disregarded the search for the visual cultural representation of identity and instead called for revealing and re-emphasising the architectural features that present unique experiential qualities and response to the weather. As an example of this, the arcaded porticos of KCC's colonial architecture (see Fig. 7) were considered as the essence of the place due to their unique experiential quality. Thus, their

Fig. 6 Typical scene in traditional vernacular neighbourhoods in Khartoum with the houses as simple cubical forms. *Source* Gamal Hamid's archive

re-emphasisation could nurture the local character and act as symbols for the institutional architectural identity of KCC.

Hence it could be highlighted that these required architectural qualities embody a sense of rootedness that is more experienced and lived rather than being merely visual. Thus, architectural identity from an experience point of view—through participatory evaluation of users of the place- is not only visual but also experiential. Consequently, the visual cultural search for architectural identity, *alone*, is no longer valid, and it should be towards achieving the unique qualities that are being identified through the participatory evaluation by users of the place.

Reaching this proposal of revealing the unique architectural features of each approach and consider the idea of enhancing the architecture of KCC through reintroducing and strengthening these features could result in what Brislin (2012, p. 9) names as the 'spirited architecture of place' which he supposes as an '*architecture that belongs to the soil within which it is sited, and which belongs to its people too. They are grasping points that resist neutralising tendencies that stand fast against sweeping forces that are greater than individuals*'. Here, the search changes from debating on how to achieve an architectural identity and the consequent cultural debate to valorising and re-emphasising its unique existing features (see Fig. 8). In addition to valorising the unique features, there are essential qualities in any built environment that ensure a better-enhanced architecture and if they exist, they will maintain an enhanced spirit of the place. Those qualities are as follows:

- Integrating the building with its surrounding (e.g. removing boundary walls, providing foregrounds in front of the buildings and creating buildings that are more open to the environment).
- Provide walkability (e.g. shaded walkways).
- Response to the climatic conditions
- Sustainability (e.g. the use of local building materials and colours).

4 Conclusion

This research explored the issue of architectural identity in the context of Khartoum and focused on its centre KCC as a case study. With Khartoum being established only 120 years ago, it was found that architects' current approaches and endeavours are helping in shaping the base of its architectural identity and that architectural identity is still under construction. Nevertheless, the exploration resulted in documenting the different current approaches of identity in KCC and classified them in three main approaches: Imposing new identities, Islamicising the Sudanese identity and Reclaiming the local.

Additionally, the research emphasised the complexity and ambiguity of the issue of identity, which arises from the various variables that determine it such as meanings, memories, cultural, social and political dimensions, and finally the architectural character. Accordingly, such documentation, *alone*, could not provide answers and solutions in a newly emerging city with a plural community like Khartoum and the issue will largely remain subjective.

Accordingly, this research addressed the complexity of the issue of architectural identity and proposed confronting its ambiguity through a more objective approach undertaken by a participatory evaluation of the physical characteristics of the three identified approaches of identity in KCC by the place's own users, that is, distilling architectural identity to its architectural character. It was found that through this objective evaluation, participants were able to look at the

Fig. 7 Archaded porticos in colonial architecture have been identified as the essence of the architecture of KCC in the participatory evaluation process. *Source* The Author

architecture of each approach in an abstract way as some physical characteristics and became able to evaluate, reveal the ones with unique qualities and discuss them in relation to identity. Through this objective participatory evaluation, users of the place were able to shift from debating the merely visual- cultural representations of architectural identity to emphasising the features that endue the architecture and its surrounding place with unique experiential qualities. Hence, the question of identity as merely a visual image becomes no more valid.

In a way or another, this method inevitably confronts the ambiguity of the issue of identity, simplifies and deconstructs its complexity into simpler more approachable issues of exploration.

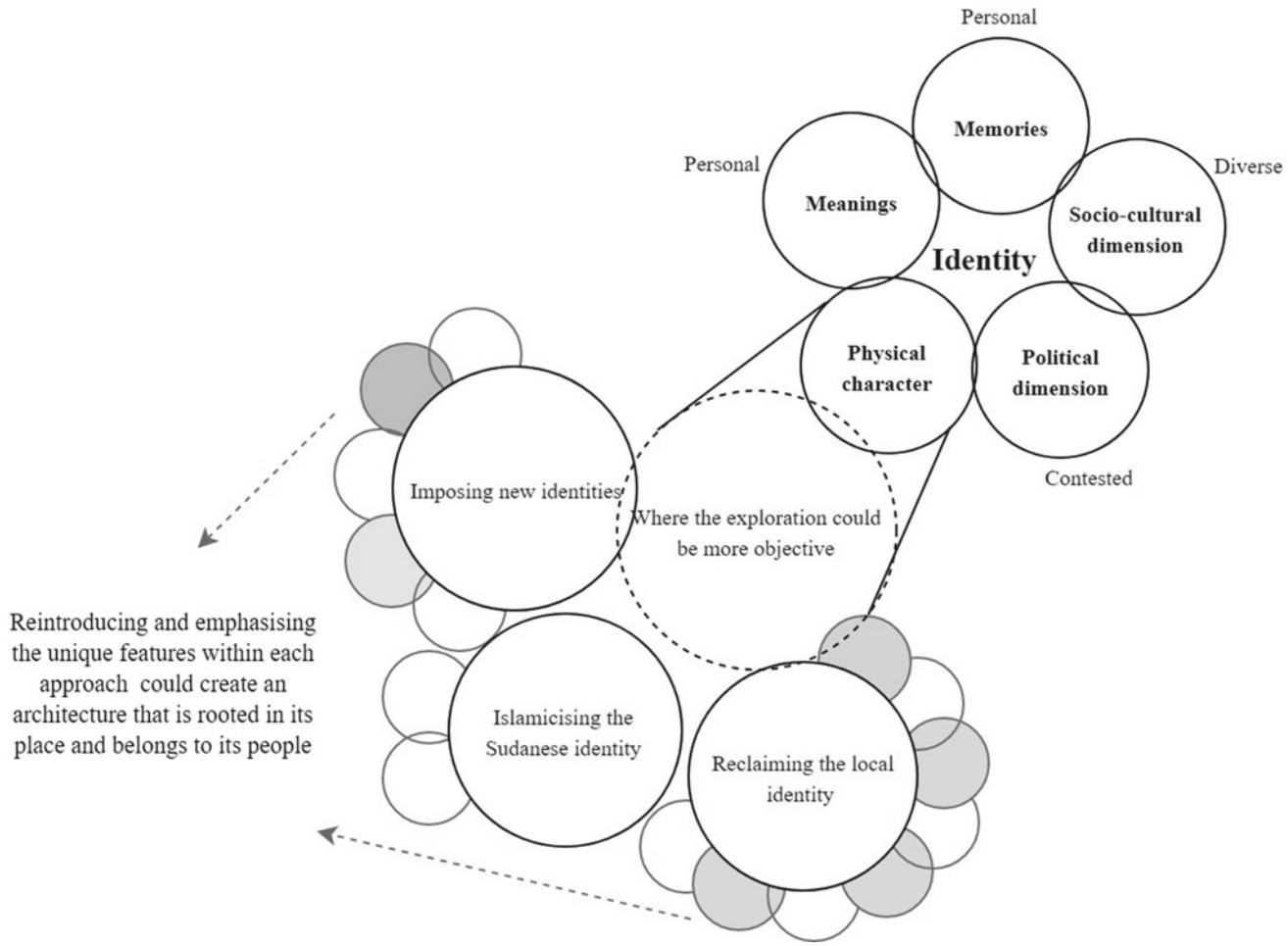

Fig. 8 The objective exploration of identity has allowed revealing the unique qualities within each approach

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Developing a Model for Evaluation of Heritage Urban Open-Air Museums: Applied to Al-Moez Street Open-Air Museum—Cairo

Mary A. A. Elminiawy and Ayman M. Zakaria Eraqi

Abstract

Addressing heritage areas by converting into urban open-air museums is considered a distinctive practice. There is a lack of previous studies in evaluating the design standards for open-air museums, the method and criteria for managing them. Therefore, the researchers have developed a previous model by adding the management criteria including resources, operating, maintenance…etc. to sustain the preservation of the heritage urban open-air museum to future generations. They also transformed the theoretical model into a numerical one using statistical methods to produce more accurate and reliable results. Applying the developed evaluation model on Al-Moez Street open-air museum in Cairo, Egypt, the results showed that the evaluation model has significantly improved in terms of evaluating the efficiency of urban heritage open-air museums. The efficiency of Al-Moez Street open-air museum was 51.60%; revealing the success potentials and deficiency features that can be remedied.

Keywords

Heritage open-air museum • Management of heritage areas • Evaluation model • Sustain

1 Introduction

Countries are currently focusing on developing heritage areas, to preserve their urban heritage, and to use it in tourism marketing operations. These heritage areas are considered types of museums called an open-air museum. Therefore, it was important to move towards assessing the country's experiences in achieving adequate criteria for converting their urban heritage areas into highly efficient open-air museums.

The importance of evaluating the efficiency of an urban open-air museum lies in exploring the degree to which it applies the different design criteria which include the existence of design elements, condition, efficiency, and clarity. In addition, it entails applying the design standards. Hence, such a museum can be developed and improved to enhance the efficiency of the heritage area, to achieve the physical and psychological requirements of residents and users (Abulela and Ali 2012), and improve the visual image of the heritage area.

The size of literature about open-air museums, its management, and evolution is very small. Some studies focused on considering capital cities as open-air museums, such as Habib Saidi's article. From the point of view of heritage and tourism policies (Saidi 2012), the practices in open-air museums; such as outdoor fairs, walking tours, museum historic paths, commercial activities, and festivals; were reviewed by Thomas Angotti's article (Angotti 2018). In terms of assessing the methods of protecting urban and cultural heritage, Shi and Liu (2007) focused only on economic, environmental, and social criteria in his model. The management responsibility to the community was determined in Sue Millar's opinion to preserve the heritage areas for posterity by enabling a critical balance to be maintained between the needs of the resource and the needs of the visitor. Through educating, entertaining visitors, and enjoying the heritage attractions without encroach on the heritage area (Millar 1989). Finally, El-Miniawy proposed a

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theoretical evaluation model for heritage open-air museums. The model consists of two main sections: a planning dimension that includes (environmental, urban, architectural, landscaping, functional, cultural, social, economic, and technological criteria) and a visual dimension that includes (visual, sensual, and aesthetic criteria). Each criterion has its own sub-criteria. And the model was applied to the area of Ismail Pasha, Cairo (El-Miniawy 2018).

According to Previous researches; such as Millar's (1989) and others, in addition to the international charters and conventions recommendations affiliated with UNESCO (2008), ICOMOS (Abed Elgalel et al.) and others; the management criterion in evaluating the open-air museum is important. This is why it must have an administrative organizational structure responsible for monitoring periodic maintenance, organizing external activities, managing public services, information sources, and monitoring violations and abuses, and that's wasn't included in the available El-Miniawy evaluation model for an open-air museum. So, the results were not accurate because it relied on qualitative description, which makes the evaluation less clear, accurate, and reliable.

As a result, the researchers have focused on developing the previous model to increase its effectiveness and improve its results. This was achieved by studying the literature to add the necessary elements to evaluate the management criteria in open-air museums. Mathematical methods have also been used to add the relative weight of the decision-making elements of the model at different levels, which convert results into quantitative results to give it more accuracy and credibility and avoid the previous distortion in the results.

2 Methodology

To come up with results, the following steps were executed:

a. Collecting museum management elements from the literature review, including previous studies and analysis of the Al-Moez developing project (case study) implemented by the Egyptian government as an open museum (2008).
b. The researchers sought support from open-air museum experts. The expert panel included five domestic experts involved in projects of developing heritage areas in Cairo. In addition, there were seven experts from Tunisia, the United States, and Italy, who had research interests in open-air museums. But the number of respondents was a total of 10 experts only; domestic and international.
c. As the questionnaire approach is widely recognized for selecting confirmed information in building knowledge, it was used in conjunction with the literature review (Saris and Gallhofer 2014). The ten experts were asked to support and confirm the researchers' choices of the administrative criteria of the model.
d. Next, the brainstorming method was used as one of the recognized methods for confirming the choices (Isaksen and Gaulin 2005) by holding a group of sessions with the five domestic experts, in order to evaluate and support or exclude researchers' choices.
e. Another questionnaire was presented to the ten responding Experts to evaluate the relative weights of chosen major, minor and secondary criteria of the developed model.
f. The last questionnaire was presented to the five domestic experts to evaluate the efficiency of Al-Moez open-air museum. Results were examined through data stability tests to provide generalizability of the results. Then, it was statistically analyzed using Microsoft Excel.
g. The percentage of Al-Moez open-air museum efficiency was estimated, and the results were displayed and discussed.

The validity test of the model depended first on the reliability of the methodology used to collect and confirm the information, and second on confidence in the mathematical method used to calculate the relative importance of the criteria, and finally on the experts' agreement on the credibility and rationality of the results of the developed model used to evaluate the success of Al-Moez open-air museum. The application of the model relied on an expert evaluation only for the success of the case study according to the criteria that were defined, without addressing the assessment of user satisfaction that needs evaluation methods, which have the ability to deal with qualitative values (expressing impressions) and convert them to quantitative values that can be studied. This is in contrast to experts whose assessment comes based on knowledge.

3 Literature and Methods

3.1 The Management Criteria

The role of urban open-air museum administration starts from the very moment of thinking about establishing such museums or developing existing heritage urban areas (Roders and Van Oers 2011). This is done by studying functions of heritage spaces within the museum, the types of visitors (Northcote and Macbeth 2006), and the activities that could be practiced according to its location, size, and uses of surrounding buildings. This task is entrusted to planners, architects, landscape designers (Feilden and Jokilehto 1998), traffic planners, sociologists, psychologists, and behavior experts.

There are four main pillars for urban management: **Supplying heritage areas with necessary infrastructure** such as water, electricity, and sanitation; **supplying basic services** for developing human resources, improving productivity and upgrading residents' levels such as transportation services, waste and garbage management; **organization of private activities** which impact the welfare, health, and security of heritage urban areas such as medical services, security services, jobs, natural and man-made environment protection; and **supplying services and facilities that enhance production services** (Davey 1993) and allow private enterprises to work efficiently.

Most of the previous researches and the requirements of the World Heritage convention as set out in articles 108 to 118 of the Operational Guidelines (UNESCO 2008), The management and conservation principles for World Heritage cities are embodied in the main documents pertaining to cultural heritage conservation, such as the ICOMOS (1964) Venice Charter, the UNESCO (1976) Recommendation concerning the Safeguarding and Contemporary Role of Historic Areas (Nairobi Recommendation), the ICOMOS (1987) Charter on the Conservation of Historic Towns and Urban Areas (Washington Charter) and the 1998 ICCROM revised Management Guidelines for World Heritage cities management classify the elements of heritage areas management (Roders and Van Oers 2011) in the following aspects:

- **Planning**: Identifying current and foreseen future problems and opportunities that can be taken (Mattingly 1995), and setting appropriate tasks for solving such problems with a recommendation of priorities within a general perspective that takes into account development and change movements.
- **Coordination**: Coordination connects different activities of different administrative authorities (Petrova and Hristov 2016), establishes programs and budgets, controls activities within the urban space according to surrounding uses, determines services that match expected user desires by considering heritage space occupation rates and times, manage entertainment programs and activities (such as festivals, product fairs, and markets), eliminates unwanted activities, decides upon tasks for achieving objectives via the optimum use of resources on time (Abdul-Aziz 2004), takes regular maintenance into account, and gathers information to optimize maintenance needs. In terms of resource preparation, coordination provides basics for capital programs, budgets, support, and finance resource requirements; and organizes cost recovery. In terms of development and operation, coordination reduces time and money lost by repetition and eliminates task interference.
- **Resources**: Resources should be always available to operate services in heritage areas, and for conducting regular maintenance. Those resources are (Okba and Al-Hefnawi 2000): **Human resources**, by providing a sufficient number of workers and upgrading their skills; **financing resources**, by finding urban development returns which requires having good financial planning and resources management via an advanced budget that rests on realistic estimations of returns and costs of services, regular revision of charges enacted upon beneficiaries, non-central administration of budget and engagement of different levels of operation (Alshahid 1999). Financing resources take different forms such as organizations income, grants, gifts, or loans. Governments provide financing via taxes or charges on using services. The public sector provides finance through profits. Non-governmental organizations provide finance through donations of sponsors, fixed assets owned, or grants, and gifts from large and international organizations (UNESCO 2008). Other resources include **Materials Resources**, like land, buildings, and equipment are the most important resources; **Institutional resources**: such as organizations, particularly their frameworks and legislations. It is better to have good levels of central and non-central aspects in administration to match decision-making responsibility, operation, and maintenance with relative weights for each. **Information resources** are prepared by some parties participating in administration (Abed Elgalel et al. 2013). The quality and quantity of such information depend on the efficiency and effectiveness of administrative efforts (Laven et al. 2010).
- **Development**: Development creates governmental, private, and NGOs; focus on new service construction sites and improving existing services (Mattingly 1995), population, and beneficiaries of such services. It focuses on the direct execution of works by public sector authorities and guiding private sector activities to match long-term urbanization needs.
- **Operation**: Operation is the phase of monitoring and following up performance and daily activities in urban heritage that provides services to the people (Roders and Van Oers 2011), and enhances the space's ability to meet visitors' needs (UNESCO 2008). These needs include cleanliness, maintenance, security by having well-trained governmental or private sector guards, putting legislations signs, control of vehicular traffic and securing pedestrians and providing programs, providing a variety of suitable transportation means for visitors, providing parking areas for visitors cars, and solving problems of shipping and transportation to stores. Operation requires controlling all resources—such as labor, money, and equipment—with appropriate quantities and suitable

efficiency levels to perform and accomplish different tasks (Abdul-Aziz 2004). This phase is undertaken by a person, an authority, or an organization to be responsible for the open-air museum. Governments usually do the operation. But, sometimes governments entrust the private sector to do such tasks with contracts. Operation by NGOs is very limited (Laven et al. 2010).

- **Maintenance**: Maintenance requires specific, organized works by scheduled routine (Feilden and Jokilehto 1998) and consuming some resources to increase the efficiency of heritage areas. It takes trained manpower, expert guidance, and administrative philosophies. Results do not come up quickly. But regulation reduces cost significantly. Open-air museum administrations must, whether governmental or private, focus on providing basic necessary services, organizing entertainment programs and events whose returns are invested in providing maintenance programs cost (Laven et al. 2010). Costs of maintenance programs differ according to program. **Low-Cost Programs** provide maintenance depending on stores, cafes, and kiosk owners who are entrusted to do such tasks as being the first to benefit from the cleanliness and beauty of the place. **Medium-cost programs** depend on collecting donations from beneficiaries of the heritage site and surroundings; hiring trained labor teams to do maintenance, security, and cleaning. **High-cost programs** are borne by the government with donations from citizens, businessmen, and activity owners to clean and maintain urban heritage elements. Individuals might donate through groups to contribute to such works (Abdul-Aziz 2004).

Such tasks are performed by the administrative parties under the supervision of the urban administration authority. Planning and coordination must be undertaken by the authority itself (Abed Elgalel et al. 2013).

3.2 Evaluation Method

In order to achieve the goal of research in achieving greater accuracy for the results of the model, Methods of mathematical percentages, relative significance, and average were used to give relative weights to the criteria at all levels of the proposed model. This method was used according to the equations shown below:

The first questionnaire adopted percentages and relative significance for estimating specialists' evaluation of relative weights of the major, minor, and secondary model criteria as per the following equations:

$$\frac{\text{Value estimated by experts of the minor criterion value} * \text{percentage of the major criterion}}{100}$$

$$\frac{\text{Value estimated by experts of the secondary criterion value} * \text{relative weight of the minor criterion}}{100}$$

The second questionnaire for assessing specialists' evaluation of Al-Moez open-air success was done via a five-step (Likert Scale) (Joshi et al. 2015). Evaluation starts from zero to four, for every secondary criterion. Results of secondary criteria were analyzed using the percent method as per the following equation:

$$\frac{\text{Degree estimated by experts}}{\text{Highest scale} * \text{number of sample individuals}} * 100$$

The minor criteria were derived from an average of the percentages of secondary criteria covered by the criterion.

Finally, the percentage of Al-Moez open-air museum efficiency was deduced from the expert evaluation of the museum as a percentage of the relative weight of minor criteria using the statistical significance method as per the following equation:

$$\frac{\text{Percentage expert evaluation of the museum for the secondary criterion} * \text{relative evaluation of the secondary criterion weight}}{100}$$

4 The Applied Study: Al-Moez Street Development and Landscaping as Open-Air Museum Project

4.1 Introduction to Al-Moez Street

This street planning goes back to 969 A.D., since the establishment of Fatimid Cairo. It was named after Al-Moez Ledinellah, the Fatimid Caliph who sent his army commander Jowhar the Sicilian to Egypt in 358 A.H–969 A.D. Egypt was from that date to 567 A.H.–1171 A.D. under the Fatimid reign.

The street presents the main axis of Historic Cairo (Fig. 1). It is about 1500 m long. The street starts in the north by Al-Fotouh Gate and ends in the south by Zewila Gate. Al-Azhar Street splits Al-Moez Street into two halves. Different monumental and historic allies and streets come out of it. Such streets have different monuments dating back to different eras. The functional value of historic buildings in

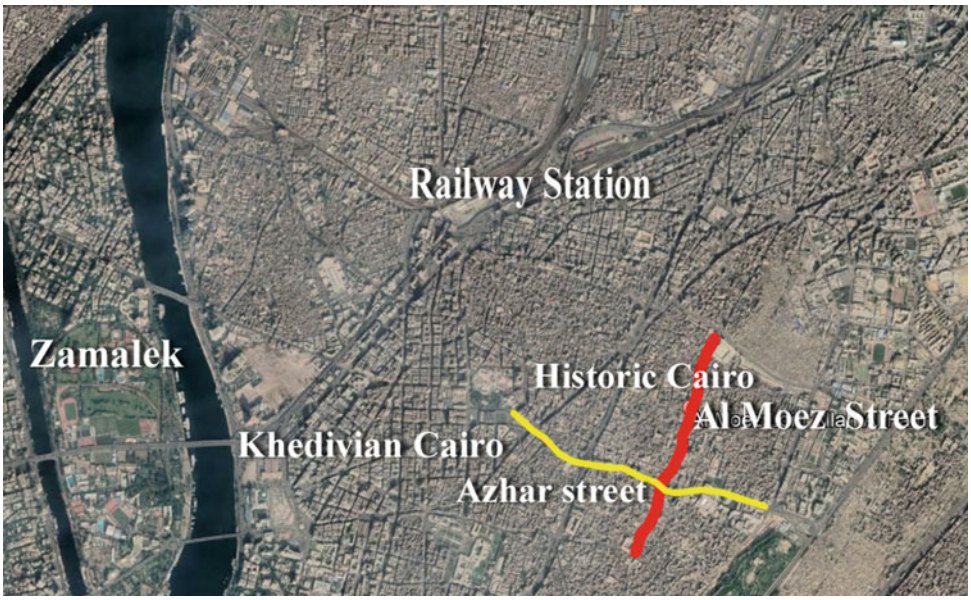

Fig. 1 Al-Moez Street location, Cairo. *Source* Google Earth

the street differ. There are religious buildings that include mosques, Zawia, Kuttabs, and Khanqahs. There are service buildings, such as Sabils and public baths; and commercial buildings such as markets and Wekalahs (Fig. 2) (Abdul-salam et al.).

4.2 History of al-Moez Street Developing Project as an Urban Open-Air Museum

"Old" Islamic Cairo, was put on World Heritage Properties List in 1979. In 1980, a study was conducted on Historic Cairo by consultants of the UNESCO to identify Historic Cairo preservation strategy. In 1997, UNDP, in cooperation with the Supreme Council of Antiquities conducted an accurate study to set the Historic Cairo preservation strategy (Antoniou et al. 1985). Proposals were introduced for developing tourism at Al-Moez Street as part of the Historic Cairo project by closing the street for pedestrians only and constructing a pedestrians' bridge across Al-Azhar Street to stress the historic continuity of Al-Moez Street which was interrupted by Al-Azhar Street after it was established in 1845. Proposals included integrating several cultural and commercial activities, redesigning facades to match the historic style of the street, providing signs and shaded areas in the space. It was proposed to reuse some historic buildings for creating new urban activities to contribute to enhancing the social and economic conditions of the area (UNDP 1997).

In 1998, the "Center for Historic Cairo Development Studies", was established with a unit for urban and architectural designs, and a documentation unit. The center set the "National Historic Cairo Project" which takes the UNDP report as its main reference. The project included "A-Moez Street development", as well as a project for restoring collapsing monuments after severe damage caused by the 1992 earthquake. It also included urban conservation and development procedures which include upgrading infrastructure (UNESCO 2009), as well as projects for reusing monuments and rehabilitation of Historic Cairo settings (UNESCO 2010 July–2012 June). An 800 million L.E. budget was allocated to the project.

In Cairo, 2002, the Ministry of Culture with the World Heritage Center organized an international conference for the preservation of Islamic Cairo Monuments. The conference introduced several recommendations for the historic city, which included enhancing and supporting the institutional framework and coordination mechanisms among different authorities concerned with Historic Cairo, and the need for preparing a universal urban plan for the preservation and development of the historic city, as well as continuous efforts for improving the performance of infrastructure networks whose deterioration is a primary reason for declining the condition of the historic city.

Practically, Al-Moez Street monuments were conserved during the first two phases of the "National Historic Cairo Project." Execution started in 2002 (2008) with the northern part, with a total cost of 40 million L.E. It was inaugurated in February 2010 as the largest open-air museum for Islamic monuments. The second phase included the southern part of the street, starting from Al-Azhar Street to Zwela Gate as well as side streets; and ended in 2014.

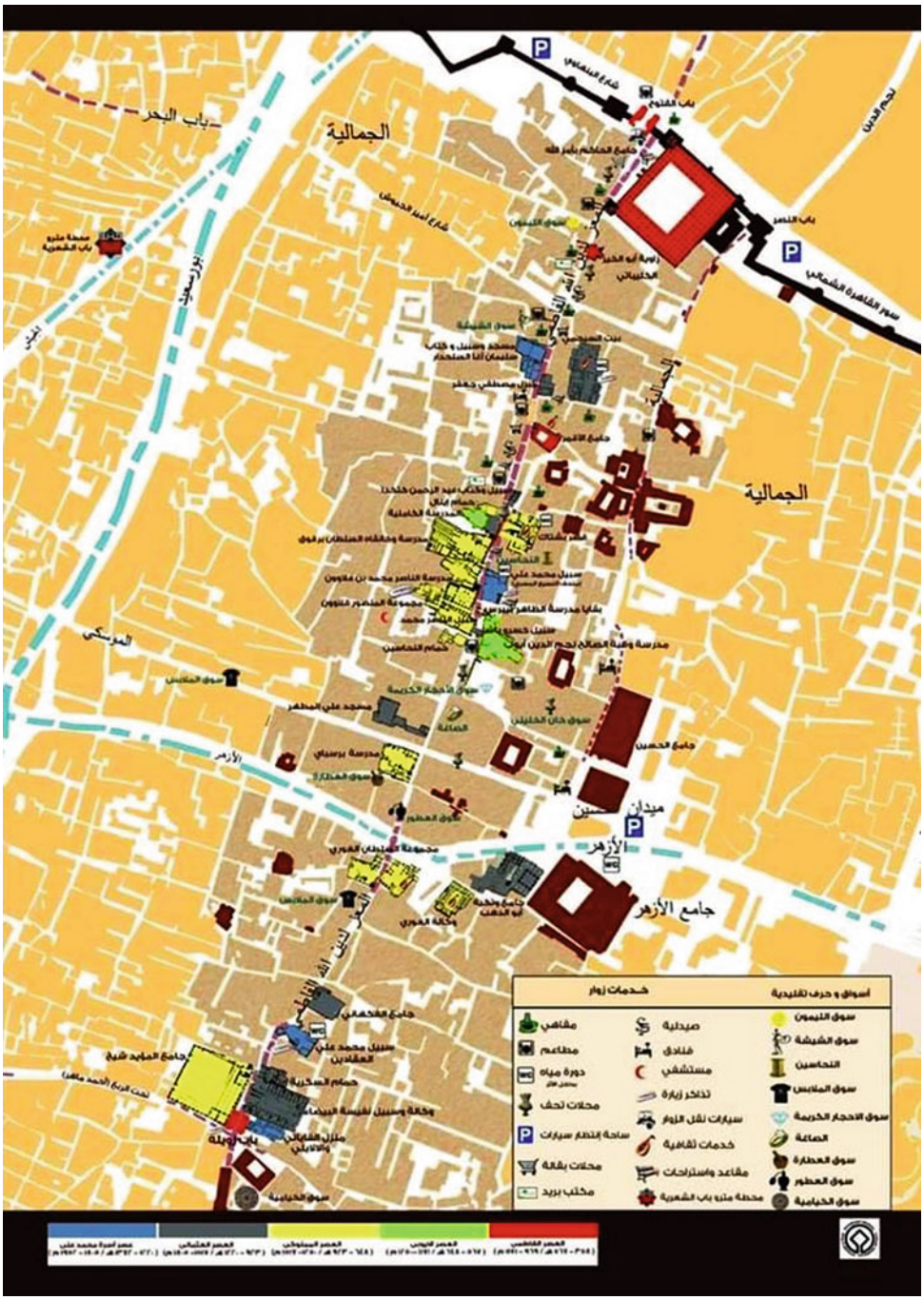

Fig. 2 Al-Moez Street MAP, showing major heritage buildings, their establishing dates, and services. *Source* The General Department of Historic Cairo & Information Center, Ministry of Culture

4.3 Features of Al-Moez Street Landscaping as an Urban Open-Air Museum Project

1. **Urban Features**
   - Total replacement of deteriorating networks. Water, sanitation, and electricity networks were renewed; and rain drainage networks were provided in 2009. Yet, the area has not been yet supplied with natural gas.
   - Increasing parking areas near the museum by opening Al-Darrasa multi-storey garage to take 600 cars in 2012.
   - Street floor was paved by domestic Aswan black granite. Pavements were done using Gandola Granite tiles.
   - Some building facades were modified by adding wooden parts whose design resembles that of the Islamic Historic Style. Building facades were conserved. Stores facades signs were replaced in some parts of the street. Night lighting was provided outside the monuments.
2. **Architectural features**
   - 33 Islamic monuments were totally restored, structurally, architecturally, in fine restoration.

- Some heritage buildings were rehabilitated. For example, Mohammad Ali's Sabil in Nahassein was turned into an Islamic weaving museum. Al-Tefahi Wekala was turned into Al-Moez visitors Center and Al-Rabb' Cultural Center by Feda Community Development Association.
- Heritage facades were lighted by contracting with the Egyptian Company for sound & light and touristic development, and an Italian company. The contract included lighting all monuments in the street as well as making uniform store lighting (Fig. 3).

3. **Landscaping**
   - The street floor and the pavements were paved with granite blocks after specifying the street level in the 1920s through the remains of black Basalt which was found at a 70 cm depth below street level.
   - Putting seats and fences in front of historic buildings in the northern part of street (Fig. 4), trash cans, identifying signs for monuments, and distributing lighting units in the streets using cantilevers and lamps specifically manufactured for heritage styles.

Fig. 3 Historic building facades lighting in Al-Moez Street. http://www.cairo.gov.eg/

Fig. 4 Distribution of landscaping elements before historic buildings. (Photo by the author)

Fig. 5 Drums festival events, on Beit Al-Shaer stage. http://www.cdf.gov.eg

4. **Functional features**
   - Allocating circulation paths inside the open-air museum for pedestrians only during day hours, with vehicular movement allowed at night only for serving stores and providing electric cars for serving visitors in the northern part of the street starting from the Kalawoon complex to Al-Hakem mosque.
   - Encouraging celebrations and festivals held in the street, such as celebrating the World Heritage Day and the Annual International Drums and Heritage Festival starting from 2013 (Fig. 5).
   - Onions, lemons, and olives markets were transferred to Obour Market.
5. **Cultural Features**
   - Raising visitors' awareness of the heritage area through symposiums held in cultural centers.
   - Providing a theatre stage from "Beit Al-Shaer". Also, specialized fairs are held inside cultural centers and historic houses, such as Tasmeem+20 which was held in June 2010 at Al-Sehemi house, Mostafa Jaafar's house, and Al-Slehdar Sabil. Some handcrafts fairs are held in the street before Kalawoon's Group. Literary symposiums are held inside cultural centers and historic houses such as "Beit Al-Shaer".

     Putting identification signs stating monument name, registration number, date, and origin.
6. **Social Features**
   - Street development promoted acceptable social activities such as friendly meetings, enjoying heritage buildings, and participation in events and programs held in the street.
7. **Economic Features**
   - Project officials encouraged workshops to change their activities to bazaars, gift shops, café equipment, etc.
   - Allocating the street for pedestrians only had a positive influence on improving trade at stores whose number increased in the development project.
   - The project attracted investors, such as the investment by a rehabilitation of a residential building as a hotel with a heritage style in 1998 by the French Egyptologist Veronica Sidrou; and domestic investment by the announcer "Gamal Al-Shaer" of a residential building to be a cultural center "Beit Al-Shaer".
8. **Technological features**
   - Using modern lighting units for lighting heritage facades and preparing the Egyptian Weaving Museum, as well as providing electric cars for serving open-air museum visitors.
9. **Administrative Features**
   - Currently there is no institutional sustainable system to protect the area and undertake all phases of managing and maintaining Historic Cairo Projects (Ibrahim 1999). In general, jurisdictions of different project authorities interfere with various authorities addressing the area such as the Endowments, Monuments, The Governorate, The district, utilities, and Civilized Coordination. The closest one was the Ministry of Culture being responsible for protecting Historic Cairo monuments and their development projects. After the 2011 revolution, a decision was made to split the Supreme Council of Antiquities and turn it into an independent ministry for monumental affairs without conducting a study to identify the method of handling technical and financial overlaps. This ministry includes the General Historic Cairo Department, the development and awareness unit responsible for improving services, the general Al-Moez Street Coordinator responsible for

coordinating with authorities responsible for discipline at Al-Moez Street and securing/cleaning the street by working companies, maintenance, electric vehicles circulations, organizing celebrations and events at the street, and eliminating all obstacles, as well as preparing a regular report of status to be submitted to the Director of the General Historic Cairo Department.

- Contracting with security and cleaning companies for the open-air museum.
- Installing electronic gates at the exits and inlets of the open-air museum to organize traffic at day for bicycles and motorcycles only, besides police/fire fighting/ambulance vehicles, and setting the dates of opening the street to vehicles for commercial purposes from 11 p.m. to 8 a.m.
- In 2013, the Ministry of Antiquities introduced the "Al-Moez Street efficiency raising" project call for tenders, due to deterioration, theft, sabotage, and ground fall after the 2011 revolution. The tender includes supply, install, and repair of electronic gates (Fig. 6); as well as electrical works and paving. The Egyptian Company for Sound and Light was contracted again for maintaining lighting units at the museum.

5 Support the Model with Criteria

Based on the research methodology that relied on questionnaires and brainstorming sessions, the model was developed by adding the management criterion including six minor criteria. These are planning, coordination, resources, development, operation, and maintenance. And it includes twenty secondary criteria to support and develop the previous model of El-Miniawy, which included planning criteria and visual criteria. The planning criteria included nine minor criteria and 66 secondary criteria, the visual criteria include eight minor criteria and 20 secondary criteria, as shown in Table 1.

6 Results of the Developed Evaluation Model

The results are achieved according to two steps as following:

6.1 Relative Weights for Criteria

As shown in (Table 1), the first column shows the results of the relative weights of the proposed model criteria within the evaluation decision.

The results show that the most important secondary criteria were "Richness of urban spaces" included in sensual and aesthetic criteria which scored 3.53%, "elements Regular Maintenance of man-made environment" and "Regular waste disposal" both scored 3.45%, "Improving services" scored 2.05% included in the management criteria, and "Projects for preserving heritage architecture" included in architectural criteria and scored 2.86%.

Also, the results show that there are many secondary criteria, included in landscaping criteria, which have less importance in evaluating open-air museums. In percentages ranging from 0.08%: 0.36% such as "Stairs and ramps", "Sculpture and artworks", "Plant basins", "fences", "Phone booths" all scored 0.08%, increasing the importance of secondary criteria included in **Technological criteria.** The "Reducing energy consumption" and "Transports" both scored 0.15%, followed by the secondary criteria included in **Functional criteria**. In percentages ranging from 0.31%:

Fig. 6 Maintenance of Al-Moez Street electronic gates. http://gate.ahram.org.eg

Table 1 Developing a model for evaluating the efficiency of Al-Moez open-air museum

Urban Open-air museum efficiency criteria				The new numerical model		
Major criteria	Minor criteria	Secondary criteria		Relative evaluation of the criterion weight	Percentage expert evaluation of Al-Moez Open-air museum	Al-Moez Open-air museum efficacy percentage
Planning criteria	Environmental criteria	Protection from climate elements		1.20	20.00	0.24
		Protection against pollution		1.20	80.00	0.96
		Protection against noise		0.39	82.50	0.32
		Total of criterion		2.80	60.83	1.53
	Urban criteria	Basic infrastructure networks that suit population capacity		1.16	80.00	0.92
		Providing sufficient car parks		1.16	50.00	0.58
		Conservation of heritage urban space elements	Floors	1.16	52.50	0.61
			Ceilings	1.02	25.00	0.26
			Walls (building facades)	1.16	52.50	0.61
		Development of deteriorated urban areas within the museum		1.16	2.50	0.03
		Total of criterion		6.80	43.75	3.00
	Architectural criteria	Projects for preserving heritage architecture		2.86	47.50	1.36
		Projects for heritage buildings reuse and rehabilitation		2.24	75.00	1.68
		Lighting heritage facades		1.70	80.00	1.36
		Total of criterion		6.80	67.50	4.40
	Landscaping criteria	acoomplishing design criteria of landscape elements	Floors	0.23	95.00	0.22
			Seats	0.36	50.00	0.18
			Green area and trees	0.31	22.50	0.07
			Fountains	0.16	5.00	0.01
			Potable water supply	0.36	2.50	0.01
			Stairs and ramps	0.08	32.50	0.03
			Sculpture and artworks	0.08	5.00	0.00
			Lighting posts	0.36	52.50	0.19
			Guiding signs	0.36	52.50	0.19
			Trash cans	0.31	50.00	0.16
			Plant basins	0.08	5.00	0.004
			Trees grates and guards	0.16	25.00	0.04
			Fences	0.08	22.50	0.02
		Homogeneous distribution of landscaping elements		0.23	47.50	0.11
		Integrated distribution of landscaping elements		0.31	17.50	0.05
		Availability of public services at the open-air museum	Shadings	0.23	20.00	0.05
			Kiosks	0.23	2.50	0.01
			Transportation stops	0.36	5.00	0.02
			Information desks	0.31	7.50	0.02
			Water closets	0.36	5.00	0.02
			Phone booths	0.08	5.00	0.004
		Night lighting of landscaping elements		0.13	2.50	0.003
		Total of criterion		5.20	24.20	1.40
	Functional criteria	Appropriateness of functional uses of heritage buildings		0.44	50.00	0.22
		Variation of functional usages		0.31	97.50	0.30
		Clarity of start and end points of museum paths		0.44	45.00	0.20
		Variation of museum paths specification		0.31	5.00	0.02
		Variation of circulation types and paths within the open-air museum		0.31	72.50	0.23

(continued)

Table 1 (continued)

Urban Open-air museum efficiency criteria					The new numerical model		
Major criteria	Minor criteria	Secondary criteria			Relative evaluation of the criterion weight	Percentage expert evaluation of Al-Moez Open-air museum	Al-Moez Open-air museum efficacy percentage
		Circulation paths agreement with user intensity			0.44	75.00	0.33
		Ease of movement and communication			0.31	47.50	0.15
		Movement directing			0.44	50.00	0.22
		Comfort	Appropriateness of the museum path length		0.55	95.00	0.52
			Existence of public rest places along museum paths		0.44	47.50	0.21
			Existence of private rest places along museum paths		0.44	55.00	0.24
			Comfort of landscape elements		0.44	50.00	0.22
			Thermal comfort		0.31	22.50	0.07
		Total of criterion			5.20	54.81	2.93
	Cultural criteria	Raising visitors' awareness of the heritage areas			0.68	50.00	0.34
		Variation of cultural programs, events, and their appropriateness for the heritage area	Theatre stage and stadium cinema		0.44	77.50	0.34
			Sound and light shows		0.44	2.50	0.01
			Specialized fairs		0.44	75.00	0.33
			Platforms for literary symposiums		0.44	77.50	0.34
			Celebrations and festivals in public spaces		0.44	95.00	0.42
		Providing information evidence			1.12	72.50	0.81
		Total of criterion			4.00	64.29	2.59
	Social criteria	Improving the living environment			1.00	77.50	0.78
		The availability of social activities			1.50	77.50	1.16
		Displays the culture and traditions of the area			1.50	47.50	0.71
		Total of criterion			4.00	67.50	2.65
	Economic criteria	Preservation of traditional crafts and industries			1.78	2.50	0.04
		Accomplishing economic boom at the heritage area			1.34	77.50	1.04
		Attracting investors and stakeholders to the heritage area			0.88	47.50	0.42
		Total of criterion			4.00	42.50	1.50
	Technological criteria	Reducing energy consumption			0.15	2.50	0.004
		Using modern technologies in equipping the museum	Information evidence		0.45	5.00	0.02
			Lighting		0.30	47.50	0.14
			Landscape elements		0.15	2.50	0.004
			Transports		0.15	97.50	0.15
		Total of criterion			1.20	31.00	0.32
	First discipline in general				40.00	50.71	20.32
Visual criteria	Visual criteria	Visual clarity	Obstacle-free view		1.88	47.50	0.89
			Clarity of circulation paths		1.88	77.50	1.45
			Clarity of nodes		1.88	50.00	0.94
			Good impressions	Clarity and directness	0.29	47.50	0.14
				Intimacy	0.29	97.50	0.29

(continued)

Table 1 (continued)

Urban Open-air museum efficiency criteria					The new numerical model		
Major criteria	Minor criteria	Secondary criteria			Relative evaluation of the criterion weight	Percentage expert evaluation of Al-Moez Open-air museum	Al-Moez Open-air museum efficacy percentage
			from facades	Acquiring	0.29	32.50	0.10
				Stimulation	0.40	72.50	0.29
				Excitement	0.40	47.50	0.19
				Relaxation	0.29	22.50	0.07
				Anticipation	0.19	97.50	0.19
				Domination	0.40	2.50	0.01
			Total impressions degree		2.55	52.50	1.26
		Visual attraction	Landmark visibility and imageability		2.48	95.00	2.35
			Visual sequence		2.48	97.50	2.41
			The monumental scale		1.88	25.00	0.47
		Total of criterion			15.00	63.57	9.77
	Sensual and aesthetic criteria	Visual comfort	Feeling Enclosure in heritage spaces		1.80	80.00	1.44
			The intimate scale		1.80	72.50	1.31
			Variation of artistic elements		2.63	97.50	2.56
			Richness of urban spaces elements		3.53	97.50	3.44
			Agreement of element design within the open-air museum		2.63	47.50	1.25
			The existence of aesthetic artistic relations and proportions		2.63	92.50	2.43
		Total of criterion			15.00	81.25	12.42
	Second discipline in general				30.00	72.41	22.19
Management criteria	Planning	Identifying problems and opportunities			0.96	45.00	0.43
		Identifying works and tasks			1.44	20.00	0.29
		Total of criterion			2.40	32.50	0.72
	Coordination	Coordination of works and administrative authorities			1.28	47.50	0.61
		Setting budgets			1.28	22.50	0.29
		Managing human activities			0.51	2.50	0.01
		Managing events and programs			0.77	47.50	0.36
		Organizing regular maintenance			1.28	20.00	0.26
		Total of criterion			5.10	28.00	1.52
	Resources	Providing and training human resources			0.56	2.50	0.01
		Budget management			1.53	20.00	0.31
		Building-use management			0.92	47.50	0.44
		Service management			1.53	17.50	0.27
		Information resources management			0.56	20.00	0.11
		Total of criterion			5.10	21.50	1.14
	Developement	Improving services			2.05	2.50	0.05
		Establishing new services			1.55	5.00	0.08
		Total of criterion			3.60	3.75	0.13
	Operation	Setting museum visit legislations			1.10	5.00	0.06
		Monitoring of museum operation and activities			1.45	5.00	0.07

(continued)

Table 1 (continued)

Urban Open-air museum efficiency criteria			The new numerical model		
Major criteria	Minor criteria	Secondary criteria	Relative evaluation of the criterion weight	Percentage expert evaluation of Al-Moez Open-air museum	Al-Moez Open-air museum efficacy percentage
		Managing transportation for individuals and goods	1.79	75.00	1.35
		Protection of natural and man-made environments	1.45	15.00	0.22
		Providing safety and security	1.10	47.50	0.52
		Total of criterion	6.90	29.50	2.21
	Maintenance	Regular maintenance of man-made environment	3.45	20.00	0.69
		Regular waste disposal	3.45	77.50	2.67
		Total of criterion	6.90	48.75	3.36
	Third discipline in general		30.00	27.33	9.09
Total evaluation for all criteria			100.00	50.15	51.60

0.44%, "Ease of movement and communication" and "Thermal comfort" both scored 0.31%.

6.2 Evaluation of Al-Moez Open-Air Museum

The percentages of expert evaluation of the secondary criteria of Al-Moez open-air museum showed in the second column in the new numerical model (Table 1). The percentage of Al-Moez open-air showed in the last column in the new numerical model (Table 1).

7 Discussion

7.1 Discuss the Results of the Developed Model to Evaluate Open-Air Museums

- The importance of the management criteria is estimated to be 30%, and this proves its importance in evaluating open-air museums, as the research has previously assumed (Roders and Van Oers 2011).
  - Management criteria are equal to visual criteria in importance, and planning criteria outweigh them in percentages. They are estimated to be 30% and 40%, respectively.
- The minor criteria are ranked in importance as follows, Fig. 7: Sensual and aesthetic criteria 15.0%, Visual criteria 15.0%, maintenance 6.90%, operation 6.90% Architectural criteria 6.80%, Urban criteria 6.80%, functional criteria 5.20%, landscaping criteria 5.20%, resources 5.10%, coordination 5.10%, Economic criteria 4.0%, Social criteria 4.0%, Cultural criteria 4.0%, development 3.60%, Environmental criteria 2.8%, planning 2.40%, Technological criteria 1.20%. This proves the importance of combining the planning and visual criteria with the administrative criteria in the process of open-air museum evaluation.
- The operation and maintenance criteria were ranked 3 and 4 in terms of importance in the evaluation model with 6.90% for each of them, and this confirms their importance in the sustainability of preserving the urban heritage which was confirmed by previous studies and international charters and recommendations (UNESCO 2008).
- Coordination and resources criteria were ranked 9 and 10 in terms of importance in the evaluation model In the same percentages estimated at 5.10% from the total efficiency of the museum, which is influential percentages in The overall result because of their ability to reducing time and money lost, that's which was assured by previous studies.
- Development and planning criteria were ranked 14 and 16 in terms of importance in the evaluation model by rates of 3.60% and 2.40%, respectively, which is less important than operation, Maintenance, Coordination, and Resources criteria, As it relates to identifying problems and opportunities, and improving existing services, that's which was assured by previous studies (Joshi et al. 2015).
- The secondary criteria "Regular maintenance of man-made environment", "Regular waste disposal", and "improving services" achieved great importance within the management criteria at rates of 3.45%, 3.45%, and 2.05%, respectively, that's assured by the previous studies (Feilden and Jokilehto 1998). However, "Managing human activities", "Providing and training human resources", and "Information resources management" obtained rates of 0.51%, 0.56%, and 0.56%, respectively.
- The developed evaluation model showed great development in evaluating open-air museums, as it is more useful than El-Miniawy's model because it produced clear

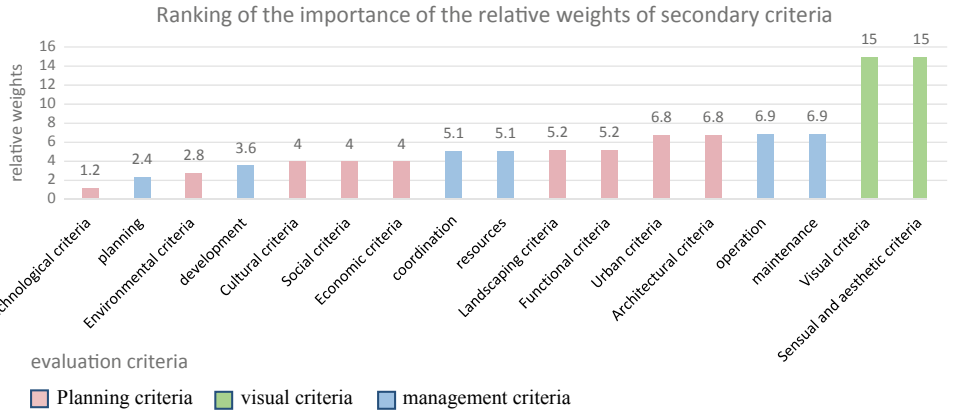

Fig. 7 Ranking the importance of the relative weights of secondary criteria

quantitative results not qualitative (El-Miniawy 2018), explaining the value of the criteria accurately for decision-makers as this was one of the disadvantages of El-Miniawy's model, and also showed the importance of management criteria in evaluating Open-air museums.

7.2 Discussion of Al-Moez Street Development and Landscaping as Open-Air Museum Project

1. Al-Moez open-air museum achieved a medium efficiency of 51.60%.
2. The percentage of planning criteria efficiency was average 20.32%, Visual criteria were good 22.19%. Management criteria were low at 9.09%, Fig. 8.
3. Minor criteria concerning landscaping, technology, planning, coordination, resources, development, and operation were low. Urban, functional, economic, and maintenance criteria were medium. The environmental, architectural, cultural, social, and visual criteria were good. Meanwhile, the sensual and aesthetic criteria were excellent, Fig. 9.

Results of the application of the evolution model to El-Moez open-air museum were presented to the experts and discussed with them in a session. They found that the results are logical as it showed the weakness of the museum's management criteria, and some problems regarding the landscaping, function, and technology. This supports the validity of the model as it does not depend on the sensations in decision-making.

The following is a discussion of the different minor criteria evaluation trends to demonstrate success and deficiency at Al-Moez open-air museum:

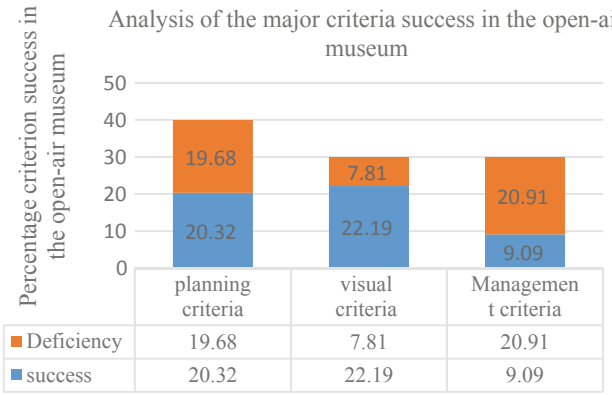

Fig. 8 Analysis of the major criteria success in the open-air museum

(a) ***Environmental***: The criterion achieved a good efficiency percentage of 60.83% for the following reasons:
- There are no shaded seats for protection against the climate, except for some seats shaded with trees before Al-Hakem mosque.
- Controlling vehicular movement in the street led to reducing pollution and noise and contributed to changing traditional workshops to bazaars.

(b) ***Urban***: The criterion achieved a medium efficiency percentage of 43.75% for the following reasons.
- The nearest garage of the museum (Al-Darrassa garage) is one km away from the entrance of Al-Moez from Al-Azhar Street; interrupting path continuity. There are no car parks from the entrances of Elfotouh and Zwela Gates.
- The development project did not consider the historic study of materials used in floors in terms of ores, design, or dimensions. Also, façade modifications have no historic implications, too.
- Conservation works focused on Al-Moez Street buildings only and some few buildings in branching

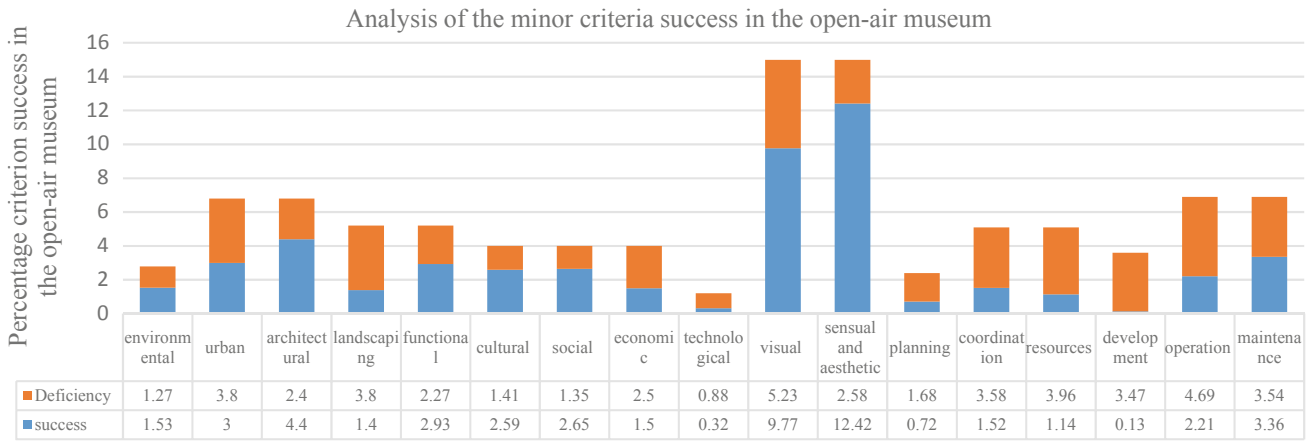

Fig. 9 Analysis of the minor criteria success in the open-air museum

allies without addressing deteriorating places in the area.

(c) ***Architectural***: The criterion achieved a good efficiency percentage of 67.50% for the following reasons:
- Many of the heritage buildings are in bad structural condition, despite some façade preservation efforts.
- There is no complete detailed study for reusing non-used monuments.

(d) ***Landscaping***: The criterion achieved a low efficiency of 24.20% for the following reasons:
- Seats are distributed in front of historic buildings. They are neither comfortable nor shaded.
- There are no green areas, and trees appear only before Al-Hakem mosque. There are no fountains or drinking water sources, sculpture or artwork, plant basins, or tree grates. As for services, there are no kiosks, information desks, transportation stops, phone booths, or public water closets for serving visitors. Water closets in mosques open for the public are used.
- The stairs and ramps are in good condition and with comfortable dimensions.
- Lighting elements, trash cans, and fences need maintenance.
- Landscape elements lighting depend on the street lighting, without having their own lighting.
- There are identification signs for heritage buildings (Fig. 10), while there are no guiding signs or legislation signs for the open-air museum.
- Fences before historic buildings give the visitor a feeling of risk.
- There is no design homogeneity or integration between landscaping elements' units in the open-air museum.

(e) ***Functional***: The criterion achieved a low efficiency of 22.50% for the following reasons:
- Changing activities of traditional workshops in the street; such as brass makers into stores, reduced the heritage functional value of the area. Some commercial activities emerged which contrast the heritage value. Also, transferring the lemon and olives market changed the mental image of the street.
- The geographic start of the museum path is Al-Fotouh Gate, and the end is Zwela Gate. Realistically, due to the absence of parking areas or public transportation stops at the start and endpoints, with the nearest in Al-Azhar Street, Al-Moez Street is entered through it. There are no landmarks on the northern part entrance of Al-Moez Street, while the southern part is characterized by Al-Ghoury shed.
- There are no specialized museum paths because the museum is limited to one street only, not an urban area.
- Circulation paths agree with the user intensity due to allocating the street for pedestrians only during daytime.
- Movement is easy, particularly with electric cars, but there are a risk in crossing Al-Azhar Street to continue visiting the southern part of Al-Moez, particularly with fences, and the absence of pedestrian bridges or tunnels (Fig. 11).
- Circulation directing in the street depends on perceived through as there are no guiding signs.
- The museum path is divided into two parts. The southern part from Zwela Gate to Al-Azhar Street is 450 m, to perambulate in 15 min without adding time consumed in visits. The northern part, from Al-Azhar Street to Al-Fotouh Gate is about 950 m,

Fig. 10 Identification signs for heritage buildings (photo by the author)

Fig. 11 The risk of crossing Al-Azhar Street to complete the trail of the southern part of Al-Moez Street (photo author)

to be perambulate in 30 min, without adding time consumed in visits.

- There are public rest places; seats in front of some historic buildings. Some cafes and restaurants can be found along the path without harmony.

(f) ***Social***: The criterion achieved a good percentage of 67.50%, due to the following reasons:

- The living environment of residents improved due to improving networks, paving the street, and restoring buildings. Hence, the rental value of residential units in the old lease law increased from 10 to 150 L.E. before the project to around 500 L.E.
- There are some rejected human activities such as playing football around monuments, particularly Al-Hakem mosque.

(g) ***Technological***: The criterion achieved a low percentage of 31.00% due to the following reasons:

- There are no applications to reduce energy consumption on street, modern techniques in informational directories, or landscape elements.

(h) ***Visual***: The criterion achieved a good percentage of 63.75% due to the following reasons:

- Clarity of vision differs on both sides of the street; with the northern being more clear and the southern less clear due to the many vendors and shades above stores.
- The circulation path along the street is clear except for the points of confusion. Nodes are not clear due to the ambiguity of their urban form, infrequency, and small size.
- Historic buildings can be recognized directly as they are simple. Yet, they hinder the clarity of commercial stores on ground floors.

- Intimacy and familiarity are accomplished due to feeling the intimacy of the street and the historic scent of the place, and forms expressing culture of the place and the society.
- Vendors seized parts of the street particularly in front of Al-Ghoury and Al-Fakahani mosques.
- The street stimulates visitors to explore its features, due to the visual sequence, and the richness of urban and architectural elements particularly during festivals and events. Excitement levels increase at night with shining lights over heritage buildings.
- Expecting the street is achieved due to mystery and surprise, as the end of the street is not clear, with variable width, variation of shade and light, covered and uncovered, and buildings across the street.
- Landmarks can be seen: such as historic fence gates and mosque minarets along the street.
- There is a strong visual sequence in the street through revealing and disappearing of landmarks with the moving sequence.

(i) ***Aesthetic and sensual criteria***: The criterion achieved an excellent efficiency of 81.25%, due to the following reasons:
- The artistic elements varied in the heritage buildings of the Fatimid, Ayubi, Mamluk, and Muhammad Ali's family. The urban forms have aesthetic relations and aesthetic proportions that enrich the same.
- There was harmony in heritage buildings with each other, with floors, lighting units, and vary with the modern buildings and shop facades.

(j) ***Planning***: The criterion achieved a low-efficiency percentage of 32.50% due to the following reasons:
- The Ministry of Housing, Utilities, and Urban Communities has prepared a project for the development of Al-Moez Street, including existing state studies and a proposal for improving urbanism and the visual image. Yet, the proposal was not achieved.
- Jurisdiction overlaps; municipalities are responsible for violations, whereas the Ministry of Antiquities is having jurisdiction over the technical aspects only.

(k) ***Coordination***: The criterion achieved a low-efficiency percentage of 28.00% due to the following reasons:
- There is no universal view of the project due to the interference of decision-making authorities. Although the Supreme Council of Antiquities is responsible for all monumental buildings, it owns less than 5% of them, with the remaining 95% are owned by the Ministry of Endowments (UNDP 1997).
- No planned budget was prepared before starting the "National Historic Cairo Project". There are various sources of finance. From the government, the ministries of tourism, Housing, and Endowments took part. Also, the Ministry of Antiquities took to grants from the Ministry of International Cooperation, as well as foreign grants such as the Arab Fund for Social and Economic Development, the EU, the American Fund, and the Center for American Research.
- Maintenance works are irregularly conducted. The Ministry of Antiquities invites tenders of increasing street efficiency upon need.

(l) ***Resources***: The criterion achieved a low efficiency of 21.50% for the following reasons:
- Human resources are not sufficiently trained.
- Insufficient resources for financing Al-Moez open-air museum and low revenues. The Ministry of Endowments rent stores inside monuments at a low value that does not match the heritage area value. In addition, tickets for some monuments are cheap.
- Managing services can only be done by contracting with a cleaning company and a security one.

(m) ***Upgrading***: The criterion achieved a low efficiency of 3.75% for the following reasons:
- The basic services of the museum were not provided; such as information desks, Water closets, and Potable water supply. The services were not improved.

(n) ***Operation***: The criterion achieved a low efficiency of 29.50% for the following reasons:
- There is no legislation for visiting open-air museums to protect the natural and man-made environments or camera surveillance systems.
- Electronic gates are not working. They need maintenance. Their role is undertaken by the private security company and the official security forces.
- Heritage buildings are protected by electronic gates at their entrances. Yet, stores inside monuments contain violations that threaten their security.
- Preventing vehicular movement at daytime, and security forces at the perimeter contributed to enhancing security but did not stop stealing and assaults, as well as some immoral aspects; particularly during nighttime. The Ministry of Antiquities introduced a project for modern cameras, control rooms, fire alarm, and self-extinguishing network. But the project has not been executed yet.

(o) ***Maintenance***: The criterion achieved a medium efficiency of 48.75% for the following reasons:
- A private cleaning company was contracted for removing trash and waste regularly out of the street without coordination with the municipal authority for sustainability.

8 Conclusion

The research supported the evaluation model for the efficiency of open-air museums with the management criteria, and with relative weights of all criteria in museums evaluation. Then, the model was applied to Al-Moez open-air museum to confirm the model's correctness.

The results showed that the model can be applied in other open-air museums with the future possibility of developing this model by researchers to fit the nature of each open-air museum. That's where such models help to rich to accurate results, and also help decision-makers to support efficiency to the open-air museum.

Also, the results showed that the evaluation of the Al-Moez museum scored 51.60%; revealing that its efficiency is medium. Then, the research discussed success potentials and deficiency features which can be remedied by providing parking areas, public transportation stops at the start/end of the museum path, achieving continuity of the museum path across Al-Azhar Street, providing more public services for museum visitors, achieving design criteria of the landscaping elements and focusing on their homogeneity/integration and regular maintenance, as well as establishing a full administrative structure responsible for the museum to achieve higher efficiency levels and sustainability of the heritage site and the open-air museum for future generations.

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Porous Images: Benjamin Reveals Naples

Giuliana Gritti

Abstract

August 1925. On the pages of "Frankfurter Zeitung" appears an article written by Walter Benjamin and Asja Lacis with a simple title: Naples. The first of a series of articles with the aim of seeking 'Modernity' through Europe and the way European metropolis accommodate this new phenomenon. Practicing his micrological approach, he captures images of the cities, collects impressions of their resistance and reads the profound essence of modernity. During his stay in Naples, he goes deep into the picturesque spirit towards the revelation of the true identity: Porosity as generative power of modernity. The German philosopher gets impressed by the perfect interpenetration between a complete identification of citizens with the city, an indissoluble link between the urban tissue and the social vitality. Almost a century later, Massimo Cacciari, contemporary Venetian philosopher, dusts off the Benjaminian image of Naples in order to awake consciousness on how the utopia of modernity has failed, especially in the Mediterranean area. Linking Benjamin's insight and Cacciari's perspective, the goal of this study is to 'borrow' Benjamin's method by images to build up an effective urban approach in order to find out the metaphor of porosity as the power of urbanity regeneration, lost in time. Comparing the images described by Benjamin and the present-day city, four 'porous categories' of urban interpenetration can be identified as an interpretation of different degrees of porosity. That's the starting point for a design approachable to give to Naples the role of threshold city—the last European and the first Mediterranean city.

Keywords

Porosity • Identity • Walter Benjamin • Modernity • Naples • Urban image • Interpenetration • Mediterranean environment • Massimo Cacciari • Permanence • Memory • Metaphor

1 Walter Benjamin, An Urban Explorer

Walter Benjamin (born 15 July 1892–died 27 September 1940) has been a twentieth-century literary critic, theorist, and essayist. Born in Germany, after the rise of Hitler and National Socialism, he lives in exile spending time travelling from Italy to Russia, from Spain to France, before finally moving to Paris in 1933. In the meantime, the German philosopher experiments a sort of micrological approach to read the different European cities he saw in order to capture the image of modernity, with its contradictions and resistances. He publishes a series of articles about each city he visited and "Naples" comes as the first experimental laboratory.

When Walter Benjamin arrives in Naples with the Latvian intellectual, Asja Lacis, he experiences and internalizes the real essence of the city unveiling the dialectic components and its inner conflicts. He images to find out a typical Mediterranean city with its classical forms that limit the contours with precision, the line of the column and the architrave of the temple that stands against the unalterable blue of the sky. On contrary, he comes across a twist, a confuse concatenation of vital expression mixing the highest artistic expressions with the simple "scrounging capacity" (known in Italian as "arte dell'arrangiarsi"), as Ernst Bloch declares in the book "Geographica" referred to Naples.

Benjamin defines the Neapolitan chaos as a sort of *porosity* that manages to enclose all the elements in the bizarre and the arabesque. An unexpected Mediterranean spirit that turns the city into a kind of coral reef, tingling with

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endless forms of vitality, where nature is confused with humanity, inextricably.

1.1 Benjamin Reveals Naples

Walter Benjamin's critic look at Naples unveils the hidden relations between people and urban elements in order to grasp the metaphysical forms of the object contained in the allegorical value: a non-definitive, unformed, a kind of unfinished that continuously appears and disappears in the visual horizon without reclaiming any conflict. The space of the city is read in the name of *porosity* that allows concrete proximity to every detail as a result of complete immersion in the everyday experience of authentic Neapolitan life.

The intuition of the image of *porosity* gives an innovative interpretation of the Mediterranean architecture as a synthesis of the community rhythm, in which construction and action interpenetrate vertically—in the passage between rock, stone and wall—and horizontally—between courtyard, door and staircase. These elements of interpenetration constitute the conceptual grid on which Benjamin bases his own idea of Naples: a lack of clear boundaries between phenomena, a total permeation, an inextricable merger of old and new, public and private, sacred and profane. The city is characterized by "*spatial anarchy, social intermingling, and, above all, impermanence*". What is concealed is the key to interpretation of the urban setting; it further suggests the transience and instability of architectural and social forms, the interpenetration of modern and archaic, interior and exterior. *Porosity* points out the significance of what is hidden. As an unplanned chaotic entity that constitutes an organic totality, "*Naples exists in a perpetual state of blissful confusion*". Buildings, spaces, monuments and objects that compose the urban environment are structure and patterns of human social activity, architecture and action shape each other, as an alive theatre that accommodates the intense vitality of the Mediterranean society.

Reading Benjamin's article, scrolling the images he has collected, the statement '*living means leaving traces*' comes out as a strong warning: these traces left behind by history should be carefully preserved and their meanings deciphered and saved as part of a dynamic process. Movement and mobility, transience and impermanence are fundamental features of the Neapolitan urban environment of the modern city. The cityscape remains fundamentally unaltered where the modern and the ancient are indivisible, the new and the old get confused, the monumental and the vernacular coexist, as synthesized in the urban section by Francesco Venezia (Fig. 1).

> Fantastic reports by travelers have touched up the city. In reality, it is grey; a grey-red or ocher, a grey-white. And entirely grey against the sky and sea. It is this, not least, that disheartens the tourist. For anyone who is blind to form as sees little here. The city is craggy. Seen from a height not reached by the cries from below, from the Castel San Martino, it lies deserted in the dusk, grown into the rock. Only strips of shore runs level; behind it, buildings rise in tiers. Tenement blocks of six or seven stories, with staircases climbing their foundations, appear against the villas as skyscrapers. Reflections Walter Benjamin 1925

1.2 A Micrological Eye

Walter Benjamin seeks to give voice to the anachronistic status of Naples underlining three fundamental aspects as phases of the production process (Gilloch 2013a, b: 34):

(1) a sense of recurring motifs—the labyrinth
(2) a site of decay and transience—the ruin
(3) a place of spontaneity and performance—the theatre.

Through the rhapsodic collection of images, the philosopher aims to describe Naples as the perpetual ruin, a labyrinth through the transience and instability of architectural and social forms that produce a sense of dislocation and disorientation within the indeterminate, improvised character of everyday life that goes on as a theatrical performance.

Benjamin's text is based on something similar to a cinematographic montage: catching the scene, breaking it down into frames and recomposing the image, giving it a new and deeper meaning. This method offers multiple opportunities if used as a method of reading the city. The experience-matrix of Benjamin's thought comes from the instinct of getting lost in order to be reassembled artificially just like the images that have studded our experience. "*Who has wisely lost in a city is able to break the monotony of the temporal succession, to escape from this mephistophelic form of destruction of memory which is progress*". (Dottorini 2008: 153–166).

Benjamin pays attention to typical elements of the city, to what is a habitual aspect and what casually happens, going beyond the picturesque to grasp the elements of truth in the controversial and dialectical city in relation to the paradoxes of the modern reality. The images are not referred to any recognizable place of the city, exception done for some explicitly and instrumentally mentioned and described spots. The movement through the city itself gives the opportunity to design through words the feeling of loss that leads Benjamin to witness an unexpected and surprising social theatre in an urban environment: the urban tissue is no more a silent background, but turns into the co-protagonist of social life thanks to its characteristic incompleteness that opens up thousands of possibilities.

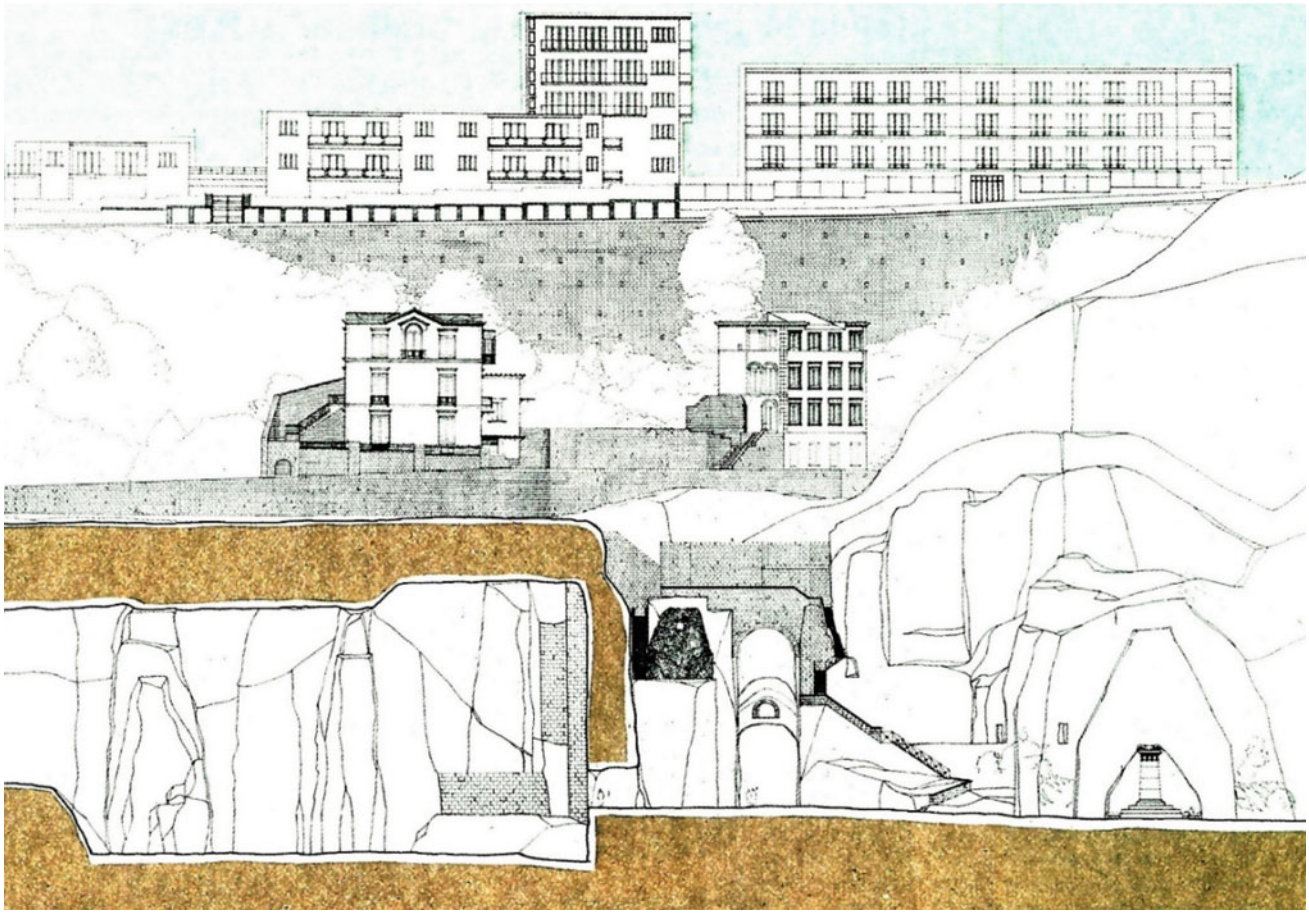

Fig. 1 Neapolitan underground soil and hypogeal Greek-Roman architecture. Naples, Monte Echia cavity; Carafa caves. *Source* Francesco Venezia e Gabriele Petrush, published on Domus N°681, Milano, Marzo 1987—XVII Triennale di Milano, 1987 "Nove Viaggi in Nove Città"—Architettura Mediterranea

The attention to details and casual events, the gaze focused on daily and apparently insignificant elements, the repetitiveness of details unveiled in different points of the city characterizes the micrological method that Benjamin develops in order to deal with the interpretation of modernity in European cities: the city is reduced to minimal units, imaginative miniatures that try to capture the fluidity of metropolitan existence, analyzed, disassembled and reassembled to design a place of interpenetration between anthropological and architectural forms.

Benjaminian micrological eye is the key to read Naples as *porous city*, able to reflect a timeless Mediterranean soul but with a unique construction process.

2 Made of Porosity

Porosity is scientifically defined as the ratio between the volume of the voids and total volume; this quality makes stones, like tuff, amazing building materials characterized by resistance and durability but above all by permeability and absorbing capacity.

The whole city of Naples stands on a tufaceous stone rib and still further, the entire built environment has been made of tuff, the material that has *porosity* as its main characteristic. Thus, just inspired by its main material, the compactness of the urban environment, as shown in Fig. 2, looks like resemble that peculiar aspect of the tuff where the small voids are all interconnected and linked in order to channel and assimilate physical and unphysical pressures.

As a sort of recognition of the city's ability to absorb the variety of external stresses and influences from an urban, architectural, artistic, and mostly cultural, point of view, it becomes clear why Benjamin chooses the image of *porosity* as a metaphor to describe the city.

Naples owes to its resilient capacity to absorb all the traces of a long history of foreign conquests and cultures engraved on its tissue. The inhabitants of this ancient city live in the heart, in the intricate tangle of alleys built up by greek colonies in the II century A.C. keeping their identity

Fig. 2 The city of Naples "Duca di Noja" map—1775. Designed by Giovanni Carafa, duke of Noja, the map includes 35 copper boards. The final width of the map is about 5 m and the length more than 2 m. *Source* CARAFA, Giovanni. Mappa topografica della città di Napoli e de'suoi contorni del Giovanni Carafa duca di Noja: anno 1775. IntraMoenia, 2017

alive and true over centuries, proud and resistant under the Swabians, the Normans, the Angevins and the Aragoneses, the Spanish, the French, the Austrians and at least the Piedmonteses. The interpenetration between urban fabric and building material, between urban space and vitality, is exactly what Benjamin sees in the city and describes in his article: he declares out loud that this resilient, permeable, vital, chaotic, unpredictable, tangled identity is what makes Naples "*as porous as its stone*". People who face, resist and absorb foreign influences become the fertilizing humus where memory and culture of the city root. It is from this humus that the strengths and weaknesses of the Neapolitan spirit come out with its contradictions: the urban tissue seems to accommodate social expressions as a living organism, a sponge emerged from the bottom and through daily life absorbs and assimilates, feeds on contrasts and tensions coming out much more vital.

The German philosopher highlights the image of porosity as generator power of urban landscape. The intricacy of this concept is able to detect, interpret and sum up the peculiarities of Naples: according to Walter Benjamin, in the absolute depth and impossibility of division. This porous complexity has followed organic rules: Naples is a city made up of many cities, all recognizable and identifiable, and the undeniable historical value that lies in their juxtaposition, penetration, overlapping that component of cultural originality.

2.1 Historical Traces

When Walter Benjamin arrives in Naples in 1925, the city is working on embracing a new national spirit: Naples passes from being the capital of a prosperous kingdom to a periphery of another foreign kingdom, forced to recognize its decadence in relation to other largest cities of Italy, but somehow still managing to show itself to the world as a city full of mysteries, full of contrasts and chiaroscuro, relying on its resilient strength: the capacity to absorb like a sponge.

The annexation to the United Kingdom of Italy in 1861 with the related loss of power, health and prestige, the huge epidemic of cholera in 1884 have disrupted the city and its population. The news about its decadence has run along the whole Italian peninsula shocking everyone and swaying

national public opinion. Immediately the city has been interested in interventions of rehabilitation. Working on the urban tissue, the rehabilitation plan tries to introduce new criteria that should solve social degradation and other unhealthy situations: the strategy requires the disemboweling the compact and chaotic tissue of the preexisting city through the opening of big boulevards and the construction of new buildings for all the people forced to live in that poor conditions. But the reality will be different: the interventions plan is not organic, since the areas of the city interested by urban rehabilitation, are so dense of the population it is hard to find space for them during and after the reconstruction; the economic investments required are so high that the realization of the project can be just partially achieved, and the privileged beneficiary of the new urban tissue is the middle-class, relevant on economic and political spheres.

So, Benjamin finds a city hit by extreme poverty, completely disappointed and disoriented: people rely on social interpenetration between the sacred and the profane, saints and superstitions in order to escape and find solace from such unbearable situation without any short-term solution. The resilient spirit and the theatricality of the excessive gestures lead Naples, beyond its rhetorical and romantic painters' vision towards an image that reflects "*the lively game of the forces of history and above all, of the popular life that in the wild and barbaric beauty of the city has left its imprint in an involuntary way and with artistic regularity*".

He dives into the labyrinth of roads and people, gets lost with no references. He believes that only in that way it is possible to perceive any contradiction: the barbaric and plebeian image of Naples, dragged into middle-class modernity; he grasps the emergence of those dialectical moments right where the attachment to the old is stronger and more sedimented. He tries to untangle the urban tangle and analyze the basic elements going beyond the folk and picturesque blanket that covers the image of the city: "*for those who do not grasp the forms, here there is little to be seen*" (W. Benjamin 124:165). Benjamin manages to capture the melancholy spirit that pervades the streets of the city, an authentic collective nostalgia. The rawest truth acquires its own poetry where the urban context is the essential background: "Neapolitan bassi" with the doors always open that allow bystanders a taste of private life, taverns that lavish on the streets all the smells of cooked food, courtyards and stairs that become the stage of spontaneity, suffocating alleys, narrow widenings opened just in front of churches. Urban components, in the image of porous city, play a decisive role and become an instrument for this urban reading that works on the interpenetration between the city's places and social life. *Porosity* flows like sap from tuff walls of the houses into the bones of the citizens who spread it in every element of the city.

3 Inherited Perspective

The power of the Benjaminian images of *porosity* goes across decades, becoming a reference for everyone who has talked and written about Naples from that time on.

In the early 1990s, Massimo Cacciari, a Venetian contemporary philosopher, dusts off the Benjaminian image of Naples and tries to reinforce the concept charging it with a whole new meaning: *porosity* is not just a key to analyze urban environment but real vital nourishment able to lift up the destiny of the town which could be the outpost of a renewed Mediterranean Europe.

In an almost hundred-years temporal range, strong social and urban transformations have jeopardized the porous quality (Figs. 3 and 4) of the city based on meaningful socio-urban interrelations between the urban realm and the society. Thus, focusing on the identification of the urban details, analyzing their singularities and the relations between them, it's possible to highlight how these elements have inspired the Benjaminian image of porosity and how many of them, permeated across the years, have been perceived by Cacciari as permanencies of that identity at the end of the century.

> Similarly dispersed, porous and commingled is private life. What distinguishes Naples from other large cities is something it has in common with the African kraal; each private attitude or act is permeated by streams of communal life. To exist, for the Northern European the most private of affairs, is here, as in the kraal, a collective matter, his private existence is the baroque opening of a heightened public sphere. For here his private self is not taken up by the four walls, among wife and children, but by devotion or by despair. […] Just as the living room reappears on the street, with chairs, hearth and altar, so, only much more loudly, the street migrates into the living room. (Benjamin 1925: 171)

The city known by Benjamin, Goethe and Bloch does not seem the same city that Cacciari describes in 1992 in "Città porosa. Conversazioni su Napoli" (The porous city. Conversations about Naples. 1992, Claudio Velardi). A deeply contradictory image of Naples, that without being aware, has succeeded in maintaining the character of a great Mediterranean city in a sort of hidden dimension.

The betrayed long-forgotten promise of an improved city in the name of modernity has provoked a socio-cultural impoverishment of the society and a loss of those social habits and urban characters (partly or perhaps entirely) that defines Benjamin's concept of *porosity*. The rhythm of modernity seems too fast and the soul of citizens is too devastated by the events to react properly. But, all the cultural rules have been overturned, the rhythm of transformation has been unstoppable and the cultural change inexorable. Benjamin's images of Naples have given the possibility to portray the starting point of that race where

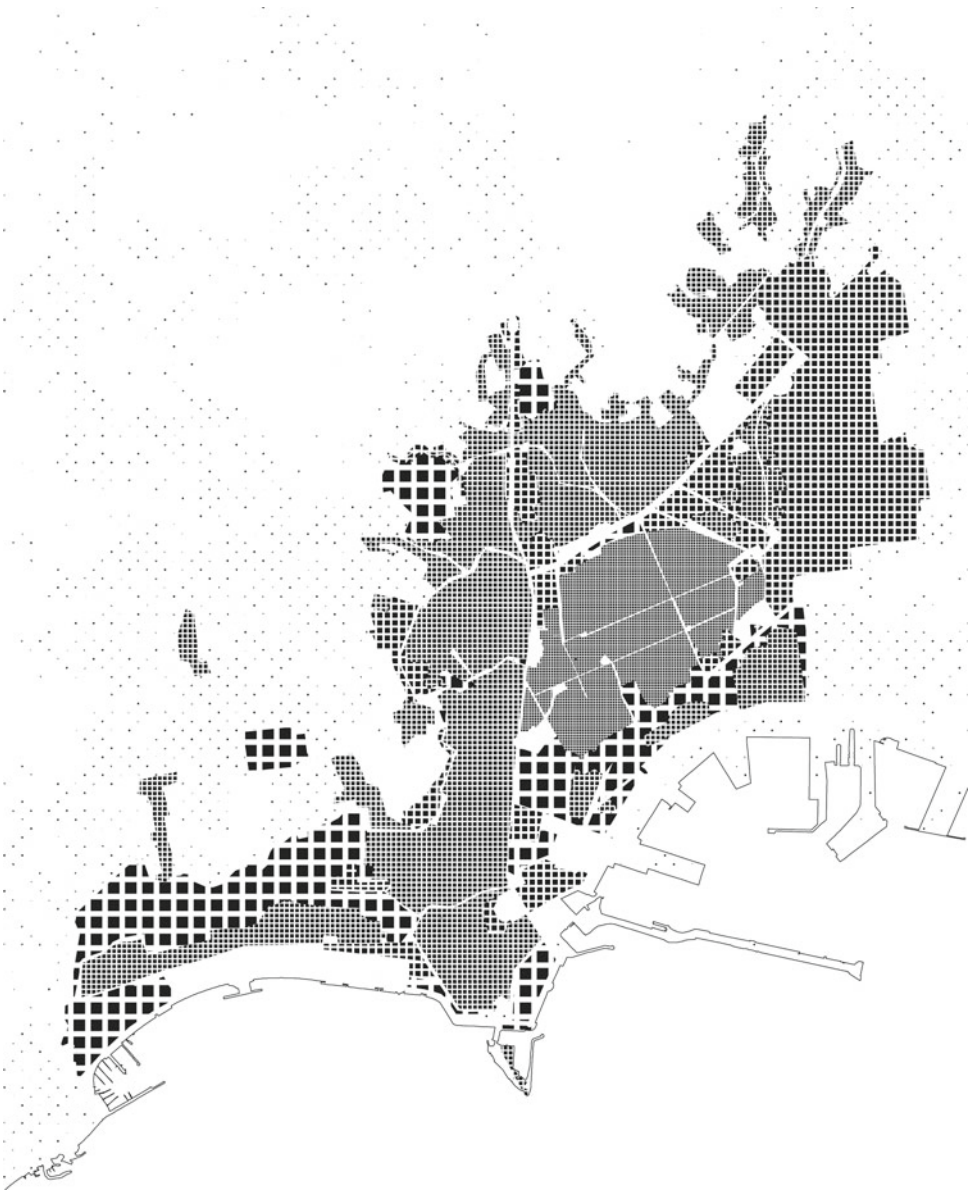

Fig. 3 Urban porosity map—Different building tissues define different degrees of porosity according to a qualitative evaluation in terms of interpenetration between public and private dimension, compactness of the tissue, built development and social practices. Made by author—Interpretative map of porosity gradient of Neapolitan urban tissue drawn on DWG map of Naples

everything constitutes that sedimented untangled complexity starts to be past, an unbearable past to leave behind to make room for modernity; and on the other side, Cacciari's awareness can be seen as the final moment, when one should ask to himself if all that modernity has been worth if the loss of identity has been the right price to pay. The past time lies in the memory of a place as it was, in order to rebuild through the thought images the hidden dimension of the city.

The savage destruction of the barbarism of the last fifty years committed by the political class that leads the city towards a social dissolution, the failure of the adaptation of European suburbs system has been the fundamental cause of social disruption and urban decay. The transfer of numerous families in the new economic-popular neighborhoods, the consequential shrinking of the historically popular neighborhoods, have brought to the paradoxical ghettoization of both situations: the first one dues to bad connection with the main city and unsatisfying local services, the second one due to the exclusion of these areas from the regeneration policies on the core center in order to restore the dignity of historical tissue even if dangerously close, isolated and degraded.

> The city is not only made by streets, buildings and fabrics. A city is more that everything the sum of its artistic background, its meaning. It's necessary firstly, be aware of its own ethos, its own historical roots, its own memory. If we don't take it as a starting point, it's difficult, quite impossible to reimage the city. (Cacciari and Velardi 1992: 160)

The strength of Benjaminian image is internalized by Cacciari and switched into a warning for the city of today:

Fig. 4 Generative map—Historical definition of different grades of porous tissues through generative paths and road hierarchy. Made by author—Interpretation of historical maps and charts based on DWG map of Naples

it's urgent to reveal the real roots, the memory of what has always been Naples, before being homologated to European modernity, before banning its spontaneous and bizarre nature; it's necessary to go deep into history to find out the cultural identity that can lead the renewal of the city and its population. The porosity lies in the unexpected surprise of discovering: the existence of a marvelous church, noble palace, monumental stairs, immerse in the compact tissue, with nothing that reveals its presence, only its breathtaking art that has persisted over centuries is preserved in the hidden dimension.

Otherwise, social coexistence between different social classes collapses, a more and more widespread local crime affirms itself; social egocentrism develops undermining the foundations of the last European and first Mediterranean community life. The melancholic and dialectical spirit that can be perceived in the pages of Walter Benjamin's article leaves room for a masochistic tendency to decay, cultural victimhood that can be translated into urban decay and social insecurity, that reach the highest moment in the earthquake. This natural disaster gets down on its knees the city and brings everyone involved face to face with the fallibility of modernity as it has been in Naples and its surroundings.

At the beginning of the 90s, when the memory of the earthquake of 23th November 1980—a natural disaster that gets down on its knees the city—vanishes, a spirit of regeneration begins to be perceived, a kind of desire of revenge against a fate that seemed to be already sealed. It is still very feeble when Massimo Cacciari is interviewed, but somehow the Venetian philosopher manages to perceive it and to focus on the loss of sense of belonging to the town and to its sites, the sense of insecurity and uncertainty spread all around the city due to the collapse of interpenetration

between public and private realms, define new relationships between citizens and city; the real identity of Naples is overlooked, and each desire of renovation would only be seen as umpteenth missed opportunity.

4 Porosity: From Metaphor to Approach on Urban Issues

The sociologist and philosopher Georg Simmel (born 1st March 1858–died 26th September 1918) states: "*Humans are porous by nature. […] bordering creature who has no border*". So true urbanity occurs where humans can mix in an unrestricted, borderless environment and this is the way in which a people-mix can give a city its special character, opening several possibilities of interpenetration. The majority of chances for natural social opportunity happens in the space between buildings that lives as a sort of in-between threshold full of implications, meaning and potentiality. This space, usually perceived as an empty void, should be interpreted as a chance to join and not separate the multitude of layers that coexist within the city. A room for *porosity* as generative power of urbanity. So, designing for *porosity* means to design for the soluble nature of human beings, design an opportunity for the inherent solubility of humanity to flourish; over time this desire to be unconstrained and unrestricted can be translated into a physical appropriation of space.

Immediately the ephemeral relationship between building and action is identified and the city is broadly described as a force able to control itself, resist the requirement to be crystallized in one form or another. There is no place for monumentality, the city is an expression of the collective memory, of vernacular culture. "*Houses accumulate memories, monuments separate them*". Memory is the most effective navigational technique in Naples, "*no one orientates himself by house numbers. Shops, wells, and churches are the reference points*". Naples is as porous as the memory of its collective and individual inhabitants.

Rediscovering the metaphor of *porosity* inside every single piece of the urban tissue opens up infinite interpretations: such as, is it possible to reconfigure that writing—Benjamin's "Naples"—diagrammatically? In other words, can the text be read as occasioning design? Porous city provides loose space and encourages its appropriation. Urbanity becomes the background of human activities, and as such the urban tissue should be examined to figure out guidelines and strategies for modernity. "*Spatial anarchy, social intermingling and—above all—impermanence*" describe the transience and instability of social forms and architectural interpenetration. The urban space as stage of improvisation evolves into the synthesis of community rhythm and the power of abstraction lives in this synthesis. The physical borders are not able to define exclusive and excluding spaces, the building walls are perceived as perforated barriers that unveil the private to the public and vice versa, letting both the realms interpenetrate, break down the limits and use their boundaries as a new coexisting, shared space. When we talk about *porosity* it is necessary to be able to make a semantic abstraction between what is identifiable as public and what is recognizable as private. Porosity can be identified as a generative process where the trigger is the loss of boundaries between the several dimensions of the urban realm; the boundaries themselves become the project elements as schematically drawn up Figs. 5 and 6. The two spheres of the urban tissue should break free the lexical distinctness and find new meanings in the interpenetration and blur of borders that define them.

The porous space exists right where it is difficult to identify what is public and what is private: public space allows being privatized in certain moments, just as private space lets public functions get in, marking out different degrees of porosity. The ground floors, the courtyards opened on the street, the appropriation of the spaces of the city, the vertical dimension that allows a sort of multi-level communication, is this fluidity that characterizes Neapolitan urban *porosity* and it is necessary to place the accent on it. The dynamics are simple, natural and strongly resistant. The reality of bonding thresholds is multifaceted and reflects the diversity that distinguishes the urban fabric not only from a morphological point of view but above all from a social and environmental point of view.

Critically analyzing all the urban factors observed by Walter Benjamin through its own words it has been possible to identify four main categories to synthetically describe the cause-effect relation:

- BONDING THRESOLDS—"*Life bursts not only from doors, not only into front yards, where people on chairs do their work (for they have the faculty of making their bodies tables). […] Just as the living room reappears on the street, with chairs, hearth, and altar, so, only much more loudly, the street migrates into the living room.*" (Benjamin 1925: 171)—Fig. 6a—Private spaces expanding on the public soil—interpenetration between the two realms.
- MELTING EDGE—"*True laboratories of this great process of intermingling are the cafès. Life is unable to sit down and stagnate in them. […] Neapolitan cafès are bluntly to the point. A prolonged stay is scarcely possible. […] The tables have a coppery shine, they are small and round, and a companion who is less than stalwart turns*

Fig. 5 The porosity of the Neapolitan City: Analytic Drawing of Borgo Limpiano. Made by author—Interpretative map based on urbanistic reflections on the urban tissue based on the analysis of Benjaminian concept of porosity drawn on DWG map of Naples

hesitantly on his heel in the doorway. Only few people sit down briefly here." (Benjamin 1925: 172)—Fig. 6b—Public spaces being privatized—official or unofficial appropriation of an urban space

- MINGLING CORE—"*Building are used as a popular stage. They are all divided into innumerable, simultaneously animated theatres. Balcony, courtyard, window, gateway, staircase, roof are at the same time stage and boxes. […] The stairs, never entirely exposed, but still less enclosed in the gloomy box of the Nordic house, erupt fragmentarily from the building, make an angular turn, and disappear, only to burst out again*" (Benjamin 1925: 167)—Fig. 6c—Private open spaces with different grades of interpenetration with the public realm
- MULTIFORM GROUND—"*Building and action interpenetrate in the courtyards, arcades, and stairways. In everything they preserve the scope to become a theatre of new, unforeseen constellations. The stamp of the definite is avoided. No situation appears intended forever, no figure asserts its "thus and not otherwise*". (Benjamin 1925: 166)—Fig. 6d—Public open spaces with different gradient of porosity and polyvalent uses: collective, individual, public and private

The method of investigation, inspired by Benjamin's "micrological eye", applied on the urban field can be an approach useful to scratch the urban surface, to look through the complexity of the tangle of relations at the root of any built environment and read the porous elements as minimal elements deeply interrelated and interpenetrated. It is crucial to extrapolate every single porous element, recognize them into the system to highlight the inextricable interpenetration inside it: social dynamics and urban processes needs to be read and identified in order to abstract the elements able to become designing tools and guidelines. *Porosity* is an extremely delicate process, but at the same time resilient and adaptable to urban and social changes.

Naples, somehow, has evolved as a result of many specific conditions, but provides an example of a city which has naturally evolved alongside the needs and requirements of its urban culture and *porosity* of humans: blurring

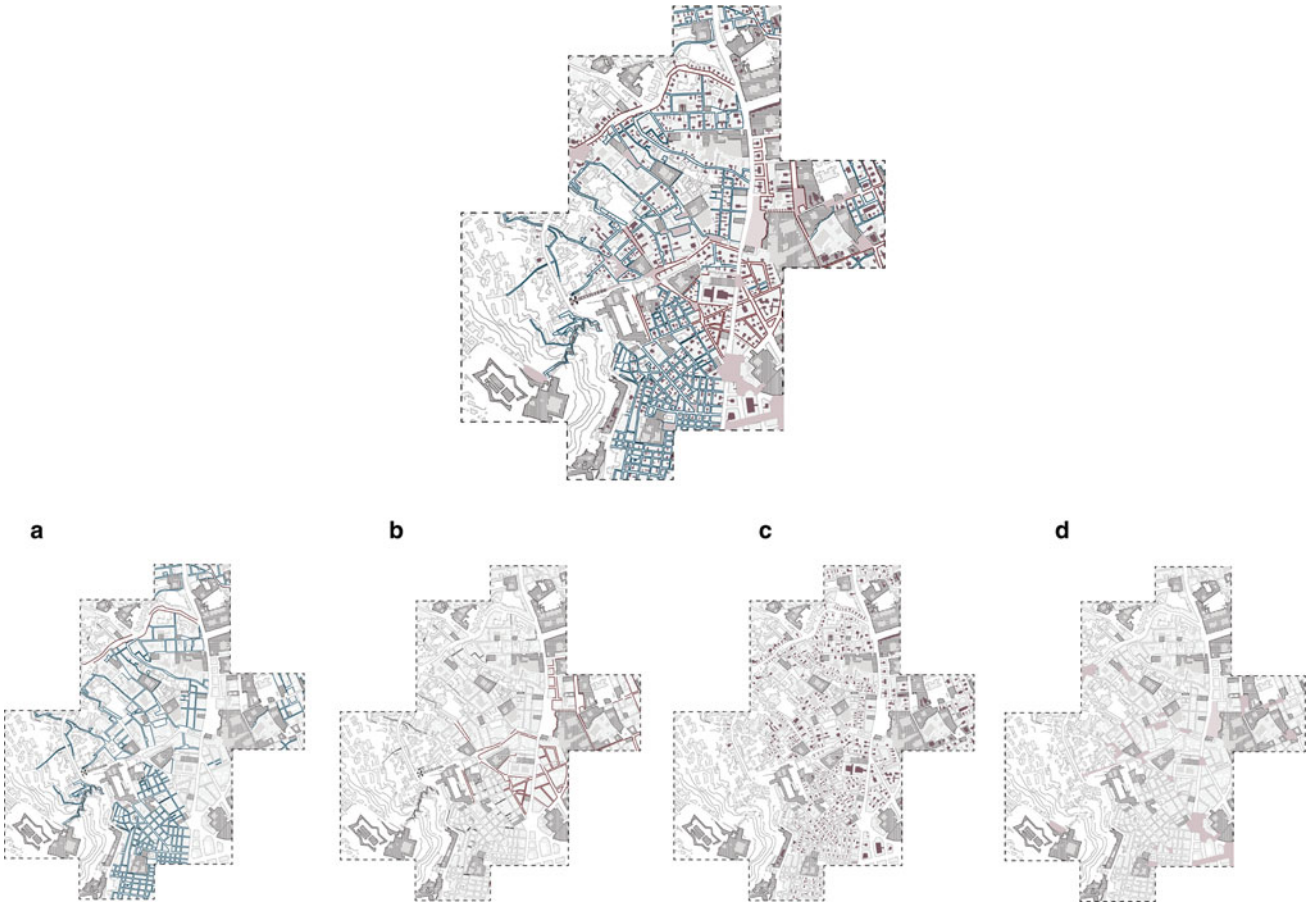

Fig. 6 Porosity as a process—Urban spaces in the city find their raison d'être in the complete interpenetration with the society that breaks the boundaries between public and private, inside and outside. The interpenetration between the urban dimension and the social dimension translated into visible and analyzable elements of the city. Made by author—Interpretative map based on urbanistic reflections on the urban tissue based on the analysis of Benjaminian concept of Porosity drawn on DWG map of Naples. **a**. BONDING THRESOLDS. **b**. MELTING EDGE. **c** MINGLING CORE. **d** MULTIFORM GROUND

boundaries loosen the strict demarcation of space and time within the city, shifting the focus from categorized actions within time periods builds up a broader network, where each space has the potential to manifest itself as a theatre for any number of unforeseen encounters that, as a flâneur, explore the urban environment. That is the reason why Naples could be the living lab to explore *porosity* as an urban approach to recover a deep and strong urban identity.

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Constructing and Maintaining City Identity Through Architecture

Much like art, architecture is a system of non-verbal symbols that are the output of feelings and aspirations of humans. It represents a way in which humans can express their cultural values, beliefs and establish a sense of unity and connection with their environments. As a consequence of this recognized relationship between architecture and society, local architecture is formed. Thus, these architectural outputs carry within them existential meanings. Some even represent the diversity of human identification as a result of cultural differences known as vernacular architecture.

The chapter titled "Vernacular Architecture as an Expression of Cities' Identity: Gercüş Houses in Turkey" dives further into the distinctive characters of traditional houses situated in the southern-east part of Turkey and compares them to surrounding cities in terms of architectural style and vernacular culture. The research uses plan typologies of the houses and social structure of inhabitants for comparisons. Through this investigation, the research gives insight into conservation issues of residential houses and urban fabric as well as the architectural and geographical potential of the town.

This part of the book also acknowledges the recent shift toward an architecture of consumption rather than a process of programmatic functionality. The result, of an alleged modernist attitude, then lacks any sense of intention as observed around the world and what remains are merely radical forms without concessions. This part highlights the importance of nature and place in architectural design in the face of neglect endured by local culture. In order to reinstate locality, the community's contribution and cultural features a city possesses are essential in shaping the elements of a city's local identity.

On that note, and in the chapter titled "How Can We Recover the Identity of The City? Workshops of 'The City Of Tomorrow/A Vila Do Mañá'", the author undertakes a real-life project known as *The City of Tomorrow*, in which she has taken part, as her case study. This educational project consists of workshops held in different villages and cities with a goal to encourage the contribution of adolescents and children, from an early age, in the construction process of public spaces and develop their creativity.

Similarly, the chapter on "The Reflection of Local Materials and Culture on Architecture: A Case Study of Harran" looks into the reflection of, both, natural and cultural data on architecture in Turkish houses. The authors acknowledge that a relationship between locality, material, culture and architecture exists and rather emphasizes the importance of using local materials. Other research within this section similarly looks into the design of architectural landscape and public spaces and the use of public arts as a way to promote social interaction and stimulate a sense of belonging.

The Impact of Identity in Determining the Characteristics of the Public Arts in Landscape

Anfal Hamodat

Abstract

Public arts represent one of the components of design of landscape architectural spaces, which in their appearance and content constitute the general shape of the space by virtue of its appearance, shapes and different geometrical and irregular patterns. By focusing on the city's cultural identity, it is possible to understand the type of arts to which the region belongs. The design of the public art and the impact of the city's cultural and cultural identity in influencing the formation of such arts in contemporary landscapes by understanding their visual properties and identifying them in subsequent productions, thus gaining those spaces of cultural value. It gives a spirit, a sense of place and identity, and creates unforgettable places with its aesthetic artistic symbols, such as symbolic signs and references frequented by people. These arts sometimes challenge social customs as well as promote social interaction and belonging to the place. From the previous literature, we found the lack of knowledge in determining the design characteristics that affect the identification of the cultural place as the art belonging to the community, and the study of a series of design examples related to different cultures could identify many of the characteristics of public art that must be taken into account in the design of such arts. These arts can not only be decorative, but are integrated with the surrounding environment. Each country has its own art. It is important to note that there is no single artistic characteristic of all the arts of the whole world. But the community is what creates art in itself. The communities are constantly changing and with them the general taste changes. These arts have a great role in welcoming strangers in their peculiar designs, bright colours and architectural details, making them attractive to tourists from all over the world. It can be noted that the public arts cannot be characterized by eternity. They change according to the time changes of the society. This has been observed in the loss of many landscapes with the artistic content of their value, attracting the change of time, while many of them have lived throughout the years. A source of attraction over the years.

Keywords

Public art • Landscape design • Identity • Street, city, urban spaces, design

1 Introduction

The public art is one of the distinguishing features of foreign spaces capable of providing a specific cultural and social value. It may be an economic value for its expression of the history of the place and the culture of its users, thus giving meaning and uniqueness to space and making it a continuous manifold between the present and the future.

It is considered one of the features of urban renewal after it was merely a decoration, historical images and expressive drawings to include a monument and an architectural sculpture that expresses the architecture itself, in turn integrated with the nature of the place that was established.

Complex forms bold expressed about the identity of the place and gave a sense of belonging to him. Landscapes are acquired in nature, which makes them unique in history and future, between disciplines and ideas. In addition to enhancing, the identity of cities and their cultural value, making them places that people go to and return to with their various artistic expressions; it also gives a sense and spirit to the place and its identity and generates unforgettable places with its symbols. In public places and its contribution by giving comfort to its users.

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Sometimes these arts may challenge societal norms, as they are a reflection of place and time and act as symbols and signs for him that makes a person go back and return to them, stimulating imagination and encouraging people to perceive the place and its works as well as enhancing interaction and social affiliation and increasing self-reflection for its aesthetic value that adds it to the environment shown with increasing the economic returns of the place, considering that art is an essential element in the economic progress, because it gives it an activity and vitality for the place as a cultural scene with attractions, as it helps to renew space and its clarity.

2 The Importance of Research

Uncovering the public arts that give a distinctive appearance to the general form of the landscape of the city, and showing its great role in highlighting the civilized identity of the city, and through public arts, we can distinguish the nature of the arts to which a region or city belongs and to identify its identity. Here, the importance of studying the characteristics of the public arts and determining them for inclusion in subsequent work is evident to preserve the civilizational identity of the city and its cultural, social and economic characteristics. And that is by giving those cultural values to the landscape by using these arts in the city streets to express the history of place and culture of developed peoples through the times; thus giving the cities a unique, distinct flavour that helps to enhance their identity and value in a way that is attached to the mind of the tourist to return to it again and also increases. The strength of the connection between the city and its inhabitants.

3 Objectives of the Research

The study aims to answer the previous problem by clarifying the importance of public art to landscape in cities in addition to identity, especially the identity of historical, cultural and social cities, and to reveal the extent of the impact of cultural identity and the characteristics of public art in man, his psyche and his belonging to his place of residence. With the presentation of examples of countries and cities, the characteristics of the public art of their landscape express their cultural identity, the truest expression, and its impact on society with the gap closed to architects so they take into account design, identity-friendly arts when designing the landscape of any city and highlighting the aesthetic and cultural value of this work in preserving historical and cultural heritage and promoting belonging to the place.

4 Literature Review

4.1 Public Arts

The term, "public arts", refers to the work of artists and artisans, with the integration of them with creative abilities to create new spaces and renew the old and reviving them with visual stimuli and manufacturing them again with different additions. We find him interested in the visual arts, rather than the performance, which includes both sculptures and paintings in public places that are easily accessible by the public. It is a creative diversity in its forms and expressions of cultural art and the participation of the masses in it and may result from the return to the heritage, and the celebration of the future and its environs environments are individual acts expressing the public beauty and modernity (Desmond 2003). It is not just an art placed in landscape that performs its aesthetic function, classified by previous literature into different forms. It may be an integrated art in its integration with the infrastructure of the urban landscape, whether it is walls, iron barriers, sidewalks, fences, in the landscapes, or independently of the same as the sculptural works that are included in the scene (Nur et al. 2014). The aesthetic value of public art as well as its functional value, which can be improved through the use of materials, treatments, and various forms such as carved sculptures, decorated streets, corridors, street furniture, murals and digital screens, can be improved by commemorating and reviving a specific historical memory such as monumental. The effects, or expressionism, give vitality to the place or may perform a specific function, such as furniture or fountains or even green walls and signs or may be a community resulting from the involvement of members of the community in the composition and reflect their imagination and memories The society's interest, customs and traditions or technology such as digital screens (Jasmi and Mohamad 2016). It is a different variety that may be either comprehensive, exclusive, dominant or subversive of different urban contexts to create attractive places that express culture and art and become a global urban standard that contributes to aesthetic transformation and creates attractive cities in their public spaces. (Guinarda and Margierb 2017) Expressing the artistic creativity on the one hand and the goals of the Jamahiriya on the other hand, with meanings of communication and meaningful messages as a sign of uniqueness (Brandão 2003).

4.1.1 Role of Public Arts in Urban Renewal

These arts have played a major role in the urban renewal of the city. Renewal is a process and product of material, economic, social, environmental and even aesthetic dimensions that can represent a cultural policy of renewal, urban life and improving the quality of public life (Palermo 2014). As well

as to strengthen the historical relationship of the city with sculptural forms of architecture that gives beauty and uniqueness and merge with the built environment (Reynolds 2012). The city of Barcelona, its presence within the urban fabric, regardless of its size and the way it overlaps, in addition to enhancing the sense of belonging to the city, may include forgotten political sculptures, which makes reading it in different forms. Its presence becomes a meeting place, a point of view and a symbol of the city centre. Of living places where it is located, as well as its ability to solve environmental problems in places where it is located (Sharp et al. 2005). It can be used to promote urban planning through creative urban sculpture to develop symbolic resources and to promote entrepreneurship in urban areas with an ideological framework as in China (Zheng 2017). A delegation found the role of public arts in the built environment and its inclusion within the architecture routinely but with the ideological transformations and the consideration of architecture happened independently of the visual arts, sculpture and painting as non-functional features, which led to the replacement of them in urban development projects for economic motives, which led to the disappearance of a period of time from space general (Hamilton et al. 2001) (Fig. 1).

4.1.2 Role of Public Arts in Landscape

The public art has a role that cannot be hidden in the integration of its existence within the landscapes and thus takes different forms, and it may be a form of vertical gardens, giving aesthetic value, environmental and economic space that everyone can use and enjoy (Nur et al. 2014). Contribute to the enhancement of the ecosystem with the relation of artistic sculptures with plants (Zhu and Duan 2011) (Fig. 2). It has been focused on pleasure and people have turned towards it like panorama-shaped waterfalls with sculptural elements as in Chicago (Carmona and Tiesdell 2007). It works to privatize public space in its visual terms, such as digital media (television), which is visually and populated (Sharp et al. 2005). Public arts in turn create an environment that is aesthetically, ecologically, socially and economically integrated with its various architectural designs and its diverse relations with landscape. The works of art in the public cultural parks may reveal changes in societal and historical values with meanings and identities that reflect the place in its different stages of life with the existence of commemorative art projects expressing the historical geographical identity of the place (Tebeau 2010).

4.2 Identity

4.2.1 Identity in Landscape

Numerous studies on external spaces have pointed to the role of identity in stirring memory with its monumental monument, its effects, and the murals that express national legends and heritage as a symbolic embodiment of both power and memory in terms of social and collective identity (Till 1999). Memorials and monuments have a role in identifying and placing identity in their place within the landscapes (Brian 2001).

4.2.2 Identity and Location in Landscapes

And can be seen through the link between man, place and imagine the past and historical memory and reconstruction by the manufacture of specific places of the past and the construction of social traditions and personal identities tangible physical facts can be seen and touched by the sense of place is an essential component of the internal psychological identity is part of the expression of the human itself symbols and recipes of that place (Brian 2001). The identity of the place is a mixture of the social and cultural characteristics of the society in physical forms within the outer cultural spaces

Fig. 1 Models of the two-dimensional and three-dimensional public arts (Jasmi et al. 2018)

Fig. 2 Examples of site privacy in external spaces (Kwon 2002)

contribute to the preservation and renovation of the buildings with distinctive elements of those spaces (Ziyaee 2017).

4.2.3 Identity and Memory in Landscape

The past is important in defining the identity of cities and memories. The relationship between memory and space is not divided as social and personal memories play a large role in the manufacture of place and identity (Wheeler 2014). Monuments, monuments, museums and archaeological sites play a central role in identification in public places with its exceptional symbolism, as in Russia (Foxall 2013).

4.2.4 Identity and Symbol in Landscape

It is possible to express identity using spatial symbols and remind them of their events and forms of commemoration in different forms of memory that help social and spatial identification (Edcnsor 1997). It is found in the Kapitan Keling Mosque as a major symbol and central centre in improving the social power of society and enhancing the role of cultural tourism (Azmia and Ismail 2016).

4.2.5 Identity and Its Relationship to Belonging

Public art can be an effective means of developing a sense of belonging to the community and developing it. The sense of belonging to the community in this context indicates the awareness of the community, who occupy a common space and communicate in their environments, as a result of the shared identity as an important step in achieving social identity and promoting social development and cohesion. (Hall 2018). As a basic component of the concept of belonging to the place, we find the integration of historical aspects and elements of identity projects, public art to express a common sense as the Los Angeles project power of palace, and the most important goal is to maintain and strengthen the links between the community and the place projects of public arts.

4.3 Public Arts and Their Relationship to Identity

Public art plays an important role in restoring the sense of history as a celebration of the local culture of countries or the expression of their religious beliefs, as in China, Korea and Japan. It is a unique culture that reflects the history of the place and meets the needs of society to reach sustainable art compatible with the technology (Jasmi and Mohamad 2016). It is both subjective and public at the same time expressing the general recognition of all the cultures found in Greece and Rome and in the murals in the Middle Ages pointed to the characteristics of the place and its history and social purpose and expressed the memory and meaning and time as indicators of relational may be permanent or non-permanent, or symbolic sculptures have a relationship with the spirit and the disappearance. Its content loses its value in landscape (Hein 1996). It is not a spatial phenomenon, but is a social phenomenon expressed by the individual and its relationship and sense of place symbols and symbols reflect the identity and determine the cultural landscape of the built environment and emphasizes the characteristics and attractiveness and sense of the past and how to deal with it (McLachlan 2010). The expression of identity may be expressed or implied by expressive symbols that reflect the relationship of art to national identity as in Sweden [23]. The disappearance of one of the symbols of public art in a place may be a matter of great controversy to the people of the region, as in the statue of zombie in South Africa, making his disappearance controversial and making the space imaginative of its symbolism, expressed by experts in the fourth dimension and the third space (Gurney 2017). It also contributes to the identification and creation of an environmental identity of great importance in improving environmental quality and providing satisfaction by its presence in public places (Özsoy 2007). His role is to give the city a meaningful and coherent form with the history of the city and its memory, sometimes reflecting the city's terrorism (Ladd 2000). Some of these arts rely on the Semianism to achieve communication in their cognitive roles and visual qualities within the public space. The role of Kevin Lynch and his methods in this context is not limited to the perception of images and images as a basis in identifying the place. We may consider public art an important tool in allocating space for its role in communication exchange with users using a semantic approach that builds the identity of the place and identifies it by relying on the inherent values temporally and spatially (Lenna 2008). It is a response to political, cultural, social and ethnic changes that appear as artistic monuments (Doss 2014) and may contribute to the establishment of cultural neighbourhoods through the relationship between the image of the place and the strengthening of local identity within the cities as in the northern neighbourhood of Manchester and the district of Belfast Cathedral and its role in urban renewal (Mccarthy 2006). The intended renewal is based on the essence of sensual spiritual art with cultural meanings that contributes to the solution of spatial distortions in historical urban centres by the systematic construction and utilization of urban and historical resources to help urban renewal (Koichi 2010). As well as the development of a sense of identity and the place contributes to meet the needs of society and address exclusion and social change to have a value that promotes cultural tourism and increase the value of the land and create opportunities to work with increased use of open spaces by being there (Hall and Robertson 2001). Cultural and religious factors directed to public art, whether bilateral or three dimensional, which expresses the identity of the city and makes it a magnet for tourists and enrichment (Jasmi et al. 2018).

4.4 The Privacy of the Site and Its Relationship to Public Arts and Identity

The site's specificity to the general art patterns reflects different cultures and patterns of artistic practices, whether museums, art galleries or squares related to the general context of the place as a point of clarification of the privacy of the site with its varied standards and social (Kwon 2002). The preservation of the concept of public art within the area intersects the desire to preserve the art that exists in that place and its memory and history and the desire to freedom of expression in a contemporary design complex within the landscapes as material elements visible within the landscapes built (Mcnally and Hsu 2012). Spatial models of these arts are a mass humanism within the built-in spatial context that reflects the desire to gather and share experiences in a reciprocal relationship (Mitrache 2012).

4.5 Design Characteristics of Public Art in Landscapes Based on the Concept of Identity

Previous studies have pointed to the design characteristics of the general art, especially identified as an important factor in landscapes, not only aesthetically, but also socially, economically and even environmentally, which cannot be hidden in the definition of public space and enhance the sense of place and identity and renewal and change it to better to be used by people.

In the form of permanent archaeological works that support the temporary events in any city and promote them. It is characterized by the quality and comprehensiveness of all the customs, traditions and affiliations of the area expressed by drawing on the cultural and historical heritage of the city. Through them, we see the future as sustainable artistic creative works that express identity with a force that attracts visitors with their creativity. Strong spatial identity and reading with the urge to use the element of surprise to be attractive to its visitors and provide creative cultural spaces.

5 Methodology

This research is designed to study the models that express the public arts in the landscapes with the distinctive features expressed by the identity from different Arab and Western countries to determine the design characteristics expressed by the identity and how to use those models of contemporary and contemporary art at the same time. A set of research questions was formulated based on the relationship drawn from previous studies between general arts and identity within Western and Arab societies through which statistical assumptions were formulated, and then, the sample was chosen and the questionnaire was distributed to a random group of Mosul community members whether they were architectural specialists or ordinary people or students building or ordinary students, and the number of questionnaire papers was 100, 86 of which were received. As for the place, it was varied between the University of Mosul for specialists and the city of Mosul for the random sample. The following forms were displayed on the sample, and then, the researcher gave them the questionnaire. The following models were presented to the two participants to see how they interacted with these technical configurations within the landscapes after exploring the appropriate snapshots of new models of designs to identify the most important design characteristics of those influential art of identifying, These include Los Watts Tower, The Freedom Sculpture, Dubai Miracle Garden (Fig. 3), The Calligraphic Sculpture by Sabah Arbilli in Qatar (Fig. 4), Dinosaurs of Santa Monica (Fig. 5). The questionnaire was then presented with a brief description of each project (Figs. 6 and 7).[1]

6 Analysis

The study showed that people's knowledge of public visual arts in terms of architectural concepts, which are common in the field of study, is somewhat ambiguous. It is known about them and their forms, but the names may differ. At the same time, the analysis of the sample of 85 people indicated that

[1]1. Do you have knowledge of general visual arts? Yes, No, maybe2. Your interest in the artistic elements of sculptures in landscapes. Yes, No, Maybe3. If you have a visual arts experience and are trying to revisit places where it is available. If any in your place of residence Yes, No, Maybe4. How interested you are in the technical elements of different paintings and drawings in the landscapes. Yes, No, Maybe5. How much do you care about the technical elements if digital panels show different subjects in landscapes?Yes, No, Maybe6. How interested you are in the technical elements of natural natural stones and integrating with nature in landscapes Yes, No, Maybe7. Do you believe that these visual arts are of importance to express a specific historical memory such as monumental murals and even antiquities Yes, No, Maybe8. In your personal belief, do these visual arts express aesthetics? Yes, No, Maybe9. Do you believe that these visual arts give vitality to the place. Yes, No, Maybe10. Can these visual arts be used to perform an environmental function if they are fountains or green walls? Yes, No, Maybe11. Is it possible to take advantage of these visual arts in the performance of a spatial function, whether sitting seats or walls of sand Yes, No, Maybe12. In your personal belief, the presence of these public arts in public places gives the place a predominance of existence compared to places where there are none Yes, No, May be13. Can visual arts of all kinds express their belonging to the place? Yes, No, Maybe14. Can public visual arts express the general context of the place? Yes, No, Maybe15. Can public art express social customs and customs? Yes, No, Maybe16. Can these arts bring you back to the place again? Yes, No, Maybe17. Can these arts give you a sense of place? Yes, No, Maybe.

Fig. 3 Dubai Miracle Garden (Abbara 2017)

Fig. 4 Calligraphy Sculpture by Sabah Arbilli Unveiled in Qatar (Islamic-Arts-Magazine 2014)

Fig. 5 Dinosaurs of Santa Monica (Art-in-Public-Places-Organization 2020)

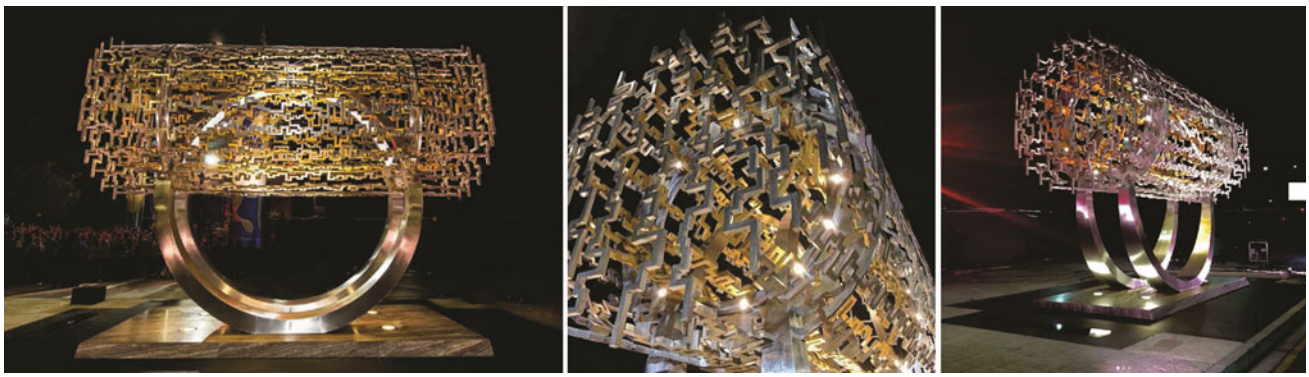

Fig. 6 Freedom Sculptur by Cecil Balmond (Chiland 2017)

Fig. 7 Watts Towers (1921–1954) by Sabato (Simon) Rodia (Shatkin 2019)

they enjoy their faces as sculptural elements within the landscapes. The desire of them to return to their places of origin and this is what the sample gathered in its various forms of technological technology or drawings or sculptural forms or natural elements as already been seen by them through the examples presented to them by the researcher before the questionnaire and it has become more important if it is a specific historical memory such as the monumental monument, walls and even the effects. They express their aesthetic and give the place vitality and increase their importance if they are compatible with the environment (such as fountains and green walls), and they give dominance to the place in it and express the context and spatial affiliation as well as the expression of customs and social customs. Giving a sense of place that makes the person wish to return to him and thus achieve the goal of research in its role in the expression of the identity of the place. When asked about their knowledge of general arts 33.39%. Their answer was yes, 5% no, and 57.1% may be. And the interest in the artistic elements of sculptures in landscape 67.9% interested in, 3.6% not interested in, 28.6% may be, when we asked them about the experience of the visual arts and trying to revisit places where it is available. If any in place of residence, 73.8% of their answer was yes, 21.4% may be, and 6% no. As for interested the technical elements of different paintings and drawings in the landscape 67.9% answer yes interested, 26.2% may be, 7.1% no interested. The care about the technical elements if digital panels show different subjects in landscape 62.2% care about this, 26.8% may be and 11% not care about this. As for interested the visual elements of natural environmental stones and integrating with nature in the landscape 81.9% were interested and 13.3% may be but 4.8 not interested. But the importance of the visual arts is that it expresses a specific historical memory, such as the monumental monument, the murals and even antiquities 90.5% interested in, 7.1% may be and 2.4 not interested in. As for the expression of public arts about aesthetics 85.5% their answer yes expression 12% may be ant 2.4% not expressed. 95.2%. The proportion of people who answer yes about the give the public arts a vital place, 2.4% expressed no and may be about to give it vital place. 89.2% answer yes about the importance of public art may be used to perform an environmental function if they are fountains or green walls, 8.4% may be and 2.4% no not important. As for about possible to take advantage of these public arts in the performance of a spatial function, whether sitting seats or walls of sand, 84.5% of it is possible, 13.1% may be and 2.4% not possible. When we ask them about the presence of these public arts in public places give the place a predominance of existence compared to places where there is none, 78% emphasized the necessity of its existence, but 20.7% indicated the possibility of its existence and 2.4% did not care about its existence. 73.5% confirmed the public arts express a sense of belonging to the place, 1.2% refused that, and 25.3% we refer to a possibility about that express. 56% confirmed public visual arts express the general context of the place, but 3.6% refused and 40.5% they indicated that they might express context. 69% expressed its importance to shows and expresses social norms and customs and 2.4% refused that and 28.6% indicated that they might express about social norms and customs. And when you ask about importance public arts bring them back to the place again 69.9% they agreed on its importance to return to the place, 4.8% refused and 25.3% indicated that they might bring them back to the place. As far the expression of public art is a sense of place 78.6% support that the public arts gave the place a "sense of place."

7 Results and Discussion

After conducting this study, the researcher reached several important things, including the following:

The cities' heritage and value are measured by the extent to which they preserve their identity and heritage and show them in their art, just as the progress of cities and their growth are measured by the strength of their economy. Public arts in the landscapes of any city are shaped by the nature of the society and its cultural and historical identity. All forms of public art reflect the nature, ways of thinking and way of life of individuals in that city. There is no single global culture, but each city has its own culture, according to

its history and developments over the years. It is the culture of values, symbols, creativity and ambition of each society. The city's adherence to its identity and make it clear to the world through its public art has great economic value because of its great influence on attracting tourists and their attachment to the most important features of the city. Public art plays a major role in influencing the health, cohesion and pride of the public's identity and history, and public art projects can involve community members in collective activities that increase their cohesion. Of the public art, a positive colour on the psyche and personality and the human spirit that lives in the place and enjoy the arts and creativity through its landscapes.

8 Recommendations

At the conclusion of this study, the researcher recommends several recommendations that can be summarized in the raise the awareness of artists and designers responsible for the inclusion of public art in the landscapes of cities the importance of highlighting the element of identity and belonging in their art. Invite the members of the community to participate to find projects to decorate the public spaces of the city, to enhance their sense of beauty and aesthetics their own taste as individuals or as a community to this art, and thus strengthen and strengthen the links and relations between them, which increases the health of the general community. Public arts can truly express cities to the world by highlighting their cultural and artistic identity, which increases the number of visitors to the city to get to know it and provides material economic benefits for the city and its residents. The general taste of communities should be taken into consideration when designing the landscapes of cities. Every person will taste the arts differently. If the art does not match the general taste, then society will not be able to see beauty in it. The inclusion of public art and nature in and around hospitals and health care facilities, as evidenced by the art of strong positive effects on the improvement of human physical and psychological health and ability to accelerate the rate of recovery. The need to find other studies examine the characteristics of public art of ancient cities and famous for its art in its landscapes; it will have a great impact on the design of the landscapes of our cities in the right manner. Raising awareness of the seriousness of globalization and the importance of preserving civilization and cultural and historical identity through the formation of public art commensurate with the identity of each city and to clarify the danger of the other cultures to cause the death and the disappearance of cultures of peoples and communities.

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The Reflection of Local Materials and Culture on Architecture: A Case Study of Harran

Ozge Ogut, Naime Dilge Mutlu, Bahar Oguz, and Olcay Cetiner Ozdemir

Abstract

Correspondingly with inevitable integration with the location, local data concept is fundamental, likewise this study researches the reflection of both of natural and cultural data on architecture in the case of Harran houses. Harran is located in the southeast part of Turkey and famous with its appropriate dome houses. After a detailed diagnosis process, it is reviewed the relationship between locality, material, culture and architecture and emphasized the importance of using local culture and local material in the field of architecture. Unconscious implementations and uses over time caused the risk of loose of Harran houses' architecture. In consideration the results of this study, an approach to study continuity of architecture in areas with local culture will be provided.

Keywords

Local material • Local culture • Identity • Harran • Dome house

1 Introduction

Culture, as a reflection of humankind's psychological and social production, comprise habits, beliefs and the behavior patterns; and as a reflection of material production, comprise the tools and places which are formed by them. The common features peculiar to the humankind of different time periods and various geographical places compose the universal culture while the differences observed according to the time period and geographical places compose the local culture (Vural 2007). In the local architecture where the local and cultural data effected the architectural structures and settlement system, a design revealed by the opportunities of the place and the life styles can be seen (Çal 2012).

2 Methodology

This research is based on a workshop which is conducted in Harran, Şanlıurfa, Turkey with the name of 'Harran 2014' during the dates 07–14 September 2014 with the contribution of the Yildiz Technical University/Architecture Department and Harran University T.B.M.Y.O Architectural Restoration Program students, especially the study of Typology group[1] in the organized workshop team (Assist. Prof. Dr. Olcay Çetiner Özdemir (Coordinator), Prof. Dr. Seda Tönük, Assoc. Prof. Dr. Berna Sel, Assoc. Prof. Dr. Ali Rıza Parsa, Dr. Banu Çelebioğlu, Dr. Şebnem Kuloğlu, Tech. Control Şentürk Özdemir. Harran 2014 Typology Group: Prof. Dr. Seda Tönük, N. Dilge Mutlu, Nilsu Morkoç, Bahar Oğuz, Özge Öğüt And Mehmet Reşat Utku).

During this workshop, the architectural and structural features of the 'Harran Houses' that are constituting our Cultural Heritage (located in Harran city that is a candidate of the UNESCO's World Cultural Heritage List) were examined. The studied area, includes different features in terms of architecture in the site with the settlements inside and represents the traditional Harran Houses. Settlement

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types (use of dome) of these specific typology are relayed from a local material and culture's architectural reflection point of view with the data obtained as a result of the studies held by the workshop participants.

3 Local Culture

The differences and associations in cultural and geographical regions show the relationship between local culture and architecture. Culture covers habits, faiths, attitudes as a reflection of mankind's physiological and social production; and as a reflection of material production it covers tools and venues that it creates.

The unique similarities of humankind in different time periods in history and various geographic locations form the universal culture; whereas the differences observed due to time and geography changes form the Local culture. The reflection of Universal culture concept to architecture is obtained with common information which is seen in spatially different places and times. The reflection of Local culture concept to architectural production is obtained with the cultural elements' in the geographical regions different effects on the formation of the built environment. When evaluating study areas, outdoor (streets, squares), specialized common spaces (courtyard) and interior (interiors of residential) properties are examined (Vural 2007).

3.1 Data That Create Local Culture

Data that create local culture are examined under the titles Natural data and Cultural data (Çal 2012). In the formation process, there is a transformational relationship among environmental and socio-economic factors and cultural components and form of the building. Rapoport notes that determinants in the formal and spatial formation are social and cultural factors, however, he asserts that climate, materials, and construction methods and physical factors such as technology play only a modifier role (Arel 1982). The noticeable difference that can be seen in architecture with similar climate and settlement conditions supports the use of this diagram which is drawn by Rapoport (Fig. 1). According to Rapoport, data that are active until preliminary design phase are not environmental conditions such as climate or building materials or the region's socio-economic characteristics but consists of the norms of the local culture that the communities who live in that region own (Rapoport 1983).

Natural data: is analyzed as topography, climate, water resources and vegetation-soil structure (Çal 2012).

Topography: is being a determinant at a settlement pattern scale, determining the road systems at the sloped lands and the river, lake and sea side settlements and thus determining the parcellation formation (before one building scale).

Climate: Affects site selection, space planning, material selection, construction system and shaping. Solar radiation, air temperature, air movement, wind, and moisture in the air are natural events that occur with the combination of all these factors that forms climate features.

Solar radiation: mainly performs in three different functions as Enlightening, Biological and Heater.

Air temperature; holds an important role in the design, to obtain the desired physical comfort in the lived interiors. While examining the effect of climate, it is determined how the climate zone where the settlement is located will behave on the scale of structure and texture in the design (Karagülle 2009).

Air movements-Wind; while a sparse settlement pattern is preferred in hot-humid climate region in order to get the wind inside; it is recommended to build the streets in prevailing wind direction.

Rainfall and humidity in the air; humidity in the air has a significant effect on the physical comfort of the people that can't be omitted. Depending on the region's climate conditions, rainfalls are effective in the design of the structural form and elements used in the formation.

Water resources: water has the priority within the natural data in the settlements. Water can direct the location and formation of the settlements and even form the social lives of the people who live in it. Water means efficiency.

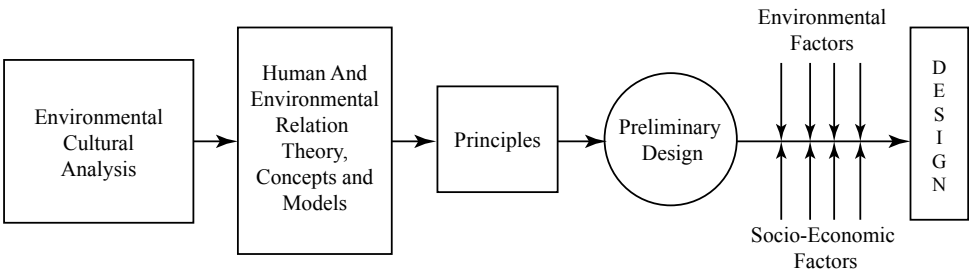


Fig. 1 The factors that influence the formation of the design and the design process (Rapoport 1983). Even if the climate and settlement conditions are similar, due to norms of local culture, architecture is different. Local culture effects the design unril preliminary design

At this point, a characteristic feature that we can generally see in traditional settlements is locating close to the shores of water or on the slopes of the valley which are close to water sources.

Soil and vegetation structure: Besides the psychological utility, vegetation of a place has significant contributions to micro climate that occur in the near vicinity of the building. As in the other natural data, depending on the climate where the structure is located, vegetation should be exploited in a conscious manner. Climatic utility can be obtained by using structural landscape elements in a compatible way in design (Çal 2012).

Cultural data: Culture includes people's roles in society, their relationship with each other and with the environment, people's world views, beliefs, and general ideas about that society (Atik and Erdogan 2007). It is observed that social values are regulated by culture and that they are deep and settled opinion like shared beliefs and ideas. The architectural values are influenced by social values. The components of Culture are examined under the headings (Çal 2012):

- Environmental images (personal experience; education; the structure of faith; privacy, etc. value judgments).
- Social structure (ethnical structure and language).
- Family structure, kinship norms and rules (population and demographic structure; family size).
- The life of the housing form (conformity to the traditions; neighbor relations).
- Technology (building and construction technology).

Environmental images: The images generated by the user groups' world cultivation of a building form and lifestyles, values and ideals are very important. In societies where the traditional values are not discussed, and where the holiness is very important it is observed that environmental images are reflected to the environment at all scales (Çal 2012).

Privacy: It is defined as 'a request to hold or retain the right to control which is done by a person or group that wants to establish social relations with the environment' (Gür 1996). Therefore, for people who have different cultures there may be differences in the design and elaboration of spaces that will be designed.

Customs and traditions: is expressed as 'these which are about culture and which is inherited from previous generations' and 'accumulated/the accumulated experiences and the constant use of them.' Social structure: it has value judgments as attitudes/perceptions that are commonly embraced by the community.

Social structure is examined in sections as substructure and superstructure. While the substructure which is about the element of economy explains the relationship between production and ownership, The superstructure, includes relations such as religion, morality which aren't able to be defined by substructure (Çal 2012).

Family structure, kinship rules and norms: Because marriage and family institutions are a part of the system of kinship 'family structure, kinship norms and rules' is seen as a cultural component. The demographic structure of the household, relationships, roles, marriage structure and kinship relations and rules have importance in culture-behavior-space interaction (Çal 2012).

Lifestyle: the nature of the job and the level of income people have generally could determines the place, type and size of the structure. A building to be done in an urban area and rural area, the size of the land and housing depending on the work are not the same because of functional differences. In addition to the functional and cultural meanings related to spaces hosted by the structure, the form, the selection of building selections to be used and in determining the size of the venue can be a status indicator in the society (Karagülle 2009).

Technology: It is used as a means of establishing relationships with 'place' in local data assimilation and reflection in the architecture. It gets into the components of material culture such as; culture, production, transportation, communication, technology and spiritual culture such as; customs, traditions and ideals (Çal 2012).

4 Harran and Harran Houses

4.1 Geolocation of Harran and the Overview to Harran's History

Harran, the historical city which is located in 44 km south-east of Şanlıurfa and visited by thousands of local and foreign tourists every year, was established on the center of a plain that is known by its name (Fig. 2). The first time, the name of Harran is mentioned as 'Har-ra-na' or 'Ha-ra-na' in the cuneiform tablets in Kultepe and Mari at the beginning of two thousand years BC. In the tablets which are founded in Ebla in northern Syria, it is mentioned as 'Ha-ra-an'. As it is written in the Hittite tablets that belong to middle of the two thousand years BC, the Moon God in Harran (Sin) and the Sun God (Samas) testified to a treaty between Hittites and Mitannis.

The name of Harran is coming from 'Haranu' and this word is meaning 'Travelling-Caravan' in Sumerian and Akkadian languages. In some resources, the meaning of this word was noted as 'intersection roads' or 'an intense heat'. Harran is a point that located in the intersection of important trade routes which are coming from northern Mesopotamia and connecting to the west and North West. From Anatolia to Mesopotamia and from Mesopotamia to Anatolia, the

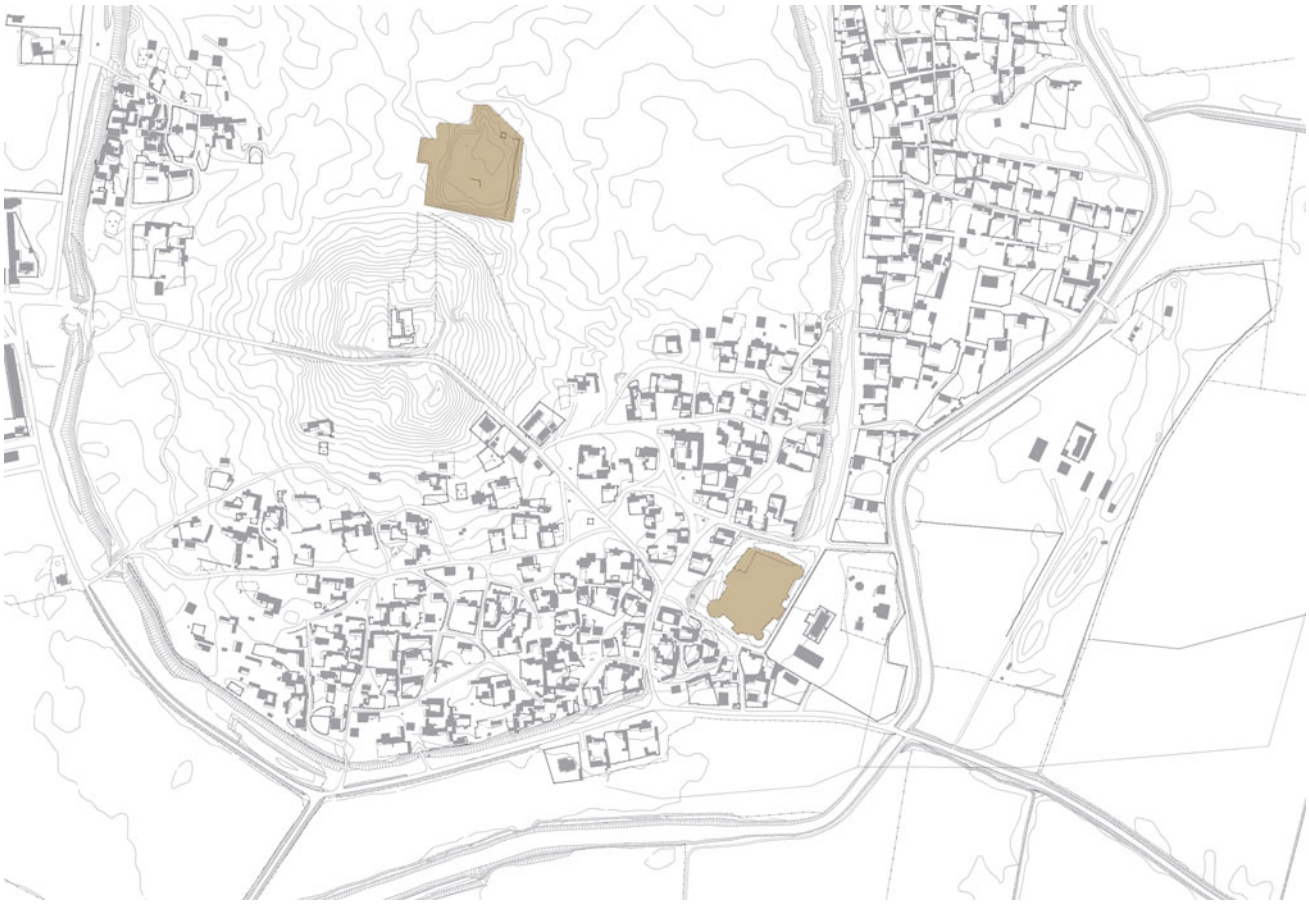


Fig. 2 Harran (Yüzgül 2011): Harran is located in Şanlıurfa, in the southeast part of Turkey. The university, old mosque and castle are the most important landmarks and historical heritages

trade flow was made through Harran thousands of years and this makes the historical city rich about cultural heritage (Yüzgül 2011).

Harran was also famous about being one of the most important centers of Assyria and Babel in ancient Mesopotamia where moon, sun and planets are considered sacred. Therefore the astronomy science is very advanced in Harran. One of the three major schools of philosophy in the world is 'Harran School'. Harran University is known since ancient times and many world-renowned scholars ware educated in here. Sabit bin Kurra was born in 821 who was one of the greatest mathematicians, doctors and he translated the articles of Greek philosophers to Arabic. At that time, Battani calculated the distance between the World and the Moon correctly (Europeans say 'Albetegni' or 'Albatanius' to him). Contrary to Greek philosophers, Cabir bin Hayyan said that the smallest fissile part of a material could destroy a city like Baghdad with a great energy and thus he is known as the inventor of the atom. Religious scholar Shaykh al-Islam Ibn Teymiyye is one of the world-renowned scholars who was educated in schools in Harran. Harran University became famous in the world in the time of Abbasid ruler Harun al-Rashid.

Plain of Harran is in the northern Mesopotamian which is watered by Cullab and Deysan rivers and this plain is a field of agriculture like it is interwoven with network of water channels in the past. Ibn Cubeyr was a pilgrim who visited Harran in 1184. He wrote that Harran was a canopy and woodland, there was a variety of fruits and vegetables and it devastated because of a long drought.

It was occupied by the Mongols in early. In 1270, when they realized they couldn't have here more time, burned and broke down the Mosque, the walls and the castle; destroyed the city. People ran away to Mardin, Damascus and Aleppo. This golden city of history was occupied by nomads and it couldn't be like in the old gorgeous days.

In the records of land registration that belongs to 1518, it is understood that Harran was a village with a population of 250–280 during the Ottoman period. In the Republican period, Harran incorporate to Akçakale district and in 1987 it became a village with a law because there will be vitality in this area with GAP (Southeastern Anatolian Project).

Fig. 3 A photograph from Harran (Kürkçüoğlu 2014): The panorama of Harran, that illustrates the remainings of the caste and the tower of old university, with all Harran dome houses

Typical houses, mound, castle, city walls and various architectural remains are attracting great interest of tourists (Fig. 3) (Kürkçüoğlu et al. 2000).

4.2 Settlement and Architecture of Harran Houses

Harran attracts the most attention with the houses which are built by corbelling technique, are cone-shaped conical domed houses. The history of domed houses is known as old as the flat-roofed houses. In the excavations in Arpachiyan near Mosul, Schulaveri near Tbilisi and Cyprus the discoveries of domed houses which are belongs to six thousand years BC are found. This tradition continued in Mesopotamia, Transcaucasia and the Aegean until three thousand years BC intensely.

In a made research, it is determined that there are two regions of intensive domed houses in Anatolia. In the first region, between Urfa and Birecik, a few villages include domed houses only in and around Suruc today. The second region which is between Urfa and Akçakale, there are domed houses in Harran and there are also in a few villages around Harran. But this is different from this houses that are covered with adobe dome, Harran houses are covered with brick dome (Fig. 4). The first of the two most important reasons of

Fig. 4 A group of Harran Houses (Özdemir and Çetiner Özdemir 2014) Traditional Harran Houses have domes which are covered with brick due to lack of wood. In addition, there were quite abundant brick material that are found in ruins of Harran

why Harran houses are covered with brick dome is the desert in the area and the lack of wood as a material. The second reason is the abundant brick materials which are found in ruins of Harran.

The houses which form an interesting texture are built over the remains of the ancient city in last 150–200 years with bricks that collected from ruins. In 1979, Harran is registered as an archaeological and urban sites for protection of domed houses and collecting material in the site, making all types of construction and opening channels is prohibited. At that time, the number is frozen in Harran where 960 dome houses are.

Harran houses are covered with domes which are masoned by corbelling technique with bricks that gradually narrowing and consist of taking the shape of a conical cone. The transition to the dome is with squinches and pendentives (cupola). The domes which are high from inside up to maximum 5 m are build with 30–40 brick series. Double, triple and groups of up to six domes are linked to each other with arches from inside and this is how the large venues are obtained. While the domes are masoning, ledges of brick are placed on the sides in a regular intervals and the top the dome is left open. Ledges of brick are for repairing and when it is a necessary shutting down the hill hole partially or completely in rainy and cold weathers. The hole in the top of the dome has skylight and chimney functions that allow the eviction of smoke inside (Fig. 5). Irregular masonry bond of the dome and the walls are linked to the silt mortar, plastered inside and outside with the same mortar.

An example of these houses is restorated with the efforts of the Harran Governor Ibrahim Halil Aksif and this house became 'Culture House' function in 1999, is offering the service to tourism (Kürkçüoglu et al. 2000; Yüzgül 2011).

5 Findings and Discussion

5.1 Findings

After the study, the data is obtained with the surveys done in the site is handled on the map and represented with tables to show the results better. The existing order of domes has been proven by photographs for all the examinated features.

5.1.1 Local Materials and Reflection of Culture to Architecture

Today, there are houses with dome as construction group more than 900 at Harran. Living at this houses match up with living tent of immigrant society. Generally, tent is used for shelter like that daily life continues at enclosed area around tent. When daily activities needs to place arise, houses with dome is used for different functions by gathering these houses due to the fact that constructions at Harran belong to settle society. These units consist of various size dome units for family living area, oven for cooking labor and foods, warehouse for tools and agriculture products and stable for animals. Settlement, located at dome constructions, is shaped like village plan with making different material. The most of these constructions is made with a few domes (Yıldırım 2015).

Construction is formed with aggregation a few units around yard. The life of family members is composed of preparing food and cooking process, banding family members together and playing them children open area. Construction units improve organically to the extent permitted by all area and material without module worry according to needs in time also with growing family.

The houses' at that area settlement form is looked like tent cells around yard and totally or not encircled with walls

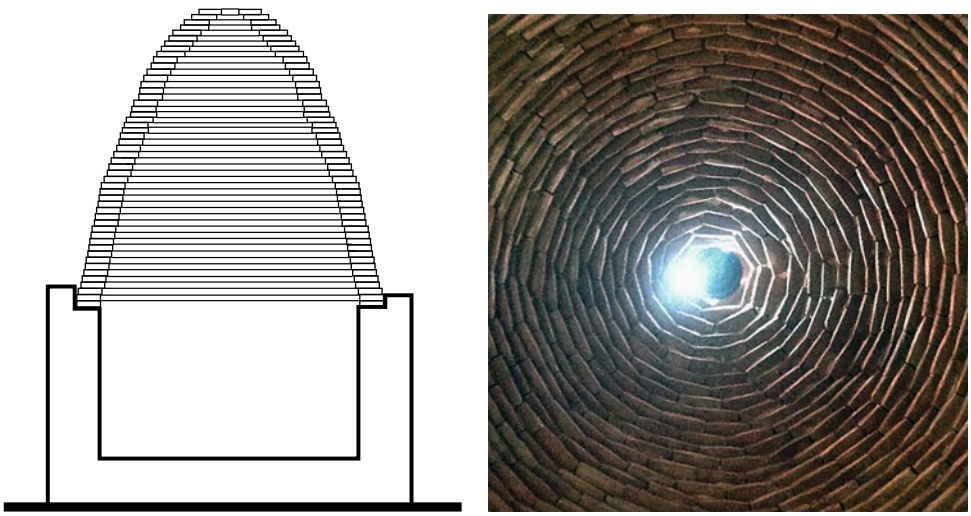


Fig. 5 A section of a Harran House (on left) (Öğüt 2014), An Example of Dome from Harran House (on the right) The hole on the top of the dome is useful for getting natural light inside and evictiın of smoke (Öğüt 2014)

construction settlement. Not encircled constructions are for low-income families. Privacy is low between yard and outside. The numbers of units are less than encircled with walls. The units, which consist of L or U shaped subunits and yard door encircled with walls, are for high-income families. Place organizations, living, resting, eating and drinking, settlement etc. places are great fictionalized.

House forms, which combine from houses with dome, generate new forms. These forms make progress organically in time. The major reasons of affecting to form are social life, interested economic area of construction owner, agriculture, husbandry and culture (Tönük et al. 2014; Yıldırım 2015) (Figs. 6 and 7).

5.1.2 Dome Determinations

Domes 2′, 3′, 4′, 5′, 6′ and 7′ (item) be brought together with it seems to occur as 1 row, 2 row, 3 row. Review made parcels different form and settlement scheme, existing some domes according to previous determinations observing to disappear (Fig. 8).

Between Studied Plan and Existing Situation of examinations in the Tables provided in Figs. 8 and 9 to seen in the result of determination; the building was abandoned, animal shelter, used as storage or income level was observed that allowed the use of low people. Unconsciously, damage and additions that 'Harran Evi' by adding 'dome' has been found to be in danger of losing the original architecture (Tali 2010, Tönük et al. 2014).

5.2 Discussion

5.2.1 Effects of Natural and Cultural Data to Architecture in Harran

Local data of nature and culture affect a settlement's architecture and characteristics of that architecture. Therefore, there can be various types of patterns. Patterns which occur in settlement by the effect of local data can be in different dimensions and can form a language.

Effect of Culture; People's lifestyles and the way they use the domed structures are the important factors that formed the structure. Parameters which affect the form of the structure are size of family, the way the individuals share spaces, the way preparing, cooking and eating functions are realized, bathing and cleaning cultures.

The living area layout is often formed by a combination of many different domes and archways providing the passage in-between the domed units.

For instance, if a family member gets married, they build a new domed unit interrelated with the existing life area.

Fig. 6 Harran 2014 Typology Group (on the left) A sampling of studied house group (Öğüt 2014)

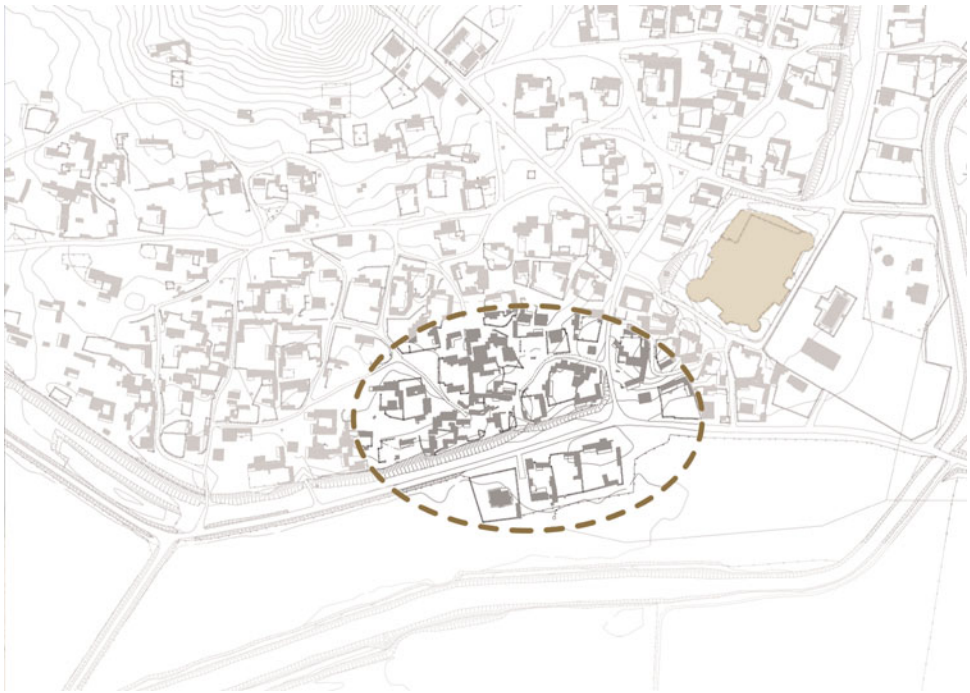


Fig. 7 Workshop Team Study Area in Harran Protected Site (Yüzgül 2011)

They may continue their family life at the several existing domed houses or a new domed house may be built. Culture also has an important role at the interior decoration of the units. Local clothes may change according to recess in space, archway and family type (Yıldırım 2015).

Effect of Natural conditions; One of the factors that influence the formation of domed housing is the efficacious climate in the region. As in cold climates to prevent the present heat is the priority, domed structures built with a small hole or no hole. On the contrary in hot climates it is essential to provide the air circulation throughout the house by making bigger holes. A significant air circulation is provided especially with a hole left at the very top center part of the roof. At the same time, orientation of the building varies according to the region. Beside this, domed units in hot climate zones are positioned around a courtyard.

The environment that the building located and the construction materials affect the form of the structure. Structures are built from forest materials where the wooden material is plenty. They are made from earth and stone materials in arid climates where the wooden material doesn't exist much. There are stone, earth and brick structures in Harran (Yıldırım 2015).

Design Compatible with Climate: A settlement is designed as a 'location' and 'settlement pattern'; whereas a single structure is designed by considering 'form of a building', 'orientation status' and 'shell of building' (Oral and Manioğlu 2005). It can be observed that the materials used in the shell structure and construction systems are as much compatible with the climate as the compatible of the building formation. High ceilings are preferred in hot-humid climates so that air circulation can decrease the level of humidity. As precaution in winter, structures have small gaps, windows. The structure and material of roof is also compatible with climate. Structures are located with spaces between them to supply all buildings advantages of sun and wind, to prevent them from shading another building near to them (Yüzgül 2011; Çal 2012).

6 Conclusion

In this study where examples of Harran Houses are examined, the effects of natural and cultural data to architecture are tried to be determined. The features of the domes are examined by making a general dome typology and later, observing this typology a general assessment made of the effects of natural and cultural data to the architecture. Natural and cultural data were both have interaction with architecture. The architectural examples of Harran houses have an endemic thought and behavior style since they cherish the persistent local architecture of many centuries. Important facts of Harran Houses are compatibility of Harran Houses with geography, considered climate, vegetation, harmless to earth's form, maintaining while considering its culture, tradition. The architectural examples of Harran houses have an

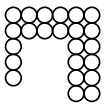
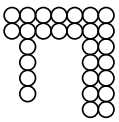
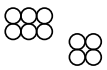
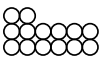
Parcel No.	Studied Plan		Existing Situation	
	Domes' Order	Form of make up the dome	Domes' Order	Form of make up the dome
64	1 row of 3'		No Dome	
65	2 rows of 4'		2 rows of 4' 1 row of 1'(little)	
66	2 rows of 5' 2 rows of 4'		No Dome	
67	1 row of 4'		1 row of 4'	
68	2 rows of 6' 2 rows of 4' 1 row of 3'		2 rows of 7' 2 rows of 5' 1 row of 4'	
69	2 rows of 3'		2 rows of 4' 1 row of 1'	
70	1 row of 2' 2 rows of 6'		0	0
71	2 rows of 2' 1 row of 3'		2 rows of 2' 1 rows of 3'	
72	3 rows of 5'		No Dome	
73	2 rows of 3' 1 row of 4'		0	0
74	2 rows of 4'		0	0
75	2 rows of 2' 2 rows of 3'		No Dome	
76	1 row of 1' 1 row of 2' 1 row of 3'		2 rows of 6' 1 rows of 2'	
77	3 rows of 5'		3 rows of 5'	
78	1 row of 3' 1 row of 2'		1 row of 2' 1 row of 1'	

Fig. 8 Determination and Comparison of the dome in the work area (Tönük et al. 2014). The domes that belongs to same group of houses are counted with consideration of both rows and lines. It is compared with studied plan and existing organization of domes in the scale of parcels

Studied Plan	1'	2'	3'	4'	5'	6'	7'
1 row	*	**	****	**			
2 rows		***	***	****	*	**	
3 rows					**		
Existing Situation							
1 row	****	**	**	**			
2 rows		*		**	*	*	*
3 rows					*		

Fig. 9 Comparison of Domes (Tönük et al. 2014). After the diagnosis in terms of numbers and order of domes in the area, it is summarized in order to see the general difference

endemic thought and behavior style since they cherish the persistent local architecture of many centuries. Important facts of Harran Houses are compatibility with geography, considered climate, vegetation, harmless to earth's form, maintaining while considering its culture, tradition.

The study of typology could be integrated in Harran houses with the consideration of local identity. The obtained results with the study are intended to form an example of an approach for analyzing the existing situation and problems, contribute to continuity of architecture Harran houses.

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Vernacular Architecture as an Expression of Cities' Identity: Gercüş Houses in Turkey

Şeyma Özcan

Abstract

Gercüş, situated in south-eastern part of Turkey, is a small district, which has distinctive character with traditional stone houses and that of position in dramatic topography. The city also shares similarities in terms of vernacular culture and architecture style with the neighbour cities such as Midyat, Savur and Mardin, so it can be defined as a part of vernacular culture of south-eastern Anatolia. The research aimed to investigate the role of constructive culture that shows cities identity analysing the traditional houses which dated first half of twentieth century and survival of the original texture of historic centre as known "old bazaar area" in Gercüş. As a result of investigations in the study area, it is tried to analyse city's identity through architecture with plan typologies of traditional houses and social structure of inhabitants in comparing with neighbour cities. In addition, conservation issues of houses and urban fabric; truism potential of town with its architecture and location and the necessity of registration as conservation site are mentioned.

Keywords

Vernacular architecture • Identity • Gercüş houses • Stone architecture

1 Introduction

Vernacular architecture, which develops according to topography and climatic factors as well as the structures of society, occupies an important position in the discipline of architectural conservation (Kuban 1995, pp. 190–191). It has the feature of a historical evidence being an integral part of historic urban fabric and reflecting the lifestyle and culture of particular societies (Kuban 2017, pp. 209–210). In this paper, the historic urban fabric of Gercüş is examined focusing in particular traditional stone houses aiming to find common features of vernacular architecture of region. The role of vernacular architecture on the city identity is also aimed to discuss supporting that of significance and underlying conservation problems. Primary data were collected through literature research in the form of published books and thesis as well as on site investigation and analysis which helped to reveal main features of vernacular architecture of region. In addition, interviews with indwellers were carried out to have a better understanding about not only architectural and urban form of the town but also the influence of the cultural, religious and socio-economic factors on that physical environment.

2 The Historic Town of Gercüş

This part of study elaborates the geographical, historical and social context as well as urban fabric concerning aim of providing background about the town as in the following subsections.

2.1 Geographical Context

Gercüş, a district of the province of Batman, is located at the foot of the mountain called Mardin–Midyat mountain sill. Until 1927, Gercüş was a village of Mardin, which is one of the bigger cities of region sharing similarities in terms of

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https://doi.org/10.1007/978-3-030-51961-2_13

vernacular culture and architecture style. In 1927, Gercüş earned the district status parallel to its development and increased population. By 1990, the district of Gercüş separated from Mardin and joins the Batman which was declared a new city of the country at that time (Zengin 2005, p. 64).

Gercüş is 60 km from Batman city centre and 90 km from Mardin city centre. As seen on the Fig. 13.1, it is surrounded by Hasankeyf to the north, Midyat to the south, Savur to the west and Dargeçit district to the east. With its layout and architecture shaped by the topography, it resembles the surrounding regions of Mardin, Savur and Midyat and differs from Batman and its other districts.

2.2 History

Gercüş first appeared in the accounting diaries of the Ottoman Empire calling "kefercevz kabile-i mahalmi" in the first quarter of the sixteenth century. However, further knowledge about the region is provided by dairies of travellers who visit the region in the nineteenth and twentieth centuries (Zengin 2005, s. 58–59). Travellers like Eduard Sachau and Gertrude Bell mention about Gercüş in their diaries with the name of "kefercevz" and "kefr joz". As seen Fig. 13.1, the oldest photograph of the region is also seen from the archive of Gertrude Bell. In consideration of these written sources, it is thought that the name of the Gercüs comes from the name of "kefercevz" which is originally Syriac. The word of "kefr", which means village in Syriac, is also encountered in the names of many rural settlements in the region. In terms of extant name of the town, since the first years of the Republic to present time, the region calls as Gercüş (Zengin 2005, s. 64).

2.3 Social Structure

It is possible to see traces of tribal organizations in many regions of the East and South East Anatolia. One of the factors affecting the development of vernacular houses is the family structure in many parts of Anatolia (Alioğlu 2003, p. 61). The construction of houses enlarges with structural additions according to the tradition of patriarchal families on the growth of male children. In other words, new rooms are added to the house for male children to live with his wife and children immediate after his marriage. Thus, many traditional houses are enlarged in parallel with the growth of the families. The other important factor which stands out with a significant influence on development of vernacular architecture is religious belief and customs. This leads to an introverted life in the region (Halifeoğlu and Dalkılıç 2006, p. 95). It is also known that Syriacs lived in the past in the region where overwhelming faith was Islam. Due to its rugged terrain, its economy is based on small-scale agriculture and animal husbandry. Migrations in the region are one of the factors that negatively affect vernacular architecture.

2.4 Traditional Urban Fabric

The area chosen as the research topic is called the old market place of Gercüş consisting of vernacular houses and a linear

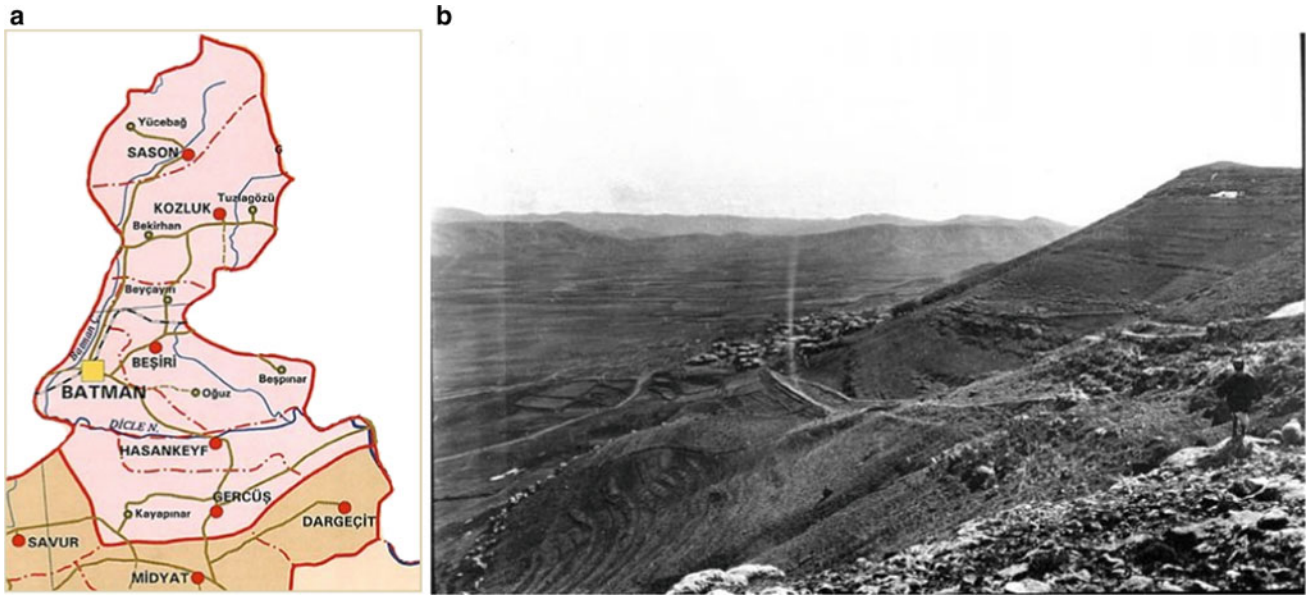


Fig. 13.1 **a** Location and neighbours of Gercüş in Batman province (left), Gercüş in 1911. **b** Newcastle University Archive (right)

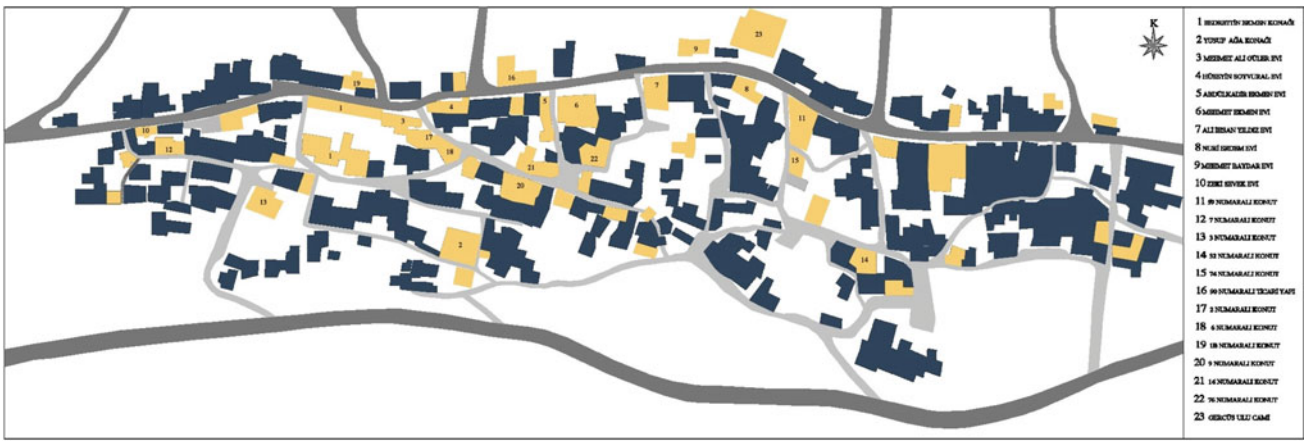


Fig. 13.2 Location plan of the old market place in Gercus, Ozcan, 2017

street and the narrow organic streets that develop in the south of the main street. As seen from Fig. 13.2, while this historic core was bounded by the road of Mardin–Batman in the south, the district developed nortwardly. In addition to vernacular houses, there are many historical shops, two mosques and public buildings in the old market place in the district where trade and religion are two influential factors that have direct impact on social life. In general, the vernacular houses are located without space on the plot, and they are mostly adjacent.

Urban texture can be characterized as dense and congested. The street as a long linear axis, which is now called *Ana Cadde*, is the commercial centre of the region in the past. As seen from Fig. 13.3, the side streets, which developed organically, are narrow and curved. They are connected to each other and the main street by forming high walls of vernacular houses' courtyard. Some side streets create small squares by merging in some places. Due to the rough topography, some streets also consist of large stairs.

Regarding the relationship between the vernacular houses and the streets, it is observed that some houses are opened to the courtyards first and then to the streets. It is considered as a result of introverted life of local people that is shaped by custom and belief. In the historical centre of Gerçüş, three different vaulted gates, which can be seen from Fig. 13.4, were identified. They are called as *Abbara* by local people. These gates are one of the characteristic feature of the region as seen from the neighbour cities such as Mardin (Dalkılıç 2004, p. 315). These three vaulted gates are also close to each other and connected by narrow high walled street.

Fig. 13.3 Streets of Gercüş, organic development of the original urban fabric

Fig. 13.4 Vaulted gates which are called as *Abbara*

3 Gercüş Houses Analysed in the Context of Study

In terms of investigation the role of constructive culture that shows cities identity, it was examined eight of vernacular houses which dated first half of twentieth century and survival of the original texture of historic centre as known "old bazaar area" in Gercüş. Examined vernacular houses were documented by taking photos and drawing plans in consequence of building survey. As a result of investigations in the study area, it is tried to analyse city's identity through architecture with plan typologies (Table 13.1).

4 General Characteristics of Gercüş Houses

4.1 Plan

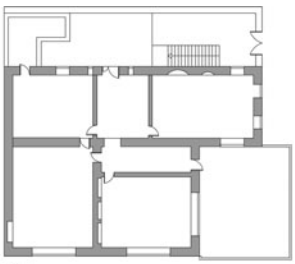
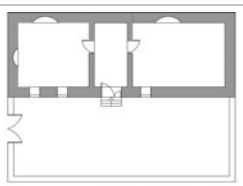
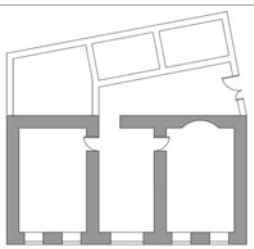
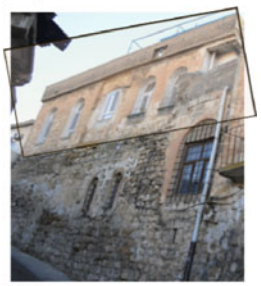
Plan types of vernacular houses of Gercüş are shaped by the iwan and the courtyard according to the examined examples as can seen from Table 13.2. Terraces are also important affecting the facades along with the iwans. In general, the lower floors consist of service rooms such as stables, warehouses; while the upper floors include iwans, terraces and main rooms. Plans of vernacular houses developed vertically depending on the topography and parcel

Table 13.1 House descriptions, plans and images

Name	Description	Plan/photograph
Yusuf Aga Mansion	Yusuf Aga Mansion was built in 1902 (H. 1330) according to the inscription on the second floor iwan. Due to the topography, the mansion has three storeys from the north and one storey from the south. The courtyard has an iwan and terrace. The mansion, which is north–south oriented and directed to the north, has three different entrances. The mansion has a rectangular plan in north–south direction. The ground floor consists of a porch with three porches, a vaulted cross, a vaulted arch and the space behind the iwan. The first floor consists of a single porch, a diagonal vaulted, pointed arched iwan, rooms around both sides of the iwan and a roof terrace of the iwan on the ground floor. The second floor of the mansion consists of an iwan with a cross vault and a barrel-arch, and a large terrace in front of the iwan. The mansion has two rectangular main rooms, both facing north. On the walls of these rooms, there are large niches that the local people call as *kubale* and small niches. It was observed that the large niches were closed with cupboards in the head room on the eastern front. The top cover of both rooms is wooden ceilings, and doors are wooden batten doors. The windows of the main room in the east are rectangular windows in arched niches and flattened arches, while the windows in the main room in the west are rectangular windows with flattened arches	 (a1)  (a2)

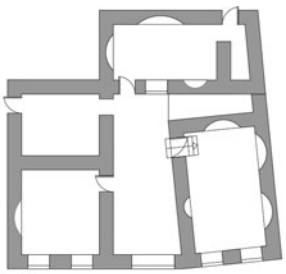
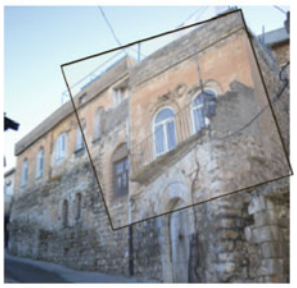
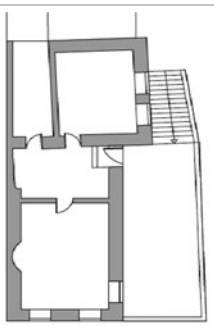
(continued)

Table 13.1 (continued)

Name	Description	Plan/photograph
House of Mehmet Ekmen	According to the inscription on Mehmet Ekmen House, it was built in 1954 and is one of the historical buildings of the region that display the vernacular architecture features. The two-storey building on the main street differs from others with its location. The upper and lower floors have separate entrances. In the western direction of the building, the arched door opens to the courtyard, and the staircase leads to the main entrance on the upper floor. The lower floor, which is used as a barn or a warehouse, is reached from the west with three different gates, one of them is double row arched. The building has a plan layout with a courtyard and a terrace and does not have an iwan. According to the plan of the first floor, the structure consists of four rooms and a terrace around two corridors, one of them leads to the entrance and the other to the terrace. In the south direction of the building, there are additional rooms that are used as bathrooms and kitchen	 (b1)  (b2)
House of Abdülkadir Ekmen	Abdülkadir Ekmen House is built in 1958 according to the inscription on the historical courtyard wall and reflects the small-size vernacular architecture of the region. The house is on a side street and neighbour to the Mehmet Ekmen House. The single entrance of the building is in the east direction and opens to the courtyard with double row arched wooden batten door. There is no iwan or terrace in the plan, and the house consists of two rooms and a hallway to the house. The house, which has the simplest plan layout among the samples examined, was constructed with stonemasonry. Abdülkadir Ekmen's house's main room has a rectangular plan in the north–south direction. There are flat windows with flattened arches on the northern side, while the southern wall has niches on the eastern and western walls. While the niches were closed with cupboards, they are still used today with its original function. The ceiling of the room is wooden. The other room used as kitchen and bathroom is covered with a vault	 (c1)  (c2)
House of Mahmut Irmak 1	Due to the absence of the inscription of Mahmut Irmak House, the construction date is unknown, but it is one of the original vernacular architecture examples of the region with its stonemasonry and plan type. In spite of its location as on a back street, it is on a dominated position. It consists of two adjacent buildings with different entrances, while there is a transition between these buildings. Both buildings have two storeys in the north and one storey in the south. Regarding first building plan in detailed, it consists of a rectangular iwan in the north–south direction and one room on each side. The roof of the second building is also the terrace of other one. Both rooms have a double-arched window layout. In the south direction, additions which are used as kitchen and bathroom were identified. As seen at the other vernacular houses in the region, the first floor of the building is ashlar, while the ground floor is rubble stone	 (d1)  (d2)

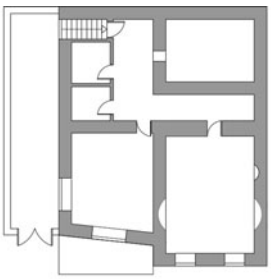
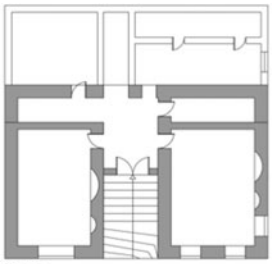
(continued)

Table 13.1 (continued)

Name	Description	Plan/photograph
House of Mahmut Irmak 2	Mahmut Irmak House's second building consists of an iwan and four rooms around iwan. The entrance to the north side of the house is a double row arched, wooden two-winged door. From this entrance, there is a transition to the ground floor of the first building of Mahmut Irmak House by stairs. The main room of the building is located on the north façade above the entrance. Windows have double flattened arches in the main room. The windows lost their original condition. Rich ornaments are seen with the eaves mouldings on the window arches and on the ceiling of the main room. The main room is distinguished by its rich ceiling decorations and niches of various sizes. Top cover is barrel vault. According to Mahmut Irmak who is the current owner, the real owner of the structure is one of the Syriac families who migrated. Only the first floors of the two buildings are used today. The other floors are not used and neglected	 (e1)  (e2)
House of Ali İhsan Yıldız	Ali İhsan Yıldız House on the main street is a two-storey structure oriented in a north–south direction. It is known that the ground floor was used as a barn and a storage in the past. The first floor has a plan with a terrace and without a courtyard and an iwan. The entrance of the house connected to the terrace on the roof of the ground floor which is used as a storage. There is one room on each side of the corridor. The building has an extension to the south. The rectangular main room in the north–south direction has a double flat arched window arrangement in the north and west directions, but one of the windows in the west direction was closed. The room was closed with a large cupboard, and the doors did not retain their authenticity. The cover of the structure is wooden ceiling. It should be also noted that on the ground floor, there is a building element at the door as storage, which is unprecedented among the structures examined in the region	 (f1)  (f2)

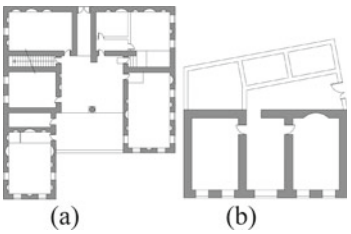
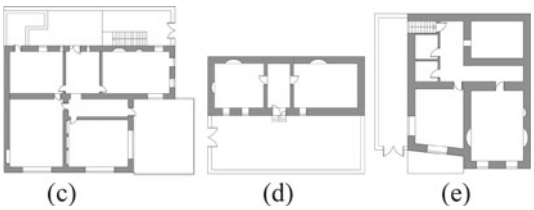
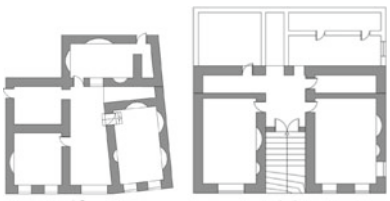
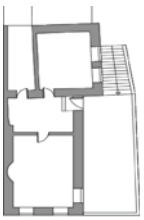
(continued)

Table 13.1 (continued)

Name	Description	Plan/photograph
House of Mehmet Ali Kaya	Mehmet Ali Kaya House is located in a street has a lot of historical buildings. The history of the building, which has no inscription, is unknown. The two-storey structure has a rectangular plan in the north–south direction. The house's entrance from the courtyard located to the east and its gate is in the north direction. The first floor of the house is used as a barn. The first floor of the building consists of the entrance opening from the courtyard and the three rooms around it. The main room of house reflects the vernacular architecture and identity of the region with many traditional building elements. The shelf on the entrance wall of the room, the niches on the other walls and the double arched window on the street façade are some of them. The top cover of the building is a wooden ceiling, and none of its doors has retained its originality. The structure was plastered inside with gypsum. The house reflects the rich stonework of the region with its vegetative and geometric decorations on the eaves	 (g1)  (g2)
House of Hüseyin Özmen	The history of Hüseyin Özmen House is unknown, as there is no inscription to date. Its original plan is with an iwan, without a courtyard and a terrace. The structure has lost its originality with repairs and extensions. The iwan in the north is changed and used as the entrance of the building. The rectangular structure with north–south direction has an addition to the south. The building consists of two rooms around both sides of the entrance and additional units in the south. There is also a staircase leading to the ground floor which is used as a barn. The entrance door of the barn on the ground floor is the only door that maintains its originality in the double-arched wooden door with double rows. Since the two rooms of Hüseyin Özmen House showed similar characteristics, the main room could not be identified. Due to changing the window layout of one of the rooms, the original window layout has double and flat arches. There is a staircase leading to the roof in the entrance area of the building. Although the main material of the building was stone, extensive repairs were made with cement-based mortar	 (h1)  (h2)

dimensions. The extended family is an important factor affecting the planning so depending on the growth of the family, additions have been made to the houses in different periods. Multi-functional usage, which is the general feature of Anatolian Turkish Houses, is also seen in the vernacular house plans of Gercus. It is known that in the original plans of the houses, the functions of the rooms are not separated from each other, and the rooms which are living room during the day turn into bedrooms at night. The rooms are mostly rectangular in shape and close to each other; while, the main rooms, which are the most significant room of houses, are separated from the other rooms by their niches, heights and ornaments. Nowadays, many traditional houses have been added new rooms such as kitchen, bathroom and wc. Gercüş's vernacular houses include two large mansions, namely Yusuf Aga Mansion and Bedrettin Ekmen Mansion. These mansions are either not used today or are shared among several families (Table 13.2).

Table 13.2 Plan typology of vernacular house in Gercüş

	IWAN	Without IWAN
Courtyard	 (a) (b)	 (c) (d) (e)
Without courtyard	 (f) (g)	 (h)

4.2 Facades

Due to the topography of Gercüş, most of the vernacular houses are located in the north–south direction. These houses have semi-open and open space with iwans and terraces with can be observed at the facades. In some examples, the arch of iwans is crowned with rich masonry. Particular attention is paid to the facades facing the street. Due to the easily processable of the limestone which is the basic building material used in the region, the art of ornaments on facades has developed. The facades of houses, especially on the street-facing facades, have been characterized by the ornaments on windows and corniches, so these ornaments differ from each other. The courtyard gates with monumental size and inscription are the other significant elements that form the facade.

It is observed that the windows, which are important elements of the façade layout, are usually placed in the arched niches. The most commonly used are rectangular windows that fit into a three-slice arched niche. However, rectangular or flattened arched windows are also used placing into lancet arched and semi-circular arched niches. At the facades which are not facing the street, rectangular or arched windows are used placing in the round arch. It is also worth to mention that some niches have columnar edges. It is observed that some vernacular houses have different niches order according to facades. It is also considered that due to the climate factors and features of the masonry work construction, the size of windows is kept small (Fig. 13.5).

Doors with monumental scales are another effective element of the facade layout. The doors between the courtyard and the street as well as the entrance doors opening from the street to the house have similar monumentality, flattened arches and two wings. The door openings are mostly crossed with two-row stone arches and rarely with single-row stone arches. Some arches have reliefs of moon and star. The door material is mostly wooden batten door, and nowadays, there are also metal samples (Fig. 13.6).

The majority of the vernacular houses have ornamented upper cornice of the façade. These cornices, which indicate the end of the roof, also provide the detection of the heights of the facades. Together with the windows, these cornices are the building elements that reveal rich ornaments of vernacular architecture in region. Cornices, an important element of the façade layout, were built in various motifs such as zigzag, leaf motif, geometric pattern, triangular motif, inverted and flat half circle and sea shell. Each vernacular house has its different style of cornices. Thus, it is a significant constructional component giving special character to the houses (Fig. 13.7).

There are inscriptions in Arabic and Ottoman Turkish on the facades of some of the vernacular houses showing the history of construction, information about the houses and various prays. They are usually located between windows or on a point close to upper cornice of the façade. The inscriptions are especially in the form of water drop, star, rectangle, square or round frame (Fig. 13.8).

4.3 Building Materials and Technic

The main building material in the region is pale yellow limestone. The most important feature of limestone is easily processable thanks to its soft structure when it is removed from the quarry; so, from this aspect, it provides rich ornaments (Dalkılıç 2004, p. 180). Another characteristic material used in the region is gypsum, which is widely used in

Fig. 13.5 Windows in vernacular Gercüş houses

Fig. 13.6 Doors and courtyards' walls in vernacular Gercüş houses

Fig. 13.7 Cornices in vernacular Gercüş houses

Fig. 13.8 Incriptions in vernacular Gercüş houses

south-eastern Anatolia being important component of the vernacular architecture. Cas, which is obtained by burning and grinding the gypsum in the furnaces and adding wood ash into, is a mortar and plaster material used in all vernacular houses in the region. In Gercüş houses, stones are used in the form of ashlar, pitch-faced and rubble stone. It is observed that, in the facades facing the street, generally ashlar is used, while on the other facades, rough stone is the overwhelming form of limestone. The construction technique used in the vernacular Gercüş houses is the masonry work construction. Cross vault is the most widely used cover type. However, it was observed that the barrel vault and the wooden ceiling are used especially in the main rooms, which are the largest rooms of houses and generally host the guests. Almost entire vernacular houses have earthen flat roof, which is regularly maintenance by compressing the soil plaster on the roof with cylindrical gemstone called *gundor* by local people as can seen from Fig. 13.9. However, it is observed that earthen flat roof of most of the vernacular houses changed over with concrete.

5 Conservation Problems

Gercüş is an important historic settlement with its vernacular houses and urban fabric. Considering that Syriacs had lived in the region in the past, the town had been host different cultures and beliefs in its history. In spite of changes in life standards, the historic urban fabric with narrow streets survives to the present day. Contrary to the district such as Midyat, Savur and Mardin which have similar architectural character, Gercüş has not undergone a comprehensive restoration until today. On the other hand, a research had been done in a part of Batman Culture Inventory under the leadership of Gülriz Kozbe in 2017 (Kozbe 2017, pp. 179–251). The initial conservation problem of the town can be listed as abandonment. As a result of increase in education of especially high-income families, migration to big cities such as İstanbul, Ankara and Diyarbakır became inevitable.

Thus, traditional houses belonging to these families have been ruined due to lack of maintenance in time. Some

Fig. 13.9 **a** Cas mortar (left), **b** different techniques used on the same façade (middle), **c** gundor (right)

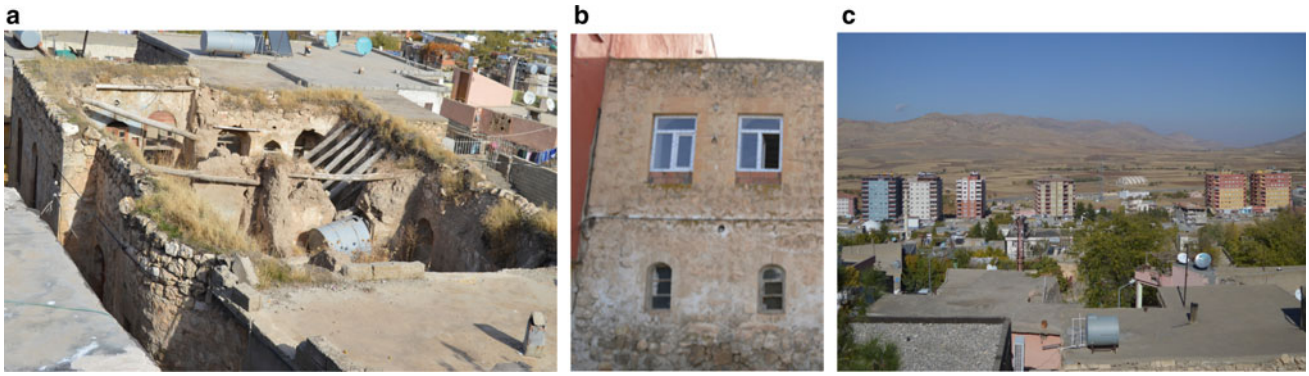


Fig. 13.10 **a** Conservation problems of abandonment (left). **b** Inappropriate addition (middle). **c** New constructions (right)

migrant families rented out their houses; however, due to the changing social structure and financial factors, the maintenance of these traditional houses could not be maintained properly, and their authenticity was damaged by unqualified extensions, additions and repairs. In addition, it was observed that some traditional houses were converted into barns in the district where rural life partly continued. Lack of awareness of conservation of cultural heritage and new construction in the town are other important problems. Although there are no high-rise buildings in the historic urban fabric, the high-rise buildings located at the north, where the district developed, severely damaged the city's skyline (Fig. 13.10).

6 Conclusion

Traditional houses are one of the significant components of historic urban fabric as the original documents reflecting the characteristics of the communities they belong to. Gercüş, where traditional life is partly maintained, is one of the authentic settlements of the south-eastern Anatolia Region with its vernacular houses, which are rich examples of stonemasonry and that of position in dramatic topography. Gercüş also ensures continuity and similarity of important historical city centres such as Mardin, Midyat and Savur with its location, urban fabric and architecture. Nevertheless, Gercüş old market and its surrounding where traditional houses are densely occupied, are not registered as an urban site. Although there are considerable number of vernacular houses and public buildings to be registered as cultural assets to be protected, only two buildings, Yusuf Aga Mansion and Bedrettin Ekmen Mansion, are registered as cultural property. It should be also noted that Gercüş has a tourism potential with being located at the route of Hasankeyf, Midyat and Mardin which are important tourist attractions of the district. As a result, the old market and its surrounding are required to register as urban site and to restore the vernacular houses in the district with adaptive reuse in order to provide a sustainable protection.

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How Can We Recover the Identity of the City? Workshops of "The City of Tomorrow/A Vila Do Mañá"

Sandra González Álvarez

Abstract

How can we recover the identity of the city? How art can inspire new generations to understand our cities? How can the city be a meeting or exchange place again? How can we feel safe again inside our homes, in the neighborhood, in the city? How can we make of the city is our place? What should we do so that the city stops being something associated with dirty, gray, monstrosity…? These are the issues that we deal with *"The City of Tomorrow/A Vila do Mañá"*. *"The City of Tomorrow/A Vila do Mañá"*.

Keywords

Identity • City • Town planning • Childhood • Innovation

1 Introduction

> At one time we were afraid of the forest. It was the forest of the wolf, the ogre, the darkness. It was the place where we could lose ourselves. When our grandparents told us stories, the forest was our enemies favourite place. […] At one time, we felt safe between the houses, in the city, with our neighbours. This was the place where we were looking for our friends, where we would meet them to play together. There was our place, the place where we hid, where we became fellows, where we pretend to be mummies and daddies, where we hid our treasures… […] But in a few decades, everything has changed. There has been a tremendous, rapid, total transformation, as our society had never seen it before (at least according to documented history). […] The forest has become beautiful, luminous, the goal of dreams and desires. The city, on the other hand, has become dirty, grey, monstrous. […] In recent decades, and especially in the last fifty years, the city, born as a place of meeting and exchange, has discovered the commercial value of space and has altered all the concepts of balance, well-being and community, fulfilling just profits and interest. It has been sold, prostituted. […] The city is now like the forest of our stories. (Tonucci 1997)

How can we recover the identity of the city?… how can we do so that our heritage is not lost?… how could the city be that place of meeting and exchange again?… how to return to make the city our place?… these are the issues that lead us to create the project of "The City of Tomorrow/A Vila do Mañá".

González-Álvarez (2017b): "The City of Tomorrow" is an educational and outreach project, whose goal is that from childhood and through play you become aware of all the scales of the common: tangible and intangible heritage, architecture, urbanism and landscape. At the same time that from the architectural discipline becomes aware of a new vision of the city, which is what those who will be the inhabitants of tomorrow contribute to us.

González-Álvarez (2017c): We believe that it is necessary that childhood and adolescence be actively present in the processes of construction of the common space (square, neighborhood, city…) providing them with the necessary tools to know the value of their environment and develop their creativity, from art and architecture. The objective is to

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provoke in them the awakening of a new look on the spaces in which they develop their life.

This project is being developed through different workshops in the City Councils of Galicia, it is carried out by the PØSTarquitectos team, financed from the different councils, and receives the support of the ETSAC (Higher Technical School of Architecture, University of A Coruña), COAG (Official College of Architects of Galicia), and APA-TRIGAL (Association for Defense of the Galician Cultural Heritage). Last March, the project was put to the test, making the leap from the Galician villages to a large metropolis such as São Paulo, with the collaboration of the City, Gender and Early Childhood Research Group of the Mackenzie Presbyterian University.

2 Objectives

González-Álvarez (2019): In the times we live, where everything is a "click" away, where flying over Tokyo or New York is within reach, where I can visit the Parthenon from the screen… we have forgotten the place where I live. The new generations, the inhabitants of tomorrow, are totally unaware of the town or city they inhabit, they live in a "little box" they move into another smaller "box" and they arrive at a bigger "box" (call school, shopping center… or sports center), this is their relationship with your environment Fig. 14.1.

González-Álvarez (2017a): The reality of today is that the natural connection between children and their habitat, the place where they grow and develop, the city or the village in which they live, is diluted, is barely existent. We found children in their homes, watching TV, with their video games, playing in their fenced and guarded urbanizations, moving by car and discovering the city from their window, where the park or plaza has been replaced by the shopping center. The city is a hostile medium for them, they have lost their freedom, which is limited to certain enclosures considered safe and controlled by adults. We are transmitting the message of fear that is currently being felt in society, and consequently, the place where they live, the town or the city, is not safe for them.

González-Álvarez (2018): In front of this image of the public space of today, "The City of Tomorrow/A Vila do Mañá" starts from understanding the city as an educational tool, not neutral, to which we approach from the game.

We recover some of the ideas proposed by the Dutch architect Aldo van Eyck (1918–1999), in which the child was given the opportunity to discover the city from his own movement, which has to be developed through his games because is his natural way to know the world. We are aware that, now, this generates a conflict in the streets and squares, which we want to provoke, highlight and show from the workshops, even temporarily. What happens when the spaces of our cities are occupied by children playing? How do the children feel? How do adults react? How can the city be transformed? From this conflict, we want to transform the image of the city that children and adolescents have and, at the same time, make them visible in those spaces in the eyes of adults Fig. 14.2.

Another idea that bases our project of "The City of Tomorrow" arises from the right to the city, Lefebvre (1975, 2013): As defended by Lefebvre (1901–1991), by which the people who live in it have the right to its enjoyment, transformation and that reflects their way of understanding life in community. From this point of view, how not to include the right of boys and girls to the city? Therefore, we consider the public space as a common space of learning and collective construction in which childhood must also have a place.

We want to give voice to those who normally do not have it, children and adolescents, promoting their right to form their own judgment about the habitat in which they live and to be able to express it and make it manifest. We seek to stimulate a critical attitude to promote their development as an active citizenship, as they will be responsible for the city of the future. Forming, therefore, the foundations of a critical citizenship.

We want to work in public spaces to transform them into common spaces. As the geographer and social theorist Harvey affirms, it is necessary the appropriation of urban public spaces by citizens through political action to convert them into common spaces. The squares and streets, the landscape with its elements, the furniture, the voids… are common goods that we seek for children to recognize as their own from different points of view: from history, its uses, its evolution and its transformations.

Our main objective is that childhood and adolescence be actively present in the processes of construction of the common space, giving them the necessary tools to develop their creativity from art and architecture, in order to provoke in them the awakening of a new look and generate identity links with the spaces in which they live.

It is intended that they acquire a greater knowledge of the city in which they live; an appropriation of spaces that are vetoed daily; the movement with freedom in the squares; the spatial empowerment along with other children favoring their coexistence; assessment of the place where they live through a new look at their habitat; make them responsible for the environment; to know also the elements that make up the immaterial place and, above all, to demonstrate their transformative capacity Fig. 14.3.

With "The City of Tomorrow," the city in which they live is not an abstract idea, nor is it a series of small partial images; It begins to be understood as a much more complex and comprehensive environment, which brings us closer to

Fig. 14.1 The vision of children about their city. Workshops: "The City of Tomorrow, Vilagarcía"

the notion of habitat: the space that transcends its physical location in a territory, in which we solve our needs by establishing relationships with other people and the environment, both natural as built; implying processes in which it is transformed but in which we are also transformed. The habitat also implies the memory and the symbolic of the community. In short, the habitat as a system of relations and processes that are generated between three elements: nature, society and the inhabitant.

We want children to learn to look at the place where they live, taking with them two powerful tools: art and architecture. They are two elements that help us to apprehend the world and, most importantly, also to transform it. To do this, tools from different disciplines are combined, since children are expected to manage knowledge of architecture, art, landscape, urban planning and sustainability.

The fundamental tool to reach childhood is the game, so the activities are based on it. The children play, have fun, and discover elements of their town/city unknown until now. Generate an identity with the space in which they live.

In "The City of Tomorrow" students from the ETSAC (High Technical School of Architecture of A Coruña) participate, looking for ways to outline the concepts of heritage, architecture, urbanism and landscape to transmit them to children; at the same time that they themselves learn from the little ones, they break with the regulated education forgetting the figures, the norms and the urbanistic techniques, and they learn to focus on the needs of the citizens of tomorrow.

3 Methodology

The workshops of "The City of Tomorrow" have a duration of 5 days, 5 days in which the city where we work becomes our game board, in our laboratory of experimentation, let's learn by playing through art.

The activities carried out in the workshops: "The City of Tomorrow," are structured through six fundamental concepts: Perception, Scale, Space, City, Landscape and

Fig. 14.2 Invasion of urban space. Workshops: "The City of Tomorrow, Cambados"

Sustainability and four necessary tools: the Point, the Line, the Plane and the Three-dimensional Element. To develop these six concepts, strategies of art and architecture are used.

4 Perception

The perception of the body itself, as well as the perception of the environment that surrounds us, are fundamental concepts in the workshops of "The City of Tomorrow".

We work with perception in two very different ways. First of all we need to know how children see the city they inhabit, we need to answer the question: what is your city like? Debord (1959): For this, based on Guy Debord, we go out to the "drift" accompanied by a large golden frame, so that in our wanderings they can frame those elements of the city that are important to them Fig. 14.4.

Why a great golden frame? Like Lorraine O'Grady in her performances, she makes us question what is inside or outside. Traditionally this was delimited by the frame, now that line is broken, and what is outside the frame coexists with what is inside Fig. 14.5.

Continuing with the work of perception, we try to provoke in children/adolescents a new vision of their environment, seeking to break with the known and that they can perceive the same places with different eyes Fig. 14.6.

Todorov (1970): We base this experience on the concept of "defamiliarization," a literary concept developed by Viktor Shklovski. According to his theory, daily life causes "freshness in our perception of objects to be lost," making everything automated. The routine makes us sleep, it makes us blind, deaf, and oblivious to what happens in our environment. We no longer observe what surrounds us, we no longer look at the objects or the places we know, because they are everyday. Art presents objects from another perspective. It takes them away from their automated and everyday perception, gives them life in themselves, and in their reflection in art. Through this concept we begin to perceive our environment in another way, we are forced to do so by the "defamiliarization," which presents us with reality as we have never seen it before. Using this concept we have made some significant actions such as turning a square into a large ocean… or even painting graffiti in the air Fig. 14.7.

5 Scale

In the workshops of "The City of Tomorrow" we introduce the concept of human scale and the city scale (Fig. 14.8). Starting from becoming aware of our own body dimensions, we can approach other dimensions such as the city and the

Fig. 14.3 Transforming the city. Workshop: "The City of Tomorrow, Ferrol"

territory. It is a perceptual route that we place between the hand (Fig. 14.9), which represents what is close to our body, and the horizon (Fig. 14.10), how distant the view reaches.

6 Space

We seek work from the space of architecture and the city through experimentation with light, texture, color, sound… The instrument is the body, which travels, constructs and plays in spaces with all the senses displayed.

We work with the horizontal plane, new materials are available, which make us discover new uses. By transforming the space with the new materials, when discovering new textures, new activities appear, they sit down, they lie down, they play, they take off their shoes… Fig. 14.11.

7 City

The city as our habitat, our game board to discover. To understand its structure, morphological conformation, its empty and full, its history, its traditions. Reflect on how we move from one place to another, the routes, the important points where the lifes of children and the community unfolds.

> "… for if a city, according to the opinion of philosophers be no more than a great house, and on the other hand the house be a little city …" (Alberti 1975)

We want you to discover how your houses connect to the city, recovering the idea of Leon Battista Alberti from understanding the house as a big city and the city as a small house, which Aldo van Eyck also exhibits in his diagram of the tree and the leaf: "Tree is leaf and leaf is tree-house is

Fig. 14.4 What would you frame in your city? Workshop: "The City of Tomorrow, Rianxo"

Fig. 14.5 What would you frame in your city? Workshop: "The City of Tomorrow, Milladoiro"

Fig. 14.6 Playing with perception. Workshop: "The City of Tomorrow, Vilagarcía de Arousa"

Fig. 14.7 Playing with perception. Workshop: "The City of Tomorrow, Vilagarcía de Arousa"

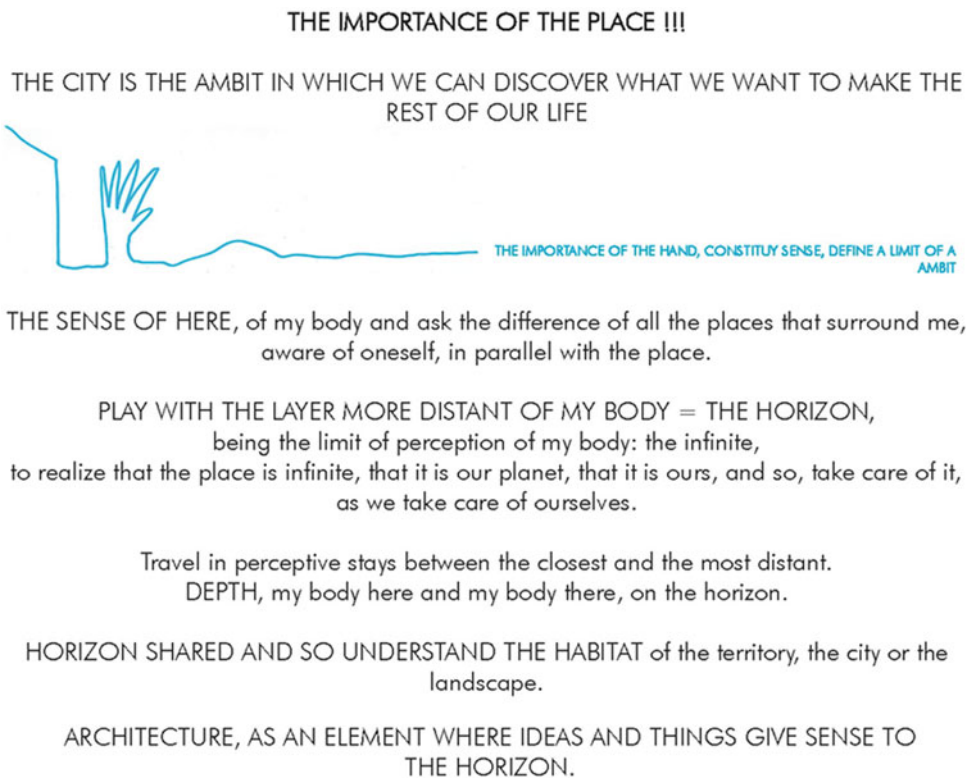

Fig. 14.8 Summary on the importance of the place, of the hand to the horizon

Fig. 14.9 Working with the scale, of the hand… Workshop: "The City of Tomorrow, Verín"

Fig. 14.10 Working with the scale, … to the horizon. Workshop: "The City of Tomorrow, Cambados"

Fig. 14.11 Working with the space… to the horizon. Workshop: "The City of Tomorrow, Riveira"

city and city is house—a tree is a tree but it is also a huge leaf—a leaf is a leaf but it is also a tiny tree—a city is not a city unless it is also a huge house—a house is a house only if it is also a tiny city" (van Eyck 2008a, b).

The instrument is the body, which travels and plays in space with all the senses deployed. The children/adolescents become in a few days in thinkers of the city, they appropriate the spaces, they make them their own. They devise and invent their own play spaces, modify the city, live it, enjoy it and generate an identity with him.

With what elements are we going to work? What elements of architecture will we use as tools to appropriate the spaces?

Point

> In our perception, the point is the essential, unique bridge between word and silence… […] The point is also, in its exteriority, simply the practical, utilitarian ele-ment that we have known since childhood. The external sign becomes habit and obscures the inner sound of the symbol… The sound of everyday silence is for the point so strident, that it imposes itself on all its other properties. (Kandinsky 1993)

We work with the Point as an elementary tool, based on Kandinsky, the point allows us to invade the spaces. We use balloons as a Point, which is an element that we are familiar with since we were children. With the balloons we do not invade only physically the space, the noise will also invade the space, when we put an end to the activity by exploiting all the balloons Fig. 14.12.

Line

> The geometric line is an invisible entity, it is the trace that leaves the point when moving and is therefore its product, it arises from the movement when the total rest of the point is destroyed, we have made a leap from static to dynamic. […] Such is the line, which in its tension constitutes the simplest form of the infinite possibility of movement. (Kandinsky 1993)

Another of the elementary tools that we use is the Line, colored threads or beacon tapes are used to generate new spaces. The children weave the street, fill the asphalt with color. It's their new play space, they have fun on "their street," they generate an identity with it Fig. 14.13.

Fig. 14.12 Transforming the city working with point. Workshop: "The City of Tomorrow, Bueu"

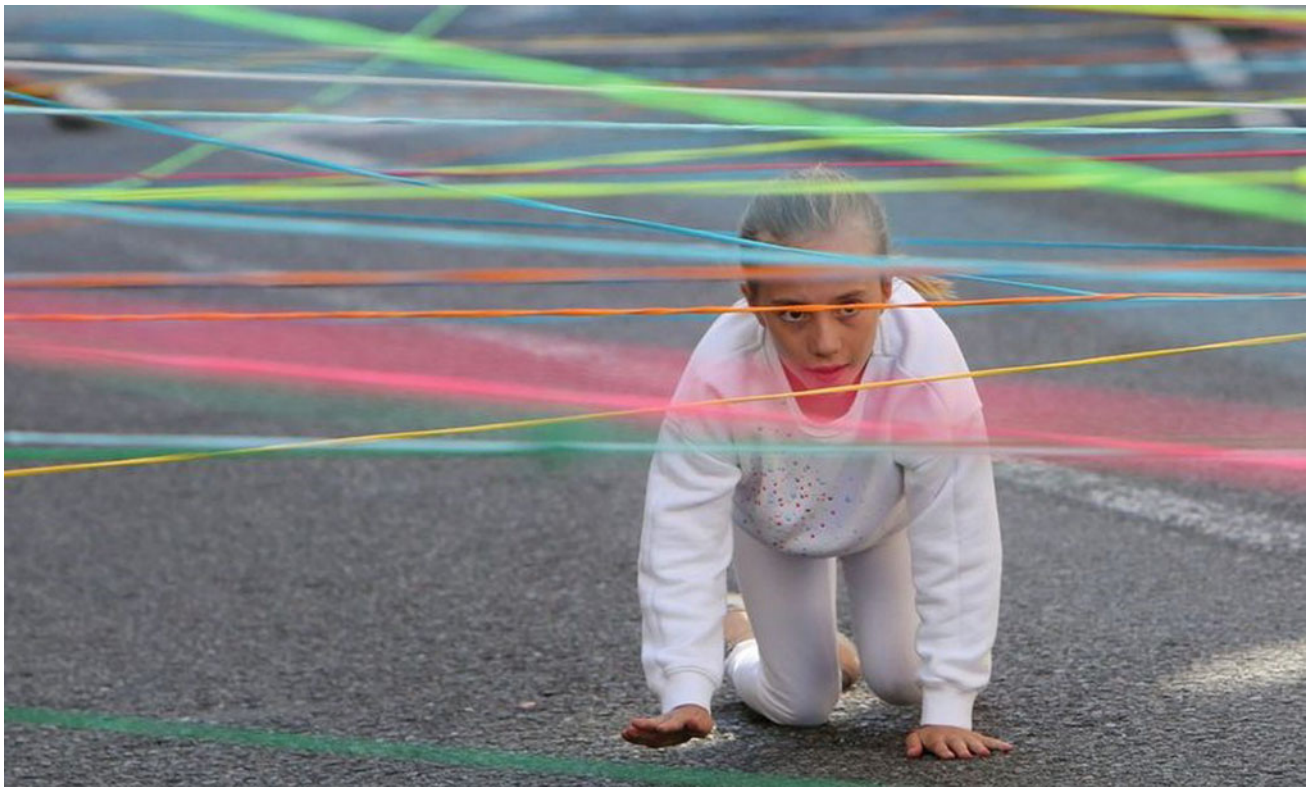

Fig. 14.13 Transforming the city working with Line. Workshop: "The City of Tomorrow, Vilagarcía de Arousa"

Plane

> But the line hides among its other properties, and ultimately, the deeply hidden desire to engender a plane, thus becoming a denser, more closed entity in itself […] when the line dies, and At what point does the plan arise? […] The basic plan is the material surface called to receive the content of the work […] The basic schematic plan is limited by 2 horizontal and 2 vertical lines and acquires thus, in relation to the environment that surrounds it, an independent entity. (Kandinsky 1993)

The third fundamental tool is the Plano, we work with the Plano to modify our spaces, to make them contain our works Fig. 14.14.

Three-dimensional element

To finish talking about the tools we use to invade the spaces of the city, and outside those defined by Kandinsky, Fröebel (1826): We work with the 3D Element, for this we will build on the "third gift" of Froebel. The German pedagogue Friedrich Froebel (1782-1852) was the creator of Kindergarten for the teaching of six-year-old children. And the word Kindergarten itself, makes us mention a place where children are going to be cared for as small plants, so that they develop completely.

In Architecture we have reference to Froebel, through Frank Lloyd Wright who was educated with this method. It is a system based on creativity and intuition of the child through direct experience with the game and nature. Froebel creates pedagogical resources based on "gifts" and "occupations". The "gifts" are pedagogical materials that do not change but are transformed; "Occupations" are activities in which children play by transforming the objects they manipulate. The "gifts" are the precursors of the building blocks of today (Lego, Tente…).

We use cardboard boxes as the "third gift" of Froebel, a "gift" on a much larger scale, a "gift" with which we propose to appropriate the city. The space is modified, it becomes a great fort, small cabins, a big wall… the space is full of life Fig. 14.15.

8 Landscape

Interaction between the built landscape, the most natural landscape and the intermediate territories. Understand how the people construct the landscape and how the landscape in turn builds us.

Fig. 14.14 Transforming the city working with Plane. Workshop: "The City of Tomorrow, Arteixo"

9 Sustainability

We want to reflect on the way in which we relate to the planet. Make us aware that what sustainable consists in a balance between what allows us to develop our life and what commits us to the survival of future generations.

We work with the inclusion of green in the cities, for this we will use the system of "seed bombs" of Masanobu Fukuoka Fig. 14.16.

10 Conclusions

> I confront the city with my body; my legs measure the length of the arcade and the width of the square; my gaze unconsciously projects my body onto the facade of the cathedral, where it roams over the mouldings and contours, sensing the size of recesses and projections; my body weight meets the mass of the cathedral door, and my hand grasps the door pull as I enter the dark void behind. I experience myself in the city, and the city exists through my embodied experience. The city and my body supplement and define each other. I dwell in the city and the city dwells in me. (Pallasmaa 2005)

Paraphrasing the Finnish architect Pallasmaa, inhabit the city and let the city inhabit me. It is an idea that we try to transmit to the children of the workshops through the different activities and actions. From the self, from the being in the world, from the body, recognizing the habitat that surrounds us with all our senses, understanding it, making it our own; with the ultimate goal of knowing that you can modify it, for better or for worse. For this, our instrument has been the game, the natural way in which children learn and express themselves. We have played with the concepts of art learned in the academy, we have taken them to the street, we have transformed the cities through artistic strategies. The city as a big board that they discover from the action, from their own movements and transform it from the art.

"The City of Tomorrow" has worked so far with 3200 children aged between 3 and 15 years, has been made in 14 cities/towns: Rianxo, Milladoiro, Bertamiráns, Verín, Mondoñedo, A Pobra do Caramiñal, Riveira, Bueu, Arteixo, Carballo, Vilagarcía de Arousa, Cambados, Ferrol and São Paulo, and 80 students of the last courses of the ETSAC and FAU-Mackenzie, throughout the development of the project we have observed two aspects of relevant importance:

1. When we started the workshop, the vision of children about their city is diffuse, disconnected Fig. 14.17.

Fig. 14.15 Transforming the city working with 3d Elements. Workshop: "The City of Tomorrow, Vilagarcía de Arousa"

Fig. 14.16 Transforming the city working with Natural Elements. Workshop: "The City of Tomorrow, São Paulo"

Fig. 14.17 The vision of children about their city. Workshops: "The City of Tomorrow, Bertamiráns"

The perception of the city and of the habitat in which the children live has changed after carrying out "the City of Tomorrow" workshops, the urban space has become a part of them, they have internalized it, They have made theirs. They have generated links with the place where they live. In addition, children have learned to express themselves through art.

2. The perception of the city and the habitat for future architects and for those who already are, has also been modified, learning by working with children, has made us consider on aspects of the city that we usually leave out of urban planning manuals. New questions arise: How can we recover the identity of the city?… How could the city be that place of meeting and exchange again?… how can we feel safe again between the houses, in the city?… how can we make the city our place?… what can we do to stop the city from being something dirty, grey, monstrous?… which are what motivate us to continue evolving the workshops of "The City of Tomorrow".

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Energy Efficiency in Architecture Design in Mohenjo-Daro

Saira Iqbal

Abstract

The universe is working according to a phenomenon. The people of ancient times did not have to rely upon dwindling resources. They utilized natural resources and used them for technology. Urbanization starts from the Indus in South Asia, birthing one of the earliest civilizations of the world, the Indus Valley civilization. With first of its kind technology and urban settlements; Indus Valley civilization laid the foundation for future settlements to come. This research article deals with the constructed and assembled environment and the relation that the built environment had with nature. Hence, sustainability is a complicated idea that incorporates not only energy but all the resources required to support human activity. It is also about enhancing biodiversity and creating spaces that are vigorous, economical, and receptive to social needs. A better balance can be created by following the natural environment. The people of Mohenjo-Daro used energy-efficient buildings in their architecture using bioclimatic architecture; thermal insulation; exfiltration and infiltration; use of proper sunlight; airtightness, air leakages, and windows; proper lightning and ventilation. The construction of buildings was according to the climatic conditions. The halls and the residential areas were built in lower town or Citadel due to lower and moderate temperature. Hence according to the study the buildings constructed in Mohenjo-Daro were energy efficient using their technology and resources and were according to the principle that all great architecture teaches us to regard local conditions as the one known fundamental factor from which to start and to allow the structure to make the most logical shape formed by those local conditions.

Keywords

Architecture • Energy efficiency, Mohenjo-Daro

1 Introduction

The Indus Valley Civilization of South Asia is one of the earliest and most geographically extensive complex urban-based societies in the world. The near standardized proportions of its architectural components, undeciphered writing system, and perhaps most famously, its elaborate network of urban water management are well-known elements that attest to the highly ordered coherence of its civic culture (Mosher 2017). Discussing the geographic location, it covers the area of present Pakistan along with the Indian states of Gujarat, Rajasthan, Haryana, and Punjab. Some of the settlements which are close to the center of civilization and may have been colonies of it—have been found in Afghanistan and Central Asia. The huge Indus river system waters a rich agricultural landscape. The plain of Indus is covered by high mountains, desert, and ocean along with dense forest to the East. Excavations first conducted in those areas in 1921–1922 showed that these areas are some 4500–5000 years old. The region where the Indus Valley civilization developed lies at the intersection of two major zones. These major zones are the dry Iranian plateau and the tropical South Asian peninsula watered by monsoon (Mcnitosh 2008).

The people of the Indus Civilization were not only agricultural but they also acquire great accuracy and perfection in measuring length, mass, and time. They developed the first system of uniform weights and measures. Considering other civilizations, actual weights were not constant from city to city. The engineering skill of the people of Indus Valley is advanced, along with the engineering skills the town planning of these peoples were also appreciable. The

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planning of municipal towns showed that these were controlled by efficient governments.

The Indus Valley Civilizations develops to have been urban, challenging the agricultural rural and logical urban progression. The extensive trading evidence shows that the people had a merchant class. The initial phase of Indus lasted from circa 3300 BC until 2800 BC. An important factor for the inhabitants was cleanliness. The urban planning included the world's first known urban sanitation system. Within the city, the source of obtaining water was well. Within the homes, some rooms had facilities in which wastewater was directed to covered drains. These lined the major streets. The sewerage and drainage system of ancient Indus were far in advance as compared to modern urban sites in the Middle East. The impressive dockyards, granaries, warehouses, brick platforms, and protective walls showed advanced architecture and construction techniques. Their strong huge walls were designed in such a way to protect them from floods as an attack as well. The residents were mostly traders or artisans. Although there was a difference between the houses still the residences do not show a major class system. Democracy was dominant as a pattern in society to a remarkable degree. However, all the houses had access to water and drainage facilities, which gives a positive, decent, and well-managed standard of living of the people of society (although there may have been extensive "shanty towns" outside the walls; which have left scant archaeological remains). The climate and environment in this area were very diverse. The region varied from the desert, to mountains, to wooded highlands all with variable rainfall (Possehl 5). People of Mohenjo-Daro because of the unpredictable weather conditions had to deal with floods, droughts, monsoons, earthquake, and change in the course of the river as well (Allchin 11). The mountain ranges and the surrounding oceans played a role in monsoonal rainfall. In some places the climate was moist and humid, supporting dense forests and grassland, where animals such as tigers, rhinos, and elephants roamed (Allchin 13). The western highlands afforded excellent grazing to sheep, goats, cattle, and wild ibex (Chakrabarti 169). Today, the Thar Desert is arid and covered in sand. However, soil analysis is a clear example that significant vegetation cover in the past, support surface water (Vieda).

2 Mohenjo-Daro

"The Island"—a long narrow strip of land between the main river bed and the Western Nara loop, its precise position being 27° 19' N by 68° 8' E; is Mohenjo-Daro—The mound of dead. (Marshall 2004). Charles Sanders Peirce famously said, "All the evolution we know of proceeds from the vague to the definite." That statement holds even today, particularly, when we connect cities of the Third Millennium B.C to the cities of the future. Those ancient city builders had a luminous awareness about the use of light and shade and the play of cool and warm. Unlike us, they did not have to worry about dwindling resources (Mukhargee 2012). It is these housing enclaves that are proving to be the least sustainable (Jansen 1985). It is time we honorably ponder about tomorrow's designs. It was in the sub-continent that the foundations of the world's first cities were laid. These cities survived the ravages of time and tide and were sustainable over two millennia.

The most important and foremost principle that needs to be taught by the architects are the local conditions and the shape of the building should promote the logical and environmental conditions. The ancient city plan included double and single-storied buildings gathered around geometrical grids with three divisions, named as the Citadel, the middle town, and the lower town. Studying the city and settlements of Mohenjo-Daro suggests an advanced level of social organization. The division of the city was on the basis of the so-called Citadel[1] and The Lower City.[2] The Citadel can be explained as a mud-brick mound around 12 meters and in feet its 39 feet high. This mud-brick mound supported for public baths, large residential structures for about 5000 citizens with two large assembly halls. A central market place was also the part of Citadel (Vidale 2010). The city has a large central well for the usage of water. People obtained their water from those small wells. There was a proper system for wastewater and well was used for that purpose. It was channeled to cover drains that lined the major streets. The construction, settlement, design, and techniques showed the economic system as the wealthy of the people. There were rooms that were reserved for bathing. A building has also an underground furnace known as a hypocaust. The inner courtyard was another addition in some of the houses that had doors opening into side-lanes. Some buildings were double storied. The ancient people took advantage of the cool groundwater temperatures in the summer months. The technique was to construct the residential quarters in the lower town. There were not only residential buildings but administrative buildings as well. The administrative buildings had inner courtyards for effective shading and cooling. Well oriented doors and oriented were in the forms of void in ancient architecture. Most of them were facing equators, i.e., south facing in this part of the world (in case of Lothal). A well-planned drainage system was designed to maximize floor space utilization with a rectangular clustering pattern. The rectangular cluster pattern shares common walls to

[1]The Citadel must be a city centre. Its physical settings is prominent and its features large imposing buildings, some most likely the sites of religious rituals or public ceremonies.

[2]The town proper lied in the east of the citadel. (Gates 2003).

present sustainable architecture design. Mohenjo-Daro has a planned street grid rectilinear layout. Fired, sun-dried, mud bricks and mortared bricks were used along with wooden superstructures. The city range from 85 to 200 hectares of an estimated area. The "weak" estimate of peak population at around 40,000. In 1950, Sir Mortimer Wheeler identified one large building in Mohenjo-Daro as a "Great Granary". There were certain wall-divisions in its strong wooden structure that were pointed out as grain storage-bays having air-ducts to dry the grain. Wheeler stated that carts would have brought grain from the countryside and unloaded them directly into the bays. However, the complete lack of any proof for grain at the "granary" was noted by Prof. Jonathan Mark Kenoyer. Therefore, he argued that it can be a great grand hall for events and functions so he termed it as "Great Hall". Close to that building was a large elaborate public bath, sometimes called Great Bath. From the colonnaded courtyard, steps lead down to the brick-built pool. That brick-built pool was waterproofed by a lining of bitumen. The pool measures 12 m and in feet its 39 feet long, 7 m and in feet its 23 feet wide. Its depth was measured as 2.4 m and in feet its 7.9 feet deep. It may have been used for religious purification. Other large buildings include a "Pillared Hall", thought to be an assembly hall of some kind and it can be termed as "College Hall", a complex of buildings comprising 78 rooms, thought to have been a priestly residence. There were no series of city walls in Mohenjo-Daro. It was fortified with guard towers to the west of the main settlement. The defensive fortifications were in the south. Considering these fortifications, it is claimed that Mohenjo-Daro was an executive center. Both the cities Harappa and Mohenjo-Daro have the same layout. They were not heavily fortified like other Indus sites. It is obvious from the similar city layouts that there was some kind of political or administrative centrality but functioning remains unclear. The city Mohenjo-Daro was successively destroyed and rebuilt at least seven times. Every time, the newly constructed city was built on top of the old ones. Flooding by the Indus is thought to have been the cause of the destruction of the settlements and surroundings.

The idea behind this research is "Climate of an area brings out the architecture of an area with respect to the adoption of the given circumstances. Moreover, to highlight the energy efficiency in the architecture design of Mohenjo-Daro."

The objectives of this study are:

- Man is the slave of nature as well as master of the nature at the same time; depending upon how he use the surroundings.
- The impact of man-made environment and its intricate relation with the natural environment.
- The research questions are
  1. How the diverse and unpredictable landscape provided noteworthy day to day difficulties and How man overcome these difficulties by using the available resources?
  2. How the concept of thermal insulation used long time ago in Mohenjo—Daro?
  3. What was the concept of Ventilation in the architecture of Mohenjo-Daro?

The research article will deal with the architectural techniques of Mohenjo-Daro with respect to Bioclimatic Architecture, Ventilation, and Thermal Insulation. Architectural research has characteristics of both scientific and technical research on the one hand and artistic and humanistic on the other hand. Christopher Frayling, the rector of London's Royal College of Art, has argued that all research in architecture revolves around one of three or either all of the three prepositions; "Into", "For" and "Through" (Groat et al. 2002).

Research FOR design typically involves investigations of new technology, products, and materials. Research THROUGH design embraces creative production, with the design process itself as a form of discovering new knowledge. The research in this article deals with the preposition "Into"—because research INTO design encompasses historical and environmental behavior research. By content, the research in this article is according to the process of design and construction. The data in this research is analyzed morphologically and technically. Morphologically, it involves looking at the specific characteristics of research, i.e., Influence of environment on architecture. Technically, it involves looking at the specific area:

- Indus Valley Civilization specifying it to architecture of Mohenjo-Daro highlighting a few areas like Bioclimatic Architecture, Use of Thermal Insulation, and ventilation.

3 Energy Efficiency in Mohenjo-Daro

The man-made built environment and its interaction with the environment is intricate and have a huge impact on the world we are living in. Through studying architectural history, it is found that in 5500 BC in the region of Carpathians people used the solution of the houses built partially buried, obtaining in this way a more stable indoor temperature (Moghiorosi 2017). Benefits of the ground thermal properties were also used later in the houses of the Cappadocians, Essenian communities from Middle East, and Native Americans. Evolution of those designs has to be remarked in

the Persians' "badghir" (wind tower), wherein dedicated routings the wind and ground energy were employed to assure indoor comfort. A similar technique, but only using wind energy can be found in the Egyptian's "malqaf" (wind catchers) (A'zami 2005). An improvement in the thermal comfort by the wall's structure design was materialized by Egyptians using thick brick walls or tiles (that have also special acoustic properties) and later by Greeks and Romans who used cavity walls. Romans also used the heating with burning gases that flow through cavities in the floor or the walls. These elements with high thermal mass actively keep the indoor temperature at a comfortable level for a longer period of time. Windows covered with mica were also an active way to preserve a pleasant temperature of the inside air by trapping solar radiation. This solution conducted to special design of rooms in the Roman Empire, namely "Heliocaminus" (Ionescu et al. 2015).

Hence sustainability is a complex and difficult concept which comprehends not just energy but all the resources needed to support human activity. A large part of an idea of construction depends upon considering the ecology, climatic change and global effects. So, the energy efficiency within the Architecture is defined by "intrinsic attribute to the building, representative of its potential in allowing thermal, visual and acoustic comfort for users, with a low power consumption".

4 Bioclimatic Architecture[3]

It refers to the design of buildings and spaces (interior—exterior—outdoor) based on local climate, aimed at providing thermal and visual comfort, making use of solar energy and other environmental sources. Basic elements of bioclimatic design are passive solar systems that are incorporated onto buildings and utilize environmental sources (for example, sun, air, wind, vegetation, water, soil, sky) for heating, cooling, and lighting the buildings" (Lapithis 2018).

The people of Mohenjo-Daro had their residences in the lower town because of cool and moderate climate. The buildings used for the administrative and public use were constructed in the Citadel because open spaces to avoid suffocation. The shapes of the buildings constructed in Mohenjo-Daro were mostly rectilinear for the ease of construction and to share a common wall. Another reason was that the double story construction in rectilinear buildings was easy. Another important point is that the thresholds of many of the houses are considerably higher than the street level; in some cases, a short flight of steps and a small platform lead into the houses. From this we may infer that the streets were liable to flooding and the doorways of the houses had, therefore, to be protected (Marshall 2004).

In the smaller structures the exterior walls usually had a vertical outer face; in larger buildings, a battering one. The inner faces were invariably vertical, and these might be covered with clay or plaster or brought to a fine finish by rubbing down the bricks, as was done in medieval and modern times in India or they might, again, be relieved by panels or recesses. The remarkable massiveness which distinguishes many of the walls was proportioned to their heights and the weight they had to support, but in part also it was necessitated by the constant danger of floods. (Mackay 2004). The living and sleeping rooms of the family were all on the upper floor, which was reached from the courtyard by way of the staircase. One of the passageway was raised up on the solid basement, in order to provide against the menace of the flood, the idea of having one fair-sized room where the family could find refugees if the rest of the house collapsed. A very noticeable feature in Mohenjo-Daro is a well of irregular shape. At the bottom, it is practically round but at the top, it is elliptical in shape. According to Mackay, it is due to the earth's pressure. The dimension of the elliptical portion of the well is 5 feet by 3 feet, and the diameter of the lower portion is 5 ft. 6 in.

The diverse and often unpredictable landscape provided noteworthy difficulties in the day to day survival of the Indus Valley people. To overcome them, these hardships led to creative technological and scientific inventions. For example, due to the flooding of the rivers, there was a need for flood defense. Since stones were not readily available, and mud bricks would have been destroyed by rain or water, a new way of making bricks were developed (Allchin 176). Instead of drying them in the sun, they were fired or burnt to make them harder and waterproof. Burnt bricks were also used in wells, drains and the numerous bathrooms found in city buildings. These bricks were manufactured in proportions of 4:2:1 which is considered favorable for the stability of structures (Allchin 176).

The Great Bath is a remarkable construction of the people of Mohenjo-Daro. From North to South its overall measurement is 180 feet; from East to West 108 feet. It was one of the hydropathic establishments and most important all remained unearthed a Mohenjo-Daro. Due to finely fitted bricks laid on edge with gypsum plaster, the floor of the tank was watertight. The side walls were constructed in a similar manner. A thick layer of bitumen (natural tar) was laid along the sides of the tank and also beneath the floor to make it, even more, water tighter. The outward pressure was prevented by the packing of crude brick. Brick colonnades were

[3]Takes into account climate and environmental conditions to help achieve thermal and visual comfort inside. Bioclimatic design takes into account the local climate to make the best possible use of solar energy and other environmental sources, rather than working against them.

discovered on the eastern, northern, and southern edges. In the construction of the swimming-bath in the middle of the quadrangle, every possible precaution was taken to make its wall watertight and prevent any settlement of the foundation. Wooden screens or window frames were held by preserved columns having stepped edges. Two large doors lead into the complex from the south. There was another access that was from north and east. A series of rooms were located along the eastern edge of the building. There was a well in one room that may have supplied some of the water needed to fill the tank. Rainwater may have been collected for this purpose but no inlet drains have been found.

The rainfall in ancient Sind was considerably more than it is now, and therefore it was necessary to pay attention to the roofing of the houses. So the roofs of the houses were of beam holes as a precaution for rainfall.

4.1 Thermal Insulation[4]

Insulation is as relevant in cold regions as in hot ones. In cold/cool regions, insulation keeps a building warm and limits the need for energy for heating whereas in hot/warm regions the same insulation systems keep the heat out and reduce the need for air conditioning. The walls in Mohenjo-Daro were made of burnt clay bricks. The burnt clay bricks show the prosperity of the people of Mohenjo-Daro. The temperature in the house was kept constant during the day and night because of the absorption of the bricks. The thermal mass and moisture were absorbed by the bricks that maintain the temperature. According to Dr. Eugene Atiemo, the Director of Building and Road Research Institute of the Council for Scientific and Industrial Research (CSIR), "walls built with clay bricks reduce noise transmission and deflect noise from outdoors, thereby ensuring a peaceful and quiet home. The bricks do not warp, rust, split, peel, or fade. They do not harbor termites and appear more beautiful as they grow older. Their low maintenance and durability make the materials a cost-effective option for the exterior of a home." Hence clay bricks are good insulators as wall materials, make walls heavy, dense, and conduct heat slowly.

[4]Is a low-cost, widely available, proven technology that begins saving energy and money, and reducing emissions the moment it is installed. Well installed insulation ensures energy efficiency in every part of the building envelope including ground decks, roofs lofts, walls and facades. It is also well suited for pipes and boilers to reduce the energy loss of a building's technical installations.

[5]Is the intended and controlled ingress (way in) and egress (way out) of air through buildings, delivering fresh air, and exhausting stale air through purpose-built ventilators in combination with the designed heating system and humidity control, and the fabric of the building itself.

4.2 Ventilation[5]

Proper ventilation can avoid risk to human lives. Doorways and windows, Ground floor chambers which alone have survived at Mohenjo-Daro received their light and air generally through doorways but occasionally through interior doors as well. Windows in the outer wall were rare and sometimes took the form of mere slits, but there may have been other windows higher up which have been destroyed. One is forced to the conclusion, therefore windows were either not popular or that they were situated so high up in the walls as to have mostly disappeared. If the latter theory is correct, it would suggest that the windows were so placed for security. On the other hand, it is quite usual to place windows high up in the wall in the hot country for the purpose of keeping a room cool. As in the houses found at Ur, doors were evidently expected to admit enough light (Mackay 2004).

In certain houses, niches were used as seats but in some houses, these are too high. They vary in considerably in length and in-depth are about half the thickness of the wall in which they were built. According to Mackay, these were used as ventilators that communicated with wind scoops. These niches served as a ventilator is discounted by the fact that these were in open courts as well as in closed rooms and that a number of them are sometimes ranged round the walls of a room in the form of sunk panels.

5 Results

The results and findings from the above research show that the architecture of Mohenjo-Daro was energy efficient. People used that environment according to their requirements. The time of Mohenjo-Daro was not that much advanced so people use non-diminishing resources as a tool to utilize. Research shows that the architecture of Mohenjo-Daro was energy efficient as per the construction techniques, designs, rescuing themselves from floods. The buildings were bioclimatic in structure in design providing thermal and visual comfort. People preferred the technique of thermal insulation by using burnt clay bricks to maintain the temperature of their houses. Doors, windows, and niches were used for the purpose of proper ventilation. Hence, people used their natural resources by amending according to their use and needs.

6 Conclusion

Man is the slave of nature as well as the master of nature at the same time. There is no surprise that the physical surroundings help in shaping the culture. People are not only

dependent upon the environment but with the passage of time; this slave of nature also utilizes the environment according to his requirements. Hence the energy given to us by the nature is a blessing as well as a disturbance but it depends upon man how to utilize the non-diminishing (dwindling) resources. According to the research in this paper; the architecture of Mohenjo-Daro was energy efficient following the basic principles of architects. Although that was not such a developed period the people utilized the technology at its best. As Mohenjo-Daro was among such areas where a lot of rainfall takes place; they utilized the rainwater for irrigation. They constructed wells in private and public areas to store water. The houses were flood protected (as much as they can; according to their resources). Furthermore, the burnt clay bricks, shapes and utilization of wells, positioning of doors, windows and niches, roof tiles, thresholds, double stories and the terraces in the houses show that the architecture was energy efficient in Mohenjo-Daro.

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The following part provides insight on the study of urban morphology as a body of knowledge for understanding the physical environment, its formation and transformation. Urban morphology represents, in a way, the relationship between the environment and its inhabitants and considers perceptual, social, visual, functional and temporal dimensions. When looked into, these dimensions are significant in the way they indicate the desired qualities of the physical environment in support of human wellbeing. Through an understanding of the physical environment and its transformation patterns as well as appropriate urban regeneration, design, planning and conservation, the quality of the urban environment can only improve.

The authors of "A Study of Built Morphology and Cultural Imagery—A Case of Bengaluru Pettah: Historic Core of the City" looks into the activities, users, events, location and spatial conditions of the neighborhood of Pettah in Bangalore. Their study evaluates the impacts of the city's regeneration processes to establish an understanding and translate it into a built image of the place. It builds upon the notion that embedded meaning and making meaning associations, over time, are crucial for the built morphology. It is an attempt to shift the focus from the traditional recording of imageability through mental, sensory and visual mapping to recording in terms of space, time, activities and sense of openness or 'publicness.'

Correspondingly, in the chapter titled "Architect José Ignacio Diaz: The Successful Manager and Landscape Builder of Downtown Córdoba" the authors focus on the urban landscape of downtown Cordoba, Argentina and the transformation it has witnessed by the designs of Architect José Ignacio ``Togo'' Díaz. By unveiling successful interactions between the design and construction processes and their effects on the quality of the buildings developed, the authors were able to articulate considerations related to the spatial objects and productive dynamics that made them possible.

Moreover, the chapter titled "Public Art from Symbolism to Randomness: The Missed Role of Art in Urban Open Spaces" briefly discusses the influence of public art on public spaces and the city. It deems its existence pivotal, as it humanizes impersonal spaces, promotes good behavior and prevents vandalism. It sheds a light on Egyptian cities and the pressing need for reviving the role of art in the community in hopes of eliminating randomness.

The Drawbacks of a Global Concept of Sustainable Neighbourhoods in Developing Countries

Mohamed Yazid Khemri, Silvio Caputo, and Alessandro Melis

Abstract

A sustainable neighbourhood is generally considered a key spatial unit for cities, enabling sustainability to be applied as a set of urban planning, social and environmental principles. However, the concept of sustainable neighbourhood was developed in the global North, thus reflecting a city form and social context that do not apply to developing countries, which have different cultures, goals and priorities. Yet, in the global south, the uncontrolled urbanisation led to adopt the sustainable neighbourhood concept as developed for the cities of the global North, in an attempt to attain a more sustainable urban development. Ironically, this is inconsistent with the notion of sustainability that advocates a planning and design process customised to local context. As a result, a rejection of globalised projects by local population for not being responsive to their lifestyle leads to spatial and social segregation. This paper aims to demonstrate the twofold hypothesis that the sustainable neighbourhood concept of the global North cannot be generalised, and a truly sustainable model should emerge from local context. In order to do so, the paper will review relevant literature focusing on the concept of a sustainable neighbourhood and will uncover the negative repercussions of this imported model in developing countries. Building on the literature review of several case studies, the paper will mention the failures of the globalised projects, such as the loss of locality, degradation of sense of community, social and spatial segregation, and globalisation, and then provide recommendations. The outcomes of the paper are useful for contemporary and future sustainable urban projects to learn from past mistakes, which can be avoided in order to facilitate the achievement of more sustainable neighbourhood development.

Keywords

Globalisation • Sustainable neighbourhood • Loss of locality • Degradation of sense of community • Social and spatial segregation

1 Introduction

Cities can be pleasurable places to live when they are designed in accordance with human needs, are responsive to people's lifestyle and provide opportunities for people to live according to their local socio-cultural norms. However, the rapid rate of globalisation and urbanisation, forced cities to rapidly grow to accommodate a large number of inhabitants, buildings and infrastructures without serious consideration of the human scale and needs of people. In this respect, gated communities and mass housing units are being constructed as a response, which caused privatisation of public spaces and decreasing social interactions within the community.

In order for cities to function properly and remedy these problems, a concept of sustainability recognising the critical contribution that communities can play needs to be included in their planning and development strategies. One of the constitutive elements of a sustainable city is the sustainable neighbourhood, which embodies the space and place enabling communities to thrive with minimal impact on the environment (Farr 2008). A large number of planners and designers consider the neighbourhood as the best scale at which sustainability can be applied as a set of planning, social and environmental strategies to form sustainable cities and ensure sustainable lifestyle (Sturgeon et al. 2016). However, a sustainable neighbourhood project should be

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highly specific to the local context and responsive to local conditions.

A review of literature and planning tools suggests that the concept of sustainable neighbourhood is developed in reflection of lifestyles and models of urban growth typical of the global north, thus not being suitable for developing countries (Nagendra et al. 2018; Yazdani and Dola 2013). In the global south, the fast rate of urbanisation and an ambition to develop cities sustainably leads to the adoption of principles for the design and implementation of sustainable neighbourhoods as developed for cities of the global north. Ironically, this is inconsistent with the notion of sustainability that advocates a planning and design process customised to the local context.

Globalisation is more than an economic phenomenon; the circulation and application of models of urban development worldwide (e.g. the compact city, the 24-hour city and urban renaissance) are another example of globalisation. Similarly, the concept of the sustainable neighbourhood who first emerged in North European countries has travelled and has been adopted by different countries worldwide since the 2000s (Srir 2016).

Despite the emphasis on the local context in sustainable design approach, the desire for rapid development and a reflection of sustainability in certain countries led decision-makers to commission foreign expertise and opt for international standards, which usually apply globalised sustainable neighbourhood approaches without paying attention to the local conditions of the region (Rapoport 2015). This results in a reliance on energy-intensive air conditioning systems, and the design of socio-culturally inappropriate urban spaces that are segregated and lifeless (Elgendy 2011; Abdelsalam and Rihan 2013).

But poor responsiveness to climatic conditions is not the only negative impact of a globalised approach to the design of neighbourhoods. A lack of understanding of the local context leads to the blind conformity with international standards, causing a loss of locality and degradation of community by creating lifeless and unattractive neighbourhoods lacking vitality and human scale (Ahmed 2017; Rudlin and Falk 1999). They become ghost neighbourhoods with fewer people and businesses when compared to the available space, as it is the case in most Chinese eco-cities that are considered ghost towns (Saiu 2017). Social sustainability is the least researched aspect of sustainable planning (Hagen et al. 2017), which could be the reason why sustainable neighbourhood projects around the world often pay less attention to the social dimension of sustainability, focusing more on achieving environmental targets and economic prosperity (Murphy 2012), thus the use of high-cost technologies and the creation of gated communities, which result in social exclusion and spatial segregation (Saiu 2017). Finally, international master planners often provide designs that were once developed for a different context which leads to the importation of foreign architectural styles and planning approaches that are not in harmony with the local context, causing a degradation in the sense of place and place identity, thus local residents no longer feel identified with a place that was once socially and culturally responsive (King 2004).

Despite vast researches that focus on the importance of linking the local context with the concept of a sustainable neighbourhood, there is a paucity of studies unveiling the negative consequences of the globalised concept of sustainable neighbourhood. This paper will review the literature which focuses on the implementation of global sustainable neighbourhood models in developing countries, in order to provide more arguments and credibility to emphasise the findings. The aim is to highlight the recurrent mistakes that prevent the full success of sustainable projects, and their impact on the city image and its components. It illustrates that the blind imitation of international standards is responsible for the achievement of partial results despite the multiple objectives of a sustainable neighbourhood.

To analyse these issues, three major repercussions of a globalised sustainable neighbourhood concept are identified. The three issues are (1) Loss of locality (degradation of community), (2) Social exclusion (social injustice and spatial segregation), (3) Internationalisation and globalised image (loss of local identity and sense of place). The literature review shows that these three issues are the most common results of globalisation, and that they are not necessarily alternative, however, they can happen simultaneously or in different combinations.

The paper is formed of two important parts, the first part provides a general understanding of the concept of sustainable neighbourhood and its principles as mentioned in the literature while offering some strategies on how to achieve the desired goals. As for the second part, the paper critically analyses and uncovers the impact of the lack of contextualisation of some principles of sustainable neighbourhood in developing countries. In this regard, the paper is organised in three main parts (Sect. 1–4). First, Sect. 1 is an introduction and an overview of the aim and methods used in the investigation. Next, in Sect. 2 which is divided into three subsections, the paper reviews the concept of neighbourhood, refers to the different movements that led to the development of a sustainable neighbourhood paradigm, and provides different definitions of the paradigm as well as the identification of key principles and indicators of sustainable neighbourhood. In the following Sect. 3, the negative repercussions of the globalised sustainable neighbourhood projects are reviewed, through providing specific examples in order to highlight the impacts of the three issues outlined above. Finally, Sect. 4 is a conclusion recapitulating the findings of the paper and some recommendations, in order to

avoid the recurrent failures and help future projects achieve sustainability.

1.1 Aims and Objectives

The main aim of the paper is to highlight the gap between theory and practice and the lack of contextualisation of the concept of sustainable neighbourhood as responsible for the negative impacts of globalisation.

This research aims to qualitatively assess the contemporary sustainable neighbourhood projects in developing countries and to highlight the impact of the blind absorption of globalised principles of the concept, and to identify the recurrent obstacles that hinder the full success of sustainable projects.

As part of the overall objectives of the paper, after the analysis of different case studies, recommendations are provided to avoid the recurrent problems in the future. In the meantime, the research will identify the different principles of sustainable neighbourhood and group them into clusters to facilitate the creation of sustainable neighbourhood guideline. These clusters, in turn, will be used as a framework to analyse the identified case studies (see Chap. 3),

The findings of this research enable on one hand to systemise the existing literature on the concept of sustainable neighbourhood and its principles, and on the other to highlight some aspects that could be used as criteria for a qualitative evaluation of future projects. Such criteria may be developed further, by adding more criteria and measurable indicators to create a thorough evaluation framework.

1.2 Methodology

The method used in the paper is qualitative and based on a critical and extensive literature review. Key authors and several initiatives were reviewed to identify the different principles of sustainable neighbourhood and then grouped into clusters according to themes. Additionally, several projects were identified from the literature and critically analysed to evaluate the implementation of different principles of sustainable neighbourhood concept.

The literature search was conducted through the University library, Google Scholar, Science Direct and Scopus search engines, and some documents were identified through the reference list of the reviewed documents. The search included all source types, ranging from peer-reviewed journals to conference proceedings, book series, Ph.D. theses and books, all written in English.

The following topics were researched: (1) Sustainable neighbourhood, (2) The drawbacks of the sustainable neighbourhood concept in the global south or in developing countries, (3) Failures of sustainable neighbourhoods, (4) Cross-cultural or socio-cultural sustainable neighbourhoods. The search string was defined according to the following keywords: *sustainable neighbourhood, Eco-urbanism, eco-neighbourhood, éco-quartier,* while including and excluding words like *global north, global south, and developing countries.* The relevant papers to the research were selected after reading the content and the abstract and skimming through the article.

The main aim of the literature review is to provide an overview of the concept of sustainable neighbourhood and its principles and to identify and explain the main negative repercussions of the global concept of sustainable neighbourhood.

The analysis of the case studies is done through a thematic analysis of particular issues related to the concept of sustainable neighbourhood, the case studies are critically analysed and evaluated according to a framework of indicators based on sustainable neighbourhood principles, in addition to a systematic review of the relevant literature, an in-depth explanation of the process with examples are provided in Chap. 3.

2 Background Paradigms and Underlying Principles

2.1 Conceptualising the Neighbourhood

Historically, human settlements have been spatially formed with districts and neighbourhoods. Today, the importance of the neighbourhood continues to hold an essential part within the fabric of the city, both socially and spatially (Sharifi 2016; Smith 2010). Many scholars claim that it is hard to define a neighbourhood precisely, but everyone knows it when they see it (Galster 2001). Some scholars claim that a neighbourhood is subjective as it can be defined according to several parameters, such as the residents' perception, the features of the place, the availability of facilities, population size and the social relations between the residents (Rapaport 1977; Barton 2000). Yet, most definitions of the neighbourhood agree that two are the critical components of a neighbourhood; its physical design and the social context.

The first component defines the neighbourhood as a spatial/functional construct that is bound by its physical design (the built environment) and the availability of services, while the second component is an interpretation of the neighbourhood as a social construct, featuring the notion of community and social relations between neighbours (Barton 2000; Briggs 1997; Choguill 2008; Forrest and Kearns 2001; Galster 2001; Hallman 1984; Jenks and Dempsey 2007; Martin 2003; Meegan and Mitchell 2001; Rohe 2009; Sharifi 2016; Smith 2010; Suttles 1972).

Neighbourhood and community are overlapping terms. The neighbourhood is defined as a spatial unit that contains residential or mixed-use areas, and the community refers to a network of people with overlapping interests and mutual support and solidarity (Barton 2000; Jenks and Dempsey 2007).

The emergence of the concept of sustainable development in 1987 stirred up approaches to achieve sustainability through planning at the neighbourhood level (Barton 2000; Farr 2008; Komeily and Srinivasan 2000; Sharifi and Murayama 2013; Rudlin and Falk 1999; Wheeler 2004). Urban sustainability, which is a key component of a broader strategy for sustainable development, can be regarded as a course of actions that aim to create vibrant, safe, inclusive and socially cohesive communities, while protecting the environment and enhancing the socio-economic aspect of the neighbourhood (Dempsey et al. 2011; Hagen et al. 2017).

2.2 The Concept of Sustainable Neighbourhood

The concept of sustainable neighbourhood can be regarded as a continuation of urban planning approaches that sought to create better and liveable neighbourhoods from the early twentieth century onwards. Following Ebenezer Howard's Garden City Movement in 1898, who inspired Clarence Perry to create the neighbourhood unit concept in 1923, Clarence Stein and Henry Wright picked up the concept and developed it further in the planning of Radburn in 1929. Later on, Mumford (1937, 1954) showed support for the neighbourhood unit as a concept to promote community feeling and social interaction among residents (Choguill 2008; Rohe 2009; Sharifi 2016). In the 1960s, Kevin Lynch, Jane Jacobs and Christopher Alexander among others also urged planners to revise the neighbourhood planning approaches used at the time, by stating some principles that provided a basis for creating better neighbourhoods (Fatani et al. 2017).

The neighbourhood is considered as an important element of the city fabric at which sustainability principles can be applied to form sustainable cities and ensure a sustainable lifestyle (Marique and Reiter 2011; Sharifi 2016; Sturgeon et al. 2016). The sustainable urban neighbourhood is a combination of important factors, the term sustainable indicates the ability of the neighbourhood to function while protecting the environment. The term urban relates to the location of the neighbourhood and its physical design, whereas the term neighbourhood refers to the built environment and the economic and social aspects of the area (Rudlin and Falk 1999).

Sustainable neighbourhood is also defined as a lively mixed-use development that is based on locality and social interaction and aims to enhance the quality of life of residents by creating jobs and enhancing wellbeing (Barton 2000; Carley and Kirk 1998; Churchill and Baetz 1999). Frey (1999) describes the sustainable neighbourhood as a high dense area that allows sustainable mobility through walking, cycling and public transport and promotes social interaction and vitality by providing necessary amenities and recreational facilities nearby, in addition to social and housing diversity.

Moreover, the sustainable neighbourhood remains the function of the traditional neighbourhood as an area where people practice their daily life and group people around a common identity. It promotes social interaction and energy performance through environmentally friendly planning (Wheeler 2004). Farr (2008) based his definition on the Charter of the Congress for the New Urbanism, stating that a sustainable neighbourhood aims at satisfying people's needs in terms of housing, workplace and leisure through compact and well-connected urban forms (Farr 2008).

2.3 Principles and Indicators of Sustainable Neighbourhood

Vast literature discussed the concept of sustainable neighbourhood (Barthel 2015; Barton 2000; Choguil 2008; Condon 2010; Coyle 2011; Farr 2008; Fraker 2013; Frey 1999; Friedman 2014; Holden et al. 2015; Jabareen 2006; Joss 2011; Luderitz et al. 2013; Medved 2017; Rudlin and Falk 1999; Salheen et al. 2015; Sharifi 2016; Wheeler 2013). Additionally, various initiatives and planning approaches were developed as guidelines to create sustainable neighbourhoods such as New strategy of sustainable neighbourhood planning, the Charter of New Urbanism, urban smart growth, UN-Habitat, A sustainable City of Neighbourhoods Project, to name but few. In 2015, the General Assembly of the United Nations enacted the 2030 agenda that includes 17 goals of sustainable development (SDGs). Goal 11 promotes the building of sustainable cities and communities, Table 16.1 shows the targets that can be applied to create sustainable neighbourhoods.

The method used to develop the principles of sustainable neighbourhood in this paper is qualitative, key authors, and several initiatives were reviewed, following that a thematic analysis has been designed in order to identify themes and recurring patterns. After an extensive review of the previously mentioned literature and initiatives, principles and indicators were grouped into clusters based on themes, and each cluster represents a specific dimension of sustainable neighbourhood. The chosen technique to group principles is to break down every single dimension of urban sustainability into manageable tasks to ease the development of a guideline to create sustainable neighbourhoods.

Table 16.1 UN goal to create sustainable cities and communities

Goal 11: Sustainable Cities and Communities Make cities and human settlements inclusive, safe, resilient and sustainable
• By 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums • By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons • By 2030, enhance inclusive and sustainable urbanisation and capacity for participatory, integrated and sustainable human settlement planning and management in all countries • Strengthen efforts to protect and safeguard the world's cultural and natural heritage • By 2030, significantly reduce the number of deaths and the number of people affected and substantially decrease the direct economic losses relative to global gross domestic product caused by disasters, including water-related disasters, with a focus on protecting the poor and people in vulnerable situations • By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management • By 2030, provide universal access to safe, inclusive and accessible, green and public spaces, in particular for women and children, older persons and persons with disabilities • Support positive economic, social and environmental links between urban, peri-urban and rural areas by strengthening national and regional development planning • By 2020, substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change, resilience to disasters, and develop and implement, in line with the Sendai Framework for Disaster Risk Reduction 2015-2030, holistic disaster risk management at all levels • Support least developed countries, including through financial and technical assistance, in building sustainable and resilient buildings utilising local materials

The following section aims to elaborate the principles and indicators of sustainability at the neighbourhood level within the limited breadth of the relevant and comprehensive literature.

The principles mentioned in this paper are highly interdependent; they derive from the global literature and are considered as generic key guiding ideas to be applied in different contexts, however, they cannot have equal outcomes as they need to be contextualised. It is acknowledged that it is difficult to develop a comprehensive set of sustainable neighbourhood principles, given the various and repetitive definitions. The aim is to group the most commonly used and agreed-upon principles, however, it is possible that the research have unintentionally missed out some principles.

Based on reviewing the previously mentioned literature and initiatives, it is possible to conclude that the main sustainable neighbourhood principles can be clustered as follow:

- Sustainable urban metabolism
- Sustainable built environment
- Satisfaction of human needs
- Urban social sustainability
- Natural environment
- Economic sustainability

The following section gives more insight about each cluster and then it is presented in Table 16.2.

2.3.1 Sustainable Urban Metabolism

Sustainable urban metabolism requires the reliance on a circular cycle of metabolism, through a reduction in resource input and the exploitation of the output as a source for the input, and the reliance on an on-site power generation system and the use of renewable energies. Exploitation of the natural resources such as rain, wind, sun and promotion of local food production (Barton 2000; Rudin and Falk 1999). Provision of clean water and a thorough water management system that ranges from rainwater collection to storm and flood management, and infrastructure for sewage recycling to use water for watering gardens and cleaning the streets (Barton 2000; Farr 2008; Luederitz et al. 2013). Segregation of waste and recycling all waste outputs to use them as productive inputs, this will reduce solid waste pollution, provide an alternative to generate power and transform compost waste into fertilizer for local gardens and allotments (Fraker 2013).

Apply bioclimatic design strategies to reduce heating and cooling demand, and water use, through the use of low embodied energy materials, recyclable materials, insulation, and taking into consideration orientation of the building and the local natural resources (Rudin and Falk 1999).

2.3.2 Sustainable Built Environment

According to Jabareen (2006) six are the elements of sustainable urban form; compactness, sustainable transport, density, mixed land uses, diversity, passive solar design and greening. Compactness indicates urban continuity and connectivity, it can be achieved through an increase in the

Table 16.2 Principles of sustainable neighbourhood

Sustainable urban metabolism	**Energy** • Local ecological energy supply system • Renewable energies • On-site power generation • Local food production
	Transport • Efficient and affordable public transport
	Waste and Water management • Reduction and conversion of residual waste to energy • Rainwater collection • Storm and flood management • Sewage recycling • Improve water quality
Sustainable built environment	**Materials** • Recyclable materials • Ecological materials
	Sustainable urban forms • Bioclimatic urban comfort • Adaptable urban form to the lifestyles of current and future residents • Urban design that fosters social interaction • Retain cultural characteristics that reflect residential history and consider placemaking dynamics of a community • Distinctiveness of the place • Aesthetic • Cultural built heritage • Density • Permeability • Liveability • Diversity/Richness • Flexibility/Adaptability • Taming the car • Sustainable mobility (walking and cycling) • Open public spaces • Connectivity
	Land use • Redevelop inefficient structures • Appropriate mix of uses
Satisfaction of human needs	• Affordable housing • Quality of life • Housing diversity • Social diversity • Social interaction • Safety • Design for the elderly and disabled people • Privacy • Local community facilities
Natural environment	• Air quality • Land use • Biodiversity • Integration of nature • Low pollution • Neighbourhood resilience
Social sustainability	• Social cohesiveness • Urban design that fosters social interaction • Access to green spaces • Cultural identity and social diversity • Participation in decision-making
Economic sustainability	• Neighbourhood retail, encourage local facilities and community markets • High-density and mix of uses • Promote local jobs, local farmers' markets and local craft activities

Source Author

density of the area, and the development of previously existing buildings and urban lands. Compact urban forms reduce transport of energy, water and people, increase social interaction, liveliness and ease accessibility to services (Jabareen 2006)

Mixed-use developments refer to a variety of activities in a common area, such as residential, commercial, industrial, and institutional as well as transportation infrastructures (Frey 1999; Jabareen 2006). Mixed-use developments promote local economy by encouraging local farmers' markets and providing necessary facilities within walkable distances from housing units, in order to reduce the use of cars and encourage sustainable mobility which also requires appropriate paths equipped with trees for shading and resting areas (Farr 2008). Mixed-use areas create a viable and lively neighbourhood, the availability of local facilities increase the presence of people in the streets, and thus create focal points and public spaces which increase social interaction, safety and security (Barton 2000).

Transport can be a serious issue for environmental sustainability of neighbourhoods, urban forms have a big impact on the travel patterns of residents, whereas they should provide opportunities for walking, cycling and efficient public transport. A sustainable urban transportation system is powered by renewable energy sources and limits emissions, it is efficient, affordable and accessible by all people (Jabareen 2006). So, it is important to create sustainable public transport that ensures connectivity to, from and within the neighbourhood to adjacent districts.

Density enables social interaction and liveliness within a neighbourhood, it also supports local economy and encourages sustainable mobility (Farr 2008; Jabareen 2006). In high-density areas, urban buildings lose less energy than detached and semi-detached houses, whereas the exposed walls increase heating demand (Barton 2000; Rudlin and Falk 1999). Density requires diversity in housing typologies, residents with different backgrounds, social class, age and culture, and necessary amenities (Truog 2006).

Health must be considered in neighbourhood design by enabling all residents to have access to health services (McKenzie 2004), and designing a cycling and pedestrian-friendly neighbourhood that increases physical activity and reduces the use of cars. Physical activities must be encouraged by enhancing the quality of streets and providing green parks (Farr 2008).

Connectivity aims at creating a well-connected street network that is safe from traffic and is pedestrian-friendly, connectivity also offers different walking options and direct walking routes in order to reduce travel distances (Truog 2006). Permeability of the neighbourhood not only encourages walkability but also fosters solar access to houses and public spaces, reducing the need for heating in wintertime (Rudlin and Falk 1999).

Flexible structures must be designed that responds to the current and future inhabitants' lifestyles and their changing behaviour. Local characteristics must be promoted to reflect the history and culture of the area and consider placemaking and sense of place (Frey 1999, Rudlin and Falk 1999).

2.3.3 Satisfaction of Human Needs

To increase social inclusion and cohesion within society, the needs of the elderly and disabled people must be considered. Additionally, a variety of housing typology, with affordable prices and flexible layouts, is important for social diversity by accommodating different income classes (Chiu 2004; McKenzie 2004).

Social justice is also achieved through enabling residents to have equal opportunities for accessing services and participating in community activities to tackle social exclusion.

Safety and security are also important principles of sustainable neighbourhood; they can be achieved through appropriate density, mix of uses, and a well-connected street network that fosters the presence of people in the streets while walking, cycling or using the local facilities (Jabareen 2006).

Privacy is considered as an important factor of planning sustainable neighbourhood, however, it is mostly considered in Arab countries due to its social and cultural importance, achieving privacy requires a careful design of the street layout, the position of public spaces, and the hierarchy of spaces and housing plots (Ahmed 2012).

2.3.4 Urban Social Sustainability

Urban social sustainability is defined as social equity and sustainability of community (Dempsey et al. 2011; Dempsey et al. 2012). A socially sustainable neighbourhood can be achieved through urban environments that help create a sense of community and belonging, common identity, solidarity between members of the community. They offer opportunities for social interaction between residents which strengthens social cohesion and inclusion, sense of place and place attachment (Dempsey et al. 2012; Ghahramanpouri et al. 2013; Hemphill et al. 2004; Vallance et al. 2011; Yiftachael and Hedgcock 1993). These urban environments should include urbanity, attractive public realm, affordable and diverse housing typologies, a mix of uses, open public and green areas, and compact urban forms that encourage walkability (Dixon and Woodcraft 2013).

Liveliness of urban spaces sends signs of safety and security and promotes liveability within the neighbourhood, it invites people of different backgrounds and different social classes, age and gender to gather in public spaces and perform different activities, fostering social interaction and social cohesion within the community (Khemri et al. 2020). Community cohesion can be achieved through an upgrade and a reanimation of public spaces, creating an inclusive

public realm which fosters social relations and solidarity within a society, and encourages residential stability (Ahmed 2012; Luederitz et al. 2013). Public open spaces can include parks, restaurants with outdoor seating, green spaces and playing areas.

Residents must participate in decision-making regarding the current and future challenges of their neighbourhood, which will increase their sense of belonging and social sustainability. Awareness about sustainable use of resources and environmental protection among the residents must be raised, through teaching programs, workshops and community activities.

2.3.5 Natural Environment

Resilience must be embedded in the design by building infrastructures that can protect and adapt the neighbourhood to natural crises to maintain its functionality, for instance, the provision of green areas to protect the area from flooding.

Urban green spaces not only encourage biodiversity but also enhance the psychological health of people and provide a comfortable microclimate (e.g. shade and protection from cold wind); they also improve air quality and provide leisure spaces (Ritchie and Thomas 2008). Green spaces require a careful design with the right density, they should incorporate different areas for different activities and be part of the public realm, whereas large green spaces require maintenance and can be empty and isolated and thus can create safety problems (Barton 2000).

The presence of green spaces promotes liveliness of the area, whereas green spaces invite people to gather, interact or relax, they also offer a playground for children to play and an arena of social interaction for their parents to gather and socialise (Khemri et al. 2020).

2.3.6 Economic Sustainability

Mixed-use developments must be created with the necessary facilities within walking distance. Opportunities for employment must be increased by creating local jobs. Local economy must be promoted by encouraging local food production, local markets and local craft activities in order to increase the diversity of economic activities in the neighbourhood.

3 The Drawbacks of Globalised Concept of Sustainable Neighbourhood

It is important to stress that this paper does not aim to criticise sustainable neighbourhood principles as presented in the literature but to discuss how they were imported and implemented in different countries without contextualisation, highlighting the fact that no single approach fits everywhere. There are numerous projects and vast literature regarding urban sustainability, which allowed the design and implementation of remarkable and ambitious projects. By reviewing the relevant literature, this paper acknowledges that designing sustainable neighbourhoods in developing countries can contribute positively to the development of cities, only if they are designed with serious consideration of the local context. However, a lack of cross-cultural understanding and implementation of some principles of the concept of sustainable neighbourhood led to several failures. In order to demonstrate this, the implementation of some principles will be analysed.

The identification of the failures is made through a systematic review of the literature, several sustainable neighbourhood projects in developing countries were selected and analysed (see Table 16.3) to investigate how successful the implementation of certain elements of sustainable neighbourhood concept was.

The framework used for the analysis is made of indicators and variables; the indicators used as a unit measure of evaluation are the sustainable neighbourhood principles (mentioned in Sect. 2.3), the projects were critically analysed and evaluated according to these principles, in addition to the reliance on the relevant literature.

The aim of this investigation is to highlight the gap between theory and practice; how sustainable neighbourhood principles are portrayed and how they contribute to sustainability in practice. The method of investigation used in this research is through comparison and evaluation of how those principles are promoted to achieve sustainability and their outcomes when applied in developing countries, which allows identifying the three failures of the global concept of sustainable neighbourhood.

The projects are qualitatively analysed according to certain principles, to see how well the principles achieved their initial goals of reducing energy consumption, social inclusion, promoting a sense of community, respecting the cultural heritage of the city, etc. In the next section, the main failures are identified as a result of the lack of contextualisation of certain principles which will be mentioned at the beginning of each sub-section.

The sustainable projects presented here as case studies are all located within the global south (developing countries), and different contexts are analysed (North Africa, Central Africa, Middle East). Therefore, the huge difference between policies, decision-making processes, contexts and urban design approaches followed by each country, make it difficult and complicated to compare different projects to define which one is more sustainable than the other, which is also beyond the scope of this paper and irrelevant for this research. The selected case studies are not to be compared between each other but to prove the existence of recurrent failures due to lack of contextualisation.

Table 16.3 Shows the case studies used to identify the failures of sustainable neighbourhood concept

Name of the project	Country	Year	Developer
Bneguerir Green town	Morocco	2012	OCP, Moroccan Phosphates company (private)
Gated communities in Egypt (Utopia, Qatamiya Height, Palm Hills, Jolie-VilleMena Garden City, Dreamland)	Egypt	1990s	Egyptian Private developers
Sodic city gated communities (Beverly hills, Allgeria, Westown)	Egypt	2000s	Sodic properties
Shaubat Al Wuttah	United Arab Emirates		Al Ain Municipality
Andalucia	Jordan	2012	Taameer Jordan Holdings
Greenland	Jordan	2006	Kurdi Group
Hummar Hills	Jordan		
The Royal Village	Jordan	2006	Bayan Holding Company
Kigali	Rwanda	2008	Oz Architecture
Luanda	Angola		Dar el Handasah Shair
Nova Vida	Angola	2016	Aurecon

It is also important to highlight that most of the neighbourhoods presented and analysed in this paper as case studies are real estate developments that target upper middle class population, use high-end technology and claim sustainability, whereas in reality, they use the label of sustainability with a promotional purpose while encouraging urban segregation and gentrification, very different from the attempts to create some form of "social housing" also in the global south.

3.1 The Importance of Contextualisation: Loss of Locality and Degradation of the Community

One of the aims of the concept of sustainable neighbourhood is to create vibrant, strong and cohesive communities, in order to do so, necessary facilities need to be locally available within a pedestrian-friendly neighbourhood, thus the presence of people in the streets while walking, cycling or using the local facilities will enhance the liveliness of the area and promote social interaction. Mix of uses and sustainable mobility are considered as important principles of sustainable neighbourhoods; however, their implementation needs to be critical. The following section demonstrates the negative results following a lack of contextualisation of the two principles.

Before designing a sustainable project, a study on the local context and people's preferences is fundamental in order to avoid generalisation and actions that are not in harmony with people's lifestyle. For instance; the use of local facilities and sustainable mobility are important elements of a sustainable neighbourhood, however, they cannot be implemented in all contexts. To highlight this point, in the past children used to walk to school, which allowed them to meet their friends and benefit from the physical activity of walking; also, their parents can meet on the way or at the school gates which fosters social interaction and creates a local network of mutual support. Nowadays, in some areas, parents drive their children to school, missing out the regular exercise of walking; also, the car drop-offs of children cause a loss of locality, unhealthy lifestyles, empty streets and social fragmentation, and an increase in traffic congestion and greenhouse gas emissions (Barton 2000). Consequently, the streets are devoid of urban life and people are replaced with cars, which decreases the vitality of streets and the use of local facilities, whereas people are dependent on their cars and tend to use the facilities near their workplace or in the big shopping malls located outside the city (Rudlin and Falk 1999). This is also related to the design of the neighbourhood, its consideration for walking and cycling activities, the density, the mix of uses, the type and quality of the facilities available in the area, and their distance to the housing units (Rudlin and Falk 1999).

An example of the negative effects generated by uncritically applying some globalised principles of sustainable neighbourhood concept is the Benguerir green town in Morocco, where the construction started in 2009 and is expected to finish in 2020, it was designed by a US-based consulting firm, with the ambition to design an eco-city, it

followed the sustainable development approach outlined within the "ECO-TOOLKIT" LEED that is developed in the US for a global market. The mainstream eco-urbanism approach followed, led to design a town based on a top-down approach, mainly concerned with the global image of the city and the eco-certification. The desire to be labelled as sustainable led the developers to design a green town according to the international standards of sustainable neighbourhood. Consequently, the project did not study the lifestyle of local population and designed public spaces that are not adequate to the local context and did not serve the residents eventually. The project also promoted walking and cycling, which are practices believed to be very sustainable within a global idea of sustainable neighbourhood. However, there is no evidence that this proposal was based on social surveys or social demands, and in a hot arid region like Benguerir, it is unlikely that people would walk or cycle and abandon their cars (Barthel 2014).

Similarly, in the UAE, the sustainable neighbourhood Shaubat Al Wuttah was assessed by Ahmed (2017) through a matrix of sustainable urban form principles based on global literature of sustainable urbanism. The design of the neighbourhood incorporates several international standards. The analysis showed how the replication of the globalised principles of sustainable neighbourhood affects negatively the liveliness of the place. The blind conformity with international standards and the mediocre design led to the inappropriate distribution of facilities. For instance, the primary and secondary schools and the only nursery in the neighbourhood are situated far from most of the houses, the lack of some important facilities like healthcare centres and low level of mix of uses do not encourage residents to walk or cycle or use local services, thus residents prefer to drive and shop outside their neighbourhood. Additionally, the facilities are not located within walking distances and the circulation paths do not offer comfortable environments for walking and cycling, thus, the use of cars is predominant, and the lack of appropriate public spaces reduced social interaction significantly (Ahmed 2017).

3.2 Social Exclusion: Social Injustice and Spatial Segregation

The aim for low energy consumption and creating sustainable buildings as part of sustainable neighbourhood paradigm can lead to the incorporation of high technology to ensure environmental performance, which in turn denies housing and social diversity, social inclusion and equal accessibility, which are also important elements of a sustainable neighbourhood. Other important elements such as safety and security caused social and spatial segregation through the design of gated communities. This section illustrates the negative impacts of bad interpretation of some sustainable neighbourhood principles like energy saving, high performant buildings, safety and security.

Sustainable neighbourhoods promote social equity by creating diverse and inclusive communities, however, the cost of green technologies makes most sustainable projects affordable only to wealthy elites (Saiu 2017), as is the case in North Africa (Barthel 2014), whereas according to Zhan and de Jong (2017) the literature on Eco-city suggests that "*under the banner of green technology, inhabitants are forced to pay higher costs for their use of facilities in eco-cities*". Furthermore, most popular case studies show that sustainable neighbourhoods have been designed using high costly technologies and infrastructures to ensure environmental protection and energy savings, aiming for a better urban environment and quality of life, and they have been criticised for their high cost and social exclusion, because they are not accessible to all social classes (Holden et al. 2015), they penalise the poor who cannot afford to buy or rent an apartment within, and unable to access new technologies. In developing countries, workers cannot afford to live in new sustainable neighbourhoods or eco-cities which, in the first place were designed to accommodate thousands of inhabitants, but end up often in unoccupied residential blocks resembling ghost towns (Caprotti 2014)

The high costs of rental and purchase, are indicators of the specific social class that benefits from this sustainable urban developments, causing social injustice within the society, between those who enjoy access to eco-innovations and well-designed neighbourhoods with abundant green spaces and mix of uses and those who remain within conventional neighbourhoods (Saiu 2017). Social and residential segregation based on the level of income could cause distrust within a society and a decrease in the overall social bond within communities. Such segregation could weaken social cohesion and cause social exclusion, and therefore compromise the creation of socially sustainable society (Myllylä and Kuvaja 2005; Yigitcanlar et al. 2015).

Benguerir green town was designed in a largely dry area that has no real natural assets or buildings and is located near a poor town (see Fig. 16.1). The design of the green town followed a global "eco-toolkit" aiming for a high level of performance that was assessed with LEED. The aim to achieve high performant buildings led the designers to use costly eco-technologies, rising the prices of the residential units to be accessible only by high-end class excluding other social classes. Ironically, it is doubtful that in Arab countries, wealthy class will restrict the use of air conditioners and cars due to subsidised energy (Barthel 2014). Additionally, the green town was not connected to the existing nearby poor town, a lack of social and housing diversity creates spatial and social segregation within the region (Barthel 2014).

Fig. 16.1 The green town Benguerir in Morocco. The town was built in a hot and dry area with no assets and next to a poor town *Source* sadbenkirane.com/projet/ville-verte-mohamed-vi-benguerir/

In Africa, Watson (2014) claims that the first eco-cities in sub-Saharan region are "urban fantasies" rather than authentic sustainable projects. They have been constructed in the image of Dubai, Shanghai and Singapore, reflecting green Neo-liberalism. The majority of the urban populations live in poverty and in informal settlements with poor urban services, and these fantasy projects are an extra boost for marginalisation and inequality within societies. For instance, the conceptual master plan developed for Kigali, the capital of Rwanda, designed by the Oz Architecture team which is a firm based in the United States. The plan was adopted by the Rwandan Parliament in 2008 and it suggested high rise buildings, which are too expensive and unaffordable to local residents, whereas, in 2010 UN-Habitat reported that 90% of the population of Kigali live in informal or unregulated housing (UN-Habitat 2010). Moreover, the conceptual plan has caused the evictions of local residents of Kigali to make room for the new urban projects, and the location of the evicted residents is not clear.

Furthermore, in the Angolan capital Luanda, a range of satellite cities including the well spread Chinese ghost towns have emerged; these cities comprise high-end tower blocks of apartments that are worth between US$ 150,000 − 200,000 each, whereas most Angolans live on less than US$ 2 a day. These new urban fantasies are considered as a luxury development, built on a land that was occupied by low social class citizens, which were evicted and relocated, thus pushed to the outskirt of the city, far away from work opportunities and essential urban facilities. Nova Vida is another Luanda Satellite city designed to accommodate 30,000 people, seems to be like a ghost town because it is financially unaffordable to most Angolans (see Fig. 16.2) (Watson 2014).

Several neighbourhoods in Amman, Jordan, like Andalusia, Greenland, Hummar Hills and the Royal village represent gated communities and housing enclaves targeting very rich elites, promising them a paradise on earth through their marketing slogans (e.g. "the joy of living", "provide distinctive homes that will redefine everyday life"), these

Fig. 16.2 New housing units Nova Vida in Luanda. Angola *Source* aurecongroup.com

self-proclaimed sustainable communities are exclusive and lack social and housing diversity (Daher 2011). Gated communities have also been constructed in Cairo, and Denis (2006) describes them as exclusive places to high-end elites, characterised by luxury and private lifestyles; the proliferation of this urban design trend, led to social exclusion and made urban spaces empty and lifeless. Farid and Ahmed (2018) named the gated communities Allegria, Westown City, PalmHills as Luxurious gated because of the social status of their residents causing social and spatial segregation within the community (see Fig. 16.3). Daher (2013) considers gated communities in Arab countries as neoliberal city-projects that led to urban geographies of inequality and caused social displacement within a society. The open public spaces inside these gated communities are privatised and controlled leading to exclusion and spatial/social segregation.

3.3 Internationalisation: The Desire for a Global Image and Its Impact on the Local Identity and Sense of Place

This section shows how the desire to contribute to environmental protection, energy performance, and exhibition of sustainability can result in a loss of identity and sense of place, where the main aim of developers is to receive certification from world leader rating systems, through the use of excessive high technology and international architectural styles.

Globalisation has led to a standardisation of architectural styles, building technologies and urban public spaces, which significantly affect the design of cities and neighbourhoods in developing world (Beynon 2010; Zalloom and Aboutorabi 2014; Zetter and Watson 2006). The destruction of local character and soul of indigenously designed and developed

Fig. 16.3 Master plan of Sodic city gated communities (Beverly Hillds, Allegria and Westown) *Source* https://api.sodic.com/wp-content/uploads/2018/05/The-Portal-Conceptual.pdf

neighbourhoods makes the residents feel disoriented, as they no longer recognise the place that was once culturally rooted and locally produced, and is now occupied by imported models that are often deficiently adapted to local needs (King 2004). Furthermore, the replication of imported models affect the place identity of urban spaces, interrupting the continuity with locality, and produce a globalised built environment (Zetter and Watson 2006)

In Morocco, the implementation of the globally recognised sustainable neighbourhood principles to design Benguerir green town was aimed merely at receiving a certification and to be recognised internationally. A consultant in the project stated: *"we have no experience of labels in Morocco, so for the moment we just accept them"*. This explains the uncertainties and the failures of some objectives of the project (Barthel 2014).

The gated communities Andalusia, Greenland, Hummar Hills, and the Royal Village in Amman, are an expression of globalised sustainable neighbourhoods, not only they target high-end clientele but also their design attempts to offer an American style way of life. The architecture is a poor understanding/interpretation of the orient, illustrated through unsophisticated use of oriental architectonic elements attached to buildings representing an oriental vision of the American style, through a single-family house with a front yard, a garage and a basketball ring (see Fig. 16.4) (Daher 2011). Similarly, in Sodic West city in Egypt, the architecture reflects a European style, neglecting the local character. Additionally, the use of tilting roofs which are not suitable for the warm and dry climate of Egypt, also the white paint on the facades is inadequate with the Egyptian dusty weather, which will in turn require a lot of maintenance (Nazmy and Kim 2018).

The identity and sense of place of an area are made of an inclusive public realm that offers opportunities for people to socially interact and strengthen their social cohesion (Ahmed 2012); also, the physical attributes of the city reflects the area's history.

With the proliferation of eco-technologies and sustainable neighbourhood principles, the replication of international architectural styles and urban designs has led to a degradation in the identity and a sense of a place. People feel disoriented and are dependent on the car, which reduces the degree of social interaction and social cohesion within communities (Chang 2017)

The conceptual plan of Kigali (capital of Rwanda), proposes high-modernism glass box towers inspired by the image of Dubai, these towers do not reflect any character of the region, and are based on international image of mega-cities, totally different from the local architecture that was once appropriated by the local residents (see Fig. 16.5) (Watson 2014).

Built environments have become places where local identity and way of life are obsolete in front of globalisation, Ralph (1976) states *"the identity of something refers to a persistent sameness and unity which allows that thing to be differentiated from others"*. Kevin Lynch (1960) defines the identity of a place as that which creates its individuality and distinction from other places and creates a basis for its recognition as a different entity. Therefore, designing buildings that all look the same diminishes the identity of a place and its cultural distinctiveness (Wheeler 2004)

Losing a sense of a place can cause degradation in the sense of community and the liveability of the area, whereas the absence of people in the streets as mentioned in the previous sections contribute significantly to the loss of a

Fig. 16.4 Gated community Greenland in Amman, Jordan. The building facades are based on international style and do not reflect the local character *Source* https://www.greenland.jo/

Fig. 16.5 Kigali Conceptual Model that is based on globalisation, inspired by global mega-cities such as Dubai, Singapore and do not reflect the African or local character *Source* Watson (2014)

sense of place. The interaction between people with similar interests in streets, buildings, public spaces and in other expressions of landscape send messages that serve to unite communities and give the residents of the place the same identity as the place itself has, and vice versa (Ralph 1976). The quality of the place is defined and enhanced by the presence of people in the streets, walking, cycling and meeting, which increase social interaction as well as creating a sense of belonging and vitality (Barton 2000).

4 Conclusion and Recommendations

In developing countries, the desire for rapid development led to the importation of foreign models; also, the desire to acquire a label of sustainability led to adopt a design that is not responsive to the region. In other words, neighbourhoods were built and labelled sustainable without being contextualised and without meeting all the principles for a sustainable neighbourhood.

The negative impacts of the replication of the globalised concept of sustainable neighbourhood can also be related to the mediocre implementation of sustainability principles, as it was mentioned in previous sections, including the inappropriate density and the lack of certain facilities force residents to use their cars instead of walking. Also, the provision of walking and cycling is not enough if they are not appropriately designed to protect pedestrians from the harsh weather conditions, and if facilities are not within walking distance. Thus, the negative impacts are not only related to globalisation but also to the way urban sustainability principles are implemented. Whereas providing few shops and offices does not mean a mix of uses, some necessary facilities are important for a neighbourhood to be sustainable such as food shops, newsstands, open public spaces, parks, primary and secondary schools, post offices, supermarkets, restaurants and healthcare centres (Hagen et al. 2017). Furthermore, these facilities need to be accessible by walking or cycling, in which compact urban form is thought to be appropriate for that, thus increasing the presence of people in public spaces, whereas inclusive public spaces attract all categories of the society giving them equal access, which in turn create cohesive communities and increase social interaction, liveliness, identity and sense of place (Ahmed 2012).

Other examples of poorly interpreted sustainable neighbourhood principles are safety, security and low energy consumption, which resulted in the design of eco-neighbourhoods, affordable only to high-income groups. This results in pushing the poor to the outskirt, away from work opportunities, and a privatisation of public spaces. There are many strategies that can be used to reduce social inequalities and exclusion, for instance, the design of affordable bioclimatic houses, and the accessibility of eco-technologies for all through specific policies, design public spaces accessible by all social classes rather than creating gated communities.

The failures of sustainable projects in developing countries are due to lack of environmental, economic, social and cultural consideration in the design, projects do not seem to be based on social demands or include residents in the decision-making process, there is a lack of local environmental policies and regulations, on the other hand, excessive dependence on international standards and labels.

It is important to take into consideration people's lifestyles, needs and aspirations in the design process in order to create spaces that are adequate to the needs of residents and ensure the liveliness of urban spaces.

Criticism	Recommendations
Imbalanced approach: Priority is given to environmental performance at the expense of social and economic sustainability	A thorough approach should be implemented and contextualised to exploit the local natural resources and enable sustainable projects to achieve the three interrelated sustainability aspects (environmental, social and economic)
The desire for rapid development led to the importation of foreign models	Sustainable projects should emerge from local context and be based on local features
The mediocre implementation of sustainability principles	Contextualisation of sustainable neighbourhood projects according to features of the place, lifestyle and culture of the residents
Misinterpretation and misunderstanding of the concept of sustainable neighbourhood	Sustainable neighbourhood is not an assemblage of eco-bling gadgets or high-end buildings, and it is not dependent on labels, it is a lively mixed-use development that embodies the space and place enabling communities to thrive with minimal impact on the environment. They should be designed to satisfy people's needs in terms of quality of life, social interactions without harming the environment
The inappropriate density and the lack of certain facilities	The provision of necessary facilities such as food shops, newsstands, open public spaces, parks, primary and secondary schools, post offices, supermarkets, restaurants and healthcare centres to encourage sustainable mobility and liveliness of the streets
Dependence on car use	Provide local facilities with approximate shaded, comfortable, safe and secure walking and cycling paths
Empty and lifeless public spaces	Compact urban form with appropriate density and mix of uses promote the presence of people in the streets Inclusive public spaces promote social cohesion and social interaction, liveliness and sense of place
Gated communities and privatisation of public spaces	Housing and Social diversity strengthen the sense of community and create cohesive communities
Social exclusion	Provide affordable and low-cost housing for the different social classes of the society to ensure social inclusion
Lifestyles are not considered in the design process	The design approach should be based on social surveys to identify people's needs in order to design spaces that respond to their needs instead of imposing new urban spaces to a different lifestyle.

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Architect José Ignacio Diaz: The Successful Manager and Landscape Builder of Downtown Córdoba

Cristian Gabriel Terreno and Diego Schmukler

Abstract

In the second half of the twentieth century, the work of José Ignacio "Togo" Díaz has deeply transformed the downtown urban landscape of the city of Córdoba, Argentina. His high rise buildings, as well as countless individual houses in suburban neighborhoods, have become unavoidable references for practitioners, as well as students of architecture, in the second most populated city of the country. Many investigations have been done about his architectural production, but the remarkable relationship between the design process and the building construction and management has not been sufficiently studied. This research seeks to further understand the reasons for his success. It starts by recognizing the mechanisms and professional instruments that positively influenced the articulation between the architectural office "José Ignacio Díaz" and the construction company "Díaz y Lozada SRL" where he was one of the partners. Unveiling the interactions between the various stages of the process and the effects on the quality of the buildings developed will contribute to greater knowledge about design and production of the built environment as well as to a more general discussion in the professional and academic world. The research has two objectives. First, to continue the indexing and georeferencing process of the complete archive of architectural drawings of the office of "Togo" Díaz (documents which were donated by his family to the Universidad Blas Pascal—UBP in 2015). Secondly, to retrospectively reconstruct the design and production process in order to distinguish stages, links, and committed actors involved. This last goal will serve to establish the impact of these relationships on the quality of the works whose documentation is being cataloged at the same time. The study will integrate qualitative methodologies for collecting and analyzing information (interviews with participating actors, document analysis) together with information on quantitative criteria such as valuation matrix or economic data. This quantitative and qualitative information will articulate both considerations related to the spatial objects and the productive dynamics that made them possible. Finally, the research will explore means of communicating, in collaboration with the School of Communication at the UBP, the impact of the work of "Togo" Díaz in the development of the urban landscape of Córdoba to the academic community, as well as to the professional world and general public.

Keywords

Urban landscape • Architecture project • Architecture production • Local identity

1 Introduction

The construction of the identity of a city is a complex and collective enterprise. The meaning of the different spaces of the city is harbored in the social dynamic of everyday life. The built environment reflects social, economic, and political structural conditions, and at the same time is the result of the proceedings[1] of a network of different participants (Knox and Ozolins 2010). These participants are on one hand the

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[1]The concept of "proceedings" used here is in reference to the concept of "agency" as in the sociological structuring theory of Antony Giddens "*Instead of describing the capacity of human action as being constrained by powerful stable societal structures (such as educational, religious, or political institutions) or as a function of the individual expression of will (i.e., agency), structuration theory acknowledges the interaction of meaning, standards and values, and power and posits a dynamic relationship between these different facets of society.*"

N. Mohareb et al. (eds.), *Cities' Vocabularies: The Influences and Formations*,
Advances in Science, Technology & Innovation,
https://doi.org/10.1007/978-3-030-51961-2_17

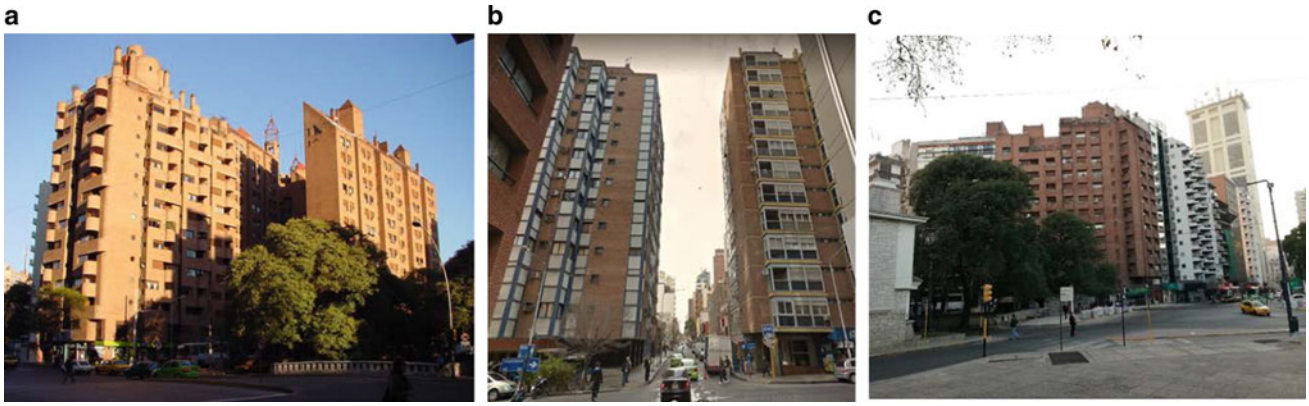

Fig. 1 High rise buildings of Diaz y Lozada SRL in Córdoba's Downtown. **a** Bulevard San Juan y Cañada. **b** Rondeau and Independencia Street. **c** Cañada y 27 de Abril Street. *Source* Author's Photographs

producers, designers, and builders, the "shapers" of the urban form. On the other hand, they are the inhabitants that experience the spaces, recognizing and transforming the places of the city as a reference for their lives. The "agency" approach (Larkham and Conzen 2014) concentrates on the procedures of the "shapers" of the urban form in relation to the structural constraints of the building industry (e.g. economics, technologies, codes and norms, clients) regarding the production of architecture. This point of view will be the foundation of this study and recognizes the ability of some actors to contribute to the quality of the city landscape in a way that can be distinguished by the inhabitants of a city as part of their identity.

Like few other cities in the world, the identity of the city of Cordoba, in a physical sense, was reshaped from the 1960s to 1990s. This was largely due to the works of architect Jose Ignacio Diaz, and the building company where he was a senior partner, DIAZ LOZADA S.R.L. This can be explained by an unusual combination of circumstances that acknowledges the economic context and the development of residential buildings, as well as the particular symbiosis of two professionals who understood the real estate business and had a clear architectonic and urbanistic vision.

By studying this example and the interrelations between the diverse actors and processes which were carried out by DIAZ LOZADA S.R.L. as a building company, and in particular, the role played by José Ignacio "Togo" Díaz as the designer architect, we will attempt to determine how the private sector, by its means of production, influences the assemblage of the character of the city.

The main objective of this research is to unveil the methods and practices that made Jose Ignacio Diaz such a respected architect, considering his success in redefining the aesthetic profile of Cordoba with more than a hundred high rise buildings in the downtown area. The aim is to systematically study the practices and knowledge of a building company that integrated design and management in such a way as to become a long-standing model for today's entrepreneurs, and ultimately transfer these findings to the academic world (Fig. 1).

2 The Urban Landscape and the Construction of an Identity

Identity can be understood as the recognition, by most participants in a culture over a period of time, of a series of material and immaterial components that give cohesiveness to daily life. From the affinity to values, traditions, and institutions, to the ways of transforming nature through technology, each member of the group finds sense in being part of the whole (Herrle and Wegerhoff 2008). In this way identity is a complex process of cultural construction where the built environment, architecture, and urban spaces, are necessary elements for social life and have the quality to last for long periods of time. Architecture might last for decades, urban spaces, and street layouts for centuries, while social life passes and changes.

In this process of identity construction, memory and innovation play a main role: memory gives continuity, while innovation allows us to overcome social challenges. Memory could be classified into two main groups: tangible and intangible, in relation to the material and immaterial components of culture. A third class applies to explain identity in architecture: the perceptual memory. It is the result of internalizing the daily perception of space so that you can move through it with the sense of being part of the landscape (Waisman 1990).

Encyclopedia Britannica https://www.britannica.com/topic/structuration-theory.

The urban landscape in most Latin American cities is based on a grid that extends in all four directions, with the foundation's main square as the center. In the last four hundred years, this Euclidean geometry has realized different buildings, most of them with typologies and languages imported from Europe. In the seventeenth and eighteenth centuries, baroque and neoclassical religious buildings dominated the low landscape of cities and towns. In the nineteenth century, the residential buildings of rich families, as well as the ones of the newly arrived immigrants, in addition to new institutional typologies built in the style of the French academic system of Beaux-Arts, changed the appearance of the city. This architecture, and the urban extensions to the city, were related to the recent ideas of the European modernization and social progress. Later on, in the 1930s, the first Modern Movement arrived and with the development of reinforced concrete, the urban landscape changed scale in just a few decades. Though the city skyline was dramatically modified, the essence of a perceptual memory has persisted for four centuries. The regular colonial layout has become the basic constituent of the identity of Latin American cities, where new pieces of architecture were added over time.

From the 1990s, cities in Latin America incorporated not only new typologies and architectural languages associated with the globalization process but also new layouts based on high-speed road systems and the occupation of large plots by housing developments. The perceptual memory and the urban identity of Latin American cities, based on that colonial grid layout imposed by the Spanish colonization and recreated in different ways over the last four hundred years, are now in crisis, experiencing a transitional stage (Herrle and Wegerhoff 2008). These inputs are essential for critical reflection on how to build a new landscape between the reminiscences accumulated over four centuries, and the accelerated innovations that came in the last decades.

We can find references to these cultural processes in different moments of Latin American architectural history when critical thought emerged, associated with, e.g., romantic, nationalistic or Americanistic ideas. A variety of buildings were designed and built reflecting these ideas by different architects, but not many. Most of them have recognized the common identity posed in the perceptual memory of the grid layout that divided the urban space into manzanas and calles (blocks and streets.) They also recognized local traditions, building materials, and climatic solutions. In general, mainstream architecture has had a limited impact on the landscape.

There is a commonality between the architectural developments of the Aleijadinho in Minas Gerais-Brazil, the architects of the Jesuit missions of Moxos, Chiquitos, and the Guarani territories, the humble and forgotten builders of small towns in the Spanish colonies in the seventeenth century, and the twentieth-century architects educated in the Modern Movement. Rogelio Salmona in Colombia, Ricardo Legorreta in Mexico, and José Ignacio Díaz in Argentina, not only looked for an amalgamation and transformation of local memories with innovative ideas in their projects (Fernández 1998), but also an integration with the production logic of their historical contexts. They have transformed the landscape of cities and small towns, by hybridizing the local memories of design and by innovating the production process. They have, in this way, contributed to the development of regional identity through an evolutionary process.

This research will focus on the legacy of Jose Ignacio Diaz, particularly his work in downtown Cordoba in the second part of the twentieth century, to consider his contributions to the construction of identity in Latin Amerian cities.

3 Changes in the Landscape of Córdoba Argentina in the Second Half of the Twentieth Century

Córdoba was founded by Spanish conquerors in 1573 in a river valley named "Suquía" by the natives. The city was part of a supply system for the mine exploitation in the territories of what is now Bolivia. The development of the colonial city was slow, with religious power dominating the landscape of the city; when travelers arrived, the most impressive buildings they could observe from the ravines were the domes and towers of churches.

After the Wars of Independence (1810–1860) the city began its first modernization process under the rule of liberal governments associated with European capitals. In 1865, the arrival of the railway that connected with Rosario, one of the main ports of the country, transformed the city's infrastructure. Now the province capital, many institutional buildings were built in Córdoba, along with residences for the growing local bourgeoisie. This changed the appearance of the city, but not the scale. Schools, hospitals, train stations and other administrative buildings, and big residences in the form of "Petit Palais" were the dominant buildings in the landscape of the city at the beginning of the twentieth century (Rame et al. 2015). This time period saw the arrival of numerous immigrants, especially from Italy, which led to the expansion of Córdoba layout and the construction of a large number of houses in what is known as the "italianizante" style.

However, it was during the Second World War that a deep transformation of the city was initiated. It was then that the Argentine government promoted an industrialization process, in which Córdoba was one of the most important roles. This process generated internal migration from rural areas, and the city grew very fast; between the 1940s and

1950s, its population doubled and reached half a million inhabitants. In the central area, with its traditional layout of blocks and regular distribution of plots, high rise residential buildings of reinforced concrete proliferated. It became the contemporary "downtown" of the city.

This new type of building, the high rise residential, arose in the local landscape in the first part of the twentieth century. The "Edificio Minetti" in Hipólito Irigoyen Avenue 27 of 1939 (Trecco 1996) and the "Edificio Stabio" in General Paz Avenue 351 are some examples of 10–12 story buildings in important avenues of the downtown area. They are organized with a decorated main entrance and a retail surface on the ground floor; in the upper floors, large apartments open to the street and smaller ones to internal courtyards.

Following the demographic dynamics at the end of the 1940s, the downtown started to change. It incorporated offices, a diversity of retail surfaces on the street, and commercial galleries. A new type of residence appeared: the small apartment for single, recently married couples, or seniors. Changes in property law regulation in 1948 allowed the subdivision of high rise residential properties into individual apartments. This meant a radical transformation of the building industry and the real estate market. At first, high rise buildings were owned by single individuals who rented the property. After the change in legislation, it was possible to sell each apartment to different owners, who bought the apartments for either personal use or as an investment property.

4 Modes of Production of High Rise Buildings in Córdoba'S Downtown

In the second half of the twentieth century, recognized are four main types of production of high rise buildings in the urban development industry: (1) First, is the continuity of a trend that started in the first part of the century, where a whole building was developed for rent by a sole investor. However, there was now also the possibility of selling the units separately. This allowed for a more dynamic investment. A representative example is the Ames Building built in 1959 (Waisman et al. 1996). It is on a big plot in the corner of the streets of Entre Ríos and Buenos Aires, right in front of the colonial church of San Francisco. The ground floor is completely dedicated to commercial activities. On the corner, the owner established his textile business on the biggest division available. The rest is a commercial gallery with small shops for rent. On the first floor, the same proprietor had his own large apartment with a terrace and views of the church. The other twelve floors are of one and two bedrooms' apartments for rent and sale. (2) A second development option was an owners' association where individuals organized themselves to buy plots and build associated residential buildings. When the building was finished it was subdivided and each participant of the association became the owner of an apartment. This was an interesting option for smaller investors. However, the cyclical nature of the Argentine economy and its impact on each member of the association made this an unstable practice. The financial difficulties of one member could stop the whole enterprise. José Ignacio Díaz, like many other architects in the construction industry, carried out projects of this type. During this time, he also worked through the construction company "Díaz y Lozada SRL". The Consorcio Larrañaga 141 (construction year 1976), in Nueva Córdoba, is one such building where each of the large apartments on the ten floors had a different design. (3) The third option started when a construction company bought a plot, hired the professional services for the project, built the high rise building, and commercialized it together with a real estate agent. This mode of production depended on the capital that the company owned and the troubled relationship between the production world and the credit market in the Argentine economy. The company "Diaz y Lozada SRL" followed this mode of production, trying to find an innovative solution to financial constraints. (4) In the context of Globalization, by the end of the twentieth century, some local actors introduced new financial tools for construction development. These developers combined the functions of the construction companies with new means of financing them through the capital market. A high rise building on the corner of Hipólito Yrigoyen Avenue and Trejo street, with business and administrative spaces, was equipped with the most modern control mechanisms. It was called the first "intelligent building" in the city, and it was financed through market shares traded in the stock exchange.

Today, the above-mentioned modes of production are still valid in terms of the construction of high rise buildings, but the most popular is the "housing trust". This is an association of investors whose sole purpose is to construct a single building. The life of the organization is limited to the construction of a particular project, and the responsibilities are only in relation to this business. As a legal tool, the housing trust receives several tax benefits in Argentina (Cánepa and Pantanetti 2011) (Fig. 2).

Fig. 2 High rise buildings of Diaz y Lozada SRL in relation to the different transformations processes of Córdoba's downtown. *Source* Author's photographs

5 The Production of José Ignacio "Togo" Diaz in Córdoba in the Second Half of the Twentieth Century

In December of 1979, the Argentine architectural magazine *Summa* edited what was the first publication of the works of José Ignacio "Togo" Diaz.[2] It was a special edition dedicated exclusively to this architect, who by that time had been designing and developing buildings for two decades. He was widely known in his hometown of Córdoba, the city which was already known as the "ciudad ladrillera" (brick city) because of the impact the buildings constructed by his firm, DIAZ Y LOZADA S.R.L., had on the downtown visual horizon.

"Togo" Diaz got his degree in architecture in 1959 and began teaching design in the Universidad Católica de Córdoba from that year until 1968. From 1969 to 1972 he was elected Dean of the School of Architecture. In 1964 he started the company DIAZ Y LOZADA S.R.L with the engineer Fernando Lozada, and was a senior partner until its close in 1995. "Togo" Diaz had a special interest in the relationship between design and production, which was apparent even when he was a student designing interiors and furniture. In the early years of the firm, which focused primarily on construction, they worked for a variety of third parties. At the same time, Diaz designed houses for private clients on his own (Moisset and Ojeda 2015).

In 1967, they got their first commission for a residential building located in La Cañada, an iconic place of urban identity in Córdoba. Some of the features which would later be the trademark of "Togo" Díaz can be found here. The volumetric play, the sense of an integral volume, and the attention to detail are all there, but oddly enough, no brick facade.

Many buildings were designed and built from this point forward, often for private clients, but as the company grew, they began to finance and construct by themselves. They became their own clients. The street corners of La Cañada became their primary target. Panorama I and II (1970/71) on the corner 27 de Abril Street, the Rivera of 1971 in Dean Funes Street, Guemes I and II (1974) in Duarte Quirós street and the Florida VI and VII (1974/75) in San Juan Boulevard are just some examples of the buildings constructed during this first phase of the office's development (Fig. 3).

Here, the initial traits of the first building were intensified, adding a brick skin which was more than merely a coating. The accurate play of volumes that intertwine with the exact repetition of windows masters the frolic of light and shadows from the dazzling sun of Córdoba. The wall of brick not only emphasizes these outcomes but is an efficient technological and economic solution in terms of its construction and maintenance. In a city where most buildings were plastered or had a coating of different materials like stone or tiles, the integral brick expression became the trademark of the company. It has been identified this way ever since.

This first period of the firm had its turning point in 1975 with the "Rodrigazo", an economic crisis that had a ruinous effect in the productive world, particularly in the building industry. On the 4th of June, the Minister of Economy decreed a devaluation of 160%, and prices raised over 180%. Almost every building company which had commitments to deliver apartments in buildings under construction failed to

[2]The only publicaton before this was in April of 1964 when the magazine *Nuestra Arquitectura 143* published his own house as part of an article called "Viviendas de Arquitectos en Córdoba" (Homes of architects in Córdoba).

Fig. 3 High rise buildings of Diaz y Lozada SRL in the Cañada, a small stream that runs through downtown area. *Source* Togo Díaz Archive

do so in the agreed conditions. Either they stopped the construction or resettled the arrangements. Diaz y Lozada was in the middle of construction of the "Federico" building, owned by a private company, on the corner of La Cañada and 9 de Julio. They completed the project under the original terms, which resulted in losses for their firm. However, it also resulted in a great boost to their reputation.

In the following years, together with a boom in the construction of residential buildings and the social credit they had earned, they became the main designing and building company of residential buildings in Córdoba. This came along with the recognition of "Togo" Díaz as a very fine designer. Many clients looked to him for their private houses. The neighborhoods of Cerro de las Rosas and Parque Velez Sarsfield, as well as the village of Villa Allende, became the privileged sites for his projects. He was more than able to solve the suburban house, as well as the rural setting, with ample creativity. With every project, he dove into precise detailing and the design of furniture and equipment (Fig. 4).

In his works, he would deploy his well-known reverence for Frank Lloyd Wright and his admiration for the Vienna Secession movement, noting specifically great attention to detail. In an interview, he declared: "*Frank Lloyd Wright made a mark on me and the first things I did were no more than a tribute to the master… What I admire of the Secession is its integrality…there was a great pleasure for the detail. If there were paintings, they had their places, an adequate niche. And they also considered the crockery and the lamps, in the end, there was a total taste…That time seems to me very rich in intellectual values….I think we ought to recover these ideas.*"[3]

[3]Interview to José Ignacio Díaz in Pinilla Acevedo (1993) *Togo Diaz. El Arquitecto y Su Ciudad*, Ediciones Escala, Bogotá. Translation by the authors.

It was a novelty, in those days, to be an architect who ran a successful building company and to simultaneously be recognized as a "liberal" designer. It was a challenge to manage both aspects of his professional career. This was possible by a very strict and rational organization of the office, and the everyday routine dedicated to his job: designing and constructing.

6 The Architectural Office and the Construction Company as a Unity

By 1978, the architectural office of "Togo" Díaz, and the company Díaz y Lozada S.R.L. operated in total synchrony. Even though Díaz and Lozada were still the senior partners, two new associates had entered in the previous years as minor partners. Engineer Alberto Zorzi, was in charge of the management and logistics of every work, and the relations with the suppliers of building materials and contractors. Architect DeMaussion was responsible for technical control, proper execution, and time management. Engineer Fernando Lozada oversaw public relations and was the traditional businessman. "Togo" Díaz was the designer of all works carried out by the company, and by his own office. The four of them had clearly established their primary role within the firm, but each of them shared major decisions that were made and knew what everyone else was doing. They met almost every day to discuss daily affairs, outside of informal encounters in the office.

Regarding designing and project development, the whole production system was very rational and efficiently managed. Togo Díaz would make the first sketches and draw his initial ideas for each design, be it a building or a house, in the afternoon at home. He would then send the building sketches to the head of the workshop, who was the same person for almost the whole history of the company, Luis Pedemonte. Luis would then "translate" Tog's sketches into

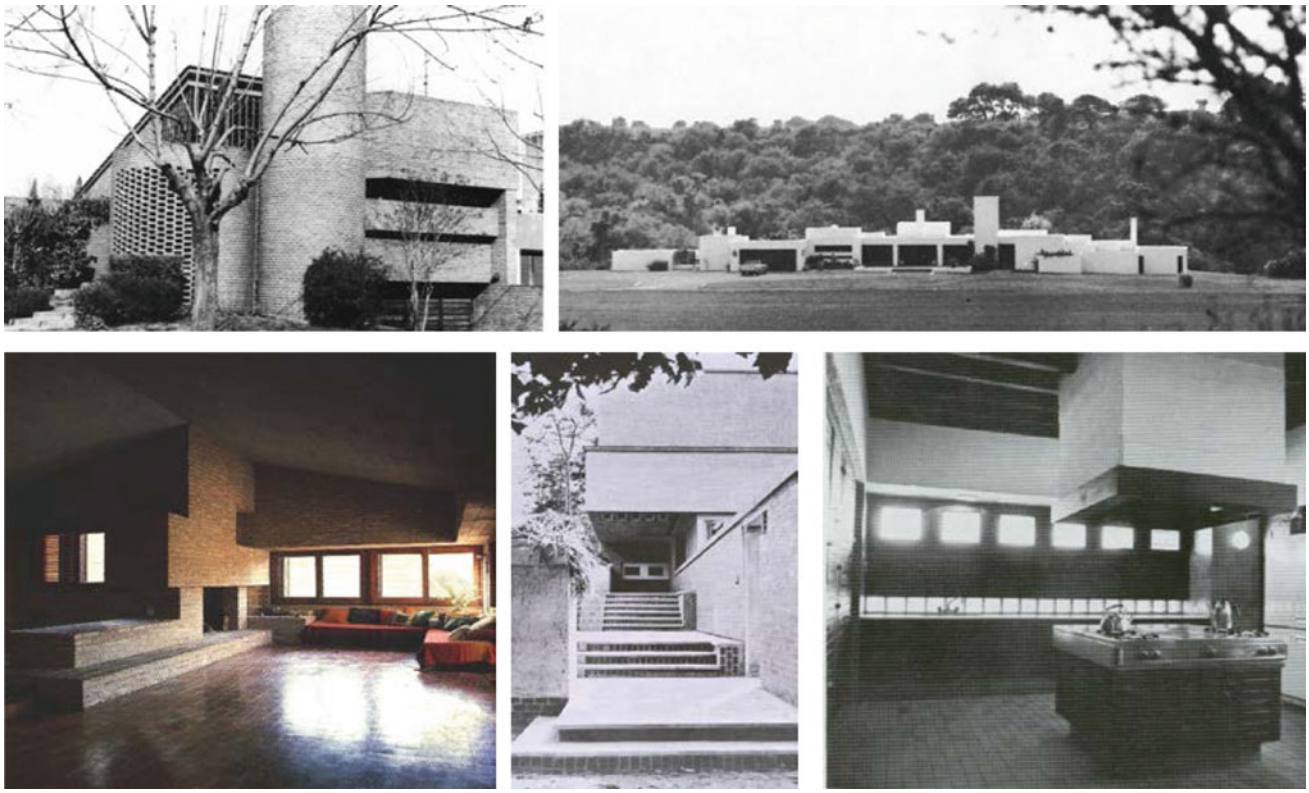

Fig. 4 Suburban houses of José Ignacio Togo Díaz. *Source* Togo Díaz Archive

architectonic pieces, before turning them over to the team leaders. There were three, and they varied from time to time. The teams were composed of the leader and one or two more people, who were responsible for the development of the project. In all, there were around ten people working at all times in the workshop. There was one external person in charge of drawing all the legal plans needed for any bureaucratic procedure (Fig. 5).

The designing process was simplified by the idea of repetition. Despite the different locations and site situations, the plans of the typologies were very similar in distribution and dimension. The facade composition of different buildings was often the interplay of the same window, which meant that the same technological detail and window catalog would be useful for a series of buildings. In any case, there was a display of creativity in the diverse types of arrangements.

Togo would instead outsource the project development of the private houses to external offices of younger architects who had already worked in the company`s workshop. Togo would be very careful of the detailing in particular of the looks and locks of the brick walls. It is interesting to point out that Togo didn't work with models, only with drawings: "*I make very few models. For me it is much more useful the drawing, I think faster with it, besides the model takes time.*"[4]

The spatial arrangement and rather small dimensions of the workshop (around 5.00 by 10.00 m), which included the glass cabinets of Togo and Zorzi, favored the intermingling of all the people working in the workshop and facilitated the resolution of any and all problems (Figs. 6 and 7).

7 First Strategy for Success: Survival in an Unbalanced Economic Context

From 1964 to 1996, Díaz y Lozada S.R.L. built over one hundred high rise buildings, and until the year he died in 2009, Togo Díaz was responsible for more than three hundred houses. This wouldn't be surprising for a well-established firm had it not been for the unstable economy and social context in which this was accomplished. Throughout these thirty years, inflation was a constant parameter with hyperinflation peaks in 1975 and 1989, when it reached the highest peak of 3079%. The highest annualized inflation was registered in 1983 with 401.7%. That same year, the first of two monetary symbol changes of this period was produced: the *Peso Ley* was replaced by the *Peso*

[4]Idem 3.

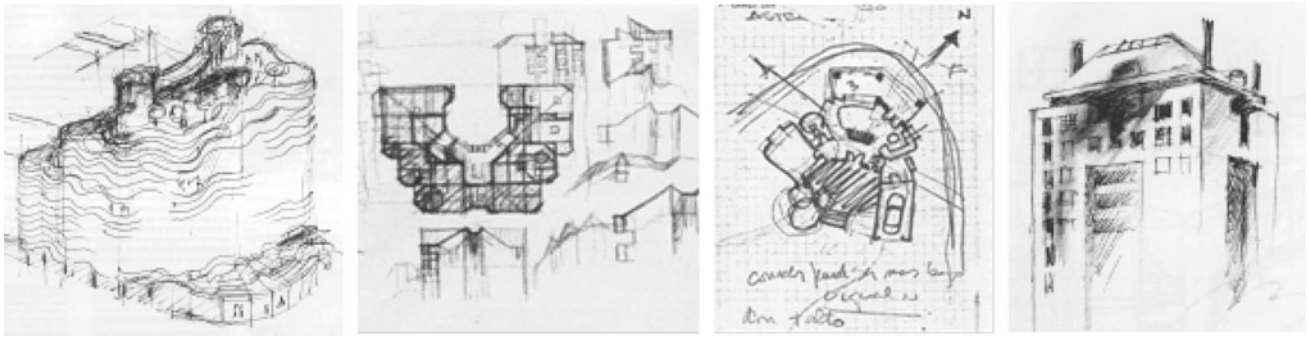

Fig. 5 Sketches of José Ignacio Togo Díaz. *Source* Togo Díaz Archive

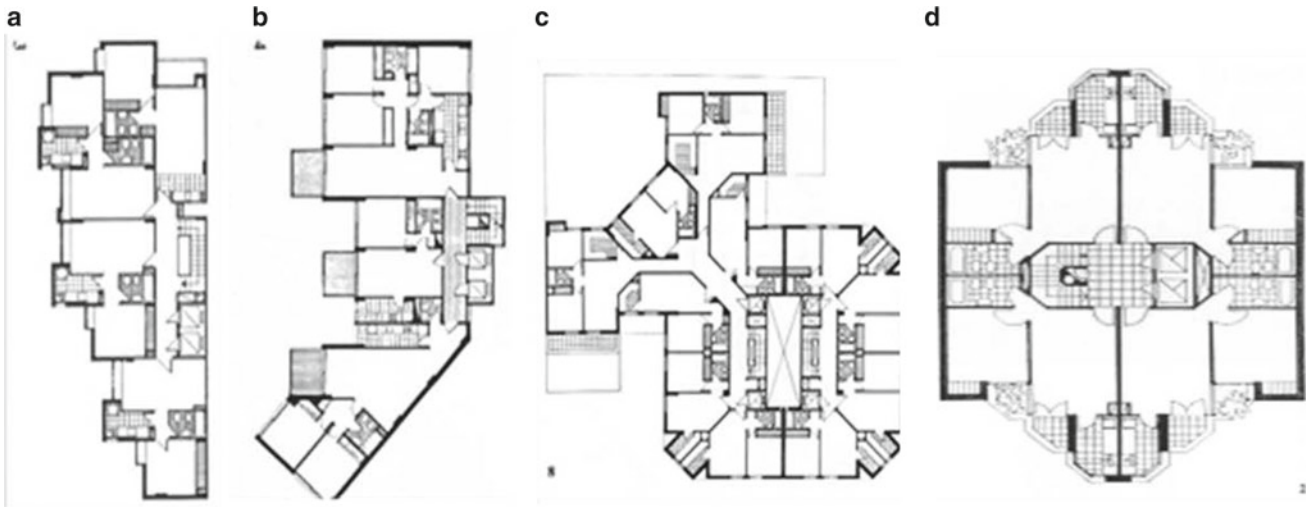

Fig. 6 High rise buildings typical plans. **a** Federico construction year 1975. **b** El Alamo 1977. **c** Paseo del Bulevard 3 1986. **d** Paseo 3 1986. *Source* Togo Díaz Archive

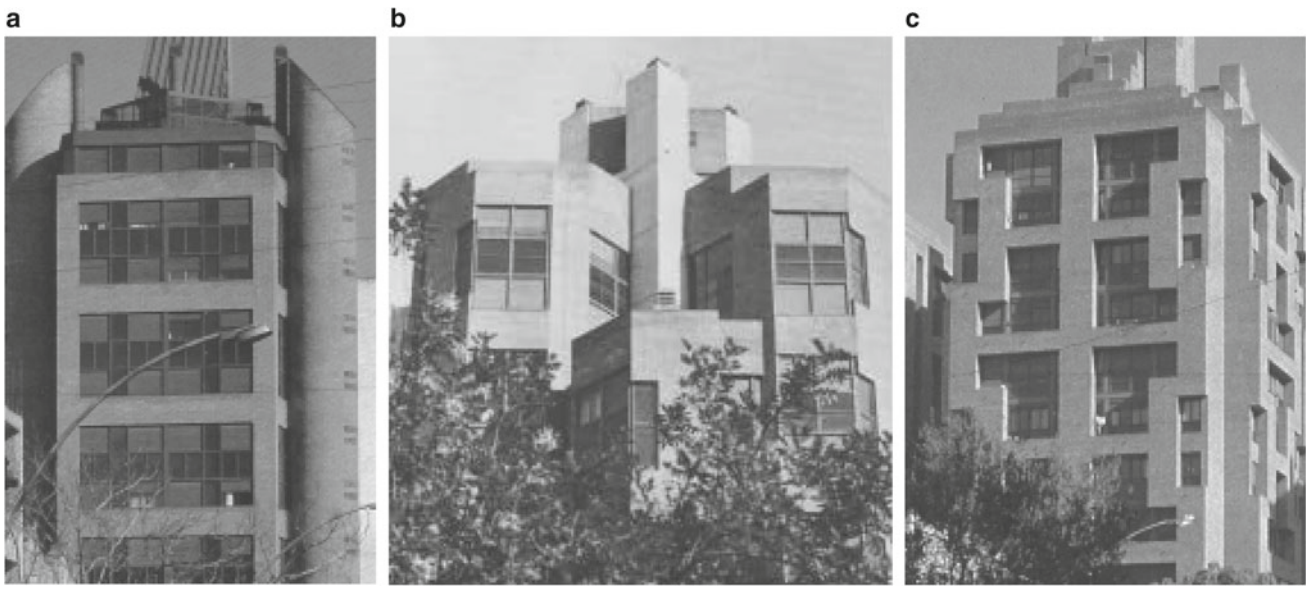

Fig. 7 High rise buildings diverse configurations. **a** Los Torreones construction year 1981. **b** Miraflores I 1981. **c** Zigurat 1982. *Source* Togo Diaz Archive

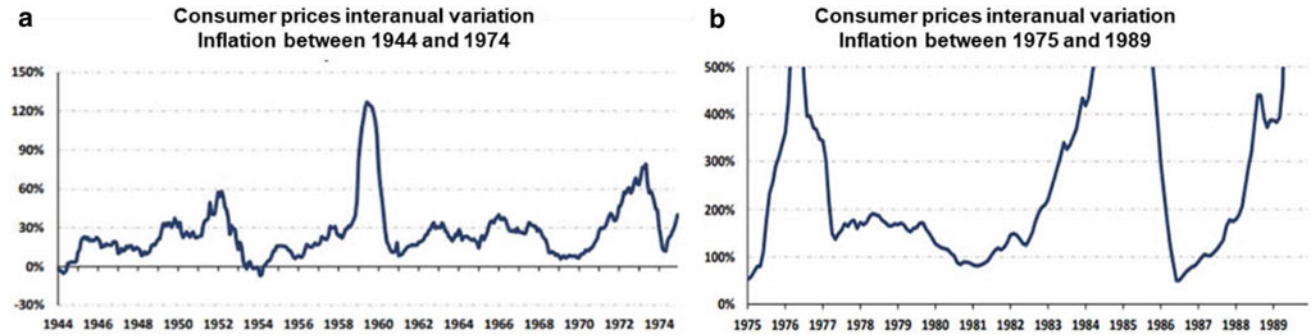

Fig. 8 Argentina economy: evolution of consumer prices. **a** 1944–1974. **b** 1975–1989. *Source* Rapoport (2007)

Argentino, and in 1985 the latter was replaced by the *Austral* (Fig. 8).

Besides the commercial ability and architectonic creativity, there must have been another factor that helped to keep a regular pace of construction without decay throughout this turbulent economic period. One reason may have been their new collaborative approach, developed to communicate with their material suppliers and contractors. They actually made an informal society in which everyone would get paid for their services or supplies with square meters of the building under construction. This meant that there was no money involved, so inflation wasn't an issue. On the other hand, everyone was committed to the quality of the building, and to finishing it in due time.

This approach expanded over time, always favoring the timely resolution of conflicts, be them social, economic, or technological. This fruitful association lasted until 1996, when the economic crisis of the "tequila effect" (economic impact on Argentina from the financial crisis in Mexico) shook the company, due to a loan they were unable to repay. Though it is hard to understand how this would happen to a company with such experience, it can be explained by the trade balance chart. 1995 is the year where all of the data are negative (Fig. 9).

8 Second Strategy for Success: The Construction of Identity Through Quality

Design and production processes were in continuous interaction. "Diaz y Lozada SRL" worked with a set of contractors who carried out different parts of the construction (e.g., reinforced concrete framework, brickwork, installations, etc.). The development of the net of contractors depended on each circumstance of different constraints, such as availability, and the quest of some potentially conflicting qualities. When a certain project started, one of the partners checked which contractors were available, and Togo Diaz, as the main designer, defined the strategy depending on which ones were available. As some were particularly good with the concrete manufacturing, their availability might indicate that a building skin could be a mix of an exposed concrete frame with a brickwork infill and exposed concrete details in the interiors. If these special contractors weren't available, the decision was to make a skin completely of brick and hide the concrete frame behind it. However, there were some unique situations. If a new building was going to start in an important corner in the core of the downtown area, the priority was to build a milestone for the company in the landscape of the city, so it was necessary to wait for the best contractor.

Sometimes experimentation was put into question; the tension between tradition and innovation was in permanent discussion in the company. In general, local construction companies are more conservative regarding innovation in production, because it meant more risk taken with cost, time of production, and some unexpected problems in the process and products (Lovera 2011). On the other hand, designers are keen to innovate, as a way to think of alternative solutions for a problem (Schön 1987). These tensions were present in the relationship between the construction company and Togo Diaz as the main designer. On one occasion, when two high rise buildings of similar size were going to be built at the same time, he proposed using two different construction systems: one with some innovative elements and the other one in the traditional way. They were observed during the process and evaluated at the end. The results showed that the traditional system was more efficient, particularly in production time. However, some elements of the innovative method were later considered and incorporated into the traditional way of construction. The buildings in Fig. 10 shows three similar high rise buildings with an exposed reinforced concrete framework filled in different ways: a traditional brick wall, a prefabricated brick panel, and another prefabricated panel with local stone. The last two options were only used in these buildings.

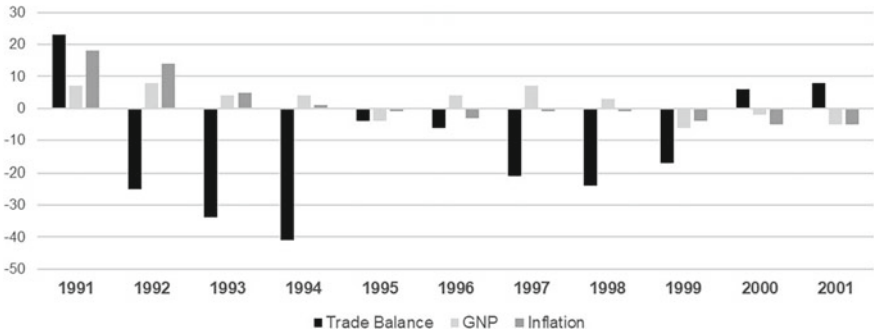

Fig. 9 Argentina economy: evolution of GNP and Inflation between 1991–2001. *Source* Rapoport (2007)

Fig. 10 **a** Edificio "Torre I". **b** Edificio "Guemes I". **c** Edificio "Malanca". *Source* Photographies of the authors

9 Third Strategy for Success: A Clear Urban Policy

Latin American cities, following the experience of the Greek and Roman colonizations in Classical Antiquity, and the medieval city foundations of the reconquested territories of the Muslim Al-Andaluz in Spain, show a regular layout in concordance with Renaissance ideas. The urban form presents regular blocks, "manzanas", with a clear differentiation between corners and street sections in between. From colonial times to the present day, corners are the most vital points in the urban ecosystem, with opportunities for encounters and subsequent profit for merchants. In this way, corners are important references for citizens in the mental construction of urban identity. The Modern Movement proposed a break with the traditional configuration of space, ignoring the urban quality of corners. The argument was that corners are places of conflict in the city dynamic, due to the concentration of activities in the urban grid, in contrast to the virtues of separated activities, particularly the car traffic from pedestrian movements (Kinkela 2009).

The particular division of square blocks in the colonial grid and the subsequent urban extensions result in different plots sizes, where the smallest ones are at the corner (Fig. 6). On the other hand, these corner plots are very appreciated in the real estate market because they allow the ground floor to be used for commercial activities, and provide two facades for the rest of the building. Furthermore, in recognition of the small size of these parcels and their high value, some urban regulations allow for more intensive use of this kind of plot within the block. The urban regulation of the Municipality of Cordoba follows these criteria for the downtown area, and as a result, the corner plots allow for the biggest surface development (Fig. 11).

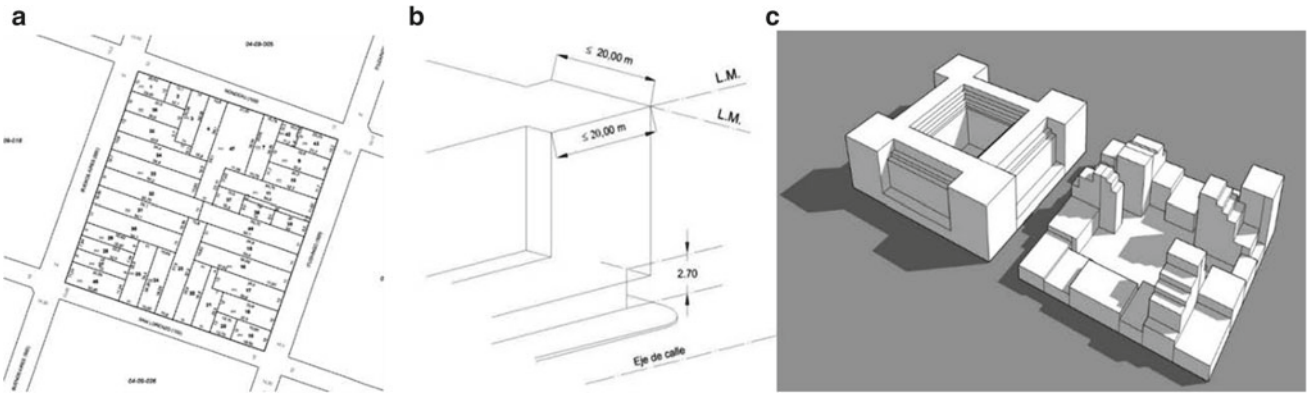

Fig. 11 **a** A typical Block of Córdoba Downtown. **b** The regulatory definitions for corners. **c** A representation of a typical block following the regulatory model and the transformation plot to plot. *Source* Municipality of Córdoba

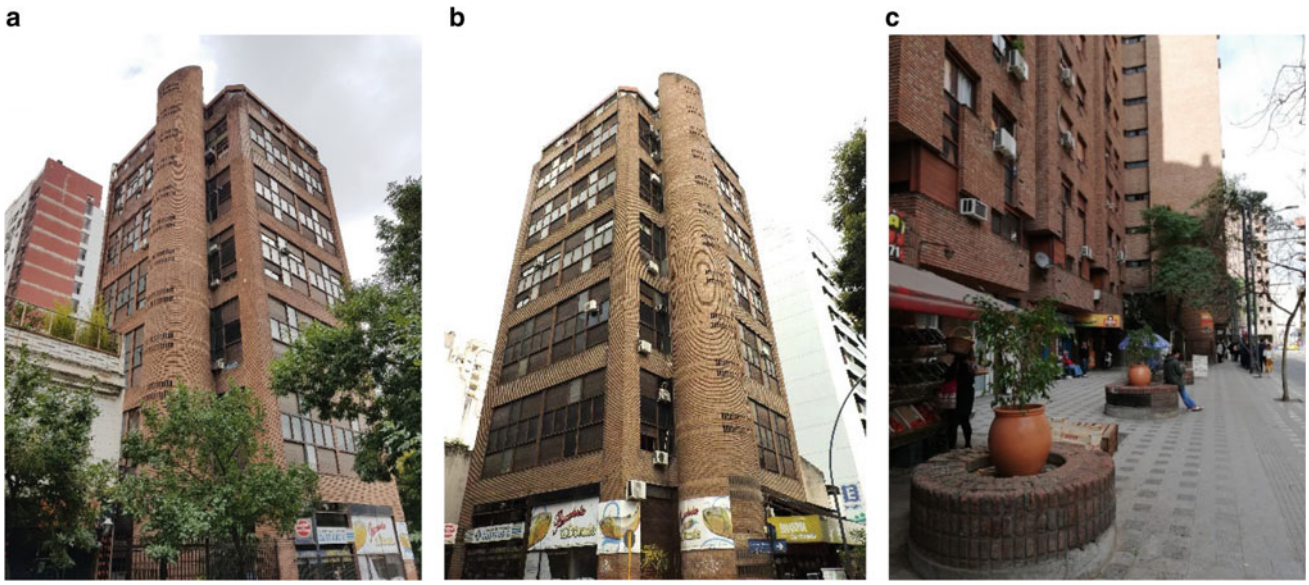

Fig. 12 **a**–**b** Edificio "Los Torreones" **c** Edificio "Calicanco". *Source* Photographies of the authors

Jose Ignacio Diaz, like many other local architects, recognized the potential of the corner plots as extremely profitable in the development of high rise buildings, but also as a very good way to obtain visibility in the city landscape. He utilized the corners as an opportunity to: (1) transform corners as landmarks at the urban scale, that in some way refer to the recommendations of Kevin Lynch (1960) for a better perceptual comprehension of the city landscape; (2) design sidewalk extensions at the pedestrian scale which are profitable for the shops in the ground floor and facilitate further opportunities for interactions between people.

Besides these two aspects, by creating a side courtyard related to one of the party walls, he highlighted the building by opening a third façade. At the same time, this improved the internal distribution of the apartments where most spaces opened to the street. We can recognize this strategy in as much as one-third of the buildings designed and built by "Díaz y Lozada SRL". An example of these buildings is "Edificio Los Torreones" in Boulevard San Juan e Independencia Street y "Torres del Calicanto" en Boulevard San Juan and Belgrano Street (Fig. 12).

The company had a lucid commercial vision, benefiting from the code regulations and the urban condition. At the very beginning, they chose to develop their buildings in a sector where the prices were not yet high. As we have already stated, this was the axis of La Cañada, the stream that crosses south to north on the border of what was, on those days, central downtown, a very popular area. Additionally, they selected corner sites because they could obtain more square meters and rooms opened to the exterior. By these means, they also obtained visual continuity of their

Fig. 13 Sketches of urban interventions of Diaz y Lozada SRL in Downtown, particularly in Boulevard San Juan-Illia. *Source* Togo Díaz Archive

own "product," which gained publicity for the company. With time, this policy extended to Bv. San Juan, and afterwards to Bv. Hipólito Yrigoyen, later spreading into the internal streets. At some points, you cannot turn your head without seeing at least four or more of their buildings. In 1993 Togo Díaz would recognize with certain modesty that: "*It seemed to me that the most honest thing to do, even though it might have been from another owner, to continue with the thematic, to repeat and try to arrive at the idea of one single work, or if there were any distinctions, that they would be perfectly in harmony with the previous one. This thought is carried forward in sets of various works, for example there is a street where I've designed eighteen buildings in a space of four blocks*"[5] (Fig. 13).

The increase in high rise buildings in the inherited colonial grid of Latin American cities, particularly where the process grew plot to plot, unintentionally resulted in the "party walls," the division between two different properties. These building side walls were not allowed to have windows. When a high rise building appears alongside an existing one or two-story building, a ten to twelve floor "blind" wall impacts the urban landscape in a strong way, and often for a long time (until another high rise building is built in this neighborhood plot). The visual impact of these walls perpendicular to the street axis is so heavy, that in many cases, it is used for graphic advertising. "Togo" Díaz acknowledged the negative impact of party walls in the city landscape and saw it as an opportunity to reinforce the search for a sign of his company. He designed the party walls as part of the whole building in continuity with the façade, and as a result the building appears as a volume, like a tower. The extra cost for these "other" facades had to be negotiated with the partners of the company, introduced as a more rational technical solution for the whole façade, to be discussed as the last point of this chapter.

The transformation of Córdoba's downtown from buildings of one or two floors to high rise buildings generated another perceptual change in the city landscape. These kinds of buildings can be seen from at least one or two blocks (100–200 metres) and from different positions if you are living in apartments on different floors. In this way, not only were facades and party walls as important components of the city landscape but also as rooftops, a "fifth" facade. "Togo" Díaz used this "fifth" façade as a visual element that emphasized the buildings as volumes, incorporating traditional elements like wind vanes or engaging a sculptural use of technical spaces like water reservoirs, chimneys, or elevator machinery rooms (Fig. 14).

One of the characteristics that differentiate the construction industry from general industrial production is the high cost of the goods produced. To be competitive in this market, it is necessary for a company to offer good quality products at a cost that can be paid by the target demographic (Lovera 2011). In the construction market, there are different demographics in varying income brackets. In the

[5]Idem 3.

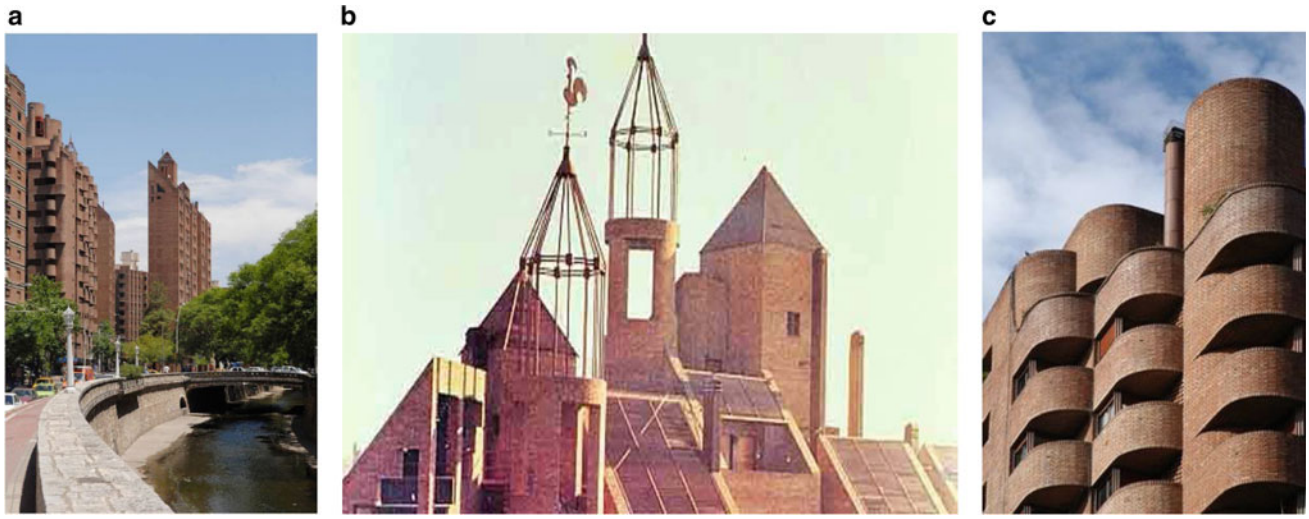

Fig. 14 **a** y. **b** Edificios "Calicanto". **c** Edificio "Castel Sant'Angelo". *Source* Togo Diaz Archive

local real estate market, one or two-bedroom apartments in high rise buildings are considered a very good investment for rent or for use in certain stages of life. They can be homes for students for a period of five or six years, for young professionals, or married couples. After that, they could be sold to buy bigger houses in the suburbs or to move on to another place. In this way, the market of small apartments is very dynamic and competitive. The production cost is one of the most important constraints for the designer, followed by the search for some elements of design that would make a difference in this competitive market. On the other hand, the architect as a professional of the built environment is thinking about the use and maintenance cost of a building and the cultural impact of complex socio-historical dynamics. When an architect, such as Togo Diaz, was part of both sides that put a strain on the development of the built environment, he had to find a strategy. We have recognized above some partial strategies in relation to achieving quality in the production process and in the architectural products of Togo Diaz as an architect and as a partner of a construction company. However, we underline that the most important strategy was the use of a brick skin. Brick was considered a second-class material for construction because it was associated with industrial facilities like sheds and warehouses for train stations. Togo Díaz transformed it into a first quality material that could save a lot of money considering the maintenance cost. To convince his partners about this kind of innovation with a higher cost of investment and a necessary break in the cultural values of the demand, he proposed a quality change. To convince the local society, he proposed the innovative solutions we have described: (1) buildings which operated as landmarks in a changing urban landscape, (2) the integration of party walls to the urban perception and the proposed "fifth façade", and (3) the ability of the ground floor to offer amenities to pedestrians. However, the most comprehensive quality emerges with the brick skin, which gives a singular atmosphere to the urban landscape of Cordoba's downtown.

10 Conclusions

The architectural contribution to the urban landscape of Córdoba's downtown and adjoining neighborhoods (Nueva Córdoba, General Paz, Alberdi) is synthesized in the comprehensive concept of a "brick atmosphere". This was started by José Ignacio "Togo" Diaz at the end of the 1960s, with his series of highrise buildings, and has been continued by many local architects and building companies recently. This research stresses that the contribution of José Ignacio "Togo Diaz to the local identity, is the result of a fruitful exchange between design and production, in which the collaborative approach played a substantive role. The aim to produce high-quality urban spaces in such a dynamic and changing environment as Downtown Córdoba, from the second half of the twentieth century until now, has been a challenge not yet successfully completed.

The results of this research could be a starting point to analyze how the private sector (architecture offices and building companies) has developed in the last 30 years, with the aim of understanding their influence in the resolution of

Fig. 15 Edifico Florida. **a** Before new regulations. **b** Current state. *Source* Togo Diaz Archive

the quality of the urban space of the city. For example, the changes introduced in the Building Code allows, depending on location, unusual dimensions and many exceptions. We can visualize, in Fig. 15, an example of what these code changes produce, and the negative impacts on one of Togo Díaz's masterpieces. Scale in relation to legal tools, material in relation to production modes, and cost and financial tools, are topics for further research that, starting with the experience of Togo Díaz, will start a discussion on important issues concerning the quality of the urban space.

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A Study of Built Morphology and Cultural Imagery—a Case of Bengaluru Pettah: Historic Core of the City

Samhitha Bydar Shubhashchandra and Rama R. Subramanian

Abstract

Cities are composition of complex matrix of neighbourhood held together by the movement networks. The local neighbourhood is very important to understand how people conceive the city in their minds. The representative memory captures the elements related to spatial identity of a place, but more often than not, these representations are pictorial images superimposed upon the fabric resulted from the standardized tools used for analysing the spatial qualities and its attributes. The recognition of the finding to capture elements related to experiences of spatial identity problematizes from well-established urban design spatial theories. On the other hand, Indian city is a collective of people, place and events. These neighbourhoods may not be central to social or business relationships nor centre for historic monuments, but the activities, users, events, location and spatial conditions that support them are very different—together key to the legibility of the city. More often than not, the impacts due to the city's regeneration process sustain the test of time and manifest into a deeper system for building an image of the place. Hence, embedded meaning and meaningful association over time become crucial for the built morphology. One such neighbourhood is *Pettah*[1]—the old core of city of Bangalore. Bengaluru was one of the key trading centres of the south during the pre-colonial era. The idea of a town structured around *Pettah* (market), *Kote*[2] (fort), *Kere*[3] (lakes and tanks) and *Totha*[4] (gardens and parks) was an unquestionable matrix of natural occurrences and cultural practices. Decades to follow many influences on to the town added a layer of new structure, and every stage of progress enunciated the past with a new skin of elements. It is this value of city's memory that lie buried within us carrying forward our past into its present fabric. Hence, the study reveals the need to radically departure from the routines of recording legibility and imageability through mental, sensory and visual mapping and to record in terms of space, events, time, activities as well as sense of public-ness. Ultimately, the findings also brings optimism into urban design practice, offering new insight into how to record mosaic of an area in an Indian city that will capture the strong perceived and conceived imagery of a place and hence sensitive responsive proposals that will aid to carefully conceive a system for the future.

Keywords

Morphology • Neighbourhood • Culture • Elusive • Character

1 Introduction

Every individual, object and nature identifies himself or herself to or with respect to the physical environment they dwell in, and identity makes its claim upon us (Heidegger 1969). It is the notion of identity that allows things to be identified as a unified entity or to distinguish one from others. This identity is present within an individual and reflected in the culture that he belongs to. These can be seen in the form of traditions, elements and forms, space and thus in a place. Place, people, form and identity are inseparable, and its uniqueness is apparent to the beholder as they experience the cityscape. The cityscapes in a cultural context like India are collective of people, place and events, offering a vibrant experience for the users. Each part of the place has a different story associated with it that makes each part alive and distinct from the other. This cityscape is a collective of

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traditional settlements, composed of microns of space-defining elements that are unique to a place with efficient distribution of resources suited to the culture and lifestyle of that neighbourhood. It is the persistence of the indigenous morphology, a basic building block of a city that provides a foundation for subsequent growth and recognized as a significant locus for social experiences. The interplay of built and open spaces within a neighbourhood is then defined through kinetic entities like local activities, temporal events and celebration of life, a pivotal factor in building up a strong sense of mental association with the place. Thus, an Indian city is a mosaic of many sociocultural milieus of inherent identity giving varied experiences for the people.

The Pettah is one such traditional settlement of Bangalore. The genesis of what the world knows as Bangalore—an information and technology (IT) capital today—begins from *Pettah*[1] between late 1700 and early 1800 by Kempe Gowda, a local ruler under Vijayanagara Kingdom. The town established as one of the key trading centres of the south during the pre-colonial period structured around *Pete* (market), *Kote*[2] (fort), *Kere*[3] (lakes) and *Totha*[4] (gardens)—elements giving the unique spatial identity to the place. The planning principles involved a few pivotal elements which were categorically placed to form the key markers of the settlement. The planning process ensured walkability across all the segments of the market area as well as the administrative region. The temples and the squares formed a pattern of pivotal elements around and along which analogous typologies were placed that ensure a sense of place and identity. Unlike some of the great cities, Pettah is not be viewed as the city of art nor has monumental landmarks/nodes or events of war but it is the combination of the structuring elements, community characteristics, activities and lifestyles that are the key in contributing to the elusive quality and vitality to this place, building the place memory (Hayden 2007).

In decades to follow, the trading city with the shifting boundaries changed its character from being a wholesale market with residents, sacred structures and activities—a self-sufficient neighbourhood to retail and wholesale markets with warehouses and business activities, all of which have left a varied building stock. Today, Pettah is the central business district (CBD) of the metropolitan city of Bangalore. In the last 25 years or so, series of projects (either individual or state-initiated renewal projects) has added layers of incremental changes altering the physical and spatial structure, resulting in a disorderly outcome of a long history. The change in the built and natural environment has also altered the sociocultural landscape of the place. As a result, the associative memory, value and the ability for the people both inhabitants and travellers to connect with the place have diminished, and Pettah today remains as a place on the map (excepting for few).

Our most critical area of ignorance is in the understanding that a place identity of an Indian city is composed of built memory and social memory. In Pettah, at the physical level (tangible elements) the town never had isolated monuments of historic importance so that the fragment of these physical environments is preserved. The Kote, Kere and Totha, i.e. the natural landscape engulfed into the development, are left with unrecognizable traces weakening the interdependency knot between the community and nature by not acknowledging the existence of a relationship between the community and cultural imprint. On the other hand, the social memory of this place mainly associated with people, community, tradition, symbol and activities—the intangible elements—is long lost with generations, and the newer generation catching up with the global trends has accelerated the process of erosion. Also, since tools for recording and preserving of the intangibles are still being debated amongst the designers, the growth has invariably given way for developing non-associative memory and identity with the place. When the presence of the past of this settlement cannot be identified by the character of a visual environment as per Kevin Lynch's theory and restructuring the settlement based on aesthetic beauty and imitation of the past as per Leon Krier remains obsolete, generalized pictorial representation of images cannot be imposed upon. Under such circumstances, the question that one should ask will be when a city that is culturally rich and diverse and place identity is dependent mostly on the social memory

i. Can the study be limited to visual survey objectifying the place?
ii. Can designers impose visual character based on established place identity theories of the west?
iii. What is the changing identity and should we allow it to change?
iv. What image is worth keeping?
v. Should designers develop nuances for containing the morphological and cultural imagery of an Indian city?

The proposition of the paper begins by discussing the methodology adapted to analyse the cityscape of Pettah. The

[1]Pettah is a connotation used for Market area in a city. But Pete is more common amongst the natives of the land who converse in Kannada - regional language.
[2]Kote is a connotation used for fort. It is more common amongst natives who converse in Kannada regional language.
[3]Kere—is a Kannada origin term, meaning lake or a tank. Each lake or tank bund was differentiated based on if it was naturally formed or built to form a tank.
[4]Totha is a Kannada origin term which means a garden or a nursery of plants. Usually, the natives housed all the plants at a place and nurtured them in order to protect the species that was indigenous to the area.

documentation and analysing this context emphasize the understanding of the role of architecture in shaping an urban fabric as an idea of space, context and its complexities. The method intends to set a platform for exploring the notion of space and place concerning spatial configurations, movement through space, shared spaces and communal spaces. The next section discusses exploring the beginning of Pettah and creation of various components of the town through time. The study in this context highlights the influence of the changing rulers and administrative capitals on the morphology of the place. Also, how the added layers of new structure altered the meaning of the settlement as well as set a new genealogy to the growth of the city.

In the third section, the paper touches upon some of the spatial theories used for acknowledging the presence of the past and conserving them and how these spatial theories cannot be used directly to study a traditional settlement in the Indian context. The same will be discussed using the analytical tools established through the methodology, applying it on the current context and also showing the same in comparison with other cities. The focus of the finding is shifted from conventional established methods towards self-indulgence within the built environment that will give the designers freedom to explore and understand the nuances present in the city in their own creative and intuitive way. The analytical tools established are on basis of *React, Observe and Respond* as a conceptual understanding to identify and testify the process while laying strong emphasis on *People*, *Place and Events.*

The conclusion of the investigation enquires on the various facets of a city and means to decipher what works and what does not. It also states whether the appearance of the environment is of any importance to its inhabitants and that the imposed picturesque identity of the past on the contemporary city will not add long imagery of the place. The established method to objectify the morphological and cultural imagery of Pettah will guide to create a mosaic of an area based on the varied characteristics and hence leading to establish a framework or policy—"Imageability Policy" for Pettah. The analysis and the policy will be ongoing research until a right type of control, criteria and designs is developed and testifies bearing on the real decision. The finding will be a powerful determinant for visually diagnosing any Indian city's cultural imagery.

2 Methodology

Any urban study starts off by undergoing some of the established stages of research such as on-site observation, empirical data collection, stakeholders' interview, mapping and other forms of visualizations. Result will be depicting the existing physical conditions and some degree of visualization of the place. These methods more often than not give us empirical information or quantitative analysis of a place but fall back with qualitative analysis. As discussed in the earlier segments, the study focuses on gathering the intangible aspects of Pete, which is predominated with social memory associated with the place than the built memory. Hence, it is important to highlight that the methodology developed to study the morphological and cultural imagery of this place emerged as an assemblage of incremental and subsequent negotiation.

To identify the intangible aspects associated with the place, the processes began with walking through these neighbourhoods looking for clues of sociocultural interaction of people with their place. This helped us to familiarize ourselves with the place and also learnt that this can be an exhaustive non-conclusive approach for the study. The study focus is then narrowed down to looking at the aspects that will inform the degree of association, and hence, the best way is to study the area under the context of *"People, Place and Events"*. The methodology adapted involved initially to study the context through history with the help of literature, maps and images that will inform us the lost connections that existed between man, community, nature and the lay of land. The findings identified a unique formulation of the land that has a powerful impact on the configuration of the urban elements in Pete called the "syntax" (Bydar Shubhashchandra and Rao 2019). The tools and technique developed to capture the essence are by *"React and Respond"*—engaging ourselves to be a participant of the place. React to people, place and events being the crux of the tool formulated and the form of experimentation based on technique of act of indirect engagement, such as role-play, act of playing real-time board games, being first person in the space, participatory design, community engagement were some of the several subset tools developed. The self-involvement with the environment worked simultaneously as a tool of research as well as for contextual understanding and built form proposition. Along with this, several standard documentation techniques and ethnographic method such as participant observation, open-ended interviews, photography and spatial mapping were also used for quantitative analysis of the place. At the same time, the physical environment and related human activities are critically observed through physical mapping, literature, people's stories, etc., that helped the study to further narrow down the focus to two components—built memory and social memory that directed to the imageability and memory associations to the place (refer Fig. 1). The continuous back and forth between tools and the imageability components where each brings in a new finding that supports the other is an ongoing process that will eventually help us to "Respond" to the study and eventually to Pete. The Respond in this context refers to the strategies that can be developed from

the findings. The act of "React" as a tool recreated site—lived experiences and triggered significant discussion with the community and hence, conversation with the place. The area included in this study is limited to the extent of the Pete, extending between Chickpete Street that ran east to west and Doddapete Street (the present Avenue Road) that ran north to south.

3 Contextual Brief

Bangalore, one of the fastest-growing metropolitan cities, is the capital of Karnataka state in southern India. The city caught up in the web of growth and development was established as a trading centre of southern region during the 1700s, under the administration of Kempe Gowda I, a local ruler under the Vijayanagara Kingdom. The city was conceptualized around *Pettah*[1] (market), *Kote*[2] (fort), *Keres*[3] (lakes and tanks) and *Totha*[4] (gardens and parks), an unquestionable matrix of natural occurrences and cultural practices (Bydar Shubhashchandra and Rao 2019). Pettah and Kote a fortified town were the centres for all commerce and trading and military activities.

Pettah (market) is the main trading centre surrounded by a mud wall and a moat or a ditch within which one could see the residential and market spaces. Together referred to as the town, has settlement quadrisected by the two main streets along north–south and east–west direction, with the walk-able system allowing unrestricted access between quarters. Kote (fort) was an oval structure built to the south of the Pettah surrounded by stone walls and a moat within which military-related activities were housed. Together, Pete and Kote formed the epic centre of the settlement (refer Fig. 2), the point from which the city grew. The town and the fort were surrounded by Totha (gardens and parks), vast extents of horticultural fields growing varieties of fruits and flowers with villages inhabited mainly by the gardening community (Sundara Rao 1985, as cited in Srinivas 2004). Lastly, the Kere (lakes and tanks) were constructed by Kempe Gowda I, as a water harvesting structure where water from one tank would feed the other through a series of an interconnected network across the city's landscape (refer Fig. 2). The water from the lakes and tanks was the main source for drinking and cultivation and also fed the moat. The new language for the inception of the city with these four elements together with people and activities established a unique spatial identity and thus a new genealogy for the city.

3.1 Pettah and the Character

Pettah, a mud fort with settlement within, is laid down in an elliptical shape and the town being organized along the two main arteries running in north–south and east–west directions. The mud fort was marked by four watchtowers and was surrounded by a hedge and moat or ditch. The main arteries quadrasected the town, and the intersection is marked with a *Chowk*[5] (refer Fig. 3). Pettah organization was based on the idea of a mercantile arrangement of space inside the town, a system of zones based on type of trade of a particular commodity like *Akki Pete* (rice market), *Araje Pete* (cotton market), *Bale Pete* (bangle market), *Chikka Pete* (gold and silver market) to name a few (refer Fig. 3). The produce and products that were sourced from other cities and countries were sold here and hence a trading centre of southern India.

Artery road running in north–south direction was the main street having all major commercial activities aligned and was predominantly dominated by pedestrian and vehicular movement. Today, this street is called the Avenue road (refer Figs. 4 and 5).

The secondary streets branched off from the primary leading to the inner residential layouts. The tertiary roads connected to secondary and usually terminated with a cul-de-sac. These became the community gathering space for social interactions at the block level. This configuration is been carried down as a natural progression even till date (refer Fig. 6).

The Pettah apart from being organized based on trade, the organization based on cast and community is seen. Each trading activity is associated with a specific cast or community like *Akki Pete* was run by upper/middle class usually the Brahmins, *Komati Pete* by the Vysya community who are mainly the traders from Andhra Pradesh, *Patnool Pete* (silk and cotton weaving market) by the weavers from the Vijayanagara Kingdom and so on (refer Fig. 8). All the shops selling similar products arranged themselves in the same area and were usually a family business. Apart from profession and cast being organizing factor, they also organized themselves around religious structures like Brahmins around the Vishnu temple, Thigala community who were mainly the horticulturists around the Dharma Raya temple and so on. Also, one can identify a platform with Peepul tree called the *Katte*[6]—a tree worshipped by the people, a usual sight within the city fabric (refer Fig. 7). These multiple socio-religious spaces along with the temples within the neighbourhood have become a community "node". These nodes are not only used as a place of worship, but also a space for social (informal) gathering and spaces for carrying out discussion. Temples and the Katte together also functioned as a significant node in the town (Keswani 2017), a centre for cultural practices, which operated at the city level as well as at the community

[5]Chowk is a connotation used for a square formed at the intersection of main artery road.

[6]Katte—Peepul tree shrines with its serpent stones, and the raised platform around it is locally called the "Katte".

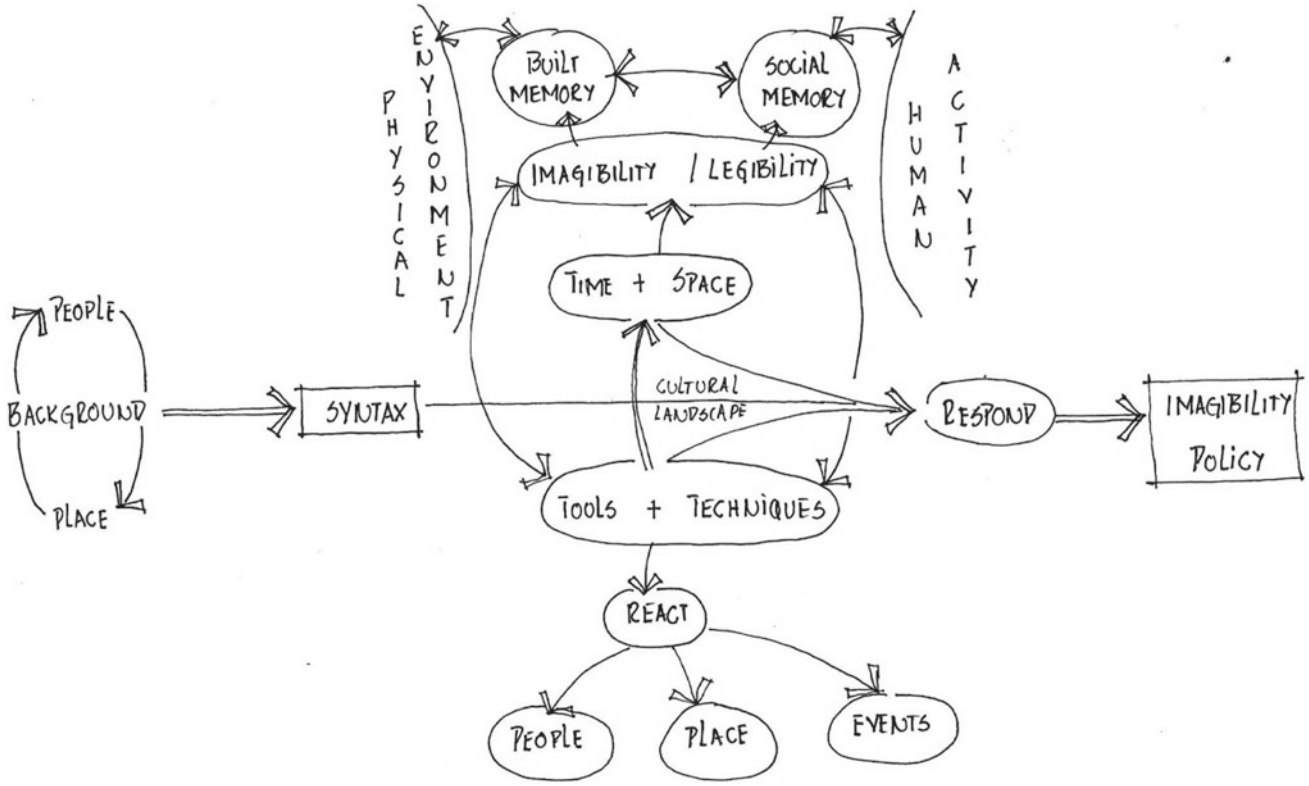

Fig. 1 Methodology explaining the established connections and interdependence between the stages of analysis of the Pete, with respect to people place and events to document the morphological and cultural imagery

Fig. 2 A portion of digitally enhanced map of Bangalore in the 1800s, showing Pettah, Kote, Kere and Totha (reproduced from Colin Mackenzie's Mysore Survey (1799–1808) the British Library IOR X/2126 as cited in Mathur and Cunha (2006) pp. 73)

level (refer Fig. 7). One such celebration that brings the entire city together is the Bangalore *Karaga*[7] the city's oldest festival celebrated by the *Thigala community*,[8] where the deity of the goddess is taken on a procession starting from the lake through the Pete. It is a nine-day festival celebrated even today by the city (Unnikrishnan and Nagendra 2014). The belief system passed down through generations is witnessed until this day. Some of these beliefs and practices are so deeply rooted in the community that repeatedly they resurface baring a dominant impression of cultural practices. Thus, the traditional built types naturally stimulated a community scale arrangement, which coincidentally indicated an influential formulation of multifunctional community spaces and also protected, survived and integrated into the growing morphology of the city.

[7]Karaga—the annual festival celebrated in Bangalore by the Vahnikula Kshatriya community. "Kara" meaning hand and "ga" meaning "that which is held", which refers to a water pot in Kannada, official language in Karnataka.

[8]Thigala community are social group occupied in Karnataka and Tamil Nadu. The community settled in Bangalore during the sixteenth century. The cast is traditionally occupied with gardening of flowers and vegetable as their livelihood.

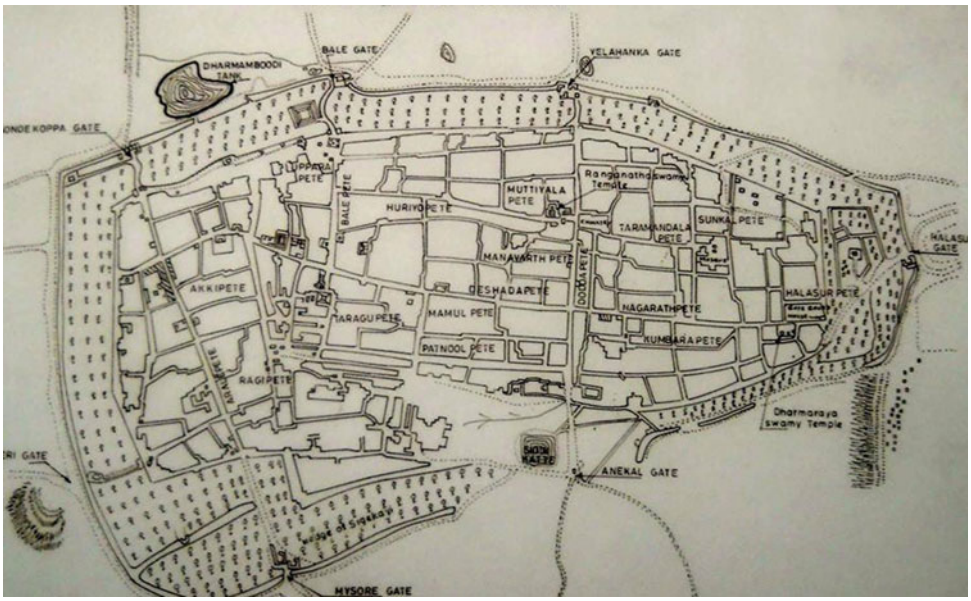

Fig. 3 A portion of map of Bangalore showing Pettah, streets and trading activities (reproduced from Intelligence records of colonel read, 1791, as cited in Nair 2005, pp.39)

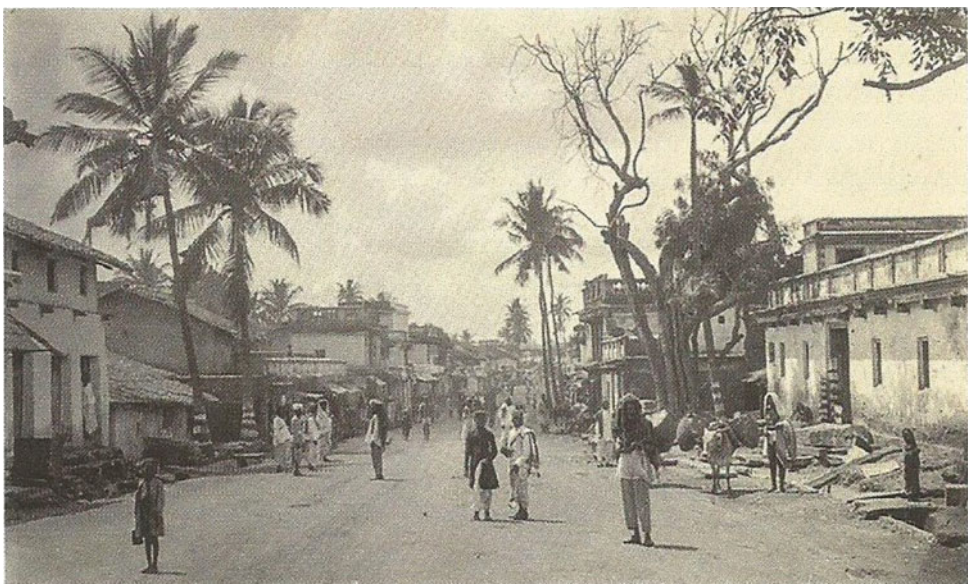

Fig. 4 View of Avenue Road, (running in North–South direction) by unknown photographer in the 1890s British Library, Shelfmark—430/41(88), as cited in Sharma 2016, pp. 82)

The typologies of built accommodated living, selling and storing units and in some selected cases a workshop or training/manufacturing area were also present. From the photograph documentation, it is observed that there existed a mixed-use development (Rajagopalan 2008). It is evident that the markets, shrines, dwellings, water body are interwoven with the fort and the community through an established hierarchical relationship. These traditionally built types naturally stimulated a community scale arrangement, which coincidentally indicated an influential formulation of multifunctional community spaces. Thus, the combination of community, practices, lifestyle with the built and natural environment is the key in contributing to the elusive quality of Pettah's cityscape and hence the neighbourhood became recognized as a significant locus of social experiences. Neighbourhood as BV Doshi said "Is about pursuing celebration of life through the creation of varied experiences for all stakeholders in the city" (Chhaya et al. 2014).

3.2 Pettah—Identity, Morphological and Cultural Imagery

As the city grew, overcrowding and congestion of the core called for new planned extension beyond the fort wall. All the residents moved to the newer extension, continuing their commerce and trade from the native town. Even today, all the commerce and trade of the city are carried out from

Fig. 5 Photograph of Avenue Road at present, 2019

Fig. 6 Figure ground of a portion of Pete showing the street network and hierarchy, 2019

Fig. 7 Photograph showing the Katte and worshiping the duties under the tree, 2019

Pettah. Due to the increased demand for dependency, development and people's aspiration, Pettah today is highly stressed and is wrecking under its pressure. The present context is highly controlled by the vastly changed circumstances and desires. The ignorance of an understanding that in this city there exists a relationship between the community and their cultural imprint and the built environment and any change on the former would have a direct response on the latter and vice versa. Hence, due to changes laid upon the Pettah, one can observe disruption and disarray, leaving the nostalgic sentiments attached with the place to surface repeatedly, putting the core under the dilemma of the social demand to conserve the cultural image.

The profound influence of the place on people, culture and events on a place and of people on the place forms a symbiotic infinite loop of direct reactions. Therefore, any historical core of a city typically has to study these three potential catalysts under two categories called built imagery and social imagery so that one should be capable to apprehend the fact that the multifaceted engagement of people, places and events is to deliberate, record and study before proposing any alternative development in this area.

Name	Item traded	Caste	Temple
Akki-Pēṭē	Rice	Middle and Upper classes	
Anche-Pēṭē	Postal Communication		
Araḷe-Pēṭē	Cotton	Gonigas - gunny bag weavers	
Baḷe-Pēṭē	Bangles	Balijas, Telugu origin	
Chikka-Pēṭē	E-W Principal Street Gold and Silver Jewellery	Wealthy merchants	
Dodda-Pēṭē	N-S Principal Street Handicrafts	Akkasalas/ Goldsmiths, sub-sect of Panchalas	Kalikamba, located in Nagartha-Pēṭē
Gāṇigara Pēṭē	Oil	Ganigas/ Oil pressers	Chenniga-Rāya
Halasūru-Pēṭē	Area behind Halasuru Gate	Halasu in Kannada refers to Jack-fruit	
Huriō-Pēṭē	Yarn	Yarn makers	
Komati-Pēṭē	Various trades	Vysyas, traders	Venkataramana Swamy on Dodda-Pēṭē Road
Kumbara-Pēṭē	Pots	Kumbaras, Potters	
Manavartha-Pēṭē	Groceries	Bulk traders	
Muthyāla-Pēṭē	Pearl	Yerra/ Kilari Gollas, Cowherds and Brahmins	Ranganatha Swamy
Nagartha-Pēṭē	Trading post	Nagarta, Mercantile guild and Devangas, weavers towards the north Togatas, coarse cloth weavers	Chowdeshwari
Patnool-Pēṭē	Silk fabrics, Cotton carpets/ *Jamkhana*, Woollen carpets	Patnoolkarans of Vijayanagara, Weavers	
Rāgi-Pēṭē	Ragi grain	Staple food of working class	
Sunkal-Pēṭē	Lime-stone (*sunna –kallu*), mortar	Building industry	
Taragu-Pēṭē	Spices and Jaggery, Household articles	Shops	
Tigaḷara-Pēṭē	Horticulture	Tigalas, Horticulturists	Dharma-Rāya The Dharma-Rāya
Uppara-Pēṭē	Salt, Building construction materials	Vaishnava Upparas, Salt traders Gare upparas – plastering	Chennakeshava

Fig. 8 Showing Pettah organized based on cast, commercial activities and religious structures associated with that particular community. Reproduced from Sharma (2016), pp. 74–76

3.2.1 Built Imagery

Today, Pettah that once had a reputation as a centre for merchant and community activities has now become the central business district (CBD) of Bangalore. During the inception of Pettah, the hierarchy of streets was visually apparent with dominant commercial activities providing varying spatial experience for the people. Lynch's theory on paths, "characteristic spatial qualities were able to strengthen the image of a particular path", holds good concerning this layout. All the elements that are classified under isolated monument structure like the fort, granary, gateways, victory towers, etc., were seen as landmarks and place defining elements. The commercial typology along the primary streets had indigenous elements like the *Jagali*,[9] an outdoor veranda place where open stalls were set up displaying an array of goods being sold. The artful display of goods engaging the people visually and physically along the thoroughfare added a unique and rather an engaging social interaction with the street. This kind of interactive street fronts is what Jan Gehl encourages to have an engaging active street edge. This relatively new understanding of active streetscape that is spoken off by the designers had been used centuries ago as a tool in Indian cities. Unlike the node as defined by Kevin Lynch, in Pettah the communities that were organized around the religious structures are referred to as a node, not only defined physically by a built structure but also by the community activities contained within the space. The morphology of Pettah was made of urban components—the streets, public structures and the residential fabric—the design based on aesthetic beauty and traditional urban block (Krier 2007) and hence qualifying to be a good traditional city model that needs to be protected and shown to the generations to come along (Figs. 9 and 10).

Though it is seen that Pettah consisted of all the necessary visual components that will help people to associate with the place and built place image, most of the visual components today are wiped out under the development pressure. The nodes, the monuments, path defining spatial qualities are seen only in the recorded form of artefacts, paintings, photographs or in writings. The good city model with space-defining urban components is now laid under the uniform matrix of the urban fabric moving away from Krier's theory. The designers must understand that once the urban component seizes to exist, the spatial theories for preserving the place image would remain obsolete. Hence, any number of solutions attempted by the designers to preserve the identity of Pettah by re-examining the writings of history will lean towards inserting a manipulated architectural fragment into the contemporary context. This would add an imposed superficial cover over the past projecting a picturesquely built fabric that is visually appealing but cannot add a long-lasting perception on the place (Fig. 11).

3.2.2 Social Imagery

When we talk of social imagery of a place, the place should be studied with the lens of the sociocultural dimension and place as a container of the activities. In this context, it is seen that the community-driven trading activities like the *Akki Pete* (rice market), *Araje Pete* (cotton market), *Bale Pete* (bangle market), *Chikka Pete* (gold and silver market), etc., continue to function until date. Along with it, newer commodities like chocolate market, plastic market and verities of retail stores are functioning meeting the modern commercial demands. Though the people who once resided in the place running the family business have moved out of Pettah to newer layout, they continue to have their trading activities in Pettah. The strength of this shopping type is that multiple independent traders run it and there is some kind of adjustments between the chains of multiple stores. This complex network established between human interdependency and trade is a unique characteristic of this place. Removal of one trade type from the place would break this complex network, crumbling the system and existence of Pettah. The street nomenclature is given based on the community, and trading activity still predominantly exists on maps as well as people's memory. The presence of multiple community groups' means regular events and celebrations during the festival are common occurrences. During these celebrations, the streets, temples and neighbourhood pockets become the cultural centres. This temporal urbanism is very characteristic to an Indian city (Keshwani and Bhagavatula 2015), where the streets swell to accommodate thousands of people and the same time shrink to function as a movement corridor. This temporal nature of Pettah's street adds vibrancy to the place. Each part of the neighbourhood can be distinguished from the other through colour, texture, smell, language and lifestyle of that place. Usually, each part belonging to a particular community has a symbol in any form projected over the built fabric, giving local identity to that part. Most parts of Pettah are particularly vibrant with colourful flower and vegetable markets, smells and active and brightly lit frontages. Almost three quarters of the street frontages have active ground floor uses like shops, eateries, temples, workshops, etc. This adds varying character to the streetscape, breaking the monotony of any other modern streetscapes. At the building level, the symbiosis of activities and use of the spaces result in hierarchical spatial order that accommodates a multitude of uses throughout the day. The transitional spaces and soft edges merge the private and public, family and community blurring the line between inside and outside. It is this value system, meanings and association of the people with the place that lie

[9]Jagali—a connotation locally used for a ledge or an open veranda in front of a shop or house opening to the street used as a resting place or place for social interaction in regional language Kannada.

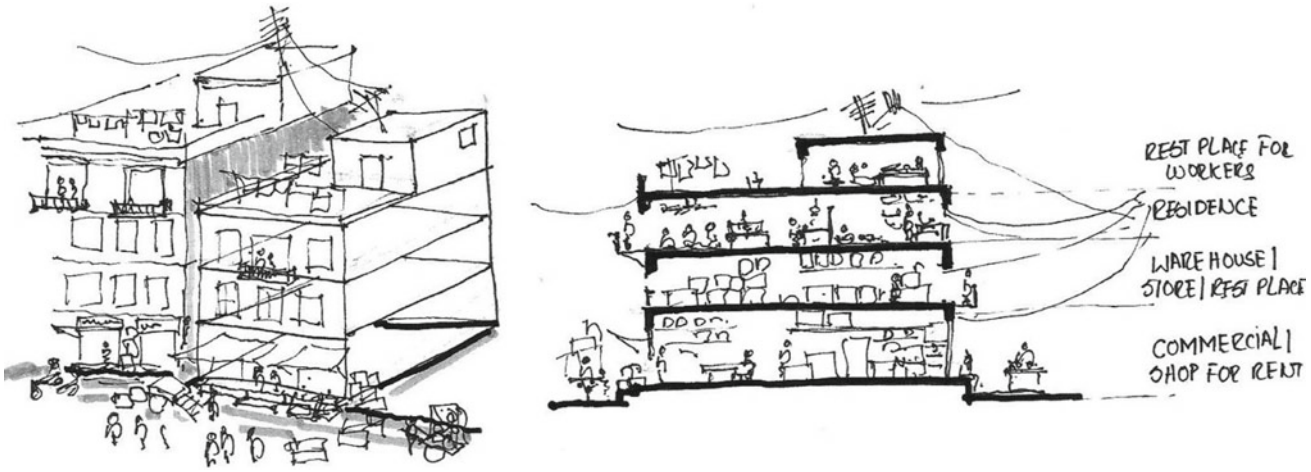

Fig. 9 Left—conceptual understanding of the relation existing between built environment and the street. Negotiation of public space and territorial claim. Right sketch shows the typical mixed use typology existing in Pettah and the activities within the building. Spillover of activity on to the street, Illustration by Author, 2019

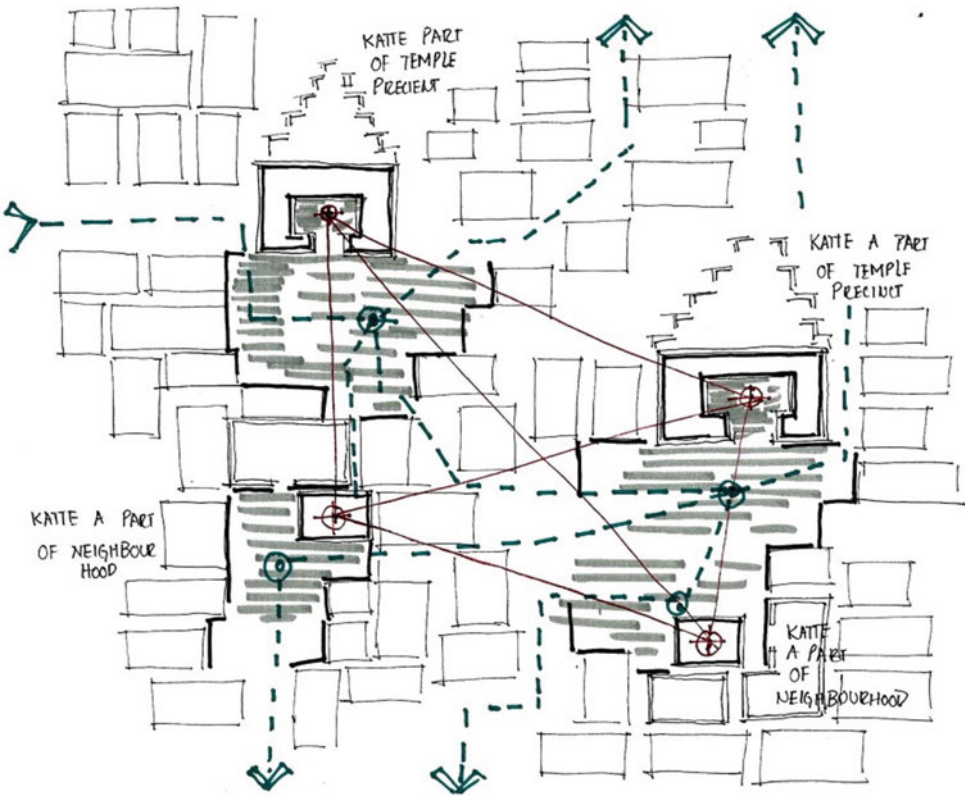

Fig. 10 Conceptual understanding of the presence of Katte and their spatial understanding as a node within the existing morphology, overlapped with the pedestrian movement—spatial and physical connotation, Illustration by Author, 2019

hidden under the surface and is deeply rooted in the intangible qualities of the place. It is this living memory that continues to exist through generations giving the true cultural imagery to the place (Fig. 12).

When Pettah is as a mosaic of sociocultural milieu and the value system that has stood the test of time even after erasing the physical environment which once contained it, how can we capture, contain and preserve these intangible non-quantifiable elements using just the spatial theories? Since the intangible association of the people to the place is the key for preserving the cultural imagery, new tools for analysing and recording the same need to be formulated based on trial and error methods to decipher what works and what does not.

Some of the Indian architects and planners like Charles Correa, BV Doshi, Achyuth Kanvinde identified this

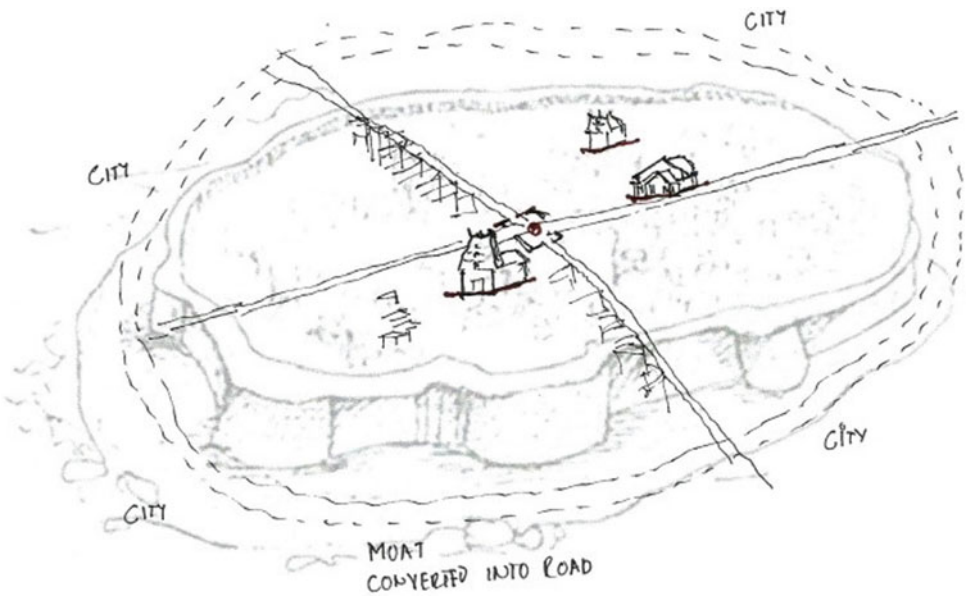

Fig. 11 Image showing the use of Leon Krier's urban component theory on mapping Pettah. Result shows the non-existence of visual and built component and hence lack of legibility and associated memory. Sketch superimposed over the base image of view of Bangalore, painting from 1791, British Library, Illustration by Author

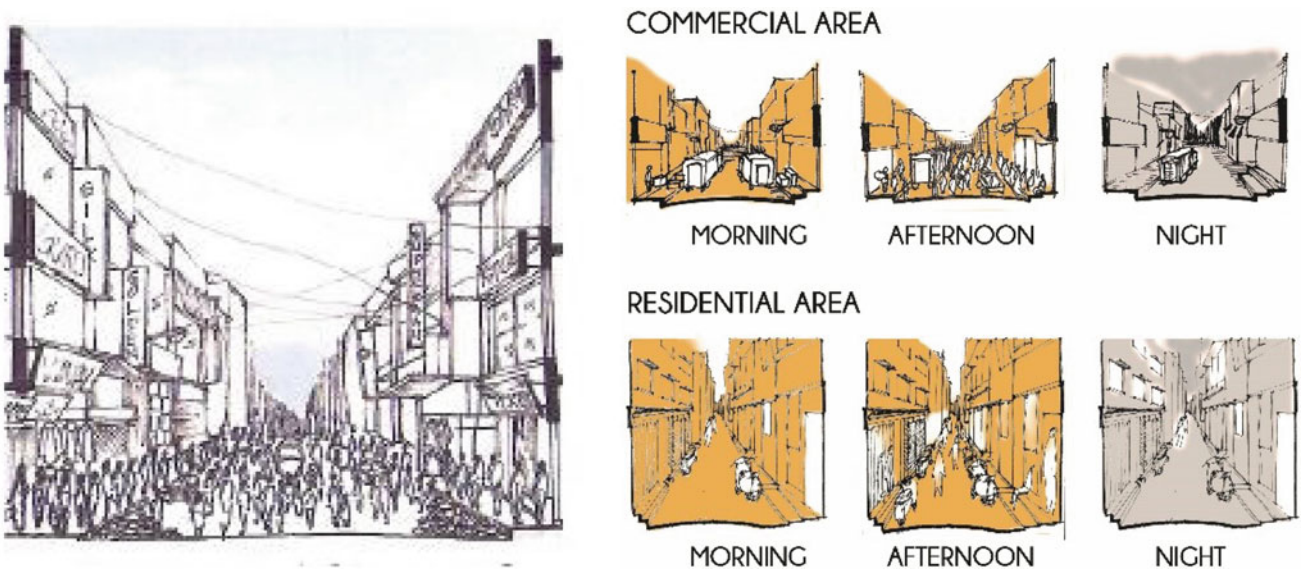

Fig. 12 Left, sketch showing the Avenue Road as a carrier of activities between buildings. The blurring of the inside–outside line. Right, sketches show the temporal nature of the streets through the clock-depicting activities between buildings

shortfall of the spatial theory method to analyse the cultural imageability of an Indian city and began to acknowledge the multifaceted cityscape of Indian cities. They started looking out for nuances for harnessing the intangibles. Though some attempts were made at the architectural level to quantify the intangible, efforts in analysing the intangibles at the city level are hardly attempted.

3.3 Analytical Tool Kit

Remembering, recollecting and preserving the imagery and identity of a place have achieved new importance amongst the designers as the contemporary cities are growing at a faster rate, eroding the past footprint and laid by a uniform grid that are producing disturbing experiences to the people.

The designers to analyse and record the spatial identity of a place establish many analytical tool kits but most often, the tools dwell on the architectural form of the city. Pettah, like any other traditional settlements of an Indian city, establishes its spatial identity of the place mostly by harnessing the intangibles and by the understanding of the role of architecture in shaping an urban fabric as an idea of space, context and its complexities. The idea of the notion of space and place with respect to spatial configurations, movement through space, shared spaces, communal spaces concerning people, activity and context is experimented to identify factors that influence the process to document and quantify the cultural imagery of the place. Hence, established were set of analytical tool kit with an attempt to capture the multi-faceted landscape of Pettah and they are as follows.

3.3.1 Designer as an Actor

Every city possesses a strong and distinctive character and identity. These attributes of a city vary between local, national and international identity. Here, the challenging question would be to know how one identifies the sense of place. One of the possibilities would be from the involvement and participation of the designer with the local people, their activity and culture within a city. Hence, developed the tool of "designer as an actor" where the designers are encouraged to engage with their environment in a 24 h daily cycle. The shift in their role between being a participant, observer and designer of his place has allowed them to subconsciously be aware of the impact that each role/character had on shaping their immediate urban environment (Fig. 13).

3.3.2 Role-Play as Stakeholder

The experience of life in a city involves encounters, relationships and experiences with people and built environment during the day. Participation with the city will result in developing an association, and continued association helps to create an impression of the place. Once the association is limited to a single encounter, the opinion made is based on conscious reaction. This we would call it the first impression (refer Fig. 14). The first impression becomes very critical in urban studies that will help to substantiate the intangibles of the place. Hence, role-play as a study tool is developed to observe and respond to the place concerning people, colour, noise, textures and aesthetics. The outcome allowed the designers to familiarize with the place and develop their opinion on the place gradually and constructively, getting absorbed into the place.

3.3.3 Colours of Pettah

To understand the vibrancy of the city that plays an important part in image-building exercise, it is important to understand the impact and role of colours in urban space. The photograph documentation of Pettah for the designers

Fig. 13 Board game developed based on the idea of monopoly to understand negotiation of space, meaning and movement

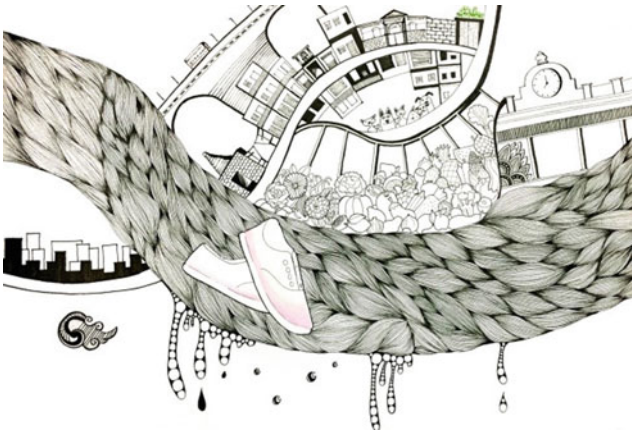

Fig. 14 Sketch of first impression of Pettah when seen through lens of a tourist

was to be taken as Pettah in black and white and Pettah in colours during different times of the day, week and month. With the finding recorded as colour charts of Pettah, the designers were able to observe the parts that were vibrant with colours and correlate it with the parts that were used dominantly by the people, and parts that were void of colours were not comforting for community engagement. This will indirectly reflect the public-ness and hence a vital place for placemaking.

3.3.4 Layering Technique

In any context study, conceptually understanding the essential elements and principles of placemaking set within a context by laying strong emphasis on understanding space and place concerning people and associated meaning is crucial. In a

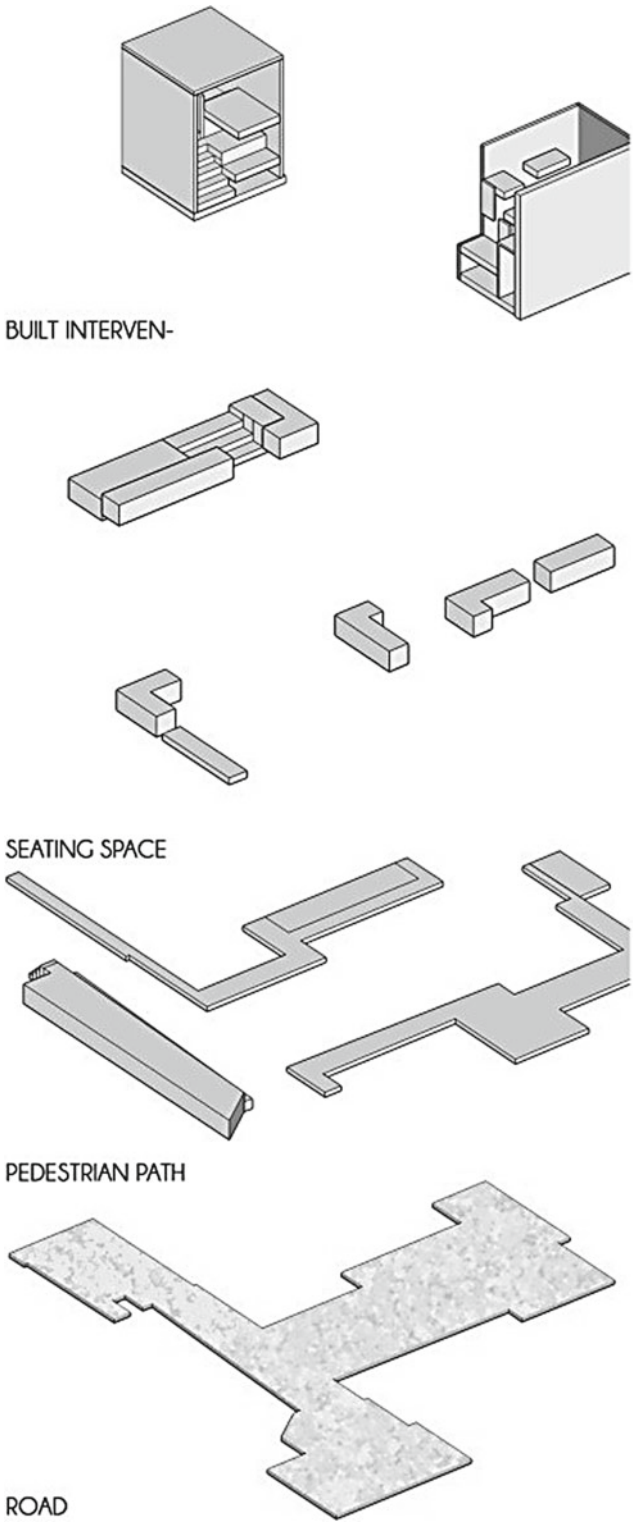

Fig. 15 Layering technique used to understand the relation between parts to whole. Shown is the conceptualization of relation between space, edge, threshold and built form

traditional set-up to decode this relationship between place and time, an attempt made to understand the changes the place went through in time by using layering as a technique. This will help to establish a relation between parts to the whole (refer Fig. 15). A design activity-based approach is established with an objective of placemaking under different contexts where they were to identify components of placemaking and to respond to needs of the community, function and activity in two different contexts. The outcome would allow designers to come up with a comparative study to understand the influence of context and community on placemaking having the same functional requirements.

3.3.5 The Grey Space

When cities in India are mainly composed of dynamic temporal spaces, there is a need to understand the nature of temporal and permanent activity set within a strong contextual surrounding. The ideas of a permanent and temporal space are explored at three scales, i.e. unite, cluster and at the community level, by identifying the basic ordering principles of space making as an exercise. The relationship between inside and outside spaces, and the idea of shared spaces/extended activity space as connectors are read as black, white and grey spaces, respectively, and accommodating the activities that are in relation to movement in space and time as yellow space. This intends to allow designers to explore the merger of inside and outside of the built environment through physical and cultural contexts and techniques to read them.

Along with these, people participation where the inhabitants are encouraged to participate in decision-making is also adapted. Other standard tools to record the visual identity of a place like way finding, landmarks, markers in space, etc. (refer Fig. 16), are used to arrive at a holistic approach to read the morphology both as build imagery and as social imagery.

4 Conclusion

The evolution and ordering principals of any city largely dictate how the subsequent growth of the area can be instantly comprehensive, especially when the incremental growth and adaptability are characteristic of any city. Growth and adaptability also mean that one can anticipate for loss of identity of the place. This issue of imagery and loss of identity has been seen as a larger issue as the contemporary cities are a hybrid of past merged with the future. Under such circumstances, it becomes necessary that we should always respect the unique formulation of their various morphology layers along with cultural imprints and accommodate them in the planning systems. When the cities are rich and vibrant bustling with activities like an Indian city, and the way the designers are talking of culture/identity and value preservation, the standard established spatial concepts for annotating an image of the place cannot be imposed directly. This concept sees the city through an objective lens and looks at the diverse–rich

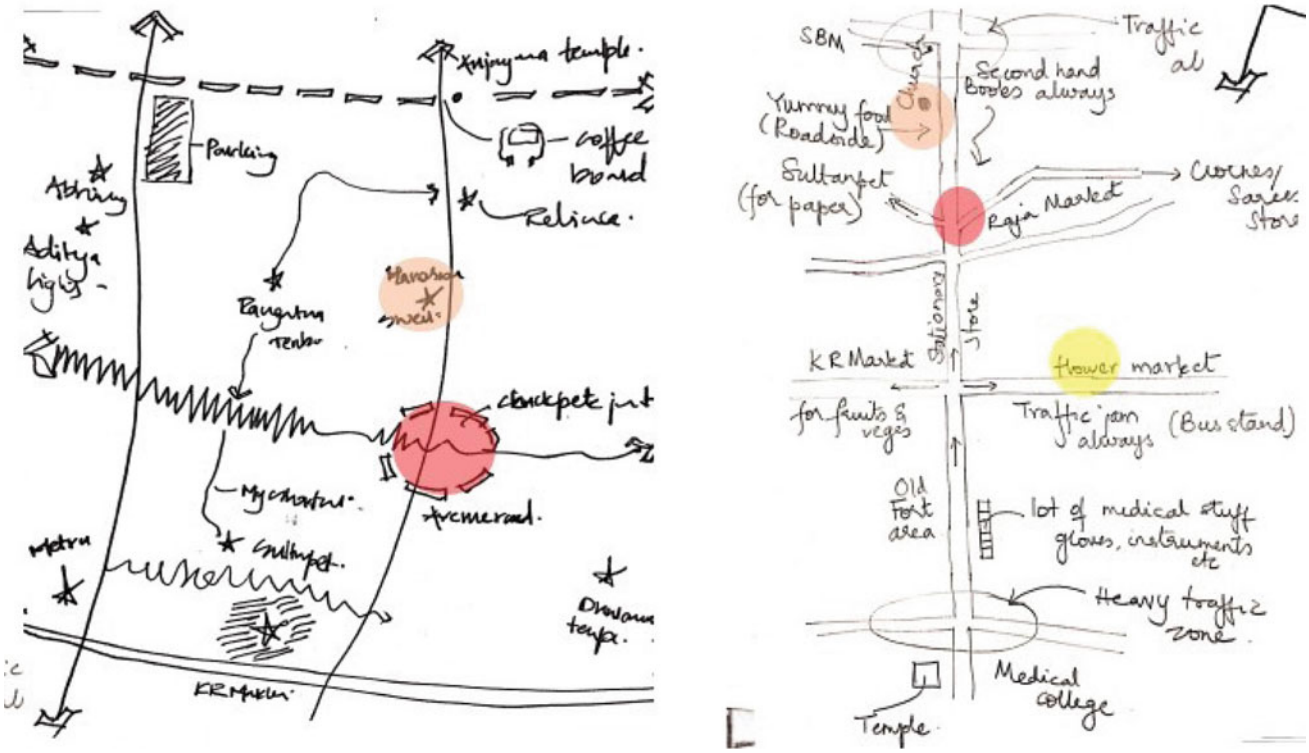

Fig. 16 Images showing the metal mapping of Pettah through people's participation

topography with a universal matrix, and when laid upon the cultural differences are flattened out into a monoculture landscape. Hence, the right tool to acknowledge these rich and diverse landscapes of an Indian city is established in an attempt to identify and record the intangible that is buried deep beneath responsible for preserving and continuing the associated memory with the place.

The finding from the study of built imagery and social imagery helped to establish that the appearance of the physical environment is not as important as to understand the value systems, meanings and association of people with the place. The findings from the set of analytical tool kit were established with an attempt to capture the multifaceted landscape of Pettah, with a hope to create a mosaic of an area based on varied characteristics and hence leading to establish a framework or policy—"Imageability Policy" for Pettah. The finding from the analysis is yet to be oriented towards arriving at tangible and qualified elements for preserving the imagery. Also, the study will arrive at objectifying the place as constant image and place as a changing image. The former would help us in formulating an imageability policy that can be applied to the Pettah to protect and preserve the image of the place. The latter will give flexibility to the city image by respecting the idea that our cities are constantly changing and so should the morphology of the place. It is also to be understood that over the test of time, the changing imagery could also become a parameter under constant imagery, opening the framework and policy to be amended.

The tools of analysis will be revisiting and adapted until the right tool to quantify the intangible is arrived at and hence calls for a back and forth continuing processes of investigation. Likewise, arriving at the framework and policy will also be ongoing research until the right type of control, and criteria for design are developed that will testify the bearings on the real decision. The finding of this research on quantifying the morphology and cultural imagery of Pettah will be applied to other Indian cities to test analytical tool kit. If the research proves to be positive, the findings will be a powerful determinant for visually diagnosing any Indian city's cultural imagery.

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Public Art from Symbolism to Randomness: The Missed Role of Art in Urban Open Spaces

Samaa Badawi

Abstract

Since ancient times, art played a significant role in people's life. It fulfills their spiritual needs and represents their culture. Art is a powerful tool for shaping the spirits, minds, morality, and emotions of people. As with any other aspect of life, art has its periods of prosperity and crumble. Before, public art had been represented in art pieces displayed at museums, but then, the meaning extended to art in outdoor spaces. The scope of this research is public art installed in open spaces. The main aim of the study is to shed light on the lost role of public art in Egyptian cities in shaping the cultural and social life to help fighting this phenomenon and reviving the role of art in the community. The research revealed that the absence of having a comprehensive plan that controls the construction and installation of art pieces in open spaces and the ignorance of the artists' role in the community are the most important reasons behind the problem of randomness of art in public spaces.

Keywords

Public art • Urban spaces • Sculptures • Interactive art • Kinetic sculptures

1 Introduction

The term "public art" generally describes works of art in any form costumed for outdoor spaces and accessible to all (Januchta-Szostak 2010). The notion of public art was much expanded after the Second World War (Knight 2008). The purpose of public art is to please people, brighten their life and enrich their spirit. The willingness for spiritual fulfillment through art is inherently human as art has historical value that represents traditions and characteristics of particular communities (Sussman 2013). The relation between art and urban spaces is deeply rooted throughout history. Urban space represented the scene of meeting between art and people as is the drive to congregate and share experiences (Mitrachea 2012). The relation between public art and open spaces has developed and changed through different periods, and it has many faces. For open spaces connected to museums, they are conceived as an introduction to the museums, affected by their function and provided a limited social interaction. Open spaces unattached to museums but contain pieces of art are designed to reflect the ideas of the designer or in some cases to reflect what is meaningful and significant from the power figures point of view (Miles 1997). The role of art in urban spaces is pivotal, and it humanizes impersonal spaces, promotes good behavior, develops deteriorated areas, and prevents vandalism. It is a way to recover featureless urban spaces and put them on the map as public spaces (Greyworld 2012).

The relation between art and cities is not a new invention. History is full of examples where city authorities intentionality supported art in order to gain competitive advantages, measured either in the form of reputation, prestige or simply by enhancing the attractiveness over similar cities (Bourdieu 1986). The relation between public art and political life is very close. This relation can be classified under two streams. The first one is the top-down stream in which art plays a powerful tool for political figures to guide people's thinking and direct their point of view (Miles 1997). The second stream is down-top art represented in street or community art. Street Art is an artistic activity that is based on a community setting, characterized by interaction with the community and involving a professional artist collaborating with people. It referred to as "the art of the subaltern and of political protest," (Naguib 2016). Street Art encompasses various forms of visual arts created in public spaces such as graffiti and calligraffiti (Abdulaziz 2015; Arnoldi 2015; Zoghbi and Karl

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2012). Street Art represents the voice of the community claiming for democracy and freedom (Community Art 2018).

The types of public art are widely varied such as sculptures exhibited outdoors, which are considered as the most popular type of public art. Sculptural work is to create a precious piece of art which responds specifically to its site and links it with the wider landscape, Street Art and urban intervention art represented in land art, site-specific art, lighting, paving, and street furniture which can give an area quality and a unique character (Miles 1997). With the amazing progress in technology, the interactive art emerged. Interactive or kinetic art is created by merging technologies and materials to produce interactive artworks which provides the opportunity to people to engage with a piece of artwork and gives a sense of ownership over the work (Becker 2004).

The natural evolution of art went through different stages. The first stage was the two-dimensional drawings, and then, artists developed perspective drawings in three dimensions, as well as three-dimensional sculpture. Recently, new media artists around the world are exploring the intersection of art and science in the fourth dimension, which is time. Their art changes over time; it communicates and interacts with the viewers (Gschwend 2015).

Egyptian art always occupied a proceeding position over time; however, recently, the role of art retreated as unusual phenomena began to spread around the different Egyptian cities. Many ugly sculptures and statues, which do not follow any aesthetic standards and do not have any spiritual meaning, are constructed randomly in open spaces causing visual pollution and censure of people. Those sculptures destroy the role of public art which is to enrich the aesthetic, cultural, and moral values in the community. Accordingly, the main aim of this study is to shed the light on the lost role of public art in Egyptian cities in shaping the cultural and social life in order to help fighting this phenomenon and reviving the role of art in the community. The research focuses on the general phenomenon of public art randomness in the Egyptian cities without focusing on a specific city in details.

2 Aim and Objective

The main aim of the study is to shed light on the lost role of public art in Egyptian cities in shaping the cultural and social life to help fighting this phenomenon and reviving the role of art in the community.

3 Methodology

The research started with a historical background to display the emergence and development of public art through history all around the world. After that, an analytical study of the status of public art in Egypt was performed in order to track the changes happened to the concept and form of public art. This analysis ended up with showing the deterioration happened and the reasons behind it and showed that there are some individual trials to enhance the concept of public art emerged in order to fight the randomness of art.

4 Literature Review: Public Art Throughout History

Throughout history, art played a vital role in shaping the profile of the city and its social and cultural life. Sculptural art is one of the most popular types of art and is stressed in this research besides the other types. Looking back over the long history of sculptural art, it is obvious that sculptures in public places have been developed in different ways to serve different purposes such as spiritual and religious purposes or for memorizing history or even purely for art and decoration. The earliest found sculpture belongs to the Aurignacian culture, which was located in Europe and Southwest Asia (Mellars 2011). The lion-man found in the Hohlenstein Stadel area has been dated to about 40,000 BP, making it the oldest known figurative art (Cook 2017).

In ancient times, different cultures made sculptures using variety of materials and techniques and stimulated by different reasons. The Kingdom of Egypt is one of the oldest human civilizations and the most ancient known in Africa from which artworks have remained. The art with its various shapes and types occupied a prominent position in Egypt since ancient times. People used to record the deeds of their kings and draw their daily life on walls. They created terrific statues for Gods, Kings, and prominent persons in the community. The design of such statues still considered as an inspiring art for design and craft. The accuracy, the ratios, and the details are all factors, which attract attention and put the ancient Egyptian art as the most leading and inspiring art (Philippe de Montebello 2018).

The monumental sculpture of ancient Egypt is world famous. Egyptian art was originally created for religious and magical purposes. Ancient Egyptian people began making sculptures around 3100 BC. Sculpture is the most representative form of ancient Egyptian art (Hartwig 2014). Ancient Egyptian statues ideally were made of stone or other durable materials, such as hardwood or metal. Their features and poses were idealized, and they were represented according to the general standards for the beauty and dignity. Each statue was made as an actual living being and was destined to live eternally. In ancient Egyptian art, even the color of everything is a clue and it has symbolic meanings (Wilkinson 2003). Egyptian art demonstrates a keen observation of nature, and many subtle indications of musculature

and bone structure reveal that artists were well aware of anatomy since (Watts and Girsh 1998).

About the same time of ancient Egypt civilization, other civilizations such as Ancient Mesopotamia and Persian Produced distinctive artworks. In Mesopotamia, during the period 3000–2800 BC many sophisticated art works were produced such as Guennol Lioness which is an outstanding small limestone figures composed of human parts and lion parts. The Assyrians created a very finely detailed grandiose art in palaces and public places, which intended to match the splendor of the Egyptian empire art. In addition, the early art of Mesopotamia affected the later Asiatic art especially in India and China (Hall 1928). In Central Asia between fourth and seventh century, Greco-Buddhist sculpture art was developed. The sculpture is characterized by the strong idealistic realism, and it is considered as the first representations of the Buddha in human form. In China, nearly all large religious sculpture is Buddhist, dating mostly from the fourth to the fourteenth century. In Japan, during the period expanding from the third to sixth century, figures of humans and animals in a simplistic style were erected outside important tombs. In the fifteenth century, monumental sculpture became largely architectural decoration (Kossak and Watts 2001).

Moving to Europe, Ancient Greece had its first distinctive sculpture in the Early Bronze Age where marble figures are represented in an elegantly simplified geometrical style. Starting from the sixth century, Greek artists reached a peak of artistic excellence which captured the human form in a way never seen before. They used great details in body parts describing movements to make them look more alive in narrative scenes. The detailed muscles and facial features set the new standards for creating sculptures at the time. The ancient Greece sculptural art continued its development during Classical period as free-standing statues were mostly made in bronze and also during Hellenistic periods as sculptures greatly expanded the range of subjects represented such as children with animals placed in public places (Cavendish 2011). By the expansion of Roman Republic victory over Greek territory, official and patrician sculpture became largely common and the design of Roman Sculptures affected greatly by the Greece Sculptures (Rizakis and Lepenioti 2010).

At the same time of the Early Medieval and Byzantine, another civilization which is the Early Christian was opposed to monumental religious sculpture; however, during the Carolingian and Ottonian periods, there were the beginnings of a production of life–size monumental statues. This gradually spread by the late tenth and twelfth century. The Renaissance period was marked by a great increase in patronage of sculpture by the state for public art. Public sculpture remains a crucial element in the appearance of historic city centers during fifteenth and sixteenth century. In Baroque sculpture, groups of figures assumed and there was a dynamic movement and energy of human forms and designed to be placed in large space. During seventeenth and eighteenth century, statues of rulers and the nobility became increasingly popular (Boucher 1998).

Moving to Americas, America's sculptures were initially made out of stone and later of terracotta and metal monumental.

In the eighteenth century, art represented an important agent in shaping the spirits, minds, morality, and emotions of a broader audience. It was considered as a powerful educational tool for the population at large, which is used for magnification of the past besides its aesthetic value. During the nineteenth century, the number and fame of museums reflected the cultural image of the city, and most public art sited in open spaces represented in statues and memorials. At the beginning of the twentieth century, the concept of aesthetic museum replaced the educational museum concept, and works of art were engaged with aesthetic value and shifted away from the social as it became an increasingly introspective experience. Late twentieth century and early twenty-first century public art became an institutionalized and professional attempt. It depended on political, economic, and other factors which tend to push it toward specific directions (Mitrachea 2012). Since the late 1960s, contemporary art works and craft have increasingly been located in city squares, plazas, parks, and gardens (Roberts et al. 1993). 1980s witnessed the birth of public art as a profession, which serves urban development, and a hybrid form of sculpture, painting, photography, and architecture were used for city regeneration (Mitrachea 2012). It is clear that in all periods, the role of good public art remains to integrate the creative skills of artists into shaping urban environments (Dan 2018).

Art trends and art innovations constantly try to claim the status of public art that is supposed to convey existential meaning and symbols which individuals are able to percept and understand through an act of identification (Norberg-Schulz 1974). The form and function of public art especially sculptures have witnessed a dramatic change over time. Sculptures have been developed from the early figurative works mirroring the human form as discussed above, to the more recent abstract depictions. A clear example of such transformation is the ten of the life size bronze sculptures of the French artist Bruno Catalano called "Les Voyageurs" in Marseilles. The statues depict realistic human workers with large parts of their bodies missing. The missing parts of the sculptures stimulate imagination and evoke queries—are they missing something, or is it something that these "voyagers" have left behind? Another impressive point is that some of the sculptures seem to stand on very little support, giving them a sort of surreal appearance as can be seen in Fig. 1 (Catalano 2013).

Fig. 1 Les Voyageurs in Marseilles sculpture. *Source* (Catalano 2013)

Fig. 2 A sculpture in Barcelona. *Source* (Syahputra 2017)

The concept of one-way communication between the viewer and the sculpture, where the viewer only views and the art is forever still, and passive is another side that has been developed and changed by time as well (Gschwend 2015). The public art transformed to be interactive either in a simple way such as designing the statue in a position and form which stimulates the viewer to interact as the example of a statue in Barcelona where a man carrying a suitcase looking in a hurry which encourages people to stop and have pictures with funny positions with the statue, Fig. 2 (Syahputra 2017).

The development of technology has a pivotal effect on shifting art to a higher level of interaction (Edmonds and Muller 2008). Sculptures have progressed from stationary monoliths to kinetic sculptures (Wang et al. 2012). Sculptures became active and designed to interact with the viewer and to change over time (Gschwend 2015). Interactive art is useful in engaging multiple people and increasing the level of social connectedness (Jun Hu 2013). There are many examples of interactive art all around the world. One of the successful examples of kinetic art is: "As We Are" sculpture by artist Matthew Mohr which welcomes different visitors with their diverse cultures. The sculpture is composed of a head shaped which slowly rotates through a database of faces. The guests can pose for pictures that will be featured on LED screens, Fig. 3 (Sierzputowski 2017).

Fig. 3 As we are sculpture. *Source* (Sierzputowski 2017)

As is evident from the previous discussion, art plays many important roles in society. Its aesthetic value illuminates people's lives in addition to the spiritual meaning that enriches their souls. On the other hand, art occupies a pivotal cultural and educational position in society because it perpetuates history and reflects culture throughout the ages. Moving to the political dimension, art represents one of the communication channels between people and the government. The next part of the research will study the role of Egyptian art from the nineteenth century until the present.

5 Analytical View of Egyptian Public from Nineteenth Century till Now

In Egypt, the period during the nineteenth and twentieth century witnessed a wide creation of statues for politicians, artists, and key persons in the community and allocating such statues in open spaces and squares to immortalize the history of those persons. Those statues were made very accurately by creative artisans such as examples of those statues, Ebraheim pasha statue Fig. 4 and Laz Oghli pasha Fig. 5 and so many other statues that decorated Cairo's and other Egyptian governorates squares telling the history and the critical events of modern Egypt (Lababidi 2008). The concept of creating statues and sculptures in public spaces continued as a top-down type of art with aesthetic, educational, and immortalizing value.

A turning point in the Egyptian public art occurred after January 25, 2010. In that date, the Egyptian revolution blew up. Thousands of activists convoked people through social media such as Facebook and Twitter and convinced them to protest against Mubarak (Puspitasari 2017). Millions of people turned out in cities, especially in Cairo's Tahrir Square protested against Mubark and shouted for Karama (dignity) and Hurriyah (freedom). On February 11, 2011, Vice President Suleiman announced that President Hosni Mubarak stepped down (Bakr 2016) after 18 days of high tensions between the police and protestors. This crucial period of the Egyptian life yielded a very creative type of art "the Street Grafittee" which represented the voice of the community to the government. Street Art is about having a voice to bigger societal movements and events, a voice that has often been marginalized (Findlay 2012). Since then, the Street Art gained more power and spread in the Egyptian public sphere.

Fig. 4 Ibrahim pasha statue. *Source* (Lababidi 2008)

Fig. 5 Laz Oghli pasha statue. *Source* (Lababidi 2008)

It is worth mentioning that Street Art in Egypt was often found in contained settings and used mainly for advertising purposes (Dawson 2003; Naguib 2011; Parker and Neal 2009), but after 25th of January Revolution, Egyptian Street Art was used for a variety of purposes: expressing political demands; criticizing the regime; congratulating people on the revolution; memorializing the revolution's martyrs, and showing solidarity with other Arab revolutions. Within a short lapse of time, it became an integral part of the revolution itself and started to be seen with glory, and graffiti artists were perceived as resistance fighters. Graffiti artists and drawings were acknowledged by journalists, bloggers, and activists and gained a widespread recognition as a different means of communication (Zakareviciute 2014).

During that time, Street Art characterized by a sense of optimism about Egypt's future. In this way, it played a role in the creation of a new public sphere in Egypt, where awareness about issues concerning citizens is raised, topics previously regarded as taboo are highlighted, and debates about what can be done about them are conducted. A clear example of Street Art at that period was when the government put up barriers in the street to restrict public movement. Street Artists painted huge murals over the barriers, such as one on Sheikh Rihan Street in Cairo, where the barrier was cleverly painted by seven artists to depict the illusion of the

Fig. 6 Sheikh Rihan street graffiti. *Source* (Don Karl AKA Stone 2013)

Fig. 7 Street Art in Egypt after 25th January. *Source* (Don Karl AKA Stone 2013)

street as if the wall did not exist (Khatib 2013) as in Figs. 6 and 7 which show graffiti for the revolution martyrs. Many researches, articles, and books were issued to archive such graffiti which is a clear example of community art. This period represents a down-top art with spiritual and immortalizing value.

By the time and in the context of the changes happened in the political, social and economic life in Egypt, the Street Art faded out. Instead, a random type of art emerged on the top. Malformed statues and sculptures mushroomed all around the Egyptian cities. Such structures lack not only the aesthetic values, but they lack the required spiritual message and meaning that any piece of art should deliver to people. As a result, they were met by a severe wave of booing. It was evident in the social media platforms and news. For example, what had happened after constructing Nefertiti head statue in Samalut city entrance Fig. 8. This sculpture offends the long and great history of ancient Egyptian art that was discussed before. This example repeated at a wide range all around the Egyptian cities horribly as so many other cases of the poorly crafted sculptures have recently reared their ugly heads across the country.

After 6 months of the construction of Samalut Nefertiti sculpture and after the massive cynical attack of people on social media platforms, the statue was removed and replaced by another one which follows the astatic standards designed by professor Gamal Sedki a professor of Al Minia fine art college Fig. 9.

This example and many others trigger many questions. Who is the responsible of constructing and instaling such statues in public spaces? If the professionals and talented artists are existing in Egypt since ancient time until now why public art is assigned to people who distort its image and destroyed its meaning? If the social media platform can transfer people's opinion effectively about art pieces to the officials and their voice can affect the existence or removal

Fig. 8 Samalut Nefertiti head statue. *Source* (Alnagar 2015)

Fig. 9 New Samalut Nefertiti head statue. *Source* (Saber 2016)

of art pieces as the case of Samalut sculpture so why those voices are not listened to at the early stages of designing public art to save time, effort, and money exerted in installing ugly statues then replacing them with appropriate ones? Despite the fact that, Prime Minister has issued a decree banning the construction and restoration of all statues, murals, and sculptures in public squares without prior authorization from both the Ministry of Culture and the Ministry of Antiquities (Mada 2016), why the series of assaulting art and civic sense and distorting public spaces still incessant? Another important question why did the Street Art with its significant role as the voice of the community fade out and remain only the top-down art? So many questions need answers and those answers represent the first step toward fighting the phenomenon of public randomness.

On the other hand, some individual trials for creating sculptures, which were made by artists and students from fine arts colleges, were highly appreciated by people, and this was clear from their comments on the social media platforms as the case of Mall Miser statue by artist Ahmed Mousa Fig. 10. The artist Mohamed Mousa explained that he chose the woman steps out from the box to represent freedom and starting off, and the location of the statue in front of the mall is suitable as the shopping centers represent important destinations for women to buy their needs. Another positive example is the Sad Clown by artist Mohamed Banawi Fig. 11. Banawi explained his idea behind designing this statue by saying that, "however the clown is a person like anyone else who has his own problems and sorrow, he forgets all of them once steps on the stage to make people laugh and forget their problems". Banawi wants the viewer to see the other side of the clowns' character. Banwi wants people to interact with his statue by adding a mirror next to it so people can watch themselves reflected in the mirror in a different and funny way (Life Tales 2017).

The horse statue, which was made entirely out of scrap by artist Hossam Hussein Fig. 12, is another positive example which reflects the creativity of its designer. This statue was highly appreciated and gained extremely positive comments on social media, and it reflects the idea of how neglected and useless materials can be transformed into a piece of art. Unfortunately, this statue was distorted by the municipality as they painted it which reflects the randomness and irreverence in dealing with art and culture (Gamal 2017). In addition to the mentioned examples, there are many others of bright works; each one of them carries a deep message which can be transmitted clearly to the viewer and appreciated by them.

Fig. 10 Mall Miser statue. *Source* (Alez 2019)

Fig. 11 Sad Clown statue. *Source* (Life Tales 2017)

Fig. 12 Horse statue. *Source* (Masrawi 2017)

6 Results and Discussion

The previous discussion reveals that throughout history, Egypt was a fertile land of art and still until today. It has plenty of very talented artists at both the professional and individual levels. Those artists are capable of producing remarkable pieces of art and participate in creating a memorable image for public spaces. The Egyptian people showed a high awareness of appreciating good art and criticizing distorted artwork. The social media platform showed their ability to distinguish between the authentic and tacky artwork. In some cases, the comments, ridicule, and criticism they posted on social media helped in correcting the situation, but of course, it will not be able to eliminate the random public art phenomenon.

The significant reason behind the problem of Egyptian public art is the lost role of the responsible institutions of controlling the whole process of providing open spaces with art pieces throughout different stages. In the first place comes the absence of creating a comprehensive art plan which studies and controls the needs of each space from different types of art; as a result, the random types of art spread in open spaces all over the Egyptian cities. In the second place comes the problem of marginalizing the role of the real artists and talented persons in the community and assigning public art to non-professions who lack the required skills. It is evident that the Egyptian society is vibrant with the needed professions as the examples displayed in the research shows. The third reason is the ignorance of critic from public and critic from outside the institutions of art. The fourth reason behind the failure of public art is because it concerns only a limited sector of the community "the non-educated sector" and working in the public interest should address a wide range of human concerns. The fifth reason behind the problem of public art in Egypt is neglecting the "community art" as one of the essential types of art the down-top chain, which represents the voice of people; and focusing only on the top-down art which affects by the complicated relationship between the immixture of political and economic agents and decisions at the top and the public at the bottom who rarely acknowledge such art in their ongoing social and spatial interactions. Understanding the reasons behind the problem of Egyptian public art is the first step toward solving the problem and reviving the lost role of art in the community.

7 Conclusion

The significance of public art is clear throughout the history. It played an important role in shaping the culture, social, and political life in the whole world. Egypt occupied constantly a high position in the domain of art; meanwhile, in recent years, the concept and role of public art have retreated. This happened due to many reasons among them, the practice of non-specialist and the absence of a clear plan for organizing such practices. Another reason is the ignorance of people's voice. At the same time, many individual trials have appeared to fight this (phenomenon) and to prove that there are many talented artists who can restore the (aesthetic) and functional values of public art and can contribute to the development of the social and cultural aspects of the society. The placement of the appropriate persons in the public art domain and considering the voice of people may contribute as initial steps to solve the problem of Egyptian public art.

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How to Predict Environmental Attitude by Neighborhood Sense of Community

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Abstract

The environmental attitude is interested with the relationship between human and its environment, as a subject of environmental psychology. Environmental problems that come up with the industrial revolution have led to increasing awareness and consciousness on the environment since from 1970s in the scope of sustainability. It is expected from the persons who have conscious on environmental issues raise awareness and conscious at the community level as well. Normally, it is expected from the community members that have strong environmental awareness and conscious to be alive and have strong social relations. Neighborhood scale should be considered as the core place to build community and ensure social sustainability. This study aims to reveal the experimental relationship between environmental attitude and sense of community and determine how various socio-demographic objective variables explain subjective environmental attitude variable. Oral interviews applied to the inhabitants of Kultur Neighborhood from Duzce City as our study area. Linear regression model was conducted to test the experimental relationship between the concepts of sense of community and environmental attitude, and one-way ANOVA and t-tests were operated to learn relationships between environmental attitude and socio-demographic variables.

1 Introduction

Together with environmental movements since from the 1970s, the perception of environmental issues and people's attitude on them has been investigated by several researchers. Most of the researchers noticed that the increased level of attitude and awareness for environmental issues at the individual level would raise consciousness and to take an effective role for community level. In recent years, several studies have also been conducted suggesting that the increase in environmental volunteering is effective in increasing sense of community and community engagement (Omoto and Packard 2016; Kalkbrenner and Roosen 2016). The development of environmental sensitivity and attitude may help to consider the future of the community which means a better physical environment contributes to a better social environment.

Macias and Nelson (2011) explained the relationship between environmental concern and social capital, and they claimed that the persons who have strong social ties are mostly impressed by ecological approaches on environmental protection. However, there are few experimental studies revealing the relationship between the sense of community and environmental attitude. This study aims to predict the environmental attitude by neighborhood sense of community.

2 Environmental Attitude

Environmental attitude is accepted as a part of environmental psychology and has been considered with psychological tendency stated by evaluating the environment with a favor or disfavor perspectives (Milfont and Duckitt 2010). "Environmental attitude" is a term that used in environmental psychology literature to refer to environmental concern. Most researchers use these terms as interchangeable, whereas others revealed the differences between them

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(Milfont and Duckitt 2004). Schultz et al. (2004) defined environmental attitude as the composition of beliefs, affect, and behavioral purposes a person considering environmentally related activities or issues.

Some researchers claimed that environmental attitude has cognitive, affective, and behavioral components. According to Kaiser et al. (2007), conceptualizing environmental attitude as the behavioral tools by which people perform these beliefs emphasize a connection between behavior and attitude of a person.

Even if most of the people could be worried about environmental issues, they have different justifications for these worries. Schultz et al. (2004) classified environmental attitudes under three value groups and labeled as biospheric, altruistic, and egoistic. Whereas biospheric values focus on the well-being of all living things (e.g., animals, plants), altruistic values focus on other people (e.g., family, friends, culture), and egoistic ones are oriented personal goals (e.g., social power, leadership, wealth). Kaiser et al. (2007) suggest that environmental attitude has only two components as preservation and utilization. They claimed that preservation is about protecting and conserving of the natural environment; in contrast, utilization is described as the use of the natural environment by people as the beneficiary.

3 Sense of Community

The sense of community is related to the social capital term, and it reflects the feelings of attachment and belonging of the persons toward their community (Pooley et al. 2005). According to McMillan and Chavis (1986), sense of community has four components: membership; influence; integration and fulfillment of needs; and shared emotional connections. Membership describes the feeling of sharing a sense of personal relatedness. Influence means that making a difference to a group and the group matters to its members. Reinforcement refers to the feeling that resulted from the resources by membership in the community. The last element is shared an emotional connection, such as the engagement and belief that shared by the members of a community such as history, monumental buildings, and shared experiences (McMillan and Chavis 1986). Whereas sense of community with its four components has a prevailing definition, it was studied as both multifactorial (Zaff and Devlin 1998; Peterson et al. 2008) and uni-factorial scale (Prezza et al. 2001; Davidson and Cotter 1986; Nasar and Julian 1995). As mentioned in Talen (1999), environmental variables would affect the social contacts in terms of frequency and quality and this contributes to creating group formation and social support. Group formation could be increased by social contact, proximity, and appropriate spaces. Social theorists blame industrialization, modern lifestyle, the loss of local autonomy, fear of crime, and privacy for the decrease in the sense of community (Nasar and Julian 1995). Therefore, environmental attitude can be seen related with sense of community. Several socio-demographic variables such as age, gender, income level, education, race, homeownership, and presence of children have been found as related with psychological sense of community (Hill 1996).

4 Study Area

Duzce city as our study area is located in the north part of Turkey, and it has rich socio-demographic diversity due to its historical background and location that migrated from other cities. It is reasonably important to protect the environment since the drinking water of inhabitants of Istanbul is to be supplied from the vicinity of Duzce city, and having consciousness of those who live in this area is important. Kultur Neighborhood in Duzce City was determined as our study area. This neighborhood was selected because of its location as the rooted core of the city and the cultural richness of the city as having been hosting different ethnic and social groups such as Turks, Circassians, Abkhazians, and Georgians. The neighborhood is the oldest settlement area in the city, and compared to the other neighborhoods, it has a higher socio-cultural level. This situation makes an impression about people who have been living in the neighborhood would be sensitive aboutenvironmental issues (Fig. 1).

4.1 Method

The oral interview that widely used in social sciences was used as a research method in this study. The random sampling method was applied to 200 inhabitants using face-to-face interviews. The sample size with a 95% confidence level and 5% confidence interval was determined as 200. However, only 121 questionnaire forms were evaluated due to their validity. The survey required approximately 15 min for each participant. A two-page questionnaire was developed to measure environmental attitude, sense of community, and demographics. Environmental attitude and sense of community scales are given in The Appendix. Even if there are many environmental attitude studies, only a few environmental attitude scales have validity and reliability. The behavior-based environmental attitude was measured using items from Vaske and Kobrin (2001) scale, and sense of community was measured by Lund (2002) and Nasar (2003) scale. A Likert-type scale with five points from strongly disagree to strongly agree was appointed to scale items. Exploratory factor analysis was run on environmental attitude scale items for data reduction, and the scale was

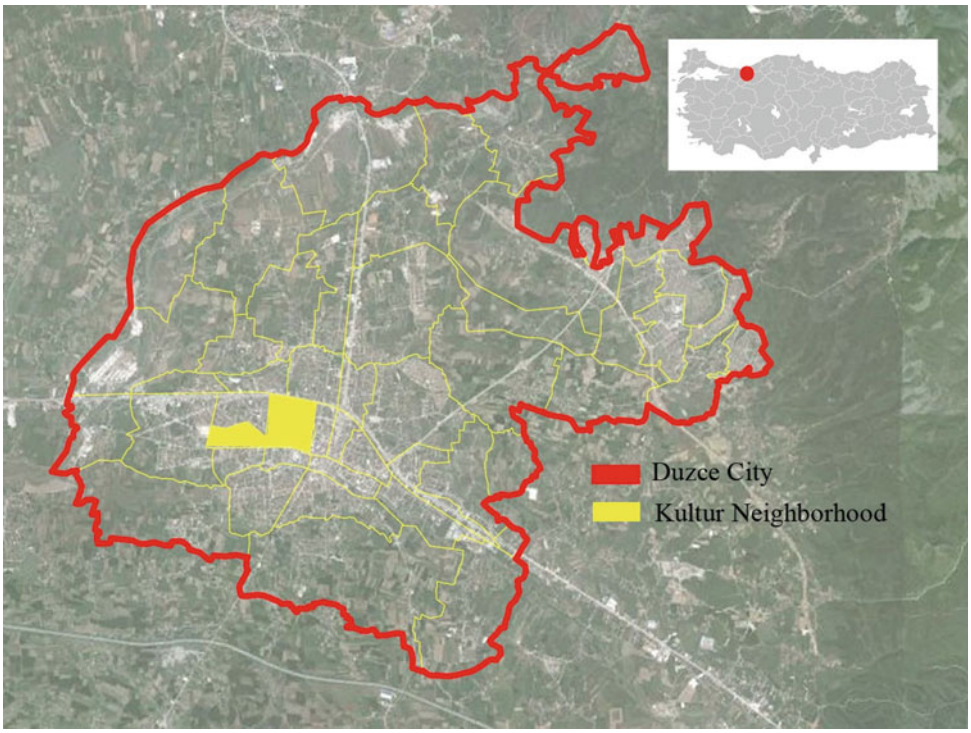

Fig. 1 Study area, Duzce city center

considered as a unifactorial scale. One-way analysis of variance (one-way ANOVA) was applied to demonstrate the relationship between socio-demographic variables and environmental attitude scale, and the linear regression model was conducted to explain environmental attitude by contribution sense of community and socio-demographic variables.

5 Results

In the case of Keiser-Meyer-Olkin value lower than 0.50, the analysis cannot proceed. Besides, the factor loadings of the variables are needed to be more than 0.32 in the exploratory factor analysis (Çokluk et al. 2010). Respectively, we found K-M-O value with 0.83, factor loadings over 0.32 and total explained variance with 59.59% as shown in Table 1.

The relationship between socio-demographic variables and environmental attitude scale was revealed by one-way ANOVA in Table 2. While a small *p*-value (typically < 0.001) indicates a strong relationship between the socio-demographic objective variables and environmental attitude, a large *p*-value (<0.05) indicates a weak relationship between the socio-demographic objective variables and environmental attitude. According to one-way analysis of variance, environmental attitude shows significant differences among socio-demographic groups. Environmental

Table 1 Environmental attitude factor analyses

Environmental attitude	Arithmetic mean of each item	Factor I
a. Learning how to solve environmental issues	3.48	0.841
b. Talking with others about environmental issues	3.63	0.838
c. Trying to convince friends to act responsibly	3.72	0.832
d. Talking with parents about the environment	3.92	0.824
e. Join in community clean up efforts	3.34	0.708
f. Use renewable energy resources	3.66	0.676
g. Reduce energy and water consumption	4.27	0.659
Arithmetic MEAN		3.72
Alpha of scale		0.89
Total explained variance (%)		59.59
Keiser-Meyer-Olkin		0.83

attitude of middle-aged persons was found higher as compared to young persons. In terms of occupation, environmental attitude was found as higher by the people who had their own businesses and workers/officers as compared to unemployed ones. Environmental attitude of large families who are more than five persons was found as higher than in small families. On the other hand, the persons who have been living alone were found as having the highest environmental attitude. Gender, education, income level, place of birth, and homeownership were found as unrelated to environmental attitude (Table 2).

Linear regression analysis was applied with sense of community, environmental attitude, and socio-demographic variables. Whereas environmental attitude assigned as dependent variable, sense of community and socio-demographic variables were assigned as independent variables. Sense of community and socio-demographic variables could statistically significantly predict sense of community, $F(9.11) = 4.632$, $p < 0.001$, and these dependent variables accounted for 27.5% of the explained variability in environmental attitude. The regression equation was: predicted environmental attitude = 0.96 + (0.57 x sense of community) + (0.03 x gender) + (0.06 x age) + (−0.02 x education level) + (0.11 x income level) + (−0.05 x occupation) + (0.01 x number of persons living together) + (0.27 x place of birth) + (0.01 x homeownership) (Table 3). These results present environmental attitude which could be predicted by both sense of community and socio-demographic variables.

Table 2 Relationship between socio-demographic variables and environmental attitude

		Factor I
Gender	Female	3.66
	Male	3.76
	F	0.34
	Post Hoc	
Age	<26	3.21
	26–35	3.84
	36–45	3.78
	46–55	3.98
	55<	3.63
	F	2.55*
	Post Hoc	46–55 > under 26
Education level	Elementary school	3.99
	Junior high school	4.01
	Senior high school	3.55
	Junior or community colleges	4.04
	Undergraduate programs	3.62
	Master's or doctoral degree	3.40
	F	1.77
	Post Hoc	
Income level (TL)	<1000	2.26
	1000–3000	2.79
	3000–5000	2.70
	5000–10,000	2.51
	F	1.47
	Post Hoc	
Occupation	Own businesses	3.61
	Own businesses and employer	4.41
	Worker/Officer	3.94
	Not employed	3.44
	F	4.41**
	Post Hoc	Own businesses and employer, and Worker/Officer > Not employed

(continued)

Table 2 (continued)

		Factor I
Number of person living together	1	4.17
	2	3.22
	3	3.78
	4	3.69
	5+	3.91
	F	2.64**
	Post Hoc	5 + > 2
Place of birth	Duzce city	3.72
	Outside of Duzce city	3.71
	F	0.002
	Post Hoc	
Homeownership	Yes	3.75
	No	3.67
	Other	3.77
	F	0.124
	Post Hoc	

$N = 121$ *$p < 0.05$, **$p < 0.01$, ***$p < 0.001$

Table 3 Linear regression predicting environmental attitude

	Environmental attitude model	
Variable	B	β
Constant	0.96	
Sense of community	0.57	0.49
Gender	0.03	0.02
Age	0.06	0.09
Education level	−0.02	−0.03
Income level	0.11	0.12
Occupation	−0.05	−0.06
Number of person living together	0.01	0.02
Place of birth	0.27	0.15
Homeownership	0.01	0.01
R^2	0.275	
F	4.63***	

$N = 120$ *$p < 0.05$, **$p < 0.01$, ***$p < 0.001$

6 Discussion

In order to interpret correctly environmental attitude and sense of community, social structure should be defined with all dimensions and dynamics. Every community has own dynamics that is affected by different parameters. Firstly, the environmental consciousness and the awareness about the actual environmental problems should be increased to develop the environmental attitude. This consciousness and awareness could be at different levels for different social groups. We run a one-way analysis of variance (ANOVA) to reveal the relationship between socio-demographic variables and environmental attitude.

Stronger environmental attitude has been identified more often in younger by Corbett (2005), more educated by Casey and Scott (2006) and females by Zelezny et al. (2000) (as

cited in Lee et al. 2013). However, some researchers found that gender is not related to environmental behavior or men have a stronger environmental attitude. These results indicate that gender differences are not consistent in environmental studies (Lee et al 2013).

Consistent with our study, Aminrad et al (2011) found that age and education level are correlated with environmental attitude. According to Plombon (2011), most of environmental supporters are younger, better educated. Klineberg et al. (1998) found a positive relationship between income and education as well (as cited in Plombon 2011).

While we found homeownership had no relationship with environmental attitude, some researchers put forward that tenants consume less energy than homeowners (Rehdanz 2007).

Environmental attitude is found as positively related to large families who are more than five persons. According to Frederiks et al. (2015), the sharing of energy services in larger households leads to lower energy use each person which means the relationship between energy use and household size is reversed considering on individual level. The household structure affects the total energy consumption considerably, such as the number of people in the household or the number of people going to work daily (Frederiks et al. 2015). As an exception, we found that the people who are living alone had a strongest environmental attitude. This result may be related to their occupation which means that the significant number of workers and officers in the city have been living alone who also tend to be a stronger environmental attitude.

7 Conclusion

The relationship between the environmental attitude and the sense of community that is theoretically stated in the literature was experimentally explained by linear regression analysis. The reason why the finding a highly predictive relationship between sense of community and environmental attitude could be resulted from closely related to these two concepts. Moreover, our results reflected the results of earlier studies considering relationship between sense of community and environmental attitude. Therefore, this study gains credibility in the light of the previous studies. Ross and Searle (2019) suggest that actively used physical space and experienced neighborhood environment are effective on the development of sense of community. Pei (2019) demonstrated the positive effect of community relations on the neighborhood scale on waste recycling intention. Development of sense of community was found significantly related with the community-directed behaviors (Theodori 2018).

Development of social bonds and relations in any place would increase awareness, consciousness, and sense of responsibility toward that place where it is experienced. Similarly, living together with the persons who have developed environmental attitudes and sensitivities would empower the community and contribute to sense of community. At this point, the sense of community needs to be developed to solve environmental problems and to increase environmental consciousness of the societies. Sense of community may be possible for the places where people share common experiences and have a certain design quality and character. Therefore, urban planning and design become quite important to create places to build strong and healthy communities. The social structure is also affected by the ever changing, demolished and reconstructed places, then the sense of community is also damaged. This case leads to the insufficient progress of commonplace culture and environmental consciousness among the people who are part of society. Future studies should incorporate other behavioral-oriented actions and emotional measures of the community by considering perceived physical space. One of the constraints of this study is that there is no questioning whether there is a barrier that preventing environmental attitude at the community level.

Appendix

Items in the environmental attitude scale (Vaske and Kobrin 2001).

a. Learning how to solve environmental issues	1	2	3	4	5
b. Talking with others about environmental issues	1	2	3	4	5
c. Trying to convince friends to act responsibly	1	2	3	4	5
d. Talking with parents about the environment	1	2	3	4	5
e. Join in community clean up efforts	1	2	3	4	5
f. Use renewable energy resources	1	2	3	4	5
g. Reduce energy and water consumption	1	2	3	4	5

Items in the Sense of Community Scale (Lund 2002; Nasar 2003)

a. There is a close relationship between people living in this place	1	2	3	4	5
b. If I feel like talking, I can generally find someone in this neighborhood to talk to right away	1	2	3	4	5

(continued)

c. I am quite similar to most people who live here	1	2	3	4	5
d. People here know they can get help from others in the neighborhood if they are in trouble	1	2	3	4	5
e My friends in this neighborhood are part of my everyday activities	1	2	3	4	5
f. If there were a serious problem in this neighborhood, the people here could get together to solve it	1	2	3	4	5
g. If someone does something good for this neighborhood, that makes me feel good	1	2	3	4	5
h. If I had an emergency, even people I do not know in this neighborhood would be willing to help	1	2	3	4	5
i. People who live here help poor and needy people	1	2	3	4	5
j. People are greeting in this place	1	2	3	4	5
k. This place is advanced in neighborly relations	1	2	3	4	5

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Conservation of Urban and Architectural Heritage

The last part of this volume builds upon knowledge established in previous parts and delves further into the importance of preserving urban and architectural heritage, the experience associated with them and maintaining continuity. Looking to build their own attributes, cities are now on a mission to ensure that their urban growth contributes toward distinctive urban identities.

That being said, in the chapter titled "Historic Cities in Karnataka: Policies for Conservation, Growth and Sustenance; Case of Badami and Kampli", challenges of present planning methods and development tools and techniques imposed on heritage districts, are discussed. The planning approaches currently used recognize and delineate only a selection of historic structures and ignore the complex and multilayered factors affecting their construction over time. The researchers question this unilateral approach and examine the impact of the planning decisions and damage they reflect. This chapter introduces the ways in which historic preservation can be connected to urban planning.

This part highlights the importance of preserving historical assets by restoring missing parts, properly designing targeted interventions and proper presentation of heritage and more. In "Shaping a Town's History Through the Enhancement of Its Ancient Fortifications Within the Traditional Town Net: The Case of Galaxidi, Greece", the author looks into the Hellenistic fortification of Galaxidi, Greece, and establishes a correlation between plans to show out the original layout of the structure and its enclosure, old structures and the way the existing town was shaped. Factors influencing the continuity of habitation of the town and its physical shaping are pinpointed and analyzed. The chapter aims to contribute to an understanding of the town's history and habitation issues to improve the image of the town and heighten self-identity.

The author of "Urban Fabrics, Transport and Identity: A Case Study From Karlskrona, Sweden" uses historical material to show evolution and explain morphological dimensions of modern cities. He uses the theory of *automobile fabric* to identify leverage points for urban sustainability transitions based on transport modal shifts. A case study is presented from a world heritage listed city in Sweden. This chapter's output is useful in the suggestions provided on how the city could capitalize upon its cultural legacy and engage with its past to strengthen its future identity.

The Elegance: A Strategy to Evaluate and Develop a Cultural Heritage

Sara Ferhat

Abstract

Recognition and classification of the built heritage were mainly based on three worldwide adopted values: history, architecture, and aesthetic. Nonetheless, the significance and importance of the cultural built heritage has broadened through updated academic research works and policies. According to the updated "agenda 2030" the above mentioned criteria are somehow restrictive and additional ones such as resilience, sustainability, safety and well-being are to be considered. In respect to the built heritage, whatever the identified scale is, a single piece of art, a cultural site or a historic city, new approaches call for making sites and human settlements inclusive, safe, resilient and sustainable by strengthening efforts to protect and safeguard the world's cultural and natural heritage. My work focuses in gathering these features into the framework of elegance as a mean of rethinking the cultural heritage to provide flexibility, when it comes to deal with the recognition and usefulness of the cultural heritage. This study is firstly aimed to bring to light the concept of elegance and enlarge the vision on the heritage values identification. Secondly, this research put face to face this concept and the latest ICOMOS Sustainable Development Goals, which recommend the priority of introducing the cultural heritage as an inclusive tool to social and economic development. Finally the work explores the significance of the concept through the case of the Algiers Bardo Museum, monument. The results showed that the elegance concept, can be used as a tool, to measure the accuracy of a cultural heritage, when preservation and development are targeted.

Keywords

Elegance • Cultural heritage • Visual perception • Preservation

1 Introduction

Algiers is a cultural mosaic of civilisations and built heritage witnesses, however a lot needs to be known and highlighted. The Bardo museum, located in the heart of Algiers could be considered, when it was still a private residence (Ministere de guerre, 1840), as the archetype of seigniorial residence (Golvin 2003). In fact, this summer palace was built during the Ottoman's regency (fifteenth century) in Algiers and until now, one can notice the refined art of its architecture and the dominance of its luxury gardens that takes ones emotions to the Granada Moorish palace. "The framework of cultural values where conservation of built heritage rests on, has significantly changed in the last decades. Conservation is inherently a part of modernity" (Del Curto and Luciani 2016).

2 Purpose

This paper aims to promote the profitability of the Bardo museum, which shows a subexploitation despite the richness of its history and the beauty of its architecture. It is rarely visited except by professionals or curious people. This cultural monument remains ignored.

The objective of this research work is, to find the useful way to make this cultural heritage more attractive. An aim endorsed by Del Curto and Luciani (2016) since they state that "a challenge to building conservation is today, how quick cultural, economic and social values of the built heritage can be reassessed, as an attempt to upgrade the classical view and make it more up-to-date, in a rapidly changing society, is thus to talk about significance."

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Built heritage monument may keep on (Bronner, A. 1939), if they are conceived not just as a goal for the collective memory preservation, but also as a part of those limited resources, thus necessary for a sustainable development.

3 Methodology

Approaches are varied when the question of glorifying the built heritage is laid. This paper focuses on the concept of elegance, to show up the importance of a building as regards to its impact on the user's changing mood and well-being. According to Milne (2011 pp. 10), "the perception of a close bond between object and subject is the aesthetic experience." These visual impacts are freely associated to aesthetics philosophy which "fits comfortably in the development of historic and cultural policies. Historical heritage has its origin in both architectural studies as well as conservation of heritage."

Moreover, and according to Charvilla et al (2009), "researchers in the field of imaging science have started to contribute a growing set of tools for cultural heritage, thereby providing indispensable support to these efforts." They (Charvilla et al (2010), added to confirm that "Processing and analysis of visual cultural heritage data is a very challenging field that does not merely exploit and apply standard techniques, already developed in other application domains, but often entails original research that is specific to this domain. A case in point is the methods for modelling the color degradation of paintings and the methodologies for their virtual or physical restoration." These studies demonstrate how far the visual perception is important when it comes to deal with the cultural heritage preservation and resilience.

The visual perception leads us to image the usefulness and impact of the well-conceived architecture on the users' mood. Visual and sensorial perception are well tied with the concept of elegance that the Larousse dictionary defines as the" Quality of what is expressed with accuracy and pleasure, with a sober clarity" and adds that elegance is the "Quality which is characterized by a grace made of harmony, lightness and ease in the form and the lines, in the arrangement and the proportions of the parts, in the movement." Valery (1957) said that elegance is "The art of not being noticed allied with the subtle care of being distinguished." Accordingly, this work looked at the power of elegance.

4 Theoretical Approach

Nathan and Brancaccio (2013), argued that "the researchers could test a single molecule, instead of experimenting thousands of almost identical clones of the original one. It is hard to deny that this more selective alternative would be preferable: in addition to being more **elegant**, it would save the research team a massive amount of time and resources"

> Elegant thinkers have been able to go beyond the boundaries of conventional research, guided by their willingness to open new avenues of research or shedding new light on old questions. Much of current scientific research is focused on problems that have narrow scope, sometimes too narrow. Specialization is a characteristic and important feature of contemporary science.

Brancaccio and Marco (2013), House, P (2015), concluded their research, "that elegance has an important role to play in scientific research." Moreover, Kuhn (1970) commented on the link between philosophy and elegance to say," We believe that history and philosophy have a role to play in everyday scientific practice, not only when crises occur. Historical perspective and philosophical reflection are not tangential, but fundamental components of scientific research. In particular, they allow us to develop the features of science that make it elegant and better understand why an elegant mind is a propeller for scientific progress."

5 Experimental Work

The concept of elegance which rests on the way of perceiving by means of sight, the convey of those restful feelings and well-being, is approached in this research, by exploring some of the painting work to show up the influence of the architecture and its elegance on the artist's perception and feeling, while working on the Bardo museum architecture (Fig. 1). For this purpose we tempted firstly to understand the painter sensorial perception while progressing on his drawing, by analyzing the color, the light and the visual field where the architectural and natural features, affect the painter while reproducing the scene on his easel and admiring the monument (Fig. 2).

Second step, we tried with a group of students to take some pictures (Fig. 3) from the same position that once used by the painter to see, at what extend the painting was accurate and good enough to be used for the restoration of the built heritage whenever it is needed.

The third step of the work, was to evaluate the kind of mood the monument produces on the users, whatever the aim of their presence on the site is. With regards to the painters feeling, this research focuses on the written description of the scene and the vocabulary used, such as luminous, amazing, wonderful, peaceful, charming, colorful, healing…etc. to figure out the well-being of the site's describer.

Finally, the work went on, looking at the vocabulary expressed by the Bardo museum visitors, published by the museum website, altogether with their description of the monument, in such a way to explore their visual perception and their mood (Appendix A).

Fig. 1 Images of the marble courtyard, perceived by the students and the painter

Fig. 2 A scene of the Bardo museum garden painted by Leon Carré (1848). *Source* Internet free of charge

Describing the marble palace courtyard, Rossi (2012) shows a deep emotion of admiration when she says "Three galleries frame the luminous courtyard of their colonnades and their horseshoe arches. One of these elevated cross-beams, sinks and narrows as a watchtower, which dominates the orchards and the countryside of the littoral." On the other hand while she uses light color, sun and shadow equilibrium, one can guess that she was in a state of plenitude provoked by the quietness and harmony of the atmosphere.

Historians and conservation architects had advanced the discussion on heritage values by arguing that aesthetically appealing buildings were easier to preserve, based on the visual appeal. Buildings that were not aesthetically appealing, were often just as important to preserve because it's more about the feeling the building conveys through stories, times gone by, connecting the past with the present that brings shape toward the future (Fig. 4).

Lise Milne (2011) says that "the historic buildings represent the past and provide some insight into what people did, the life they lived "scenario shown in (Fig. 2). "These stories provide some insight into the values of a particular time in history." A statement that was confirmed by this work, while surveying into the Bardo museum (previously wealthy residential palace).

Fig. 3 Perception of marble courtyard from the same angle of view (students and painter)

Fig. 4 "The perceptible charm of an everlasting way of life" (Gabriel Darbeda, Architect 1915–1920)

The well-being and happy emotion experienced by the students and the visitors showed once again that the preservation of the built heritage can be promoted through the saving of the genuine features.

On the other side, the assessment of the C. Rossi painting description of the Bardo palace, joined the Paul Landau (2002), statement of the deep emotional feeling, when he says "that images change depending, on who is looking at them and showing how images have both underwritten, and undermined, the hierarchies that governed colonial Africa."

"If there are histories of text (writing and printing), and of orality (folktales and oral traditions), then perhaps there could be a history of images in the same vein."(Stanley Fish 1980, pp.146) "This does not mean, however, that no such strategy could ever come into play, and it is not difficult to imagine the circumstances under which it would establish itself." Sabih et al. (2011), publication attested that "Humans rely upon their eyes, more than any other sense, to assess the world around them. We see effortlessly, and we see every waking moment of our lives; even when we sleep we "see" dreams. With such familiarity comes a sense of dependability and for most of us only "seeing is believing"; thus, the surprise and fascination when we look at optical illusions"

6 Conclusion

The work I undertook confirmed that preserving the built heritage can be achieved by means of investment through the visual and sensorial perceptions of the way of life scenario that the history of the built heritage offers.

The experimental work we achieved while visiting the Bardo Monument with a group of student, showed that while the museum's guide, was telling the story of the ancient occupants from the noble society and how they used to host their guests, took the students, for a while, back to that period of time were they felt the good emotions and carried away into that atmosphere.

Some of the museum website (Appendix A), confirm the emotional feeling of the students while visiting and taking pictures of the monument. In the same line, Rose those sensorial perceptions expressed by the Bardo museum visitors and borrowed from the published feedback (2019, 2006), Rose and Brown (2015), Zavagno et al. (2015) while working on the perception phenomenon, said "We start from very different fundamental assumptions – about reality, the nature of mind and perception – so we express ourselves in a variety of specialised terminologies, which can lead to mutual incomprehension. Yet in the end, won't our apparently conflicting views, on the nature of perception and how it works overall, turn out to be merely different perspectives on the same underlying mechanisms?"

On the other hand, Del Curto and Luciani (2016) stated that "…a better connection among the goal of sustainability and resilience may favour a better understanding of the social reason for such a commitment and the quest for a closer connection between a social-based views of cultural heritage."

Heritage buildings may keep a place among the "weak subjects" worthy of protection if they will be conceived not just as a matter of collective memory (more or less controversial, rare, authentic and also expensive) but also as part of those limited resources, thus necessary for a sustainable development, and as lesson of resilience against the ravages of time. Those arguments lead to the fact where health and well-being, that a cultural built heritage offers, are to be considered in the way of working on the sustainable built heritage in the way one can observe and react to the object (buildings, sites and cities) elegance. New values and vocabularies, are nowadays developed to promote the cultural heritage. The elegance accredited by the visual and sensorial perception is a cultural research updated vocable.

The paper outlines some key ways and contemporary vocabularies developed to enhancing the sustainability of the cultural heritage and to introduce the historical monuments in a prospective vision, for social and economic development. "The quest for elegance can make science better even when elegance is not achieved. Hence, this quest should be a goal of all scientists" (Casadevall and Fang 2018).

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Appendix A

A Web survey showing up the rating of the Bardo museum and the visitor's perception of the site.

"Very nice visit

Bardo Museum in two centers of interest. First the exhibition on the archeological excavations then the discovery of the palace itself. Beautiful home with very refined ceramics that reflect the life of a prince of the 18th with all his family and his traditions. A small flat, we would like the rooms are a little more furnished to **imagine** the way of life of the inhabitants. Fortunately, the kitchen, the hammam and a woman's room allow to project the **refinement** of the time. Impeccable home"

"Magnificent

An exceptional place filled with history and tradition, I loved visiting this museum with my family and rediscovering the history of Algiers the "white""Beautiful building

The museum is a big word but the construction is self-sufficient. A **dive** in the nineteenth century Algiers.

"Very beautiful place
Very nice place to visit without moderation… Style, history, construction, gardens… Mosaic at the top. Do not forget your **camera.**..
"A proud crucible
The architectural **elegance** of this wonderful site and proud of its civilizational and cultural values that it represents with great harmony"
"Beautiful little palace
Beautiful Moorish home. Well preserved. **Live** the history of Algeria, from the architecture and clothing side, art, the palace with these different aspects".
"Always a pleasure
My best place to visit, a beautiful museum, I'm in love with its architecture, the meaning of every detail, the fountain in the middle, the view, Just **jubilant**."
"A **return to the past**
The architecture of this museum is absolutely beautiful. It is very pleasant to walk in the garden, in addition there is almost no one feels like living in another era. A must."
"A **beautiful** monument but…
It is a beautiful monument, located in the center of the capital, we spend good moments of **relaxation** and serenity, but what a pity the restoration work was conducted in a poor way without respecting the materials and the original motifs! It is a pity."
"A palace with a **beautiful** garden
A beautiful palace with a beautiful garden residence of the Ottoman era on the heights of Algiers overlooking the bay of Algiers, many vestiges anthropological, I advise the visitor to be assisted by a guide specialized in anthropology or archeology to understand the history of the city of Algiers"
"To visit and visit over again **without moderation**!
Authentic Moorish palace dating from the Ottoman era and transformed into a museum of natural history (The Bardo Museum Website, 2019).

Appendix B

Some of the dignitaries' occupants of the Bardo palace throughout history.

Date	Occupants	Status	Status
1830	Mustapha Hadj Ben Omar	Wealthy Algerian owner (dignitaries.)	Private
1846	General Rémy Joseph Isidore Exelmans	French military officer	
1868	M. Baccuet	French Architect	
1875	Ali Bey, Agha de Biskra	Algerian dignitary	
	Mr. Bacri	Wealthy banker	
1879	The Domains redeem the Bardo Villa		Public
1955	The site host the CNRPAH (National Center for Prehistoric, Ethnographic and Historical Research)		
1985	Ranking of the Bardo villa as historical monument by the Algerian cultural authority		

Appendix C

The concept of elegance attracted the scientists, designers and writers' interest. We cite some of their comments and arguments.

1. Alyssa Goodman of the Harvard Smith-Sonian Center for Astrophysics, said: "there is something about the way things fit together, a kind of fluidity. If it is done right and elegantly, you do not see all the individual parts, because they all fit together in a way that looks like a whole."
2. The journal of Nature nanotechnology, published in 2010 report that: "when a theory or a model explain a phenomenon clearly, directly and economically, we say it is elegant. It added that: "one idea easy to understand, can account for a large amount of data and answers many questions."
3. Goodman says about Newton's law of notion which relates force with mass an acceleration, she says " is one of the most elegant findings in science."
4. When he was asked about the significance of the concept of elegance, Robert Sapolsky replied "you know it when you see it."

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Urban Fabrics, Transport and Identity: A Case Study from Karlskrona, Sweden

Giles Thomson

Abstract

The theory of urban fabrics outlines how different types of cities are combinations of walking, transit and automobile urban fabrics based on their dominant transport systems. The theory was developed to explain the morphological dimension of modern cities. As automobile urban fabric dominates most modern cities, the theory has been used to identify leverage points for urban sustainability transitions based upon transport modal shifts. But prior to the trains and automobiles, water-based transport modes were common in many coastal settlements, and traces of this transport mode may be observed in the urban morphology at the city's water interface. This chapter presents a case study from the world heritage listed naval city of Karlskrona in Blekinge, Sweden. It describes Karlskrona's urban pattern in relation to walking, transit and automobile urban fabrics, as well as introducing elements of a possible new classification *waterfront urban fabric* that have developed around water-based transport. This research assesses historic maps from Blekinge Museum to show the evolution of the city in relation to these dominant transport modes. Finally, it offers a few suggestions about how the city might capitalise upon its valuable and iconic maritime cultural legacy to re-engage with its past and in the process strengthen its future identity.

Keywords

Urban fabric • Transport • Urban identity • Waterfront • Karlskrona

1 Introduction

The 'urban fabric' of a city is the sum of its buildings, public realm and infrastructure, it comprises all the built landscape that we create to live in, work in and relax in. Urban fabric tends to respond to the transport-related opportunities that are provided in a city, and these can be described in terms of the 'theory of urban fabrics' (Newman et al. 2016).

1.1 The Theory of Urban Fabrics

The theory of urban fabrics was developed by Newman et al. (2016) to help planners see that there are three main city types, not one (automobile fabric) as has been suggested by modernist city planners since the 1940s. The theory enables planners to create strategies for managing the different urban fabrics to highlight how some urban fabrics have inherently more sustainable properties that need to be optimised and extended to other parts of the city through new development on the fringes or through infill strategies within existing urban area. Urban fabric is shorthand for describing the urban environment (or urban morphology) that results from the different types of underlying infrastructure within a city. Urban fabric includes transport infrastructure, such as road or rail technology, building setbacks, road patterns and widths, which in turn shape the form of the more localised infrastructure of buildings, open space and utilities.

Newman et al. (2016) identify three dominant urban fabrics: walking urban fabric, transit urban fabric and automobile urban fabric. Most cities have a mixture of all three urban fabrics (Fig. 1); the key characteristics of each are described below.

Walking urban fabric

Walking cities are characterised by dense, mixed-use walking urban fabric of generally more than 100 persons per hectare. These are the oldest typology, and this fabric

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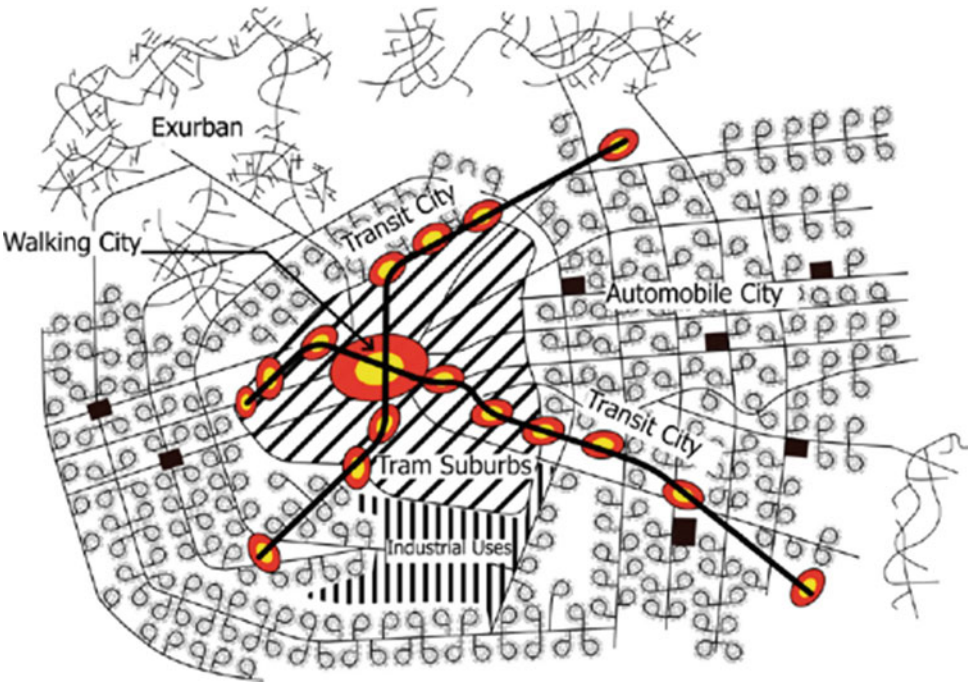


Fig. 1 Automobile city, transit city and walking city: a mixture of three city types. *Source* Newman and Kenworthy, 2015

dominated until the 1850s. Many modern cities are built around a nucleus of an older walking city, but they struggle to retain the walking urban fabric due to the competing automobile city fabric which now overlaps it (Matan and Newman 2016; Newman and Kenworthy 2015).

Transit urban fabric

Between 1850 and 1950, trains, followed by trams from the 1890s, extended the old walking city. Trams and trains supported corridor development of transit urban fabric with typical densities between 35 and 100 persons per hectare, yet higher density walking fabric still remained around transit stops. The increased speed of the transit urban fabric allowed development to extend 20 km or more from the centre. Transit city fabric has had a considerable revival in recent decades and is the preferred location—along with walking city fabric—for knowledge economy jobs such as education, hospitals and health professionals, and consulting services, with the highly spatially confined jobs associated with financial services, government and high-end services keeping to the old walking cities (Newman and Kenworthy 2015).

Automobile urban fabric

From the 1950s onwards, with the advent of automobiles, city growth is no longer constrained to fixed transit corridors giving rise to the automobile urban fabric. Population densities fall to less than 35 persons per hectare (low-density sprawl) because the flexibility and speed (average 50–80 km/h on uncongested roads) allow automobile cities to spread over considerable land area (Newman and Kenworthy 2015).

The term 'automobile dependence' was developed in the 1980s to express how cities were increasingly being built around the car (Newman and Kenworthy 1989). A fundamental problem with C20th town planning has been the belief that there is only one type of city: the automobile city. Low urban intensity reduces the potential for cost-effective transit, and as a result, sprawling suburbs become the basis of automobile dependence (Newman and Kenworthy 1989). Section 3 of this paper describes the surprisingly diverse urban form of the small city of Karlskrona in terms of urban fabric in the hope that a better understanding of factors that have influenced past urban development might assist with future urban planning decision-making.

Waterfront urban fabric

In addition to the three dominant urban fabrics described above, this chapter uses historic maps and photographs from the city of Karlskrona to provide evidence of, an as yet undescribed, *waterfront urban fabric*.

1.2 The Naval City of Karlskrona and Water-Based Transport

Karlskrona is the capital of the Blekinge region in Sweden. Growing from a historic centre upon the island Trossö, where the Swedish navy has been based since the 1680s, the city's geography spreads onto the adjacent mainland and across several islands in the Blekinge archipelago.

The naval presence remains, its legacy of over 300 years of continuous occupation includes a range of naval architectural heritage, most notably baroque structures, and collectively these items contributed to Karlskrona's 1998 UNESCO World Heritage listing (Fig. 2). Karlskrona is recognised 'an outstanding example of a late seventeenth century European planned naval city. The original plan and many of the buildings have survived intact, along with installations that illustrate its subsequent development up to the present day…' (UNESCO, 1998).

The World Heritage statement includes the following extract:

> …an extremely well-preserved example of a naval city from a time when major European powers secured their positions largely through war and battles at sea. Founded in 1680 by King Karl XI and planned from the outset as a naval city, Karlskrona was built as a new base for the fleet of Sweden, a major power at that time. The city was designed by Quartermaster General Erik Dahlbergh in a grid plan with Baroque features, and included the complete range of necessary functions: naval base facilities, military fortifications and defences, a shipyard, a civil city with trade and administration, supply areas, areas for provisions, and residential areas for groups from various levels of society (UNESCO, 1998).

Watercraft is the city's *raison d'etre*. Reminders of this are embedded in the urban patterns that persist to this day. But as the importance of water-based transport waned, more modern modes such as rail and road transport have become dominant, each leaving their own distinctive marks in the urban fabric.

2 Purpose and Approach

The purpose of this study is to better understand the historic evolution of the naval city of Karlskrona through the lens of urban fabrics. The three primary urban fabrics can be recognised in any city from maps and aerial photographs (Newman et al. 2016). Maps dating from Karlskrona's origins in the late C17th through to the present day were visually assessed in terms of infrastructure related to the dominant transportation modes relating to successive periods of development. In addition to analysis of historic maps to describe the evolving urban form over time, Karlskrona's present-day urban morphology is considered through the

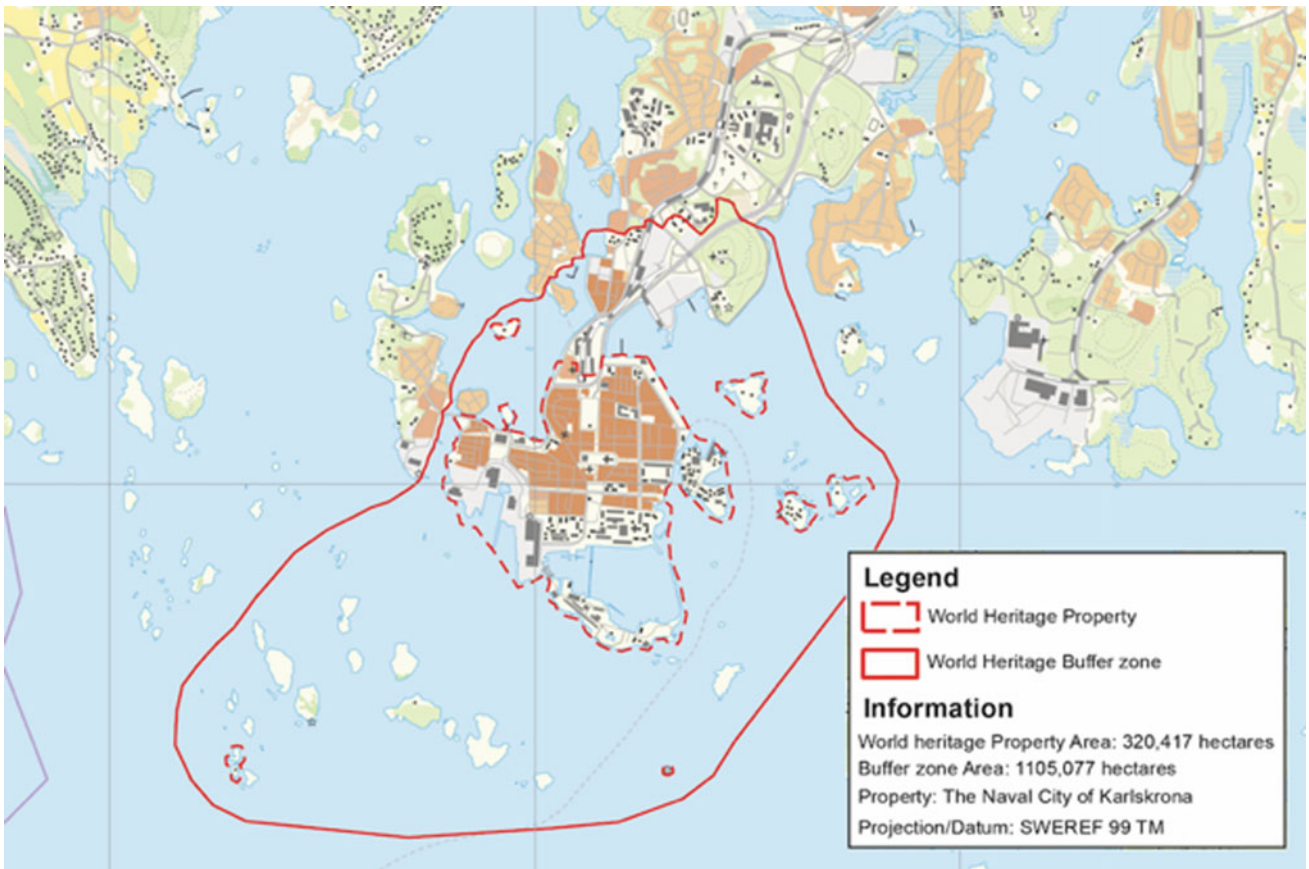


Fig. 2 WHL, UNEP Naval City of Karlskrona World Heritage designation (world heritage area appears as a dashed line, with the heritage buffer zone shown as solid outer line) (geodata licence I2018/00075)

lens of urban fabrics to better understand the importance of transportation modes to the historic evolution of Karlskrona.

Observing the historic maps, made it apparent that there may be evidence to support a new urban fabric category, what is called here waterfront urban fabric, that relates to waterborne transport and its associated infrastructure.

Finally, the question is asked, how might the theory of urban fabrics, particularly the prevalence of watercraft and its related infrastructure in Karlskrona (waterfront urban fabric), inform future planning and development decisions to strengthen the identity and appeal of Karlskrona?

3 The Evolution of Karlskrona's Urban Fabric

This section draws upon maps observed at Blekinge Museum to describe Karlskrona's urban fabric, including changes observed over time, between 1680 and the present day. Trossö was the site of the original Baroque city plan. Sections 3.1–3.3 give special attention to the northern end of Trossö, where over time some of the most significant changes can be observed. Section 4 zooms out to consider more recent (post-1900) changes to greater Karlskrona, particularly those changes that came about due to the dominance of car-based transport and its associated automobile urban fabric.

3.1 Karlskrona 1680–1850

Early plans show that the island of Trossö in the midst of the Blekinge archipelago would be the primary site of development for the Swedish naval base and maritime defences. The navy relocated south from Stockholm to minimise disruption to the fleet due to icy seas. The island of Trossö presented strategic naval benefits in terms of defendability and accessibility, but Trossö had limited space for food production, nor any permanent freshwater source. Both food and water needed to be brought in from outside and the nearby older settlements of Ronneby and Lyckeby provided resources such as food, water and labour to support the island city. Nearly all these materials, including water, were transported by ship from the surrounding area. The city of Karlskrona was planned on the northern side of Trossö close to the supply lines to the mainland, and the naval base was located to the south.

Figure 3i shows a plan of Karlskrona from 1680. The island of Trossö can be seen centrally located amidst the navigable waters of the Baltic Sea, rivers and tributaries.

i. Karlskrona Plan 1680 (source: Krigsarkivet, Sverige Topografiska kartor, Östersjön, Öresund och Bälten, SE/KrA/0400/23/028)

ii. Karlskrona Plan 1683 (source: Krigsarkivet, Sverige, stads- och fästningsplaner, Karlskrona, SE/KrA/0424/063/138)

Fig. 3 Two early images of Karlskrona's 'ideal city plan'

From its inception, Karlskrona was a settlement focused upon water transport, trade and naval pursuits. Figure 3ii shows an early, idealised plan of Karlskrona (Carlscrona) with indicative streets and an ambitious ring of fortifications which was only to be partially realised; however, this vision formed the basis of the future city's development. The historic orientation of Karlskrona was towards the south-east, facing the primary water transport access point for the navy, residents and guests arriving from the Baltic Sea by boat. By contrast, the northern approach was little more than a wooden bridge; it was well fortified at multiple points to protect the city's landward side from potential invading ground forces in this recently conquested Swedish territory, which until 1658 was 'East Denmark'.

3.2 Karlskrona 1850–1950

By 1855, the city had largely been built along the lines of the original vision, although not to the full extent of the first plans (Fig. 4). True to the original plans, naval activity was concentrated along the southern side of Trossö to orient towards the Baltic Sea (and the navy base remains there to this day, marking over 300 years of continuous operation). The south-east facing dock 'Kungsbron' directly in front of the governor's residence was designed to serve as the primary gateway for ships arriving to Karlskrona with dignitaries. This 1855 map shows some urban development expanding northwards, beyond the island of Trossö, to (Stora) Pantarholmen, but the physical connection to the mainland remained tenuous, exiting only as a series of long narrow wooden bridges.

Fig. 4 Map extract Karlskrona 1855. *Source* Blekinge Museum

On a global scale, from the 1850s onwards, industrialised countries began investing in rail for the fast and efficient movement of people and goods. Karlskrona was no exception and received its first railway connection in 1874. To facilitate the railway connection to the military and civic population of Trossö, a substantial land bridge, Landbron (Fig. 5), was constructed to provide the railway secure foundations. Landbron effectively linked Trossö to the mainland. This marks a significant turning point in the evolution of Karlskrona's urban fabric, this technological shift triggered a change in the dominant transport mode. The increase in land-based transportation caused a corresponding reduction in the importance of water-based transport for non-recreational purposes, this trend only increased over time and is highlighted through a series of comparative maps spanning the years 1840–2020 showing the evolution in the land bridge and adjacent urban form, and the study area is highlighted in Fig. 4. Figure 5i shows the present-day (2020) extent of the land bridge in comparison with the historic maps of Figs. 5ii, iii and 6i–iii.

In the late 1880s, further extensions were made to the original railway line, including a partially underground railway line to allow materials and supplies to the shipyard on the southern side of Trossö, in addition new shunting yards were built on reclaimed land to the east of the station, and additional links to the commercial wharf to the east of the island, and these can be observed in the 1906 map of Karlskrona (Fig. 6iii). This period also saw the rationalisation of much of the coast line parts of which have been the subject of detailed archaeological assessment by the Blekinge Museum (Flöög 2019). As small-scale docks became less important, they were demolished and the water frontages on the north side of Trossö were remodelled through land reclamation and squared off with an 'apron' of hardscape around the perimeter of the island. This can be clearly seen in the comparison of the maps from 1840 (pre-rail) and 1887 (early rail with waterfront architecture in tact) (Fig. 5ii and iii), compared to 1906 where waterfront docks and warehouses have been replaced by railway lines and yards (Fig. 6i).

In 1910, an electric tram was built for internal movement between the shipyards and the suburbs on the mainland north of Trossö. The railway alignment is marked along the road Landbron in Fig. 6ii and continuing along the western boundary of Hoglands Park. But the tram would be short lived, it was removed 39 years after its installation in 1949 (Svenska Spårvägssällskapet, n.d.).

3.3 Karlskrona 1950–Present

The shoreline changed little between 1906 until after WWII, although land reclamation continued at the commercial harbour. Corresponding to the demise of the tram was the rise of the automobile. The move towards automobiles was a global trend reflecting advances in technology and facilitated by modernist planning ideals. In response to this shift, Karlskrona constructed a motorway (Österleden) in 1972 to the east of Landbron following further land reclamation to widen the land bridge. The motorway's planned route is indicated by a dashed line in Fig. 6iii. The motorway connection strengthened Trossö's connection to the mainland and marks the beginning of a period of sprawling car-dependent development in the newer suburbs to the north of Karlskrona.

By 2020, as the aerial photograph in Fig. 5i shows, Karlskrona is well connected to the mainland as a result of successive waves of land-based transport mode infrastructure construction and land reclamation.

As described earlier, this process began with the construction of the railway in the late C19th, then subsequent land reclamation for development and, finally, the land bridge expansion in the 1970s for the construction of the motorway.

The shoreline has been rationalised, leading to almost all of the many historic waterfront docks and warehouses being removed. Recreational docks have replaced what was formerly the commercial harbour, and a wharf utilised by the coast guard amongst other boats can be seen to the east of the aerial photograph (Fig. 5i). The replacement of the commercial wharf and associated buildings by a concrete wharf apron which is now used for parking cars and summer recreational vehicles, combined with the extension of the motorway around the western perimeter of the Trossö, somewhat disconnects the city from the water. The barriers are minor, but they still reduce access to what was once an important land–water interface for residents, workers and visitors to access waterborne transport around the entire perimeter of Trossö. Perhaps most importantly for the city's identity, the new transport infrastructure has resulted in the erasure the city's formerly intimate interface with the water that is apparent in earlier maps of the city through a varied and crenulated edge of docks, coves, waterfront buildings that all were designed to maximise the interface between the city and the water.

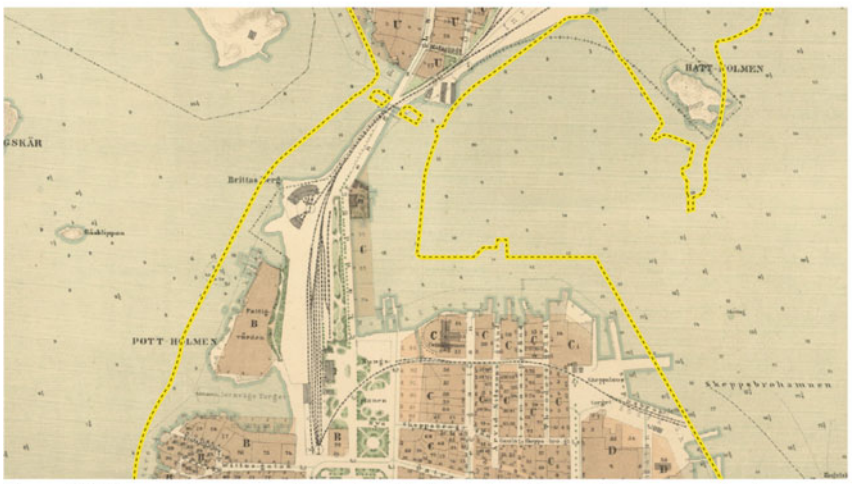
4 Recognising Karlskrona's Urban Fabrics

The previous section provided an overview of successive periods of development in Karlskrona and touched on the influence of the dominant transportation modes. This section describes development patterns observed in the contemporary urban environment, including the newer suburbs to the north, in terms of urban fabric.

Sweden, like much of the world over the past century, has prioritised automobiles for transport, and as a result car-dependent urban sprawl can be observed on the fringes

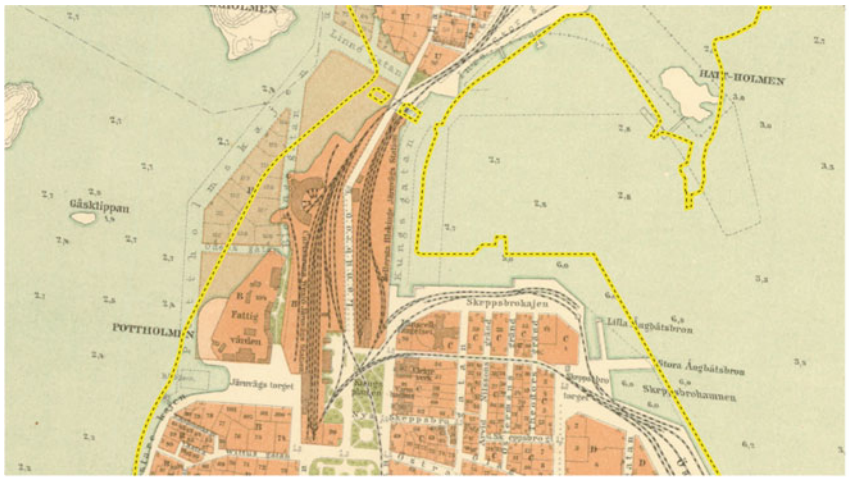
i. Karlskrona landbridge ca.2020. The current waterfront boundary is marked and is repeated on the comparative historic maps that follow (source:Google)

ii. ca.1840 Trossö is still connected by wooden footbridges as it has been since the 1700s, boat remains the main access (source: Blekinge Museum)

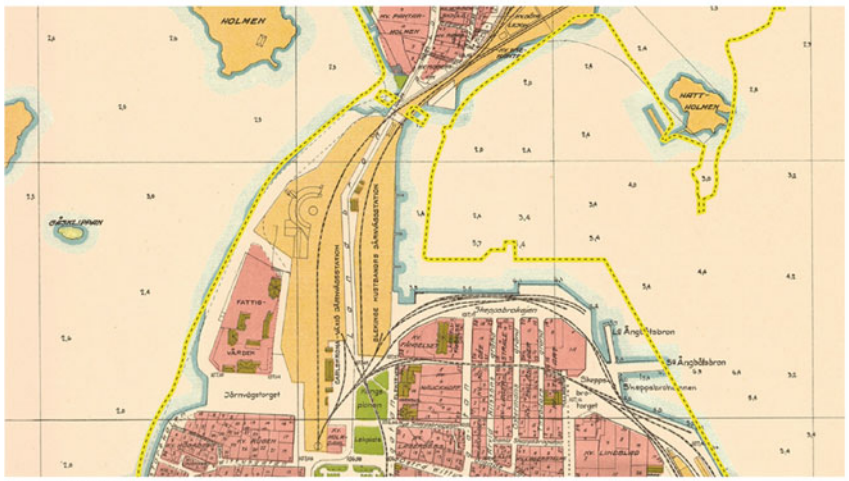


iii. ca.1887. construction of the land bridge to allow rail access, docks are rationalised and many wharves removed (source: Blekinge Museum)

Fig. 5 Comparative plans of Karlskrona's land bridge 2020, 1840, 1887



i. ca.1906 – expansion of railroad (with railway square) land reclamation, urban 'apron' of roads & rail displace wharves (source: Blekinge Museum)



ii. c.1927 The land bridge now carries a tram as well as train to connect Trossö to the suburbs of Karlskrona and beyond (source: Blekinge Museum)

iii. ca.1970 – Future motorway alignment indicated by dashed lines on the eastern side of the land bridge (source: Blekinge Museum)

Fig. 6 Comparative plans of Karlskrona's land bridge 1906, 1927, 1970

of its historic cities. In many locations and in many cities, historic urban fabric has been extinguished to make way for automobile infrastructure. This can be seen in Karlskrona in the development patterns described above in relation to Trossö. Similarly, in the newer parts of Karlskrona, the evolution of these development patterns can also be observed. These patterns give an indication of the planning ideals under which each area was built.

Figure 7 compares four locations which were chosen as they represent different planning ideals. Each has a different urban development pattern which can be 'read' in the maps that reflect their particular era of planning, and these include:

- Circa 1680: central Trossö with its high-density low- to medium-rise buildings, comprising largely perimeter block development. The connection of buildings to the street (i.e. zero setbacks) is almost universal, and property access is typically either through a door facing the street or through a street fronting gateways to an inner courtyard. The streets are relatively narrow with tight corner radii, and the block size is small; all of these characteristics are designed around the pedestrian and facilitate walking in a manner typical of walking urban fabric. The plan of Trossö has changed little from its original Baroque origins (A).

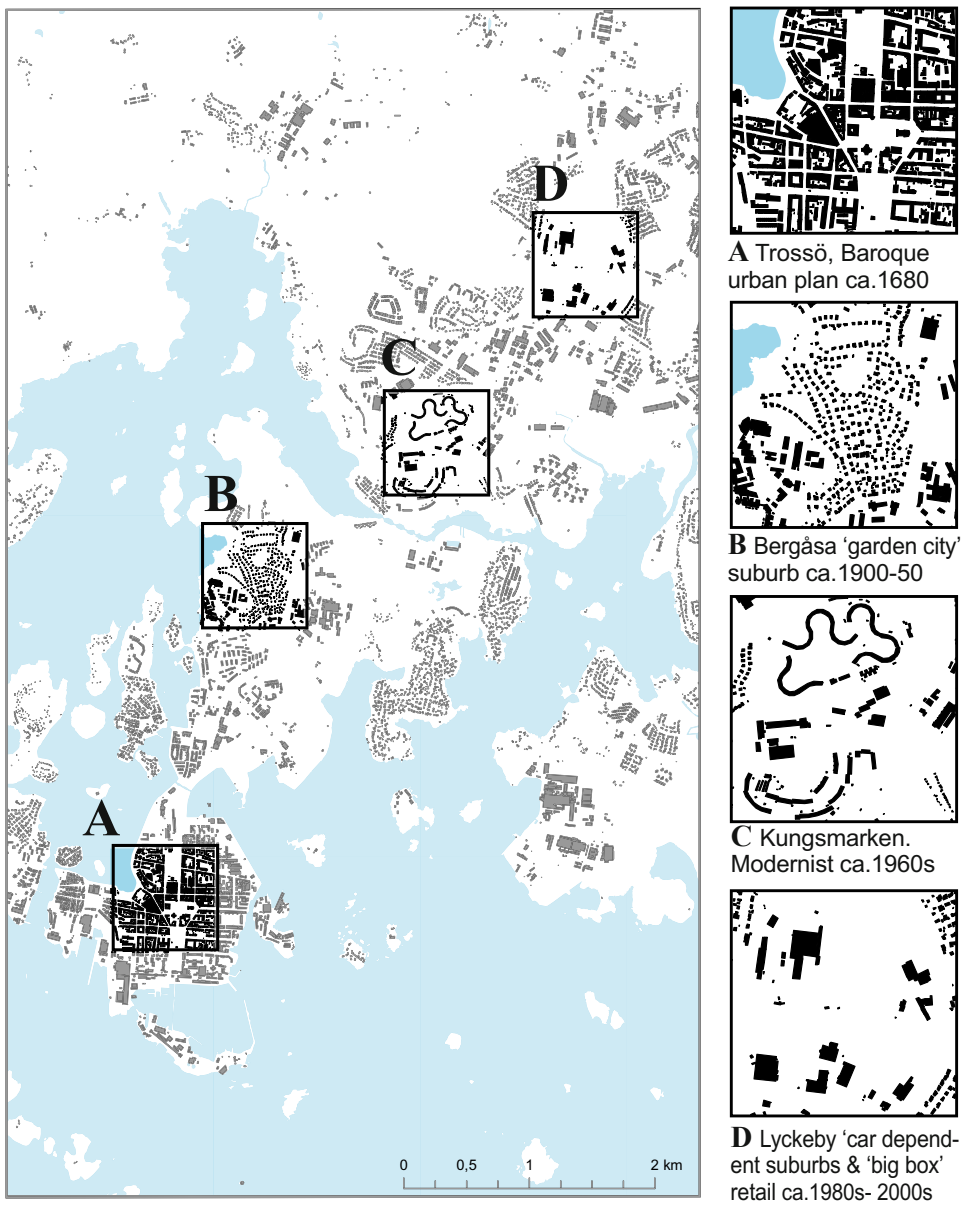


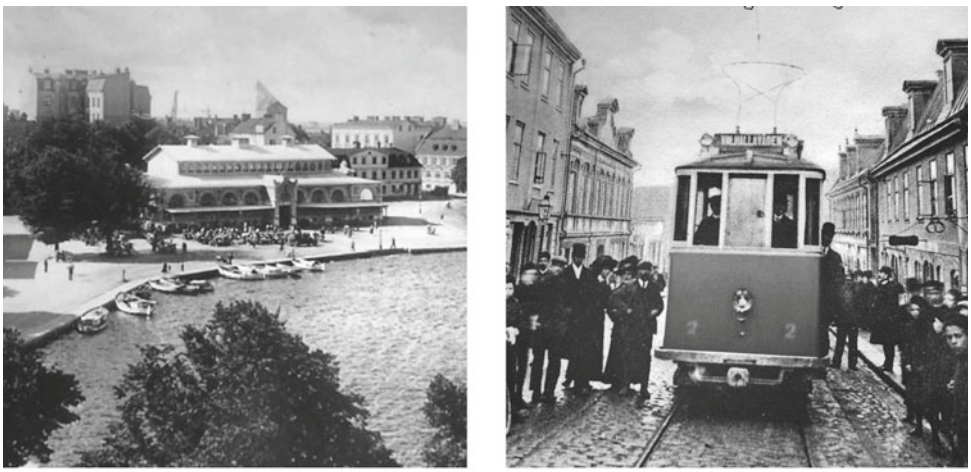
Fig. 7 Karlskrona 2019, figure ground comparison (geodata licence I2018/00075)

- Circa 1910: Bergåsa, a low- to medium-density suburb developed adjacent to the train station and former Bergåsa tram stop (the tram has since replaced by bus). The development reflects the early C20th 'garden city' ideal of cottages or small multi-family villas (2–3 units) set in individual landscaped plots. In addition to good public transport links, the development is close to places of employment (including the education and research facilities of Campus Gräsvik to the east and the hospital to the west), and it is also well connected to the recreational facilities of the forest to the north and the beach to the west (B).
- Circa 1960: Kungsmarken, low- to medium-density, medium-rise development, consisting of built form experiments reflecting modernist values, constructed as part of the Swedish 'million homes' programme of the 1960s. This development bears little connection to its surrounds and actively avoids connecting to the street in favour of 'buildings in space'. Developed on the premise of car-based transport with ample parking and open space and relatively poor access to service (C).
- Circa 1980–2000: Lyckeby 'big box' shopping and surrounds, very low-density development, the few large 'big box' retail buildings are scattered in a large area of open space, most of which is car parking, roads or other vehicle access. This development pattern reflects conventional late C20th automobile urban fabric with monocultural land uses. Flanking the big box retail is dormitory suburban housing. Walking connections between land uses is poor and unappealing, the low-density development is inefficient in terms of land area and unattractive in terms of character with nothing to distinctly identify it as Karlskrona. The generic urban pattern mimics countless other locations developed over the last half-century where standardised transport planning prioritises fast car and truck movement over pedestrian and public transport quality; the low-cost big box market-driven retail sitting in the midst of vast areas of car parking invites customers to drive from a large catchment at the expense of smaller shops in the area (D).

Today around 10,000 residents inhabit the island of Trossö, while only around 25,000 residents inhabit the remainder of Karlskrona, which is many times larger in area. This is largely because of the inefficiencies of low-density development, which tend to be both – less sustainable in terms of resource use (Thomson and Newman 2018), and worse in terms of public transport provision. These factors can reduce liveability due to unhealthy car-based sedentary lifestyles and social isolation (particularly for the elderly, disabled or other people without car access) (Sallis et al. 2004).

5 Discussion in Relation to Identity

Minimising low-density car-dependent automobile urban fabric can reduce adverse impacts of sustainability and liveability, but it can also minimise negative impacts upon city identity and character. Generic, standardised urban development does not create memorable places that people want to visit. Marketing brochures, postcards and tourist snapshots tend to seek out those places that are attractive, appealing and unique in character. These are not the hallmarks of automobile-dependent environments, yet attractive places are often extinguished as a result of automobile-oriented planning practices. Figure 8i shows 'Salluhalen' on 'Fisktorget' (the fish square) the former waterfront fish and food market demolished in the mid C20th, a victim of changing shopping models, and its site is now occupied by



i. Photograph of Salluhalen ca.1920s (demolished) (source: Blekinge Museum)

ii. Electric tram on Borgmästargatan ca.1910 (discontinued) (Blekinge Museum)

Fig. 8 Historic photographs of Karlskrona

an open plaza and a road extension that leads to the motorway from the western side of Trossö. Figure 8ii shows the electric tram that formerly connected Bergåsa via Borgmästaregatan to the shipyards.

The architect and phenomenology theorist Christian Norberg-Schulz described 'architecture' as 'inhabited space' and the users' experience as reflecting how 'it "is" in space'; he continues to state that this 'atmosphere' is of essential importance because it creates the 'particular character or spirit of a place…the *genus loci*' (Norberg-Schulz 1993, p. 19). This concept has resonance for the theory of urban fabrics as it relates to a city's identity, because it is from the transportation platform that people experience the city and, in turn, relate to the city. Consider two people moving through the same space, one walking and one driving, the walker averages around 3 km/h and can take in detail, both sights and sounds, they have a much greater connection to the intimate character of the place. By contrast, the car moves around 60 km/h obscuring the intimacy of place, as details blur at high speed. Over time, cities designed around automobiles as the primary mode of transport are redesigned and restructured to facilitate fast movement of traffic and in the process change the character of the urban experience in ways described above.

Imagine instead the experience of a city observed and accessed by boat from the waters surrounding a forested archipelago, this was the reality of Karlskrona for the majority of its history. The city plan reflects a Baroque ideal of military origins but the effect was to embed a strong water identity in the city that to some degree persists today, but as the assessment of maps earlier shows, the geographic heart of the city is gradually being drawn away from the islands towards the E22 motorway to reflect the dominance of automobile transport in modern society. In addition, the former coves, waterfront developments, docks, warehouses and other land–water interfaces of Karlskrona were rationalised and reclaimed as hard surface edges (Figs. 5 and 6). Waterfront wharves and buildings such as seen in Fig. 9 were demolished in the process. Over time, the development of transit and automobile urban fabric led to the erosion of the once prevalent waterfront urban fabric that hemmed the coastline of Trossö and other water interfaces of Karlskrona.

Based upon historic map observations and photographs, Karlskrona's waterfront urban fabric is typified by the following characteristics:

- A (usually) narrow land–water interface, with strong connection and overlap with walking urban fabric and good public access to the water's edge,
- Typically a highly crenulated edge to increase the land-water interface surface area and maximise waterfront access opportunities,
- Fine-grained high-density low-rise development,
- Infrastructure that facilitates and supports water-based transport (docks, decks, bridges, etc.),
- Water-based economic activity (boatsheds, market places, wharves, warehouses, etc.).

On the south of Trossö, the naval base and associated activities have to a large extent seen the retention of considerable amounts of the original waterfront maritime structure and character; by contrast, the erosion of waterfront urban fabric in other areas can be clearly seen in the historic maps, for example the discussion in the previous section about the reworking of the water edge to create the land bridge to facilitate land-based transport, i.e. train and cars. While most of the important Baroque architectural buildings and structures remain, less significant aspects of the

Fig. 9 A rare photograph of now demolished waterfront buildings taken from a frozen Baltic Sea. A man and his dog pose in the foreground next to a barge trapped in the ice

A rare photograph of now demolished waterfront buildings taken from a frozen Baltic sea. A man and his dog pose in the foreground next to a barge trapped in the ice.

waterfront urban fabric have been removed or remodelled. According to the World Heritage List (UNESCO, 1998):

> …the cultural values in large parts of the World Heritage property are currently not safeguarded. This is evident in regard to the rebuilding of certain protected buildings and in decisions involving newly declared listed buildings. Extensive new construction has taken place in some areas, and additional construction is planned within central parts of the World Heritage property.
>
> Sustaining the Outstanding Universal Value of the property over time will require further protecting its attributes and reformulating the present management plan to ensure that these attributes are managed appropriately in the context of the ongoing development of the city and the continual pressures for change that face this living urban environment.

But the city's identity has been weakened not only through the loss of much of the delicate waterfront urban fabric, as the historic maps revealed just how strongly shifts in planning ideals have shaped Karlskrona's development patterns over time, particularly the importance of the dominant modes of transport on its urban structure. Interestingly, once in place the street network has remained relatively static, this is the case even when the dominant mode of transport changes. The maps show that new development typically reflects the dominant planning ideals at the time of construction. However, the delicate waterfront urban fabric, that was such a distinctive feature of Karlskrona's identity for the first 200–250 years of its existence, is an exception and it seems to be particularly susceptible to erasure. Possible reasons for this include:

- Replacement of water-based transport for the movement of goods and non-recreational personal mobility reduced the need for the supporting infrastructure.
- Following the economic demise of pre-container port waterfront activity, warehouses and other associated built forms became redundant, the valuable waterfront land redeveloped, and urban regeneration of underutilised docklands is a global trend (Thomson et al. 2016).
- The dense development existing on Trossö meant that little space was available to accommodate trains and car transport; therefore, reclamation of shallow waterside areas made new projects feasible with minimal disruption to the existing development.

Each of these factors facilitated the demise of the very urban fabric that defines Karlskrona's identity. But one thing that the theory of urban fabrics shows us is that planning *intentions* (e.g. values and visions) are a powerful tool for shaping urban environments. By recognising that there are at least three urban fabrics, it becomes possible to consciously design using the most appropriate urban fabric for the location. There is a growing trend within many modern cities to reclaim the desirable characteristics of fine-grained street patterns associated with walkability (Gehl 2010; NACTO 2016). Similarly, it may also be possible to restore the desirable characteristics of a fine-grained waterfront urban fabric in cities like Karlskrona.

Automobile urban fabric at its worst (e.g. the big box retail of Lyckeby) creates anti-people places. Its inefficient land use displaces agricultural and forest land, and as it continues to grow its problems are exacerbated, the more sprawl is built, the more people need to spend driving to get their daily needs met. By contrast, dense walking urban fabric creates places for people, and the key principles for making places for people are described in detail in the various publications by Gehl Architects based upon several decades of research observing and documenting people in public places (Gehl 1987, 2010). As Karlskrona continues to grow, the importance of human-centred urban design for creating successful urban areas cannot be overemphasised. There is a strong need for urban planning controls to curb the highly inefficient and less liveable automobile-dependent sprawl that can be recognised in the relatively unstructured urban patchwork developed in recent decades in the outer areas of Karlskrona. Indeed, a strategic urban structure that prioritises mass transit, potentially a new tram, and that plans for pockets of higher density walking urban fabric close to the stations would help reduce reliance on cars. Many such opportunities for urban infill exist within the existing development footprint of Karlskrona, for example in the underutilised spaces between some of the 'patchwork' of development, or through the redevelopment of large car-parking areas or the highly inefficient big box retail. Placing infill development into these in between spaces could create a transit corridor along vibrant pockets of Karlskrona in areas that are currently car-dependent to help reduce the negative impacts that research tells us results from car dependence, such as poor health, pollution and social isolation (Newman and Kenworthy 1999).

In addition to minimising the automobile urban fabric and increasing transit and walking urban fabric, a conscious awareness of the largely invisible but historically relevant waterfront urban fabric is worth further exploration for the benefits that its reinstatement could offer for the rejuvenation of the city's water edge and the attractive branding opportunities this identity would afford.

This may involve looking southwards, towards the other islands of the Blekinge archipelago, and to some extent this is already occurring with recently introduced ferry rides in the summer holiday period. But more could be done through the creation of additional water-based transport links and access points to and from existing urban areas and associated services. In addition, architectural design could explore new waterfront building typologies inspired by historic building forms such as those seen in Fig. 9.

6 Conclusions

In an increasingly homogenous world, the city of Karlskrona is well placed to take advantage of its maritime heritage as unique selling point to attract, not only tourists, but also to offer Karlskrona a competitive advantage nationally. The city's maritime identity developed over 300 years of settlement, but the past century has seen many of the distinctive elements of its maritime origin diluted or removed. Much of this shift can be explained as a function of changes in the dominance of different transportation technologies, firstly with train and tram displacing the importance of watercraft, and subsequently the replacement of these transit technologies with automobiles. These successive shifts are expressed in the corresponding urban fabric, and as with any city, these can be 'read' in historic maps.

In Karlskrona as trains, and then automobiles, replaced watercraft as the primary mode for moving people and freight, access to the heart of the city, Trossö, effectively flipped from the original 'gateway' at Kungsbron oriented to welcome water-based transport from the Baltic Sea, towards the land-based transport arriving from the Swedish mainland. As the importance of this land-based access grew, so did the strength of Trossö's mainland connections; the historic timber bridges were replaced through land reclamation and coastal realignment to create an increasingly significant land bridge. Today, the island of Trossö is no longer an island as such; rather, it is well connected by an artificial land bridge to the mainland.

The loss of maritime buildings and activity, and replacement by other forms of transport infrastructure with their corresponding built form typologies over the past century has been to the detriment of Karlskrona's historic maritime identity. But despite this the maritime identity is still strong in Karlskrona; for example in 1997, the National Naval Museum (Marinmuseum) was opened, Karlskrona Kommun (municipal government) was instrumental in the 1998 World Heritage designation and maritime-based festivals are a regular occurrence.

But more could be done, particularly as it relates to the city's built form and recognising and respecting the waterfront urban fabric. This identity can be capitalised upon and indeed strengthened. The heritage legacy of Karlskrona is interesting, but to avoid it merely being seen as a collection of historic buildings to entertain sightseers, a strategic planning direction that combines both infrastructural and cultural needs could further enhance the maritime identity, not just for the passing tourists, but much more importantly for the stakeholder communities of Karlskrona itself—to further strengthen the pride that comes of being a city in the sea.

Finding ways to recognise and repair this fabric along with the best of walking and transit urban fabric will help distinguish Karlskrona in a manner that reflects and enhances its historic identity as a maritime and naval city. The generic alternative involving a less than strategic 'market-led' planning approach would be easier; however, such an approach not only risks creating a less sustainable and less liveable environment, but also it detracts and obscures the city's maritime roots.

As the city plans its next stage of development, it is worth reflecting on the fact that the legacy of a powerful vision 300 years ago of an idealised Baroque model resulted in a city plan on Trossö that has persisted over 3 centuries. Subsequent changes happened to the city, and expansion north of Trossö to the mainland has occurred in an *ad hoc* manner, gradually shifting and eroding the historic character and identity in iterative steps and creating new sprawling settlements detached physically and cognitively from the historic city centre.

In an age of increasing citizen mobility and intercity competitiveness, Karlskrona has an opportunity to distinguish itself by capitalising upon its valuable and iconic maritime cultural legacy. Creating opportunities for everyday interaction with the water could help re-engage people with this past, not only as historic fact, but also as a lived experience through its urban design. Developing a strategy for the regeneration of the waterfront urban fabric that involves recognising and reinstating some of the historic qualities described above could improve the liveability of the city, offer a unique selling point, and in the process strengthen Karlskrona's future identity.

To do so has the potential to offer a powerful narrative capable of further strengthening the regional identity and attractiveness of the city and the entire Blekinge region. A strong city identity is a powerful attractor with the potential to both increase tourism but perhaps more importantly to attract the creative classes seeking a 'sea change' and helping assist regional economic development.

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Shaping a Town's History Through the Enhancement of Its Ancient Fortifications Within the Traditional Town Net: The Case of Galaxidi, Greece

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Abstract

The traditional late medieval sector of the town of Galaxidi occupies the historic small peninsula where the ancient city was constructed. The network of the historic peninsula is adjusted to its hilly grounds in contradiction to the regular one of the second half of 19th c. Westwards extension. The elliptical street rings of that network often are following the ruins of the Hellenistic fortification, consisted by rectangular and almost square shaped, towers, intermediate linear sections, and gates, adjoined to one or two towers. Remains of these structures were embodied in later Byzantine and medieval fortified enclosures on the site. Later, during the Ottoman occupation of Greece, they were incorporated in several residential buildings of the traditional settlement on the peninsula. Nowadays, after several excavations many parts of its walls and towers, as well as gates, are accessible visually or physically, to the public. The need to show out the original layout of the ancient fortified enclosure is much related to the correlation of the old structures and the way the existing town was shaped. In 2016 started a study for the enhancement of the ancient fortifications recorded as a whole ensemble the visible traces of the fortification and their position within the existing network. Moreover, the part of the study which represented missing—not visible—sectors depicted the path of majority of the ancient fortified enclosure. A primary objective of the project was to protect and preserve the revealed ruins of the fortifications and restore some missing parts through limited anastylosis. On the other hand, the necessity to reveal the layout of the ancient enclosure inside the town grid of the traditional Galaxidi, along with the later modifications adjoined to these fortifications was a much innovated aspect for that settlement. It was ranked as the main factor to present the continuity of habitation of the small town which also contributed a lot to its physical and historical shaping. A well-designed combination of targeted interventions and manners for a proper presentation of the fortifications can contribute thoroughly to understanding its history and especially the continuous habitation issues.

Keywords

Galaxidi • Γαλαξίδι • Ancient fortification • Traditional town

1 Introduction

The small coastal town of Galaxeidion or Galaxidi is situated almost at the middle of the north coast of Korinthian gulf. Its historical traditional sector occupies the small peninsula where the ancient town was built (Παπαχατζής 1981). After the independence war of 1820s, it was expanded to the mainland mainly toward Southwest (Βενετάς 2002). Natural safe ports flank that peninsula at east and west (Fig. 1a). From administrative point of view, it forms part of the Fokis prefecture and is listed as "traditional settlement" by the Hellenic State since 1977 (ΦΕΚ 27Δ/1977). Moreover, 10 years earlier than that listing, an extend area by the port (Fig. 1b right top), incorporating a long section of the ancient fortifications including two towers, has been declared as an "archeological site" (ΦΕΚ 183Β/16-3-67) by the Ministry of Culture.

1.1 Historical Notes

Galaxidi was identified by scholars (Θέμελης 1984; Παππαδάκις 1923) as the ancient Chalion (Χάλειον in

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Fig. 1 **a** Aerial view of Galaxidi. **b** Existing and hypothetical parts of the ancient fortifications (Antoniou 2017)

Greek), a small fortified town of the antiquity. Its walls are dated back to the fourth century BC, but due to its strategic position probably there were also earlier fortified structures (Πορτελάνος 1998). According to Sathas (Σάθας 1865), the area of the port and the fortified enclosure (Fig. 1b) were destroyed in 981 or 996 by the Bulgarians of Czar Samuel. Despite that Lerat, who was the first to describe the fortifications of Galaxidi (Lerat 1952), evaluated the descriptions of Dodwell (1819), insisting that most of the perimeter of the ancient walls was visible during the era of Dodwell tour at the area.

A more detailed drawing of the fortifications was made by I. Travlos (in Θρεψιάδης 1972). Besides all the above references on the ancient walls of Galaxidi, their most detailed—up to now—study was composed by A. Portelanos in his Ph.D. Thesis about the Aetolian ancient fortified sites (Πορτελάνος 1998). Many rulers passed from the city since the eleventh till fifteenth century, when it became part of the Ottoman Empire (Σκιαδάς 1999). Galaxidi was evolved into a naval town (Βενετάς 2002), with many, sailors, ship owners, and a famous sail ships fleet, during eighteenth and nineteenth centuries. The steamships of Galaxidi were running till 1930s.

2 The Research of the Ancient Fortifications

As it was mentioned above, earlier parts of fortifications were identified being ancient structures by travelers and scholars of the nineteenth and early twentieth centuries. It is also known that part of the surviving ancient walls was used for the construction of the docks of the port of Galaxidi in 1830s and 1860s (manuscript found in 1863 and published by Σάθας 1865).[1] Archeological research by Thepsiadis (Θρεψιάδης 1972) revealed more parts of ancient walls and towers. The research was continued in 1970s and 1980s, and plots incorporating parts of the fortifications were expropriated by the Hellenic State. Recently, the local Archeological Ephorate incorporated the enhancement of the ancient fortifications of Galaxidi at its future projects' list (Ψάλτη et al. 2019). Within this projects' list, a study about a master plan for the enhancement of the ancient fortifications of Galaxidi was implemented and submitted by the author of this article (Antoniou 2017).

3 Ancient Fortifications of Galaxidi

The ancient fortification (Fig. 1b) was consisted by (i) rectangular, almost square shaped, towers, (ii) intermediate linear sections, and (iii) gates, adjoined to one or two towers. The distance between towers is almost equal to most parts of the fortification that have been found up today. That can be testified nowadays since after several excavations inside the historic town grid of Galaxidi, many parts of the ancient

[1]Probably for that reason there are not much visible remains of the fortifications at the ESE sector (see Fig. 1b) since the discussed docks lays just in front of that part, forming much of the south—and more secure—port of Galaxidi. That action was not rare, during the first decades of the New Greek State, for the ancient remains which were not evaluated having enough artistic and historic value. Also similar work might have been made at Chirolakas quay as it could be concluded by the two blue lines at the 1882 town plan (Βενετάς 2002).

walls and towers, as well as gates, are accessible visually or physically not only to scholars but some of them to the public.

Even though the ancient fortifications of Galaxidi appears as a unified ensemble, when studied at a drawing like that in Fig. 1a, the actual situation is different. Except the long sector at the area of former Chatzi plots (Fig. 2a), most of its parts survive in small plots (Fig. 7a) or as foundation of eighteenth- and nineteenth-century houses (Fig. 2b). Some other parts are found in small fenced areas in a square or inside expropriated plots (Figs. 3a and 2a). Moreover, limited parts are found just crossed over by a contemporary street of the settlement (Fig. 3b) and in two cases are inside residential buildings, expropriated or not (Fig. 4a and b). Many single or two story buildings and high yard walls interfere between the visible parts of the ancient walls, which in some cases are quite apart from each other, 50 m or even 100 m.

On the other hand, the incorporation of the parts of the ancient walls to the traditional built shell, buildings, streets, or yard walls is related to the continuity of living at the settlement and to the reuse of the fortifications through the centuries after the late antiquity when Chaleion was temporarily abandoned. Over and next to the remains of the walls and towers can be seen not only houses but also ruins from the byzantine and medieval periods of Galaxidi. These are extremely valuable finds, which present the continuity of habitation of the site. Even though they are constructions of poor quality compared to the ancient walls, their preservation and the comparison of their quality to the ancient walls are valuable elements for shaping the town's history through these remains.

4 Lack of Interpretation and Enhancement

The described condition of the visible parts of the ancient fortification testifies the evident fact for every visitor or even inhabitant of Galaxidi: The wall cannot be identified as a unified ensemble, and it is difficult to trace its path within the traditional network of the town. The local Naval and Folk museum has edited a leaflet with two cultural paths within the listed town, leading visitors to mansion houses, churches, and other remarkable attractions of Galaxidi. Unfortunately, there is not a similar path for the fortifications, and there are certain difficulties for the presentation of the ancient fortifications to visitors and inhabitants, not only as a distinct historic structure, but also as a feature related to the continuity of inhabitance in Galaxidi. Moreover, the comparison between the position of the gates and the streets of the existing network in the historic peninsula, testifies that some streets almost follows the ancient accesses into the Hellenistic enclosure. Therefore, it is crucial to reveal and present all these connections and relations between the ancient, medieval, and newer parts of the town, which actually shape the history of the settlement through the built remains of the various periods, and especially through the ancient fortification. That structure and its remains, were the predominant ones for the settlement despite the destructions which occurred by various intruders.

5 Theoretical Approach for Introducing the Ancient Enclosure and Its Path Within the Traditional Town Grid

Historically both formation and assembly of urban environments depend a lot not only on the financial social and cultural factors of the relevant eras, but are much correlated —besides to local topography and relief—to the pre-existing structures and earlier urban formations.[2]

Quite often valuable historic remains as temples, agoras, or fortifications, and the constitutional obligation for their protection and preservation, obstruct the functionality of a town or city. Despite that—and several destructive approaches against ancient remains inside town grids during mid 19th c.—the need to reveal the characteristics of the ancient fortifications were briefly mentioned above in a simplified way. Moreover, the ruins of the walls and towers of the antiquity is an element which provides to the inhabitants and visitors the materialized elements on site that shows the continuity of habitation in the settlement, besides the existing historical references. Moreover, they can present the probable element of the adjustment of the succeeding built structures to the topography and relief of the site.

Nowadays, since the visual evidences are much more predominant than any other informative ways, the proper presentation of a pre-existing feature and its transformations through centuries on site provides that visual material to spectators and can be a major factor to present the continuity of habitation at a site.[3]

The continuity of habitation of a settlement, or of a town or city, is a strong historical element for the legacy of that place. Moreover, the remains of the earlier phases of a settlement and the way which they were reused after their original construction usually present historic facts as the economic situation, security matters, and sometime social conditions. Through history the reuse of earlier constructions or their remains was a natural procedure, saving material,

[2]Extend discus on these critical and generaly applied aspects Kostof and several other scholars have contributed in details (Kostof and Tobias 1999; Kostof et al. 1999; Monclús and Guàrdia i Bassols 2006).
[3]Besides the conventional visual ways, recently augmented reality approaches, ordinary—materialized—or digital ones through relevant applications, contribute to that (Borko 2011; Mohammed-Amin 2010).

Fig. 2 **a** Long sector with two towers at ex Chatzi plots area. **b** Fortification as retaining wall/house foundation

Fig. 3 **a** Wall and adjoining tower inside an impromptu fenced enclosure. **b** Remain of the wall crossing a street

Fig. 4 **a** Ancient gate found under the floor of a 18th c. (?) house. **b** Part of the wall remains inside the yard of a house

and labor time. But the manner, materials and the formation and adjustment to the pre-existing structures reveal the characteristics of the relevant era, mentioned just above.[4]

In addition the continuity of habitation is testified by the correlation of the earlier built remains with the formation of the later settlement. Apart the expected adjustment to the local topography and relief, the continuation of main accesses path into the settlement—even roughly—testifies that the site was continuously used.[5] The presentation of such elements has an undoubtable importance to the realization that a settlement was formed adapting many of the pre-existing formation axes and features.

Continuity of habitation is the critical factor for the case of Galaxidi since the everyday life and economic activities interact with the remains of the ancient fortification. There are other examples where the temporary—at the end—habitation as, i.e., ancient Stratos in Akarnania (Νεραντζης 1994) does not require acts and projects for the ancient remains as at the case of Galaxidi.

6 Necessities and Targets of the Enhancement Intervention

The described condition of the visible parts of the ancient fortification testifies the evident fact for every visitor or even inhabitant of Galaxidi: The wall cannot be identified as a unified ensemble, and it is difficult to trace its path within the traditional network of the town. The local Nautical and Folk museum has edited a leaflet with two cultural paths within the listed town, leading visitors to mansion houses, churches, and other remarkable attractions and by similar way the ancient fortification could be presented to the people. But a proper enhancement should provide more features as the ability to trace the path of the walls on the ground and through the traditional network. Thus, revealing the layout of the ancient enclosure inside the town grid of the traditional Galaxidi, it would be more evident the correlation between the ancient structure, the later historic phases of the settlement and the shape of the traditional town as it exists today. In addition, it could enrich the impression of the visitors about the town, which now is being considered as a very picturesque traditional settlement related only to its nautical tradition of the 1900s.

Besides the primary objective for the protection and preservation of the existing ruins of the fortification, the submitted master plan for the enhancement of the ancient fortifications targeted to the presentation of the path of the walling and towers at as many as possible places by various manners.

7 Proposed Interventions

Apart the obvious intervention of partial restore and anastylosis of suitable sectors of the fortification[6] (i.e., at Chatzi area, Fig. 5) which would increase the size of the surviving parts and the three-dimensional presence of the enclosure, other proposals were incorporated to the master plan.

These proposals (Fig. 6) aim to the presentation of the continuity of the fortification and the easier presentation of a visiting route which will reveal the path of the ancient defensive structure within the existing nowadays traditional network and buildings. The varieties of these proposed interventions in brief are the following:

- Establishing public accesses, foot paths, and trespasses, through expropriated plots with remains of the fortification, so the visitor could walk by the ruins and experience them as part of the natural walk within the town and not as exhibits in an enclosed area.
- Removal of the fences from expropriated plots with remains of the fortification.
- Connection of neighboring plots with wall ruins.
- Reveal of the parts of the wall under the streets and construct over them foot passages with sympathetic design and materials.
- Restore in a minimal grade parts of the walling sectors crossing streets of the town, in order to achieve a three-dimensional impression there.
- Mark the position of the wall under selected places of streets or squares with a different material on the pavement, in order to increase the perception of the path of the fortification.
- Create small information spots along the path line of the fortification using expropriated buildings incorporating parts of the walls, or gates, places which present in the most vivid way the continuity of habitation and reuse of ancient remains.
- Restoration of expropriated buildings (there only two).

[4]For example in the Byzantime times remains of the ancient enclosure were modified to fortification as well (lack of security) with impromptu manner (economic evidences). On the other hand the constuction of mansion houses on top of ancient walls in late 18th c. till mid 19th c.

[5]In the case of Galaxedi for example the access to the center of the tratitionl settlement—the main church square—from the north port, is a wide—for the town's scale—street, paved with well shaped stone slabs, which lies just next to the house where the relevant ancient gate was found.

[6]Reveals besides the prosperity coming out of the naval nad commercial evolution of Galaxeidi, absence of secututy and safety issues. Where the remains rest on State owned (expropriated) plots. That intervention would also function as a protective element to the surviving ancient remains.

Fig. 5 Partial anastylosis proposal at the long coastal branch of the fortification and the visitor's path passing in front of it and continuing toward the line of the ancient walls (Antoniou 2017)

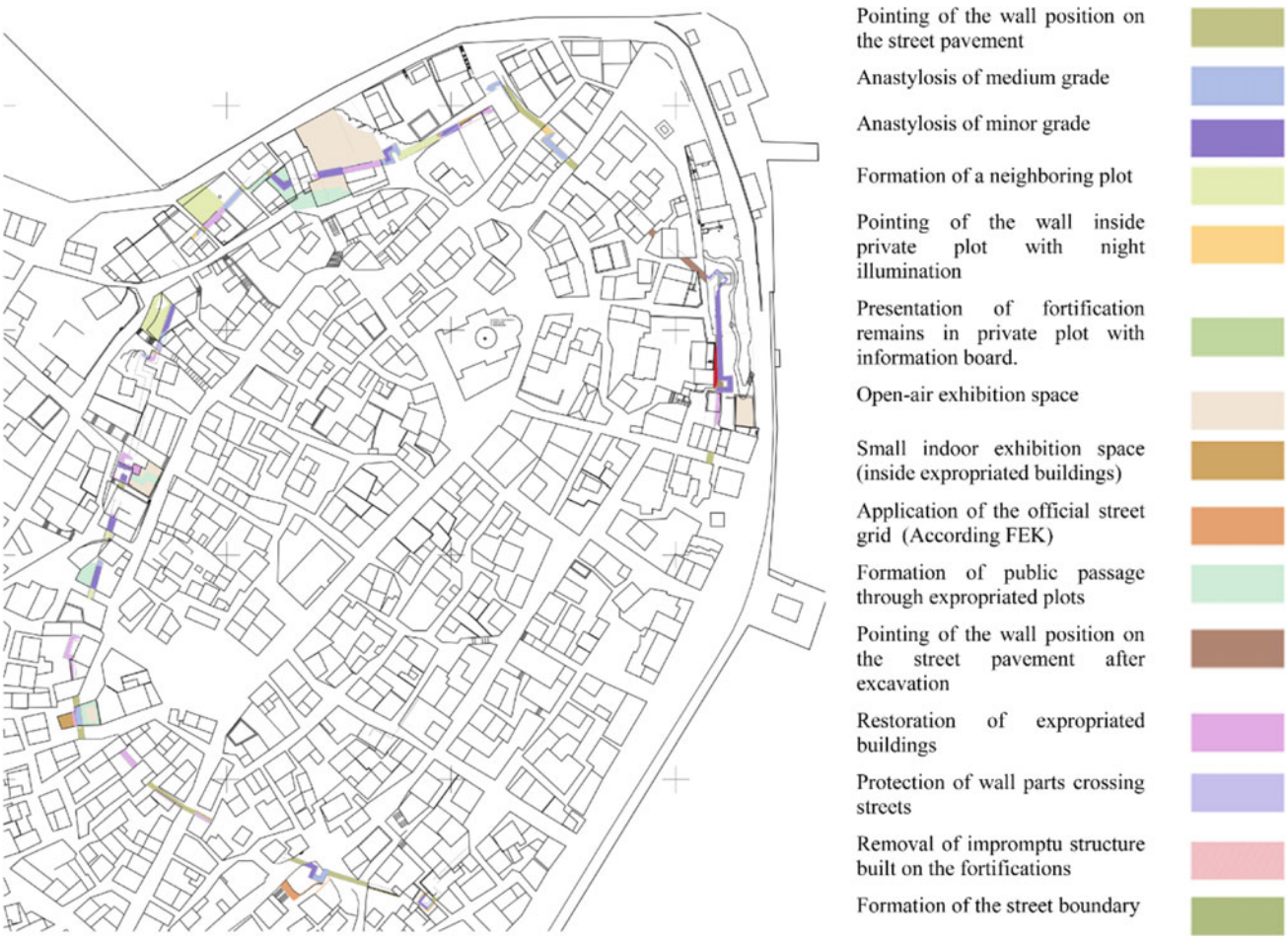

Fig. 6 **a** Proposed interventions and its legend (Antoniou 2017). **b** Legend for proposed interventions

- Establish well-shaped open-air exhibition areas next to the wall ruins, presenting not used built material of the fortification (i.e., stone blocks, etc.) and other stone made ancient finds in Galaxidi or its surroundings.
- Night illumination at selected sectors (particularly those visible from the sea).
- Night illumination from the street network toward sectors of the walls being inside private yards,[7] i.e., the case in Fig. 4b.
- Implementation of an digital application incorporating augmented reality images with representations of parts of the fortifications.

The above interventions are visible to the plan of Fig. 4b and its legend.

The most remarkable site for several combined interventions (*anastylosis*, restoration, foot path along the wall, open-air exhibition, and night illumination) is the long surviving part of the enclosure which has also two towers and traces of the medieval interventions of the fortifications. There *anastylosis* of medium extend will present the walls even from across the small bay. Also a walking path will create a small raised esplanade along the coastal road (Fig. 5). The proposed adjusted night illumination of the complex will present the construction and the newer phases in the darkness.

The establishment of public accesses, foot paths, and trespasses, through expropriated plots with remains of the fortification (i.e., Fig. 7a and b) would be an intervention which will bring the visitor closer to the ancient remains and aims to cultivate the feeling that the ancient ruins is part of their own public space.

Similar aim has the removal of the fences from expropriated plots with remains of the fortification, so the visitor would also feel that these spaces are parts of its own town. The successful example of the Chatzi area where the fortification ruins remain intact is the best example of that proposal.

The connection of neighboring plots having wall ruins will increase the spaces where other interventions as foot paths can be applied.

Revealing of the parts of the wall partially covered with the street pavement (Fig. 3b) is critical also for the protection and preservation of these parts. In both cases a minimal *anastylosis* is essential to increase the protection of the authentic parts. That *anastylosis* partially improves the impression of the correlation to the neighboring sectors inside plots next to the street and increases the three-dimensional impression of the ruins there. Since the pedestrians[8] step on the ancient structure, it is needed to construct sympathetic foot passages over the remains of the walls.

The construction of a different pavement on the streets exactly above the part of the wall or tower which exists underneath is critical in many places to point out the correlation of a fortification sector with a neighboring one and to increase the perception of the path of the fortification.

There are two expropriated buildings which after their essential restoration is proposed to be transformed to small information spots, allowing also the visitors to pass during day time through them. Both buildings incorporate parts of the fortification which will be a kind of exhibit inside them. Along with them small open-air or sheltered exhibition areas will present stone blocks or architectural fragments from Galaxidi or the neighboring archeological sites.

Besides the above exhibition places adjoined to small info spot buildings, similar ones but bigger will be made next to the two existing long sectors of the fortifications, hosting similar type of stone exhibits.

For better presentation of selected parts at night, relevant general illumination should be applied. These selected sectors are the long one with the two towers at Chatzi area and the other long sectors along the Chirolaka port-bay. The illumination will cover also the nearby soil-rocks with different white light temperature.[9]

Finally, the master plan proposed targeted illumination on small parts of fortifications being inside private properties, i.e., the case in Fig. 4b, from the spots of street municipal lighting, with the agreement of the owners.

Finally, along the built interventions, a digital feature combined to the above interventions, thus an augmented reality application, with graphical representations of the ancient fortification can boost the comprehension of the ancient enclosure and the later modifications. That smart phone application can be supported by a street map with the path of the ancient walling, distributed at the small local museums, the Naval and the Archeological.

8 Conclusions

The issue of ancient ruins within or under existing settlements and towns is well-known and examined scientifically from various points of view and scholar fields, either by contributing to the formation and assembly of the towns and cities (Kostof and Tobias 1999; Kostof et al. 1999) but also by the way they interfere—or often obstruct—the contemporary living and functions of the a city's life (ICOMOS Greece 1993, 1994). Especially in the case of Greece many

[7]This intervention would be possible through negotiations with the respective owners.

[8]All cases refer to stepped streets accessible only by pedestrians.

[9]In such cases a warmer white is usually selected for the groud surfaces.

Fig. 7 **a** Expropriated plot between two streets. **b** Proposal for creation of a path walk by the wall within the plot of (**a**) (Antoniou 2017)

contemporary towns are situated on sites of ancient ones,[10] incorporating in most cases elements and sometimes formations of the pre-existing town grid. In addition, it is evident the importance of an onsite visual existing feature for the presentation of the continuity of habitation at a settlement.

The proper presentation of major elements for the shape of a town is important for the interpretation of its time line and understanding the correlation between the earlier and contemporary parts of the settlement, as well as the influence of the various earlier remains to the shape of newer formations.

Through the case of Galaxidi and the proposed presentation of the layout of the ancient fortifications, it can be concluded that a combination of targeted interventions and manners can contribute thoroughly in the way the town was shaped and its history, as well as to the increase a town's image and self-identity. The variety of intervention types can result into an attractive for the visitor ensemble of—not connected!—spaces. Also the proposal for open and publically accessed areas with ancient remains can resolve problematic situations as the abandoned and poorly treated small plots with antiquities. Moreover, the chances of the modern technology can contribute to the better interpretation of scattered places through augmented reality applications, which in the short run could also contribute financially to the maintenance of these interventions. Last but not least such proposals enrich the touristic features of such small towns and can increase their touristic interest.

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[10]For general and extend relevant cases (ICOMOS, Greece 1993, 1994).

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Historic Cities in Karnataka: Policies for Conservation, Growth and Sustenance, the Case of Badami and Kampli

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Abstract

Land and culture are intrinsically linked to each other. Cities and towns in India more often than not have a historic origin which has subsequently grown into the present-day urban settlements. While the timeline of the historicity may vary, historic districts are a fairly common occurrence. These historic districts have layered histories that are expressed in their built morphology with their embedded culture and meaning. The present planning methods and development tools and techniques that are imposed on the heritage districts are of a top-down approach which carefully recognize and delineate only a selected few of historic structures and precincts while ignoring the complex multilayered factors that resulted in their formulation over time. This paper questions this unilateral approach to planning such multilayered, multifaceted issues as faced in historic districts. While the primary intent of this study is to examine the impact of the planning decisions and the mutilations that they trigger, the aim is to provide a comprehensive understanding of the historic districts of the towns of Badami and Kampli, and discover the possible ways to better connect historic preservation with urban planning, which could potentially be applied to other such towns in India.

Keywords

Historic districts • Planning guidelines • Urban planning

1 Introduction

Across the length and breadth of India, there is a number of historical towns that were once important cities or capitals of flourishing kingdoms. Eventually due to various factors including invasions, changing leaderships and lifestyles, many of them lost their importance and became forgotten history, except for a few relics from the past in the form of forts or temples or other such historical structures that remind us of their past glory. While a few have morphed into successful modern-day towns and cities with laws and regulations governing their historical districts, there are many more that do not fall under any such legal protective framework. There are various categories of historic districts or towns. The old or historic districts of metropolitan cities like Delhi, Kolkata, Ahmedabad, Jaipur, etc., have planning policies and guidelines built into the master plans and have been marginally successful in implementing them. There are examples of towns that have been declared as heritage cities by the Government of India; these include both religious towns and secular towns like Varanasi and Badami. Apart from this, there are the World Heritage Sites like the urban agglomerations of Hampi, precincts like Pattadakal and individual monuments like temples, the Sun Temple at Konark being an example. The master plans of cities identify heritage zones, precincts and monuments that need to be protected as per the existing legal framework. Karnataka state has the Town and Country Planning Act (Karnataka Town and Country Planning Act, 1961) that recognizes any heritage zone or precinct or monument declared as heritage by the legal body and sets down the rules and guidelines for safeguarding the same. But this is just the tip of the iceberg. There are numerous such towns like Sringeri, Kollur and Kampli to name a few in Karnataka, each with a rich and storied past that are all losing their essence even as we write about them. This study looks into two examples of historic districts Badami and Kampli in Karnataka and the direct impact of the planning decisions on the built morphology

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and consequently the mutilations that are triggered due to this.

1.1 Badami

The first example, Badami, which is defined as an urban centre per the Town and Country Planning Department of Karnataka, is a part of the HRIDAY scheme floated by the Government of India and thus has a city development plan prepared under the same. The city development plan is a much more comprehensive document as opposed to the master plan of Badami developed by the local planning authority, it tries to address the tangible and intangible aspects of the heritage town and come up with solutions that will enhance and protect them. Yet there remains the question as to how does one integrate historic preservation with urban planning. Is it as simple as cordoning the monuments and creating a buffer around them and adding a few tourism-friendly activities like the arts and crafts village as suggested by the City HRIDAY Plan for Badami or should it be more holistic in its approach? While tourism is necessary as it gives the economic impetus for the historic preservation programmes, it should not lead to a situation where historic districts become caricatures of themselves, pandering to the demands of commerce.

1.2 Kampli

The second example is Kampli a municipal town in the district of Bellary in Karnataka. Kampli has a storied past that is older than Hampi (UNESCO World Heritage Site) as it was the capital of the dynasty that preceded the Vijayanagara Kingdom. Lying on the banks of the river Tungabhadra, the historic town with the remnants of a fort wall and the famous Pampapati Temple to its south and a settlement fabric that is very similar to that of Badami is not on the radar of any conservation/heritage policies. The organic pattern of the settlement follows the lay of the land and does not have any monuments to boast. This coupled with its proximity to the World Heritage Site has meant the land prices are skyrocketing leading to unchecked transformations in the historic fabric. While tourism in Kampli is very limited, it is but a matter of time before the spillover from Hampi finds its way to Kampli. The presence of a strong fishermen community lends a distinct pattern in the weave of the fabric. This paper particularly focuses on investigating the consequences of a top-down approach and explores sustainable approaches that could be formulated which can weave together all the different layers in a beneficial way that is not necessarily tourism-driven. The premise of this paper is to challenge this sort of unidirectional approach that fails to identify the underlying complexity of interconnected layers that led to the formulation of the historic district. While it is an undisputed fact that any planning and development schemes cannot succeed without economic viability, the kind of economic generation can be looked into.

2 Methodology

This research is divided into four parts:

- The historical context of the towns of Badami and Kampli,
- Present urban planning framework and government schemes in Badami and Kampli,
- Impact of the schemes on the towns,
- Discussion and strategies on how to integrate historic conservation with urban planning.

The objective of this research essentially is trying to find answers to three questions. First question, what are the factors including historical, climatic, social and so on that led to the settlement pattern at present. Second, what are the current planning policies and government schemes that are applicable and in operation in the two towns, and the third question is how to integrate planning policies with sustainable practices that result in the preservation of both the tangible and intangible aspects of the historic town. Answering the first question involves analysing the historical layers and understanding all the factors that resulted in the settlement pattern. The resultant analysis would help us understand the significance of different aspects of the historic districts and how to sustain them. The answers to the second question will help in identifying the lacunae if any in the current planning policies and governmental schemes and the mutilations that are being triggered due to them. Thus, the answers to the first two questions lead us to the directions in which the answers to the third question should take. By understanding the historical layers and practices and identifying the present triggers, the gaps in the overlap can be exposed leading to better integration of the conservation of the historic district with urban planning. While it is not possible to use this study as a prototype and generalize the findings, the study may lead to further discussions on how to address the master planning processes of towns of different sizes and scales with historic districts and integrate the multiple facets of the historical districts into the planning framework.

3 Literature Review

The literature review is based on the objectives of this study and thus has been divided into the following parts:

- Historical planning in India,
- Analysis of comparable historic districts in Karnataka and India,
- Analysis of the literature on legal frameworks for conservation and urban planning by international bodies like UNESCO and ICOMOS.

3.1 Historical Planning in India

The principles of town planning are mentioned in some sacred book like Mansara Shilpshastra. They deal with many aspects of town planning including the importance of soil studies, climatic conditions, topography and orientation to get maximum advantage of sun and wind. It also mentions the layout of various town plans such as Dandaka, Swastika, Padmaka, Nandyavarta, Prastara, Chaturmukha, Karmuka. The general principle was to lay main streets (Raja Marga) aligned east–west to get the roads purified by the sun's rays. The north–south axis had shorter streets aligned to it. "Mangal Vithi" or the roads which ran around the village were reserved for chariots (Dagnes 2017, pp. 28–29). Many of the layouts suggested in these texts follow the grid iron pattern for the roads with the temple in the town centre. Some are fortified while others are not. The Indus Valley Civilisation had a well-defined town planning system with sophisticated drainage systems and grid iron pattern having the important streets in the north–south axis and distinct zoning for different groups. During the Buddhist period too, we see towns like Nalanda laid on a grid iron pattern with the main roads clearly defined and the entry points to the town defined as well. The medieval era saw the planning of the walled city of Jaipur as per the ancient texts. The city is designed according to the mandala system with grid iron streets and designated zones for different activities. The Moghul period saw the introduction of gardens into town planning. With the British occupation and subsequent independence, new cities were designed for both administrative and industrial purposes, including Chandigarh, Bhubaneshwar, Gandhinagar, Rourkela and Jamshedpur among others. Thus, many towns and cities in India have historic cores that have been planned as per the ancient town planning methods with the main streets laid out perpendicularly and having a temple in the centre of the town as well as having designated area for particular castes in the town.

3.2 Analysis of Comparable Historic Districts in Karnataka and India

The comparable studies that have been selected are the Hampi World Heritage Site situated in Karnataka, India, with a comparable historical timeline and history, and the walled city of Ahmedabad in Gujarat, India, Hampi in Bellary district, is one of the most visited tourist places in Karnataka, and one of India's most prominent heritage sites. Hampi was designated a World Heritage Site in 1986 with about 56 monuments dispersed over 29 villages in the talukas of Hospet and Gangavathi, where the two talukas cover an area of 23,645.86 hectares of land. In 1999, it was put in the endangered list, since two bridges were constructed inside the inscribed area, and they were deemed to threaten the Site's Outstanding Universal Values (OUVs), Authenticity and Integrity. Following this inclusion in the World Heritage in Danger, preparation of a management plan for the site was necessitated. To implement the management plan, the Hampi World Heritage Area Management Authority was legislated through an act in 2002. Hence, the Hampi World Heritage Area Management Authority (HWHAMA) was created in 2003, as prescribed in the act. As a result of this act in 2004, the local planning boundary (Fig. 1) was extended to include all the 29 villages, increasing the boundaries of the World Heritage Site from 135 to 236.46 km^2 with a core zone (usually taken to mean a no-build zone) of 41.8 km^2. The Hampi World Heritage Area Management Authority essentially deals with providing design solutions and guidelines for local development. The HWHAMA has been entrusted with the management of all developmental activity in Hampi, and its surrounding areas—including the villages of Kamalapuram, Kaddirampura, Virupapura Gaddi and Anegundi (Final Integrated Management Plan for Hampi World Heritage, Section 12, ASI 2007) (Table 1).

In 2007, the first master plan was created by the HWHAMA for managing the World Heritage Site. This plan was highly criticized in terms of its both formation and execution by all the stakeholders involved. However prior to this in 2004, an Integrated Management Plan (IMP) for the Hampi World Heritage Site (HWHS) was proposed by Prof. Nalini Thakur. The IMP is a comprehensive and exhaustive document which recognizes the WHS as a living heritage and follows the World Heritage Convention Guidelines very stringently. The document recognizes the spatial, legal and sectoral challenges that are encountered and attempts a national heritage framework for the management of heritage sites in India irrespective of whether they are inscribed as World Heritage Sites or not (Thakur 2004). Based on this report, the Archaeological Survey of India prepared and submitted an Integrated Management Plan for HWHS to the

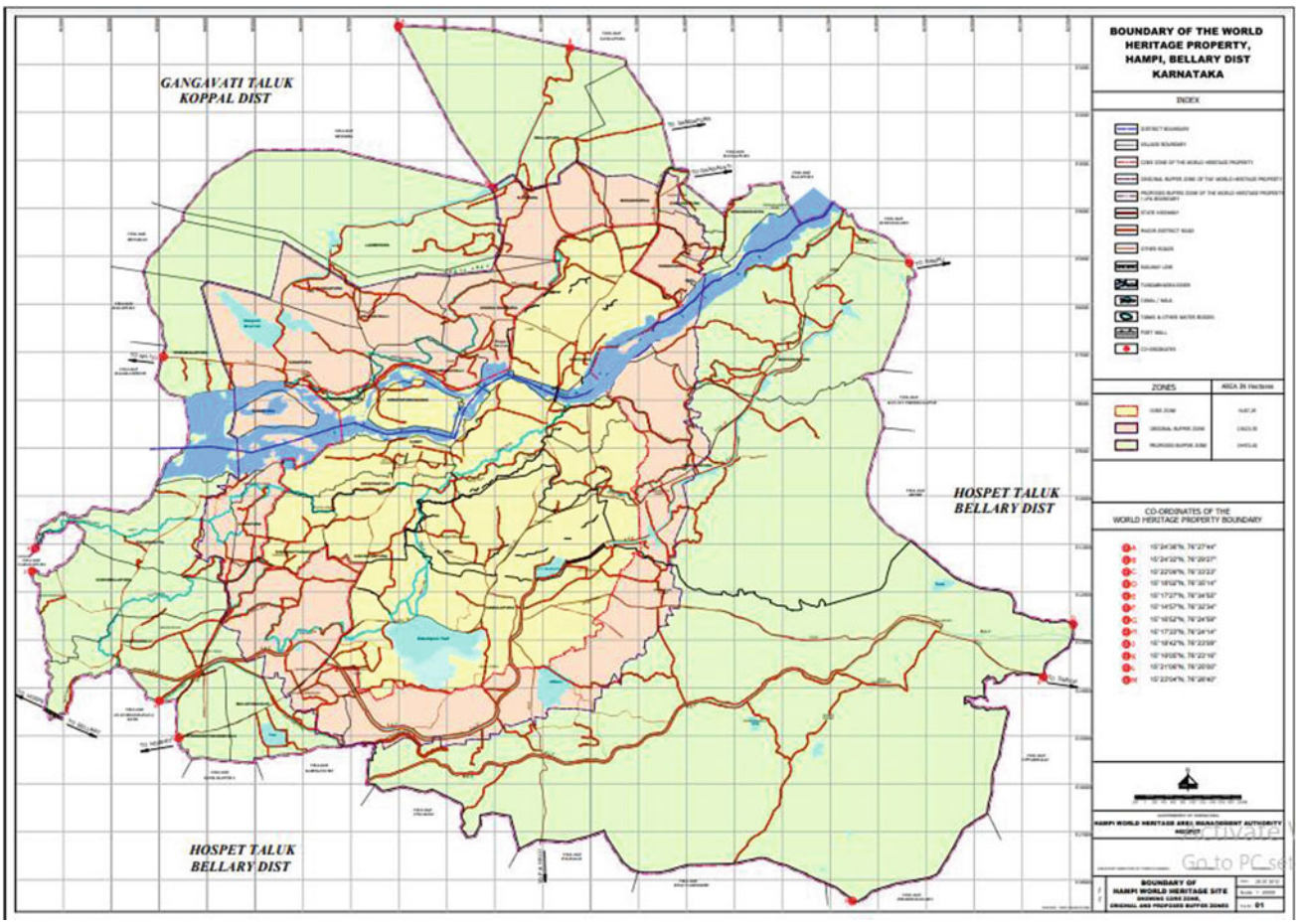

Fig. 1 Map showing the core, buffer and peripheral zones of Hampi as per the local planning area

Table 1 Area of each of the zones in the LPA (Government of Karnataka 2002)

Area calculation for Hampi World Heritage Site (Source: Hampi World Heritage Area Management Authority Act, 2002)	
Core zone/inscribed area	41.8 km^2
Buffer zone	53.0 km^2
Peripheral zone	31.0 km^2
Total	125.8 km^2

World Heritage Centre in 2011, and further the HWHAMA prepared an action plan for implementing the same. This document recognizes the lacunae in the Hampi World Heritage Area Management Authority Act, 2002 (HWHAMA Act, 2002), a Karnataka State Act and the subsequent Amendment Act in 2009 and the discrepancies and inconsistencies between the two. It identifies the need to redefine the roles and responsibilities of the HWHAMA vis-a-vis the relevant bodies at state and local level with regard to the decentralization agenda. It proposes a remodelling of HWHAMA to constitute a multi-stakeholder board with its committee which will give representation to central, state and local stakeholders. Both the IMP and the Action Plan Report are comprehensive documents that can serve as excellent references for the management of heritage in both the tangible and intangible forms with the participation of all the stakeholders.

The second comparable study is the walled city of Ahmedabad in Gujarat, India. Ahmedabad, a city with more than 600 years of continuous history and culture, was founded by Sultan Ahmedshah-I on the ancient sites of Ashaval and Karnavati in the year 1411 (AD). The city was taken over by the Mughals in 1574 followed by Marathas and later administered by the British from 1818, until 1947. The historic city wall of the fifteenth century (A.D.), 10 km in circuit with 12 gates, enclosed an area of 5.40 km^2, which is now inhabited by a population of over 4 lakhs. The walled city is also the main business centre of Ahmedabad. Ahmedabad's built heritage is not limited to historic monuments. The carved wooden domestic architecture in the pols of the old city is in no way artistically inferior to the

historic stone mosques or temples. The traditional houses of the rich in the pols, called Havelis, display fabulous wood work and sculpture (pol is a traditional micro-neighbourhood with cluster of residential buildings protected by a gate, generally occupied by people belonging to a particular caste, religion or profession). There are nearly 600 pols in the walled city. Ahmedabad recognized the need to engage the common public in the process of conservation and also realized that conservation can only work when it is economically viable. Tradable Rights and Conservation Enabling System (TRACES) was developed to facilitate the better implementation of the TDR comprising a procedure which will put all the listed properties on an interactive map. The properties would be classified according to the grade assigned to each along with the present physical condition of the building and also incorporate all the information required for an individual property such as the location, heritage value, building area, available FSI through TDR and at what amount. Thus, adaptive reuse and TDR play an important role in the process of rejuvenation as well as conservation. From heritage walks conducted at night to reviving traditional technology to converting heritage structures to usable apartments, Ahmedabad has come up with many initiatives to ensure conservation is also sustainable. Ahmadabad includes 28 monuments listed by the Archaeological Survey of India (ASI) along with 2696 important buildings protected by the Heritage Department at the Ahmadabad Municipal Corporation (AMC). The buildings and sites listed by the AMC (components of the walled historic city) are protected as a zone with special regulations by the development plan of Ahmadabad Urban Development Authority (AUDA). Due to all these efforts, the walled city of Ahmedabad was inscribed as a World Heritage City in the year 2017. A heritage management plan along with a local area plan and a historic conservation plan are currently being worked on in order to satisfy the World Heritage Council Guidelines.

A study of the attempts by the Jaipur Urban Authorities and Urban Local Bodies in Jaipur, Rajasthan, also gives us some insight into the weaving of conservation efforts into urban planning. The heritage management plan of Jaipur was prepared to guide the growth of historic core and heritage area in the city with a clear vision to sustain its heritage. It is based on an exhaustive listing of 1096 heritage structures and is currently a part of the Jaipur Master Plan 2025. The first initiative started in 1971 with the master plan proposal specifying heritage development works. Since then, there have been many initiatives by the municipal body in collaboration with other agencies, NGOs, etc., to restore and revitalize the historic walled city of Jaipur. Although all initiatives were not implemented and many were just proposals on paper, the fact that conservation is a necessary part of the development wasrecognized and can be seen in the present state of the walled city. Conservation as a tool to draw in tourism thus uplifting the economy is a lesson that can be learned from Jaipur

3.3 Legal Frameworks and Guidelines for Integration of Conservation and Urban Planning: Indian and International

The constitution of India gives the legal framework under which the culture and heritage of the country are protected. Accordingly, there are a few central laws and acts that have been passed for the protection of built heritage in India, and the acts include the Ancient Monuments and Archaeological Sites and Remains Act, 1958 (AMASR). The Antiquities and Art Treasures Act, 1972, regulates the export trade in antiquities and art treasures and prevents smuggling and fraudulent dealings in antiquities and ancient monuments. The Public Records Act, 1993, has the power to permanently preserve public records which are of enduring value. Of these, only the AMASR Act 1958 is applicable to the built heritage. Many states in India have a corresponding state act for the AMASR, 1958 (Kawathekar 2020, pp. 21–22). The salient features of the act are

- The AMASR Act 1958 has declarative and acquisition powers.
- The AMASR Act 1958 recognizes ownership in three ways: private with regulatory control, government with regulatory control and acquired property under the regime of the act.
- The AMASR Act 1958 delegates the preservation and repairs and maintenance of the monuments.
- The AMASR Act 1958 acknowledges the living component of the protected monument only in case of religious structures (Kawathekar 2020, p. 26).

In 2010, an Amendment and Validation Act for the AMASR 1958 was passed. This requires for a National Monument Authority to be constituted, a competent authority specified and heritage bye-laws framed for all protected monuments and protected areas. The heritage bye-laws are to be formulated in consultation with Indian National Trust for Art and Cultural Heritage (INTACH) or other such expert heritage bodies.

Apart from this, there are other acts which assist the AMASR Act 1958, namely the Indian Forest Act 1927, Coastal Regulation Zone (CRZ) Regulation: Cantonment/ Act 2006, Environment Protection Act 1986. But the main act that controls development control regulations and building bye-laws comes from the laws governing the Regional Town and Country Planning and Municipal Acts.

Attempts for urban conservation are made through Town and Country Planning Acts which follow the same pattern of central and state acts. These attempts are made for large sites needing two types of protection

- Area level: It could be a region, city, neighbourhood, cluster or a street.
- Site level where the structure under consideration shall be considered as an entire complex with its setting and all ancillary structure making it into a complex.

One of the first cities to come up with urban heritage conservation process was Mumbai that passed Mumbai Heritage Regulations, and the key elements of this regulation were

- It defines conservation to cover aesthetic, cultural, historic and social value and emphasizes on the need to undertake conservation in the context of urban development.
- It also gave broader definition for built heritage which incorporated not only important buildings but also groups of lesser buildings where the group as a whole and also large areas or precincts retained special socio-economic cultural traditional value that was worthy of preservation.
- It puts forth the listing and grading of historic buildings and encouraged the reuse of historic buildings. The constitution of urban heritage conservation committee comprises a balanced composition of government officials and professionals from the different fields associated and specialized in conservation work (Kawathekar 2020, pp. 61–63).

Two major incentives were introduced in the final regulation in 1995: one made the change of use for heritage building permissible, and the other incentive was the transfer of developmental rights, which entitled the owner of a building to claim equivalent amount of area in the form of TDR certificate, which can then be sold for its value in the property market (Kawathekar 2020, p. 63). Many other cities subsequently followed the Mumbai example and enacted their own regulations under the Town and Country Planning Acts of their states, including Hyderabad, Jaipur, Chandigarh and Ahmedabad.

The other resources include the UNESCO operational guidelines for the implementation of the World Heritage Convention and the ICOMOS charters that give recommendations for the integration of urban planning with heritage conservation. The Venice Charter underlines the importance of preserving the setting of the monument along with the monument and the need for making use of them for some socially useful purpose. The Washington charter further adds to this by recognizing the historic urban areas, large and small, including cities, towns and historic centres or quarters, together with their natural and man-made environments. It recognizes the values of traditional culture that these areas embody. It also states that "In order to be most effective, the conservation of historic towns and other historic urban areas should be an integral part of coherent policies of economic and social development and of urban and regional planning at every level" (Washington Charter, 1987). The Charter on the Built Vernacular Heritage, 1999, states that "the vernacular embraces not only the physical form and fabric of buildings, structures and spaces, but the ways in which they are used and understood, and the traditions and the intangible associations which attach to them" (Principle 6, Charter of the Built Vernacular Heritage, 1999).

A study of the many historic districts in India will show that the layout of the town followed the ancient texts of town planning with the main streets of the town laid perpendicular to each other and a temple at the town centre. This is clearly evident in Badami where the two main streets of the town are perpendicular to each other and meet at the intersection where the Virupaksha Temple is present. Thus, there is evidence of historical planning principles being applied to the town. Second, the comparative studies reveal that the various legal, operational and management processes adopted in other such historic districts in India and the key takeaways from them including how education and participation of all stakeholders are very essential for the successful implementation of any conservation programme. Also, grading and listing of all heritage properties is an essential exercise for any historic district. Apart from this, the incentives in the form of tax breaks, transferable development rights (TDRs) and adaptive reuse are all important for any conservation process, since without economic incentive there is no feasibility for any conservation work. The third aspect is regarding the legal frameworks and tools that are available for the protection and conservation of built heritage in India. Although there are laws like the AMASR Act 1958, which help in the protection and conservation of built heritage in India, the Word Heritage is not defined in the AMASR Act 1958. Hence, defining and protecting the living heritage and the socio-economic, cultural, aesthetic and historical values should be done through the development plan proposals for each city as per the provision of the Town and Country Planning Act. This proves that the master plan is a very important legal tool for the effective integration of the planning process with conservation. Finally, the international guidelines like the UNESCO Operational Guidelines for the World Heritage Convention as well as the ICOMOS charters all stress the need for integrating the policies of economic and social development and or urban and regional planning for the effective preservation and conservation of historic districts.

4 Historical Background and Spatial Development

4.1 Badami

Badami or Vatapi is in existence since the sixth century AD when it was established as the capital city of the Chalukyas. Since then, the settlement has grown, modified and amalgamated into its present state. Badami was established by the Chalukyas who were overthrown by the Rashtrakootas around the 9th century. Subsequently brought under the Islamic rule of the Bijapur Sultanate, it was then successfully ruled by the Maratha's, Hyder Ali and then finally the British before independence. Each of these changes left an impact on the settlement that reflects its layered past in the form of the various monuments and structures that are littered across the old town of Badami. The presence of the two axial roads that intersect at the town center where the Jambulingeshwara Temple and Virupaksha Temple are located and the clear clustering of the various communities into different quadrants as a result of these two axial roads show an intent in planning based on occupation and lifestyle.

Presently, the town municipal corporation of Badami (Fig. 2) occupies an area of 10.3 km^2 with a population of 30,943 (source: 2011 census). Badami is unique for both its historical past and its geographical setting. It is set in the valley formed by the red sandstone cliffs that surround the town on the north, east and south sides, and along the western banks of the Agasthya Teertha Tank, an amazing engineering marvel built to hold the rain water run-off from these cliffs, to feed the town of Badami of yore. Many of the important historical monuments are found around the tank including the Bhoothanatha group of temples, the famous rock cut cave temples, the Malegetti Shivalaya and the Yellamma temples as well as the Islamic tombs and fort walls. It is one of the few places in India that have rock cut temples and structural temples of the same period coexisting together (Fig. 3). Apart from this, there is the historic settlement that has a very distinct pattern and built form with a pedestrian scale that is suitable to the lifestyle and climate of the place.

4.2 Kampli

Kampli or Kampila was established about four centuries after Badami by the later Chalukyas; subsequently, it was ruled by the Cholas and then the rulers of Anegundi; much later once Hampi became the capital of the Vijayanagara kingdom, it served as an outpost to Hampi.

Kampli also claims mythological instances from the epics of both Ramayana and the Mahabharata. Today, the remnants of a fort wall and the Pampapati Temple which was the royal deity of the rulers of the Vijayanagara empire are the only reminders of its past. Present-day Kampli is the taluk headquarters of the Kampli taluk and the town centre for the surrounding villages (Fig. 4). With a population of 39,307 (source: 2011 census), it is a bustling town with many educational institutions ranging from primary schools to degree colleges. Its main economic activity being agriculture, it has about 20 rice mills and is the economic hub for the surrounding villages. It is also just 25 km away from the UNESCO World Heritage Site of Hampi and surprisingly excluded from the larger Hampi Area Management Plan.

5 Present Urban Planning Framework and Government Schemes in Badami and Kampli

5.1 Badami

In 2014, the Ministry of Housing and Urban Affairs, Government of India, launched the Heritage City Development and Augmentation Yojana (HRIDAY) scheme, with a focus on holistic development of heritage cities. The scheme aims to preserve and revitalize soul of the heritage city to reflect the city's unique character by encouraging aesthetically appealing, accessible, informative and secured environment. HRIDAY strategizes its efforts like planning, development, implementation and management for ensuring the sustainable growth of selected heritage cities in partnership with state governments (Scheme Statement and Objectives: HRIDAY 2014). The City HRIDAY Plan (CHP) offers an overall vision for the future heritage-based development of Badami and associated heritage sites in the surrounding areas. It provides a city-level as well as heritage area-/zone-level infrastructure assessment, broadly focusing on four theme areas, i.e. physical infrastructure, institutional infrastructure, economic infrastructure and social infrastructure for reviving and revitalizing the soul of heritage city (Badami City HRIDAY Plan—IHCNF, 2015). The City HRIDAY Plan for Badami proposed under this scheme recognizes the value of the intangible heritage along with the tangible heritage, proposes a slew of infrastructural improvements and culminates in an arts and craft village on the western edge of the Agastya tank as well as a haat (rural market) at the Banashankari temple precinct. The focus here is economic development through the promotion of heritage tourism, hence the arts and crafts village that promotes the regional cultural skills. While the plan brings in a lot of much needed infrastructural improvement in terms of local and tourist infrastructure, its culmination seems watered down and tourist-driven without seeming to consider the local impact of such a scheme.

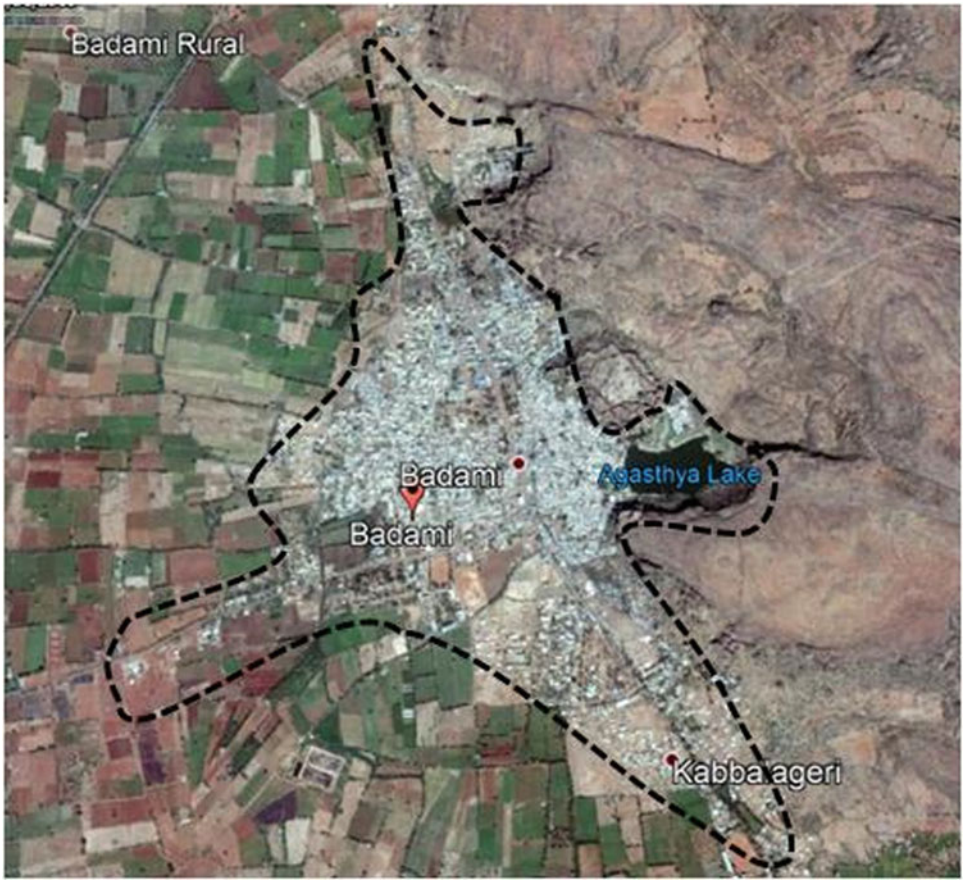

Fig. 2 Badami town

5.2 Impact of the Scheme

Historical landscapes like the old town of Badami are the cumulative result of many factors that include lifestyle, culture, spatial formations, etc. An agrarian lifestyle along with the festivals and rituals, combined with climate-responsive techniques has resulted in the pattern that is seen today. Bye-laws and guidelines to protect the built heritage and streetscapes while welcome are not enough. A deeper understanding of the origin and formation of these settlements is required in order to formulate policies that are truly bottom up and inclusive in their approach. According to the "Landscape Identity Circle", a vital component of the landscape is the "spatial identity". It is a space "where people ascribe identity to their environment". Thus, the characteristics of this space are much broader than "the visual aspects of the landscape". It includes elements such as orientation, distances, ordination, colours, processes and even sounds and smell (Stobbelaar and Pedrolli 2011). A sense of self-efficacy is upheld if the personal lifestyle is supported by or at least not in conflict with the area. This aspect is related to the function or use of an area (Stobbelaar and Pedrolli 2011). The pattern and scale of the built form of the old town with the Agastya tank as its focal point allow for a meaningful interaction in everyday life as espoused in everyday urbanism (Crawford et al. 2008, cited in Carmona et al. 2010, p. 44). The tank and the town are intrinsically linked; it is a source of water, livelihood, a social gathering space as well as a sacred space. This "multidimensional consideration" of the public space that is the tank and its edges are intrinsically linked to the everyday lives of the residents of the old town needs recognition. The tank is the urban commons that has a temporal and social structure to its functionality that is inbuilt into the everyday life of the residents of the old town. Starting with daybreak, people come there to fish, others come for their morning ablution, the farmers sometimes wash their cattle, and between mid-morning and mid-afternoon women come there to wash clothes, dry and take them back. This washing of clothes is as much a social event as an everyday chore. The women talk, socialize and help each other while doing an ordinary everyday mundane chore. Each community has a designated spot at the tank which is strictly followed. Late evening is a time for the children and adults to gather, play, chat and socialize until the sun goes down. Apart from this, there are festivals and events of the community that culminate in the

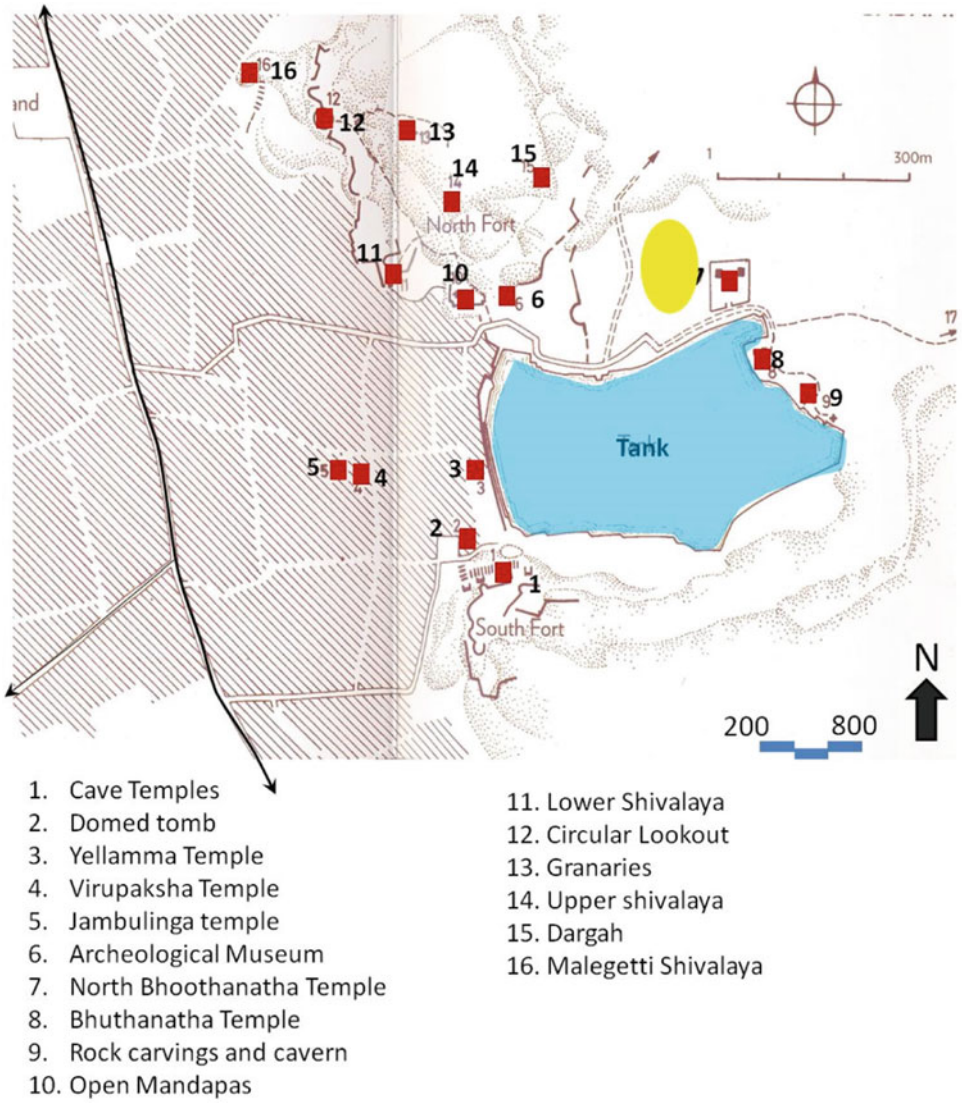

Fig. 3 Historical sites and monuments of Badami

Fig. 4 Kampli town

tank. So, an art and crafts centre at the edge of the tank is an invasion of the urban commons of the community which can be shared but not taken over by tourists. This distinction is essential to maintain a sense of self-efficacy which comes when lifestyle and the area are not in conflict (Stobbelaar and Pedrolli, p. 327).

5.3 Kampli

Kampli has two parts: the main town of Kampli that is the taluk headquarters and the old Kampli that is the historic district which has the fort wall and lies hugging the banks of the Tungabhadra. The old town of Kampli or Kote, Kampli as it is known, is home to a sizable fishing community, and these are mostly migrant settlers, here due to the bounty offered by the Tungabhadra. The scale and the fabric of the settlement are reminiscent of the hot and dry vernacular typology found in the plains of Karnataka. Thick mud walls with mud composite roofing, small openings, skylights at strategic points, verandas in the front are all derived due to the climate and lifestyle as well as the locally available materials. Narrow lanes that keep the hot sun away are pedestrian-friendly and climate-responsive. There are distinct residential typologies that are caste- and occupation-based. The unpretentious Brahmin residential typology is distinct from the wealthy Lingayat landlord typology which houses underground cellars to store grains and wealth. This very distinct historic fabric that is irrevocably linked to the lifestyle and occupation of its residents is threatened by the new wave of construction that is seeping into it. According to UNESCO's Convention for the Safeguarding of the Intangible Cultural Heritage wherein intangible cultural heritage (ICH) is considered as "a guarantee of sustainable development" (UNESCO 2003), ICH is "transmitted from generation to generation, is constantly recreated by communities and groups in response to their environment, their interaction with nature and their history, and provides them with a sense of identity and continuity" (UNESCO 2013). This means that the knowledge and skills constituting ICH practices are "inherited" from one generation to the next through processes of "embodiment". If the transmission is disrupted, the heritage practice will eventually be extinct because it is irrevocably bound to the practitioners and ceases to exist with their passing away (Meissner 2017). Thus, the master plan of Kampli needs to address these aspects if the fort area of Kampli has to retain its authenticity.

Integrating Historic Preservation with Urban Planning:

Economic generation is essential for any community to sustain. While the City HRIDAY Plan (CHP) prepared by HRIDAY (Heritage City and Augmentation Yojana 2015) scheme under Ministry of Urban Development, Government of India, is commendable for its identification of both the tangible and intangible heritage aspects of Badami and tries to address the same through various measures proposed under its aegis, it is very tourism-centric in its approach. It focuses on reviving the arts and crafts of the historic district but does not offer any incentives for the agricultural industry that is the primary occupation of the town. The built form, the scale and the typology of the construction are all linked to an agrarian lifestyle. Defunct oil mills and dried lake beds and depleting water table are all indicative of the move away from the traditional farming practices that were more sustainable and earth-friendly. Tourism, while welcome and lucrative should only add to the existing economic policies, not monopolizes them. The two towns of Badami and Kampli while being very similar in certain aspects in terms of their historicity and their present status as taluk headquarters are also very diverse in terms of their value in the heritage chain. Thus, Badami with its numerous monuments and historical buildings and precincts is deemed worthy of a heritage city status while the lesser known Kampli does not qualify. The HRIDAY (Heritage City and Augmentation Yojana 2015) initiative by Government of India is a good start to identify the value and importance of historic towns and districts in India. It is but a start, we need to look at a more varied and in-depth classification that can identify and address towns and districts that do not come under such classifications and find a way to ensure that our planning policies and guidelines encompass historic districts of all types, scales and importance. Once the policies are in place to identify and recognize historic districts across all towns and district, a plan of action can be evolved that can be applied to the district based on its place in the heritage hierarchy. Towns like Kampli cannot have a CHP like Badami, but they do need a road map to safeguard their heritage in a way that is economically sustainable to its residents. Gibson and Kocabaş (2001) state urban regeneration as a holistic, comprehensive and integrated approach that embraces the three E's—economy, equity and environment. Thus, holistic planning that ensures equitable opportunities for all the stakeholders involved while ensuring the practices are sustainable in order to create a resilient economy is important. A crucial aspect that requires attention is convincing the community that their built environment has turned into heritage as they are living communities. Agenda 21 identifies four programme areas for sustainable development and focuses on empowering and uplifting small and disadvantaged communities including indigenous and fishing communities. It recommends using local and traditional building materials and using traditional building techniques and self-help systems, adopting energy efficient designs and the dependence on labour-intensive construction techniques. Thus, sustainable planning has to look at all these aspects and not just tourism or infrastructure alone.

6 Strategies for Integration of Historic Preservation with Urban Planning in Badami

The strategies to be adopted for revitalizing the historic district in Badami can be tourist economy-driven in terms of the infrastructure and craft and skill promotion as well as primary economy-driven in terms of sustainable practices to be adopted for better output in agriculture.

7 Art, Culture and Tourism Strategies

The CHP proposes an arts and crafts centre on the north banks of the Agastya tank for reviving the dying arts and crafts local to Badami. "Such a facility would additionally ease the pressure of footfall concentrated on a few monuments and spread the same over a wider area, thus reducing the impact of excessive tourism concentrated in one area—i.e. the Badami Caves" (Badami City HRIDAY Plan—IHCNF, 2015, pp. 109–110). But the proposed plan will do the exact same thing it is trying to avoid in a different place, which are the ghats (a flight of steps leading down to a river or water body) of the tank. Instead, an inclusive plan provides housing and infrastructural support to these crafts which in turn will help revive them and make them more profitable and thus more economically and resonates better with the three E theory (Gibson and Kocabaş 2001). An arts and crafts village placed closer to the railway station with areas identified for housing and workshops as well as places for tourist interaction, while still being easily accessible from the bus stand and the other places of stay is a more sustainable solution (Fig. 5). This will enable to maintain the sanctity of the Agastya tank while still allowing the tourists their experience. Provision for hospitality to help more tourist inflow is proposed in the south towards the Banashankari temple precinct. This can increase the revenue for the city while providing better tourist facilities. Apart from hospitality, other tourist infrastructure in terms of information Kiosks at the railway and bus stations, maps and signage, toilets, improved connectivity between the caves and the Bhoothanatha temple complex through NMT's, heritage walks and tours, guided tours to the nearby temple precincts of Mahakoota and Banashankari will definitely help in increased revenue from tourism (Fig. 6). Many private operators run day tours to Pattadakal (World Heritage Site) and Aihole which are about half an hour away, from Badami. The government can identify and regularize these tours and add a few government-operated tours, thus increasing tourist revenue.

8 Agrarian Economy Strategies

The lifestyle is also linked to their occupation which is agriculture-based. Sustainable policy decisions should and

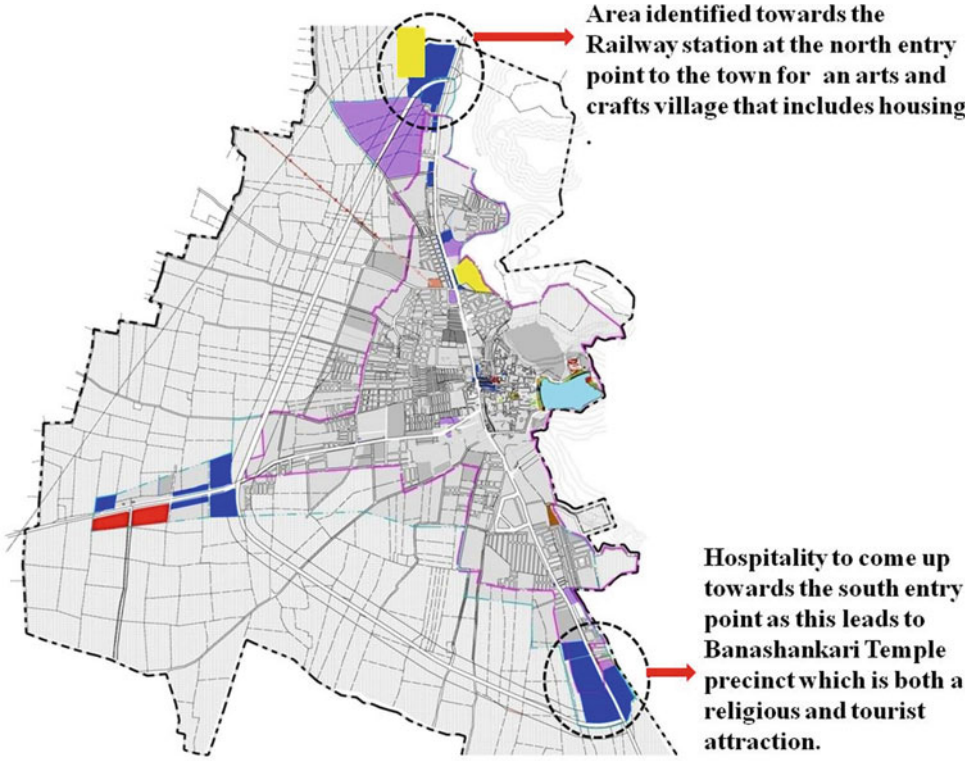

Fig. 5 Strategies to sustain the arts and crafts of Badami

must address the larger issue of how the primary occupation and economy generator continue to be of relevance. Agenda 21 (Rio De Janerio, 1992) recommends adopting traditional agricultural and irrigation techniques, supporting the involvement of local communities in the conservation of their historic buildings and providing equal employment opportunities for women (Sitarz 1993) It also recommends support of research on and integration of traditional methods of production that have been shown to be environmentally sustainable. Sugar cane which is a water-intensive crop is not suitable for an arid region like Badami. Such unsustainable practices need to be discouraged at the policy level as these crops lead to digging of water bore wells in a region where the water table is already depleted. According to agropedia, an Indian Institute of Technology Kanpur (IITK) and the National Agricultural Innovation Project (NAIP) collaboration, a portal on agricultural practices and research, under the aegis of Council of Agricultural Research (ICAR), intercropping of groundnut with chilli, pigeon pea and sunflower is very good sustainable practice. Incentivizing farmers who follow sustainable methods, which help in improving crop production and retaining the soil fertility and reduce the adverse effects of drought, is essential. Furthermore with the higher output of oilseeds, the defunct oil mills can be revived which will in turn further help stop the migration of the population as well as strengthen the economy.

9 Strategies for Integration of Historic Preservation with Urban Planning in Kampli

9.1 Conservation Strategies for Kampli

The new town of Kampli is a thriving, bustling taluk headquarters with a lot of economic activities like rice mills, commerce, etc., thriving here. The old fort area of Kampli is struggling to keep up with the new developments and consequently losing its essence. Since a clear demarcation exists between fort town Kampli and the new Kampli in the form of an agricultural land belt, the fort area can be declared as a protected zone with guidelines for protecting existing built fabric as well as for future building activity. A survey to classify the structures according to era, style, construction techniques, the material used and so on should be conducted, and structures that qualify on predetermined parameters have to be notified on the heritage list. To ensure the process is financially viable for the individual owners of the heritage property, appropriate measure to compensate them has chalked out. This could be done in the form of tax incentives, TDR or tradable FSI, public–private partnership and adaptive reuse. These schemes have been implemented with varied success rates in Jaipur and Ahmedabad in India as shown in the earlier studies. As stated previously, convincing the community that their built environment is heritage is very important for implementing the above-mentioned

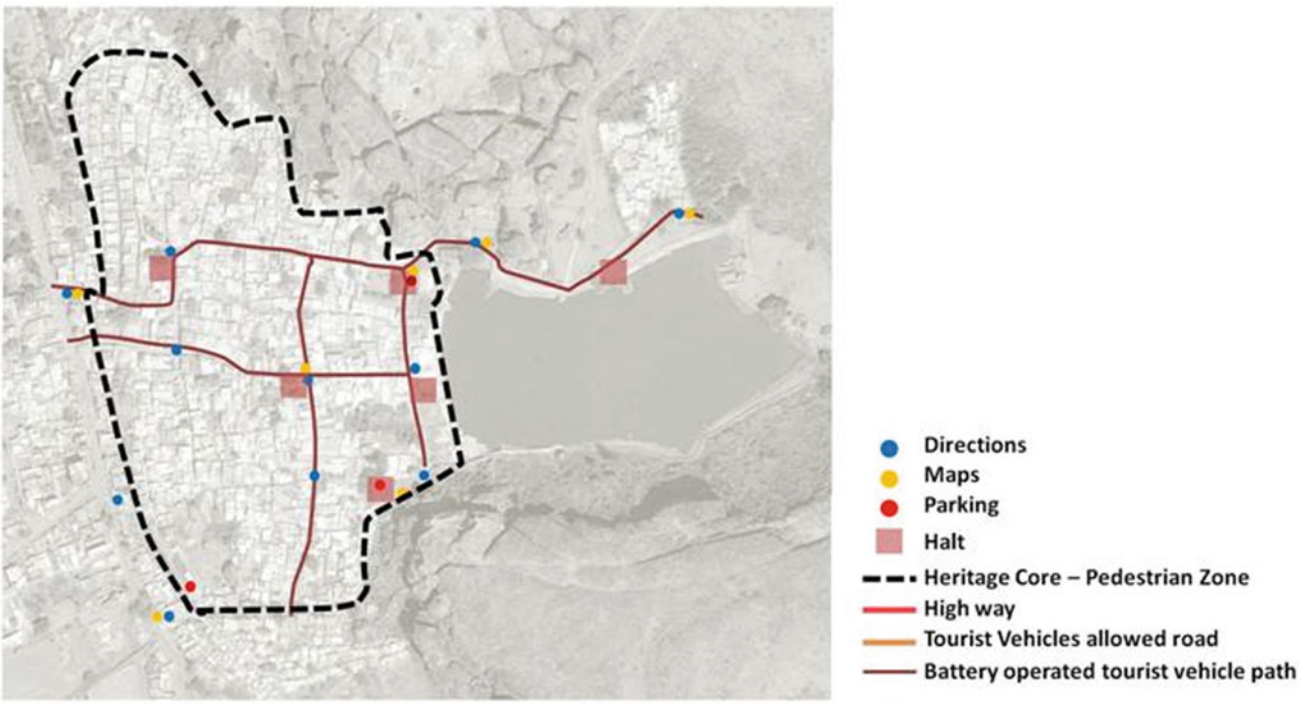

Fig. 6 Strategies for sustainable tourism in the historic district

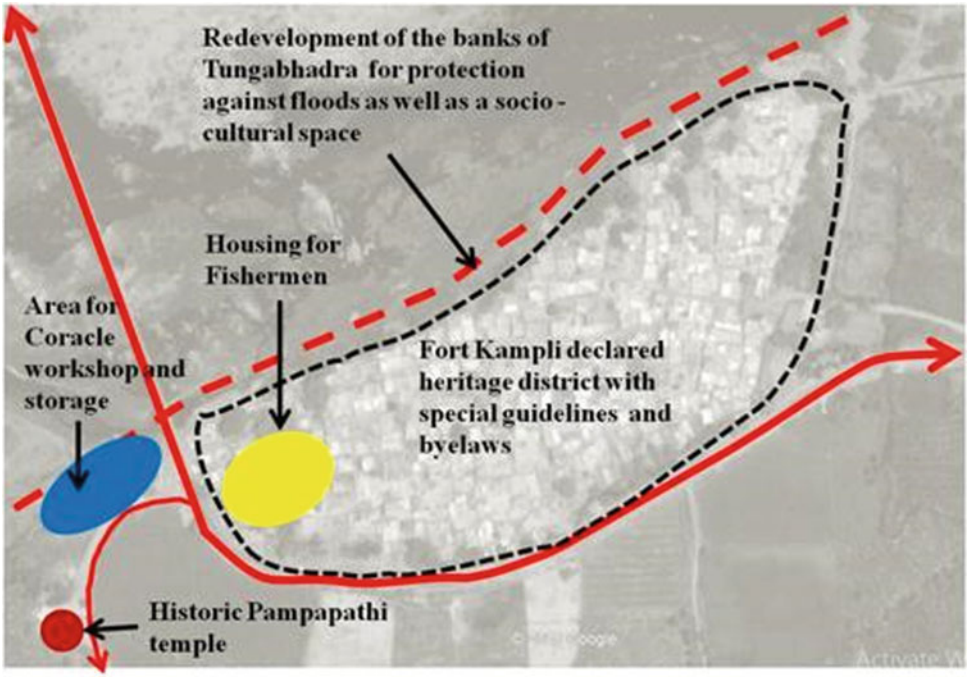

Fig. 7 Strategies for sustainable regeneration of historic area of Kampli

schemes. This can be further made economically viable by training willing members of the community in the traditional building methods, many of which are dying and creating job opportunities.

Pampapati Temple has to come under the protected monuments ambit of ASI, and the precinct can be developed linking it to the other monuments of the era in Hampi (Fig. 6).

9.2 Tourism and Fishing Economy Strategies for Kampli

Fishing is the primary occupation in the fort area; ancillary activities like coracle making, weaving and fishnet making are part of it. Providing better housing for the fishermen, strengthening the coracle building craft with government incentives and organizing workshops and interactive sessions for tourists could help add to the revenue. Redevelopment of the banks of the River Tungabhadra with better facilities for coracle docking, place for building and storage of coracles and ghats along the banks will transform the river edge and help give the town a stronger identity (Fig. 6). Boat rides along the river to connect Kampli with Hampi (UNESCO World Heritage Site) which is just 25 kilometres away would help in drawing tourists from Hampi into Kampli and could strengthen the argument to conserve the old fort area of Kampli (Fig. 7).

10 Conclusion

Change is inevitable with development, and since lifestyles and built environment are closely linked to each other changing lifestyles have a negative impact that is no longer conducive to the continued preservation of the historical built form. Historic districts are also more often than not the centre of their present-day urban settlements, thus having the most sought-after locations as well as being the most accessible part of the town. All these factors make them very vulnerable to the economic forces of change. So what is the solution to this riddle of conservation in the face of development? While there are no straight and simple solutions for these questions, there is however a need to relook at the guidelines and framework of our planning policies that govern these determining factors. One cannot ignore the economic point of view that historic districts occupy prime land and are usually densely populated but low rise in nature which given the strain on the resources in our urban areas, especially land which is the most precious of them all, has to be optimized. This conflict caused due to the developmental forces and the transformations that get imposed on these heritage districts lead to a situation that is detrimental to the original settlement. We need to re-imagine and rethink our existing policies and frameworks of planning that mostly delve into land use and infrastructure and only glance through the intangible aspects of our heritage. While the

built monuments and precincts get protected, the sustainable practices that inform these settlements get lost in transition. In towns like Badami which are a part of government-sanctioned schemes to protect and conserve their tangible and intangible heritage, the document and the proposed city development plan do not consider the primary occupation of the town that is agriculture and the vanishing sustainable practices that need to be continued if we have to look at any holistic approach. On the other hand, towns like Kampli that have a storied and historical past are not on the radar of any conservation policy or legal framework since they do not boast of any significant monuments or precincts and ironically being just 25 km away from the World Heritage Site of Hampi, not even covered by the larger Hampi management plan. Does that mean that these towns have nothing significant to conserve or contribute in terms of sustainable practices or planning? Critical regionalism as espoused by Frampton (1983) talks about the culture and the identity of the place and historical towns and districts that are replete with such practices which are critical to the climatic conditions, the local material and technical knowledge of its inhabitants giving these places their unique identity. It is this aspect of the historical districts that needs to be retained so that we do not erase our towns and districts of their sustainable practices but instead try and glean the best practices and learn to find a middle path that allows for development in a more inclusive and sustainable way. It is the proper understanding and interpretation of the definition of sustainability by the UN, "sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs"—the United Nations World Commission on Environment and Development (28, 29). This paper contemplates how two historic districts which are at different ends of the spectrum in the hierarchy of heritage districts need to be looked at when deriving the development plans and policies and what are the aspects that need attention if we are to create resilient towns and cities that can continue their proven and sustainable practices with the additional benefit of tourism and not just become tourism-driven economies.

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Transnational Global Infrastructure Spaces and Their Impact on Historical Places: Resistance, Negotiation and Alternatives in the Case of Gwadar

Sohrab Ahmed Marri

Abstract

Global infrastructure spaces, known as variegated types of free zones, such as ports, luxury gated communities and more, are spaces that function as dynamic crossroads and global trade platforms. The development of infrastructure spaces has endured incremental disruption while transnational activities were met with local resistance. This is clearly seen in the case is Gwadar, a small fishing town of prime location, which is a feature for transnational global infrastructure spaces. The development started from 2003, lasted until 2008, and was then resumed as part of expansion plans under the umbrella of the China Belt and Road Initiative starting 2014 to the present. The impact of the initial phase of developments has resulted in a disintegration of the socio-economic situation and daily lives of locals. The associated resettlement plan induced a fear of displacement and the negligence of the local authorities has caused the abandonment and eventual deterioration of historical places within. Citizens of the town, in hopes of protecting their surroundings and identity, met the development with resistance. Historical places also conveyed resistance by self-regenerating and maintaining their socio dynamics. Due to previous unsuccessful planning attempts, the Chinese architects and planners adopted an alternative strategy under the BRI framework. The strategy was aimed at negotiating the development process with the public in hopes of legitimizing the preservation of historical places and designing new infrastructure that rather emulated local architectural identity. This paper highlights the resistance in discourse as well as efforts exerted to sustain the identities of these places. This is achieved by using temporality, sensory experience and mapping out the sensations and subjective response of the users of newly constructed architecture, specifically infrastructure spaces. The research concludes that the state-run dominant policies are not always successful and negotiations with alternative strategies could help mitigate local resistance in transnational developments.

Keywords

Historical places • Identity • Transnational • Infrastructure spaces • Resistance • Infrastructure development • Gwadar

1 Introduction

The focus of this research is namely the development of transnational infrastructure spaces, their impact on historic places and the induced conflict of new constructions on the identities of old towns. Abundant research has been carried on urban resettlements, as a result of infrastructure development projects, which has impacted the local economy, cultural heritage and identity (Olivia and Chiristopher 2012; Modi 2009; Vinclay 2016; Vinclay et al. 2008). In some cases, the undertaken developments did not result in the physical removal or relocation of the people, yet still managed to leave an impact on their livelihood and socio-cultural life (IFC 2002). Research on urban regeneration reveals that state urban policies are not always successful in effectively controlling urban spaces (Degen 2017). Further research states that taking a "world city" approach and moving towards globalization has caused constant pressure resulting in incremental corrosion, destruction of existing and historical towns and even an undermining of the fabric of social life (Chalana 2010; Dirlik 2005; Murray 2017; Lee and

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Baumeister 2007). This paper presents the case study of Gwadar, a small historical fishing town located south west of Pakistan and near Strait of Hormuz which is between the Persian Gulf and the Gulf of Oman. The old town of Gwadar has faced continuous pressure since the beginning of the first Gwadar port construction which aimed to expropriate the existing old town and make space for developing infrastructure. This confiscation of land was met with resistance from local people in hopes of defending their identity, culture and socio-economic status (Jamali 2014). The resistance can also be seen in several other places to sustain local identity and socio-economic dynamics in the face of external threat. The resistance was mostly detected operating in a material-temporal level within the dynamics of place making (Massey 2005). The paper emphasizes the importance of temporality and sensory experience in the relationship between power and resistance in the Old City. Thus, this paper uses ethnography-archival research as its methodology (Gracy 2006) in addition to questionnaires and interviews to find out the level of resistance existing and operating in the temporal dimension (Fig. 25.1).

The conflict in discourse is, on one hand the old town's heritage, and the necessity of development for progress on the other. The preservation of cultural heritage is often seen to represent an obstacle on the path to economic development despite its various economic benefits such as increasing job opportunities in maintenance, revival of city centres, heritage tourism, increasing property value, promoting small businesses that cater to heritage and more (Shipley and Snyder 2013).

The transnational infrastructure project development started in 2003 and lasted until 2008 for the first phase, after which the China Belt and Road Initiative took over starting 2014 until the present. The first phase consists of the Gwadar port, a Free Zone, a City master plan and supporting facilities. Only two projects continued including the construction of the port, by a China State-owned Construction Company, and the city master plan which was prepared locally. The resettlement plan, part of the Gwadar master plan, and other planned activities triggered local resistance and armed conflicts which, as a result, hindered the development process and eliminated success. The sensed ambiguity and ignorance on the local government's part has caused huge damage to historical sites and the socio-economic situation (IUCN 2007; Jamali 2014). However, Gwadar is gaining attention for its new status as an international port city. The projects initiated by the Chinese state-owned companies such as the expansion project of Gwadar port, construction of Free zone, Gwadar New City Master Plan are now also under the spotlight (Berta et al. 2018). Yet, the main challenge for Chinese architects and planners remains; will the old town be torn down to make way for new developments and related facilities or will the culture and heritage of the old Gwadar town be preserved through alternative strategies?

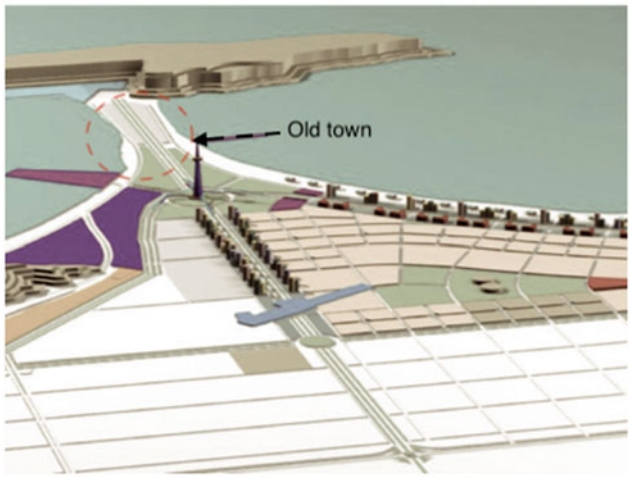


Fig. 25.1 The 3 dimensional Gwadar City First Master Plan in which the old town is mentioned as a green space. *Source* Gwadar City Master Plan document extracted from Gwadar Development Authority office

This paper presents the first phase of development and its impact on local historical places and the opposition it endured. In the second phase, Chinese architects and planners put forward an alternative solution to preserve the old town by including the local community and suggesting to convert it into a cultural district that presents a Chinese model of "micro transformation" (Final report of Gwadar Master Plan 2019). On the other hand, they sought to establish new local identities by emulating local architectural features with an aim to enhance Gwadar's peculiar architecture and minimize conflict with locals. The intention is to execute the plan as not an invader but to ensure integration. In conclusion, the research briefly introduces a peculiar methodology of research, which enabled authors to analyse the old town and areas where resistance emerged. The results of the negotiation strategy adopted by the Chinese architects and planners could be useful for future transnational projects.

2 The Contested Old Town

Gwadar is a small fishing town located in west of the Baluchistan province in Pakistan. The town's current population is one million with more than 70 per cent relying on fishing and boat related businesses (IUCN 2007). In 1624, according to Italian traveller Pietro della Valle, Gwadar's inhabitants comprised of the Baloch and their chief who has ruled Makran and has established relationships with the Persians. Serving as a passage for sea trade, the city represented the safest trade route from Hormoz as well as source of profit. Moreover, Gwadar was mainly ruled by Khanate of

Baluchistan from fifteenth to eighteenth century after which it was overtaken by the Oman sultanate for nearly two centuries (Lorimer 2003). Gwadar has enjoyed diverse cultures such as the Arabs of Oman, Agha Khani of Persia, native Baloch and Hindu of Sindh who lived side by side and had a hand in the creation of the unique Gwadar culture and heritage (Suleman 2015).

The construction of a deep-water port in Gwadar has been a lifelong dream for Pakistan and after the recommendation of Worth Condrick, deputed in 1958 by the US for survey of the Balochistan coast. In September of that same year, Pakistan spent three million pounds to end Omani control and take back Gwadar after having realized what it represented (Rizvi 2008). In 2001, the General Musharraf, the dictator of Pakistan, announced the construction of Gwadar's seaport with financial and technical assistance from Chinese Government, by handing over construction to a Chinese Communication Construction Company. The initial phase in the development consisted of dislocating the Mullah band neighbourhood located in the old town. The Mullah band has been compensated but has lost one of the oldest areas of Gwadar where mostly fisherman lived for centuries. A prime location for the port has been the site selection's main focus as it was known for its fishing activities (Jamali 2014). Loss endured in the process is made for the sake of new developments.

Moreover, and in 2003, the first Gwadar master plan was prepared by a local planning firm in which the resettlement of Gwadar's old town was intended to create space for supporting facilities (Gwadar Master Plan 2003). This, as a result, has triggered conflict within Gwadar as native fishermen realize their removal would mean losing their homes, sources of income and identity forever. Meanwhile, the tension in the Baluchistan province rose as ethnic separatism took place resulting in armed resistance against this government. Incidents encompassing violence against Chinese workers brought about Pakistani Security forces to control situations. Control over the population and restrictions were later enforced to establish a cordon sanitaire around the Gwadar port and old town. The aggressively taken security measures disrupted local fishermen's experience of place and social memory and introduced feelings of exclusion, fear and paranoia as well as influenced fishing activities (Jamali 2014). Some fishing restaurants, some of the most famous in Gwadar,[1] located near the port, were forced to shut down for security reasons. However, and in spite of the tension surrounding the development, the 5-star Pearl Continental Hotel and seaport, part of the initial construction phase, were completed in 2007.[2] Pearl continental hotel is also designed by a local architecture firm and is inspired by wind catchers sharing traditional Arab and Persian architectural and cultural elements. This was a first attempt at reflecting the local identity in new designs and an attempt to set grounds for the vision put forth to modernize the town of Gwadar.

Ever since announcements have been issued by the Belt and Road Initiative (BRI) with regards to development plans, Gwadar has been set as a top priority under the umbrella of the China-Pakistan economic corridor; a collection on infrastructure projects. The seaport and infrastructure development agreement, signed between Pakistan and the Chinese government on a Build-Own-transfer basis, constituted that the Gwadar Port and Free zone is leased to the China overseas port holding Company (COPHC)[3] for 40 years. There are some projects undergoing development by the BRI, which directly clash with the old town, such as the Eastbay expressway as it connects to the port as its main artery. Other conflicts are represented by the resettlement plan of old Gwadar to make room for port related facilities, especially considering its poor condition which could denote a bad image on media channels.

3 Objective and Aim of Research

The aim of this article is to explore the notion of temporality and sensory experience and their roles in framing relations of power and resistance[4] in Shahi Bazar, an old town included as part of the first phase of the Gwadar port project. It draws attention to sensations and subjective response and ties them to the construction of a new architectural identity by foreign architects. The research methodology adopted makes use of ethnographical research tools, historical archives, questionnaires and interviews. The specific questions addressed in this research are "How did the historical places of Gwadar, with special focus on the Shahi Bazar area, respond in the face of transnational global infrastructure spaces? Did they decline or withstand the change? What is the best practice to

[1]The author conducted informal meetings and interviews by the end of 2019 with Native fishermen asking "what are the impacts of the Gwadar port's initial development phase on fish related business?". One of fishermen highlighted that the fish restaurant located by the fish harbour, a famous public space, is also closed due to security reasons.

[2]The Hashoo Group (HG) Chairman Sadurddin Hashwani in a press conference on December 2006. He briefed the public about the new PC Gwadar hotel. 2006. Hashoo Group builds 5-star hotel at Gwadar. Retrieved from https://fp.brecorder.com/2006/12/20061207505108/.

[3]The details about the Gwadar projects developing under the umbrella of the China Belt and Road Initiative is mentioned by the author in another published article in an Italian magazine i.e. (The places of Belt and Road)". (E tutta seta cio che luccica? L' Italia e Xi: bilancio e prospettiva della Via della Seta) (Mondo Cinese) 156–174. For more information interested reader can read it.

[4]See the definition of "resistance of place" in Monica Degen article "Urban regeneration and resistance of place foregrounding time and experience" published in 2017.

preserve the old town while also completing development? Finally, is it possible to mitigate local forces of resistance through architectural design?"

4 Methodology of Research

The research methodology proceeds to taken on the concept of "places of resistance" for discussion and defines it as the ability of places to survive in the face of challenges such as the disturbance of fishing activities, socio-cultural activities and continuous fear of resettlement. The places in discourse have adjusted themselves to survive with limited resources to take into account time and space requirements (Degen 2017). By self-regenerating, it can be said how the resistance was dealt with was through accounting for spatial and social dynamics rather than relocating. The idea of resistance in anthropological research has always been linked to the work of individuals or communities but instead this paper develops the notion of "resistance of place" and its inherited identity.

This paper uses a range of ethnographic vignettes, archives, and questionnaire and interview excerpts to make note of how the temporal and sensory experiences are embedded in the resistance of place (Degen 2017). The author has undertaken the ethnographical research by conducting field survey a number of times over the last 2 years. Additionally, photo archive research was adopted as a comparative analytical tool to understand the notion of resistance in this context. Twenty (20) interviews were recorded using a mobile phone recorder. The author later transcribed and organized them into categories by meaning. This article presents the results obtained from selected data sets in the form of summaries of ethnographic observations/interviews and personal statements of respondents in 2018 and 2019.[5] The data was analysed through grounded theory approaches and a thematic analysis.

Combining ethnographical and archival research methods (Gracy 2006) to see how resistance took place and rather regenerated itself with time. To conduct ethnographical research, the author made frequent visits to the site to observe those places of resistance and regeneration related activities and interacted with Shahi Bazar people to gather information. A local friend provided assistance with the observation phase by accompanying the author as to not look strange or suspicious to locals. The aim is to gain an insider's perspective of the community and to get the same experience as provided to community members (Allen 2018). The other case study of new architectural infrastructure spaces mostly encompasses collection of official documents, Chinese research articles, interviews, and questionnaires.

In both cases, the interviews are mostly conducted with local authority officers, China State-Owned Construction company officers and local fishermen and local historians. The structured questionnaires include 50 multiple-choice questions, distributed in 50 copies over old town natives, who were university students. University students were specifically selected as they represented the intellectual population of any remote area. The author thoroughly investigated the sensory experiences collected through ethnographical vignettes by observing archival research to compare how the places modified and regenerated themselves over time. The morphological changes and reasons were accumulated to investigate about how the identity of places withstood or deteriorated in the face of intervention and development. In the second case, the subjective sensory analysis of the inhabitants was conducted to examine responses to newly constructed architectural spaces.

5 Gwadar's Historical Sites and the Case Study of Shahi Bazar

The historically important sites of Gwadar's old town are the famous Portuguese watchtower and cannon, Omani Fort, Jamaat e Agha Khani or mosque of Agha Khani and the Shahi Bazar (market). The famous. There is no accurate evidence as to how the Portuguese seized Gwadar and how much time they lived in it, however, history implies in hints that, during the sixteenth Century, the Portuguese battled Turk fleets for control over south East Asian coastal line. Gwadar is located in Makran coast and stretches west as far as strait Hormoz and east to Goa India. Mir Hammal, a famous native hero, fought several times with the Portuguese to defend the Makran coast but was soon captured and sent to prison. However, and by the 1580s, the Portuguese had sacked and burnt down Gwadar. Thus, the watchtower and cannon now represent significant cultural heritage as they show the presence of the Portuguese and related incidents (Khan 2000). Second is the Omani Fort, which depicts that Gwadar was ruled under Sultanate of Oman for around two centuries. Gwadar first came into Omani possession in the 1780s when its actual ruler, Mir Nasir Khan, conferred the area to Sultan bin Ahmed. Declared an unsuccessful Sultan of Oman after obtaining supreme power of his homeland, he took over Gwadar and under Oman ruling. Several Omani forts constructed to control Gwadar were in existence by then, one of which is the Thana ward fort, which has recently been restored by a Omani grant (Lorimer 2003). Moreover, another historically significant structure is the Agha Khani

[5]The general social science research methods about how to sequence your research results can be read in Babbie (1998). The practice of social research. London: Wadsworth Pub. Co.

Jamaat Khanna as it presents Persian footprint in Gwadar. The Agha Khani are Ismaili Shiite Muslims who had migrated from Iran due conflict with the Persian ruler of that time. The Agha Khani community settled near Shahi bazar and was protected by Omanis due to their status as a minority in Gwadar. They represented the main traders of Gwadar and made considerable profit by trading through the Gwadar port. The Agha Khani's Jamaat Khanna was built almost one century ago but retains its perfect form (Sorabi and Sohail 2018). The focus of this case study is Shahi Bazar mainly because of its historical significance and cluster of historical assets. It is especially appropriate for exploring the resistance of places through investigating sensorial experiences in different temporal dimensions.

The "Shahi Bazar" literally translates to the noble market. In Shahi Bazar, there are three communities coexisting with one another: the Hindus, the Agha Khans (Ismaili sects from Iran) and the native Baloch "med" (fishermen). During Omani rule, the Hindus were prominent businessmen while the Agha Khani were traders. The Hindus and Agha Khani were in minorities and received the protection of the "Wali" (governor). In 1958, after the invasion of Gwadar by Pakistan, the Hindus gradually migrated to India leaving behind their assets, which were then bought and occupied by local Baloch med. The Agha Khani slowly migrated to Karachi to find better education and business opportunities; however, a considerable number of the Agha Khanis remains. After their relocation, their assets were bought by other Agha Khani and local Baloch meds (Sorabi and Sohail 2018). The history in discourse is depicted clearly in vernacular buildings of Shahi Bazar and tells of the diverse cultures of Arabs, Persians and Hindus. Throughout history, the Shahi bazar regenerated itself and remained full of life.

Since the commencing of Construction for the Gwadar port and the displacement of the Mulla band neighbourhood, the first master plan has painted the old town to be a green space. It also stated other hostile conditions such as the armed violence triggered against transnational infrastructure development. Similarly, fishing and cultural activities have become restricted over time as security in the old town is amplified. For instance, the fishermen were not allowed to freely go fishing and enjoy their socio-cultural activities because they are continuously being watched over by Pakistan security forces. In the first phase of the project, there were not enough funds to execute the resettlement plan, which was coupled with the locals' unwillingness to move away. After the inclusion of Gwadar as a main step in the CPEC project by the BRI, work on the resettlement plan was reinitiated. In 2016, the Gwadar Development Authority hired consultants to prepare a resettlement plan for the old town. The GDA then proposed to relocate the people of the old town to nearby fishing villages like Surbandar and Pishukan in addition to compensation by the Government of Pakistan (Group C. C., 2017), however, the suggestions were completely rejected by local fishermen. On the other hand, The Pakistani federal government prohibited the GDA from allocating any funds for old Gwadar. Alienation increased as locals feared the destruction of their homes as they were aware of sacrificing them for the development of the CPEC port and free trade zone (Group C. 2018).

I then asked the fishermen Chief, Hassan Ali Sohail, about the GDA resettlement in an interview conducted in Nov. 2018 to which he replied:

> The Pishukan and Surbandar already has a huge number of native fishermen. Why would the people of those villages allow us to do fishing in their territory? It is completely an absurd resettlement plan and the government needs our land and in return we can be trapped fighting with each other.

This is one form of resistance directed towards individuals or a community, but what about experiencing places of resistance? The Shahi Bazar was once a favourite place for fishermen to sit in tea shops and enjoy chatting, but now, due to its narrow streets and hiding places, it has become a hot spot for daily security force visits.

> I still remember how, in the past, Shahi bazar was our favourite place to enjoy chatting with our fishermen friends. Now we fear interrogations by security forces with regards to why we are there? Thus, we now seldom go to Shahi bazar.—Hassan Ali Sohail

Due to this political situation, the Shahi bazar charm has faded away and the socio-economic activities associated have become disintegrated as most of the economic activities of Shahi bazar are directly or indirectly related to fishing activities (Jamali 2014; Sorabi and Sohail 2018). The Shahi bazar, however, could not withstand the neglect any further as properties began to decline due to a lack of proper maintenance over the years. The maintenance of these structures has its own expenses in addition to the fact that they are not legally registered properties or own by locals. Moreover, there exists an uncertainty as to whether they will be relocated or demolished. Abandonment of these places resulted into deterioration resisted by many Pakistani scholars (Lashari et al. 2019).

As mentioned in the initial draft of the Master Plan, the conservation of historical monuments had been outlined and had proven significant (Gwadar Master Plan 2003). These historical sites consist of the Omani fort, Portuguese cannon and watch tower, Jamaat e Agha Khani and, finally, the Shahi Bazar, a historical market neglected by the government until 2019 and in need of restoration.

In an interview with the GDA planning officer, conducted in April 2018, about the market:

He said, "*We know it should be restored but the express highway is also planned to pass through this area which requires the relocation of the old town*". Another reason to

disrupt the old town except for some prominent historical monuments due to security reasons.

Efforts exerted by the local government, with foreign assistance, in preserving historical monuments included three Omani forts, which represent Omani rule. One of them had been turned restored and turned, by the Ministry of Heritage and Culture, into a museum as ordered by the Sultan of Oman, Qaboos bin Said, during his visit to Pakistan in 2001. General Pervez Musharraf officially inaugurated the museum on March 20, 2007 (Khan 2019) Fig. 25.2. This clearly demonstrates the traditional way of conserving historical monuments of prominence while undergoing spatial cleansing.

For archival research, old pictures of Shahi Bazar, taken by Architect Arif Hassan in 1980s–2000s, were collected and analysed (Hassan 2001) Figs. 25.3 and 25.4. The pictures show fishermen and tea gatherings. Some of the shops in the images are closed as they belong to Hindus and Agha Khani who have migrated to other places as previously mentioned. The ground level consists of shops while the upper levels consists of residential units or apartments. One of the known and prominent features of Arabic Architecture is known as the wooden Mashrabiya windows and screens. Similarly, other historical structures depict Persian architecture through their use of ornamentation. The narrow streets and the diversification in ornamentation gave an interesting and friendly feel to the space. As shown in the images, the shops seem to be in good condition, both, closed up and operating ones. In November 2018, the author has managed to capture some photographs of the same places as taken by Architect Arif Hassan in Fig. 25.3 for comparisons with Figs. 25.5, 25.4 and 25.6. The comparative analysis between the old picture and new ones suggest that the structures are deteriorating at a fast rate. In Fig. 25.5, a local is seen to fix a door in bad condition (Fig. 25.7).

During the Author's visit to Shahi Bazar and in his ethnographic diary dated Nov. 2018:

> On my way to Shahi Bazar, I came across several shops including a barber shop, a Paan (edible leaves) shop, and a dessert shop famous for Karimuk tea. Apart from these shops, others have been abandoned and are worsening in condition over time. Many of them no longer have roofs over them as if disaster struck and resulted in neglect. Some motorcycles can be spotted circulating around the area while others sit on raised platforms as shown in Arif Hassan's pictures. The locals consist of more old men than young and some notable among them for wearing their traditional hats or headwear. The streets are not paved and dust and rubbish can be seen scattered all over. On other side, there exists a seashore where the Chinese workers are busy with the construction of the express way.

There is a famous Karimuk (tea) shop owned by an Arab and gifted to a native Baloch. Operating until today, the author's diary in Dec. 2018 states that:

> There are many people in the shop and all of them are found chatting with one another while sipping their hot drink. The shop is while and newly painted. It looks like an old mud shop with wooden a roof. The roof is somewhat dilapidated, as it seems to be very old. There is also a nearby shop that seems to be in ruins and without a roof or doors.

The author visited the same shop again in 2019 and mentioned in his diary dated Aug 2019 that:

> There are many young but mostly old people who are enjoying their tea and chatting with each other. There seem to be additions across from it and they seem to all be newly constructed.

It has also been noted that the Karimuk tea shop has undergone incremental expansion over time.

There is an old man and a worker in one of these famous shops who sold pans. When interviewed by the author in Dec. 2018, he shared some insight:

> Since my childhood, I have been selling pans. I live here, I got this shop through an Arab shopkeeper, and I have been looking after it since. I have no other skills, so I am happy with this old shop. I have recently expanded my shop due to an increase in demand of customers. It is my everything.

In an interview with a nearby shopkeeper, Gul Muhammad, conducted on Nov. 2018, he said "*10 years ago, my father used this shop to sell. Since, I have made renovations and now I am running a laundry business. This shop is more than 100 years old*".

In these three cases, the expansion of the tea shop and pan shop, as well as the renovations in the existing date shop and transition into a laundrette shows that, despite external fears, the places regenerates itself over time and changes according to space requirements and user needs.

In an Interview with the chief of fishermen Hassan Ali Sohail on January 2019, he said:

> We want development, but we also want to maintain our fishing jobs because we don't possess other skills. My childhood was spent here and I have many memories in Shahi Bazar. Most of our time is spent here as it is the only public place. Before, there were Arabs from whom we have adopted many cultures. We still continue to practice their culture. These structures are not meaningless as they are our heritage and it reminds us of our past history, Arabs and Hindus.

The research also includes a similarly structured MCQ questionnaire to collect information on the general public's opinion. For this reason, native University students were selected Table 25.1.

The results of the questionnaire indicates that the government has not provided any form of assistance to preserve existing heritage. The sense of belonging and identity is more a pressing concern for locals as opposed to moving into new and modern residential spaces with various facilities. This resistance towards relocation can not only be perceived from their physical or verbal expressions but also

Fig. 25.2 Thana ward Omani Fort. *Source* Photo by Hassam Lashkari Arab News, n.d.

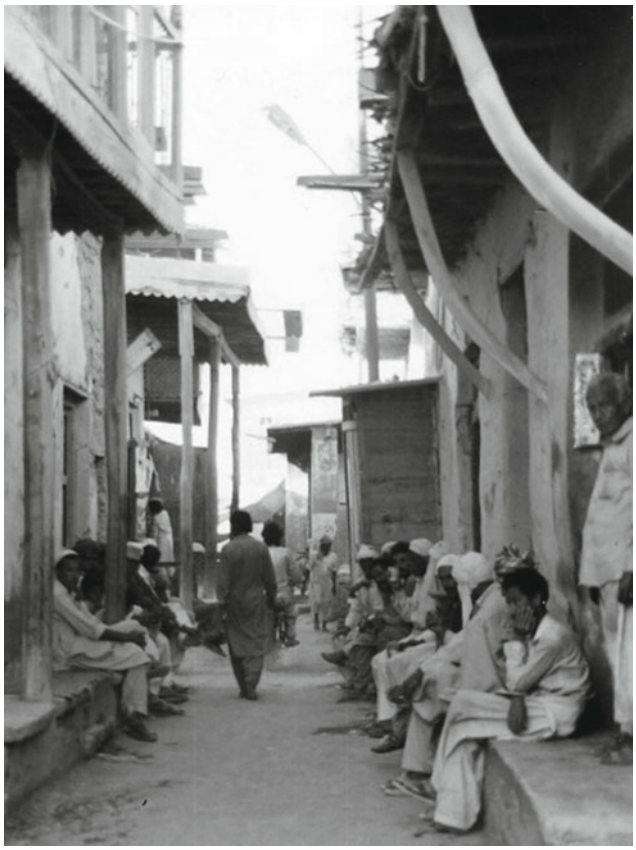


Fig. 25.3 Shahi Bazar in 1980s. *Source* Photo by Architect Arif Hassan

Fig. 25.4 Shahi Bazar in 1980s. *Source* Photo by Architect Arif Hassan

Fig. 25.5 Shahi Bazar same spot in Nov. 2018. (Author's own, n.d.)

Fig. 25.6 Shahi Bazar same spot in Nov. 2018. (Author's own, n.d.)

through the continuous regeneration of their places of living and work.

During the development of phase 2 progressing under the CPEC, the CCCC-FHDI (the consultant of Gwadar Master Plan) met with locals of the old town to listen to their concerns. By the beginning of 2019, the first draft of the master plan was ready and was proposed to revoke the resettlement of the old town for two reasons, as mentioned in the report. In the initial development plan, the resettlement proposal was not financially feasible. Moreover, morally, the best option was to preserve the old town, which was also one way of achieving economic development through tourism. After a meeting was held for the steering committee of CPEC, the proposal was approved by the federal government of Pakistan (Final report of Gwadar Master Plan 2019) (Fig. 25.8).

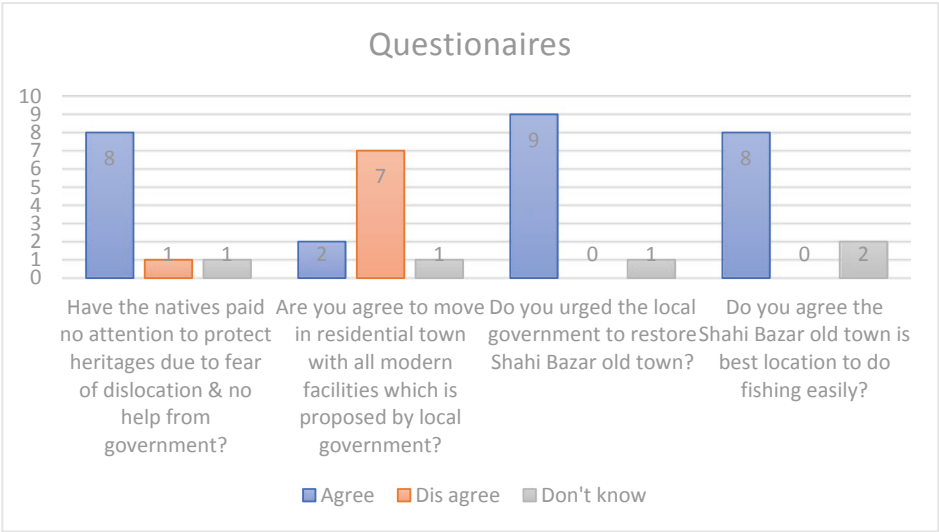
The following field survey concludes that despite external threats and a fear of resettlement for over 10 years, the lack of interest displayed by the local government resulted in deterioration of their public spaces and places of living while some resisted while their socio-spatial dynamics continued. Some of the destroyed shops belonged mostly, to the Agha Khani whom have migrated to Karachi. Due to fear of relocation and political uncertainty, owners never restored the shops as they lacked purpose. The local government and other agencies involved at the beginning paid no interest in their restoration. However, the current master plan has led the local authorities and Pakistan's federal government to establish a new initiative towards restoring it with the assistance of local scholars and experts (Ahmed et al. 2019).

6 Case Study: Gwadar Master Plan and Free Zone Architecture

Since the commencement of the Belt and Road Initiative, the Gwadar port turned into a hotspot for various projects, mostly undertaken by Chinese construction companies. The

Fig. 25.7 Karimuk Hotel. (Author's own, n.d.)

Table 25.1 MCQ questionnaire results



Gwadar Port and Free zone is leased to the China overseas port holding Company (COPHC)[6] for 40 years. (Berta et al. 2018). The COPHC is derived from three parental China State-Owned Enterprises (SOE): 1. The China Communication Construction Company Ltd CCCC, 2. The China Merchants Group CM, 3. The China Ocean Shipping (Group) Company COSCO.

The main components of the Gwadar project are:

1. Development of Gwadar Port Phase 2
2. Development of Gwadar Free zone Phase 1 and 2
3. Gwadar Smart Port City Master Plan
4. Supporting infrastructure and facilities.[7]

[6]The details about the Gwadar projects developing under China Belt and Road Initiative is mentioned in author another published article in Italian magazine i.e. (The places of Belt and Road)". (E tutta seta cio che luccica? L' Italia e Xi: bilancio e prospettiva della Via della Seta) (Mondo Cinese) 156-174. For more information interested reader can read it.

[7]The details about the Gwadar projects developing under China Belt and Road Initiative is mentioned in author another published article in Italian magazine i.e. (The places of Belt and Road)". (E tutta seta cio che luccica? L' Italia e Xi: bilancio e prospettiva della Via della Seta) (Mondo Cinese) 156–174. For more information interested reader can read it.

Fig. 25.8 Deteriorated old house more than 100 years old. *Source* A photo by Author

This case study focuses only on two Gwadar projects, the Gwadar Smart Port City Master Plan with a goal to tackle the issues within the old town and the second is the way(s) in which this new master plan is to prove different from that previous prepared the local firm? The new Gwadar Smart Port City Master plan proposes an alternative strategy characterized by inclusive development. The second case study is on the Gwadar Free Zone, which focuses on its spaces and architecture, designed by Chinese firms to manifest the local identity and minimize the alien character of the newly developed infrastructure.

The China Belt and Road Initiative policies suggest an inclusive development and respect of local culture, religion and heritage (Liu 2019). Therefore, Chinese construction companies followed the mission of BRI closely and avoided the direct conflict with locals. They met with the fishermen's representatives to negotiate and modify the plan of the new express way, so it reclaims land in sea. Even though the new plan is costly, it was approved for construction. The construction of the expressway is on-going. The CCCC, FHDI (the Fourth Harbour Engineering Investigation and Design Institute) are responsible for developing the New Gwadar Smart Port City Master Plan.[8] The defining principal set up by FHDI is to design and plan in an inclusive way and according to local characteristics (Final report of Gwadar Master Plan 2019). They met with local fishermen and listened to their issues, one of which is concerned with the location of the old town and the possibility of traditional fishing activities around the area. The local fishermen informed made it clear that they would need modern fishing boats, deemed costly, if they were to be moved to a new location. Moreover, their ancestors lived there for centuries, so these places are not ordinary but had even inherited their collective memories (Sorabi and Sohail 2018). Thus, the FHDI planners urged the community to participate in this development (Fig. 25.9).

The initial draft of the new master plan prepared by FHDI also suggests that the old town remains intact for these two reasons which led to its acceptance by the Pakistani Government (Alternative Report of Gwadar Master Plan 2019). According to the final report, the FHDI recommended and prepared a comprehensive plan for the town. In the report, it is stated that:

> The urban areas are symbols of the historical development in Gwadar and bears memories of the local people. They are worth preserving […]. Therefore, it is not suitable for the old urban areas to adopt the method of total demolition and reconstruction so as not to destroy the cultural accumulation of the city, increase the traffic burden and raise the hidden danger of safety. The planning chooses to continue the traditional construction of

[8]Discussion with Nadeem Jamali and other Urban Planners of NESPAK(who are collaborating with CCCC_FHDI_Ltd in Gwadar master plan), about Urban Planning mechanism of Chinese planners dealing with local issues. Nadeem Jamali further said we NESPAK are actually assisting FHDI in providing knowledge about the local planning rules regulations. Arranging a meeting with local people, concern authority officers, data collection activites and etc. while the rest of work means the overall master planning and decision making process are done by FHDI.

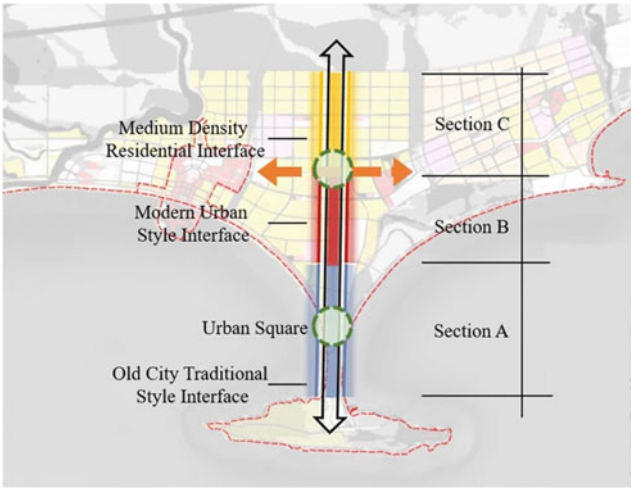


Fig. 25.9 Old city designated as cultural district. *Source* Final report new Master plan Gwadar extracted from GDA office

> the old urban areas. In the way of micro- transformation, the old architecture is retained, and necessary urban functions are added. This not only continues the development history of Gwadar, but also vitalizes the old urban areas […] while on other side the public awareness regarding these buildings as historical assets is an essential element in promotional activities targeting conservation and environmental improvements (Final report of Gwadar Master Plan 2019).

In an interview in December 2018 with a NESPAK planner, Nadeem Jamali, who has been assisting the FHDI:

> The old master plan couldn't work as you can see, now the Chinese experts are providing plans with a goal to revitalize the old town. They also asked us to invite residents of the old town and said that only with their involvement will enable us to improve the framework in place for preserving historical places.[9]

The new master plan highlighted the old town as a cultural district, which is different from the goal of the initial draft that stressed only to preserve the historical monuments like the Portuguese watchtower, Oman fort, Agha Khani Jamaat etc. However, this new initiative to preserve the whole district has led to an encouragement of the participation of the public in the restoration process. Chinese planners introduced the "micro transformation" model which includes the improvement of infrastructure and the restoration of only few facades to highlight the surrounding environmental and cultural theme. The rest of the spaces could regenerate themselves once their importance is realized with time. The FHDI prepared a detailed description of the planning proposal to preservation of old town. For example, the architectural features within the old town include medium rise buildings of white or beige colour. Thus, it is recommended to use beige or white colour paint on structures to create a unique coastal city theme like that of Santorini, Greece. New facilities should be added in the old town such as a cultural museum, boat making museum, and vocational training institute to facilitate natives to keep up with the port's future requirements (Final report of Gwadar Master Plan 2019). However, this intervention needs funds, which is not covered by the Chinese aid as it merely covers the preparation of the master plan. Now, it is the burden of the local authority, that is the GDA, to carry. Accordingly, the GDA invited local scholars and experts to assist the government in restoration phases and turning the town into a cultural district by following the FHDI planned framework of "micro transformation" and a community participation mechanism.

The other case study is on design of infrastructure spaces. The China communication construction company CCCC has been awarded the construction of the Gwadar Free Zone Business Centre using the aforementioned Chinese aid. The hostile environment around Gwadar towards the development is the result of grief and deprivation. CCCC architects have followed the same course taken in the Gwadar Master plan to construct a state of art centre and showcase local architecture to avoid conflict with the local identity (Marri 2019). The Gwadar Free Zone is divided into two parts: the south Free Zone and North Free Zone (medium and long-term phase). The South Free Zone is approximately 25 hectares, developed during the first phase, whereas the North Zone spans 898 hectares and is to be part of the medium and long-term phase. The former is much smaller, thus some of the land is reclaimed from the sea without expansion to old town. It is considered a trade and logistics zone while the North is industrial. The project itself is located in the South free zone (Yousaf (COPHC) 2018).

Since the South Free Zone is considered industrial, its initial phase constitutes a development of merchandise exhibition, warehousing logistics, cold chain logistics, international transit or distribution businesses, life services, etc. and should gradually develop into an important commercial logistics zone. The Business Centre is a comprehensive service centre integrating office spaces, accommodation, food services, leisure and security. The target customer groups are Chinese customers going into Gwadar for business, project contracting, business inspection and tourism, and accommodation for ship crews stopping over at the Gwadar port.[10]

[9]Ibid.

[10]The document is received from Guanghe Ding (Chinese architecture scholar and assistant Professor Guanghe Ding from Beijing University). He extracted it from Chinese research article website. The details are 瓜达尔自由区商务中心——巴基斯坦项目 the design of Gwadar F. Z. Business Center. Pakistan 中国电子工程设计院 建研院五所 王倩. The document is translated into English from google translator.

Fig. 25.10 The first design proposal of Gwadar Free Zone Business Center. *Source* Pdf Document from Chinese scholar

The initial design proposal was made on 2016 in which the main building and auxiliary building form a u-shaped layout Fig. 25.10. The main building is dominated by accommodation, and the conference hall is concentrated in the podium of the main building. The supplementary buildings consist of offices and apartments while basement levels house storage/equipment rooms, kitchens and some catering and entertainment spaces that highlight the features of Islamic architecture in their design through the use of Arabic lattice windows and pointed arches. The lattice windows were used as a shading device. The main idea was to design the whole building with visible Islamic style.[11]

This design of the Business Centre was revised after a meeting was held with the federal government of Pakistan's departments that are the Gwadar Port Authority and the planning commission committee on Gwadar CPEC projects.

In an interview with Coordinator and Project Director Hassan Daud Butt on 2019 August:

> Gwadar enjoys a unique Persian and Arabic culture while Pakistan contains numerous Indo-Gothic architecture heritage. We asked the Chinese construction company to refer to these examples. In the next proposal, they briefed us on the inspiration behind the design: Xinjiang Islamic architecture and Pakistani local Islamic architecture. The design constituted of central Asian and Anglo-Asian architecture and the committee approved it.[12]

The first proposal gains inspiration from orientalism and orientalist practices of western architecture. The screen patterns of windows or walls and the pointed arches reflect a generalization of Islamic architecture. This is deemed faulty application as every locale has its own architectural features.

The second proposal was altered and bared the inclusion of domes, as well as a change of colour from white to beige Fig. 25.11. The beige colour scheme may be inspired by Gwadar local mud architecture. The pointed arches were substituted with rounded arches which is an adept choice as its matched the Gwadar's local architecture and culture. The extra traditional decorative features were removed to maintain a contemporary stance. The domes share similarities with Indo-gothic architecture as opposed to local rounded ones. Other features relate to Chinese contemporary architecture, which are blended in a harmonious way. The interior also consists of mixed Xinjiang decorative features, Islamic pointed arches and Chinese paintings. This superficial structure manifests and reinforces the local architectural character of Gwadar city. Many scholars criticized the infrastructure urban design and architecture claiming that it is mostly taken from elsewhere and looks foreign in a native land (Murray 2017; Easterling 2014). However, the Business Centre's architecture is more in harmony with the local characteristics and consistent with local identities Fig. 25.12.

[11]Ibid.

[12]In a discussion with Hassan Daud Butt (Deputy Director of CPEC cell of Planning Commission of Pakistan) about the design decision making of Gwadar business center. The initial model presented by the China construction team was much like that of Chinese architecture. We asked them to see Gwadar and incorporate local element and design it in modern Islamic architecture way. They did all work we just reviewed it there was no local consultant firm was involved in planning and designing of Free Zone. Beside architecture style our main priority is the project should meet sustainable goals.

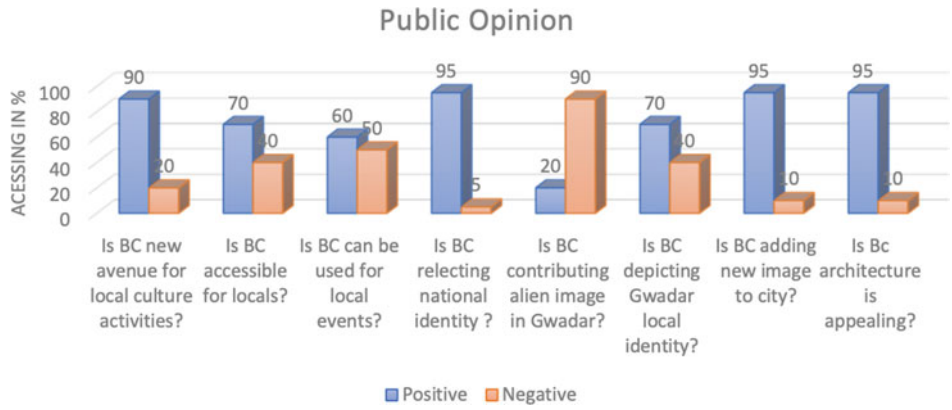
Fig. 25.11 The second proposal of BC is approved with little adjustments in design. *Source* COPHC office

Fig. 25.12 Business Center construction finished in January 2018. *Source* Gwadarexpo.com

The author conducted a questionnaire to gather information on the public's opinion, specifically natives, on the Business Centre's design. Questions such as "does it represent the Gwadar local architectural identity?" were asked Table 25.2. The overall results show positive responses from locals.

The local people believed that they will be side-lined by this development project but are now satisfied with the new

Table 25.2 Mcq questionnaire



initiatives introduced, especially the alternative strategy of negotiation and inclusiveness as it has brought about new hope.[13] The strategy highlighted China's new role in BRI where the local characters, local needs and local technical staff are involved in the design and decision-making process and establish collaborative and inclusive urban planning and architectural design.

7 Conclusion

The research concludes that state policies for controlling urban space are not always successful in the face of resistance. The resistance may not only be limited to powerful and physical action by individuals or communities but can also be experienced in places. The intervention carried out by the Chinese company presented plenty of other alternatives for development while also preserving the old fabric and identity of a city. The uncertainty and negligence of the local government for such a long period resulted in a deterioration of some historical places. The old town may have lost some of its assets, but some places resisted it and continued to maintain their own socio-economic dynamics. Generally, in global infrastructure spaces, foreigners are known to exploit local assets (Easterling 2014; Murray 2017). Here, the collective resistance of locals and their determination to put planning to paper, coupled with their resiliency, motivated foreigners to negotiate with locals and adopt an alternative strategy.

On an International scale, it is a long debate among less developed countries concerning development while also preserving the old town (Murray 2017). The best practice is to encourage the participation of the community in the development process, heritage conservation initiatives and methods to use in introducing new architectural spaces to the local identity (Verdelli 2005). Spatial cleansing is a great loss to local identities and culture and causes economic and social disruption.

The alternative planning strategy regained new trust among natives, which not only introduces new vigour in cultural characteristics of Gwadar, but also provides an opportunity for economic development. The combination of the methodological understanding of experiencing places and alternative transnational and inclusive development could set an example for urban heritage managers, urban planners and policy makers for use in future studies. The comprehensive development proposed by foreign technical experts involves locals for the planning of decisions and cost-effective policies of restoration. On other hand, it intended to incorporate and experiment with local architectural elements and high-tech construction, which provided a sound example, which could mitigate the obstacle of native resistance for development processes and transform foreign presence into local.

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[13] An informal discussion with Gwadar realtors, shop keepers, bank managers and other general Public about is China construction company bringing benefit to local population and is they are involving them in decision making and providing jobs? Most of the response was positive for current situations brought by Chinese companies while some are pessimistic about future.

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Correction to: Vernacular Architecture as an Expression of Cities' Identity: Gercüş Houses in Turkey

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In the original version of the book, the chapter "Vernacular Architecture as an Expression of Cities' Identity: Gercüş Houses in Turkey" references to the earlier papers were missed. This has now been rectified and the references has been added. The correction chapter and the book have been updated.

The updated version of this chapter can be found at https://doi.org/10.1007/978-3-030-51961-2_13

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