

Cross-Cultural Design and Its Application in Architecture

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Abstract The article presents the author's view on multicultural context in architectural design as a key to spatial and social harmony. The review that was carried out suggests that multicultural context is an important element in the identity and in the history of a place and points out that multicultural context is an essential feature of sustainable development. The analysis led to selecting a range of elements of multicultural approach in architecture: cultural patterns, cross-cultural communication, glocalization, space branding, and multicultural canons. By placing the problem within current debates in multicultural context, we offer a new approach to amplifying architectural identity through developing intercultural capital that enables attaining creative architectural solutions. We conclude that the cross-cultural context is an important element of contemporary architecture.

Keywords Cultural requirements engineering · Design · Architecture · Cross-Cultural

1 Problem

The perception of cultural heritage has evolved in the ergonomic approach to architectural design. Ergonomic analyses have seen a rise in the concept of cultural capital as a crucial development factor. Cultural capital includes cultural property that is traded in a global society, namely knowledge, skills, and creativity [1]. The main feature of cultural capital is that it can be turned into economic capital. This concerns both cultural capital in its tangible form (utilitarian objects, buildings, streets and squares), and its intangible form (work organization,

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innovativeness, education, etc.). It is noticeable that cultural capital is quite a stable type of capital. In addition, it is an exceptionally safe investment of resources which is hard to obtain, yet difficult to lose. Cultural capital carries significant practical meaning. It is an unappreciated economic potential that has not as yet been balanced at the stage of architectural design development.

Cultural capital found in architectural design is an added value that does not have to entail additional investment costs, but it does require expertise, skills and talent on the part of the designer.

The paper aims at proposing a cross-cultural approach to architectural design that addresses new challenges at the interface of investment, consumption, and life style.

Toffler called these new challenges “a cultural explosion”, which is manifested in the individualisation of needs, multiculturalism and the increase of a society’s cultural capital that ensues from it. The traditional perception of culture as a cost factor and an element that requires extra outlays has been replaced by an approach that sees culture as a generator of profits for investors. For example the idea can be used to revitalise squalid urban areas that have lost their attractiveness, declined economically and have seen a rise in inhabitant migration. The successful revitalization based on cross-cultural design should raise the status of urban space and ensure social stability. It is worth noticing that the cross-cultural approach is relatively rarely used in architectural design and its methodology has not been sufficiently developed yet.

2 Analysis

Culture is a complex entirety that comprises knowledge, art, technology, morality, beliefs, customs, and skills acquired by people as members of social groups. Therefore they are features that make up material and spiritual cultures.

In order to enter the realm of culture an idea or a thought needs to be recorded in a tangible form.

Against this background, material culture is a physical manifestation of spiritual features on art objects, utilitarian objects, technical artefacts, and first of all in architecture. Material culture results from manners of creation being adapted to suit an individual’s mental and physical capabilities. From this perspective culture influences the relationship between an individual and their surrounding in an ergonomic aspect.

Culture needs tangible media, out of which architecture plays a primary role. As a manifestation of material culture, architecture, in turn, needs spiritual culture to be created. The spatial form of cities, houses, and gardens is not haphazard and results from creative concepts dependent on an era and its culture. In this understanding culture shapes the spatial environment, which then shapes people.

The notion of cultural space is not new and is associated with the concepts of sociologists that explore the interactions between a spatial system and the social

structure. Representative studies on urban sociology include those by Wirth [2], Simmel [3], Weber [4], Durkheim [5], Harvey [6], and Castells [7]. They have their origins in the achievements of the Chicago School, which formulated the sociological and cultural theory of urban development [8]. According to the theory, people's spatial behaviours, their ability to design the surrounding, system of assessments and values are dependent on natural factors to little extent and they are mostly determined by social ones. In this understanding every area shaped by a human being is an expression of their culture. Wallis [9] pays attention to this aspect of cultural value of urbanized areas. Odum [10] makes a distinction between folk culture (traditionally stable) and urban culture, which undergoes rapid transformations and is associated with life in great metropolitan areas. In a similar manner, Toennies associates community (*Gemeinschaft*) with rural culture and life, whereas association (*Gesellschaft*) is linked to a more complex and organized culture of urban life [11]. Ogburn stresses the problem of "cultural lag" and states that instilled cultural preferences and customs (or folk culture) do not catch up with technological advancement [12]. Wallis [13] points out the costs of cultural lag incurred by new inhabitants of big cities. Adapting this social group to a new environment is a long-standing process that requires economic, social, and mental sacrifices.

2.1 Culture Globalization and Glocalization

Since the descriptions defining urban culture as the opposite to folk culture were formulated, there have been significant changes that challenge sociologists' definitions [14]. In the era of globalization and mass media most social groups regardless of whether they live in the suburbs, urban or rural areas can be classified in a similar manner from the viewpoint of culture. The trend relates to the geographical areas in which cultural differences are becoming blurred. Cultural patterns are being homogenized and standardized.

Nowadays, in the era of globalization inter-cultural interactions are inherently present in business and personal contacts. Globalization that reduces cultural differences leads to unification mainly for economic reasons. People from various cultures are becoming consumers of homogenized goods as a result of aggressive marketing supported through global media. Mass media that international companies use to promote "universal patterns" aimed at all customers show no consideration for cultural varieties and diversity. The most prominent example of this phenomenon of the architecture of the second half of the 20th century was the expansion of the international style—the cubistic variation of modernism detached from vernacular patterns.

Tensions that stem from the uncompromising cultural expansion have produced negative outcomes in the form of people's defiant attitudes aiming at protecting their own cultures. In many countries the attitudes have turned fundamentalist, radicalising a negative society against values promoted globally. It was the

main reason why the globalization policy was replaced with the strategy “Think globally, act locally”. The slogan is an old idea—now back in grace—by Patrick Geddes, a Scottish town planner, that concerned the principles of urban planning at the beginning of the 20th century. Geddes was against mindless copying of the fashionable architectural and urban designs of European metropolitan areas and transferring them into colonial cities. He believed that it was necessary to retain the identity of cities by protecting the local traditional buildings and urban structures [15].

Contemporary media manipulated by skilled marketing specialists were eager to pick up the local in spirit but global in character notion, which was later called glocalization. Robertson defines glocalization as an adaptation of global strategies to local conditions [16]. Considering local conditions, glocalization builds a new kind of consumer loyalty strengthened by the sense of protecting the local culture. To some extent, glocalization highlights the uniqueness of local cultures locating production in countries that are economically dependent on global companies and customising products to local preferences. As opposed to globalization that aims at unifying consumption patterns, glocalization treats cultural differences as an attractive commodity, providing global companies with greater chances of economic success in local markets.

2.2 Evolution in the Perception of Culture

Evolution in the way culture is perceived stems from the civilisation transformations that can be characterized synthetically by means of a set of juxtapositions that differentiates the traditional 20th century corporate development model from the contemporary postindustrial situation [17]: Old—New, Industrialization—Deindustrialization, Hierarchical structure—Network structure, Production integration and concentration—Outsourcing and deconcentration, Large scale—Small and medium scale, Economy of goods and storage—Economy based on creating and transferring symbols, Collective and anonymous—Individual and personified, Mass culture logic—Logic of social groups, Imitating others (the surrounding)—Standing out among others (in the surrounding).

It is worth pointing out that post-industrial reality necessitates the need to take a fresh look at the role and place of culture in spatial and economic development. In a functional sense, culture becomes a product. Culture is no longer a set of ideal values that determines our approach to space, and is becoming an economic value. It is therefore associated with material values in the form of visual attractions, images, signs, sounds, symbols, and events designed for consumer markets.

A typical example is an urban landscape. It constitutes cities’ skyline that has been developed over the centuries and that offers views that are attractive to recipients to a varying degree. The art of urban composition is able to highlight such values as picturesqueness, uniqueness, and mood, for which a consumer (e.g. tourist) is able to pay a specific price.

In an economic approach, the unique look of architecture, the rare form of squares and streets, the intimate scale, the extraordinary urban composition and architectural detail that draw on local tradition, the contact with water and greenery are gaining more and more significance and affect property prices. They are positive factors of a new urban ergonomics that describes the relationships between an individual and their surrounding.

2.3 Culture-Generating Attributes and Cultural Patterns

This way of perceiving the relationships between an individual and their surrounding enables identifying the following culture-generating attributes that can be used in architectural design:

- aesthetic attributes,
- cognitive attributes,
- utilitarian attributes,
- identification attributes,
- integrative and adaptive attributes,
- religious and magical attributes,
- emotional attributes,
- educational attributes,
- ludic attributes,
- symbolic attributes,
- expressive attributes,
- ideological attributes.

Culture picks and chooses only a few characteristics out of this range that become leading attributes of architectural form that make up some kind of a “pattern of culture”. It is impossible to analyse single attributes detached from their entirety because architecture is a functional and integrated whole that is a unique arrangement of culture-generating attributes.

A “pattern of culture” is a set of attributes that a particular community see as its “own”, and worthy of respect and imitation. It change in time and is associated with fashion. It plays a significant role in shaping the collective memory of a given social group. In architecture, “patterns of culture” are materialized in such elements as form, colour, ornament, and architectural detail. Aesthetic values and spatial elements such as size, distance, boundaries, territories, dominants, and composition axes etc. can also be included here. The notion of a “pattern of culture” is derived from Benedict’s anthropological research and concerns basic culture-generating aspects [18]. In architecture, the pattern enables identifying architectural form as belonging to a specific culture circle.

Cultural patterns may be competitive, and even exclusive, depending on the context. Most patterns are easily identifiable, yet there are hidden ones the meaning of which we often do not realize. The knowledge of cultural patterns may

be profound or superficial, and a context approach is needed to promote them in architectural practice.

3 Cultural Requirements Engineering

An advantage of the context approach is that it is concentrated on analysing cultural expectations on part of users of architecture. This approach is already part of the Cultural Requirements Engineering trend. It concerns defining, documenting, and managing requirements as to the detailed aspects of a cultural system. Cultural Requirements Engineering is a key stage of decision making during which requirements are formulated that a designed construction is meant to meet.

In a broad sense, it is a process of identifying users'/clients' cultural needs and documenting them in the form of design standards [19].

In this approach the main criterion (overriding objective) of design optimization is requirements. They stem from the attributes that build specific patterns of culture. Because of that determining the importance of particular attributes in building a pattern of culture is moved into the foreground. It should be remembered that in the cross-cultural approach users have more often than not diversified requirements, which is connected with their systems of values. That is why it is essential to associate design requirements with the cultural profile of the customer for whom a building is being constructed.

Not only does the method request analysis of and forecasts as to how users will use the building (or the effects of design works), but also mainly aims at confronting compositional and functional features against cultural requirements. This approach is an efficient way of enhancing design solutions. This approach is characterised by the fact that based on research into attributes of culture we attempt to adapt the building to suit its users' needs rather than force them to change their cultural preferences and use a building (a product) that has not been customised. Hence first we look for answers concerning cultural requirements, and then we assess the proposed solutions to see whether they meet the requirements.

A question arises as to the criteria of assessment of the project in the context of meeting cultural requirements.

4 Architectural Form

Architectural form is a clear sign the meaning of which carries specific functions of culture. Architectural form may be distinctive in its exclusive visual features that make up its unique identity. Architectural form (the way in which architectural creations look) is designed for promotion (attracts prospective tourists, inhabitants and clients), values (presents unique values related to tradition and culture), and identification (is distinctive from other cultures).

Features that create cultural identity gain particular importance as some kind of a promotional message that is designed to draw tourists', inhabitants', and investors' attention. Architecture drawing on tradition and culture is a proof of the value of the place in which it was created. Architecture that is alien to our culture promotes the culture of other (competitive) regions with which it identifies. Therefore it is important to create a unique image of architecture as a brand identified with its location. This aspect is important for marketing and makes it possible to assess the architectural form as an element of space competitiveness.

In this context, the most important criteria of assessing the efficiency of design solutions include:

- (a) Uniqueness. Uniqueness comprises a set of features that differentiate local architecture from their competition.
- (b) Familiarity. Familiarity is a set of architectural features that cause people to take preference over particular architectural forms rather than others and long for these forms when they have no contact with them (e.g. if they have emigrated).
- (c) Personalization. Personalization comprises architectural features that reflect inhabitants' own aesthetic tastes and preferences that arise from their cultural habits and systems of values. It is an expression of inhabitants' identity and original preferences.
- (d) Local symbolism. Local symbolism is created through architectural features that are symbols of pride and prestige.
- (e) Cultural identification. Cultural identification is a set of architectural features that are directly equated with local tradition, history and collective memory of the location. Cultural identification is an important element of stylistic identity in culture.
- (f) Expression of tradition. Expression of tradition concerns architectural features that are worthy of protection and preservation because they value the society from the viewpoint of emotions and hence they have been considered important for current and future needs.

The aforementioned features form the basis for determining a pattern of culture of architectural form suits the location best.

Figure 1 shows a practical use of the method in the design of the new development in Harbin (China) that makes references to Polish cultural heritage with the first urban development plans prepared by Adam Szydłowski in 1898.

5 Assessment of Cross-Cultural Solutions

It can be noticed that people assess architecture based on their own cultural preferences and motives that stem from a behavioural profile. Bagnall pays attention to the regularity, saying that an individual's memory, emotions, ideas, cognitive preferences, and the way they perceive their surroundings are a vital element of "visual consumption of goods of culture" [20].

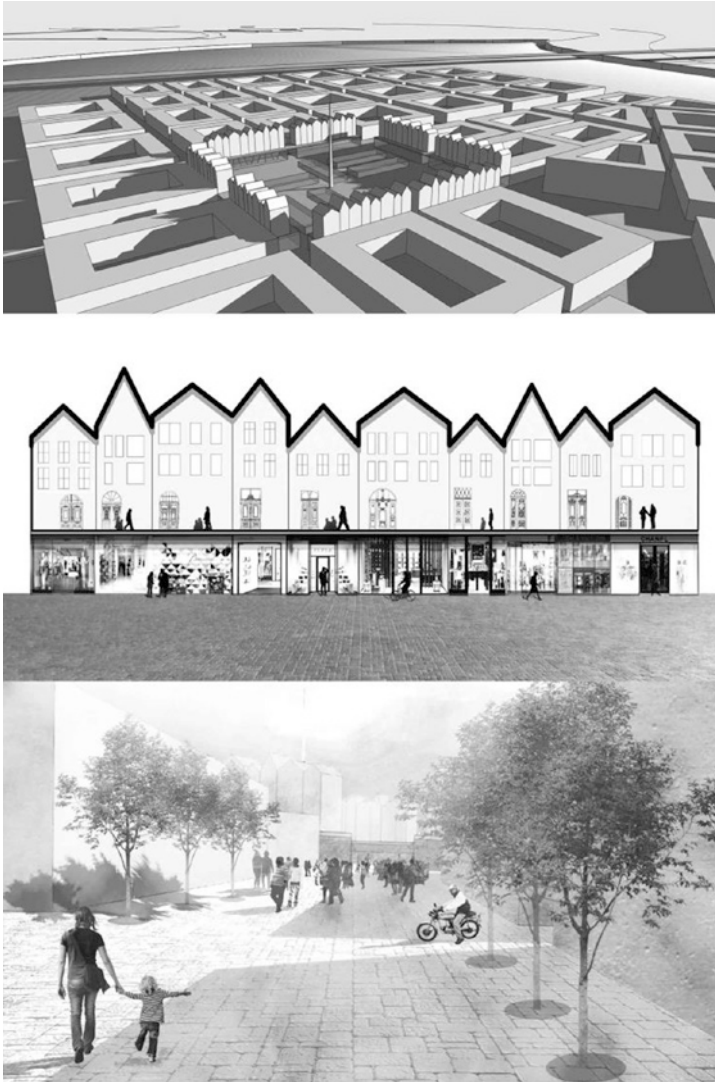


Fig. 1 “Polish (is)land in the City of Habin” design that makes use of cultural designs related to Polish cultural heritage. The design was made by students M. Koczewska, Z. Pietkiewicz, and M. Stępniaik supervised by Prof. W. Bonenberg, University of Arts, Poznan, Poland

“Visual consumption” is associated with material attributes that make up architectural form. Following from that it is possible to define specific design requirements relating to:

- Cultural context: society, history, tradition, language, customs, climate, lifestyle, technology etc.,

- General design approach: design theories, approach to nature (the earth, water, air, sky, fire) and their cultural significance,
- Elements of a building: walls, roofs, eaves, cornices, balconies and loggias, windows, pilasters, bay windows, ornaments, structure, colour, fabric,
- Entrances, doors, gates, fences: size, shape, colour, structure, sculptures and their cultural significance,
- Design principles: articulation, contrast, adaptation, balance, rhythm, proportions, scale, composition simplicity/complexity, clarity,
- Spatial organization: linear, central, radial, chequered, organic,
- Spatial dependencies: space permeability (interior/exterior), transparency, separation,
- Adaptive capabilities: flexibility, changeability, multi-functionality, directions of extension,
- Crystallizing elements: paths, edges, nodes, corridors,
- Narrative elements: ornamental, allegoric and symbolic decorations, their hierarchy and cultural significance,
- Horizontal surfaces: landform features, land cover (flowers, grass, stone slabs, ceramics, wood, concrete), water levels,
- Vertical elements: architectural dominants, columns, arches, vaults, trees (and their cultural significance),
- Properties of architectural interiors: shape, size, proportions, lighting, microclimate, acoustics, equipment, furniture, facilities,
- Environmental protection: waste disposal, sustainability, and energy efficiency,
- Building maintenance design: strength of materials, cleanliness, safety, susceptibility to changes resulting from inhabitants' emerging needs.

6 Conclusions

The discussed problems form the basis for assessing a design against its conformity with a “pattern of culture”. The lack of conformity means that architecture has not been adapted to the cultural context. It is most often manifested through such faults as wrongly selected building development scale, no stylistic originality, and colours and materials that are not associated with the local tradition. Architectural uniqueness is also affected by little attention having been paid to local ornaments and architectural details. Another error that can be listed is a building not tailored to its inhabitants' cultural preferences.

An interesting approach to solving the problem is proposed in the theory and practise of urban empathy [21]. Urban empathy stresses the importance of cross-cultural design from the perspective of the local community's preferences. Before taking decisions relating to design, an architect should research how proposed design solutions will be accepted by the local community. The cross-cultural ability to reconcile various and often clashing interests is the basic benefit of the

method. Such an approach in architectural design offers a chance of preserving local culture and arrive at creative solutions that bring new value added to urban space.

Hence, it is possible to obtain positive values that raise the attractiveness of a space:

- Sense of space,
- Uniqueness of a place,
- Familiarity of a place,
- Safety of a place,
- Spirit of a place.

These features have a favourable effect on strengthening social ties, raising a sense of security (neighbour watch), and caring about the unique heritage of a place. The cross-cultural approach to design makes it possible to tailor architecture to better suit a local community's preferences, and understand how tradition and history may be used in contemporary architectural design.

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