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Sustainable Conservation and Urban Regeneration

The Luxor Example

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A Chance of Dialogue Between Cultures

Maria Grazia Folli

Abstract In 2009, between AUC PhD at Politecnico di Milano, the Council of Antiquities in Cairo and the Luxor Governorate an experimental research has been started: the issue was been the definition of design methodologies and solutions that, following the rediscovery of Sphinxes Alley, would allow the overall Luxor urban regeneration. Reasons, strategies that used multidisciplinary, multi-scale and intercultural methodologies have settled in a context of cooperation to promote well-balanced sustainable growth and integration of historical and archeological values in the city structure. Shared conceptualizations and projects designs have tried to build new interlinkages between local resources and global perspectives, between past memories and visions of a better future.

1 Introduction, Background

The scenarios of globalization shows a liquefaction of the world that weakening the horizons of meaning, reduces the identities—ethnic, cultural, political and economic—in favour of a unique system. Local specificities are homogenized, in a general aspiration towards an exponential growth of wealth with obvious consequences on customs and ethic.

However, globalization is also an opportunity for: innovation, interconnection, openness, democratic participation, social responsibility and much more. The challenge therefore, as Cacciari said, is not to be ‘no global’ but ‘new global’,¹ in order to govern (and not to suffer) globalization. This means activating and bolstering exchange processes, forms of collaboration that are able to recognize, valorize, contaminate cultures, project methodologies. The aim is to produce

¹Cacciari (2014).

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Fig. 1 Luís Teixeira, Portolan Chart. Lisbon, Ca. 1600

innovative tools and visions that can contribute to build a possible, more sustainable and reassuring future.

The Mediterranean, despite the fact that today is the scene of tragic conflicts, could play a fundamental role, thanks to its great potential of human, cultural and natural resources.

The Mediterranean is not only the common geographical characteristic of the twenty-two nations, of three continents, bordered by this sea but, it is expression of a multiplicity of tangible and intangible dimensions—cultural, social, political, scientific, epistemological—throughout history, it has been political space, exchange scene, place of cultural and ideological influences, contexts of debate, expression of ‘reciprocity’.²

What is the Mediterranean? One thousand things at a time: Not just one landscape but innumerable landscapes. Not just one sea, but a succession of seas. Not just one civilization but many civilisations packed on top of one other. The Mediterranean is a very old crossroads. Since millenia, everything converged on it³ (Fig. 1).

The Mediterranean according to Braudel is an ancient geo-historical system, a sea that joins landscapes, a reserve of resources and identities, a dynamic space, a

²Polany (1944, 1957).

³Braudel (1949).

sequence of human, social, cultural, political, religious, ideals events, a network of changing ties and conflicts between diversities.

One thousand things at a time, today a mosaic of complex, unstable realities. Since 1950, the total population of Mediterranean countries (around 213 millions) has more than doubled and, at least 75% of the inhabitants are concentrated in towns.

ONU foresees that, in 2050, Mediterranean population will be almost 605 millions. It is expected an increase of 41.2% in the south coastal countries, where the phenomena of urban growth will be more evident.⁴

The demographic dynamics of mediterranean Asian and African coastal zones are due to scenarios characterized by unstable and complex realities, where are striking the asymmetries in development. The World Bank data show an average income of states in southern shore of Mediterranean equal to one twelfth of the average of European Union and, at the same time, in these countries are present different socio-cultural, economic, political, religious worlds with their conflicts. These are problematic heterotopias but also repositories of resources, good intentions, imagination, interest in cooperation and exchanges; a richness that can be fruitful of new thinkings and new practices (Fig. 2).

The Euro-Mediterranean Partnership (Euromed) was promoted by the European Union with the *purpose* “to strengthen its relations with the countries in the Mashriq and Maghreb regions. The partnership laid the foundations for what came to be the Union for the Mediterranean.”⁵ The process started in 1995 with The Barcelona Conference, involving States of the European Union and countries on the southern shore of the Mediterranean, that has set up the Euro-Mediterranean partnership in which, the contributions from civil society organisations are playing an important role in supporting social, economic, cultural, political strategies.

Since 1998, the Euromed Heritage Regional Programme has founded partnerships between conservation experts and heritage institutions from the countries of the Mediterranean region. Almost 400 partners from the Member States of the European Union and MEDA countries (Algeria, Palestinian Authority, Cyprus, Egypt, Israel, Jordan, Lebanon, Malta, Morocco, Syria, Tunisia and Turkey) have created a network of universities, museums, cultural associations, non-governmental organizations which cooperate with each other. The main goal has been supporting the growth of Mediterranean countries’ capacities in managing and developing their cultural heritage—tangible and intangible, their agrarian and urban landscapes, by stimulating new forms of sustainable development and environmental rehabilitation.

Also AUC Ph.D.⁶ of Politecnico di Milano, with ethical commitment, has contributed to build knowledges and best practice in the network of Mediterranean cooperation; with multi-disciplinary and multi-scale approach. The doctoral

⁴Sources: United Nations Development Program, World population Prospects: The 2015 Revision.

⁵Barcelona Declaration and Euro-Mediterranean partnership, adopted at the Euro-Mediterranean Conference—27–28/11/95.

⁶Phd del Politecnico di Milano: AUC è acronyme di Architecture, Urbanism, Conservation of the Living spaces and the Landscape.

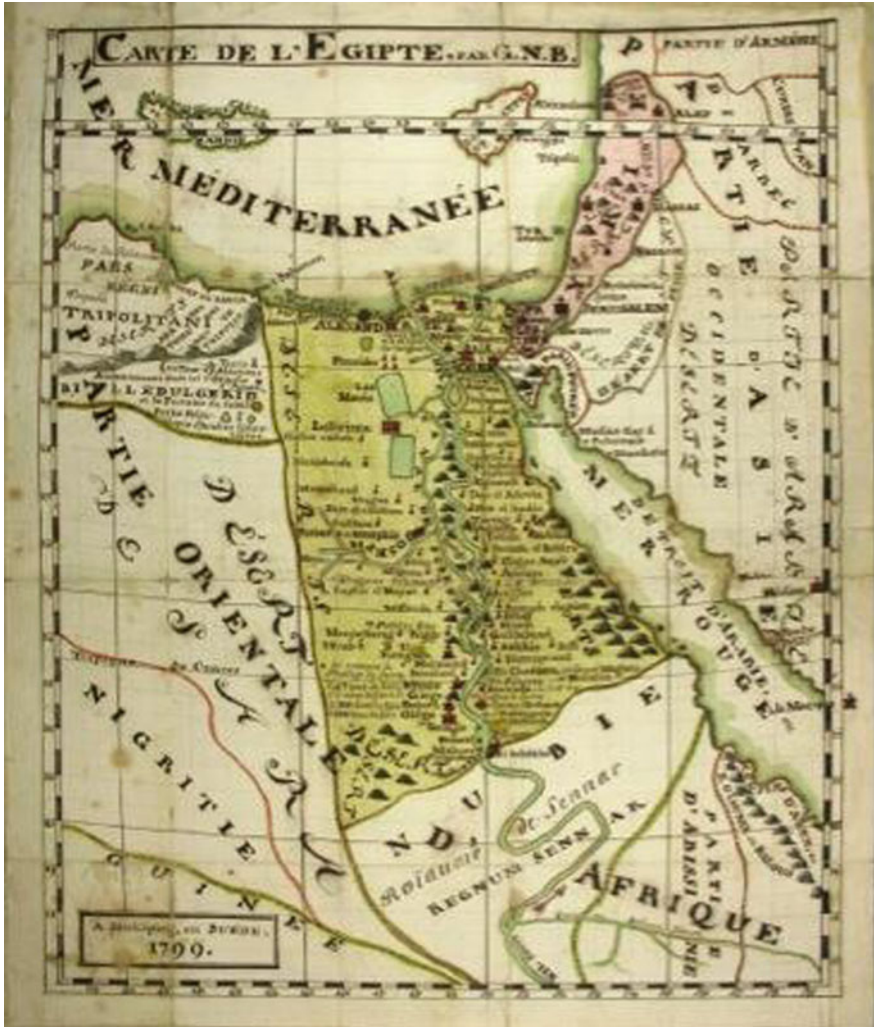


Fig. 2 Map of Egypt, made by Johan Henrik Tandefelt, around 1799

programme has carried out research activities and experimental design projects in the area of architecture, urban and agricultural landscapes, restauration and preservation of historical sites and buildings. The objectives have been pursued by means of the cooperation between AUC Ph.D. and Egypt; a country, today strained by a deep crisis, serious elements of instability and conflicts, that is an extraordinary reality, because of its immense cultural heritage and unexploited potentials, where supporting inclusive and sustainable development and exchange processes. The historic and artistic heritage should, certainly, be preserved but also, valued and contextualised through shared projects and strategies in an overall vision for a better future.

The Ph.d. Egyptian adventure started in 2008 thanks to a strong cooperation with the SCA (Supreme Council of Antiquities) of the Ministry of State for Antiquities, which, since 1859, has been responsible of Egyptian antiquities, from the archaeological digs to protection and promotion of cultural heritage: “to achieve its goals, it formulates and implements all policies concerned with antiquities; issues guidelines and permits for the excavation, restoration, conservation, documentation, and study of sites and monuments.”⁷ The Council has expressed an interest toward a shared research agenda, enabling to produce knowledge exchange, as well as comparison of strategies. The common goal was to define methodologies and procedures for analysis and actions concerning preservation of historical heritage but, furthermore, and above all, the relationship between antiquities and positive innovations: the archaeological remains would have to interact with the contemporary structure of its territory, with the social, architectural, environmental, functional, economic urban systems.

In March 2009, the cooperation was formalised by an official agreement with the task, for Politecnico di Milano Ph.D., of performing “a complete site management of Luxor’s east bank, more specifically the area of the Sphinx Alley”.⁸ The final goal had to be an overall project, able to increase the archeological and visual value of the Sphinx axis and, at the same time, upgrading the urban system in its morphological, functional, social and economic dimensions.

The result has been a wide and innovative project, which deals with a multitude of factors and scales, developing integrated solutions about urban morphologies, systems of settlements, functions, environment, roads network, infrastructures, houses, tourism, individual and collective use of space, et-cetera. The project has been expression of ideas and a sense of reality, pragmatism and a clear awareness of what is needed. For doing so, the continued cooperation with the experts of the Council and the ministries, the Luxor Governorate and the local communities has been instrumental.

Unfortunately, the political events of the recent years have shattered the Egyptian political scenario and, consequently, the overall framework of intercultural relationship within which the project had been developed. The realization of many ideas and proposals has been blocked, however, the cooperation wasn’t unnecessary; it has spread in the Mediterranean world, methods and possible solutions able to open up new perspectives for the future.

Maria Grazia Folli

⁷Supreme Council of Antiquities, SCA, in <http://www.sca-egypt.org/>.

⁸The Ph.D. Team was composed by M.G. Folli, Prof. of Architecture and urban design, coordinator, M. Boriani, Prof. of Architectural Conservation, G. Magli, Prof. of Archaeoastronomy, M.C. Giambruno, researcher in Architectural Conservation, R. Gabaglio, researcher in Architectural Conservation, besides Ph.D. doctors and students M. Moscatelli, R.M. Rombolà, A. Abulnour, B. De Carli, M. Flandina, E. Silvestri, M. Tolli, F. Zangheri.

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The Sphinxes Avenue Excavations to the East Bank of Luxor

Mansour Boraik

Abstract The Sphinxes Avenue extends from Karnak to Luxor temples for about 2,700 m. There is evidence that Queen Hatshepsut from the Eighteenth Dynasty had been the first to build this processional road, with sphinxes in her own likeness. However it was Amenhotep III, who first instituted the sphinx lined avenue between the 10th pylon of Karnak Temple and the precinct of Mut Temple and to the South of Khonsu temple at Karnak. Then the project was stopped during the reign of Akhnaten, but was continued by King Tutankhamun although the sphinxes have usurped, reworked and repositioned many times by later kings. The present sphinxes avenue dates back to the reign of Nectanebo I who inscribed various dedicatory texts on the bases of the sphinxes. The Sacred Road was first discovered in 1949 by Z. Ghonaim in front of Luxor temple. Subsequent excavations by M. Abdelqadr and M. Abdelraziq (between 1958 and 1964) substantially increased the initial exposure, revealing the Avenue from Luxor temple to the rear of Luxor Polis station which was existed in front of Luxor temple in 1936. By the end of these excavations, a total of sixty-two sphinxes had been revealed. Between 1984 and 1991 M. Al-Saghir excavated three more portions of the Avenue. The recent excavations started in 2005 in the different sectors according to the Luxor Governorate Strategy. The team working on this project had been under my direction from 2005 through 2013. The master plan of Luxor aims to excavate, to restore, and to install a site-management program designed to integrate the Avenue of Sphinxes into Luxor City. The recent excavations brought to light precious information that enriches our knowledge of Ancient Theban history.

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1 Introduction

One of the main aspects of Luxor Governorate Development projects was to reveal the processional road of the sphinxes avenue connecting Luxor and Karnak temples to the East of Luxor City. The sacred road extends from Karnak to Luxor temples for about 2,700 m. The excavations started in November 2005 in the different sectors of the sacred road according to the Luxor Governorate Strategy. Luxor Governorate was in charge of demolishing and removing the houses and the agricultural lands which occupied the upper level of the sites. The archaeological excavations team working on this project had been under my direction from 2005 through 2013. The excavations along the ancient road were divided into several sectors including the rams before the Gate of Euergetes (see plan 1). The excavations were started at the same time in sector I–IV along the ancient road from Luxor temple until the turnoff to Mut temple.

2 Historical Background

There is evidence that Queen Hatshepsut from the Eighteenth Dynasty had been the first to build this processional road, with sphinxes in her own likeness. This procession is depicted in the Red Chapel, where Hatshepsut burns incense before the six shrines, each of which is identified with its individual name. In Hatshepsut's time the procession to Luxor temple for the Opet Festival went along the ceremonial road and on its outward journey, but always returned on the river Nile. The existence of these six way stations indicates that Hatshepsut had constructed an early, sacred road or at least embellished it.

There is evidence for a processional way lined with statuary to the South during the reign of Hatshepsut. A few of the existing sphinxes have been also attributed to Tuthmosis IV on stylistic grounds. However it was Amenhotep III, who first instituted the sphinx lined avenue between the 10th pylon of Karnak Temple and the precinct of Mut Temple and to the South of Khonsu temple at Karnak. Then the project was stopped during the reign of Akhnaten, but was continued by King Tutankhamun (Cabrol, 1995), (between the Xth pylon of Karnak and Mut temple) although the sphinxes have usurped, reworked and repositioned many times by later kings. These paved ways linked the various temples of Karnak with one another and with Luxor temple were its remained visible in ancient times. The present sphinxes avenue between Karnak and Luxor Temples dates back to the reign of Nectanebo I who inscribed various dedicatory texts on the bases of the sphinxes

says: *“I built a beautiful road for (my) father Amun bordered by walls, planted with trees and decorated with flowers. A road made by the king to his father Amun in order that he does a beautiful sailing to Ipt-resyt and more beautiful has ever existed before...”* (Abd El-Razeq, 1968).

3 The Discovery of the Sphinxes Avenue

The Sphinxes Avenue was first discovered in 1949 during excavations conducted by Zakaria Ghonaim in front of Luxor temple (Fig. 1). Subsequent excavations by Dr. Mohamed Abdelqadr and Mahmoud Abdelraziq between 1958 and 1964 (Abdul-qader, 1968) substantially increased the initial exposure, revealing the Avenue from Luxor temple to the rear of Luxor Polis station which was existed in front of Luxor temple in 1936. By the end of these excavations, a total of sixty-two sphinxes had been revealed, along with circular red-brick structures occurring between the sphinxes (interpreted as emplacements for planting trees), their associated irrigation channel, and a pavement made from sandstone slabs (Fig. 2).

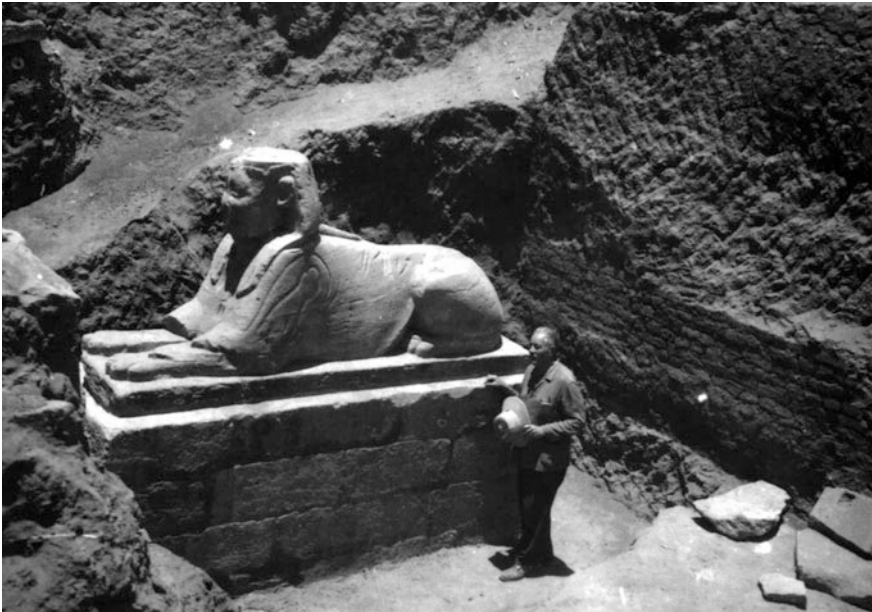


Fig. 1 Abdul Qader with the first sphinx



Fig. 2 Abdul-Razeq excavations

Inscriptions were found running around the bases of the sphinxes recording Nectanebo's titles and epithets. On one he describes "*this magnificent avenue which was enclosed within walls, planted with trees, and made dazzling with flowers basins*". Of note, Dr Abdulqader recorded that the eastern row of the sphinxes was, without exception, destroyed, whereas the western row was found intact. Mohamed El-Saghir recorded a similar scenario to the northeast.

In addition to the excavations in front of Luxor temple, six soundings were dug along the course of the Avenue, both inside and outside the modern town. Between 1984 and 1991 under the direction of Mohame Al-Saghir, three more portions of the Avenue were revealed. These include, first, the area at the North end of Hod(basin) of Abualgud, The latter where twenty sphinxes were exposed, all badly damaged, along with the pavement (located 7.6 m from the sphinxes), flowers basins, and irrigation channels (El-Saghir, 1992). The second area is to the West of the Northwest corner of Mut temple. The latter excavations demonstrated that the Sphinxes Avenue which runs directly northwest from Luxor Temple does not connect, as was formerly believed, with the dromos of the Temple of Khonsu (Fig. .3), but reaches its North end at a point facing the northwest corner of the Mut Temple precinct. At this point it joins and East–West Avenue of Sphinxes also erected by Nectanebo I. Of the last area of the Avenue (i.e. The East–West), the



Fig. 3 Sector of the Avenue



Fig. 4 The excavations in front of Luxor temple

eastern part connects with the main entrance of the Mut precinct, where it branches South for a short distance to the temple of Mut and northward for a greater distance to the Tenth Gate of Karnak temple. Along this East–West axis, the Avenue was bounded by mud-brick walls on either side.

4 Recent Excavations

Before we began the work in the Sphinxes Avenue, the whole road was divided to different sectors according to the occupations covered it (Fig. 4). The excavations began in 2005 until 2013 under the supervision of the author. The excavations aimed to open the whole course of this great processional road between Luxor and Karnak temples, (Boraik, 2008) and proceeded as following.

4.1 Sector I (in Front of Luxor Temple)

This sector comprises the area of Khaled ibn El-Waleed garden and the Avenue of Sphinxes from Luxor temple until the dismantled police station. The excavations started in this sector after completing the demolition of the police station and after mechanically removing the paved asphalt road between it and the mosque of Almeqashqesh. A trench excavations measuring 24 m × 2 m extended East–West



Fig. 5 One of sphinxes as found



Fig. 6 A head was used as filling during Roman time



Fig. 7 The sector in front of Luxor after excavations

in the middle of the site about 20 m to the North of the mosque of Almeqashqesh. This was dug during my work in the salvation of Karnak and Luxor Temples dewatering project in 2003. Here was found a sphinx on the western side of the area, with red brick circular planters and pavement, but there were no traces for the eastern row (Fig. 5).



Fig. 8 The second sector during the excavations

Two long NE–SW trenches were dug which exposed the western and southern row of the sphinxes associated with red brick tree pit. The North-eastern row is severely damaged, while the South-western one is relatively better preserved, with some sphinxes broken in pieces.

Many Roman structures were found, indicating that the site was used during the Roman period for different activities. A sandstone block found inside one of the walls in front of the western row of the sphinxes was inscribed with the name of Cleopatra VII. Two red brick walls running parallel to each other, oriented SE–NW, occurred at a level lower than the sphinxes and dated back to pre-Nectanebo times in the late period. (Boraik, 2010a, b) Also we found that the western row is in a good condition of preservation and three sphinxes were used as a peddling for some of the Roman structures (Fig. 6). Two royal heads of the sphinxes also were used as a filling in the walls of these Roman structures (Fig. 7).

Most of the stone pavement in the middle of the road has been found in a good condition and a big slab has the name of king Thutmosis the fourth from the New Kingdom was used in the construction of the pavement. The total number of sphinxes and pedestal, from Luxor temple to the end of this sector (including what Abd el-Qader and Abd el-Raiq found) is now 130 pedestals, 65 on each row and 90 sphinxes of Nectanbo I with dedication texts and cartouches inscribed in sunken relief on their bases (Fig. 8).



Fig. 9 One of the heads of the ram head sphinxes



Fig. 10 Menkherperre Chaple



Fig. 11 The wine cistern



Fig. 12 Wine installation

4.2 Sector II, (from Police Station to El-Adra Church)

This sector was occupied by the building of the court and other government structures. The excavations revealed that this sector was completely damaged. Some sphinxes were found in pieces and three intact heads of sphinxes. Also remains of red brick circular structures for plantation were found (Fig. 9).

Fig. 13 The Stela

4.3 Sector III, (from El-Adra Church to El-Mathan Street)

This sector covers a distance of 250 m. Houses utilizing a septic tank swage system occupied this area. Most likely, this system has contributed to the observed damage of the avenue. Our excavations in 2009 revealed that the road was badly damaged and that the slabs stones of the pavement do not exist anymore. However, the bedding sand was found, with a thickness of 40 cm. Remains of 79 sphinxes were unearthed, 39 in the eastern row of the avenue and 40 in the western row. In the eastern row, only the lower parts of the pedestals have survived. Two royal sphinxes heads were uncovered in poor condition (Fig. 10). Between the pedestals the remains of circular red brick tree pits were unearthed. We discovered that at the time of Nectanebo I some inscribed blocks and some parts of the columns were reused in the construction of the pedestals. The most important discoveries were the remains of a chapel that was built by Menkheperre, a high priest of God Amun Re during the 21th dynasty (1080–931 B.C.). This chapel is located to the North of this

sector, 15 m to the eastern row of the avenue. Some red bricks bearing the name of Menkheperre also uncovered in this chapel with remains of two columns (Fig. 11).

This indicates that the chapel had already existed before and has usurped during that time. Under the reign of Necktanbo I, the chapel has been dismantled and the stones of the columns were reused in the construction of the sphinxes pedestals. In 1993, M. El Saghier had found another chapel of this high priest in the area of Abu El-Goud, 75 m east of the Sphinxes Avenue.

The excavations brought to light also that this area was used as an industrial area during the Roman period. A series red brick walls extended from the South to the North just behind the sphinx pedestals. A wine installation was found on the West row of the sphinxes dating back to the Roman period and, most likely, was in use through the Byzantine period (Fig. 12). The winery extends 19.5 m South–North and 24 m East–West. Its eastern façade is 1.60 m high. The preliminary study of the pottery indicates that this winery was used until the 3rd Century A.D. A sandstone block measuring 120×70 cm has circular holes with two crosses (most likely Coptic) carved next to them. In the walls of the building next to the winery, remains of a royal stela were found which possibly dated into the end of the Pharaonic periods. It measures 50×40 cm and portrays a king kneeling in front of god Amun-Re and offering the NW bowls (Fig. 13).



Fig. 14 Portion of the Avenue Sector IV

4.4 Sector IV (*Behind Luxor Library*)

The site is located 750 M to NE of Luxor Temple and is bounded to the NE by Airport road and to the SE by El-mathan street, to the SW by Sharya El-karnak and to the east by Abu al-Goud village. The site extended for 653 m × 76 m wide and is named after Luxor Library; it was occupied by agriculture which didn't effect on the preservation of the avenue and also gave us an idea about the stratigraphy of the



Fig. 15 Cistern

site. About 172 sphinxes with their pedestals were uncovered. Most of them were found destroyed and headless. Parts of the pavement made of sandstone slabs have been revealed with circular red brick planters connected with irrigation channels were also found. 89 sphinxes of the western row were found partially preserved in good condition and 83 in the eastern one, mostly destroyed; their heads were cut off and many of them found next to their bodies except two which were found intact. This portion of the Sphinxes Avenue was also built by Nectanebo I, but no inscriptions on the bases of the sphinxes was found. The excavations of this sector revealed that it was used widely during the Roman periods. And show that this portion of the Avenue was used for industrial activities during that period (Fig. 14).

The pavement: most of the pavement was carried away and does not exist anymore. The excavations revealed that Nectanebo I constructed a 40 cm thick bedding of pure sand before installing the slabs of the pavement.

Two remaining parts of the pavement were uncovered. The first was towards the north, next to the Airport road; the second part is to the South of the first and was damaged by an important flood episode: the slabs are slightly isolated and silts were deposited between. The excavations revealed that this sector was truncated by three factors: First, during the late Roman time, the bodies of the sphinxes were used as bedding in some structures and later this area was turned into an industrial area. Second, at that time a large flood event covered and destroyed part of the site and left behind a thick layer of clayish silt and silty clay raised about 1.2 m above the sphinxes. Third, during the medieval period the sandstone blocks and fragments of the avenue were largely carried away, especially the pedestals. This explains the fact that many sphinxes were thrown off their pedestals. As mentioned above, this sector, was used in the late Roman period for industrial purposes. Wine installations with their related structures as pottery kilns, galleries for labors, were found. It



Fig. 16 Wine presses



Fig. 17 Sector V after excavations

seems also that the area to the east of the site was for vineyards. The wine installation Among the many important remains of the Roman period structures that have come to light in this portion is the wine factory. It is located to the West of the western row, behind the sphinxes No. 21–24 and consisting of three main elements:

- 1 Portico for sorting the grapes. A pillared portico is located to the north of the presses. Made of badly destroyed red bricks, it was probably used for the first step of the process (Fig. 15).
- 2 Presses. The complex located to the South of the portico measures about 14×13.5 m. This wine press has a subsidiary basin for washing the grapes. The press itself was made of red bricks in a rectangular shape with a mosaic floor. It contains two squared basins. The first one lies to the North–West and measures $2.6 \text{ m} \times 2.46 \text{ m} \times 1 \text{ m}$ deep.
- 3 Storage cistern. This is located to the South-West of the press behind sphinx no. 27 and 28 of the western row of this sector (Fig. 16).

The laborers galleries: the complex measures $38.5 \text{ m North} \times 9.65 \text{ m West}$ and was constructed on the same level of the pedestals of the sphinxes. These galleries are located to the South of the cistern to the West of sphinxes no. 36–43 of the western row of the avenue. They were used mostly during the harvest season as a temporary residence. Among the important discoveries during the excavations of this sector are: A stela of Bakenkhonsu, the high priest of Amun-Re was found



Fig. 18 Connection to Mut temple and Nile River

during the first cleaning of the upper phase of the site and at a depth about 50 cm from the surface level, behind sphinxes no. 48–49 (Fig. 17). It has 17 horizontal lines of text and measures 132 cm height \times 77 cm in width \times 28 cm thickness. It is dated to the 4th regnal year, the, highest attested date, of Setnakht, the first king of the 20th dynasty. Of particular interest in the main text is the theme of the discovery of damage of an ancestral and divine monument as a symbol of the effects of disorder, this followed by the reversal of such effects by restoring the monument and a dedication offering by Bakenkhonsu (Boraik, 2007a, b). And also a rounded-top private stela in sand stone in sunken relief was also found. It bears the representation of a man standing in front of God Amun and his wife Goddess Mut. The stela may



Fig. 19 The water well with its staircase

dates back to the New Kingdom. Another two fragments of a sand stone stela of Emperor Tiberius were unearthed to the east row of the sphinxes. The stela is decorated with figures and remains of text in sunken relief. Topped by a winged sun disk, the lunette depicts the emperor offering the nu-bowls of the wine to the traid of Karnak, Amun-Ra, Mut and Khonsu before whom a second figure of Khonsu the child is standing; before the king. During the excavations of this sector we found a thick layer of ceramic remains containing some complete jars of different shapes and sizes, as well as oil lamps, some melted by high fire. This indicates that these wares and vessels were placed as bedding for next constructed kiln. Initial investigation dates them back to the 3rd century A.D. (Boraik, 2010a, b).

4.5 Sector V

This sector is called Shaikh Moussa Bridge, named after the bridge that existed over the ditch of Chevrier. This site covers a surface of 474 m in length and 54 m in width. It extends from the Airport road towards the North of the avenue that leads to Mut temple. In 1992, El Saghier discovered in this site the remains of twenty deteriorated sphinxes, fourteen on the western and of six on the eastern row. These



Fig. 20 The platform of the flads holder



Fig. 21 The old retaining wall

were badly damaged and had completely lost their inscriptions. Along with the sphinxes, remains of tree pits and irrigation pipes of ribbed ceramic were unearthed. On this site as also in the previously described sectors I and IV the sphinxes are placed on an average distance of 6.60 m from the edge of the paved way (in sector II the pavement was missing). In sector V the western row of the sphinxes had been built over by private houses, two mosques, and an asphalt road in front. Our excavations in this sector started in January 2010. We discovered 28 new sphinxes on the western and 7 on the eastern row (Fig. 18). Together with earlier findings by M. El Saghier, a total of 168 sphinxes were excavated in this area. The stone pavement was found in a good state of preservation but erosion is particularly visible on the upper and middle part on its surface. It is assumed that in this section the pavement experienced long periods under Nile water. Most likely, this area was like a lagoon before the construction of the High Dam at Aswan. Our excavations revealed that the avenue extends 320 m to the North at the same level. Thereafter, the Avenue of Sphinxes was built in ancient times at a slightly higher (60 cm) level than the parts before. Under the reign of Nectanebo I a ramp was built to connect

the two different levels. The road continued on this higher level until the turnoff to Mut Temple and on this part of the road for another 50 m (Fig. 19). Some of the sphinxes were found in fragments and then restored. The first three sphinxes on the western row from the road to Mut temple have inscriptions with the titles and the cartouches of Nectanebo I. Furthermore, six royal heads were unearthed on the eastern row next to their pedestals. Approximately 15 m behind the sphinxes, a cylindrical well was found built of sandstone blocks.

This well which may have functioned as a Nilometer has a diameter of 5.5 m at its top and a flight of stairs measuring 110×25 cm, with an average thickness of 15 cm, was leading down to the water (Fig. 20). We tried to clear the well inside.

However, the work had to be stopped after one meter when we reached the ground water level. So far, many pottery vessels were uncovered some dating back to the late Pharaonic period but the majority were attributed to the Roman period. East of the eastern row of the sphinxes, we unearthed a platform made of mud bricks. The platform which faces the area where we found the well has as a special feature a line of sandstone slabs with holes on the top. Behind each of these holes another corresponding one was discovered in the ground.

This construction might have been a type of flagpole holder, made to support wooden beams that were held by ropes and tied to the holes. Perhaps, this platform may have been used to announce the beginning of the Opet festival after the level of the inundation was measured in the well (Fig. 21). Approximately 200 m from the



Fig. 22 The embankment of the Sphinx Alley

East and West of the sphinxes previously cleared, whitewashed mud brick walls were found. These walls were built during the reign of Nectanebo I, most likely as a barrier for the road. A section of sandstone lintel was uncovered to the East of the avenue, measuring 0.95 m × 0.44 m and 0.14 m thick. The lintel has linear vertical inscriptions carved in sunken relief. The owner of this lintel is portrayed in position of adoration, kneeling towards the names of Amun-Re, Re-Horakhty, and cartouches of Ramses VI. Another sandstone block was found that was reused for the construction of the pavement. It bears a large scene in raised relief of a standing king dressed with the royal kilt which was decorated with cobras crowned with sun-disks. The king holds in his right hand a long bouquet of flowers. This may have been a representation of Amenhotep III in his later deification style (Boraik, 2013).

To the northwest end of this avenue we found the remains of a Roman structure. Certain blocks that were reemployed in its construction are inscribed with the cartouches of the God's wife Shapenupt in sunken and bas-relief. 7 some fragments show scenes of the God's wife with Amun-Re, others show inscriptions together with representations of the god Hapy.

Another block which was found in this building shows an inscription in slight sunken relief mentioning the fourth prophet of Amun, Montuemhat from the 25th dynasty.

Many pottery jars and vessels from the Roman Period were unearthed as well as an oil press made of black granite. At the end of this sector, where the avenue turns off to Mut temple, we excavated the road in the opposite direction towards the Nile. The excavations uncovered 50 m of this road and, to the North of it, a Ptolemaic settlement. Houses were built of mud brick next to the avenue after the Nile shifted towards the West and left behind a space for the people to settle in. Some limestone talatats from the reign of Akhenaton were unearthed in this area. One of the talatat blocks bears a carved fresco of cobras (Boraik, 2013).

4.6 Sector VI

The area of Sector VI that was cleared, was the western side of recumbent ram avenue in front of Khonsu temple. The eastern side of this sector could not be excavated since it is still occupied by modern private buildings, an asphalt road, and underground utilities.

On the western side of the area the excavations brought to light an extension of the embankment wall that was previously discovered in front of Karnak temple.

This indicates that the complex of Karnak was built on a peninsula and had been surrounded by a huge embankment that protected it from (the erosion of) the flood (Fig. 22).

The extension of the embankment in front of Khonsu temple was built with small carved blocks of sandstone and curved southwards towards the avenue (Boraik, 2010a, b).

The excavations showed that the recumbent rams in front of Khonsu temple may have been placed there during the Ptolemaic Period when the gate of Euergetes was constructed, as the embankment lies at a lower level than the bases of the sphinxes.

The embankment wall was not used as a quayside because it has no mooring loops, unlike the quay in the front of Karnak temple. The West row of rams was completely cleared and brought to light numerous pedestals bearing the name of Amenhotep III. Most of these were rebuilt back to front, and some were built with reused blocks dating back to the 25th Dynasty.

5 Conclusions

The excavations in different sectors of the Avenue of Sphinxes were carried out at the same time according to the master plan of the Ministry of State for Antiquities (MSA). The master plan aims to excavate, to restore, and to install a site-management program designed to integrate the Avenue of Sphinxes into Luxor City. Different campaigns funded by the MSA have been worked along the avenue. These excavations have brought to light lots of information about the history of East Luxor. This sacred road built by Nectanebo I was most likely used for the procession from Karnak to Luxor temple during Opet festival (for a summary about the Opet festival and the routes which were used see Darnell 10). The sacred road was in use until the end of the Roman period. During the Ptolemaic period many contributions in restorations and constructions in both Karnak and Luxor temple were achieved.

The city, called Diospolis Magna in Roman times 11, was divided into six districts and the processional route was still in use at least until the 3rd century (Bagnail and Rathbone, 2004). During the reign of Tiberius (14–37 A.D.). Luxor temple was damaged by a high inundation. Tiberius ordered the repair of the temple and the building of an embankment. Perhaps, Tiberius also ordered the digging of a canal to protect the temple in future. 12 Greek graffiti on the same pedestals testify the worshipping of Amun by pilgrims in Greco-Roman times and also their visit to the Avenue of Sphinxes.

Under Diocletian (284–305 A.D.) Thebes became a separate province with two legions. Luxor temple became the heart of the Roman military camp. 13 By that time the temple and the Avenue of Sphinxes were no longer in use. The Avenue of Sphinxes was disrupted from that time till modern times by many factors: During the Roman period and after closing the temple many of the Sphinxes were used in foundations and beddings of Roman structures. Many of their royal heads were used as fillings inside the walls. Several parts of the sacred road were used as an industrial area for different activities like wine installations, pottery kilns, and wine presses. During the late Roman period a high inundation event destroyed parts of

the Avenue of Sphinxes and leaving behind a thick layer of clayish silt. The silty clay raised above 1.2 m of the sphinxes. The site was used as a quarry during the medieval period. Especially, sandstone blocks and fragments of the Pedestals and the pavement from exposed parts of the avenue were largely carried away. Finally, the Avenue of Sphinxes has completely disappeared under farmland, modern houses, modern roads, governmental buildings and religious structures. Clearing and excavating the great processional way of Luxor has brought to light precious information that enriches our knowledge of Ancient Theban history. The work carried on also opens the opportunity of economic and cultural development in the area for years to come.

6 The Site Management

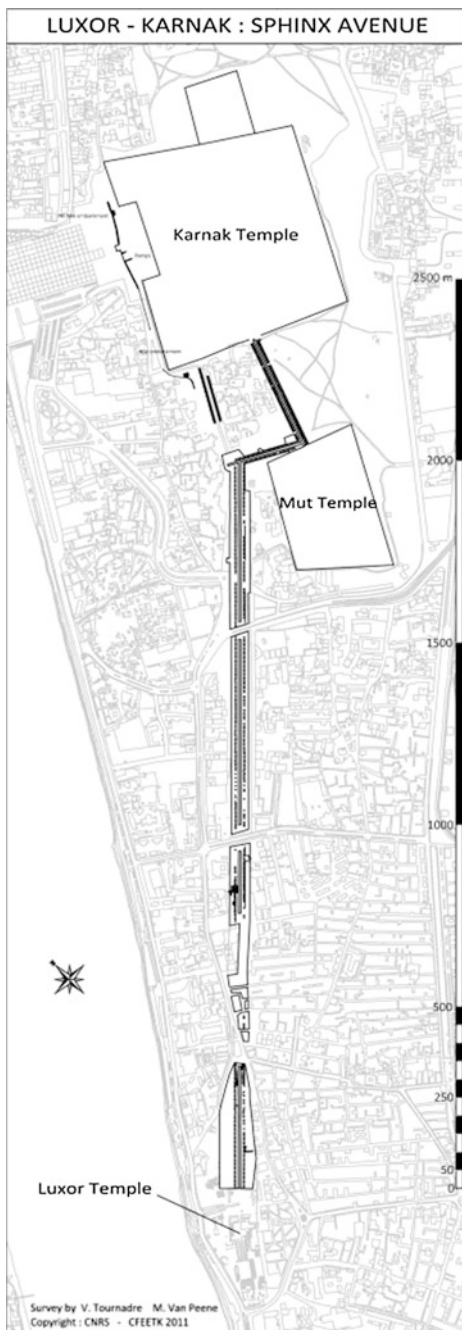
The excavations of Sphinxes Avenue were particularly complex as it included many underground cables, sewage and fresh water pipes that must be relocated. Also the uncovering of this sacred road divided the East part of Luxor city to two parts. Because the road lies in some sectors 4 m below the ground surface. This led to think about the protection of the avenue antiquities and also to integrate it with the city. Luxor Governorate was in charge of the construction of roads, infrastructure and plantation around the road under the supervision of the Antiquities Department.

First, a sandstone retaining slope wall was constructed on the both sides of the avenue (Fig. 23). After we finished the sector V behind the library, the vision was nor matched with the avenue. This concept turned the Sphinxes Avenue to look like a dry water canal. Secondly, with the idea of Antiquities Department, a concrete vertical wall was built along the both sides of the road and cased with mudbricks (Fig. 24). Also, every 600 m we constructed a ramps as visitor access to the road



Fig. 23 The new retaining wall

Fig. 24 Plan for the Sphinxes Avenue



and each ramp ends with control room. Behind each row of the sphinxes avenue, different trees were cultivated. Ancient trees were chosen to cultivated like, Sycamor, Henna, Acacia, Pomegranate, Tamarisk trees. Tow bridges are constructed crossing the road. Anew light system was installed to illuminate the sphinxes and the stone pavement. At the same time, work is ongoing focusing on restoration of the statues and conservation of the inscriptions. Also a new sandstone pavement was constructed in the areas where the ancient one is missed.

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Architecture, Astronomy, and Sacred Space: The Case of the Avenue of the Sphinxes

Giulio Magli

Abstract At Thebes, today’ Luxor, two among the most magnificent temples of humanity were built: Karnak, which was the “house” of Amun-Ra, and Luxor. Luxor was dedicated to Amun as well, but the God was worshipped there in a other “form”, Amenemope, the God of renewal. The two temples were connected by a processional avenue, the so-called Avenue of the Sphinxes. Archaeoastronomy is used here to investigate on cognitive aspects of the Luxor-Karnak relationship and, especially, on the role of the Avenue in this relationship.

1 Introduction

Two among the most magnificent temples ever built are located along the eastern bank of the river Nile in today’s Luxor: the so called Karnak and Luxor temples, by far the most important sacred places of Egypt during the New Kingdom (Wilkinson 2003) (Fig. 1).

Both monuments were devoted to Amun-Ra, the ancestral God of Thebes who—once united with the Sun God—became the most important God of Egypt. Karnak—founded in the Middle Kingdom—was the official temple of Amun, his elected residence and main centre of cult. But what about Luxor? At Luxor, a “creator version” of the very same God was venerated, but the true meaning of this worship is unclear and, as a consequence, many “alternative” interpretations of this temple exist, which have little or nothing to do with the ancient Egyptian’s religion and way of thinking.

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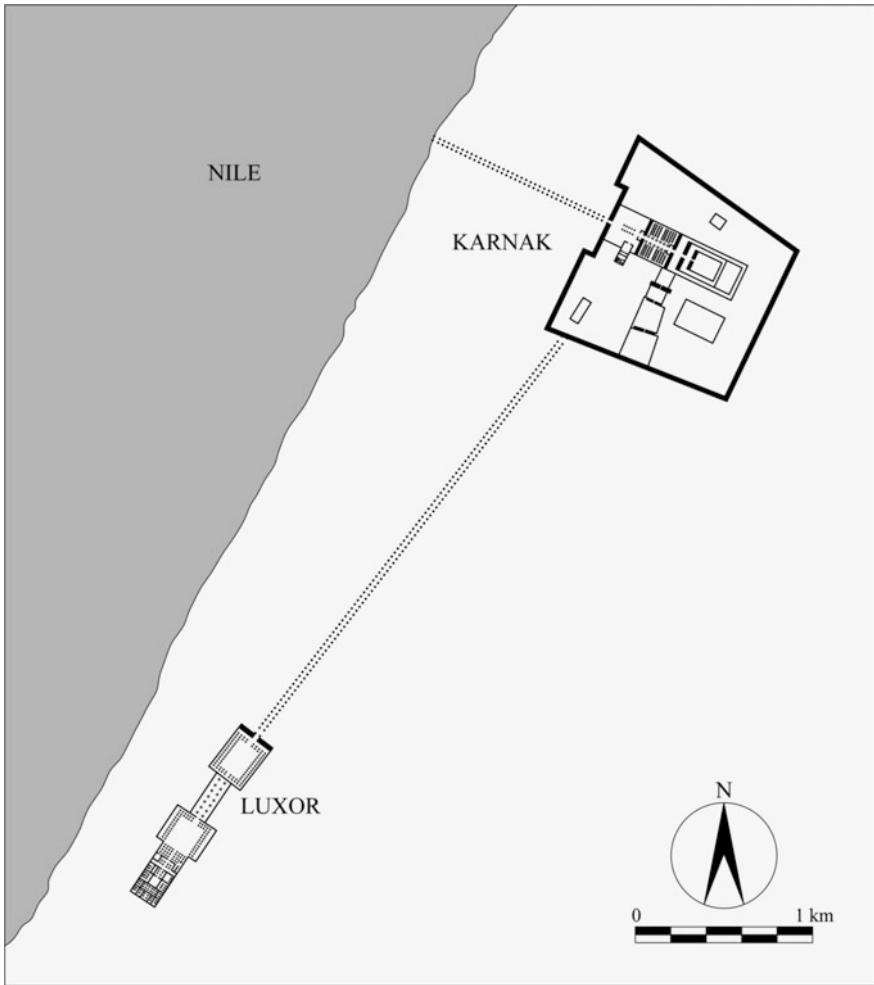


Fig. 1 Plan of the Karnak Luxor area

Closely connected with the problem of Luxor's function and meaning is the role of the avenue of the Sphinxes, a processional way which connected it with Karnak. It is the aim of the present paper to account briefly on recent results which have been obtained on this subject within a wider research project on cognitive aspects of ancient Egyptian architecture (see Magli 2010, 2011a, b, 2014) (Fig. 2).



Fig. 2 The final section of the avenue of the Sphinxes towards Ramesses II' pylon of the Luxor temple (Photograph by the author)

2 The Luxor-Karnak Relationship

When the Theban kings unified the country at the beginning of the Middle Kingdom, the role of Amun of Thebes started to grow in importance, and Karnak, *the most select of the places*, was founded in his honour (Blyth 2006). With the New Kingdom, Karnak received a series of huge, spectacular additions. In particular, Hatshepsut (the fifth ruler of the 18 dynasty) promoted the worship of a “Theban triad” of gods, formed—besides Amun—by his wife Mut and their son Khonsu, whose temples clustered near the main Karnak one. It is with the Pharaoh-queen that the sacred area of eastern Thebes definitively acquired his second, fundamental element: the so-called temple of Luxor.

Luxor is placed along the Nile some 3.5 km to the south-west of Karnak. Known in ancient times as the *sanctuary of the south*, it was again principally dedicated to Amun, worshipped as Amenenope, God of renewal and fertility. As in Karnak, also here a series of subsequent construction stages can be recognized.

The third element of the Karnak-Luxor complex is a straight processional way connecting Karnak with Luxor. It is usually referred to as the *Sphinx Avenue* because it is flanked by hundreds of sphinxes. The statues—most of which have been brought again to light in very recent times—are a relatively recent addition, but the avenue can be ascribed at least to Hatshepsut times if not before; the Pharaoh-queen in particular is known for the construction of six “barque stations” along it (Cabrol 2001).

All in all, it can be said that Karnak, Luxor and the Sphinx Alley form altogether a unique sacred space. The key to its meaning is provided by the Opet festival, which connected the Karnak temples with Luxor once a year (Assmann 2003). During the festival, the statues of the Theban triad literally visited Luxor. Once in Luxor they were housed in the triple shrine located inside Ramesses II' first court, on the right of the entrance. The festival commenced with the Karnak statues being loaded onto ceremonial barques under which long stakes were inserted. Baldachins were then carried on the shoulders of the priests, and the religious procession moved towards Luxor along the avenue. Renewal was the focus of this feast, and countless offerings of flowers were brought to the temples. The rites were related with the renovation of power, both divine and royal, and Luxor acted as an explicit, perennial symbol of this renewal. Public access to temples was generally forbidden, so the idea of circulating the god's statues back and forth met the need to have contact, however detached, with the gods. The Pharaoh, in accordance with his divine nature, had of course a key role, for the festival was connected with the renewal of the Ka (the vital spirit) of the king and—by extension—of that of all people. The Pharaoh himself made a reappearance, having changed his clothes, after the entrance of the procession into the recessed part of the Luxor temple. The secluded rites included a repetition of the coronation, with the king receiving the two crowns in front of the God's image and presenting special offerings. Also, the Gods themselves were "reactivated" in the festival, to the point that the ceremony known as "Opening of the mouth" was probably performed on their statues (Bell 1985). This ceremony was originally a funerary ritual, attested since the Old Kingdom, in which the officiant, using special tools, touched the mouth and the eyes of the mummy (or the statue) of the deceased, magically enabling it to receive food and drink, to breathe, and see.

3 The Role of Astronomy

As is very well known, the Karnak axis is aligned with the winter solstice sunrise (Hawkins 1974). The front of the temple actually points towards the Nile and the summer solstice sunset, but the setting sun cannot penetrate the temple in full, because the horizon is occupied by the Theban hills, which obstruct the view. The astronomical orientation to the winter solstice sunrise is connected with the calendar, since in the years around the foundation of Karnak the Egyptian calendar completed one half of its turnaround with respect to the solar cycle, and thus new year's day—originally at summer solstice—coincided with the winter solstice.

The astronomical orientation of the Sphinx alley has been studied in Magli (2014). The pathway proceeds very straight, so that the azimuth can be estimated quite precisely by repeated sampling along its course, and it is inter-cardinal, that is 45° from Luxor to Karnak (author's data). This azimuth was not constrained by strict local topography, as the connecting avenue could have been projected within a wide range of azimuths (the arrival area was a huge open space parallel to the

Nile, and the arrival point was chosen hundreds of meters to the north of the existing buildings at that time). The choice of orientation is, therefore, hardly random, and its most likely explanation is astronomical.

Inter-cardinal orientation is present in Egypt since the Early Dynastic times. The first occurrence is in Abydos, where the royal enclosures and the royal tombs of the first two dynasties at Umm el Qab are all orientated inter-cardinally (Belmonte and Shaltout 2005). A inter-cardinal axis governs the general topography at Giza (Lehner 1985; Magli 2010). At Western Thebes, inter-cardinal orientation (this time NW-SE) characterizes also the majority of the funerary temples. From the astronomical point of view, inter-cardinal directions are and were out of the solar and lunar range in Egypt, but they corresponded to the Milky Way, seen as a relatively wide band in the sky (say 12° wide), during the course of the 3 Egyptian kingdoms (approximately 3200–1100 BC). The Milky Way was a very important presence in the ancient Egyptian sky. It is mentioned in the Pyramid Texts, where it likely functioned as an analogue of the “shaman’s path” for the travel of the pharaoh’s spirit in the afterworld sky realm, and was identified as an image of Nut, the sky Goddesses “bending” over the earth. In particular if we take as reference the date of Hatshepsut’s accession for the planning of the avenue (around 1470 BC) we can see that many bright stars related to our galaxy were rising, and other were setting, at the two ends. The two regions of azimuths located at the two extrema (close to 45° at rising and close to 225° at setting) were in fact crowded by bright stars: the “northern branch” of the Milky Way with Cygnus, (but also Arcturus and Vega), rising to the north; the brightest part of the Milky Way—and in particular, the Southern Cross-Centaurus group—setting to the south. In particular, the spectacle of the Milky Way setting “inside” the Luxor temple, mostly visible in winter months, must have been particularly impressive. Of course, due to precession, we cannot enjoy the spectacle any more; the two centuries or so separating Hatshepsut from Ramesses II were not sufficient however for precession to destroy these phenomena so that 200 years later the same spectacle was still quite effective.

The choice made for the orientation of the avenue was therefore deliberate and highly symbolic; it influenced the subsequent topography since in this way the position of the last “barque station” was fixed. The choice was an explicit reference to a pattern of orientation *strictly related to the royal funerary cult*, originated, as mentioned, at Abydos more than 1500 years before and repeatedly applied in the course of the centuries. But why?

To understand this, what is particularly important is the meaning of the topographical axes in the royal necropolises, and especially in the pyramid’s fields (Magli 2011a, b). In fact, associated with these axes there is a “movement” in placing subsequent royal tombs to the south west (or simply to the south) of the predecessor’s tomb. I have thus proposed (Magli 2014) that the general position of Luxor to the south-west of Karnak, strengthened by the strict inter-cardinal, south of west orientation of the avenue, was due to an explicit, cognitive reference to the “canonical” position of the tomb of a king with respect to his (ideal, or direct) predecessor. Basing on the above astronomical and topographical observations, the “sanctuary of the south”—where the power of the gods was “re-enhanced” and, in a

sense, resuscitated—can thus be seen as a sort of gigantic Serdab, the special room where the Opening of the Mouth was performed. The relative disposition of the Luxor temple with respect to Karnak—analogue to the “classic”, almost mandatory position for the tomb of the successor to a revered king—thus alludes to the fact that the new king is no one but the “renewed” Pharaoh, who succeeds to himself as well as does the “rejuvenated” Amun of Karnak. Luxor and Karnak, the most sacred places of “Heliopolis of the south”—as Thebes is called in many official documents of the period—thus shared the same “dynastic” connection which governed the topographical relationship between Giza and Heliopolis some 1000 years before.

4 Conclusions

Sacred architecture or, more generally, sacred space is a simple and natural concept; it is *familiar*, as Eliade (1959) once said. This holds also at eastern Thebes: the symbolic relationship between Karnak, the main “house” of *Amun-who-hears-the-prayers*, and Luxor, the main “house” of Amun as *Amenenope*, responsible for renovating the Ka of the Pharaoh, was not “esoteric” as many authors tried to claim in the past; on the contrary, it is heightened by a series of references to sacred space concepts which would have been quite familiar to all Egyptians capable to read such things. Among these references, the Avenue of the Sphinxes was a key element, for it absolved to a fundamental, albeit symbolic, function. Its role indeed was to establish between the two temples a topographical axis which made explicit reference to dynastically related concepts of rebirth of the Pharaoh as a living God.

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Archelogy, Architecture, City. Luxor Between Past and Future

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Abstract The theoretical reflections and the projects design for the city of Luxor were the outcomes of intercultural confrontations, researches, cognitive processes, which have been promoted by an agreement between Egyptian Institutions and Politecnico di Milano. The ‘restoration of the Avenue of Sphinx’ and the principle of Luxor as an ‘open Museum’ were considered into a comprehensive strategy aimed to increase the value of greatness of ancient Thebes but also to upgrade the quality of urban settlements. This purpose was achieved through tactics able to deal with the relationships between tradition and innovation; also among archaeological estates, monuments, ordinary urban fabric, natural landscape, mobility. The System ‘Luxor Temple-Sphinx Avenue-Karnak Temple’ has become an urban structure, generative of unexplored functional, physical and visual connexions as well as new modes of organisation of city spaces in various configurations and complex uses. The text describes the working method and the on-going attempt to bring about a system of mutual coherence both preservation-enhancement of the antiquities and morphological, functional, infrastructural project design. This synthetic vision must address, in a balanced and sustainable way, the growth of the city (preventing the urban sprawl), the tourism development and the improvement of life level of inhabitants and visitors. The project design solutions are answers to the urgent questions asked by the reality and, at the same time, by the mythical dimension of Egyptian culture and by local tradition heritage: these are depositary of principles and values to be interpreted through new contents, strategies, forms and techniques.

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1 Thebes, Luxor¹

“A neuf heures, en détournant la pointe d’une chaîne de montagnes qui forme un promontoire, nous découvrîmes tout-à-coup l’emplacement de l’antique Thebes dans tout son développement; cette ville dont une seule expression d’Homere nous a peint l’étendue, cette Thebes aux cent portes; (...) célèbre par ce nombre de rois que leur sagesse a mis au rang des dieux, par des lois que l’on a révérees sans jamais les connoître, par des sciences confiées à de fasteuses et énigmatique monuments des arts, respectés par le temps; ce sanctuaire abandonné, isolé par la barbarie, et rendu au desert sur lequel il avoit été conquis; cette cité enfin toujours enveloppée du voile du mystere par lequel les colosses même sont agrandis; cette cité reléguée, que l’imagination n’entrevoit plus qu’a travers l’obscurité des temps, étoit encore **un fantôme si gigantesque pour notre imagination**, que l’armée, à l’aspect de ses ruines éparses, s’arreta d’elle même, et, par un mouvement spontané, battit des mains, comme si l’occupation des restes de cette capitale eût été le but de ses glorieux travaux, eût complété la conquête del Egypte.”²

‘A ghost as unfathomable to our imagination’ it is Thebes, on January 27, 1799, in the eyes of Vivant Denon, diplomat, artist, writer, archaeologist, man of great culture who was following the Napoleonic troops during the Egyptian Campaign. Denon headed 167 scientists, experts of every discipline, who had to discover, know, invent, measure, map, analyse materials and constructive techniques of treasures of the Nile Valley, in parallel with the military conquest. These explorations were documented in ‘Voyages dans la Basse et la Haute Egypte pendant les campagnes de Bonaparte en 1798 et 1799’, official of napoleonic campaign report, consisting of 10 toms containing 837 copper engravings, for approximately three thousand images (Fig. 1).

The mythical world, evoked by the remains of Thebes, fascinated the nineteenth-century European culture. Expeditions and journeys were promote, driven by thirst for scientific knowledge by the archaeologist and, at the same time, the desire to satisfy curiosity and imagination by painters, musicians, and writers. As Flaubert who writes in his travel notebook, fifty years after Vivant Denon: “*Quand nous sommes arrivés devant Thèbes, (...) j’ai senti monter du fond de moi un sentiment de bonheur solennel qui allait à la rencontre de ce spectacle, et j’ai remercié Dieu dans mon cœur de m’avoir fait apte à jouir de cette manière; je me sentais fortuné par la pensée, quoiqu’il me semblât pourtant ne penser à rien, c’était une volupté intime de tout mon être.(..)* Nous sommes arrivés à Louqsor le

¹Thebes was the capital of Egypt during the period of the Middle and New Kingdoms; it was also known as Wase or Wo’sé (the city) and Usast or Waset (the southern city); it covered an area of 36 square miles and was built on either side of the Nile River with the main city on the east bank and the vast necropolis on the west. Luxor, Arabic Al-Uqşur, has given its name to the southern half of the ruins of the ancient Egyptian city of Thebes and its surrounding area.

²D. Vivant Denon *Voyages dans la Basse et la Haute Egypte pendant les campagnes de Bonaparte*, en 1798 et 1799, Paris: Didot, 1802.

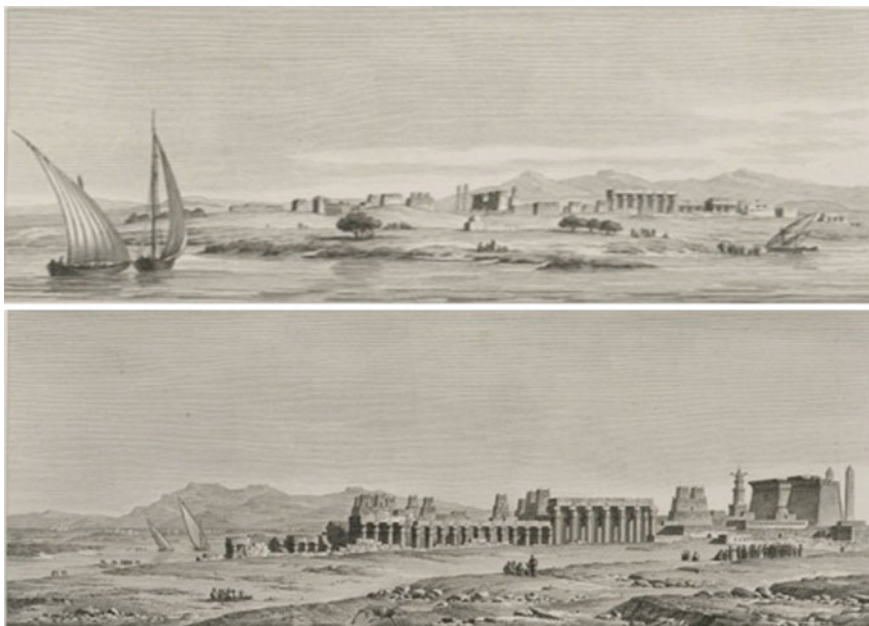


Fig. 1 Vue de Louqssor [Luxor]. Vue d'un temple de Thèbes à Louqssor [Luxor]. In V. Denon, Voyages dans la Basse et la Haute Egypte, pendant les campagnes de Bonaparte, 1829

lundi 30 avril, à 8 heures et demie du soir; la lune se levait. Nous descendons à terre (...) La masse des pylônes et des colonnades se détache dans l'ombre, la lune qui vient de se lever derrière la double colonnade, semble rester à l'horizon, basse et ronde, sans bouger, exprès pour nous, et pour mieux éclairer la grande étendue plate de l'horizon.(...) Le lendemain, mardi, nous visitons Louqssor. Le village peut se diviser en deux parties, divisées par les deux pylônes la partie moderne, à gauche, ne contient rien d'antique, tandis qu'à droite les maisons sont sur, dans, et avec les ruines. Les maisons habitent parmi les chapiteaux des colonnes, les poules et les pigeons huchent, nichent dans les grosses feuilles de lotus des murs en briques crues ou en limon forment la séparation d'une maison à une autre (...) La première impression de Karnac est celle d'un palais de géants, les grilles en pierre qui se tiennent encore aux fenêtres donnent la mesure d'existences formidables; on se demande, en se promenant dans cette forêt de hautes colonnes, si l'on n'a pas servi là des hommes entiers enfilés à la broche comme des alouettes.(...) Nous revenons, l'allée des sphinx n'a pas une tête, ils sont tous décapités (Fig. 2).³

In 1850, as Flaubert wrote, the solemn, exciting spectacle of monumental heritage was in contrast with the vision of a poor village, built around the Luxor

³G. Flaubert M. Du Camp (illustrateur), Voyage en Égypte octobre 1849-juillet 1850 Paris: Edition Entente, 1986.

Fig. 2 M. Du Camp, Thebes, Luxor, 1850



Temple, without any great activity; but this urban nucleus would be transformed quickly. Since 1869, the British travel company Thomas Cook introduced tourism in Egypt, and Luxor became the main stage of the Nile cruise. In two decades the ancient Thebes was transformed, by new archaeological excavations and the expansion of settlements. In 1880, Luxor is “*a large village, increasing both in population and prosperity. It is the chief stopping place on the Nile voyages and it is the best headquarters from which to visit the wonderful remains of old Thebes*”.⁴ In 1897 Thebes had 10,000 inhabitants and its tourist receptivity was enhanced.

The city changed its appearance, for some negatively, as believed by the French writer Pierre Loti. In 1907, when he returned to Luxor he noted, with bitterness, the recent transformations of the town: “*L’arrivée à Louxor. Et là, quelle mystification! Ce que l’on aperçoit de deux lieues, ce qui domine tout, c’est Winter Palace, un hâtif produit du modernisme (..) un colossal hôtel, visiblement construit en toc,*

⁴Murray (1880).

plâtre et torchis, sur carcasse de fer (...) la vieille petite ville arabe a beau être encore debout, avec ses maisonnettes blanches, son minaret et ses palmiers; le célèbre temple, la forêt des lourdes colonnes osiriennes, a beau se mirer comme autrefois dans les eaux de son fleuve, c'est fini de Louxor!"⁵

In 1914, Luxor had few thousand of tourists; the monuments, that before had been subject of discovery and scientific study, became a tourist resource; infrastructures were developed and hotels increased in number. The Baedeker Egypt guide described the city: *"On the right (E) bank lies Luxor, now a town of 13,908 inhab. (inclus. 4598 Copts), the chief tourist centre in Upper Egypt.(..) The most frequented part of the town is the new Quai extending along the bank of the Nile in a S. direction from the temple; here are the Winter Palace Hotel, the Hôtel du Nile, and many shops. On the E., the Shâri el-Mahatta, with the post-office, runs straight to the railway station. To the N. of the town lies the Zabtiyeh Square, an open space adorned with gardens, which contains the Police Station, a Mosque, the Roman Catholic Church, and the Savoy and Grand Hotels.*

*To the N. of Luxor extend the immense ruins of Karnak connected with it formerly by the lanes of the city, now by a broad street planted with trees (Fig. 3)."*⁶

In 1922, the discover of the very rich tomb of Tutankhamun by Howad Carter, became a further attraction at international level. In the 1927 census, Luxor had a population of about 20,000; in the inter-war period, the tourist development is accompanied by programs and urbanistic plans for the aménagement and the embellishment of the city. *"Les plans 'd'embellissement' lancés par les autorités municipales redéfinissent les tracés de la ville dès la seconde moitié des années vingt: un axe est-ouest (rue de la Gare) est percé, perpendiculaire à la rue du Marché, reliant le temple de Louxor à la gare nouvellement construite. Autour de la station, fleurissent de nouveaux hôtels bon marché, des pensions, des commerces. (...) Les boutiques s'installent plus nombreuses le long de la rue du Marché sur un axe nordsud. Des bâtiments à deux étages de style colonial s'étendent vers l'est, entre le temple et la voie de chemin de fer. C'est là que nombre de familles expulsées des abords du temple ont élu résidence. Des bâtiments art déco aux inspirations pharaoniques, témoignent des activités de construction de l'entre deux guerres. Le gare en est un exemple, ou encore le bâtiment de la centrale électrique, situé sur la corniche.(..) Louxor devient une ville à part entière durant l'entre deux guerres, dans un mouvement conjoint de croissance démographique et de préoccupations grandissantes en matière d'aménagement touristique et d'exploitation des sites antiques."*⁷

⁵Loti (1909).

⁶Baedeker (1914).

⁷Gamblin (décembre 2007).

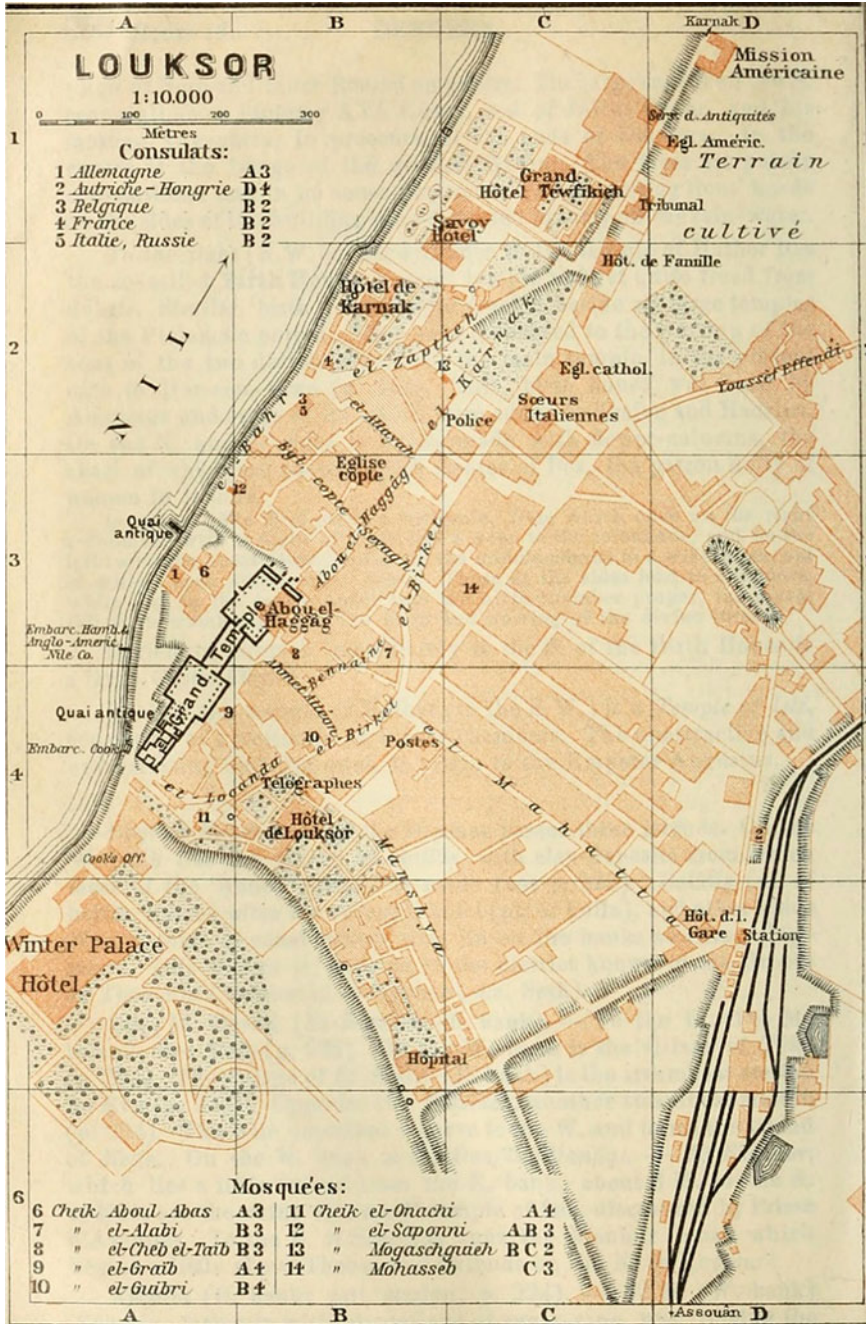


Fig. 3 City Plan of Luxor, Egypt 1914 Baedeker

2 Contemporary Luxor

In the 1976, Luxor had 94.000 inhabitants, 125.000 in 1986, 361.000 in 1996; they became 500.000 in 2009. The site of the ancient Thebes kept on being ‘a ghost as unfathomable to imagination’ as Denon had already defined, in 1799.

The fabulous heritage of Karnak are amazing presence, and, immediately opposite, across the River Nile, monuments, temples and tombs of the West Bank Necropolis, which includes the Valley of the Kings and Valley of the Queens. Mansour Boraik, who oversees Upper Egypt on behalf of the country’s Supreme Council of Antiquities, sais “30% of world monuments lie in Luxor, and 70% of the monuments in Egypt are in Luxor”.⁸ These presences are made even more magic by the background of the environmental contexts: the ever-changing skylines, the chromatic range of the agrarian landscape, desert, sky, river, mountains shades; the transparencies and the luminescences of the sunsets; and this is done, in spite of problems and contradictions of the city. The incremental growth of population and tourists has generated urbanization phenomena that have saturated the territory, among the monumental complexes of Luxor and Karnak. These processes, continuous and invasive, are causing damage to social life and cultural settlements, are expanding urban boundaries as well as they are eroding agricultural lands.

In this way, the urban territory of Luxor seems to be lacking of a structure capable of integrating, within an organic framework, many heterogeneities: the splendour of the monuments, the morpho-typological and functional intensity of the Arab fabrics, built in mud stone requiring recovery and rehabilitation interventions, the Victorian decorum of the Corniche buildings located along the Nile; the regulating geometries of the nineteenth-century paths; the more recent new infrastructures. This territory lacks strategies able to face the criticities due to the traffic congestion, vulnerability of the inhabitants, conflicts between old and new practices of living in a tourism oriented city.

By the end of 1970s, UNESCO’s analysis and reports have highlighted the issue of the heritage protection and enhancement, in coherence with the strategies of urban planning and promotion of tourism. “*It cannot be accepted for one moment that because Luxor is a town containing major antique remains, the community of Luxor should be disadvantaged in being able to carry on a normal life which includes buildings new homes, schools and hospitals. They have a right to develop and expand the town; it is dangerous, unjust and impossible to thwart such pressures. At the same time, a third of the population of Luxor gain their livelihood from the tourism related to the antiquities. Thus, the survival and the setting of the antiquities is important to this section of the community of Luxor*”.⁹ The report indicated the rediscovery of the Alley of the Sphinx as a strategic intervention. The path, built by the 30th Dynasty king Nectanebo I, between 380 and 362 B.C., connected the Luxor and Karnak Temples by 2.7 km long ceremonial avenue. It

⁸Hauslohner (2010a).

⁹Welbank (1982).



Fig. 4 A color map of Thebes, showing the area between Luxor and Karnak, with buildings labeled, 1888

was lined with sandstone sphinxes put on pedestals at an interval of 5 m interspersed with trees. Most of this avenue was covered by the modern town and, therefore, its rediscovery requires the demolition of at least 300 houses inhabited by around 5000 residents (Figs. 4 and 5).

Fifteen years after the Unesco Report, ‘The Restoration of the Avenue of the Sphinxes’ is one (the first) of the ‘six investment packages’, that should have allowed to achieve the goals of the ‘Comprehensive plan of Luxor city project’. In 1997, the Ministry of Housing Utilities and Urban Communities and the United Nations Development Programme sponsored the USA firms of Abt Associates Inc. for the study of an overall vision for Luxor 2020. “*The Structure Plan, Heritage Plan and Investment Projects produced in this project addressed ways to accommodate projected growth in population, tourism and agriculture, and outlined approaches to the preservation and enhancement of the antiquities to absorb the expected escalation in tourism without diminishing the cultural experience. The objective of the project is to establish and carry out a work plan for environmentally sustainable tourism development that also benefits the local population. To reach this objective, the following core themes emerged from a study approach that stressed the active participation of all major stakeholders: (1) Preservation of cultural resources protects Egypt’s heritage and promotes economic development. (2) Planned growth promotes sustainable economic development. (3) Meeting the contemporary needs of local residents is vital to the success of plans. The project’s execution documentation is arranged in six investment packages (..): 1. The Restoration of the Avenue of the Sphinxes. 2. Development of the new community of New Luxor. 3. Development of a destination resort at El Toad. 4. Infrastructure services for New*



Fig. 5 Luxor, current situation and projects forward

*Luxor and El Toad. 5. Development of high value agriculture primarily on reclaimed lands. 6. Development of Luxor City Centre as an Open Museum.*¹⁰

The concept of the city-museum, has had the goal to support urban regeneration and revitalisation inside a general development plan. Its implementation has

¹⁰Abt. Associates Inc. (2000).

included: preservation and enhancement of antiquities, promotion of sustainable investment, coordination of the tourism services. Furthermore the plan should also have taken into account the risk of gentrification, the phenomena of expulsion of inhabitants towards surrounding areas and their social exclusion, etc.

This was an ambitious project, with a budget provision of many hundreds of millions of U.S. dollars, which basically had to be used for the modernisation of the city and to make it suitable for tourist demand. “*The Abt report calls for 6,600 new hotel rooms, and officials say that 18 new hotels are already under construction, including the sprawling 34,000-square-meter Luxor Four Seasons, on the bank of the Nile. The McDonalds has a spectacular view of the 3,300-year-old Luxor Temple, and the colonial-era Winter Palace Hotel nearby is getting a heavy-duty facelift that will expand the hotel right up to the lip of the temple.*”¹¹

3 A Research, a Project

At the beginning of 2009, The Supreme Council of Antiquities of Egypt and the Politecnico di Milano signed a Protocol of Scientific collaboration, concerning “The development of a monumental and visual values of the Sphinx Alley in Luxor.”

The agreement intended to promote research studies on Luxor, defining tools and strategies able of providing additional qualities to the monumental sites and to the urban territory. The main aims were: preservation and enhancement of the antiquities—existent and to be discovered—development of restoration, architecture and urban design projects within a conscious and ethical vision of environmental and social contexts. That meant to face the relationships between tradition and innovation, archaeological heritages and new and existing urban fabrics, monuments, natural landscapes, infrastructures, mobility and uses of the city.

Firstly, studies and project proposals were contextualised within a framework of founding references and conceptualisations:

– Old and new

“*Cities need museums like people need memories: not as a repository of their past, but as a token of their identity and a guide to the future*”,¹² said the English historians and critics Joseph Rykwert.

The identity of Luxor is given by its history, its precious cultural heritage. It is related to its change over time, the evolution of morphologies and uses of spaces, social representations, symbolic values, cultures, individual and collective imagery, and much more. The identity of a place is expression of dialectical relationships between preservation of the historical heritage values and renewal-regeneration actions: a culture of conservation, if it is understood as commemoration and/or

¹¹Hauslohner (2010b).

¹²Rykwert (2000).

celebration of the past, does not allow visions and hopes for the future. According to Levi Strauss “*L’identité est une sorte de foyer virtuel auquel il nous est indispensable de nous référer pour expliquer un certain nombre de choses, mais sans qu’il n’ait jamais d’existence réelle.*”¹³

It is essential, in order to counteract irresponsible transformations, to be aware of the sense of places; everything that is stable and persistent should interact with ‘in progress’ processes and it has to be related to new uses, spaces, temporalities. Moreover, identity is not a fixed and immutable authority, but a broad, open, polysemic concept. It is expression of a continuous urban narrative, which includes values of the memory and the new one.

– Sustainability and urban project

“*As a paradox, city is both the main threat for ecology and the best hope to survive for a great amount of people*”¹⁴ said in 2005 Grahame Shane, Professor in Urban Design at Columbia.

The rediscovery of the Sphinx Alley should be considered in coherence with a programmatic vision of coordinate actions based on principles of sustainability—economic, environmental, social and ecological. The urban project design is a key method and a tool for promoting sustainability, for recomposing, in a synthesis, the functional efficiency of the city and its social, spatial, and aesthetic values. In this way, the strategies of protection and enhancement of archaeological heritage have to be integrated in safeguard measures for ecosystems and agricultural landscape, in suitable planning policies, in ethical models of development, in aesthetic and functional qualities of settlements, in new levels of urban comfort for inhabitants and tourists.

Tourism is the major source of income for Luxor, but it must be a responsible practice. A ‘not sustainable’ tourism can be a critical factor, causing environmental damages, conflicts between local and global behaviours. It is clear that inclusive models of tourism market have been having disastrous effects such as mercification, snaturalization, disneylization of the values of historical legacies.

Besides, these processes may jeopardise the already fragile relation between physical and social contexts, marginalizing the needs of the communities of inhabitants. Vice versa, a ‘responsible’ tourism, respectful of urban life, may be an enriching factor, a way to share with the inhabitants, experiences related to culture, loisir, commerce.

– City as common good

“*The ‘public good’ the concerns of the citizen, is indeed the common good because it is located in the ‘world’ which we have in common, without owning it*”¹⁵ argued Hanna Arendt. It is often assumed that cities are made of ‘commodities’, namely

¹³Lévi-Strauss (1977).

¹⁴Shane (2005).

¹⁵Arendt (1977).

‘marketable’ items, which, unfortunately, seem to govern processes and behaviours, causing irreparable disjunctions between social practices and spatial forms, erasing cultural and historical identities. On the contrary, the city, considered as a set of ‘goods’, or rather ‘common goods’, is not commodity to exploit, but a whole range of resources that should be protected for improving the well-being of the local communities and for granting citizenship rights.

The urban project guidelines are based on the recognition of Luxor as an invaluable treasure made up of many things: people, spaces, activities. They must be treated, implemented, shared in ‘civilian projects’. Luxor has an urban territory of 416 km² and a population of more than 500,000 inhabitants, constantly growing. It is a dense city that suffers from inadequate services and infrastructure, public spaces, lack of ‘collective’ needs. Considering Luxor as common good, means to have clever ideas and design innovative projects, in a framework of administrative actions that encourage economic development, environment protection, rights to habitat and to inhabit. In addition, laying down rules, generative of urban quality; means to set up the conditions enabling citizens to proudly accept the responsibility of treating, protecting and preserving—for the whole community and for future generations—the cultural, social, religious, and ethical values of their city.

3.1 Knowledge for the Project, Project for Knowledge

In such an ‘exceptional’ and complex environment, the project had to have strategy of knowledge able to read, decode physical and social reality, recognize historical values of environmental, architectural and settlement characters. For doing so, in-depth exploratory and descriptive procedures were activated in order to allow the development of taxonomies of ‘monuments’ and important urban functions, but also the recognition of ordinary, uncertain things and changing spatial situations. Often, these are factors of weakness that, however, have great potentials (Fig. 6).

Like the Italian urbanist Bernardo Secchi said, “*Walking in the city is simple operation; Seeing and recognizing the ever-changing characters is more complex operation; Making accurate and reliable reports, which imply the slightest misunderstanding of what has been discovered, is a very difficult operation. Detecting is to educate the look, see and show how the city is made and wonder about how it could be done; Is to observe in detail the places where social practices take place, the urban materials with which they come into contact and interfere; it is to know their metric, material and typological characteristics, their conservation, maintenance and degradation state, their adaptability, the possibility of their deformation and transformation. Listening is to come into contact with social practices as they are experienced and talked about by the same protagonists, capturing different temporalities, rebuilding microstores, recognizing images and widespread myths.*”¹⁶

¹⁶Secchi (2000).

3.2 Contaminations

To deal with complex contemporary contexts, according to André Corboz, “*Il nous faut d’urgence élaborer une notion de la ‘ville’ comme lieu du discontinu, de l’hétérogène, du fragment et de la transformation ininterrompue..., il faut considérer les forces en action dans la ville en tant que derives*”.¹⁷ Then, the city needs a set of multiple skills, contaminations between different knowledges, collaboration between disciplines, consistency between theories, methods and techniques. Investigative, proactive approaches, even if unconventional, may be useful for configuring unseen outcomes, for producing development and social innovations. “*History, conservation, design, construction, manufacture, control, regulation, planning, etc., they manifest themselves as intrinsic dimensions in every moment of knowing and operating in architecture*”.¹⁸ The AUC (Architecture, Urbanism, Conservation) Ph.D., has taken responsibility towards liveability of places, sustainability, good practices; considering historical values within the complex reality of Luxor. The research team availed itself of interdisciplinary thought, *essential* to build up effective conceptual apparatus and design instruments. A wide, articulated integration of scientific and humanistic knowledges—restoration, archeology, urban planning, architectural composition, construction science, technology, mathematics and archeo-astronomy—has been activated and opened to contaminations with the different forms of thought, knowledges, visions of the Egyptian culture.

4 Project Guidelines_Luxor. City as Open Air Museum. Strategies

The rediscovery of The Sphinx Alley, which, has been buried under roadways and settlements over time constitutes, without doubt, the re-appropriation of exceptional historical and artistic values. However, the excavation and re-use of the path, would have meant quite a number of disruptions in the urban structure: “*part of the avenue is still covered by the contemporary settlements (...)The exposure of this last stretch, however, will involve the demolition of one of the most interesting, residential quarters of the town, and will not spare a mosque...and a large church, among other buildings of character and importance*”.¹⁹ The alley, about two meters below the current city level, with a constant 76 m-wide width, would have produced a deep cut, separating east and west of the city.

¹⁷Corboz (1992).

¹⁸Benvenuto (1991).

¹⁹UNESCO Mission report of 18–24 April 2008.



Fig. 6 Politecnico di Milano and Supreme Council of Antiquities, sites inspections and studies

In ‘The Vision 2020 for new Luxor’, expected outcome of the excavation is a canal connected to the urban level with banal concrete slopes and crossed by pedestrian and vehicular bridges. To mitigate the infrastructural impact pharaonic decorations, aiming at spectacular media effects, have been proposed. *“The Avenue of the Sphinxes (also known as the Kebash Avenue) is the central project in the Development Plan’s strategy to create an Open Museum in the Luxor city center. The Avenue of the Sphinxes is a 2,400-meter grand parade linking Karnak Temple and Luxor Temple, with an adjacent avenue angling off to connect Karnak Temple with the Temple of Mut. The Avenue of the Sphinxes is lined with majestic cryo-sphinxes, fantastic statues each with the body of a lion and the head of a ram, representing the Pharaonic god Amun’s divine features. The Avenue of the Sphinxes will accommodate thousands of tourists, both day and night, in an atmosphere that transports the stroller back across the centuries. Luxor Temple is illuminated for night-time viewing, as are the nearby Nile front and quaint old market areas.”*²⁰

In response to increasing separation between urban areas, ‘Vision 2020’ provides a “protective ‘buffer zone’ between local communities and the ancient relics. That is, as some critics suggest, keeping the natives away from the treasures”.²¹ In essence, this ‘Plan of Development’ seemed to be unconvincing for a number of reasons. It did not take account of the whole of the urban issues on the line; the ratio between the amount of planned investments and the impact was inappropriate in terms of a better overall quality of Luxor.

²⁰Abt, Associates Inc. (2000).

²¹Hauslohner (2010c).



Fig. 7 Project guidelines: concept at territorial scale. Longitudinal and transversal landscape systems

Then, an alternative design vision has been drawn up. It was built in order to achieve specific objectives by adopting methodologies and intervention strategies, based on the following principles:

The recognition of ‘the city’s character’ is based on conviction that, in addition to the historical architecture and monumental landmarks, also the ‘everyday’ urban spaces and the daily social practices have a key role: an effective urban regeneration depends on willingness to valorize exceptional and ordinary in a comprehensive spatial, economic and social vision.

The consideration of the Luxor Temple-Sphinx Alley-Karnak Temple complex, as a part of the ‘urban system’, put all these monuments within the whole framework of relationship and stratification of natural, anthropogenic and social elements. It is an approach that counteracts with the process of separation of sectors and skills and overturns defensive approach, purely aimed at conservation, isolating and separating monuments from the urban environment. Restoration looks to the future, not to the past; as part of a system, the historical heritage can create added value if it is integrated into the landscape, considering this last one as unitary demonstration of culture and civilization.

The design of the public framework allows Luxor to be ‘common good’; priority was given to the rehabilitation and reorganization of sites, in which uses, practices and collective imagination are condensed. These are places such as the souq and the tissues of the Arab city, the Corniche along the Nile, the squares of entry in the templar complexes, the green areas. They call for integration with new open spaces, collective facilities, housing, commercial activities. Then, the project design study has specifically dealt with: the ‘Nilo-side promenade’; the paths and pedestrian walkways crossing east-west, bonding the Corniche area to the eastern city’s everyday spaces; the small parks and public gardens, which have the task of forming a new structure of urban spaces, able to connect the Sphinx Alley to its lively surroundings. Particular attention has been given to the places, allowing the access to the archaeological areas of Luxor and Karnak temples and to the ‘Sphinx



Fig. 8 Masterplan

Avenue Stations'. These stations should have been, not only controlled entry systems to the monumental path, but strategic and remarkable points of the city structure (Figs. 7 and 8).

The roads network constitutes the city's own skeleton, their vehicular and/or pedestrian use defines specific morphologies and functional organisations. It has been recognised essential to build a strategy capable of defining hierarchies for road dimensioning and traffic flow. Mobility is considered from the viewpoints of efficiency, rationality and sustainability: compatibility between fast and slow flows, safety for vehicles and pedestrian, integration of infrastructures to the environmental context, limitation of pollution (in air, water, or land), mitigation of acoustic and visual discomfort, etc.

Roads have been divided into four categories: (a) Territorial roads, connecting the city to its territory (including airport and train station): these roads might have a broad Section (2 lanes per way) and act as the main arteries of distribution. (b) Main roads, divided into two-ways and one-way roads, they constitute the main vehicular network of Luxor. Crossing the city, they reach its major points of interest (train station, Temples, Corniche, Hotel areas) and should be equipped with wide pedestrian walkways and tree-lined along both sides. Main roads intersect the Sphinx Alley in two points and cross over it by means of bridges. Vehicular traffic on the Corniche is limited to its central part; in our opinion it should be gradually reduced to the bare minimum. (c) Restricted access road, reserved to emergency

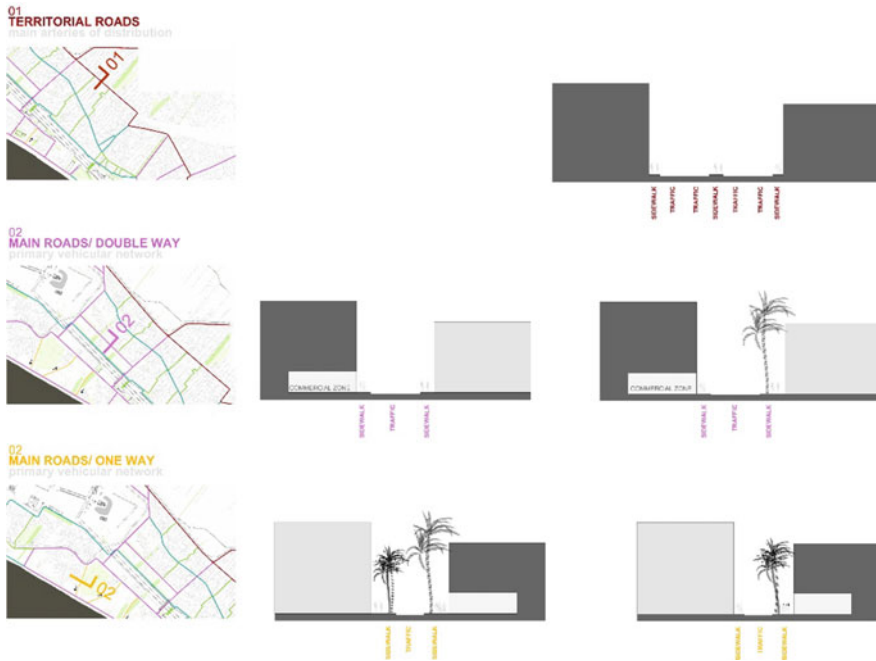


Fig. 9 Roads, urban hierarchy

cars (ambulances, police, firemen) and carriages. These roads should be considered as the backbones of Luxor’s public spaces (Fig. 9).

The longest ones run through the city from north to south; one of the two runs along the Sphinx Alley, connecting the Temples and part of the Corniche. They can have a broad and articulated section, hosting pedestrians as well as other slow movers (as bicycles, carriages, horses). (d) Pedestrian routes crossing east west: these routes can make an important role bonding two parts of the city, that would have been separated from each other by the Sphinx Avenue’s excavation. Pedestrian routes must ensure the possibility to safely cross the city to all city users and inhabitants, apart from vehicular traffic. Two of them cross the Sphinx Avenue by means of protected passages, giving Luxorians the chance to access the Avenue at ground level and experience it, as part of their daily activities.

The development of an efficient public transport system (including air transports but also mobility by water and by land) made of railroad, buses, boats must be guaranteed, both to inhabitants and tourist, as well as new arrangements for accessibility and new relations between landscape and urban territories. It has been considered pivotal to promote, together with services efficiency, their visibility: in particular, the representativeness of open spaces, bus stops and railway station.

The assumption that the Sphinx Avenue should not become a trivial canal has been a fundamental premise. The path, characterized by precious archaeological

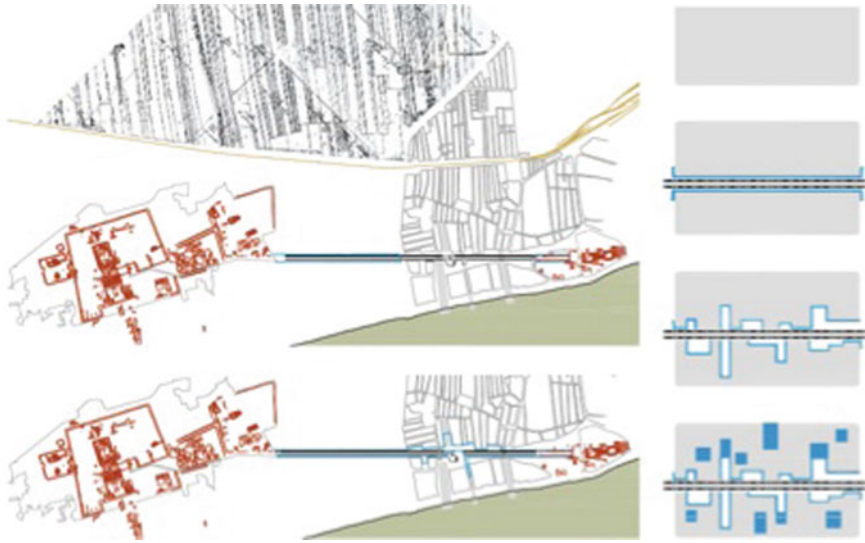


Fig. 10 Buffer zone criteria

remains and from its historical role of territorial connexion, must be valorized. The axis must generate new systems of space relation—both at the level of the excavations and at the current quota of the city. The new edges of the Alley should be, not a separating ‘buffer zone’, but a porous device, able to rebuild connections between the Sphinx path and the whole city, in particular, with the public spaces network; acting on the thicknesses of the urban soil, on the differences in level, on sloping planes. Eventually, landscapes can be built from the many complex configurations and uses (Fig. 10).

Architectural interventions help to strengthen the urban quality: walls, courtyards, porticos, shaded spaces, look-out points; also, small gardens, like the ones fascinated Flaubert: “*Jardin de Prisse - Nous visitons l’ancien jardin de Prisse, qui appartient maintenant au sheik des Ababdiehs. Une treille en maçonnerie couverte de vignes, des palmiers nains, ou petits (...) Jardin français. - Planté par les officiers du Louqsor (...) ce jardin est plein d’orangers et de citronniers quelques palmiers s’élèvent droits, au-dessus de ces masses rondes. Le plaisir de la verdure m’a surpris avec un charme étrange. On nous apporte des petits citrons verts et des bouquets de menthe*”.²²

The definition of strategies needed to solve the problems, following the planned digging and demolition of residential, commercial, religious constructions, has been considered social and morphological crucial issue. Criteria for reallocating inhabitants and functions, which has to be expelled, should avoid social exclusion and spatial segregation. New housing developments and settlements tissues has to be

²²G. Flaubert, cit.

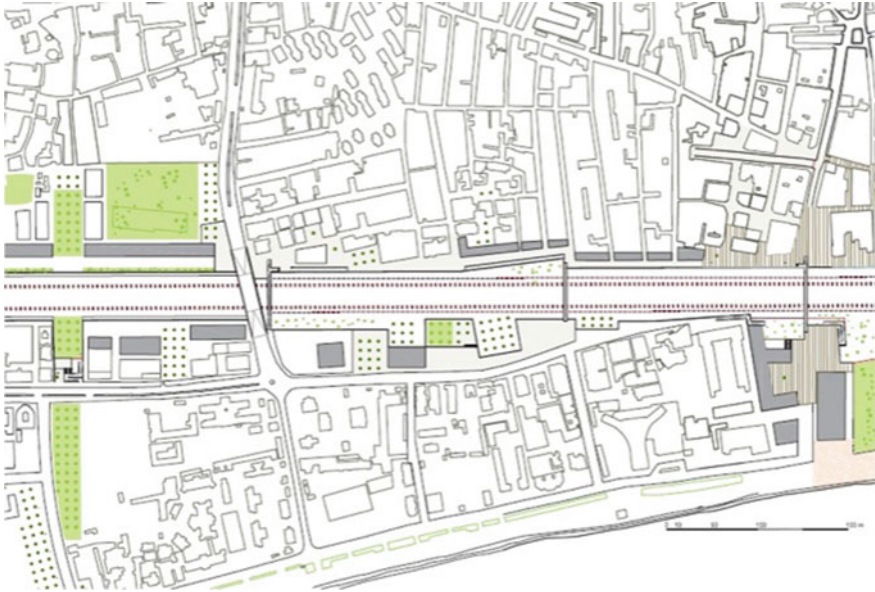


Fig. 11 System of urban spaces

integrated to the urban structure, to interpret, at the same time, historical typologies and contemporary needs (Fig. 11).

The problem is not to design a ‘model village’ as it was during the ‘40s. The Hassan Fathy New Gournā²³ located in Luxor on the West Bank of the Nile River, was a pioneering experiment that dealt with traditional urban morphologies, architectural typologies, native customs, techniques and materials, as with the goal of social cohesion and economic and environmental sustainability. However, nowadays, the matter is no more to build isolated villages—although rich of qualities. Rather, it is to plan new elements and settlements that, on the one hand, are able to relate themselves to the memories of the historical landscape, while on the other hand, they may contribute to redefine, in an innovative way, architecture and urban spaces integrated into a new one topographic layouts.

The development of the architectural-urban strategies has become a reality by means of the new masterplan led by specific guidelines. Particular attention was given to the design of alley-heads, edges and crossings. The architectural expression is characterized by contemporary languages facing, without vernacular camouflage, context and characters of the traditional Egyptian building and planning: geometry,

²³Fathy (1969).



Fig. 12 The head of Karnak area

mathematics, measurements, scales, diagrams, symmetries-asymmetries, complex perspectives but also light, materials, colours close ties between nature and artifice,²⁴ have been project design tools.

The heads of the Sphinx Alley—in the North by the fence of Karnak temple, in the South by the Luxor complex—, even if shaped in different ways, have developed a system of open spaces. They are rest and walking areas characterised by the presence of small building: spatial and functional devices that solve logistical problems related to the monumental sites entrances, where are located the ticket-office, infopoints, shops, parkings, various facilities, without renouncing to address the issues of aesthetic and symbolic representation (Figs. 12 and 13).

For the Archaeological Area of Luxor Temple, an effective plan of urban requalification have to succeed in facing complex, interlaid functional, aesthetic and economic aspects. The monumental complex of Luxor Temple and Sphinx Avenue should generate physical and visual connections. A recognizable character of: urban nodes, gardens and open spaces contribute to create a single, multilayer mobility system. This archaeological area could redefine its morphological relations with the West coast and Nile landscape through a careful design of open spaces, pedestrian paths, accesses to the temple itself and comfort facilities. Towards East, the project design emphasizes the linear shape of Luxor Temple by inserting a new garden: a

²⁴Petrie (1938), Smith (1958), Badawy (1966), Badawy (1954–68), Stierlin (1992), Arnold (2003).

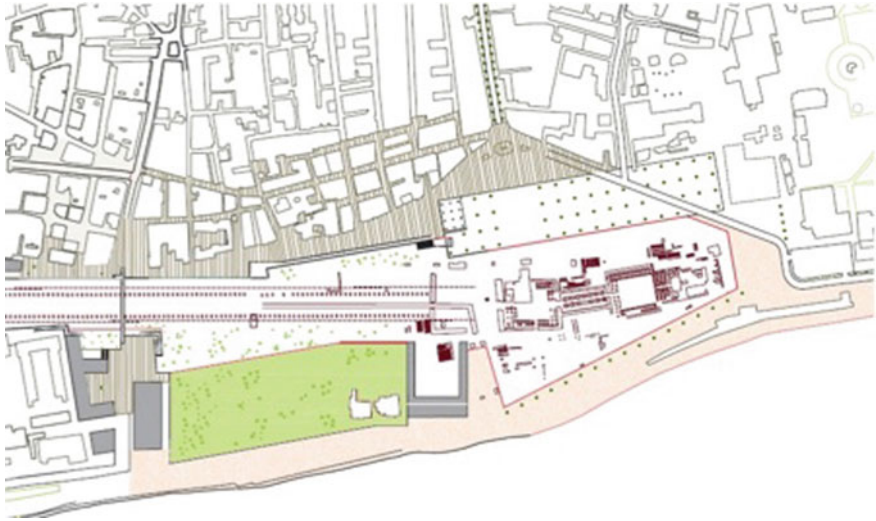


Fig. 13 The head of Luxor area

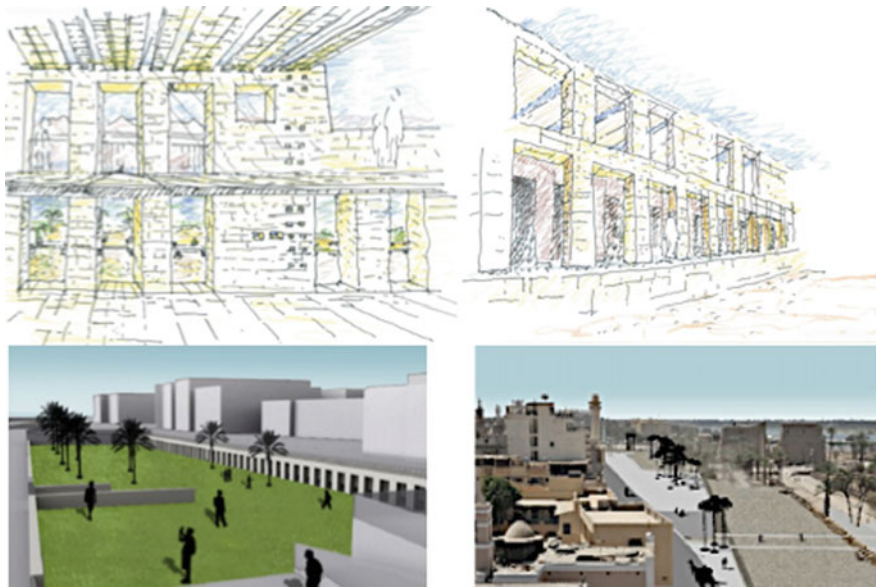


Fig. 14 Studies for the area of Luxor Temple

rectangular palm grove offering the shade for the rest and the walk both to tourists and inhabitants. At the same time, this palm grove is the background scene of the Temple as seen from the Nile, and the public space where commercial activities and

pedestrian/vehicular routes—coming from the historical urban tissue, between the Temple and the railway station—are concentrated. From a new public square/garden that is in correspondence of the Mosque and the stop bus area, it is possible to enter into the archaeological area of the Luxor Temple and the Sphinx Avenue, through an appropriate control system. Crossing an inclined plane the visitors can go down, of approximately two meters, into a space where, with the shadow of an arcade and a palm grove, there are some utilities for the tourists: the ticket office, the cafe, the antiquarium, the space for the virtual representation of the archaeological patrimony. To approximately 300 m from the portal of the Luxor Temple, a pedestrian crossing allows the relation between the commercial zone of the east city and the new Park on the Nile. The connection does not produce environmental impact: this is, not about a bridge, but a public delimited path that, following gentle slopes, goes down to the level of the Sphinx Alley and crosses this last (Fig. 14).

The Bridges. The vehicular connections between the eastern urban fabric and the settlements near the Corniche along the Nile have been limited to two bridges. They are not intended as simple infrastructures but as architectural elements integrated in the urban landscape.

In the history of the world, the bridge has been an architectural and urban archetype, which has incorporated forms, techniques, materials, as expression of

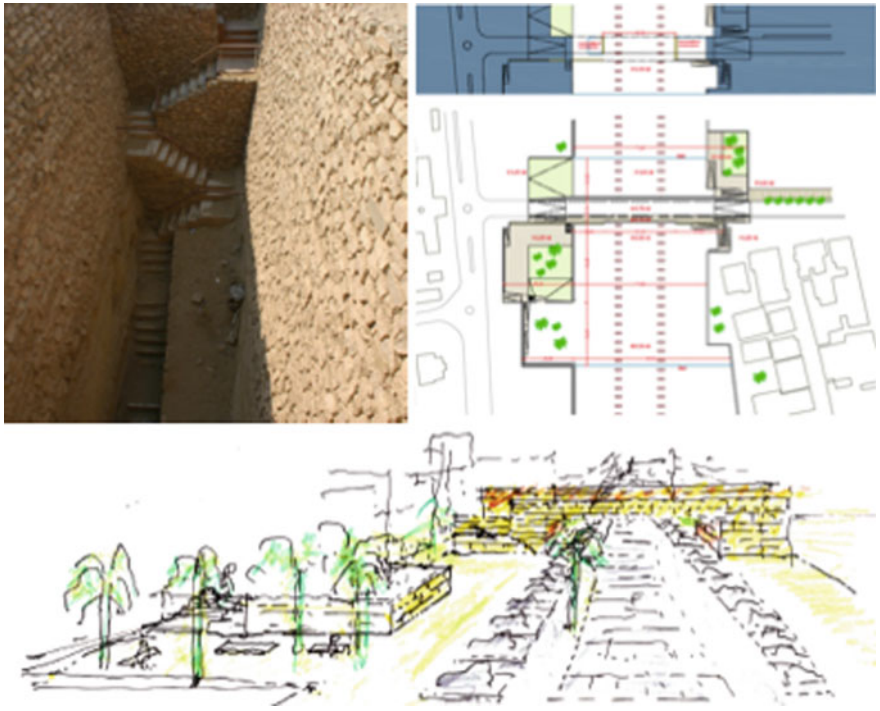


Fig. 15 Studies for the New Bridge



Fig. 16 Urban sections of the New Bridge

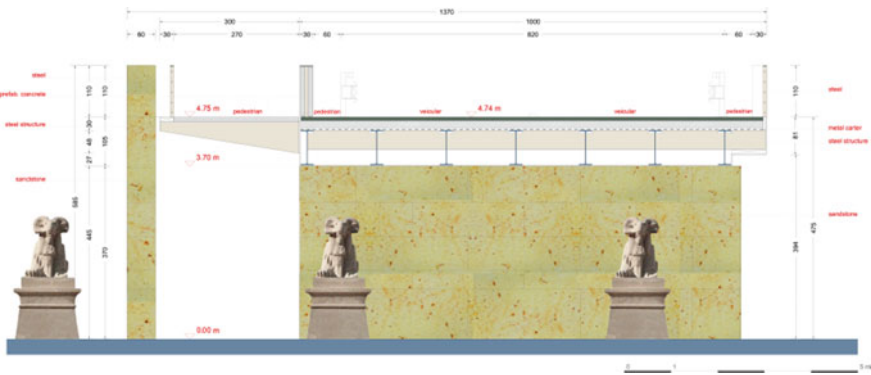


Fig. 17 Details of the New Bridge building

cultures and societies. Above all, it has been expression of the ‘sense of place’, symbolic meanings involved in the idea to overcome an obstacle, connecting two separate places, joining two opposite banks (Figs. 15, 16, 17 and 18).

“The bridge gathers to itself in its own way earth and sky, divinities and mortals.” said Martin Heidegger²⁵ and, this essence of the bridge, is well recognizable in paintings and constructions, of both the eastern and the western culture.

²⁵Heidegger (1971).

THE BRIDGES

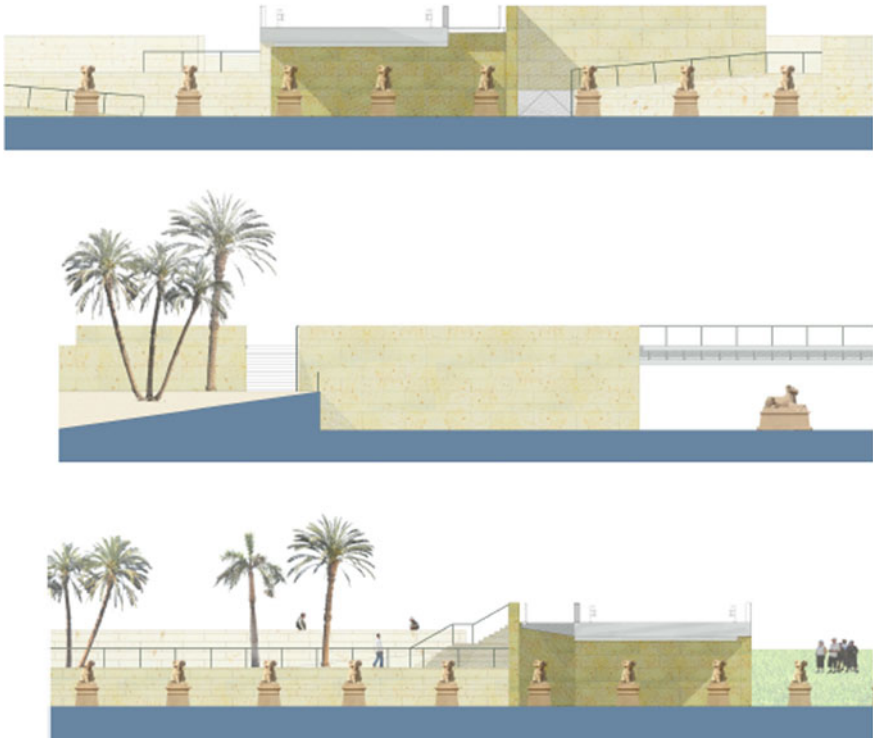


Fig. 18 Sections of the New Bridge

The existence of bridges in ancient Egypt is documented in the monumental ‘Biblioteca historica’ by Diodorus of Sicily, Greek historian in 1st century BCE: “At every mouth (of the Nile) a fortified town has been built which is divided by the river, and furnished on either bank with the appropriate defensive installations on the bridges”;²⁶ and the way to build bridge is known from the image of the bridge of Tjaru, in the reliefs of the New Kingdom (sixteenth and eleventh centuries BC) depicting ‘The victorious return of Seti I from a campaign’, on the exterior of the Hypostyle Hall’s north wall in the Karnak Temple of Amun, right in Luxor (Fig. 19).

In the 19th century, also in Egypt the bridge signified change and modernisation of the cities, as the Gezira Bridge, built in 1860–82 in Cairo (demolished in 1931), that crosses the Nile with an iron/concrete structure and a monumental entrance characterized by a pair of stone pillars, topped by bronze lions.

²⁶Diodorus (1935).



Fig. 19 Bridge of Tjaru, Karnak Temple of Amun

The new bridges on the Sphinx Alley should have the requirements of *‘gathers to itself in its own way earth and sky, divinities and mortals’*, in addition to being capable to overcome the obstacle of the dig. Consequently, the project design strategies looked for possible synthesis between landscape and infrastructure, form and construction, meaning and aesthetic value.

A thin horizontal beam, 11.10 m wide (9.40 m of roadway + 270 m of pedestrian footbridge) through the support of two concrete pillars. The load-bearing structure is included in two parallel walls in limestone. The bridge representations, which comes out of that, has its own conceptual reference, in the portals of ancient Egyptian architecture, from the monumental door to the false door of the tombs. Thresholds, gates and doors have been symbolized transition and passageway from one place to another, known and unknown, profane and sacred, between the worlds of the living and the dead.

This new portal, orthogonal to the Sphinx Alley axis is, not only a technical device for passing over the path, but an urban element. It defines backgrounds, connects different heights, organizes access through ramps and stairs. Architectural composition, constructive and functional choices cooperate, together, in building a bridge as iconic, cultural, symbolic presence in the city landscape.

In conclusion, the whole ideas and project design proposal, from the restoration and antiquity management to the new urban configurations and architectural and technical solutions, are aimed at implementing the beauty, efficiency and attractiveness of Luxor.

The concept of the city like ‘Open air Museum’ makes sense as expression of a synthesis between exceptionality of the monumental heritage, ‘ordinary’

settlements, practices of inhabitants and tourists, urban development policies and much more yet; the background must be a multi-cultural, open and dialectical scenario.

And the whole city of Luxor, not only the monumental marvels of the ancient Thebes, can be *a ghost as unfathomable to imagination* and the place of a desirable future.

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The Project for the *Sphinx Alley* in Luxor. Notes About the Methodological Approach, Between Modalities of Analysis and Operative Criterias

Matteo Moscatelli

Abstract The occasion of elaborating a proposal for reopening the *Sphinx Alley* represented the occasion not only for facing an experience of applied research, or more closely knowing a cultural approach that is different from ours, but also for a reflection about a methodology able to tackle complex themes in a real case-study. The preliminary analysis, and the verifications during the evolution of the work phases, suggested to start from the recognition of a few unavoidable principles. The first was the one of adopting a *diachronic approach*, required by the necessity of considering two coexistent and overlapped cities, the Luxor of the past (in the pharaonic Egypt) and the contemporary one (in a strong demographic growth and with a decisively tourist vocation). The second was the one of maintaining an *interscalar approach*, required by the different problematic levels, that included the one of archaeological finds (the Sphinxes), the one of the site (the *Sphinx Alley* and the areas in front of the *Karnak* and *Luxor Temples*) and the one of the territory (interpreting the segment not only as a linear system, but also for its possible transversalities). The third was the one of an *interdisciplinary approach*, that was naturally fostered by the composition of the workgroup, whose participants came from different research fields (architecture, urban design, conservation), and asked to share approaches and acknowledges considering the specificities without losing the dimension of the wholeness, inspired by a thought “*that distinguishes and connects*”, as Edgar Morin wrote, more than a “*disjunctive and reductive one*”. The proposal was based on a few distinct principles, through an enhancement *by description, by conservation, by reconstruction and by the reconceptualization of the relationship between ancient and new*. The choice of drifting away from the idea that the historical patrimony we tackled was constituted by a fossil, static and untouchable, allowed to verify how much it is necessary to rebalance our operative

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strategies towards the relationship between architecture and archaeology, and to comprehend how today these can effectively configurate themselves as the protagonists of a new and potentially very worthwhile alliance.

1 *Considering the Man the City Is Being Planned for*

In a conference delivered in Cairo in 1967, Hassan Fathy—the author of the project for the New Gurna village (1948–1953), a milestone of the North-African architectural culture of the Twentieth Century—remembered that “*when planning a city one has to consider the man who is being planned for. Imagine him roving around the streets, squares and open spaces and try to create a harmony in the visual images he is going to look at, full of nice surprises without boring him or overwhelming him with details that make him uneasy. Talk to his feelings using all the forms of planning that create strong impressions and changes of mood as well as a feeling of expansion; an increasing generalisation that begins when he goes from his house to the side street, and then to the main street, the square and finally to the centre of town in a graduation of scales that is something like a crescendo in music*”.¹

This relationship with the human measure, this “*considering the man the city is being planned for*”, is a fundamental question of the architectural research, and has always been reminded, in the theoretical and design experiences held within our doctorate, as one of the substantial requirements for defining proposal of intervention that could be responsible, forward-looking and steadily related to reality.

The occasion of elaborating an operative proposal for reopening the *Sphinx Alley* in Luxor represented the occasion not only for facing an experience of applied research, or for more closely knowing the characters of a cultural approach that is different from ours, but also for a wider reflection about the identification of a methodology able to tackle complex themes in a real case-study.

The theme was precisely outlined, in the premises and in the purposes: it dealt with unearthing the ancient *Sphinx Alley*, a three kilometres axis that connects the existing Luxor and Karnak temples, not only through the excavation and the recover of the monumental system, but also the evaluation of a strategy of integration between this new artificial fault line, opened in a land that was far from clear, and the urban edges that surrounded it.

But what approach is more appropriate to apply in a project with such deep social and economic repercussions, that involves an ancient monument in a contemporary city, and that requires solutions for questions that range from the conservation of the artifacts to the creation of the new crossings and from the strategies for the enhancement of the monuments to the redefinition of the new boundaries (Figs. 1 and 2)?

¹Fathy (1998).



Fig. 1 Hassan Fathy, *New Gurna*, Luxor (1948–1953)



Fig. 2 Hassan Fathy, *New Gurna*, Luxor (1948–1953)

2 Defining a Methodology of Intervention for a Diachronic, Interdisciplinary, Interscalar Approach

The preliminary reflections, the advices received by our interlocutors, and the verifications that appeared necessary during the evolution of the work phases suggested to start from the recognition of a few unavoidable methodological principles.

The first was the one of adopting a *diachronic approach*.

Just like Clarice²—the “*Invisible city*” imagined by Italo Calvino developed by the superimposition of many cities, each one originated by the recombination of the components of the former one, where also a few parts (such as the Corinthian capitals) were used, in the multiple passages from the state of “*chrysalis*” to the one of “*butterfly*”, for completely different uses versus the former ones (transforming themselves from the top of the columns to the “*support of the basket where the hens laid their eggs*” and from there to the specimens shown in the “*Museum of Capitals*”)—the question about the interpretation of the context, in a case such as the one we faced, implied inevitably to consider two different systems, two coexistent and overlapped Luxor.

The Luxor of the past, the ancient Thebes, was since the II millennium BC one of the most important religious and political centres of the pharaonic Egypt. It was the capitol during the Middle Kingdom and therefore a city of remarkable historical monuments, among them the Karnak Temple, devoted to the cult of Amun, and the Luxor Temple, “*the main satellite of the big center of Karnak*”³, linked to the first through a majestic *Alley* of sphinxes and criosphinxes.

The contemporary Luxor—two millenniums (and a series of devastations and reconstructions) away from that period of magnificence—is a city that appears deeply changed: populated by 500 thousands people (nowadays among the first ten in Egypt) and in strong demographic growth, with a decisively tourist vocation due to its strategic position for the cruises on the Nile, but also with a series of new settlements erected in the place of the ancient monuments.

The *Sphinx Alley* is the symbolic image of this evolution, the epitome of this progressive transformation: anciently a stately processional connection, today the place of the new residential development, this new monumental corridor is in a central position in relationship with the contemporary city, creating a solution of continuity towards the infrastructural web that connects the spaces of the *Corniche* of the Nile Riverbank with the main links towards the exterior services of the city, among them the railway station and the airport (Figs. 3, 4 and 5).

The first goal of the project was the difficult recomposition of these two systems: on the one hand the ancient *Alley* that must have been recovered, excavating where

²Calvino (1972).

³Roccati (1981).



Fig. 3 View towards the *Sphinx Alley*



Fig. 4 View towards the *Sphinx Alley*



Fig. 5 The Luxor Temple area—The detail of the Sphinxes

the groove was covered, redeveloping the connection with the two temples of Luxor and Karnak and recovering the ancient statues (that over time, such as in Clarice, took a different role); on the other one, in the post-transformative phase, the urban structure that must have been redefined, trying to comprehend the consequences that this reopening would have determined in the contemporary city and to solve the problems connected with the laceration of a fragmented fabric, with the demolition of a few constructions previously installed, aiming to develop the potentialities of the new elevated spaces on the border.

The second necessity was the one of adopting an *interscalar approach*.

The topic was centered on the questions related to the *Sphinx Alley* but, in the subsequent phase of focalization of the strategies to employ, the problem became triplex, in its including the field of the archaeological finds, the one of the site and the one of the territory.

The archaeological finds are the Sphinxes themselves: the reconstruction of the original image of the *Alley* implied the redevelopment not only of the axis, but also of the elements that built its edge and scanned its rhythm. These ancient artifacts, conceived as iconic elements placed along the path, requested a specific exam, and a survey that through the visual analysis allowed to recognize the state of conservation for identifying the priorities of intervention.

The site was considered starting from the relationship between the *Sphinx Alley* and the areas in front of the Karnak and Luxor temples, between the segment and its two vertices. These parts presented very different conditions: the first one, in the North-western area, was surrounded on the one hand by a palm grove and on the other by a *folk house* and a few little commercial spaces; the second, in the South-eastern area, was ahead of a big empty space that could have hosted a filter area, where we could place a few buildings for the services and for the accesses to the archaeological area.

Another important aspect regarded the site survey of the different situations the segment created in its longitudinal city cutting, interpreting it not only as a linear system, but also for its possible transversalities.

This analysis process requested deepening that concerned the modalities for accessing the lower level and the one for enhancing the spaces created between this monumental precinct and the city, with the qualitative goal of conferring the path a new idea of urbanity. This passage led to recompose the fracture defining a series of raised green spaces, that created a buffer zone towards the monumental axis and a few areas where this big mineral void could have been perceived also by a new and advantaged point of view, that was lifted and consequently provided with a bigger depth of field.

For what finally regards the territory—considering the project typology, that provided the creation of a wide hollow in the middle of the city—the fundamental question was just the one of the institution of a relationship with the existing fabric.

On the one hand—through the mobility analysis, that brought us to identify the different role of the infrastructures—this suggested a hierarchical classification between slow and fast connections, between the main roads directed towards the nevralgic points (from the airport to the railway station), the urban roads and the pedestrian paths, for defining the priorities in tracing and placing the new crossings.

On the other hand—through the creation of a series of slopes that gradually resolved the difference between the level of the city and the one of the monumental *Alley*—the second aspect was the one of transforming these unproductive resulting cutouts in a system of decongested panoramic spaces that permitted to multiply the visual axes towards the monumental precinct.

The general goal was the one of the reinterpretation of the edge, of the assignment of a new dignity to that fundamental area where the city is interrupted and the new axis is opened, of transforming, for recalling a recent image by Richard Sennett⁴, a space intended as a “*limit*” (the edge where the things finish) in another one intended as a “*border*” (the edge where different groups interact one with the other) (Figs. 6, 7, 8, 9 and 10).

As easily imaginable, each of these three fields implied specific analysis and surveys. But the complexity of the project, in its being constituted by the continue resonance between different scales, asked at once to keep a distance from a process made of sealed off compartments.

⁴Sennett (2013).



Fig. 6 The Luxor Temple area—View of the access to the archeological site



Fig. 7 The Luxor Temple area—View towards the city



Fig. 8 The Karnak Temple area—View of the access to the archeological site



Fig. 9 The Karnak Temple area—View towards the Palm Grove



Fig. 10 The streets behind the buildings around the *Sphinx Alley*

Franco Purini wrote how today the world is transformed in many “*separate islands*”, each one resolved with specialized languages, and how this “*separative and classificatory vocation*” is for the compositional activity “*an obstacle more than a resource*”.⁵

For this reason too, the interscalarity meant working in groups that were constantly in dialog, in order that each problem was threatened in an integrated way, thinking that resolving each one in its specific field, without considerable consequences also in the others, was inconceivable.

This happened in our experience not only as an exclusively theoretical declaration of intent, but also in the practical evaluation of many of the submitted proposals; the choices about the placement of the crossings, that started from a territorial scale, triggered a series of repercussions in the architectural one about the definition of the green terraces and about the ways for transforming these paths from a mere connection between two banks to a real component of the surrounding urban landscape; the ones regarding the necessities about the protection and the enhancement, emerged during the reflection about the conservation, requested the creation of further spaces for making the visit experience more engaging and formative, in the idea of the “*six stations*” that we developed along the path: a space for the virtual simulation about the *Sphinx Alley*, the green terraces, for creating new

⁵Purini (2002).

points of observations, the *Pharaonic gardens* and the public gardens (with an educational purpose), the conservation of the *Folk House* (for relaxing, refreshing, having fun), the quality craft shops for an implementation of the local culture and the palm grove, in a visual relationship with the *Karnak Temple*; the choice about the shapes and the orientations of these new buildings, that allowed a better configuration of the services in support of the *Alley*, requested a redefinition of the open spaces, and a redevelopment of the accesses system.

The third necessity was an *interdisciplinary approach*.

The project theme, as seen before, asked at the same time to design new buildings, to define a new infrastructural framework, to elaborate proposals for the conservation of the artifacts, thinking at the same time how to give new nourishment to a predominantly tourist-oriented economy, and how to solve the social problems of a more and more fragile inhabitants community.

The interdisciplinarity was translated in the project in a few basic passages.

The first consisted in the fact that each topic was faced involving precise specific skills. In this case the composition of the workgroup, whose participants came from different research fields (architecture, urban design, conservation) made this step easier, allowing to develop a proposal where all the aspects were taken in consideration: on the one hand for the analysis of the problems and the identification of the possible solutions—you need specialized acknowledges for making proposals about the infrastructures and the mobility, as well as for defining the strategies for the enhancement of the historical patrimony, and of course for establishing the best techniques for the protection of the Sphinxes and of the buildings—on the other hand for their representation—in several cases it was necessary to select at the big scale the elements that were considered useful for expressing the characters of the territory and the infrastructural hierarchies, in others to summarize through a few three-dimensional images the relationship between the designed elements and between these ones and the city, in others to make the management modalities of the existing monuments immediately comprehensible.

The second was the one of developing a counterpoint between the multiple disciplines involved, that means sharing approaches and acknowledges in order to find the better solution for each problem, thinking to multiple levels through a methodology that could gather the specificities of the detail without losing the dimension of the wholeness and—remembering what Edgar Morin wrote defining this passage—that was inspired by a thought “*that distinguishes and connects*” more than a “*disjunctive and reductive one*”, creating a distance from the fragmentation and the compartmentalization of knowledge that makes us unable to perceive “*that which is woven together*” (Fig. 11).⁶

This happened in all the phases involved, from the first discussion about the modalities of enhancing the different fields of the project, but also in any occasion the proposal was improved, selecting aspects to deepen and instead others, initially appeared useful, to set aside.

⁶Morin (1999).



Fig. 11 The six stations along the *Sphinx Alley*: the *Sphinx Alley* virtual simulation (01), the green terraces (02), the Pharaonic gardens and the public gardens (03), the *Folk House* (04), the quality craft shops (05), the Palm Grove (06)

There was eventually a third aspect that allowed to offer more effective answer to the proposed topic, that regarded a fundamental character of the polytechnic formation: the evaluation, the confrontation and the systematization of further knowledges besides the ones expressed at the beginning.

Maintaining an interdisciplinary view meant also something wider: not only a dialog among the different disciplines, but also a will to open the discussion to different fields of knowledge, recognized as external to the canonical ones of our workgroup but however useful for a more complete comprehension of the problems involved.

The contribution of the archaeoastronomy was precious to deepen the modalities the buildings were oriented, the reasons for the creation of the accesses, the hierarchies between a part and the other of the monumental system.

The more general relationship with the archaeology, put into effect in a series of meetings both in the preliminary phase in Milan and in the one *in loco* in Luxor, allowed to understand a few details in their aesthetic, social and cultural dimension, to define the historical and symbolic meaning of the temples and of the *Alley* and to contextualize them in a broader operation about the valorization of the cultural heritage that, just in the years our activity was held, was strongly developing in Egypt.

3 Architecture and Archaeology: Towards a New Alliance?

Established these requirements, the approach was developed with continuity, with a constant process of check and sharing of the level of progress in each field, from the analytical to the design process.

The phase regarding the definition of the intervention strategies represented an other particularly delicate moment of the workshop, because it required taking a position about the most adequate modalities of valorization of an historical site that was strongly characterized from the archaeological point of view.

The actual moment sees a more and more evident globalization of taste, a progressive loss of identity of the places we inhabit, a cancellation of differences that are necessary for the conservation of an heterogeneous cultural heritage.

Giuseppe Dematteis observed that the safekeeping of the historical heritage—that is constituted by the “variety of the specific cultural traits of the various societies that are formed, conserved and transmitted thanks to a certain stability of the relationships they have with their territories”—can be obtained only adopting different coexistent strategies, because the menace it is interested by doesn’t regard only “*the patrimony accumulated in the past*”, but also its reproducibility, that is “*the possibility of continuing to produce new diversified cultural values in the future*”.⁷

This means that a politic of enhancement correctly intended can’t be addressed only to the simple conservation, but must be thought in order to reevaluate the meaning of what still exists through the collaboration of different concurrent actions.

In our case, the proposal has been inspired by a few distinct principles.

The first regarded an idea of *enhancement by description*, intended as an easily comprehensible restitution of the most significant aspects identified in the historical-critical analysis of the ancient pre-existing elements, underlining the actual situation but also their meaning over time, in a continuous going up and down from the configuration of the wholeness to the one of the single components.

The second regarded the *enhancement by conservation*, intended as the definition of the actions that are necessary for the permanence of the single buildings and artifacts in the collective memory, each one endowed with its own specific nature. The hypothesis of intervention on the Sphinxes requested an in-depth analysis and a differentiation of the approach modalities, for guaranteeing statue by statue, component by component, the most appropriate operations for the pursuit of an idea of recognizability and durability over time.

The third regarded the *enhancement by reconstruction*, intended as the exam of the most appropriate modalities to consider for digging up the *Alley* and for mending it with the city, performed after an itinerary that, as underlined, requested to bring the historical analysis closer to the one regarding the actual state of the urban fabric.

⁷Dematteis (2009).

Above all, according with a principle that takes us back to the recalibration of the intervention methodology, the project interpreted an idea of an *enhancement by the reconceptualization of the relationship between ancient and new*.

Fulvio Irace wrote that the environment restoration should get closer to an idea of its redesign, thinking about “*new balances where the new must not cork the ancient up, but also where the past pretend to extend itself, embalmed, to the contemporary*”.⁸

If effectively this idea of “*redesign*” is close to the one we experimented in this project, because the coexistence between ancient and new revealed itself as a real establishing principle, the results we achieved can be contextualized in a wider question of our discipline that, particularly in these times, seems to have become again a topical subject.

In a recent essay about the restoration of the ancient monuments in Rome, Andreina Ricci defined the archaeological project as an action that can be intended as “*a process of real interpretation, translation and narration*”, endorsing the idea that the objects of the past should talk not only for a “*duty of memory*”, but because they can “*acquire a sense, a quality, a value that can let them emerge from an opaque and superabundant quantity*”.⁹

The idea of working in an environment so strongly characterized from the social and historical point of view, whose problems went from the conservation of small artifacts to the individuation of strategies of integration and development of an entire territory, represented an opportunity to verify the importance of taking benefit from a methodology that is clear and shared, tightly based on the fundamental requirements that we underlined.

In the same way, the choice of drifting away from the idea that the historical patrimony we tackled was constituted by a fossil, static and untouchable, was useful for verifying how much it is necessary today to rebalance our operative strategies towards the relationship between ancient and new and more on the whole between archaeology and architecture, and for comprehending how, just through the project, these can effectively configurate themselves as the actors of a reciprocal enhancement action, thus becoming the protagonists of a new and potentially very worthwhile alliance.

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Sustainable Tourism and Urban Planning

Eugenia Silvestri

Abstract This research paper is an attempt to delve into what constitutes a contemporary 'city of heritage' and harmonizes the relationship between its past, present and future. The city of Luxor is a prime target for this most critical discussion because of the myriad of challenges facing the desire to create and sustain a coherent urban fabric that respects both the patrimony of antiquities and the daily lives of people. The paper, in its summation, aspires to collage a number of complex subjects into a fruitful discussion. The goal is to evoke questions on the multidisciplinary levels of tourism, conservation endeavors and urban living and then proceed to formulate practical solutions to these questions. Concepts such as sustainable tourism, place making, added value, authenticity and local economy are addressed in a trial to formulate a clearer image of the development approach that should be followed in Luxor. The fundamental logic of the discussion is how to combine traditions, vernacular lifestyle, cultural attractions and heritage sites into one coherent touristic map of the city.

We are in Luxor, overlooking the Temple, the excavations of The Sphinx Alley, the city, April 2009 (Fig. 1).

What is the context of Luxor, that a sustainable project of urban development must face? The context is very complex. For ages (we can say since the nineteenth century) the relations between the central power (colonial, national, foreign) and local/local authorities has determined a monument-centered development (its preservation and exploitation in economic terms) both in its material and immaterial aspects. Antiquity is the resource around which heritagization and touristification, two processes barely separable that determine the shape and the image of the city, act. The latter have always looked beyond the boundaries of archeology, Egyptology and conservation to be able to touch upon geopolitical, political-economic themes that are connected with the construction of the national identity as well as the nation itself.

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Fig. 1 Domina Emilio Hotel panoramic terrace (Luxor)

Since the “colonial” era, when the tourist vocation has emerged (the first travel guide of Luxor was published in 1892, the guide of Egypt in 1830, Luxor is a special territory, an autonomous governorship. It is important to stress that besides the local population (ethnic groups, different social and religious groups ...) there is the presence of the “foreign” (here intended both the Westerners and Cairo’s municipal administrators and officials). This group grows up becoming strong and influential. Certainly, since the end of the nineteenth century Egyptologists, pioneers and travelers, have been standing alongside tourists.¹

Locally, on the east shore, the regional resources of Luxor, administrative and material, are divided, between two families since the early twentieth century. The first is Copt, it exercises powers in land management assuming, for this reason, avocational roles that link them to Western community. The second is Muslim, it is the guarantor of the city’s religious heritage and it controls trade and business as well. Moreover, the presence of many foreigners requires the establishment of a local foreign administration very soon and, consequently, the need to found various administrative and institutional representation offices.

The duality of powers lays the foundations for a division between the groups that seek to concentrate and gather appointments to hold administrative power and those who look to grab the monopoly of the resource management: antiquity and tourism. Instead, The west riverside, where there are the villages, builds its own narrative

¹As a mass phenomenon tourism places its foundations at the end of the nineteenth century.

around the legendary sack of the Dayr al-Bahary mummies that happened in 1881. This event almost becomes founding myth and icon-stereotype for touristic marketing activities since 1890. In today's tourist guides, this history has reported yet, but also the metaphor about the relationship between heritage and national identity, theme recaptured by a movie in 1969² that reinterprets this latter to explain the construction of nationalist feeling.

It is important to recall that since 1882, when the British Empire occupied Egypt in order to have control of Suez Canal, the Luxor temple, used as basement till then, was valorized starting an excavation plan carried on intermittently until 1920s.³ On the temple insisted the so-called Arab village, which had to be "dismantled". It was a procedure that led an actual urban restructuring plan with related displacement of the living populations, paying quite-balanced allowances for the houses by means of negotiation that also involved the villas and facilities of the foreigner residents (English, French, German).

Over the years of the English Protectorate an independent movement is increasingly growing. The ancient heritage is gradually invested by politics and the processes of decolonization of Egyptology and administration of ancient sites become strategic.⁴

King Fouad has begun an action capable of being defined tourist marketing. Egypt, indeed, disseminates its international image through its Monuments that are intrinsically linked to a possible use for tourist purposes. In 1912, he founded an Egyptian Propaganda Association to promote actions around three major themes (still relevant and fundamental) about comfort, advertising and security. During the two world wars, this association becomes the main interlocutor abroad for what concern agreements and regulation of activities related to tourism (accommodations and transport).

After the 1919 Revolution leads by the nationalist leader Saad Zaghloul, in the first months 1922, Egypt win independence but the strategic ministries remains under British control and the antiquities one under French leadership.

However, during 1920s, Luxor (whose morphology changes according to what we call the heritage/tourism needs) becomes an administrative unit, with a quite active municipality. In this division of "power and control" Luxor becomes battlegrounds among colonial powers, governments and local authorities. Areas of discussion are economy issues, management of historical sites both in term of touristic attraction and urban planing: 1922 is a crucial year. It is also the year of the

²The film "The Mummy" by Shadi Abdel Salam is part of the debate on political independence and nation; The shootings begin in 1967, just as Egypt loses the six-day war against Israel, the film expresses the idea that monumental antiquity is an emblem and collective value.

³To give an idea of the climate of contrasts and clutches among the subjects involved in the governance of the territory, one can also see the work of a subsequent restructuring plan of the city of the 1930s (more precisely 1937) to enlarge the Corniche and arrange a garden of Faced with the facade of the temple, because of the opposition between local and municipal authorities and the central service of antiquities will be interrupted until we find agreement of 1943).

⁴Gamblin (2007).

incredible discovery of Tutankhamun's tomb. A particular juncture happens, the death of the lender and owner of the tomb excavation and the rise of a secessionist in quality of prime minister. He aims at the nationalization⁵ of the goods, he calls for suspending excavation in order to rewrite the rules and agreement between foreign excavations and the Egyptian government. The Egyptian Carter is not able to continue excavations, and the rediscovered material is no longer divided as previously done, but it is considered wholly owned by Egyptian state. The groundbreaking ceremony turns into an anti-British political claim. It conveys the idea of a revival of an Egyptian awareness of the value of its historical heritage promoted to symbol the foundation of the nation. Luxor, as Cairo, becomes the theater of a nationalization of ancient vestiges.⁶

Also in regards to the relationship between ancient monument and national unity, in Luxor contest, it is worth mentioning the experience of New Gurna, the modern village designed by architect Hassan Fathy. The work started in 1945 but was interrupted in 1948. It originated in an experimental and utopian idea, let say romantic, which points out the theme of sustainability, in relation with politics vision for territorial development and tourism marketing aimed at regulating/demolishing the informal settlements on the mountains close to historical sites. New Gurna village embraces a vernacular idea of going back to the origins (presumed Nubian architecture) in order to reduce construction costs. The vernacular revival regarded both the constructive form and constructive system with local materials, raw ground for the walls and roof domes, which articulates. An urban settlement is equipped with "facilities" (school, flies, theater ...) to meet the need of reformist demands. Population did not want to abandon their homes, and only the strong demographic growth of 1970s pushed for use these houses, which were enlarged and modified with other constructive methods retracting the principle of relationship with the ancient heritage, here intended as retableing the theme tradition/national identity for built environment in broad sense.

The Department of Antiquity moves from French to Egyptian leadership in 1958, year when Nasser creates a fund to support the completion of works around the Luxor Temple... the city extends. However, the government of the Egyptian Republic doesn't want to nationalize either the tourism department or the antiquity department in order to maintain cash flow. During Nasserian period, tourism for Egypt is an important source of incomes but it is not at the center of political

⁵Also playing the rivalry of "foreign nationalisms" between British protection and antiquity services related to the French.

⁶*Faronism* is defined as this form of national imagery that produces a targeted and a-confessional image of the nation on a regional scale and on a global scale. There is a need for a synthetic specification, Egyptian nationalism of the ethno-territorial form, it is basically anti-colonialist and develops from the nineteenth century and it is imposed until the first decades of the twentieth century. Arab nationalism is instead secular and has a socialist political, and its utmost dissemination is during the GA Nasser government.

concerns for reformation or planning (such as agrarian reform, industrialization, illiteracy...). Nevertheless, tourism sector, although under state system, has got continuity of private and foreign investment.

In the 1970s, Saddam Infiṭāh's policy of economic openness⁷ inflates public sector and the state has more influence in tourism development. The ministry, through the newly established of national tourist agencies, gives the leadership of the market to fellow investors. The state steers the market but relies on the private. It becomes a partner of foreign companies and international finance agencies. It controls this profitable sector dictating terms and promoting actions that support networks able to ensure the control and its replica.

Since the 1960s, UN, UNESCO and the World Bank have encouraged policies for enhancing the historical and cultural heritage. They define programs that promote international tourism in the countries of the South of the World. International tourism⁸ should drive economy and support development of disadvantaged countries. Their commitment for Luxor territory is increasingly intense.

Since, the 1980s, the report "Our Common Future" (Brundtland Commission, 1987) and, subsequently, "United Nations Conference on Environment and Development", most commonly called the Rio Conference (1992), put at the center the theme of sustainability, also acknowledged by several tourism agencies. "Tourism that takes full account of its current and future economic, social and environmental impacts, addressing the needs of visitors, the industry, the environment and host communities".⁹

In the nineties, it finds nourishment the idyllic idea that international tourism must be not only sustainable but also responsible. Tourism is seen as an instrument to support political stability, a tool of: social sustainability, peace, exchange and cultural knowledge. Tourism sectors often work in partnership with NGOs. In these years a series of terrorist attacks, that ravaged Egypt and the territory of Luxor (1992–1997), take place. As we have already seen in the 1970s, tourism development in Egypt can be pursued if environmental conditions, that welcome the development opportunities itself, are assured .

How to say, create a shared base for tourist development. Ideologically speaking: development, civilization, combating poverty and underdevelopment (as if they are the "cradle" of any terrorism) and political awareness of the value of tourism, are at the base of the programs that they want to protect the sector, which produces employment and wealth, from the risk of terrorism.

In the early 1990s, tourist sector resort to international financial, there is concentration of capital at the monopoly's limit. Thanks to IMF programs increases the privatization of public institutions, the debts to foreign is reduced by 50% (at the

⁷Openings to market logics push for a change in international alliances (from the Soviet Union to the United States).

⁸World Tourism Organization (Now UNTWO, since 2003 becomes a specialized agency of the United Nations, is formed by members of 150 states plus another 300—other organizations, private companies, universities, NGOs, professional associations ...).

⁹<http://sdt.unwto.org/content/about-us-5>.



Fig. 2 The city of Luxor and the territories on the east bank

end of the Gulf War) and new government agencies are created (for: distribution of financial support, promotion of the tourist image in the world, diversification of the tourist attractions).

Focusing again on Luxor context, in 1976 a decree defines the region (and its monuments) as a tourist region and, therefore, management goes to the Ministry of Tourism, creating competition and potential discord with the Ministry of Culture, which is responsible for Egyptian antiquities.

In 1979, UNESCO includes Luxor/Tebe and the necropolis of the west riverside into its list. By extension, there is a controversy between various player for the management of the territories: (within the government, between local government

and central power, between local groups and private investors locals and not, between international government agencies and local administration).

In 1989 it is made a new statute that defines the city as territorial unit of exceptional value for its capital assets and for those come from international tourism. A small town but defines as “a city that has a particular importance in reason of: its ancient archaeological, cultural character and international tourism. It is, therefore, a cultural showcase for the Arab Republic of Egypt”. The concept of showcase is interesting because it is intended not only as showcase for Egypt in its relations with foreign countries, it is also the showcase for international Investors who may have a reputational benefit from investment in an area perceived as the cradle of civilization.¹⁰

The exception of Luxor’s administration responds to: the centralist political strategies, the monopolistic approach, as well as to the management of local economic resources for archaeological sites and tourist revenues.¹¹

Between 1994 and 2004, the frequent turnover of presidents, designated by the central government (four in total, three of them were previously senior military) has makes difficult to implement long-term development programs, in addition, it has made impossible to maintain a continuity in planning urban regeneration and local administration. Increasingly, joint boards carry out the management (board of trustees), and the central government make every strategic decision about planning.¹²

In this framework, the “Comprehensive Development Plan for the City of Luxor, Egypt” has been elaborated since 1996 for the development of the territory with a vision until 2017 (Fig. 2).

Within the “Comprehensive Development Plan for the City of Luxor, Egypt” the group of the Ph.D. in Architecture, Urban Design, Conservation of Housing and Landscape of Politecnico di Milano, Italy proposes a study called “The Development of a Monumental and Visual Values of the Sphinx Alley.” between 2009 and 2011.

The main purpose of the Comprehensive Development Plan is to find solutions to the problem of a general serious impoverishment. Impoverishment is due to exponential growth of population (attracted by opportunity to get job or make business in a city where tourism is the foremost economy) which determines a major housing emergency. Also for this reason, the United Nations Human Settlements Program (UN-Habitat), the Ministry of Housing, Utilities and Urban Communities Higher Council of the United Nations Development Program (UNDP) are partners of the project (Fig. 3).

¹⁰Gamblin (2007).

¹¹At the top council of the city, the tourism and antiquity sectors are usually represented by members designated by Cairo, in great detail (with a ratio of four and three out of 18 members, respectively).

¹²An example, important to understanding the framework in which Comprehensive planning is born, USAID’s US agency enters Luxor in the Secondary Cities Development program (1994/2014).



Fig. 3 Living poor in Luxor (Karnak) and in Gurna

Over 20 years four programs were developed. Common points on which the 1984 and 1993 plans were made are: dismantling of informal settlements around monumental areas, setting of new urban focal points, removal of rural villages from the city to transform the new free space into urban areas that redefine the city's boundaries. An Urban development that: promotes low density and implementation of public and touristic facilities, improves living standard creating new jobs, lays the foundation for new urban communities, almost satellite towns, for redundant population. The 2000 Plan (later updated by the 2004 Plan) proposes to transform heritage areas into an Open-Air Museum.¹³ To improve the urban sector it plans to provide new areas and tourist activities, supporting also supply industry, with beneficial results for economy and recovery process of agricultural areas along both sides of the Nile. Six projects have been selected in this plan: the restoration of Sphinx Alley, the development of El-Toad's tourist settlement, the development of a new community in New Luxor, the provision of the infrastructures needed for

¹³Kamar (2014).

these two settlements, the strategic plan for high quality agriculture, the development of the Open Air Museum and “heritage” district.

The proposal “The Development of a Monumental and Visual Values of the Sphinx Alley” made by the Ph.D. student of the doctoral program “Architecture, Urban Design, Conservation of Housing and Landscape” was referred to the investment project number one and number six: the restoration of the Sphinx Alley and the design project of Luxor as the Open Museum. From both actions were expected a strong environmental and urban impact (actually extended at territorial level) that may transform the shape of the city and its policies.

The approach was to face the study with a multi-disciplinary perspective able to deal with spaces and forms at different scale and, above all, with the scientific areas involved. For this reason, issues that need to be analyzed by different disciplines (such as economic sciences, human sciences) have been taken in the light of complexity and translated in specific solutions by project always under the umbrella of taking care of the urban territory. The sustainability criteria were already defined by the International Commission within the program. “Sustainability” has been the implicit background, always taken into account, that has made possible to drive various domain towards a design synthesis.

The WTO defines sustainable tourism: “Tourism that takes full account of its current and future economic, social and environmental impacts, addressing the needs of visitors, the industry, the environment and host communities”.¹⁴

The project of urban architecture is sustainable because it is respectful of the resources available and able to preserve them, with the view of leaving resources to future generations.

¹⁴*Reference: Making Tourism More Sustainable—A Guide for Policy Makers*, UNEP and UNWTO, 2005, pp. 11–12—“Sustainable tourism development guidelines and management practices are applicable to all forms of tourism in all types of destinations, including mass tourism and the various niche tourism segments. Sustainability principles refer to the environmental, economic, and socio-cultural aspects of tourism development, and a suitable balance must be established between these three dimensions to guarantee its long-term sustainability. Thus, sustainable tourism should:

(1) Make optimal use of environmental resources that constitute a key element in tourism development, maintaining essential ecological processes and helping to conserve natural heritage and biodiversity. (2) Respect the socio-cultural authenticity of host communities, conserve their built and living cultural heritage and traditional values, and contribute to inter-cultural understanding and tolerance. (3) Ensure viable, long-term economic operations, providing socio-economic benefits to all stakeholders that are fairly distributed, including stable employment and income-earning opportunities and social services to host communities, and contributing to poverty alleviation.

Sustainable tourism development requires the informed participation of all relevant stakeholders, as well as strong political leadership to ensure wide participation and consensus building. Achieving sustainable tourism is a continuous process and it requires constant monitoring of impacts, introducing the necessary preventive and/or corrective measures whenever necessary.

Sustainable tourism should also maintain a high level of tourist satisfaction and ensure a meaningful experience to the tourists, raising their awareness about sustainability issues and promoting sustainable tourism practices amongst them”.

Paraphrasing Nicola Emery,¹⁵ the sustainable urban project wants to offer space and not to occupy it. “To cure means to show relationships and to preserve them, being in relation to natural diversity and to the fabric of the pre-existence. It means to choose a modality different than the colonizing process of shopping mall or the negation one that act individually. To Cure means: creating free space rather than occupying it. It means working to supply space, such as the place, the receptacle for multiple energies. A reserve, a shelter not to be exhausted but to be respected and recognized.”

Architecture doesn't reflect social identities only, but contributes to setting them. It is a “device that should have the overall aim to cure and harmonize space, understanding this last as a fundamental common good.”¹⁶ The quality of human experience is inherent in its relational character, and it is transmitted to architecture. This relation has to be placed at the center of a design project for territories where tourism is not just an important theme, but it is what informs the context. A synthetic glance, by which jointly address environmental, social and human ecology, a glance shifted to hybridization in order to operate within a “laboratory” where different “expertise”¹⁷ work together.

A project for Luxor also requires a comparison with sociological and anthropological debates about tourism, if the aim is to provide not a design project for a codified sustainable tourism but architectures for a long lasting sustainability in a context full of contradictions where tourism as a key role for economy.

We are particularly interested in the relationship to the concept of authenticity and not authenticity of experience (Fig. 4).

Mass tourism was born, as already mentioned, in the mid-nineteenth century (and it boomed in the twenties of last century). It is expression of modernity and it represents its fundamental characteristics of separation and standardization of time: working time-leisure time (even more time out of the ordinary, tourism experience becomes the time of evasion from the ‘Ordinary and routine’).

Many studies consider mass tourism as a phenomenon of standardized experiences. The journey is just an entertainment moment, with the criticalness of becoming almost pre-packaged and specially massive recipe.

The widest possible dissemination through desire-building operations around a product conveyed by mass media. Communication, just like any other industrial product, is a consumer product. In this sense, we can say that are offered inauthentic experiences (but they have effect on places where there is a trend to reproduce panoramas according to created expectations that are replicated as a kind of non-place).

This vision of an uniform standardization, an absolute lack of authenticity and artificiality of tourism, instead, is reduced by surveys and reflections such as those of Cohen and MacCannel. They retrace different ways and reasons that drive

¹⁵Emery (2007).

¹⁶Op. cit.

¹⁷Bruno Latour, *Atmosphère, atmosphère*, 2003 in Garcia-Germán (2010).



Fig. 4 In-authenticity of the experience of producing alabaster objects (typical craftsmanship)

tourists as well as they identify a form of authenticity in the perception that the single tourist has of his own tourism experience. The first, in *Who is a Tourist?*,¹⁸ classifies types of tourists, mobility models, their temporalities and motivations.

Cohen tells us that mass tourism seeks to build a sort of environmental bubble, where the tourist can rediscover his cultural patterns and, thus, he acts as a mediator in the relationship with culture, thought, and local living and, eventually, a superficial view of the life there is enough for him.

How to stay in the bubble or get of, becomes a modern tourist-pilgrim (because the will to authentically know and experience exists). They are always part of a consumption relationship with the offer of local cultures. Changing processes start and they go beyond: authenticity, staging and tourists' satisfaction (both aesthetic and in term of expectations) provided by local cultures.

MacCallen¹⁹ supports the idea that tourists seek authentic experiences and they try to get in touch and interact with the local population. Six modalities can be identified, with different grades between what is artificial and what is truly authentic. Four intermediate stages exist between the Front region (the social space where the relation between tourists and locals is mediated by tour operators) and Back region (where, like in a back-stage, inhabitants live a normal life, that was staged in the previous one, therefore this one would be the place of authenticity).

¹⁸Cohen (1974).

¹⁹MacCannell (1973).

According to this last point of view, the tourist becomes part of the environment where he is living, even temporally, and the local perceives him as belonging the context.

In the 1980s, a post-modernist theory about tourism was taken into account. It assumes that different elements lead us to move and visit new places. We should bear in mind that consumption change the meaning of objects, goods, cultural production and consumer goods build personal and collective identities. Furthermore, the tourist, according to Urry,²⁰ is aware of being a tourist, and aware that not a single authentic experience exists.

These theories, although criticized, are essential to rethink a tourist theory able to connect: sociology of tourism, Cultural Studies and “mobility paradigm”.²¹ The modern paradigm switches from distinction and separation between practices and social fields to their merge. Tourism and culture are mixed, tourism industry is linked with cultural industry, and mobility becomes pivotal: what moves is no longer just the physical flow of tourists but also objects, data, images, communications.

Also tourism is essentially based on combination of different physical mobility, imaginable and virtual. Tourism, as a cultural practice, is “symptomatic of an society always more mobile and has a central role rather than being a marginal and peripheral activity.”²²

For Appadurai,²³ culture is a moving entity with five flows, that he called with the suffix *-orama*: the *ethno-rama*, which is the flow of men (workers, tourists, immigrants, refugees...) the *flow of technology* (ever faster and extensive), the *flow of money*, the *flow of images* (personal and by media) and the *flow of ideas*. The idea of intersecting flows, that independently by their direction effect one another, makes clear that their separation is not possible for a discrete analytical definition, and the suffix *-orama* (comes from panorama) stresses that it doesn't exist a key position for their observation. Observation is always a point of view within the flows; speed variation increases complexity and, actually, the container—the control body of the various layers of social life (the “national state”)—is heavily weakening (Fig. 5).

“Reality” is where there are points of overlap between flows, which are in motion by nature, this destabilizes process of location, sense of belonging and place. You cannot do anymore their actual spatialization.

The concept of flow implies movement, and movement is in contrast with our log-established idea that sense of belonging can be localized. The different *-orami* are no longer recognizable in spatial sense, but their transformation and complex

²⁰Urry (1990).

²¹Mascheroni (2007).

²²Mascheroni, Giovanna “Le mobilità turistiche: il turismo come movimento di persone, luoghi, oggetti, immagini e comunicazione” in *Annali Italiani del Turismo Internazionale*, 2006 volume n. 1 (cit Rojek, C. e Urry, J. *Touring Cultures: Transformations of Travel and Theory*, Routledge, London, 1997).

²³Appadurai (2001).



Fig. 5 The town “practicable” by the tourist (Corniche) and the back of Sphinx Avenue

interactions must be traced. Therefore, one central force of the modern world is the de-territorialization.

The concept of place, as unique space where there is a particular culture, is overcome (for Luxor’s, it is still incontrovertible the uniqueness given by the presence of its monuments, recognized all over the world as heritage of humanity).

Places are hub within a network of flows, hybrid entities where material elements meet. On the stages created by the tourist understanding, we can say that also the tourist and his footprint are part of the performance, therefore places become space for hybridization (Fig. 6).

“Global mobility, through the hybridization and mobilization of places and cultures, generates new spatialities that are located in the middle between places of origin and destinations, canceling their distinctions”.²⁴

The historical excursus, initially proposed as a description of Luxor’s context, would like to show how, over the centuries, political administrative dynamics regarding tourism have been structured and reproduced. We focus on actors to emphasize multiple scales and, at the same time, the strong dirigisme by local authorities, central power/powers and international capitals. It was important for our project, in fact, to understand in which context the plan of development was defined. Within a situation where tourism management is strategically and strongly handled (deep and continuous transformations are faced, in fact, in terms of management, organization or marketing), it seems that the relationship between tourism and society should have been a long-term one, but actually, in name of a higher yield (political, economic, of image), it wasn’t.

It is proposed a re-reading of the project that during the development has taken into account additional aspects of the “tourism phenomenon”:

- Tourism as a development policy, how it replies to specific requirements of political and economic investment but, furthermore, its consequences for population;
- Tourism with regards to: relationship between foreign and local, “involvement” of local populations, changes within communities from the point of view of social and cultural relations and contradictions.
- Tourism and its own culture as well as in relation to the tourist as a subject.
- Sustainable and responsible tourism, as already seen in environmental and social terms, with reference to heritage, impact on natural or historical environments, taking into account security (even more crucial) as theme that should be addressed.

The Sphinx Alley is a physical break within the urban fabric. It divides longitudinally the urban space and it drastically reduces connections. The buffer zone, protecting the monument and impeding visitor’s enjoyment, creates a situation of further isolation. In the project, the infinitely long spit avenue is no longer a connecting channel or a monument that should be isolated, but becomes a path. A path along which (six) stations are proposed, sort of milestones for a narrative in development.

²⁴Mascheroni (2006).



Fig. 6 Brothers coffee shop

The path offers opportunities for resting, crossing, appreciating alterity of the place, changing direction, entry and exit... The six stations offer multiple experiences, they meet the needs of a new cultural tourism that is different compared to the massive one of the 1980s of which Luxor was a typical example in Egypt context (Fig. 7).

Since 2006, Unesco has promoted creative tourism, with the slogan “less museums, more squares”²⁵ With the idea of path and possible relations, it is pre-figured a proposal that goes beyond the “environmental bubble” defined by Cohen. This last seems on the stage yet and it precisely on the track of an environment that replicates the own culture of tourists, indeed, the project not only would transform and define the territory, but it offers many point of view for tourists.

According to Urry’s definition (maybe outdated and overcome in favor of modern one in which visitors and guests can more easily interact, the “glance”²⁶) look is a way to make places and cultures part of our background. It changes according to historical periods, social contexts, individuals. These looks can be divided into three dichotomies that can help during design process of project that welcomes and proposes a different experiences: the romantic/collective dimension

²⁵“Creative Tourism” involves more interaction, in which the visitor has an educational, emotional, social, and participative interaction with the place, its living culture, and the people who live there. They feel like a citizen. This third generation requires that managers also evolve, recognizing the creativity within their city as a resource, and providing new opportunities to meet the evolving interests of tourists. While creative tourism must be linked to culture, the particular cultural expressions will be unique to each place.” fonte UNESCO: Discussion Report of the Planning Meeting for 2008 International Conference on Creative Tourism Santa Fe, New Mexico, U.S.A. October 25–27, 2006.

²⁶Chaney The Power of Metaphors in Tourism Theory in Coleman and Crang (2008).



Fig. 7 The tissues behind the first curtain on the Sphinx Alley

(the first puts privacy and contemplation, the second, the presence of crowds and tourist infrastructure), the historical dimension/modernity (priority to cultural heritage before tourism facilities), the dimension authentic/fictional compared to local culture.

The project offers “space” not a specific views, it is for a city not limited to meet and have a comparison with tourism, but in which the “tourist dimension” is the constitutive DNA.

The idea of a city museum, with the view of boosting the economy, is open to the tourist dimension as confirmed by the trend of a global promotion of cultural tourism in cities that we will mention later.²⁷

Moreover, the idea of city museum certainly involves issues related to conservation of an archaeological site, but it loses effectiveness when tourism policies encourage more the touch and go model than “slow” experience. In fact, if significant investments and priorities are focused on building accommodations and facilities (with high incomes for investors) in more peripheral areas protection switches towards potential degradation phenomena that jeopardize the archeological or historical site (also in terms of investments for protection, safeguard, research, proper communication etc.) (Fig. 8).

If urban scale actions can act as an enzyme for tissue regeneration, it is conceivable, always within the framework of future socio-political stability, to propose model of stay more scattered in the city and in the redeveloped fabrics, with actual wide return also for social economy.

According to this view we deal with issues connected to New Town that the Plan foresees. We have to accept that those who work in tourist sector, at small scale, (included the huge number of temporary workers that benefit of tourism organized by “operators”, tourist guides, calash drivers, peddlers, taxi drivers, small restaurant owners, that are contracted or freelance), needs to live close to sites.

Commuting doesn't allow them to access the actual economic resource. Furthermore, during the development of our project there wasn't a “middle-class” that could move.

In Luxor, a critical issues regards the housing projects for the local population. To maximize the return, they have been re-converted for luxury tourism (it is also important to take into account the request of luxury by Egyptian middle-class and the pressure of Arab investors operating in this market) and therefore they don't generate the expected improvement for sort of *mixité* between locals, tourists, “foreign” residents.

²⁷The 5th Global Summit On City Tourism in November 2016 was held in Luxor. The strategic importance of the promotion of “the city's tourist (cultural and creative)” is confirmed. Many interesting points have emerged: the importance of tangible and intangible “culture” and “cultural heritage” as a means for destination competitiveness and also for local community empowerment; Tourism in cities is an opportunity to safeguard and enhance the quality of life of the local community and an incubator of innovation and technology.



Fig. 8 Antiquities and revenue



Fig. 9 Tourists at Luxor Temple

The problem of security (already with the attacks in the 1990s, and in particular the one in 1997 in Deir el-Bahari) has generated a feeling of separation between the various elements of the territory, like bubbles around an attractive center (Fig. 9).

This happens for the areas of the monument, the tourist facilities of the site (the mall, the street of souk etc.) and the tourist accommodation (high delocalized but

offering new services for sport and wellness etc., hence, with a potential of being monument's competitors).

Social separation: informal settlements are more and more a political issue than an urban planning one, a national issue often managed choosing models of "gated community" in both directions (gold "gated community" for rich and separated districts "slums" for poor people) and the matter of informal settlements is basically used to endorse speculative operation with high return in the short term.

Re-reading the project

We get across the city along the Avenue of Sphinx, describing the stations (following the ancient Egyptian processional ritual) in brief, because already in deep discussed by other essays of this publication.

1. The first station is a space dedicated to Virtual Simulation, an immersive educational and informative space equipped with digital technologies in order to enhance the tourist experience recreating in three dimensions historical scenarios or proposing a vision of heritage and archeological remains that cannot be directly touched for conservation reasons.

Virtual Simulation and augmented reality, technologies always more accessible, are not proposed as a playful attraction, but they would enrich the visit experience with scientific contents user-adjustable and they can be used for development of educational laboratory for school visits.

It is a "sustainable device" because it allows physical protection of fragile material that otherwise would be available to specialists only. Moreover, nowadays, replicas are accepted and appreciate thanks to the paradigm shift in cultural tourism.

Public is increasingly aware that common heritage should be safeguarded and safeguard. In April 2016, for instance, the exact replica²⁸ of the Tutankhamon's mortuary chamber tomb, which is expected to close in the coming years due to higher moisture content generated by visitors (about 1000 per day on average in 2010), was inaugurated.

2. The Green Terraces: is a complex of open spaces, along an hypothetical pathway between the two temples, where people can stop and rest. It is close to the museum and commercial facilities and services of the urban fabric. It is, as already mentioned, a device support exchange processes between tourists and inhabitants, a space of hybridization according to a view that would overcome the mechanisms described by MacCannell.

²⁸Is about a one kilometer away from the original, and was made after years of 3D scanner pads by Factum Arte.

No simulated authenticity, but an urban space of beauty, a passage and connecting device as the one that is designed for the area close to the bridge that connects the two parts of the city of which especially one risks to become a back side.

Supply space through architecture is a “promise”, renewable/durable, for the quality of space itself and life.

3. Pharaonic and Public Garden. It wants to be a public garden of connection the Nile, the Corniche and the sphinxes' boulevard, but it is also a new tourist supply. Part of it as a botanical garden, where it is possible to grow local species of flowers and tree, more precisely the 256 ones collected by Tutmosis III and reproduced in the Karnak Temple. It is a space for the city but also a new high quality attraction. Pedestrian accessibility and its location away from the other stations, are in compliance with the idea of enjoying the Open Museum city not as an excursion but as a continuous experience of the city extended in time.

An attraction not only for tourists but also citizenship, always with a view of social sustainability. If linked with the urban fabric it may boost revitalization and development of local opportunities related to food services and more.

Stations 4, 5 and 6 are part of a sort of system.

4. The Folk House: is a chance.

It is a building structure located near a possible secondary entrance of Karnak Temple. When it will be restored, It could be used as meeting center and party house by locals but it could also be opened to tourists who can enjoy its cultural offering. Its restoration, if financed, needs that all off those who manage tourism and heritage are involved and, finally, it requires to add also minor urban patterns in the planning with the aim of their future use and management by the local population (Fig. 10).

Since the early 2000s, Zahy Hawwas has been led the Council of Antiquity. The institution promotes a vision that encourages relationships between the archaeological monument and its surroundings. The proposal is especially focused on urban fabrics, including informal ones, that have characterized the image of the city for ages but they are inconsistent with an expected higher profitability.

Therefore, in addition to preservation of built environment, the proposal identifies new opportunities for a slow transformation of this part of the city. It would promote a cultural tourism that ask for authenticity (understanding and participating in the life of the city), and it wants to encourage, even more, a widespread creative tourism. It would protect and, at the same time, return an open space for local population, where it is possible to establish new positive relationships. A recover minor urban fabric, not monumentalized or picturesque, which participates in the Open-Museum as a heritage and not as an attraction.

A urban fabric that becomes safe, a self-regulating network of exchanges where a tourist can find and can be guided to additional interesting places such as the cemetery, or the informal settlements, hence, a peculiar and multi-colored urban pattern etc (Fig. 11).



Fig. 10 The tissues of Karnak village



Fig. 11 The cemetery

The theme of security is faced with the conviction, not the propaganda, that knowledge and sharing as an active path is the basis of peace pacification.

5. In this area is always pivotal to create an extended milestone, almost a district, the Quality Craft Shop where culture and shopping bump into each other. It is required to invest in relationship between tourists and local people, starting from fostering craft production and widespread commercial opportunities, with microcredit instruments.

The “gentle” commercial relationship between tourists and locals, not driven by others and not extremely pushed by the “commission” system, needs and creates, at the same time, conditions and perceptions of security that encourage also the so-called responsible tourism.

Security is perceived when relationships with territory are complex, when the “practices” are manifold. In an *mixité* environment (housing, trade, manufacturing, services) it is beneficial for a tourist experiences the same environment, however, according to the conditions that tourism is the economic engine and the main source of incomes (as in the extreme case of Luxor), it is essential to support a fair competition in order to recreate an environmental conditions of security.

6. Palm Grove: is an existing oasis, in visual contact with the temple of Karnak. It is an opportunity when a scenery is no longer built to satisfy the tourist, but to preserve and safeguard a natural space and collective resource (Fig. 12).



Fig. 12 The oasis palm grove

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Acupuncturing Luxor: Reinventing the Open Museum Concept

Adham Abulnour

Abstract During the first decade of the new millennium, the attempt to transform the city of Luxor in Egypt into an open museum resulted in a number of undesirable outcomes. A major reason for these outcomes is the lack of knowledge regarding the differences between the ‘open museum’ concept on one hand and providing open air/outdoor areas for sightseeing on the other. This lack of knowledge was exacerbated by a failure to recognise the need to maintain harmony between the locals, the built environment and the heritage sites in Luxor. The adopted ‘open museum’ scenario did not consider that a visitor’s experience of Luxor should include the local and vernacular cultures along with the magnificent landscapes that are as old and majestic as registered monuments.

The flawed plan led to an urban fabric that is segregated into two halves. Moreover, the plan resulted in heritage sites that, despite being very rich in cultural significance, tend to offer poor learning and sensory experiences for short durations of stay in the city.

This paper endeavors to counteract the flaws in the open museum project by ‘acupuncturing’ the city’s urban fabric. The idea is to identify spaces of ‘energy’ and then carefully propose a development program for these spaces in order to eliminate the negative effects of the flawed open museum plan. The logic behind the idea of acupuncturing certain spaces in Luxor (as a solution for the entire city) is that we have actually seen the ‘horrors’ that can result from mega scale developments so it might be useful to try developments on a much smaller (micro) scale. This new plan would enrich the experience of both locals and tourists in Luxor while offering an entirely new perspective for reinventing this magnificent city into

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an open museum. The proposal identifies new attractions and integrates them into a comprehensive experience of the city, while providing for prolonged durations of stay and promising higher revenues for the local economy.

1 Introduction

Since the late 1990s and early 2000s, the governorate of Luxor in Egypt has been preparing for a massive project to transform the city into an open museum (Abraham, Bakr, & Lane, 1999). During the first decade of the new millennium, funds were allocated and contractors were hired to remove encroaching infringements on the Avenue of Sphinxes (a ceremonial road 76 m approximately in width and 3 km in length with statues of Sphinxes rhythmically arranged along its side). The entirety of the Avenue was excavated to reconnect the ancient axis between the Karnak and the temple of Luxor, both located on the eastern bank of the Nile (Fig. 1).

Another axis, extending between the Karnak and the temple of Hatshepsut (on the western bank of the Nile) was also to be renovated as an integral part of the city's development project (Aghabi et al., 1999). According to an antiquities map, ancient Egyptians dug a canal along this axis and created a harbor on the eastern bank of the Nile to gain access to the west bank at a position that faces Hatshepsut's temple (Shetawy & Dief-Allah, 2006). The development project took this historical fact into consideration and conducted further excavations in the space extending between the Karnak and the Nile to uncover more of the Karnak's archaeological story, in particular the ancient harbour and canal that once connected the temple to the Nile.

The project also necessitated removing the bazaars scattered in the Karnak's vicinity. The vacated area was transformed into a one-storey commercial zone (which is now commonly known as the Bazaar) with a vast parking area (Fig. 1). A visitors' center was also established in the plaza to provide visitors with information about the history of Karnak (El-Aref, 2008).

Despite its noble intentions, the project (which came to conclusion in 2011) left relevant parties (locals, visitors, decision makers and scholars) with a number of undesirable outcomes:

- **A fabric segmented into two**

With a length of 3 km and an average depth of 4 m below the street level, the decision to excavate the entirety of the Avenue resulted in a trench-like axis that runs along the city from north to south while splitting its urban fabric into two longitudinal segments. Only three points of pedestrian crossways (stairways) are located along the Avenue's length (Fig. 1). Each time a pedestrian wishes to cross the segmented city, he/she has to ascend and descend a combined height of 8 m (almost three floors) with no special provisions for the elderly or the handicapped.



Fig. 1 The two development axes chosen for the open museum project in Luxor. The excavated avenue of Sphixes (first axis) and the Karnak Plaza (second axis) after conducting the project

- **An evident lack of services**

With the encroaching infringements removed, the residual urban fabric around the Avenue is mainly residential. The project has clearly neglected to include urban regeneration and tourist-centred venues as well as properly-equipped heritage conservation and restoration facilities. These facilities should have been established to allow for proper restoration of the salvaged Sphinxes statues. Without consideration for the principles of visitor management, along the entire length of the Avenue there is no provision of an information center, greenery, shaded areas, multi-lingual signage systems, local refreshment facilities, pedestrian safety features or other tourist services.

- **A fragmented picture of the city**

The ideal open museum should endeavor to integrate cultural, traditional and natural environments into one coherent experience. The identity and interests of local communities should be expressed through the open museum concept as much as monuments are publicized (Rentzhog, 2007).

Luxor, however, fails to encompass this ideal. Tours in the city are typically confined to visiting (or more precisely: sightseeing) monuments. In consequence, these monuments—despite being culturally significant beyond academic evaluation—are perceived as ‘bits and pieces’ of a fragmented picture of the city instead of being appreciated as an integral part of a comprehensive experience. This flawed picture is consistent with the notion that ‘monuments-based’ tourism is typically the sole factor in shaping touristic development agendas in Egypt. The fact that most donor investments in Luxor were channeled to upgrade individual monuments substantiates this notion. Few investments were made to upgrade the residual fabric of Luxor local communities.

In addition, one of the objectives of Luxor’s development project was to reconnect the east and west banks of the Nile by re-digging the ancient canal (which was located along the central axis of what is now the Karnak plaza). This goal could not be executed because the Corniche street (a vehicular route running along the Nile’s length from north to south) separates the plaza from the Nile. The final result of the failed attempt was a ‘barren’ open plaza with very poor furniture and landscape elements. More recently, a number of restaurants and commercial facilities were added to the plaza, specifically on both its sides, which only served to accentuate its ‘isolation’ and failed to encourage pedestrians to exit the Karnak to walk to the Corniche street and enjoy the views of Theban hills and the western bank of the Nile. Visitors are deprived of an excellent opportunity to view Luxor’s west bank, an integral part of the city’s image, while still standing on the east bank. The lack of an attraction to encourage people to walk along the axis of the plaza and reach the Nile is exacerbated by the lack of shading devices.

- **A silent tour—No storytelling**

In the ‘monuments-based’ tours of Luxor, no effort is made to colour the visitors’ tours with historical storytelling, which would at least provide a comprehensive experience of the monuments. For example, after excavating almost the entirety of the Avenue, no serious efforts or preparations were made to revive the ancient Opet ceremonial progression that used to start from the Karnak and proceed along the Avenue of Sphinxes up to the temple of Luxor as a part of the spring festivals in Ancient Egypt.

And even if such efforts or preparations were made, one cannot ask a visitor to walk a 3 km distance under the scorching sun with no shading devices (temperatures can surge up to 42°C in Luxor during the summer).

- **Minimal durations of stay for a location so rich in historical, cultural, natural and vernacular attractions**

The absence of services, tourists’ activities and storytelling in Luxor discourages long stays in the city. Undesirable outcomes include minimized benefits to the local economy and less flexibility to reschedule touristic visits. These shortcomings are made worse by the decisions makers’ failure to perceive Luxor beyond being a one-dimensional product (i.e. offering monuments-based tours). The limited offering of activities, cultural events and performances as well as the failure to enrich the visitors’ experience with a diversity of attractions (varying between the natural, cultural and vernacular) typically limit the duration of stay in Luxor to 3 days with the following itinerary (Fig. 2):

1. 1st day tour (To west bank): Excursion to the Necropolis of Thebes to visit the tombs of various Dynasties and the temple of Hatshepsut. On the return journey, stop at the Colossi of Memnon which are two gigantic sitting statues representing Amenopsis III facing the Nile.
2. 2nd day tour (East Bank: Karnak and Luxor temples): Excursion to the temple of Luxor to visit its courtyard and the granite statues of Ramses the Great. Proceed by carriage or bus to visit the complex of Karnak temples.
3. 3rd day tour: Shopping activities in the morning and visiting the Karnak temple by night to watch the ‘sound and light’ show (Touregypt, 2017)

This itinerary reveals how the current touristic scenario in the city is limited to sightseeing activities without any real opportunity to experience the local urban context, the traditional lifestyle of the city or, at the very least, the historical significance of the visited monuments. This is truly a great opportunity lost because Luxor is more than a repertoire of monuments; Luxor is rich with its people, local culture and traditions, activities, natural landscape elements, agricultural lands and vernacular living style. Luxor is also characterized by the aesthetic tension between the desert and agricultural land, which has been present since the early days of Thebes.

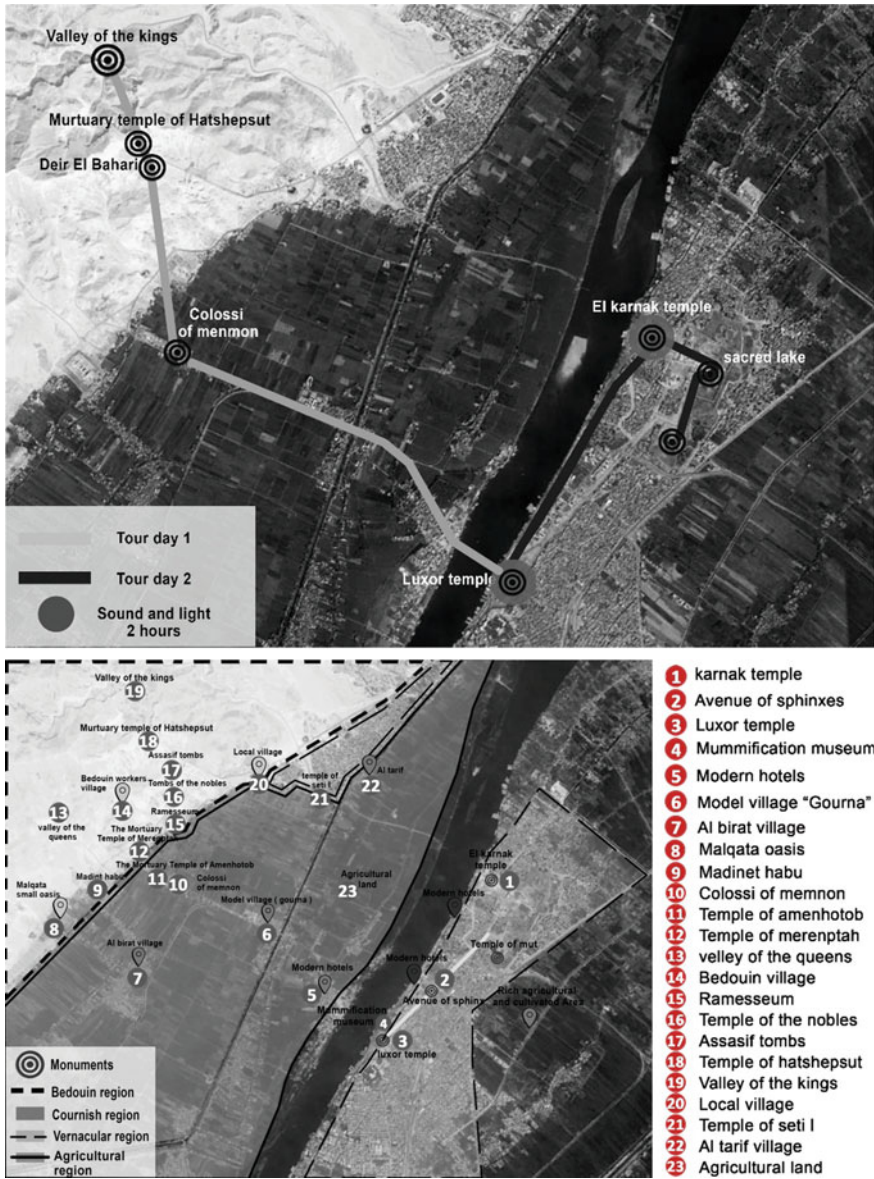


Fig. 2 Above: the typical 'monuments-based' tour in Luxor (3 days). Under: the expanded repertoire of monumental, traditional, vernacular and natural attractions in the city

2 Statement of Problem and Logic of the Solution

The open museum vision adopted for Luxor was based on eradicating infringements, relocating residents, constructing massive housing settlements for those relocated, excavating routes and rerouting paths. Meanwhile, Luxor's urban context (spaces and buildings) was dealt with on the grand scale of urban planning rather than the more intimate scale of urban design.

The failure to understand that a city such as Luxor should provide users (visitors and locals) with a comprehensive experience (instead of a fragmented mental image of an incohesive and segregated fabric) led the Avenue of Sphinxes to be excavated and developed through the logic of a 'highway'. The Avenue should have instead been developed as a datum for connecting the entirety of the city with services and shaded areas on both its sides. Adopting a similar logic, the space in front of the Karnak temple was transformed into a 'barren' plaza with minimal services, attractions and shading devices instead of being developed as a space for socio-cultural, educational/entertainment (edutainment) and commercial activities. This strong inclination towards macro-scale developments is arguably a major reason behind the flawed attempt to redevelop Luxor. The direct outcome was transforming the city into a series of outdoor (open-air) touristic sites that fail to offer the rich and comprehensive experience that should have been offered through a successful open museum vision.

To this end, this paper endeavors to enhance the limited visitors' experience of Luxor by adding new attractions and aiming for larger numbers of tourists. Providing a more comprehensive experience (one that is diversified between the vernacular, Bedouin, agricultural, natural and monumental) should appeal to a wider sector of tourists (Mckercher, 2002). The goal is to encourage the individual visitor to visit Luxor frequently over the years while combating the frustration associated with incomplete sensorial and intellectual experiences. Visitors can enhance the thrill of experiencing (and not merely sightseeing) magnificent monumental sites by gaining a true picture of Luxor, Ancient Egypt and the people who live and have lived there. This picture should be framed in a manner that encourages visitors to stay longer in Luxor while providing the locals with economic opportunities through tourism-related jobs.

3 Discussion of Procedure

The challenge which faces a comprehensive open museum experience in Luxor is how to comprehend and build on the relationship between the attraction sites (monumental, vernacular, etc.) and the overall urban context.

A logical starting point for facing this challenge is to refocus the scale of development from urban planning to urban design. This change entails developing

the diversity of attraction sites to impart visitors with a 'sense of pace' through which they can understand and interact with the entire urban context.

The shift from the macro to the micro, though logical, evokes further challenges: How can urban spaces be developed on the micro scale in a manner that provides solutions on the macro scale? How can this shift be performed while maintaining an eye on the 'bigger picture' of the city? What spaces are eligible for this tremendous responsibility? And, challenged by a suffering economy, which of these spaces deserve the limited funds allocated for development?

A logical solution presents itself in the concept of urban acupuncture. This concept draws inspirations from the traditional Chinese medicinal practices and amalgamates them with modern urban design trends such as New Urbanism and Placemaking (Cerviere, 2015). Urban acupuncture would apply small-scale interventions to specific constituents of Luxor's urban context (micro scale developments) as the key to 'healing' and improving the city's tourist industry and transforming the larger urban context into a comprehensive experience (macro-scale developments).

The specific locations for applying the interventions are best selected after analyzing and critiquing aggregate urban design factors. A typically influential factor is identifying spaces of 'energy' that are, or have the potential to be, centers of attraction for both visitors and locals while encouraging socio-cultural interaction and hosting edutainment activities (ibid).

Investigating the possibility of acupuncture in Luxor necessitates a more thorough examination of the city's monumental, vernacular, traditional, local and natural repertoire. The map illustrated in Figure (2) illustrates an augmented list of highly potential centers of attraction.

A prime space of 'energy' is the Karnak plaza. This plaza is adjacent to one of the most prized monuments of the ancient world. In comparison to Luxor temple's plaza, the underdeveloped Karnak plaza is still open for design suggestions that can revive the ancient link between the temple, the Nile and the west bank.

Acupuncture the Karnak plaza will also enhance its role as a starting point for a revival of the Opet festival. However, the substantial length of the Avenue of Sphinxes (almost 3 km) might discourage Opet festival walks under the scorching sun, especially in absence of shading devices. For this reason, the Avenue, with its potential for storytelling and magnificent statues, is a priority 'energy' space that merits acupuncture. The goal would be to create an enhanced walking experience through a network of open spaces and parks for recreation along the Avenue. These spaces and parks would contain a mix of public facilities, edutainment activities and local commercial venues that are strategically positioned on different platforms covering the level difference between the street and Avenue (almost 4 m).

The goal of these platforms is to remove the sharp transition between the Avenue and street while diminishing the trench-like feel of the former. Once the Avenue is transformed into a corridor for shows and events, the Opet festival can be revived through appropriate landscape design, increased shading devices and improved local bazaars that would prevent the the 3 km walk from being either boring nor exhausting.

Other priority locations for acupuncture in Luxor include agricultural lands, natural landscapes and traditional (vernacular) housing settlements, Bedouin villages and oases, especially those on the Nile's west bank. The goal would be to rediscover these local, traditional and natural attractions and position them strategically on the touristic map of Luxor.

4 Acupuncture the Karnak Plaza

The aim of acupuncture the Karnak plaza would be to transform the characterless and poorly-serviced space in front of the temple's entrance on the Nile side (Fig. 3: left) into an attraction site that can engage the mind and senses of visitors as a comprehensively rich experience. The project would pay the utmost attention to the 'sanctity' of the Karnak temple as one of the major monumental sites on the world stage.

The acupuncture of the plaza, as envisioned by this paper, takes place in three subzones (Fig. 3):

Zone A

The edutainment zone of the plaza should contain outdoor digital display systems to project the history and cultural stories of Luxor. The idea is to introduce technology as an appealing way of telling the story of Egyptian culture from architectural, technological and artistic points of view. The projected media should encourage people to support the preservation of antiquities.

Zone B

The middle zone is designated for temporary uses. The goal is to provide an open space for diverse cultural activities ranging from musical to folklore and stage performances.

Zone C

The third and last zone is reserved for commercial activities that should join the existing restaurants and Bazaar in providing job opportunities for the locals.

Approaching the Karnak from the Nile and Corniche side, users in Zone C are subjected to a sensorial experience (of merchandise and goods) that is both rich and diverse. As users continue to proceed towards the temple, the sensorial engagement decreases. This is evident in Zone B where the activities are more cultural than commercial. This means lowered noise levels and less visual distraction.

The design of Zone B should be based on a modular system (a distribution of columns, lighting fixtures, etc.) to facilitate the distribution of several time-limited activities happening simultaneously in the plaza. This shift from 'the commercial' to 'the cultural' between the two zones diversifies the users' experience and builds up anticipation as users get closer to the temple.

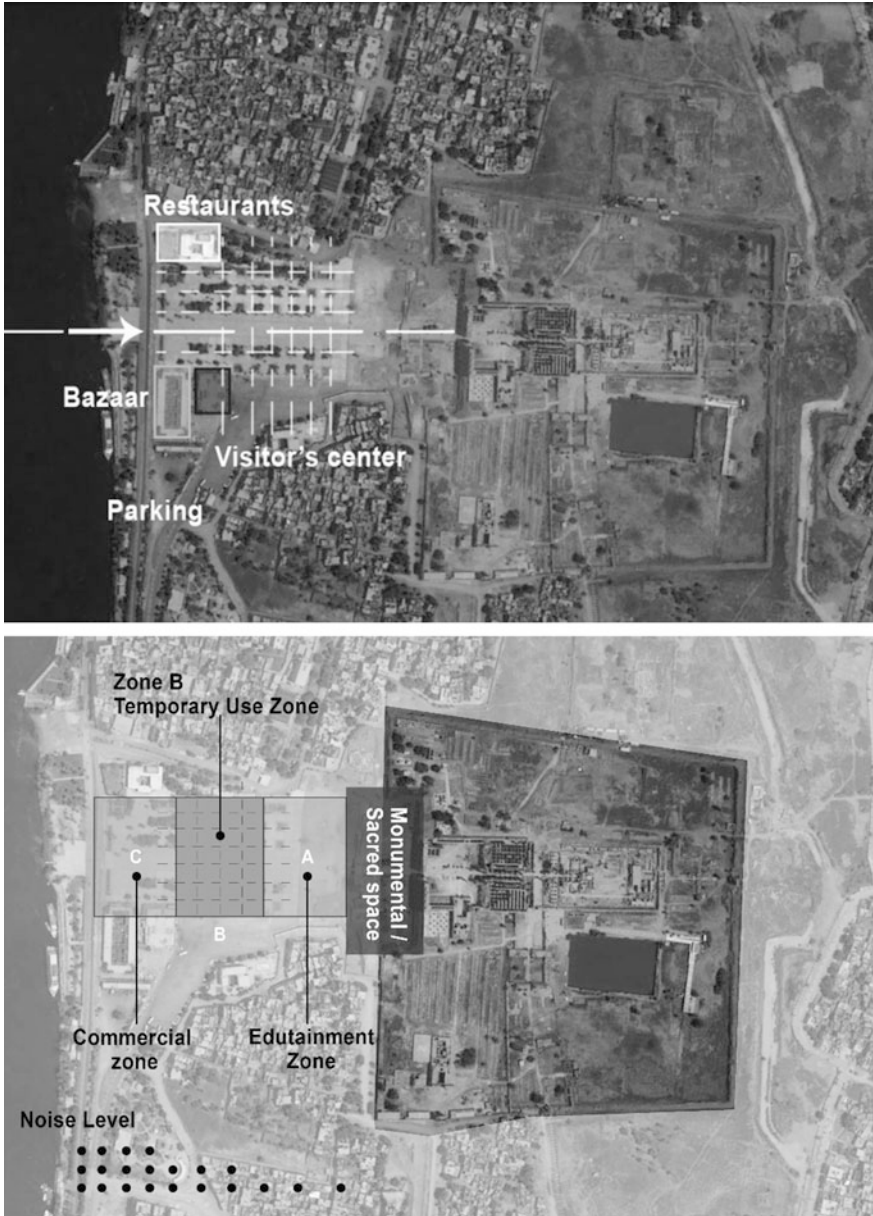


Fig. 3 The current design of the Karnak plaza. Under: Acupuncture the plaza in three subzones

Upon leaving Zone B and entering into Zone A, the sensorial distraction should start to decrease even more. Noises start to fade step-by-step as historical stories are told on the projection screens that constitute the foreground of the temple. A sense

of awe starts to accumulate and the anticipation builds up until the entrance gateway (pylon) of the temple is finally revealed.

The detailed design of the three zones should be an interesting task for urban designers and architects. A major design criterion is to allow these three subzones to flow seamlessly into one another without losing their individual character. Using soft landscape elements such as shrubs for fences can allow visual and physical continuity while subdividing the plaza into uniquely identifiable zones.

5 Acupuncture the Avenue of Sphinxes

In 2010, a team of researchers at the Politecnico di Milano, Italy prepared a project proposal for the conservation and restoration of the Avenue of Sphinxes (Folli, 2010). The team, which included the author of this paper, was headed by Maria Grazia Folli, Professor of Architectural Design at the School of Civil Architecture. The project proposal was developed according to the articles of a collaboration protocol (initiated and coordinated by the author in 2010) between the Politecnico di Milano and the Egyptian Supreme Council of Antiquities (SCA) headed by Dr. Zahi Hawass at the time.

The project presents itself as a valid acupuncture intervention that fits the aim of this paper while enhancing the length of the Avenue with various edutainment and socio-cultural activities (Fig. 4). The project strategically positions these different activities (tourists' information centre, digital displays, cafeterias, conservation and restoration facility, etc.) on several platforms that actively 'dissolve' the transition (levels difference) between the Avenue and street in order to 'rejoin' the segmented city for the sake of both visitors and locals (Fig. 4).

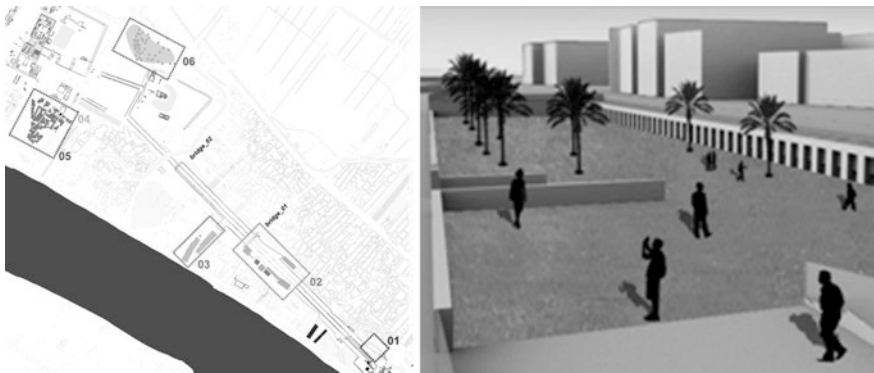


Fig. 4 Left: different locations for positioning attractions along the Avenue's length. Right: a 3D illustration of attraction zone (1) suggested in the vicinity of the temple of Luxor (Folli, 2010)



Fig. 5 Priority candidates for acupuncture as eco-lodges. Left: a photographic image of Al Birat village. Right: a photographic image of El Gournia village. *Source* <http://panoramio.com/photo/127202312>

6 Acupuncture the Natural and Vernacular Environment: Introducing the Eco-lodge Design Concept in Luxor

A major objective of this paper is to reveal the potential of the natural and vernacular environments in Luxor to yield spaces of ‘energy’.

A valid starting point is to search for possible locations that can be converted into eco-lodges. An eco-lodge pursues a vernacular or traditional accommodation style that promotes environmental friendliness (Mehta, Baez, & O’Loughlin, 2002).

In Luxor, oases as well as Bedouin and rural villages (Fig. 5) enjoy these characteristics while depending on simple yet efficient techniques for ‘energy’ production (burning pallets of animal feces and plants residues) in addition to being built with local materials (mud, straw, palm fronds, etc.). Converting vernacular and traditional settlements into modern day eco-lodges would lead to an expansion of the retail/commercial sector of the local (and, in turn, the national) economy while offering new venues for expanded tourist activities. Agricultural landscapes and desert lands flanking Luxor on both banks are also ideal targets for environmentally-friendly touristic eco-lodges that offer prime opportunities for interaction with nature.

7 Results

Acupuncture the proposed locations in Luxor entails applying conservation and restoration projects to historic sites and constructing new venues and facilities. The proposal also entails developing vernacular, Bedouin and rural villages as well as establishing new settlements on desert and agricultural lands. The final result should

be reinventing the open museum concept in Luxor while offering several modes of experiencing the city intellectually and sensorially. These modes can be realised as different tour scenarios, each with its own selection from an expanded repertoire of attractions.

Each tour scenario should be developed to be unique. An individual tourist would thus be encouraged to visit the city frequently over the years as each visit promises him/her a new experience. The goal of each tour is to encourage a longer stay in Luxor while offering a comprehensive experience of the city.

All tours are recommended to start on the east bank of the Nile specifically from the acupuncture Karnak plaza (in contrast to the typical touristic tour which starts by visiting the west bank antiquities). This is a logical decision because the Karnak plaza is the most important point of attraction in close proximity to the entry road from the airport to the city (for visitors arriving by plane) as well as the harbors on the eastern Nile bank (for visitors arriving via Nile cruise ships).

All tours are also recommended to include the acupuncture Avenue of Sphinxes and its new experience. The east bank portion of the tours should end by visiting the mummification museum and then the temple of Luxor.

These are evidently the most visited attractions on the east bank of Luxor. The paper takes this fact into consideration and aspires to offer a continually reinvented experience of the touristic axis: Karnak temple—Avenue of Sphinxes—the temple of Luxor. To this end, this axis would be acupuncture to introduce a diversity of temporary uses, events, storytelling scenarios and digital display systems (cultural, commercial and edutainment activities that, in essence, are continually varying/changeable along time).

Visitors would be staying in hotels in the Karnak vicinity while enjoying the experience of the plaza over a number of days. Each walk along the Avenue of Sphinxes should be a new experience that is enjoyed through various services, activities and landscape elements. Storytelling along the Avenue should make the visit to the temple of Luxor and mummification museum a repeatable experience. Repeat visits are especially likely when the plaza of the former is developed to host temporary uses/events and the management of the later starts organizing temporary exhibitions and technical workshops.

As visitors pass to the west bank of the Nile, the design starts to change as each touristic scenario now strives to cover a new set of attractions. The goal is to offer a continually changing 'taste' of the traditional and cultural life of Luxor during the west bank portion of the tour. This variation can be achieved by strategically positioning the eco-lodges in different locations on agricultural and desert lands. Users should be able to take in numerous novel perspectives of Luxor, all of which strive to be comprehensive while offering various selections from Luxor's cultural, vernacular, traditional and natural repertoires. Users will finally be able to experience Luxor as an open museum as they move between different Bedouin and agricultural villages while visiting different monuments. They can pass through the natural beauty of the Theban mountains and the fringes of the desert, then move across the Nile again to arrive to the start-end tour point: the Karnak temple plaza. Once acupuncture, Luxor can arguably offer extended durations of stay (a week

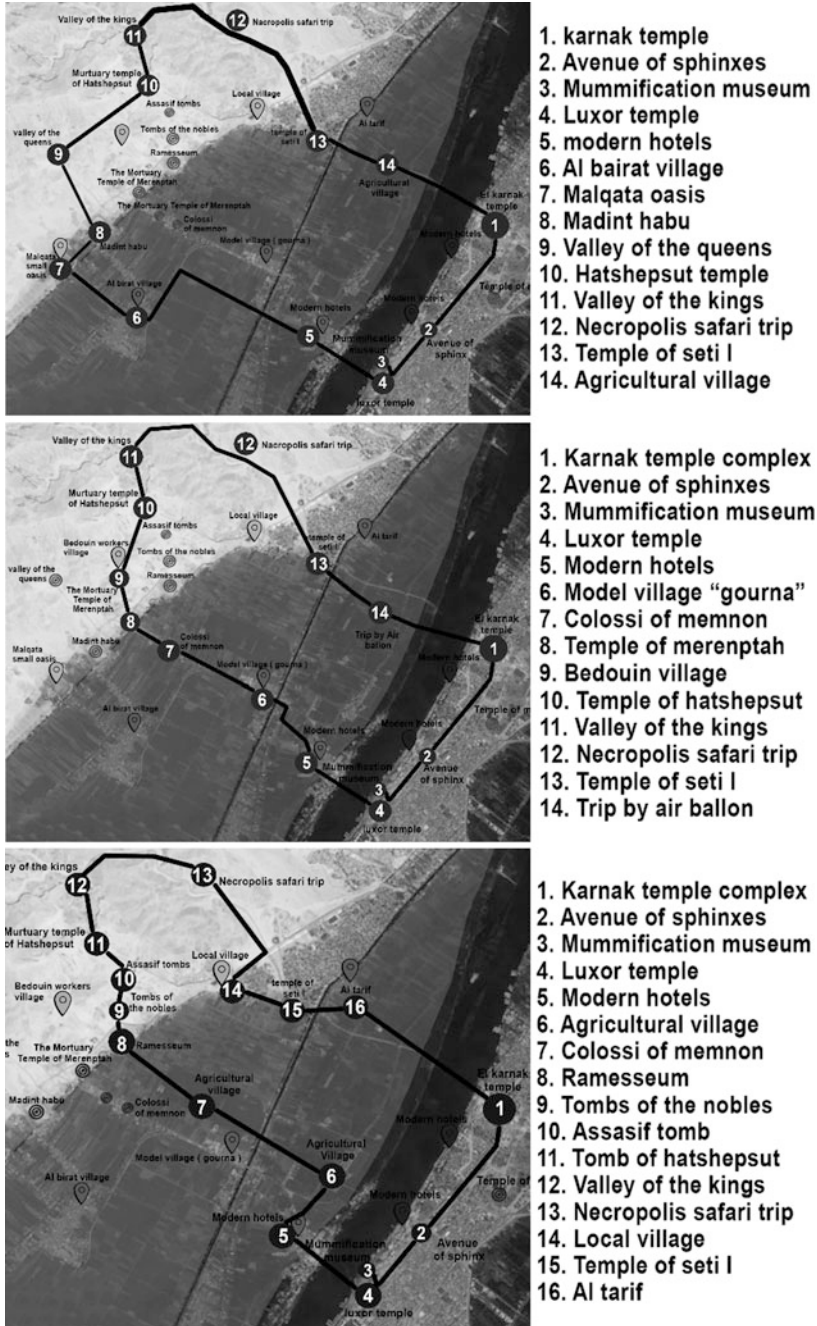


Fig. 6 The itinerary of three extended tours (achievable after acupuncturing the city)

per tour instead of the typical three days). The following figure is the suggested itinerary of three separate tours that are comprehensively rich and diverse (Fig. 6).

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Urban Restoration, Cultural Heritage and International Cooperation

Maurizio Boriani

Abstract International cooperation in the field of cultural heritage is facing not only the weakness of local institutions responsible for his protection, but also the role that politics assigns them in creating a “national identity” and in the economic development of each nation. This role regards specifically architecture: Under the sight of everyone, Architecture constitutes a geographical reference point and often represent a symbol of national or local identity or of a specific power or religion. These symbols are important points of reference for those who mean to propose a certain view of the history of a Nation or, more importantly, for those who intend to oppose to it, even using force. For these reasons, built cultural heritage can be differently interpreted as to the diverse cultures, political interests, and personal knowledge: the concept of “heritage” is essentially a “relative” one, even when it claims to be universal, as UNESCO teaches us. Thus, opinions on what should be preserved and how to do so often appear to be in sharp contrast, both within a country and between operators from different cultural backgrounds. It can be argued that the intervention on cultural heritage not only raises issues of technical or aesthetic nature, but also, and often, “ethical” ones. It’s a matter of reflection over values that move the behaviours of individuals or social groups and particularly, regarding what they consider right or wrong, as well as the concept of responsibility towards others, posterity and the natural environment.

The specificity of urban restoration does not consist as much in a matter of scale (urban restoration = planning of historical centres; architectural restoration = project at building-scale) rather than in a methodological issue. In fact, urban restoration is about dealing the problem of safeguard and preservation of architectural and landscape heritage through an investigation and design methodology able to face the historic reality of a place as a whole. This can be achieved starting from the structure of relationships that each element—valuable as heritage—set in it, being it natural or manmade, has, had or would establish with the others and its environ-

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ment. In other words, urban restoration is the discipline that faces the theme of the role of cultural heritage nowadays, within the context of contemporary cities and future development. About the safeguarding issues related to historical centres, it is habit referring to the century-old debate that has seen an enlargement of the concept of monument, from isolated buildings to their environment, social and physical context. The origins of this discussion are set in the thesis of Quatremère de Quincy, who opposed the transfer to Paris of Italian masterpieces following Napoleonic conquests.¹

Camillo Sitte's well-known book of, *City Planning According to Artistic Principles*, published in 1889,² represented another decisive step. The volume attributes different significance to the evaluation of historical city, as complex and indivisible work composed by different authors, in which monumental buildings create an essential bond with the widespread built context in which they were, and are, set.

Lastly, Alois Riegl³ enounces that all that is recognizable as manmade acquires a potential documental value. Therefore, it becomes accountable for safeguard, independently of any judgement of value over it. Thus, it is a radical but consequential position that has been deepened in recent years by a reflection of historians over the concept of monument and document. This consideration led to the identification of the two factors of the matter, and consequently flanked to the investigation of great events from the past a new attention for "long-standing realities", as defined by Fernand Braudel, intended as "half-forgotten story of men and enduring realities, which were immensely important but made so little noise".⁴

An attention for historical and natural pre-existence intended as resources—a heritage with economic significance and social utility—has made designers more sensitive towards their work within the pre-existence. Thus, it poses issues not only related to the history of monuments as architecture and witness of material culture, but also in terms of technical works and objects of use. Safeguarding and restoration (in terms of re-instauraton) matters have been sided by the ones of preservation and reuse, causing conflicts.

Nowadays the practice of safeguarding, preservation and reuse of built heritage tends to extend to the whole heritage from the past, intended as a sum of significant monuments/documents, not only in their individuality but also in the complexity both of their interactions and of the social and cultural context that created them, preserving or modifying the heritage itself. In individuating the heritage to be preserved and in the definition of intervention choices over it, the relationship (the

¹Antoine Chrysostome Quatremère de Quincy, Edouard Pommier, *Lettres à Miranda. Sur le déplacement des monuments de l'art de l'Italie*, 1796, English translation: Quatremère de Quincy, Edouard Pommier, *Letters to Miranda and Canova on the Abduction of Antiquities from Rome and Athens*, Los Angeles, Getty Research Institute, 2012.

²Sitte (1965).

³Riegl (1982).

⁴Braudel (1967).

past, present and future one) between each heritage and the society has a whole acquires a determining importance. Thus, cultural and landscape heritage become recognizable since they preserve, or acquire in time through collective memory, social utility. In other words, nowadays every preservation project is essentially attributable to an urban/territorial issue: what to preserve in the built city, how to safeguard it, how to integrate it in the needed transformation works that new requirements set in time, how to use or re-use heritage inherited from the past. All these actions cannot disregard the role that nowadays we attribute to pre-existence, as memory of the past as well cultural and economic resource of the present that has to be conveyed to the future.

That being so, these are resources since they represent the result of human activity, which has incorporated in them investments, work, meanings: physical, productive and mental energies. “The human is the trace that man leaves in things, it is the work, whether it is a famous masterpiece or the anonymous product of one particular epoch. It is the continuous dissemination of works and objects and signs that makes a civilization the habitat of our species, its second nature. If we deny this sphere of signs that surrounds us with its thick dust-cloud, man cannot survive. And again: every man is man-plus-things, he is a man in as much as he recognizes himself in a number of things, he recognizes the human that has been in things, the self that has taken shape in things.”⁵

In this sense, the heritage we inherited from the past must be first intended as a system, since it is product and expression of a social organization (original, present and—as far as predictable—future) that is complex for its own nature and organized in a system of parts strictly related one to the other. Thus, the territory must be envisioned as a continuum of heritage and not as a mere container of them: these are not isolated and singular monuments, but a whole environment. Thus, it might have fractures and unpleasant intrusions, but no interruption in history time, which regularly flows and in which present is always the result of the past and the starting point for the future.

Therefore, urban restoration can be defined as the discipline that faces safeguarding, preservation and re-use issues of historical, architectural and landscape heritage as a system (complex formal structure) resulting from the continuous action of man and nature over territory.

Only such an approach is in fact able to put at proper level the issue of safeguarding collective memory of a human society in relation to its environment and its physical and historical context: the problem of recognizing a spatial and environmental organization in everyday life; bringing in the recognition of its meaning, that is a non-extinction of man from the places of his own life.

This is a particularly important issue in these years, more than two centuries away from the rise of the industrial revolution that accelerated the process of transformation of the territory, changing populations and people so seriously that the problem has been placed of the relationship between individual history and its

⁵Calvino (2013).

establishment; whether it be the original one—which is under an increasingly rapid transformation—or a newer, where it is increasingly difficult to reconstruct the cultural and historical coordinates of reference for those coming to live in from different faraway places.

There is a need for historical recognition of places and identities, which is linked to being the man-plus-things man introduced by Calvino. This requirement for identity is now endangered by the speed of social, cultural and even spatial transformations we are subjected to: “In the years before the Great War... it was not yet a matter of indifference whether a man lived or died. When someone was expunged from the list of living, someone else did not immediately step up to take his place, but a gap was left to show where he had been, and those who knew the man who had died or disappeared, well or even less well, fell silent whenever they saw the gap. When a fire happened to consume a particular dwelling in a row of dwellings, the site of the conflagration remained for a long time afterwards. For masons and bricklayers worked slowly and thoughtfully, and when they walked past the ruins, neighbours and passers-by alike recalled the form and the walls of the house that had once stood there. That’s how it was then! Everything that grew took long to grow; and everything that ended took a long to be forgotten. Everything that existed left behind traces of itself, and people then lived by their memories, just as we nowadays live by our capacity to forget, quickly and comprehensively.”⁶ Roth’s words, nostalgically dedicated to the last years of the Habsburgic Empire, remind us with great lucidity that too many times today the environmental reality of our cities appears to us as a sum of relics of the past casually dispersed in the imperfect reality of the present. We are no longer able to attribute meaning to these evidences as they are no longer decoded: the modes of use have changed, some basic reference elements disappeared, the original inhabitants are emigrated or extinct, interrupting tradition.

Therefore, the problems of safeguarding the architectural and environmental heritage cannot be properly addressed without the aim of explaining their real meaning, their social utility, having the awareness that these values tend to be less and less readable in the absence of a policy tending to use history as a resource to build the future.

The statement of “cultural heritage”, being the individuation of a particular object or system of objects, is to be regarded as the heritage of the culture of a society. Therefore, it is an eminently political act, not only because this task is commonly assigned to the State and its peripheral or decentralized organizations, but also because the utility of this heritage is collective, and the way of their fruition is social.

In this sense, it is indispensable for this statement to be socially shared: safeguarding the “social memory” of a community cannot exclude the inhabitants of the places involved. If the protection and preservation of a limited number of objects

⁶Roth (1933).

recognized as exceptional can be entrusted to specialists, to centralized institutions and, at last, to authoritarian ones capable of acting against the common opinion in the name of higher interests, yet it is clear that conservation and proper use of a whole territorial reality intended in its entirety as a historical value can only go through the conviction of a large majority on the opportunity and on the meaning of such operation.

That is why working on the “boundaries” of the concept of monument is of great importance nowadays: a set of objects and areas that only recently the official culture tended to recognize as meaningful and which are the majority of the system of signs that history left over the territory. Furthermore, and not more important, some partial visions tend to underestimate this heritage. Conventionally smaller but widespread cultural heritage that characterize our everyday life as indispensable for a proper understanding of the major monumental objects.

Working on the boundaries means, therefore, to develop a study methodology for the identification and discovery of what can be intended as cultural heritage, like an ancient centre, or a historical landscape. At the same time, it means to point out the recent reasons for their abandonment, misuse and degradation; to assess the social, economic and technical potential of the benefits that such heritage can still offer; to develop a practice of territorial planning and architectural design that does not intend these objects as something to be treated separately from the rest of the territory, in a kind of “reserve” where economic and social laws are different from the rest of the world. Indeed. They are essential components of a comprehensive human intervention project on the environment of its own existence.

This means setting up the territorial reality so that its historical events appear to be resources for creating the future, not as constraint to development; teaching to live in museums, ancient centres, parks. Or better, to claim that everything is a park, a museum, an old centre, rather than just visiting once a year few places considered to be exceptional as “something else” compared to our daily lives, and consumed (and worn out) as one of the many products of our waste society, in a sort of purifying collective rite.

The above mentioned are valuable not only in the contexts of the “evolved” countries in the field of safeguarding, but specially in countries that have only recently faced the problems of a national cultural heritage policy. The ongoing globalization processes require a reflection on what role should be assigned to them in this context of rapid transformations where Countries in transition⁷ are involved, especially those that look their investments for cultural heritage as an accelerated economic development opportunity. These phenomena are not different from those which have in the past occurred in the most developed nations: the difference relies

⁷The *Encyclopedia of Information Science and Technology* (Khosrow-Pour, Mehdi (ed.), Information Science Reference, Hershey, U.S.A., 2015) defines Countries in Transition “A third world country that is in a transition process based on more liberal, market-friendly structures and associated features of liberal democracy”.

in the much faster speed than what had happened before; moreover, in a particularly weak and unprepared institutional and political context.

In these Countries it is also very common to consider archaeological, architectural and historical-artistic heritage an essential resource for development. This happens primarily when international tourism is encouraged: these Countries are often newly formed nations (or have recently rejected colonial or authoritarian regimes) owing cultural, landscape and environmental resources of great relevance, now easily accessible from all over the world both because of the greater opening up of borders and the substantial reduction in air transportation costs.

Along with healthcare and public education, the theme of cultural and environmental heritage is one of the most suitable to international cooperation, especially because of the great stimulus that UNESCO has put in place with the “World Heritage” policy.⁸ The aim is to help preserve the cultural heritage of a country, to allow access to it by international tourism, to increase employment opportunities in local population; it appears to be an almost obvious co-operation policy and, apparently, also “politically correct”.

A large number of “donor” countries are investing in cooperation policies in this area, with great satisfaction from the countries where they are proposing to cooperate, who are recipients of resources they might not otherwise have.

What practice is normally followed? It identifies a heritage or site of great historical-artistic relevance (on a global level); archaeological or architectural investigations are carried out and then the degradation phenomena in progress is evaluated. Furthermore, restoration projects are being realized and funded; the project intervenes in training local staff, in order to ensure sustainability over time for the actions envisaged; it cooperates with the preparation of a management plan for the concerned area; it assists local technicians and politicians in the recognizing procedure for the World Heritage site; tourism infrastructure (visitor center/museum, access infrastructure, office and management tools) are established. Finally, authorities cut the tape and return home happy to have done their duty as a good citizens of the world.

But is everything really so simple and, as it has just been said, obvious? Instead, experiencing just few cases in the field is enough to realize that things are not going exactly the way they would have expected. Why? Because cultural heritage is a delicate subject that involves social, religious and political issues, legal issues and economic interests of great complexity. Most likely, disregarding them would lead to failure, if not to endangering the heritage that is intended to be protected.

International cooperation projects in the field of cultural heritage are facing not only the weakness of local institutions responsible for their protection, but also the role that politics assigns them in creating a “national identity” and in the economic development of each nation.

This role regards specifically architecture: if on a theoretical point-of-view the general criteria for the conservation of artistic historical interest heritage are

⁸cfr.: <http://whc.unesco.org/en/conventiontext/> and <http://whc.unesco.org/en/guidelines/>.

essentially the same, whether it be related to movable or not property, however there are some specificities that are peculiar to architectural heritage.

Architecture, as Vitruvio says, must satisfy not only *venustas* (beauty) but also *utilitas* (utility) and *firmitas* (steadiness): it is impossible to observe architecture preservation in an exclusively conservative or “museographic” perspective. Original use, its confirmation or change requires the involvement of not only cultural but also economic, political, social, and even religious interests, which is impossible to disregard. Adapting to nowadays indispensable safety and performance standards also means to deal with the need to operate through compromises between conservation and use needs.

On the other hand, the size and costs of projects related to the built heritage are much higher than those for many other objects: in a limited economic resources environment, preservation works often compete with others, of social, infrastructural, and political interest, which for many reasons tend to require a priority. The process of conservation must therefore mediate between diametrically opposing forces: the requirements of modernizing a country against those of the preservation of historical heritage.

Architecture is also much more visible and constitutes a geographical reference point, likewise a historical and cultural one. Under the sight of everyone, Architecture often represent a symbol of national or local identity or of a specific power. These symbols, especially when referring to political or religious aspects, are important points of reference for those who mean to propose a certain view of the history of a Nation or, more importantly, for those who intend to oppose to it, even using force.

For these reasons, built cultural heritage can be differently interpreted as to the diverse cultures, political interests, and personal knowledge: the concept of “heritage” is essentially a “relative” one, even when it claims to be universal, as UNESCO teaches us.

Thus, opinions on what should be preserved and how to do so often appear to be in sharp contrast, both within a country and between operators from different cultural backgrounds. This especially occurs when a certain social group attributes to its history, and to the opportunity to found over it, the ideological reasons for its independence, if not of its own domain over a particular territory and a particular population.

Since history is often written by winners, it is obvious for them to tend to work out a selection of historical facts concerning them, to justify their behaviors in the past, in the present, and in the construction of the future. Physical heritage, especially architecture, is the material support of this policy: in policies for Cultural Heritage it is easy to make intervention choices depending on them.

It cannot be left out of consideration that the recognition of a heritage value is an eminently political act. Thus safeguard, preservation and restoration practices or transformation actions (and even destruction ones) are the consequences of a certain vision and sustaining ideology. Moreover, things can become complicated by the fact that, following the vicissitudes of European colonialism, the borders of the

present nations often do not coincide with ethnic, religious or linguistic boundaries at all.

Obviously, these considerations especially affect the built heritage with monumental programmatically intents: that are, the ones which are designed to celebrate a character, a religion, a dominant ethnicity to inherit its memory to the future. It is natural that, with a change of regime or the emergence of new social classes, these heritage values tend to be overturned, especially if these transformations occurred through violent conflicts. Following the collapse of a government, the symbols of the bent power are removed or even destroyed, regardless of their historical or artistic value or, perhaps, precisely because of their value.

Frequently, as evidenced by the chronicles of our times, it is precisely the cultural heritage to be the military target of programmed destruction—if not even publicized—as a result of political, religious or ethnic conflicts. The events of the Balkan and Middle East wars are on the agenda of the chronicles, and ethnic and religious fanaticism is continuing due to specifically planned destructions.

In regards of worship buildings, it is important to note that following the fall of regimes that impede religious practices it is easy to find an understandable spirit of revenge from religiously oppressed communities. Thus, the creation of new buildings for worship, competing among different religions, and interventions of adaptation or “improvement” of historical ones are made, based on functional or representative needs that rarely respect the historical values of buildings. This often happens outside State control, and even with the tacit consent of the new political power. “Churches” become a State in the State and do not respect regulatory limits or controls. Thus, it occurs especially in intervening over ancient buildings in degradation state: for these, for worship and decoration reasons, a restitution of the “Original splendor” or “modernization” is requested.

Regarding “minor heritage”—the one that from an observer’s perspective has acquired an historical-documental value of ethnographic interest—there is the rise of other issues in emerging countries. This heritage is often considered as witness of poverty by local population, of underdevelopment and of an era that must be removed favoring modernity. The last is seen as more appreciable in the perspective of building performance.

As has always been the case, even in Europe, the recognition of heritage values of ancient urban fabric or traditional rural construction takes place after few generations from the one who abandoned these areas in search of a better life. Modernization is one of the most severe threats in terms of protection of the popular classes built heritage, since good hygienic and health standards often come with the status-symbol and social ascent factors, which are strongly influential once the appropriate resources have been acquired.

Above all, in rapidly emerging countries, international cooperation activities pose problems of behavior, which are not easy to solve having to mediate between the different cultures both of the countries that carry on the co-operation, and within the countries that are subjected to international aid. It can be argued that the intervention on cultural heritage not only raises issues of technical or aesthetic

nature, but also, and often, “ethical” ones. It is a matter of reflection over values that move the behaviors of individuals or social groups and particularly, regarding what they consider right or wrong, as well as the concept of responsibility towards others, posterity and the natural environment.

It is well known that every professional activity, at least in theoretical terms, poses the problem of social responsibility in acting also for public interest. This requires explicit engagement by the members of a profession to postpone their personal interests to the public one, but also to take into account the legitimate interests of the clients, employers and workers.

The basic principles of a profession include in general: moral integrity, objectivity, competence and care in carrying out work and, where necessary, confidentiality. These principles increase the possibility of a conflict between the values of a profession and those of the client and the general society in which the professional works (Mansfield 2008).

In the case of architecture professions, ethical problems are in part different in nature than those encountered in other disciplines for several reasons: first, architecture is an art form that, necessarily, involves mediation problems between the individual interests of the client and the legitimate interests of the society regarding the quality of a project and its implementation. The task of the architect is to know how to mediate between the needs of the client and the needs of the community, generally governed by laws and regulations; but this leaves wide margins for interpretation.

In the case of interventions in heritage contexts, the architect’s ethics requires that he does not use selective criteria depending on his/her own political or religious beliefs, but to strictly adhere to the conservation of what is entrusted to him/her or what emerges during the research.

If the affected building or site is considered a historical “document”, any newly-conceived work could alter the document forever, despite the sincere efforts that could be made to reduce this impact. Each form of intervention has effects on the authenticity and integrity of the building and therefore poses particular important problems not only from a technical but also an ethical point of view. The motto “*Primum non nocere*” (First do not harm) by Hippocrates can also be extended to all restoration interventions that aim to pass on to future generations the originality of the work being performed.

This involves a specific ethical behavioral approach to monuments: preserving their authenticity and integrity, avoiding invasive and irreversible interventions. This can be preferably achieved using non-destructive diagnostic techniques and working methods, and already tested materials.

These activities are clearly indicated in the international conservation charters, which are taught to students in all the schools of Architecture and Conservation of Cultural Heritage in the world and which are expressly required by UNESCO for listing a particular site as World Heritage (UNESCO 2008).

These actions are easy to understand from the theoretical side, but problematic to be implemented in the practical one. This is due since on the one hand buildings are subjected to a set of norms and standards, defined to guarantee safety and efficiency,

not always easy to meet in terms of conservation. On the other hand, the needs of the client (limited time, cost savings, search for economic or political convenience, etc.) impose ongoing compromises, which are not always acceptable from a deontological point of view.

It should be noted that the concept of authenticity in the theory and practice of preservation originates from a multi-century debate essentially carried out in Europe: it is not always understood and shared in the rest of the non-Western world today. There are several reasons why this should happen: the main one probably depends on the fact that the industrial revolution in the West for nearly two centuries has created awareness of the irreducible fracture between the modalities of ancient and contemporary production.

Materials, working techniques and costs have radically changed from the past and every attempt to artificially replicate the ancient production mode (as it was tried on several occasions) has become in our eyes a fake or pale imitation rather than a scientifically founded reconstruction. However, in less developed countries, traditional construction techniques and maintenance processes have been preserved in major extent, and the negative effects of the introduction of materials and work of industrial origin in preservation could not become evident yet.

It should also be noted that the value of antiquity referred by Alois Riegl is the value of the traces of time, which can be recognized in the patina, in the imperfections and incompleteness of the buildings and which we now consider as a mark of authenticity of the buildings. It has always been in contrast to the value of novelty, generally appreciated by the non-experts and, in particular, by the less educated clergymen, attentive to the decoration of the worship buildings rather than the marks of their antiquities.

The continuous maintenance works required for buildings in countries with difficult climate conditions and easily perishable materials—that are commonly used in construction in these countries—makes it unavoidable to develop a habit of a regular maintenance of buildings. Generally, it is essentially done by replacing and integrating the lacking parts, rather than through sophisticated conservation interventions.

If it is then considered that contributing to the renewal of worship buildings is regarded by many religious practices as an honorable activity in respect of the divinity, it is then possible to comprehend how really difficult it is to be understood while carrying a rigorously conservative operating practice.

Without using philosophical subjects and references to the different concept of history that characterizes the Western thought than the Eastern, it is beyond doubt that a concept of preservation that is strictly focused on conservation of the authenticity of the original work might face perplexity, if not opposition apart of the Western World.

It should be noted, however, that similar attitudes are not lacking in Europe, especially among non-professionals of the field.

If less noble but more pressing demands arise, such as those linked to making a monument more understandable (or even spectacular) in order to make it better

understood by travelers organized in international tourism circuits, it is then clear that the expertise of a rigorously conservative intervention also appears to be a barrier in selling a tourist product facing international competition. To tourists, the ruin is little photogenic and the difficulty of understanding its meaning would take too long. When international organizations happened to make critical remarks regarding interventions that did not meet the operational standards accepted by the scientific community in a specific site, it was replied that it was not an issue. The site was deemed anyway able to recall great numbers of visitors, even not taking into account the quality of the restorations made or, in limit situations, just because of non-careful interventions (Dallen and Boyd 2003).

These issues deserve a further insight. The international culture of preservation is strongly marked by the European approach, which imposes a long series of activities preliminary to the intervention: diagnostic studies, accurate surveys, historical-documentary research. These activities need time and, consequently, significant costs: monitoring decay phenomena involves at least 18 months of detection, modern laser-scanner and non-destructive diagnostic techniques require the use of expensive equipment and specialized technicians, chemical-physical analysis of materials and degradation phenomena involves the use of laboratories rarely present in developing countries.

These facts collide with the scarcity of resources available and with the need to make the investment for restoration as quickly as possible.

Methodological precautions tend to be considered as sophistication proposed by technicians most concerned with scientific publication of the studies carried out rather than the conservation works themselves. The international co-operator is likely to be welcome when brings founding and set aside when he is “being difficult”.

It is not intended to give all the reasons to the first mentioned one and all the wrongdoings to local technicians and politicians. It is necessary to realize that in some countries it is needed to adapt usual methods to the working context, which does not always have the necessary tools and materials, and even less, the skills involved in them. As often happens, even in these cases, better acts against of good.

Lastly, a problem that seems obvious to those who work in this field: archaeological research, preservation, site enhancement (signage, visitor centres, etc.) should not be limited to *una tantum* operations, but involve continuous maintenance. This regards both the control of the weed vegetation and the effects of the meteorological phenomena, as well as the functioning of the scientific tools and media that are intended to be used for the enhancement of a site.

Since it is difficult to have success and “fame” for hanon-careful interventionsing built a shelter for a newly excavated archaeological area or for having removed the vegetation from a wall that has been invaded by it, these works are then rarely performed. The responsibilities of such behavior must be equally shared between those who intervene, who must always foresee sustainability (even economic) over time of their own works, and by those who will be in charge of the site after the completion of the intervention, who have to carefully program maintenance of buildings and tools, which often is not easily accomplished, more due to neglect than for lack of resources.

Often, international cultural conon-careful interventionsoperation activities are come along with training actions: ex-cathedra lessons, laboratory activities, excavation and conservation training on situ that represent an important opportunity for professional upgrading of local technicians. These are indispensable activities, but must be conceived for the specific reality of the places where the project is operating. First, it's necessary to overcome a certain degree of reluctance to accept, by local technicians, innovative practices compared to those normally used by them. It is important not to underestimate the traditional techniques of the local craftsmen, since they are often more effective than the ones imported or even the only possible to apply in a given economic environment.

In such cases the self-esteem of a local technician must never be damaged by offering intervention methods out of his reach or simply "fashionable" in European countries. It's necessary to overcome the new criteria of intervention in time: it is not enough to teach once and for all a certain practice, its application must be followed over the years, as new local technicians are able to function properly (and correcting the practice if teachings are ineffective or problematic to apply).

This is the hardest part, since almost always cooperation projects have a beginning and, above all, an end, beyond which there are no more resources to go back to the place or to improve the learning of what it was meant to teach.

The theme of sustainability over time in training actions should be well-represented when defining the timeline of interventions, reserving a small part of the resources available for continuing education and for a number of years and for travel and stay expenses associated with it.

The discussion so far has referred to the issues of the protection and preservation of a single monument or a well-defined site of historical interest. However, it must be considered that monumental heritage is rarely isolated from the territorial context where it has arisen, especially in developing countries, where there is often a strong combination of archaeological-monumental interest and inhabited areas. This bond, developed over time due to subsequent stratification, tends today to be considered by local governments as a problem rather than as a resource, often without reason: recent settlements overlay with ancient ones by altering their legibility and sometimes physically compromising their structure.

Cases are not uncommon where, with a drastic decision, the population has been removed from the sites object of tourism promotion interventions. The population that has inhabited areas of monumental interest (sometimes even for ages) is then removed, making the reasons for the conservation and enhancement of the sites prevail.

We do not want to go into the matter of what destiny families and activities expelled have met, although there would be much to be said about this. However, it should be noted that in this way questionable processes have been often developed. First, archaeological or monumental "reserves" have been built apart from the context of their territory, often fenced so as to prevent unwanted access (and to impose a ticket to the visitors). Moreover, buildings or agricultural structures of historical or ethnographic important values were removed; these could have been at

least in part preserved to contribute in enriching the interest even to distracted visitors.

Finally, the opportunity to use preservation and enhancement efforts to support the upgrading of nearby settlements has also been lost. In the worst case, the monumental areas have been reduced to protected tourist reserves, offering an image of sites completely falsified by the exclusion of everyday life that animated those sites before.

Even worse is the fact that, with the displacement of the originally settled population, the opportunity to involve local community in safeguarding the heritage that is to be enhanced is lost. In fact, a widespread resentment suggests opposition to conservation and restoration interventions: there are not uncommon cases of opposition by the locals to the listing of a site within the World Heritage List, since it is feared that this will end up producing constraints and obligations, or even loss of home or place of work.

These issues have long been present in the international debate on the protection of historic centers and agricultural areas of historical or natural interest inhabited by local populations. The concept of “integrated conservation” was introduced for the first time in an official document in the so-called Declaration of Amsterdam, signed by the Council of Europe Member States with the official headline of the “European Heritage Conservation Convention” (1975).⁹ On the basis of this Convention, the protection of architectural heritage must evolve from isolationist interventions to become part of a specific economic, social, cultural and urban development policy.

This widening of the approach introduced the themes of heritage conservation within the overall debate on sustainable development. The notion of sustainability becomes ever more pervasive in many aspects of contemporary society, challenging the current and necessary use of natural and man-made resources with the needs of future generations and, more generally, the maintenance of cultural resources and the natural balance of the planet’s environmental equilibrium. From this point of view, especially in emerging countries, the maintenance of traditional land-management procedures and, in particular, of agriculture (including forestry, sheep-farming, fisheries, etc.) can play a decisive role. Traditional farmers are defined as “land maintainers” and can develop important activities to ensure the natural balance of a territory, even urban, once provided that their role is acknowledged even economically.

Indeed, it is necessary to counteract a policy of short-term exploitation of the natural and cultural resources of a territory, which takes place without attention to the long-term effects that these policies may trigger.

Occasions for a more flexible visit are not missing: these activities can involve the local population, even those who are not engaged in tourism services but who cannot compete in terms of economic resources, capability to appear on international markets and entrepreneurial culture.

⁹<http://www.icomos.org/en/charters-and-texts/179-articles-en-francais/ressources/charters-and-standards/169-the-declaration-of-amsterdam>.

NGOs are often involved in this field and various international cooperation initiatives are finalized in enhancing them. These experiences are to be developed by small groups spread over the territory, difficult to organize and above all to manage, thus requiring longer times.

There is a “grey area” in tourist offer that must be taken into account: it is the one implemented by that portion of local population which has sufficient resources to invest in small business activities: food services, hosting in campsites or private houses, small local transportation activities etc.

These are initiatives can often be successful in the short term but set at risk the same resources they intend to exploit to attract tourists. They are individual initiatives, mainly due to the severe competition in this area and to the inability to cooperate locally: for Countries out of collectivist regimes talking about cooperatives is like “evoking the devil”.

These activities distract young people from agriculture and craftsmanship, resulting in the abandonment of those lands and activities that are a major attraction for less hasty visitors (e.g. Asian rice paddies, tree cultivation in desert oasis or traditional tools craft). Frequently newly unplanned buildings endanger the landscape: the resources that once attracted visitors are compromised in a short time due to the abandonment of traditional activities, crops and damaged settlements.

Paradoxically the increase in tourism without any effective control and policy is likely to compromise the very cause of tourism attraction. The affirmation of “liberal” economic policies after decades or centuries of strongly repressive regimes certainly stimulates the economies of transition countries with by a clear message from local power (“*enrichissez vous*”), which in this way builds a strong and widespread consensus (Dallen and Nyaupane 2009).

However, while Western liberalism has over centuries created government control on the excesses coming from a total freedom of action, these institutions are still weak in emerging countries. Furthermore, a policy that allows mediating between interests of individuals and those of the community, especially in the medium to long term, is lacking. Liberalism in economy also produced a building one: constructive models derived from countries that are very influential from the political and cultural point of view—close and far—have replaced traditional architecture. Construction technicians find greater economic benefits in working for the private industry rather than in public employment, rules and regulations are seen as unacceptable impositions and constraints imposed on protected areas (parks, archaeological sites, cultural landscapes, etc.): they are read as impositions rather than as potential resources. A lack of knowledge of alternative sustainable tourism models compared to those of intensive exploitation of areas of major recourse hampers the introduction of model experiences that could be a benchmark for similar initiatives in other contexts.

Is this a hopeless situation? No, but it is necessary to understand that a good landscape is the effect of good governance. This can only be achieved by following a country political and administrative institutions through political-social development to reach the economical one, thus respecting the self-determination of population and democracy.

The Western world can offer the story of its mistakes and achievements, to cooperate with the best forces in each country, by accompanying the necessary reforms, in the awareness local people will be in charge of their own path to sustainable development. Meanwhile, it would be important to Western world to be in charge in providing examples of how things might work and express a fairer demand of goods, services and tourism more respectable to population rights, cultural heritage and the natural environment.¹⁰ Being aware of the difficulties involved is already a beginning, but only a small part of the journey to be accomplished.

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¹⁰See Giambruno ad Gabaglio’s paper in this volume.

Beyond Ancient Egypt. Preservation and Valorisation of the Sphinxes Avenue in Luxor and Its Urban Context

Mariacristina Giambruno and Rossana Gabaglio

Abstract The excavation and the opening to tourism of the ancient Sphinxes Alley is one of the most extensive works carried out in the first years on twenty first century in Egyptian territory for an archaeological area and, at the same time, one of the most recent urban archaeological operations that has deeply marked the city fabric of Luxor. The paper takes into account the experience gained since 2008 of knowledge, survey and assessment of the state of conservation of a portion of the Road and its immediate nearby, consisting of a compact urban fabric of traditional buildings of not recent formation. The aim of the work was, on the one hand, to identify intervention priorities and methods of managing the archaeological heritage of the Sphinxes that could suggest a rational planning of conservation works. On the other hand, see whether the most recent cultural heritage could become a resource for conducting policies and interventions for the development of sustainable tourism in the area. Research has also led to some reflections on the relationship between archaeological excavation and existing city and the most suitable tourism models for the exploitation of archaeological areas. From these starting points the papers starts.

1 The Scenario

1.1 Archaeology and Existent City. Which Relationship?

The relationship between archaeology and city developed over oldest vestiges is most of the times conflictual. In fact, one makes the way to the other, or vice versa: in relation to the diverse factors that in time have given priority to archaeological discovery or to urban “development”.

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Selection and value judgment have imaginarily driven the use of “destructive pickaxe” in favour of archaeological evidence rather than to successive urban and architectural witnesses, even though historical; or the pickaxe has acted in detriment of evidences when ignored or destroyed if fortuitously found during infrastructural operations that have subjected cities already during the second part of twenty first century.

Rome is an emblematic case in this sense: layered city by excellence, represents an extraordinary example to describe the “relationship between archaeology and city”.

An essay by Italo Insolera written in 1983¹ resumes clearly the alternate fortunes of archaeological investigation and discovery in the context of a compact urban fabric: not a re-enactment of facts, but rather a clear analysis of their conflictual relationship. While firstly, in the time span from the Napoleonic era to the first decades of twentieth century, archaeology has the priority over urban fabric by exalting “roman spirit” through excavations to the detriment of “historical centre”, the second part of twentieth century sees an inversion of roles.

But is licit to destroy layers so as to undercover others? Which layer is more important to urban history? And between coeval stratum is there a value scale?

Once again, selection and value judgement have a role. These two categories are too frequently considered as objective, while they retain an evident subjectivity strongly related to personal feeling and to the historical moment in which they become “operative”.

“Yet in ancient Rome (...) all the subsequent archaeological layers are overlapped (...). Destroy a city of this kind means to strike its whole history; not to substitute an epoch with another, or a style to another. (...) It is taken for granted that an historical urban entirety does not exist; but rather that exist only the so-called “monuments” inside a city not recognized as cultural evidence (...).² Thus, the priority of archaeology over stratified existing city is expressed also through the selection of the evidences discovered; “roman spirit” and renaissance have priority over middle age and baroque, “marble” over “bricks” and “tuff”.

In the second post-war period and in the following years the increase of urban population brings an uncontrolled urban expansion; new roads, new neighborhoods, new infrastructures and services. These are the years of “rescue archaeology”, being not the archaeological excavation to discover evidences but rather documentation of deposits fortuitously found during urban operation and threatened of destruction. “The typical archaeology practicable in a living urban center, (...) is “rescue archaeology”.³

¹Insolera (2010).

The essay is part of the rapport presented to the venue “Archeologia urbana e centro antico di Napoli”, already published 1983 in conference proceedings. Translation from Italian to English of the authors.

²I. Insolera, *op. cit.*, p. 30. Translation from Italian to English of the authors.

³Gardini and Milanese (1979).

Archaeological discovery, which for years has preeminence over existing city, has nowadays a subordinate position. Urban expansion threatens archaeological complexes and surrounds them with a stranger “environment”, often not planned and lacking in architectural quality. “The issue of relationship between modern life and ancient art is getting critical...”⁴

The context of archaeological evidence changes and modifies “the environment that surrounds every archaeological complex is without doubts the essential element to valorize it... Thus, every rehabilitation has to assume a particular aspect and its validity can derive only from sensitiveness and perception of who is in charge of it. To reach this aim is necessary a long, accurate study; a careful investigation of the area in order to conciliate the needs of modern life to the ones of the archaeological context”.⁵

But it is sufficient sensitiveness and perception of the singular, or rather shared norms and controlled buffer zones are needed?

It is evident that “underground” and “over ground”—discover of the archaeological evidence and safeguard of the built layer over it—are given as incompatible. Which of the two has more “right of existence”?

Such conflict, as in Rome, is evident and explicit in the case of Split historical center, in the traces of Diocletian’s Palace. This case allows some reflection on a theoretical basis, thanks to the existence of essays on the topic written by two important actors of Preservation in twentieth century: Alois Riegl and Gustavo Giovannoni.

Retrace even few passages can reconstitute which are the reflection conducted in the tentative to let the instance of archaeological research and the safeguard of layered historical city coexist, since the first years of twentieth century.

The demolition events in the historical center of Split has started in the years in which Riegl writes; until the end of nineteenth century a dense medieval urban fabric absorbed the traces of the Palace, which emerged only in the peristyle, the mausoleum and Jupiter’s Temple. For a century almost, until 1997—year when the excavations were stopped—demolishment campaigns continued with the debatable aim to reconstruct the disappeared roman “monument”.⁶

The Austrian scholar opens his essay by underlining from the first sentences the principal matter of the question. “A liberation of ancient part of the Palace means, at present, nothing but the elimination of antique and medieval additions (...) (it) has caution to not forget the care of medieval and modern monuments of the ancient

(Footnote 3 continued)

The entire issue of the magazine is dedicated to the relationship between archaeology and urban planning and collects contributions from different disciplines presented in interdisciplinary seminar “Archeologia urbana. Archeologia e pianificazione dei centri abitati”, performed in Rapallo in 1978.

⁴Forlati Tamaro (1967).

⁵Mustilli (1967).

⁶See: Blasi and Carabellese (2005); Lorenzi (2012); Marasovic (1997).

complex. Thus, assumes the challenge to analyse until what point its decisions—given by the interest towards ancient evidences—can be adaptable with the repairing action towards the right of existence of its medieval and modern components”.⁷

It is evident that Riegl introduces the theme of destruction that would occur over urban fabric if it happens, sustaining at the same time the need to give maximum importance to archaeological discovery of the ancient Palace. The subsequent page in history does not have necessarily a minor witness interest: therefore, the effect of demolition should be evaluated.

Gustavo Giovannoni, almost forty years later, writes similar considerations: “the commission is now unanimously convinced that this page, more modest than the first one, is not less glorious, and that the aspect that it has given to Split urban fabric cannot be erased, and even crippled. Split must not remain a dead evidence, but a living city, and its neighborhood enclosed in the ancient monument must preserve Art expression that have overlapped in all times spontaneously and that characterize its most suggestive peculiarity”.⁸

The two scholars propose different solutions for Split, strongly related to their theoretical positions to solve the matter on field; a norm, following Riegl thoughts, should have for “medieval and modern Split” “to guarantee its integrity as the primary scientific interest for the conservation of the ancient evidences of the Palace”.⁹

Giovannoni stated that “freed” the walls and “arranged” the central part, it should be proceeded not with demolitions, but rather with “building reduce” finalized to heal the dense historical urban fabric.

The era of great destructions to set in light archaeological evidences seems to proceed, in the first part of twentieth century, to an end.

1.2 *Archaeology and Sustainable Tourism*

Which relationship occurs between cultural heritage and tourism development, especially when focussing over archaeological assets? When the archaeological research leaves the step to valorisation of discovered evidences and which bond has

⁷A. Riegl, *Rapporto su una ricerca per la valutazione dell'interesse verso i monumenti medievali e moderni all'interno del Palazzo di Diocleziano a Spalato, condotti per incarico della Presidenza della I.R. Commissione Centrale*, 1903, in S. Scarrocchia, *Alois Riegl: teoria e prassi della conservazione dei monumenti*, Boulogne, CLUEB, 1995. Translation from Italian to English of the authors.

⁸*Spalato Romana*, Report of the Academic Commission, 22 novembre 1941, in G. Zucconi, *Gustavo Giovannoni. Dal capitello alla città*, Milan, Jaca Book, 1996, p. 160. Translation from Italian to English of the authors.

⁹A. Riegl, op. cit., p. 340. Translation from Italian to English of the authors.

the investigation with the willingness to increase touristic flows towards an economic development of places?

In the specific case of Luxor, some of the presented reflections are needed. In this site, particularly in past years, the presence of tourists was extremely high, and their impact over everyday life of local community was important.

Therefore, the question is which tourism for cultural heritage?

Sustainable tourism, together with its implications, can be described as a crucial objective for those places that want to develop their economic resources and, at the same time, to safeguard their cultural, social and natural heritage. Thus, it can be defined as “Tourism that takes full account of its current and future economic, social and environmental impacts, addressing the needs of visitors, the industry, the environment and host communities”.¹⁰

The World Conference on Sustainable Tourism¹¹ has ratified, more than two decades ago, the principles over which sustainable tourism should base on, in order to guarantee a fruition of places that would not deplete the resources at the centre of tourism flows, which are by definition scarce and perishable:

- the development of tourism can help promote closer ties and peace among people, creating a conscience that is respectful of the diversity of cultures and life-styles;
- we need to develop a tourism that meets economic expectations and environmental requirements, while respecting the demands of the local population;
- tourism development shall be based on criteria of sustainability, which means that it must be ecologically bearable in the long term, economically viable, ethically and socially equitable for local communities, integrated with natural, cultural and human environment, able to control its impact on the cultural heritage, respectful of the central role played by traditional elements, activities and dynamics of each local community;
- the active contribution of tourism to sustainable development necessarily implies solidarity, mutual respect, participation by all stakeholders/actors, both public and private, conservation, protection, and awareness of the value of natural and cultural heritage, afford a privileged area for cooperation. Sustainable tourism must, first of all, take into account the different opportunities offered by the local economy. It should be fully integrated into and effectively contribute to local economic development. All options for tourism development must effectively improve quality of life in the local community and influence its social and cultural growth; actions should be promoted to allow a more equitable distribution of the benefits and burdens of tourism.

Particularly, is cultural tourism that should set up its development criteria in a sustainable perspective, since its base—cultural heritage—is fragile and suffers from the impact of important numbers of tourism flows.

¹⁰World Tourism Organization, *Definition*, <http://sdt.unwto.org/content/about-us-5>.

¹¹Lanzarote, Canary Islands, April 27–28, 1995.

Mass tourism brings evident issues due to the concentration of great numbers of people in few places for limited time during the year. This model is facing difficulties in recent years also due to the still unsolved economic crisis.

Every site has its own “carrying capacity”. That being so, it could stand a maximum number of visitors without being damaged in its cultural and natural environment, or without representing a worsening instead of an enhancement in terms of quality of life of local residents, whose needs are in conflict with the ones of tourists.¹²

“In tourism, in fact, it is realized the encounter of two communities: the one of tourists (alien species) and the one of residents (endogenous species), which aspirations or desires of use of some resources can be concurrent (congestion effect) or counter posed (externality effect). The issue is more evident and/or severe when the availability of resources is reduced; when the two categories are not homogeneous (e.g. cultural diversities or contraposed aspirations over the use of shared resources) and more the arrive of “alien species” develops relationships (interests) counter posed to the hosting community (e.g. between opponents and creators of a certain kind of territorial transformation)”.¹³

Without going in depth with the damages that concentrated tourism flows can cause to physical conservation of the historical architectural heritage, it is evident that mass tourism tends to substitute indigenous productive activities, to modify the context in which population lives in, rises the consume of resources like water and energy by concentrating, on the other hand, economical benefits coming from this revenues over a reduced number of operators from the sector (frequently of great dimension and, in case of emerging countries, the capital is often coming from abroad).¹⁴

The resident population in sites of major tourism concentration, has to face strong modifications to its territory, which is adapted to the needs of tourism. Frequently, local community has to cope with a decrease of purchasing power caused by an adjustment of life cost to different standards.

These issues are particularly evident in emerging countries where the two communities, the one of tourists and the one of inhabitants, are in conflict. Tourism should limit the negative impact over these places, becoming a key factor to reduce poverty and social inclusion, instead of being the trigger of these problems. It is fundamental to set up “measures to prevent or minimise the potential negative social impacts of tourism, such as competition for land, water and other resources, and unwanted social change, including crime and sexual exploitation. This emphasises the need to ensure that local communities are consulted, engaged and

¹²WTO, 1999.

¹³S. Bimonte, L. F. Punzo, *A proposito di capacità di carico turistica. Una breve analisi teorica*, in “EdATS Working Papers Series”, n. 4, January 2004. Translation from Italian to English of the authors.

¹⁴E. Poggiali, *Turismo sostenibile*, elaboration from ENEA sources, Gruppo di Coordinamento Agenda 21 “Terre di Siena”.

empowered to influence decisions on tourism development and operations that may affect their livelihood and society”.¹⁵

The importance of sustainable tourism is at the base of the reasons that have led the 2030 Agenda for Sustainable Development,¹⁶ promoted by United Nations, to state “through Sustainable Development Goal Target 8.9 to devise and implement policies to promote sustainable tourism that creates jobs and promotes local culture and products”, underlying its importance also in the Sustainable Development Goal target 12.b.¹⁷

“Tourism must consider its effects a cultural heritage and traditional elements, activities and dynamics of each local community. Recognition of the traditional elements and activities of each local community and support for its identity, culture and interests must at all times play a central role in the formulation of tourism strategies, particularly in developing countries”.¹⁸

1.3 Luxor “World Heritage”

The research area was listed as World Heritage in 1979 as part of a broader site including “the temples and palaces at Karnak and Luxor and the necropolises of the Valley of the Kings and the Valley of the Queens”.

In order to frame the context in which project proposals were posed—as will be described in next paragraphs—it is useful to recall briefly the threats underlined in UNESCO state of conservation reports, in a time span that starts from nomination year until the beginning of the project concerning “ancient Thebes and its Necropolis” site.

The first UNESCO online report is dated back to 1998.¹⁹ Matters include the village of Gurnah, set in Kings Valley, and the move of population decided by local authorities to a different site, since the settlement was built over archaeological traces and that wastewater coming from the village might harm underground heritage.

UNESCO recommends to investigate in detail to evaluate carefully architectural characteristics of more recent settlements and the environment, before moving inhabitants.

¹⁵UNWTO (with the financial assistance of the European Union) *Sustainable Tourism for Development Guidebook. Enhancing capacities for Sustainable Tourism for development in developing countries*, 2013.

¹⁶Egypt launched in March 2015 its strategy for sustainable development “Egypt’s Vision 2030”, in agreement with the targets of Agenda 30.

¹⁷*Sustainable development, Knowledge platform*, <https://sustainabledevelopment.un.org/topics/sustainabletourism>.

¹⁸*Charter for sustainable tourism*, Art. 3, Lanzarote, 1995.

¹⁹The mentioned and other information can be retrieved from: <http://whc.unesco.org/en/soc/3099>.

The subsequent report, dated back to 2001, is focussed over the same themes, underlining: “Possible conflict between conservation requirements and safeguarding of socio-cultural character of the local community”.

In 2006 the main problems of the site might be summarized as follows: “Crop production; Deliberate destruction of heritage; Flooding; Housing; Identity, social cohesion, changes in local population and community; Land conversion; Management systems/management plan; Water (rain/water table)”.

In 2008 a joint World Heritage Centre/ICOMOS mission conducted between 18th and 24th of April discloses some important matters on the investigated area of study.

Specifically: “ICOMOS reviewed the mission report and made the following remarks: (a) The information made available demonstrates that while the Master plan is very much about cleaning up, improving image and conditions for tourists, renewal, sanitization etc., it is not about protecting the Outstanding Universal Value of the site. As a result, little attention has been given as to how best to maintain the complex set of historic layers which underlie the Thebes inscription on the List, and that indeed many significant parts of the site are being needlessly discarded. (b) The demolition of some of the structures near Karnak, the later urban settlements between the two temples and of substantial parts of Gurnah are neither acceptable approaches within contemporary conservation theory (which demands that changes be limited to only those essential to meet critical functional needs, and here, only where this can be done without loss to heritage values), nor respectful of the property’s Outstanding Universal Value. Even if some of these places are not what would be described as “antiquities”, they should be protected as being indissociably connected to the development of the site, and therefore worthy of the strongest protection efforts (...). (c) The demolition of structures along the proposed Avenue of Sphinxes linking the Luxor and Karnak temples is an effort to reconstruct past physical relations. However, the Operational Guidelines stress that “in relation to authenticity, the reconstruction of archaeological remains or historic buildings or districts is justifiable only in exceptional circumstances”.²⁰

2 Project Proposals

2.1 *Addressing Sustainable Tourism. Some Enhancement Proposals for the Context of the “New” Sphinxes Road*

Starting from considering the city of Luxor as an open air museum, defined enhancement proposals have the aim to implement the quality of settlements and of life for inhabitants and tourists in the entire city both. This aim must be pursued

²⁰World Heritage Committee, *Mission report*, Thebes and its Necropolis (Egypt) (C 87) 18–24 April 2008, source <http://whc.unesco.org/en/soc/3099>.

through adequate strategies, able of facing coherently: the relationship between tradition and innovation; the relationship between archaeological estate, urban fabric, monuments, natural landscape, mobility.

The proposed strategy is articulated in actions different, but necessarily complementary:

- Considering buildings and spaces, structural territorial traces, memories, uses, customs, etc. can play a primary role in addressing planning choices oriented to urban requalification;
- Consideration of the system “Luxor Temple—Sphinx Avenue—Karnak Temple” as the fundamental city system. Therefore, the system should not be considered as a “monumental enclosure”, isolated from the rest of the city, but as a generative device of relationships, of unexplored physical and visual connections, of new modes of organization of spaces of the city in their numerous configurations and complex uses;
- Design of public spaces organization, beginning from the requalification of those places made recognizable by uses and collective practices. Their enhancement can produce their reconsideration in a new relationship with spaces and city equipment (both existing and new).

Particular attention should be paid to the surrounding complex of Karnak.

The archaeological area (Figs. 1 and 2) is, at time of survey campaign, nearby to some very poor neighborhoods but retain potentially interesting ethnographic values (Figs. 3, 4, 5 and 6).

It would therefore be appropriate to limit demolitions to what is necessary for archaeological knowledge, and proceed to the rehabilitation of the other recoverable buildings.

“Modest” buildings in adobe but decorated with recent frescoes of family pilgrimages to Mecca, trees protections in adobe (which could be used as an inspiration for newly designed green areas), urban green spaces, constitute an ethnographic potentially attractive value for tourists interested both in public monuments and in the local material culture. Materials, architectural elements and construction techniques are traditional: masonry with mud bricks; plaster made with earth mixed with straw, finishing with polychrome brushed painted; slab-load bearing wood beams, intrados in wattle, plastered and painted; flooring and cladding elements made in fired clay.

In this area there is also a palm grove, located east of the temple, which could connect to the Sphinxes Alley, at least visually with appropriate movements of the ground (Fig. 7).

To the west, the wall of the monumental complex, made in adobe, make the place particularly attractive.

Some of these buildings and urban spaces, in case of a conservation compatible with archaeological and urban needs, could be rehabilitated and involved in the tour. For example, a small building used as a neighborhood centre located in the



Fig. 1 Views of the Sphinxes Avenue, 2009



Fig. 2 During the excavation works and the foundations of the found Sphinxes

green square with typical adobe building, next to the west wall of the complex of Karnak (Fig. 8).

This building, dating back to 1917 and existing at time of survey campaign, could be restored with modern and well proved adobe conservation techniques and, while maintaining the current destination, be open to visitors who will find here the local culture and, perhaps, a refreshment area with traditional products.

The aim of this project is to preserve these important proofs of traditional architecture in adobe and make them protagonists of an urban regeneration process useful to archaeological heritage.

The building becomes a Folk house to support, on the one hand, a new kind of relationship between local people and tourist based on showing of traditional ways of life, while on the other to improve social opportunities of meeting for local people. The project shows what kind of interventions the existing building needs in order to become a new urban reference and a social focus point (Fig. 9).

Preservation interventions, a needed premise for the enhancement of this kind of traditional architecture and change in use, are referred to the state of conservation surveyed and investigated at the time of the in situ research; the operations described as follows are indicative and need a preliminary and detailed diagnostic



Fig. 3 Children walk through the Sphinxes Avenue back from school, 2009



Fig. 4 Views of the village near Karnak temple, 2009

phase before become executive. The green square in front of this building could be upgraded both for tourists and for the population. Besides, in this building, as in another made with the same technique, could be hosted a small information center on adobe building modernization and restoration techniques. The restoration of the stretch of Alley excavated in the early decades of the twentieth century, the arrangement of a public park, the recovery of some traditional buildings in this area south west of the fence of Karnak, could become an alternative access for the main



Fig. 5 Open spaces in the village, 2009



Fig. 6 Handcraft area in the village, 2009

archaeological site to that of busses, used, for example, from visitors in non-organized groups (pedestrians, carriages, bicycles). These kinds of tourist are probably also interested in create a contact with the local population and with its traditions and way of life. This small (but important for the new models of sustainable and compatible tourism increasingly spreading worldwide) flow of visitors may also provide a modest entry of money for the people of Luxor that, perhaps organized in “Cooperation”, could offer food and quality craft products, far from the large-scale trade that does not protect in any way the identity of the sites.



Fig. 7 Palm grove near Karnak temple. Space for relax and restoring (graphic simulation)

These works could be financed by N.G.O. in form of “microcredit” or with cooperation project.

2.2 Notes About Conservation State of the Sphinx System

The knowledge project of the Sphinxes road as a system and as singular elements is the necessary premise to intervene punctually and efficiently over an archaeological heritage that it is not subjected to any systematic maintenance or conservation intervention, although it is subjected by the natural process of decay.

Another characterising aspect of this archaeological site is the presence of inhabitants. The entire dig road crosses the core of the city, creating two diverse



Fig. 8 Folk house: façade before (2009) and after conservation works (graphic simulation)

conformations. In the proximity of Luxor temple, the settlements are few meters below the road and city level, thus reducing the spontaneous pressure of inhabitants; instead, nearby Karnak temple the situation is extremely different (Fig. 10).

At time of survey the rural village is at the same level of the road and often the few evidences of this archaeological heritage, although sometimes not recognizable and extremely fragmented, are used and lived daily in an unstructured way by the inhabitants (e.g. becoming the scenography setting for children's play, support for bicycles or carts...) (Figs. 11 and 12).

If this situation is potentially more dangerous for the conservation of archaeological heritage, the continuity of the archaeological dimension with the urban one is extremely interesting and might become an opportunity, if properly managed, to generate a process of valorisation of existing archaeological, architectural and rural heritage.

The willingness to define a knowledge process of the road "system" in its entirety, without ignoring its complexity (every sphinx came us in different conservation state and completeness) has required the creation of a GIS (Geographic Information System), to locate the geographical forms, to be compared and combines different types of information (textual, numerical and iconographic).

GIS becomes also a useful tool to plan preservation interventions on the sphinx, in terms of intervention priorities or/and modality.

Concerning the "Avenue of the Sphinxes" near Karnak, set inside the rural village, it has been studied a survey of archaeological structures.

The database contained in the GIS for these items has been completed for a sample area, but designed to be upgraded in situ by the archaeologists and extended to all the sphinxes already excavated.

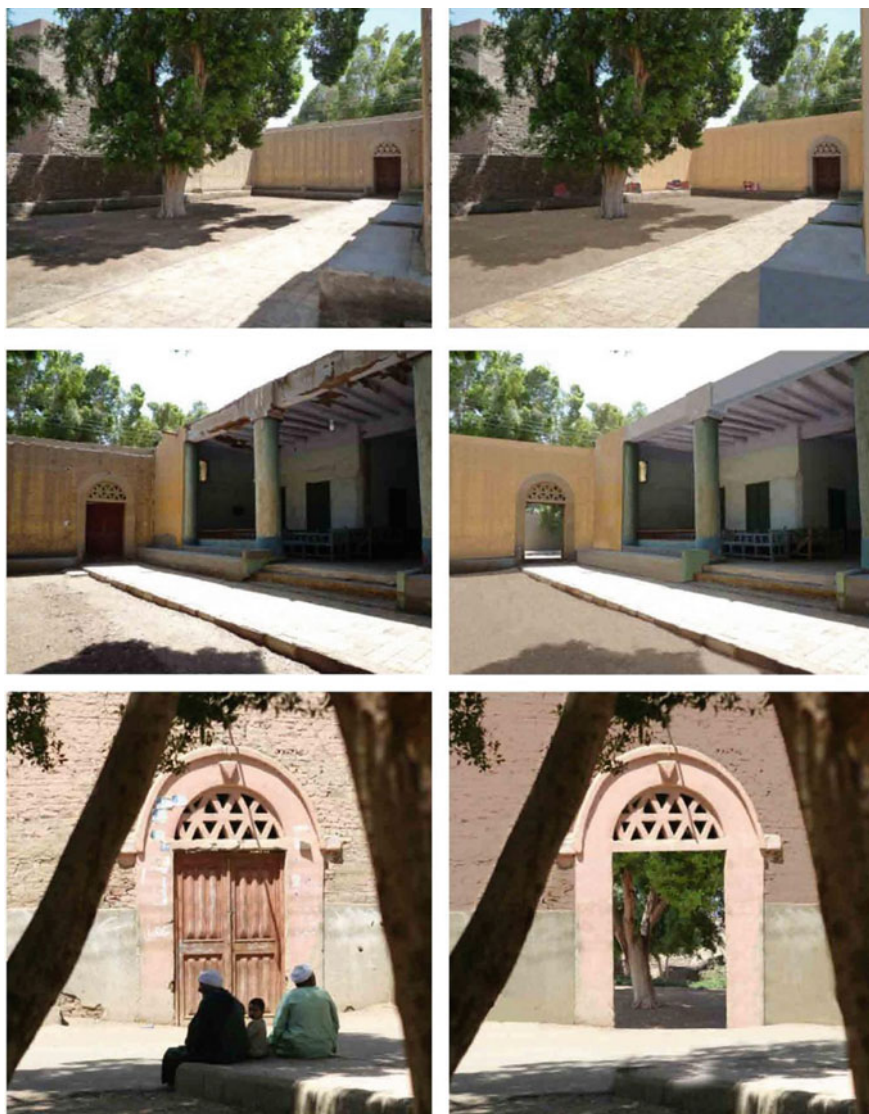


Fig. 9 Folk house: some views before (2009) and after conservation works (graphic simulation)

The information gathered in situ through the phase of direct survey (visual, photographic and using measurement tools) reference to two specific aspects of this archaeological heritage: the state of consistency and the one of preservation.

All the information have been inserted in the GIS database and subsequently elaborated through thematic maps (see Rosamaria Rombolà "The GIS for Urban



Fig. 10 The rural village at the same level of the Sphinxes Avenue, 2009



Fig. 11 The Sphinxes into the rural village, 2009

Analysis and Risk map of archaeological site: the case of Sphinxes Avenue in Luxor”).

From the methodological perspective, it was necessary to define synthetic categories able to explain the complexity of the heritage under investigation, without punctually reading its characters: this is an appropriate *modus operandi*, referred to the specific data to investigate and its different manifestations in situ.

Regarding the state of consistency, namely the parts effectively still existing of the single Sphinx and their morphological recognisability (not an abstraction of the



Fig. 12 Sphinxes become the setting for children's games, 2009

architectural-sculptural element of the sphinx, but a punctual lecture of existing heritage and of its consistency), seven principal categories have been defined that, if necessary, can be combined one to the other. Sphinxes can be considered as a system composed by a basement and an anthropomorphic body; starting from the most fragmented and incomplete situation under the morphological perspective until the complete form (basement and body) the categories defined and then inserted in GIS database are: significant tracks no longer recognizable; tracks no longer morphologically recognizable; tracks hardly recognizable; tracks basement; basement; partial body; complete body.

A part from the important information related to the completeness of the evidence is necessary to individuate its state of conservation, in order to program preservation interventions efficient and punctual over the archaeological heritage of the Sphinxes.

Specifically, during the investigation conducted at time of survey over the sector of the road nearby Karnak temple decays and structural issues have been identified.

Four different categories have been individuated, from the less to the most severe:

- alteration of the visual aspect and color: discoloration, chromatic alteration, stain, patina;
- deposition or formation of new materials: biological crust and climbing plants, crust, deposit, efflorescence, encrustation, film, soiling;
- loss of stone material: missing part, erosion, perforation;

- loss of mechanical strength: crack, deformation, fragmentation, splitting, loss sealing, break out.

For each category have been identified four levels related to the presence and diffusion of decay phenomena (absence, low, average and high) (Fig. 13).

In order to define a knowledge process that can have also an operative character, numeric coefficients have been associated to each abovementioned decay category, which represents also in quantitative terms the priorities of intervention (Fig. 14).

Methodically, the choice was to associate low numerical coefficients for less serious degradation to high values in more graceful situations requiring urgent intervention. It is important to define this quantitative element to outline modalities and timing related to more risky situations, as it is necessary in the eventuality of an effective intervention of preservation over archaeological evidences, in terms of gravity and extension (localized or diffused) of surveyed decay phenomena.

The abovementioned modality of knowledge, reading and interpretation of the state of the arts during the survey has allowed to give a synthetic judgment over the Sphinxes road, analyzing the system in its complexity and individuating the main peculiarities.

The research has proposed a methodological approach specific and punctual: two phases are defined (safety and diagnostic), which are the premise for every punctual intervention over the Sphinxes, and a pilot preservation project.

For what concerns the safety procedures of this archaeological heritage, starting from the existing situation as surveyed in the on-situ investigations, have been recognized as urgent the following operations:

- General cleaning and presence of waste material. The system of the Sphinxes, as already mentioned, is structured in an urban context extremely populated: the problem of waste, which characterizes the entire city, interests also the road that becomes the privilege place of abandonment of object and materials not in use anymore. The removal of waste is clearly the first operation that demonstrates respect and awareness of the collective value of this archaeological heritage;
- Driveway: production of new pavement and connection with the level of Sphinxes. It is necessary to define a new level (paved or not) in correspondence with the road in order to reduce, on the one hand, the rising damp from soil to Sphinxes (especially in case of traces or absence of basement) while, on the other, to manage the system of collection and removal of rain that will spontaneously deposit, therefore activating decay processes that set at risk the subsistence of materials (rising damp, disaggregation, powdering...);
- Classification, collection and recovery of the fragments located on the ground. Nearby the Sphinxes, especially in the portion that crosses the rural village beside Karnak temple, stone fragments that in time detached and fallen to the ground are now in complete abandonment. These evidences, although are incomplete and fragile, are a heritage to discover and preserve. An accurate photographic and geometrical survey, together with fact-sheet documentation and the choose of an intervention strategy to assure material conservation

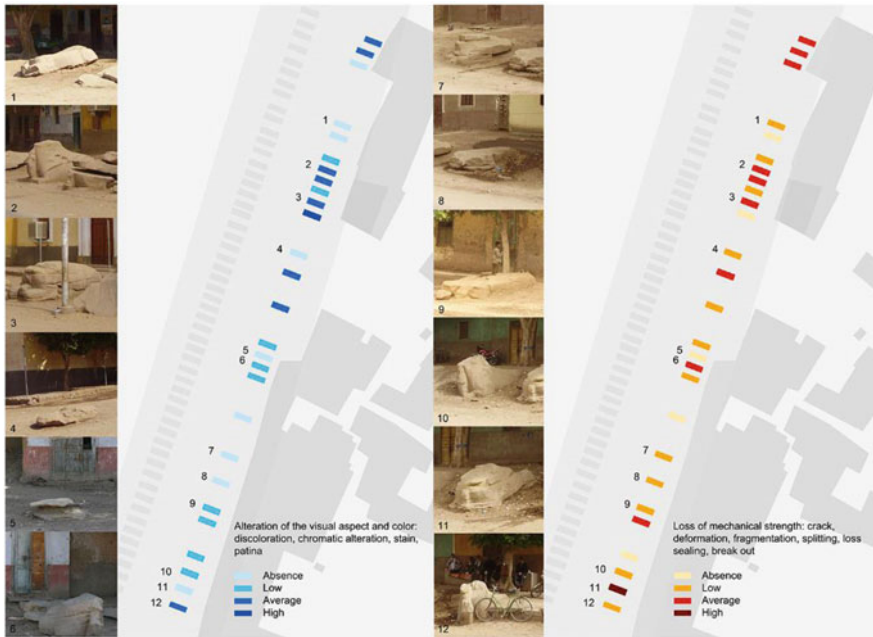


Fig. 13 Severity levels of decay phenomena. Examples for “alteration of the visual aspect and color” and “loss of mechanical strength”



STATE OF CONSISTENCY		
Partial body		
STATE OF CONSERVATION		
TYPE OF DISEASE	LEVEL	COEFFICIENT
Alteration of the visual aspect	1	0,2
Deposition or formation of new materials	1	0,3
Loss of material stone	2	0,6
Loss of mechanical strength	1	1

Fig. 14 Examples of cataloging of Sphinxes

(in situ, ensuring the protection from misappropriation, or in archaeological deposits);

- Generalized dry cleaning with small hand tools (rags, brushes, paint brushes) and low pressure airless: this action allows the removal of all the incoherent deposits that at the moment do not represent a worsening of conservation state, but if not removed can transform in decay products that might change physical-chemical and mechanical composition of stone materials;
- Temporary seals to reduce the ongoing deterioration (erosion, fracture, loss...), provisional interventions to reduce damages caused by severe decay phenomena, before a punctual intervention of conservation.

After the first phase of safety procedures of this archaeological heritage at risk, a diagnostic activity must follow. The objective, in the different actions listed, is to develop a framework of knowledge regarding the state of the arts the more complete and detailed possible, referring not only to chemical, physical and mechanical characteristics of stone materials that compose the Sphinxes, but also to natural and artificial elements of the context. Only a profound knowledge of the reality investigated allows the definition of an effective and aware intervention.

In the specific case of the Avenue of the Sphinxes a check of ground-water level and of the presence of dissolved salts represents a priority. The presence of water in stone materials is potentially a hazardous agent that triggers significant decay processes. Understanding the level of ground water and its seasonal growth represents an important information to quantify the phenomenon of rising damp from the ground, and to define adequate strategies to reduce negative effects. Not only the quantity of water, but also its composition is a necessary factor to complete the framework of knowledge: the presence and chemical composition of soluble salts is in fact an hazard element that allows the formation of efflorescence (crypto or sub) extremely dangerous for material conservation.

To understand the effective consistency of archaeological heritage, that might be partially covered and protected by soil, the use of geo-radar is recommended. This technique is not destructive and is able to identify material discontinuities underground. This phase would therefore be preliminary in order to start, if necessary, localized excavations. If these two diagnostic phases are referred to the system of Sphinxes and are necessary to understand some specific characters of this heritage, the subsequent ones are strictly related to single Sphinx.

Analysis of lithic-type for recognition of chemical and physical characteristics and the consequent choice of techniques and products to be used in intervention for preservation are fundamental: through samples gained in situ, choosing properly the position in order to reduce at maximum the external obstacle elements and the specific lab analysis both, it is possible to understand precisely the chemical and physical peculiarities of the material, important information in the decision of techniques and products for the intervention of conservation. That being so, these are not theoretically but practically adequate and efficient to the investigated case.

The last step of diagnostic process is the survey and mapping of disease and ongoing degradation. In this phase, the results of precedent phases are interpreted

and set in relation, in order to understand in the most correct way the state of the arts and its complexity.

Through a detailed direct and photographic investigation are surveyed, localized and then turned in drawing the material and structural decays, individuating the causes.

Following the safety procedures and diagnostics phase the pilot project has been defined.

As case study was chosen a specific Sphinx that, at the time of the survey, was significant for its consistency and the decay phenomena present (Figs. 15 and 16). The preservation project indicates precisely the technical operations (cleaning, strengthening and protection) and the specific execution modalities. Thus, the project was an important occasion to test in situ the validity of aforementioned operations.

The objective is to define all those useful and necessary actions to reduce decay phenomena that would set at risk the subsistence of stone materials, which compose this archaeological heritage. The preservation project indicates punctual interventions over causes that trigger decay phenomena: to not recognize and so, not intervene over external risk and acceleration of decay factors of materials would make the intervention not useful and partial.

The objective of the intervention is essentially to preserve the material consistency of Sphinxes: to remove all the deposits caused by chemical alteration processes of the existing material (e.g. crusts, soiling...); to consolidate materials subjected to breakage or consumption (e.g. erosion, disaggregation, powdering...) so that their consistency can be reinstated (superficial or deep, basing on specific situations); to apply products able to protect materials from natural decay causes (water, wind, sunlight...).

Therefore, the preservation project aims to slow down natural decay processes of material, not to stop them. The project will then be followed by a maintenance programme able to indicate, in specific time and modalities, the operations to carry on in order to permit conservation and transmission of archaeological heritage to future generations.

In the pilot project the operations, which localization and extension are indicated on a three-dimensional base, are the following:

- Cleaning: dry or with laser equipment. The proposal of two techniques (tools, product and manpower different one to the other) will allow—if the intervention would be realized—to test the different results in terms of efficiency and costs, permitting to choose the most adapt modalities in regards of the needs;
- In case of presence of efflorescence and crypto-efflorescence (see results diagnostic phase) testing of packs for the extraction of soluble salts (ammonium salts, ion exchange resins) to choose the most efficient and less invasive one for existing material;
- Sealing: testing of products to fill the gaps in order to restore a uniform surface and less attack from water and atmospheric agents. Testing of products for use in depth and surface;

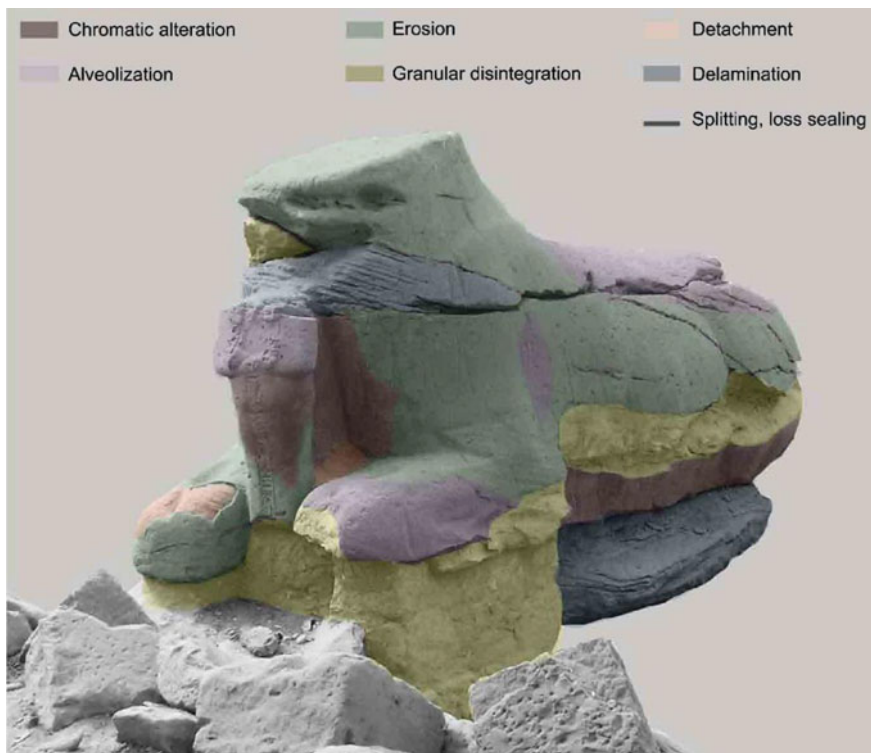


Fig. 15 Case study Sphinx: diagnostic phase

- Consolidation: consolidating testing of products and methods of application (leaching, spray, brush). The choice of product will be a direct result of information obtained during the diagnostic phase (for example ethyl ester, acrylic resin);
- Protection: testing of protective products and methods of application (leaching, spray, brush). The choice of product will be a direct result of information obtained during the diagnostic phase (for example silicone resins, mixtures of acrylic and silicone resins).

3 Final Remarks

The research project described has allowed to conduct some important experiences in the field of international cooperation for the safeguard of cultural heritage.

Firstly, it has permitted to analyse in detail the state of conservation of an important witness of the past as the Sphinxes characterising the Avenue are, being it

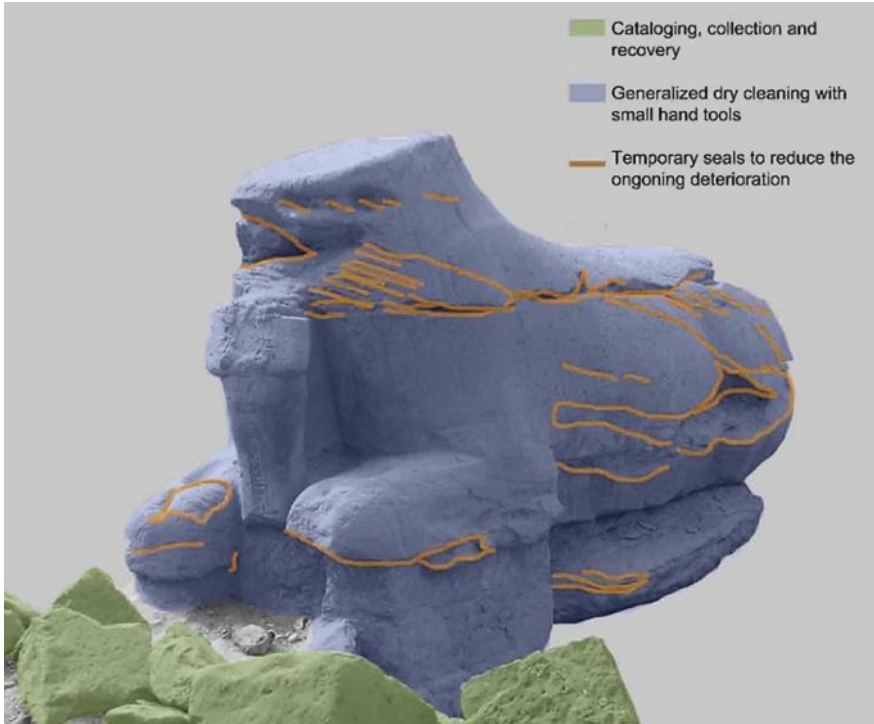


Fig. 16 Case study Sphinx: put in safety procedures

the evidences discovered during excavation or the one already known connected directly to the road level both.

The presented results concerning the state of conservation and intervention hypothesis constitute first and provisional indications that have to be supported by a process of analysis and lab test in situ. Thus, this action should be done to verify the consistency of decay phenomena and to experiment intervention techniques in an environment severely under anthropic and weather conditions pressure.

What the research aimed to demonstrate is the validity of the proposed methodology that is based on accurate studies and intervention hypothesis not decided on field, but designed on the base of a preliminary knowledge project.

Another important result of the research was to confront valorisation policies regarding archaeological areas and, more in general, of cultural heritage, in a context different from the one which we are used to, and that represents the knowledge reference of the author.

The relationship between archaeology and city assumes in Luxor theoretical principles and intervention practices different from the ones covered by actual European positions. For this reason, they must be read and analysed in the reference Egyptian scenario, in order to be fully understood. The lesson learned in this case is

related to the capability of interpreting a context without preconceptions, so as to understand and sustain our positions and knowledge, proposing them to colleagues from another country.

Similar considerations might be done over the theme of touristic valorisation and regarding the different ways to interpret which are the needs and requirements of tourists, and how much those have to set a relationship with the necessities of the community. Sustainable tourism is a gradual process that must be guided by local stakeholders and therefore requires a great awareness from the population about the dual occasion that it offers: to enhance living conditions and increase at the same time visit experiences, improving so tourism flows and touristic fruition of the site.

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Advice

The article is the result of the joint discussion of all authors; the individual parts have been edited as follows: Mariacristina Giambruno is responsible in particular of the Sects. 1.1, 2.1 and 3; Rossana Gabaglio of the Sects. 1.2, 1.3 and 2.2.

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The GIS for Urban Analysis and Risk Map of Archaeological Site: The Case of Sphinxes Avenue in Luxor

Rosa Maria Rombolà

Abstract Through the description of the Geographic Information System (GIS) created for preservation and enhancement of Sphinxes Avenue in Luxor, the paper wants to demonstrate how the use of new technologies is necessary to improve the process for the preservation of cultural heritage. Specifically, the contribute underlines the importance given to the “Risk map of archaeological heritage” as a need tool in order to curb archaeological damage and losses, as well as to estimate expenses of each project. Starting from this introduction, the use of a GIS platform can create an information management system where data, concerning pathology and state of conservation of cultural heritage, are recorded, correlated, distributed in the space on real geographic coordinates, during different time periods, contributing decisively to improve planning of preservation interventions.

1 Introduction

This study is part of the wider research of the Politecnico di Milano, which in 2009 proposed the project: “The development of monumental and visual values the Sphinxes Alley—Luxor”. A multidisciplinary team of experts in the architectural project and restoration heritage and landscape analysed the city of Luxor. The city is famous for UNESCO Site “Ancient Thebes with its Necropolis”. The team focussed the attention on the Avenue of Sphinxes; it was the processional avenue, which connected the two temples of Karnak and Luxor. The project aimed to identify a strategic vision for the management of this complex system.

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This part of the research investigated the potential of the Geographic Information System (GIS) for knowledge, preservation and management of widespread heritage and archaeological sites as well as for the rehabilitation and urban development of the historic centre.¹

The GIS allows us to associate the cartographic base with a database and as such, by selecting an architectural element on the map (on real geographic coordinate), it is possible to access specific information (texts, photos, drawings, etc.) and to constantly update them. The use of software GIS aims to localization of buildings, for to control the decay progress and to improve planning of intervention priorities.

The first part of the research focussed over the elaboration of a GIS for preservation and enhancement of historical—cultural buildings and urban spaces, around of the Sphinxes Avenue. The second part involved an area inside the Core Zone area UNESCO of Karnak Temple. The GIS was used to representation of sphinxes decay and in parallel for control of preservation intervention. This method allows us to process the “Risk map archaeological heritage”, which intend to define the steps needed in the research, preservation and restoration of each sphinx.

2 The GIS for Analysis, Monitoring and Interventions for Cultural Heritage in Luxor

For centuries, Luxor was a relatively small Pharaonic settlement clustered around the two major temples, Luxor and Karnak with largely a rural fabric surrounding the city. The “*Kebash Avenue*” (Fig. 1) was the processional avenue that connected the two temples.²

The archaeological heritage of Luxor is being threatened by urban development. As city constructions expand, the need for preservation and maintenance of urban archaeological heritage becomes steadily more urgent. In the past, urban growth has always been contained of the River Nile on the West and of the railroad tracks on the East. Recently, the city is expanding in the East direction and arable land was lost. A slightly slower growth has been heading in the North direction, increasing the constant threat of encroachment rural, unauthorized settlements on the antiquity sites surrounding Karnak Temple and adjacent arable lands. In the South, Luxor city grows, the new urban development are swelling up arable land and villages (Fig. 2).

¹In 2009, the research group that participated at the investigation consisted of M. Boriani, R. Gabaglio, M. Giambruno, R. M. Rombolà, F. Zangheri.

²During the Opet festival, statues of the gods of the Theban Triad Amun, Khonsu and Mut were accompanied in a joyous procession down the Avenue from the Karnak Temple to the Luxor Temple.



Fig. 1 Sphinxes Avenue towards temple of Luxor



Fig. 2 Arable land and villages around the city

In this part, the research refers the creation of a specialized GIS, which includes a great range information for interpretation, monitoring, visualization and evaluation of urban data around of Sphinxes Avenue in Luxor. GIS is a tool for monitoring and analysis that can be very useful for evaluation and planning of interventions in historic centres, where usually add up complex and very different problems, protection of historical and architectural values, conservation needs,

functional needs, socioeconomic conditions. The widespread heritage of Luxor is certainly emblematic in this sense because it is characterized by socio-economic, functional and conservative conditions very problematic.

The work has been carried out in the following steps:

- Census and survey of building characterized by significant artistic, historical, constructive values.
- Census and survey of urban open spaces.
- Census and analysis of landscape.
- Cataloguing and geo-referencing of the elements types in a geodatabase.

The project has been developed with software the ArcMap/ArcInfo, while the design of the GIS has been based on a digital map (Cartographic database) and information concerning the items included within the digital map (Thematic database).

Thematic databases have included monuments protect, interesting buildings to be safeguard, museums, mosques, churches, libraries, cemetery, urban parks and green spaces. Moreover, the urban analysis have located accessibility and infrastructure services (railway station, railway lines, roads and traffic routes) and services for tourists (hotels, commercial venues) (Fig. 3).

The GIS is also a monitoring instrument used to identify key threats early on, thus allowing the establishment of necessary remedial measures before the damage becomes too great. The tourism industry is comprised of different goods and

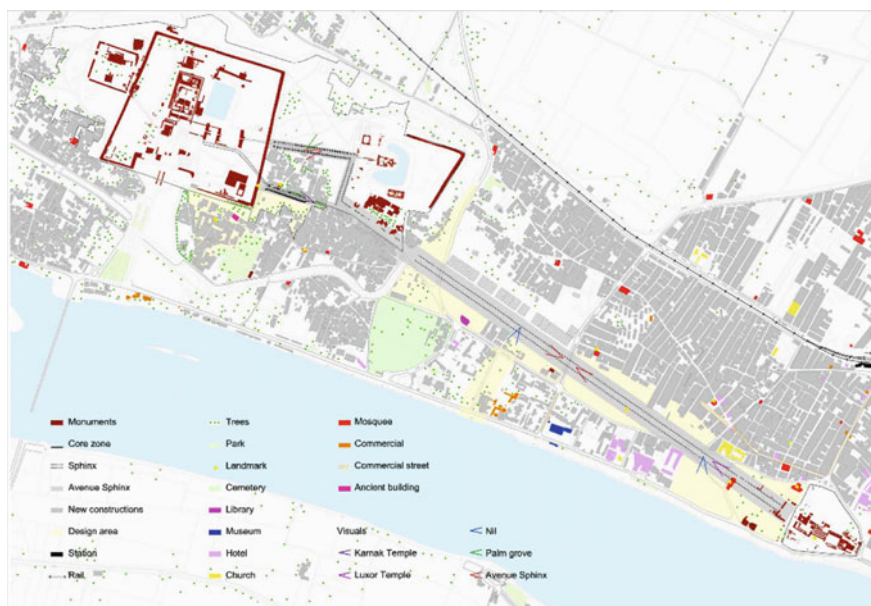


Fig. 3 The map represents cultural heritage and aggregation services around Sphixes Avenue in Luxor



Fig. 4 House in Luxor around Sphinxes Avenue

services sectors (transportation, accommodations, restaurants, crafts and other local products) whose management affects the landscape and people's quality of life. The concept of "Sustainable Tourism" has been developed to respond to these problems and this model's approach is thoughtful of the protection of resources, the promotion of real economic benefits for local people and respects socio-cultural characteristics of the object at hand.³

The analysis has shown that a lot houses along the Avenue of the Sphinxes have been destroyed without an objective assessment of significance and many neighbourhood's physical and socio-cultural elements are degraded (Fig. 4).

The GIS allows us to display different information and produce maps for each theme. This mapping method helps us identify the problems and critical situations as well as the opportunities and potential of the city. In addition, the localization of architectures on the map allow us creating networks of pathways to allow connecting the various places.

Another important application of GIS is the study of landscape and analysis of panoramic scenes. Relationships with the landscape can be created opening visual

³The UNESCO considers Cultural Heritage and "Sustainable Tourism" as important assets for the protection of resources and the development of local communities, especially in developing countries.

perspectives and a network of connections that enhance the perception of resources and their relations with the territory.

The usual method for using GIS to interpret scenic landscapes is through individuation of “visuals” to be protected. The research has defined Landmark (Fig. 5) and visual or panoramic views (Figs. 6, 7 and 8). The first one is a built or a place that is easily recognized, especially what you can use to judge where you are.



Fig. 5 Landmark along Sphinxes Avenue

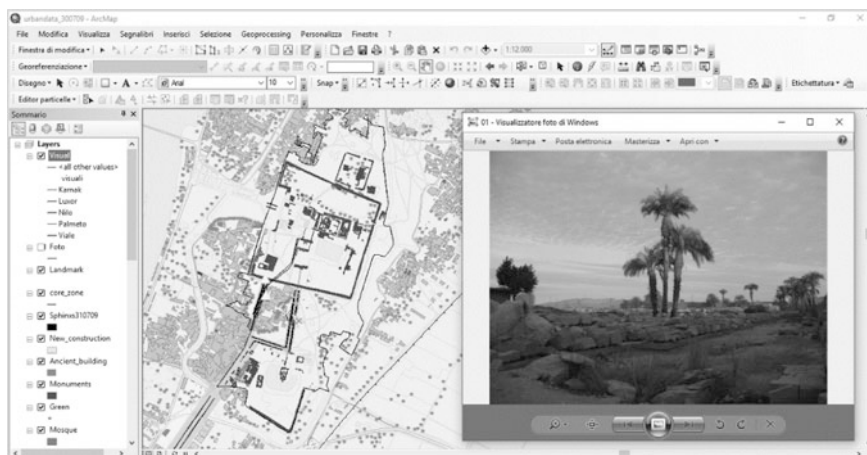


Fig. 6 Location of the panoramic views on the map

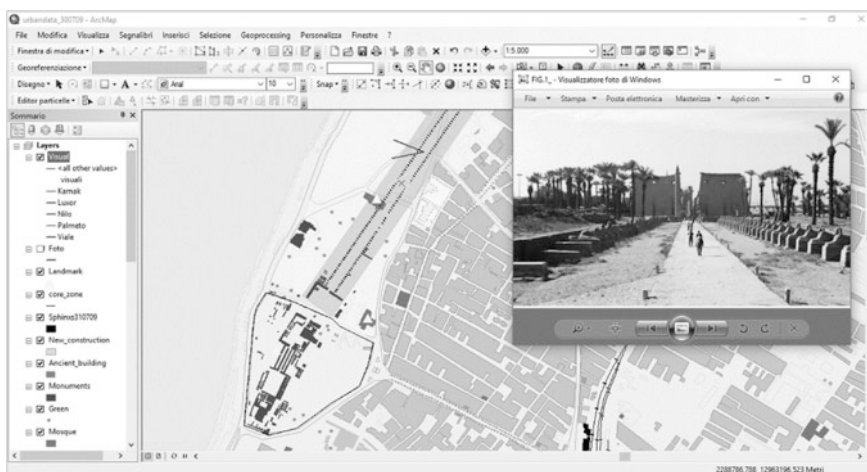


Fig. 7 Location of the monument on the map and selecting of the information

The visual or panoramic views can be used to generate height control zone for urban heritage conservation and renewal.

The placing of monuments on cartographic productions allows us to identify the relationship that the monument has with the surrounding area.

Often the monuments are in very indicative contexts and they have a symbiotic relationship with the landscape, which becomes the theme of the conservation project. In other cases, this relationship can be threatened by development processes (construction of roads and buildings). In such cases, knowing the monument's location becomes essential to guiding the development processes that should be



Fig. 8 Panoramic views towards the temple of Karnak

duly addressed and planned. The research proposed to protect a series of visual or panoramic views towards the Temples of Karnak and Luxor, towards green area on the east side of the Karnak Temple, it is a natural palm that establishes a particular anchorage point in the surrounding landscape and towards the river Nile.

The investigation has shown how the need of a preservation strategy for ancient city and landscape is urgent. The change of soil use and the urbanization threaten the cultural heritage and the risk could reach a critical point.

3 The Risk Map of the Sphinxes Inside Core Zone Area UNESCO of Karnak Temple

The centuries since the Pharaonic period have buried this processional avenue and its statues under nearly two metres of silt and sand. Over a period of nearly 50 years, portions of the *Kebash Avenue* have been excavated, revealing remnants of the sphinxes and the avenue.

Ahmed Assem, Head of Luxor Antiquities Council points out that the Sphinxes Avenue has been divided into three main areas: the first section starts form North of Luxor Temple to “*El-Khaledeen garden*”, where the bases of several statues have



Fig. 9 Sphinxes Avenue inside core zone area UNESCO of Karnak Temple

been discovered recently. The second section, South Karnak Temple, has a number of excavated statues. The third section, the middle section, is considered the most complicated portion as the route crosses through high density of residential, governmental and religious buildings.⁴

The research has been focussed on the second section, inside Core Zone area UNESCO of Karnak Temple (Fig. 9). In this part, GIS modelling and analysis operations can be used as a methodological tool for to representation of sphinxes decay and in parallel for to control preservation interventions.

Risk map of archaeological heritage provides the framework for this management in order to curb archaeological damage and losses, as well as to estimate expenses. Specifically, the risk map intends to define the steps needed in the research, preservation and enhancement of the sphinxes. This requires a detailed inventory and analysis of the sphinxes.

The underpinning references of this project have been: the UNESCO Site Management Plan and “The Cultural Heritage Risk Map” produced by the Italian Ministry of Cultural Heritage, which is based on building a Geographic Information System aimed at the protection, conservation and enhancement of architectural monuments. The “Risk Map” considers the “risk of loss of cultural heritage” as a criterion for the identification of priority actions. It recognizes the monument’s geographical location as a key factor in protection and conservation planning.

The UNESCO Site Management Plan outlines measures to ensure the long-term conservation of the site and examines the ways in which its value can increase for the benefit of residents.

⁴Shetawy and Dief-Allah (2006).

The work has been carried out in the following steps for each sphinx:

- Cataloguing and geo-referencing in a geodatabase.
- Evolution state of consistency and decay (shape, dimensions, physical characteristics).
- Evolution of the state of conservation (absence, low, average, high or ruin).
- Calculation of priority intervention.

The design of the database is one of the most important phases of a GIS conservation methodology. In particular, this methodology uses the GIS ability to record, group, manage and analyse of spatially referenced and associated attribute data. In particular, several information have been inserted, such as: consistency, decay and state of conservation (Fig. 10). For these themes GIS has been utilized for developing thematic maps, where different characteristics have been represented by a different layer and have been displayed by a different colour. Afterwards, a qualitative and quantitative analysis has been carried out in a GIS, producing map of decay and priority intervention.

This method is needed to avoid that the restorations is based on spontaneous reactions, interventions only to restore some parts of the statue that were obviously deteriorated, while the origin and causes of this deterioration were not well identified. The information insert in the GIS is based on the survey realized on the field-work. The first data documents the state of consistency of the sphinxes; it is consider the actual shape, dimensions and location.

The sculptured surface of the sphinxes presents different conditions, which survey results has indicated different physical characteristics, which have been classified in the seven classes: A—Significant tracks no longer recognizable; B—Tracks no longer morphologically recognizable; C—Tracks hardly recognizable; D—Tracks basement; E—Basement; F—Partial body; G—Complete body (Figs. 11 and 12).

The second data evidences that the sphinxes have suffered different types of degradation and/or deterioration. Sources of such decay can be classified as nature, time, and man—made. The survey has identified that the sphinxes show: A: Alteration of the visual aspect and colour; B: Deposition or formation of new materials. C: Loss of stone material. D: Loss of mechanical strength.

ID	DISCOLORATION	DEPOSIT	LOSS MATERIAL	LOSS MECHANICAL	A	B	C	D	E	F	G	CONSISTENCY	STATE OF CONSERVATION	PRIORITY
180	0	2	1	1	0	1	0	0	0	0	0	C	0,021	2,2
181	0	2	0	0	0	1	0	0	0	0	0	B	0,030	1,8
182	2	2	2	2	0	0	1	0	0	0	0	C	2,222	4,2
183	2	2	2	2	0	1	0	0	0	0	0	B	2,222	4,2
184	1	2	1	1	0	1	0	0	0	0	0	B	1,121	2,7
185	2	2	2	2	0	0	1	0	0	0	0	C	2,222	4,2
186	3	2	1	0	0	1	0	0	0	0	0	B	3,210	1,8
187	0	1	3	1	0	1	0	0	0	0	0	B	0,131	3,1
188	1	2	1	1	0	1	0	0	0	0	0	B	1,121	2,7
189	0	1	1	0	0	1	0	0	0	0	0	B	0,110	0,9
196	1	2	2	1	0	1	0	0	0	0	0	B	1,121	2,7
197	2	2	2	2	0	0	0	0	0	1	0	F	2,222	4,2
198	2	2	2	2	0	0	0	0	0	1	0	F	2,221	3,2
199	1	2	2	2	0	0	0	0	0	1	0	F	1,222	4,0
200	1	2	2	1	0	1	0	0	0	0	0	B	1,121	2,7
844	0	1	3	2	0	1	0	0	0	0	0	B	0,131	4,1
845	2	2	3	2	0	1	0	0	0	0	0	B	2,232	4,8
846	2	2	3	2	0	1	0	0	0	0	0	B	2,232	4,8

Fig. 10 Database with attribute data: consistency, decay, state of conservation and intervention priorities

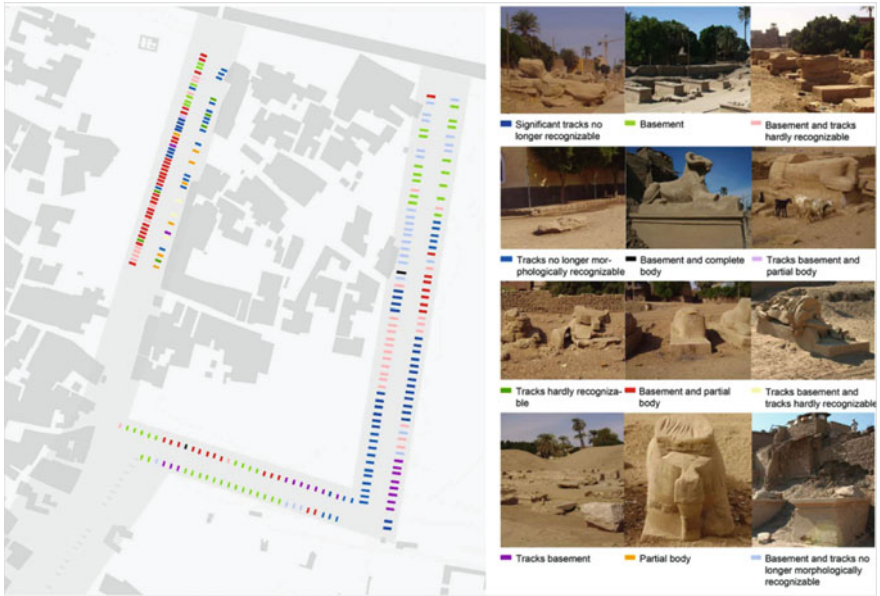


Fig. 11 The map represents the state of consistency of the sphinxes

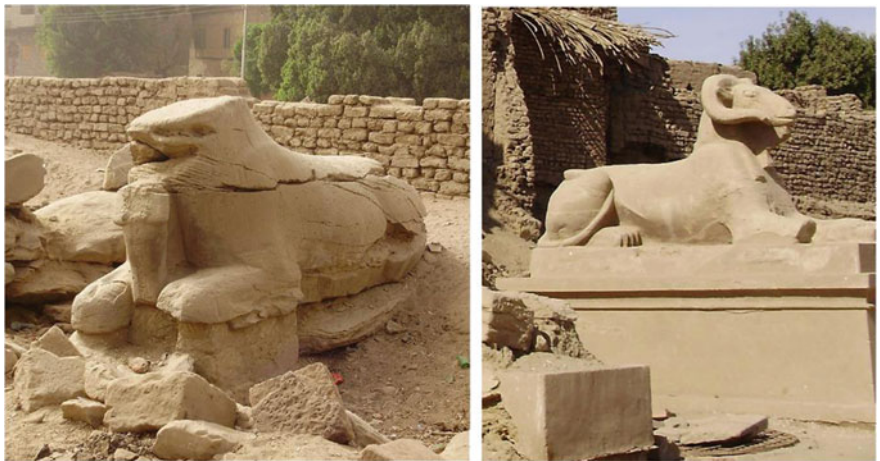


Fig. 12 The sculptured surface of the sphinxes presents different conditions

The degradation of materials and structures is mainly due to deterioration caused by structural instability, weathering, pollution, and anthropogenic damage.

The state of conservation of each sphinx depends on intrinsic variables. It has been calculated assessing the presence of each degradation in each sphinx. The database included the decay indicators: alteration of the visual aspect and colour,



Fig. 13 Sphinxes with severe damage

deposition or formation of new materials, loss of stone material and loss mechanical and for each decay has been quantified and evaluated the damage. Four damage categories have been defined: 0—no visible damage, 1 (low)—slight damage, 2 (medium)—moderate damage, 3 (high)—severe damage. Based on these values, degrades were evaluated separately for each sphinx and for each pathology. In the next phase, the state of conservation of the sphinxes has been evaluated by considering all types of degradation together and multiplying each value for a severity index: 0,2 for alteration of the visual aspect and colour; 0,3 for deposition or formation of new materials; 0,6 loss stone material; 1 for loss of mechanical.

The database contained in the GIS has been completed for a sample area of twenty-seven sphinxes but it can be designed and upgraded in situ by the archaeologists and extended to all the sphinxes already excavated.

The investigation has shown as many sphinxes have moderate or severe damage (Fig. 13). For example, on the twenty-seven sphinxes analysed all have the decay loss of material; five with severe damage, seventeen with moderate damage and five with slight damage. The opportunity to use the new technologies GIS allow us to identify the sphinxes have severe damage and to propose a “pilot project”, where to start the project of restoring of the Sphinx.⁵

⁵For more in-depth analysis about this part of the research, it is possible to consult the paper: R. Gabaglio and M. Giamb Bruno, *Beyond Ancient Egypt. Preservation and valorization of sphinxes roads in Luxor and its urban context.*

4 Conclusion

With the methodology outlined above, the risk map of sphinxes involves the use of large amounts of spatially referenced data, and requires the drawing of maps to represent graphically the data stored in the databases as well as the data derived from the different analyses made.

This requires a computerized system that can perform the following tasks:

- Acquisition and upgrade of alphanumeric data and images in the database.
- Management of great quantities of data and their spatial information.
- Mapping from alphanumeric data stored in the databases.
- Spatial analysis by multiple overlays and simulation.

The analysis of spatial information is not a new concept. In the past, geographers, cartographers, mathematicians analysed spatial relationships, overlaying cartographic bases and thematic lucid, these study can be considered a sort of first GIS. However, the new technologies are very useful to improve to control all of these tasks involved in developing the risk map.

This information system is a valuable tool to analyse the events and planning strategies since all the information available, from micro to macro scale are always readily accessible. The quality and potential of GIS are evident when it needs to check and compare different data, such as: incidence of the different factors in the processes of degradation of cultural heritage, different type of decay, effectiveness of the materials and techniques used in the restoration, verification of the costs of preservation.

The aim of this work was to provide a new tool to Luxor municipality, today not existent, not only for documentation and research but also for the management and planning for the preservation, revitalization and development Sphinxes Avenue. With the support of sphinxes heritage geo-referred database, for example, it is more simply set up a program of “planned preservation” for each sphinx.

In fact, through the interrogation of the database, the municipality could easily manage and implement all archived data.

Moreover, the database can be designed and upgraded in situ, the archaeologists can upgrade it while they are excavating. The increasing database would allow identifying of main causes of decay, to evaluate the state of conservation of each element and to plan maintenance interventions of the archaeological heritage, like in a “risk map”.

Reference

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Website

<http://www.cartadelrischio.it/> Ministero dei Beni e delle Attività Culturali e del Turismo, Carta del Rischio del Patrimonio Culturale.