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THE CHALLENGES OF SUSTAINABLE HISTORICAL CENTERS: THE CASE OF ROSETTE, EGYPT

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ABSTRACT

Historical centers of many Egyptian cities managed to survive as living cities in spite of physical decline and economic depression. Their fabric carries out cultural messages that communicate with their present citizens. The heritage of these historic city centers are not only Material character, but much more. Generally, the conservation of historic centers is fundamentally different from conservation of single monument. While a single monument can be kept on a chosen state of evolution, the historic centers cannot be preserved in particular state. The historic centers, as living cities must meet the varying needs of citizens with sustainable transformations. The challenge is not how to preserve, but how to create dynamic living places.

The research analyzes the historical center of "Rosetta", which is one of the intermediate cities in northern Egypt that has a particular architectural heritage and many urban problems. Rosetta (Rashid in Arabic) is best known for the Rosetta stone, which was discovered in the Qayitbay castle in 1799. The city history passed over many periods of increase and decrease in its importance due to economic and political reasons. Its architectural heritage reveals the influence of various ages, but the most unique are merchant houses and mosques from the ottoman period. The city also has a particular suburban landscape of agricultural land and palm groves that are of great importance. Although Rosetta is no longer a leading commercial center, its citizens are employed in various typical activities, which are mainly agriculture, stocking and processing rice from the Delta, fishing and building ships and yachts.

The main problem that faces the historic buildings of Rosetta is moisture from the soil, caused by an excess of underground salt water. The historic merchant houses have been the subject of many restoration projects over the past 20 years, but many of them have regularly been re-damaged by water and humidity and are currently under re-restoration. Rosetta's historic center future must include renovation and modernization of basic infrastructure and development of traditional production sectors. Physical restoration of the buildings is not enough to keep the historic center of the city alive, but a project for rehabilitation should be initiated. Not only to preserve and restore the monuments, but to insert some social and economic activities to the city center.

1. Introduction:

1.1. Historic urban city centers:

Historic urban centers are the nuclei of the cities in the Mediterranean zone; they are the focus of residential, economic and cultural activities, in dense built-up areas. They are the containers of major monuments and buildings of architectural and historic significance, and they reflect the identity of the city. The marked physical deterioration of these centers has greatly mitigated the identity of those cities. Therefore, they need a particular attention to survive under the waves of globalization.

In many cities, for the sake of progress, and fast modernization, buildings flourished in and around historic areas, without any link with the local cultural values and natural conditions. In these new hybrid environments, people cannot identify themselves and they have become strangers in their own localities. Townscapes should be preserved for their role in everyday life rather than for their artistic or historic value only. Therefore, the integration of cultural and economic activities in historic areas will contribute to their sustainability while strengthening their distinctiveness [16]. Adaptive reuse may be a major vehicle of sustainable development in

historic areas. This is because an appropriate functional usage in historic centers improves the maintenance of the area, delays its decay and maintains its life. Moreover, the restoration of the physical fabric alone cannot help conserve its meaning, but its usage and function that can withstand the various pressures of redevelopment. The continuous functioning of these areas makes them dynamic parts of the present urban environment [5].

The complexity of urban rehabilitation comes from its cultural, social, economic, technical and institutional tasks that need coordinated investments by the government, residents, owners and other stakeholders to ensure maintenance and careful substitution of the built environment elements. This depends not only on the availability of funding but also of the specific technical and social skills that form the traditional expertise. Unfortunately, many historic cities especially in Egypt suffer from lack of funding and local experience. In addition, the main problem is the lack of cooperation between the authorities that makes the decisions usually come from the central authority without considering the feedback [7].

One of the main factors that responsible for the decline of the historic city centers are the negative image of the historic districts that cause the immigration of former bourgeois from the old city to the modern urban extension, that make the historic centers as a Slum awaiting demolition. So that the conservation of the historic centers may aim to reverse this poor image by creating new opportunities to preserve and develop the traditional activities. The restoration of the monuments and heritage buildings is the first step but it must go in parallel with the development of local traditional resources of the community to enhance the quality of life in the historical centers. This integrated approach will create a sustainable conservation process (Fig. 1) shows the main elements of this process [4].

1.2. Conservation and Sustainability in the historic centers.

Conservation is a process involving the restoration of built heritage along with the cultural processes, which is fundamental for sustainable development. Urban conservation is about improving and upgrading life of people in historic areas and not just a matter of restoring bricks and mortar. Its central aim is to enhance the city's cultural identity and sense of place while not undermining its inhabitants' daily needs. Urban conservation policies are usually area based, through the designation of conservation areas. Conservation of an historic city center is not an isolated and individual project; it includes a series of projects, which are physical, social and cultural [5].

New developments in the social and technological field have their merits and contribute to the quality of present-day life. This is to stress that a marriage between conservation and development may be capable of sustaining and improving the quality of life in our historic cities. New developments should be rejected, only if they form a threat to the existing historic townscape. The main reasons to conserve urban heritage can be classified in two categories. First, urban heritage helps forge national identities, which enable people to define who they are and where they are. Secondly, urban heritage may have assumed economic importance, as people increasingly want to reuse their historic areas and buildings as resources for trade and tourism to increase their income. Urban conservation carries two main benefits with it: identity and utility, which refer respectively to conservation and development. A sense of identity needs to be enhanced to withstand the radical effects produced by rapid growth and change. Utility keeps the heritage resource sustainable by an adequate adaptive reuse program [13].

1.2.1. Sustainability in the historic context.

Heritage manifests human ingenuity and history. Heritage buildings cannot be reconstituted once they have been destroyed. Heritage management is an ongoing and dynamic process that balances conservation and change. Unfortunately, when it comes to "sustainability", heritage conservation has been ignored. Heritage conservation has a great potential to improve the quality of life, improve understanding of our past and its contribute to our culture [9].

The concept of sustainability is always associated with new buildings. Conservation and sustainability share the same generative basics. The first and basic concept of sustainability is to use what already exists. Similarly, the basic concept of conservation is to protect what we

already have. From the conceptual point of view, there is neither conflict nor contradiction between conservation and sustainability [19].

Conservation, as a tool for heritage management, is a key to sustainability. Heritage conservation is concerned with passing to future generations cultural values expressed through heritage items. The principles of sustainable development have always been central to heritage conservation and management. Managing heritage assets to ensure that they can be enjoyed by all, including future generations, means putting sustainability into practice [9].

The core concept of conservation is to maintain, preserve and protect both the tangible and intangible heritage. This resource is non-renewable and irreplaceable. A demolished building cannot be retrieved or recreated. This means that a part of history is permanently lost. A folkloric tradition or ritual is indispensable to the local culture. Therefore, heritage is perceived as a cultural resource that must be perceived in the same way as other non-renewable resources. From this basic notion, the core of conservation is to keep heritage protected and to hand it to future generations. Therefore, keeping historic buildings intact requires some sort of a sustainability process. According to (UNESCO) "heritage is our legacy from the past, what we live with today, and what we pass on to future generations" [19].

The concept of conservation avoids the unnecessary use of finite resources such as materials and fossil fuels, as well as the generation of waste and pollution. Heritage conservation can be considered an integral part of sustainable development in terms of [3]:

- The use of heritage buildings has environmental, social, and economic benefits, which are the three dimensions of sustainability.
- The rehabilitation of heritage buildings reduces waste and conserves energy:
  - Initial energy required to process, manufacture and transport building materials and construct buildings.
  - Energy required to maintain and repair the building.
  - Operating energy to heat, cool, ventilate or light the building.
  - Energy to demolish and dispose of the building.
- The social and cultural values of heritage buildings are non-renewable resources.

Heritage conservation can play an important role of sustainable urban development strategies of cities. Also, it can be included in strategies set for using renewable resources and savings of energy. Cultural heritage can also have the value to the well-being and quality of life to communities and can help prevent cultural globalization sustain cultural diversity and positively affect economic development [15].

1.2.2. Public participation and experts.

A number of Mediterranean cities and communes have decided to develop individual measures to further approach a sustainable development within cities. Public participation is vital, as the inhabitants are those best acquainted to the problems of the environment surrounding them. It is generally acknowledged that towns are living systems, involving social dynamics, technical and building networks and the presence of people living there. Historical evidence suggests that for their sound conservation they must be kept within sustainable development activity cycles. Concerning cultural heritage there has often been a time lag between expert judgments and public acceptance. The task of monument conservation bodies in the last half of the 20th century has been to defend also the unwanted and disliked part of the cultural heritage against elimination and disappearance. Today "Active conservation" has to express and take into account both the historical, long perspective, judgments of experts and public participation as well as powerful economic interests in exploiting the cultural heritage [14].

1.2.3. Managing historic city centers: the Bottom-Up Approach.

The main characteristics of the historic cities centers are the predominance of mixed-uses in historic core areas: housing intermingled with small shops, markets, workshops, and commerce, all with the human culture that accompanies them. Housing is the predominant building use in historic cities throughout the region. It is the use for which the majority of the buildings were

constructed and it remains the use for which they and the urban infrastructure are all best suited, housing is the starting point for their revitalization [19].

1.2.4. Managing change in the historic city centers.

Conservation should seek to manage change everywhere within the historic environment, as well as to protect the "best" parts. This is a particularly necessary perspective for the cultural landscape, which is a dynamic, living set of complex systems that must have room for change if part of its character is not to be lost. However, managing change should also be the objective for conserving sites and monuments. Places protected as "monuments" set aside from everyday life -and preserved for research, education, or tourism- will always be a minority. The majority of the historic environment is in everyday use, and this means accepting that a consequence of continued use is continued change. Continued use of the historic environment might mean putting buildings to new uses, or changing urban areas through regeneration, and so [12]. For the historic environment, not all or any change is acceptable, sustainability means controlling change and choosing directions that capitalize most effectively on the inheritance from the past.

2. The architectural heritage of Egypt:

A number of Egyptian cities have a modern center contrasting sharply with the old medieval one and featuring a unique architecture combining European styles with local influences and materials. Yet public awareness of this heritage is still not fully formed. The overwhelming number of sites, monuments and artifacts scattered all over the country and the ever increasing pace of urbanization around archaeological sites as well as environmental hazards, make the task of archaeological site management in Egypt real challenging. The need for documentation, protection and restoration of sites for future generations has become vital [21]. Many Egyptian cities historical centers managed to survive as living cities in spite of physical decline and economic depression. Their fabric carries out the spiritual and cultural messages that communicate with their present citizens. The heritage of these historic city centers are not only Material character, but also much more. These historic centers, as living cities must meet the varying needs of citizens with sustainable transformations. The challenge is not how to preserve, but how to create dynamic living spaces and places that produce rich in cultural traditions that lead organically from the past to the future. The research will analyze the historic center of Rosetta "Rashid" which is a medium size city in the north on Nile delta.

3. Rosetta city, Egypt.

Rosetta is a city in the north of Egypt its area is approximately 8 400 000 m2 or 840 hectares, with “estimated population” [*] in 2010 about 400000. The city has a master plan that sets guidelines until 2022. The master plan identifies and allocates space for all activities that should be in the city; it particularly focuses on its tourism role by including areas for tourism and its services (no detailed plan for the historic center) [18].

3.1. Location of Rosetta:

Rosetta located at south latitude 28° 35' and at longitude 34° 31', it is an old port at one of the Nile branches that flows into in the Mediterranean Sea. Is located 12 km away from the mouth of the Rosetta branch of the Nile River, along its western bank (Fig. 3). The city is approximately 65 km east of Alexandria and 55 km away from Damanhour, the capital of Al-Beheira Governorate [18].

3.2. History of Rosetta:

Many details about Rosetta's earliest history are uncertain due to a lack of reliable sources. Remains of ancient settlements have been found all over the region and on Tall Abu Mandur[**]. In addition, ancient texts talk about a temple called Bulbitinum, possibly dedicated to Cleopatra, which existed in the area in the Ptolemaic period, but its exact location is still unknown. Similarly, some sources suggest that around 270 A.D., the Roman Emperor Aurelian built a fortress, apparently to defend the area against attacks by Queen Zinubiya's army. Remains of an early fortress have been discovered on Tall Abu Mandur, but it cannot be established with

[*] No population statistics have been gathered in Egypt since 1996.

[**] Tall Abu Mandur: is an archaeological site to the south of the modem town.

certainty that it is that of Emperor Aurelian. Excavations on the tall have also uncovered the remains of a 5th_6th century wall, which was constructed around the town, presumably to protect it from Persian and Nubian attacks, apparently frequent during the Byzantine period. Other remains from this era include a basilica and several vessels stamped with the image of the Coptic Saint Abu Mina [10].

The town was relatively prosperous in the 12th century, when it was possible to pass through Rosetta on the way to Alexandria via the Khabur canal, which was later neglected and was completely sanded by the end of the 14th century. Although Rosetta may have lost some of its commercial aspects upon the obstruction of this route, it remained an important military outpost. During the Mameluke rule of Egypt, Turkish merchants settled in Rosetta in large numbers and built houses, wikalahs and mosques. After thriving as a point of transition for merchandise from the northern Mediterranean destined for the Silk Road or the Red Sea, commercial activities in Rosetta - and the Mediterranean were hampered by the discovery of Cape of Good Hope by the Portuguese in 1488 [2]. Sultan Qayitbay after building his citadel in Alexandria in 1479, he turned to Rashid where he built a fort (Fig. 11), which now stands at the border of 'Izbat ai-Burg village, in the northern edge of Rosetta [1].

As the Ottomans invasion continued to threaten Egypt, around 1515 Sultan “Al-Churi” expanded and repaired the castle of Qayitbay also built walls around Rosetta. But this did not spare the city from the Ottoman invasion in 1517. At an early stage, the Ottoman conquest of Egypt brought no major changes to the country as the Mamelukes stayed in power and the trading pattern of the city was not affected. Moreover, Rosetta became Egypt's closest port to Istanbul and all ships with merchandise from Turkey landed here, Egypt being the Empire's main supplier of rice, grain and other vital products [2].

In 1798, Napoleon and his army invaded Egypt, launching the Expedition d'Egypte. A year later, as Napoleon's soldiers took up residence in Qayitbay's fort, the most important Egyptological find of all times was made in one of its walls: the Rosetta Stone (Fig. 2) which became the key to the decipherment of the hieroglyphic script. The French presence in Egypt was short-lived but led to a boost in trade for Rosetta as French merchants had free passage to the port. But Napoleon's adventure ended with the British intervention. Their navy launched attacks on Egypt and together with their Ottoman ally, defeated Napoleon in 1801.

Mohammed Ali took the throne of Egypt in 1805 and two years later, he defeated the British General Fraser's forces in battles within and around Rosetta. Shortly after, Muhammad' Ali initiated extensive projects in an attempt to modernize Egypt. Consequently, railroads were constructed, industries were built up and the road network was improved. As a result, overland transport became both more efficient and much cheaper than transport on the river. Muhammad 'Ali also seemed to favor the development of Alexandria over Rosetta, which was not connected with Cairo on a direct railroad [1].

The city was further bypassed by the construction of the Al-Mahmdiyyah canal in 1819-20. The new canal connected Alexandria directly with the Nile, ensuring that boats no longer, had to stop in Rosetta on their way to the Mediterranean. With this development, Rosetta's days as the principal harbor of Egypt were over and a century later, it had fallen almost completely into oblivion to the outside world [10].

3.3. The Historic Center of Rosetta

The historic center was divided by two main cross streets; the first one parallel to the Nile “El-Mahally and zaghlul” (previously Dehlez el-Molk street) and it pass throw the main mosques of the city “El-Mahally, Zaghlul and El-Abbasy”, the other one perpendicular to the Nile “Port Saed” (previously queen Nazly street) it starts from the main gate of the city and ends with the old port on the Nile (Fig. 4).

In the 16th century the city covered about 190000 m^2 (19 hectares). It was most densely occupied in the east. The majority of expansion occurred to the west, The main route ran north-south along the river Nile. In the 17th century, the town expanded eastwards as the sediments of the floods provided it with more land. The eastern part continued to be the most dense and important with orientation towards the river, and the main thoroughfare along its corniche. To

expand, more densely settled units grew up around a mosque in the west, while the southern extension was limited by a large cemetery. The total estimated surface of the inhabited area reached approximately 230 000 m^2 by the end of this century [10].

When Rosetta attained its evolutionary peak in the 18th century, the river's sediments in the east provided additional land, but this could not offer enough space for the rapidly growing population. Consequently, the nucleus around the mosque in the west continued to develop rapidly and small quarters grew up in the west, north and northwest, sparked by the increase in commercial activities, which also led to a transformation of the cemetery in the southeast into rice depots and factories. Two new harbors also developed; one to the north, for commerce and travelers and another to the south opposite the factories for merchandise. In between, small private docks sprang up as well [18].

In the 19th century, the expansion of the town continued to follow the same pattern, although at a much slower rate. A challenging setback to the prosperity of Rosetta occurred after building Aswan High Dam in 1965, halting the annual floods of the Nile into the Mediterranean and preventing the accumulation of sediments in the river. This led to a rapid erosion of the seacoast and a decline of Rosetta's important fishing industry. Moreover, this also meant an end of adding new land to expand on, and a dramatic rise in the ground water level in the city, a problem that necessitated the now ongoing building of a complex drainage and wastewater control system. Nevertheless, the town expanded further along the 20th century, with the natural increase of Egypt's population. The squatted built up areas that grew up in the north were merged with the town, while the expansion south remained slow and limited (Fig. 5) [1].

3.4. The Heritage of Rosetta

Rosetta is the second city after Cairo in terms of the quantity of its Islamic houses, it has a unique group of Islamic buildings (there were 54 monument in1963 "Gate, Mosques, Wakala, Mill, Bath, and 39 House" (fig. 6,7,8,9,10) in 2006 only 39 monument still exist [11].

The city's most famous piece of heritage is the "Rosetta stone" [*] which led to understanding of hieroglyphs (fig. 2). The fortress of Qaitbay (fig. 11) on the west bank of the Nile River, north of Rosetta, the place is directly connected to the Rosetta stone, which was discovered in this location during the French expedition in 1799 [11]. Mill Abo-Shahen (fig. 12): This mill dates back to the second half of the 18th century, it was built by Uthman Agha at-Tubgi (al-Amasyali) who also built the two adjacent houses in the early 19th century [11]. Azzuz Bath (fig. 13): This public bath was built by Abd Ar-Rahman Ibn al-Hagg Higazi in the 19th Century, it is the only bath remaining in Rosetta [11].

3.5. Main activities in Rosetta historic center.

Traditional markets are the main activities of the historic center, and they are one of the main problems of the historic buildings. And near the historic center along the Nile coast there is an open gallery boats under construction where building fishing ships and luxury yachts are one of the main activities in the city (fig. 14). Also surrounding Rosetta there are agricultural fields and dense palm groves. The palm trees have an invaluable ancient symbolic as well as an economic value, many local traditional products depend on it (fig. 15).

3.6. SWAT analysis of Rosetta historic center.

3.6.1. Strengths

- Rosetta received great attention from researchers in all Egyptian universities as well as international researchers.
- Most of the historic houses have been restored through previous projects.
- The city is internationally recognized for discovering the Rosetta stone.
- The city heritage potential (the second place after Cairo in its number of Islamic houses).
- Rosetta is uniquely located on the Nile near the Mediterranean.

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[*] The Rosetta Stone is a basalt slab 114 x 72 cm, weighing about 760 kg and contains an inscription with three different spellings: Hieroglyphics, Demotic and Greek (top to bottom). Demotic and hieroglyphics are two different spellings from the Egyptian languages. It was originally part of a 5-6 ft. tall column. The stone was taken to England. It is now in the British Museum in London [6].

3.6.2. Weaknesses

- Lack of coordination among different authorities responsible for historic buildings.
- Insufficient public transportation and railway tracks.
- Continuous transgression over historic area will lead to the loss of its unique identity.
- Inadequate resources for historic building conservation.
- Deficiency of data related to historic buildings and the historic center.
- Weak public awareness about cultural heritage resources and their significance.
- Restoration of monuments without upgrading the whole city historic center.
- Contradiction of authorities responsible for the city and for its historic center.
- There are no tourism agencies and touristic services in the whole city.
- The Supreme Council of Antiquities is the only agency that funds the conservation process and it relies on self-generated resources.
- The city in general is not fit to host tourists (number of hotel rooms, level of cleanliness, and number of recreational facilities).
- There is no clear plan for developing historic center.
- The lack of adequate sanitation, which directly affects the heritage buildings.

3.7. Main problems faces the historic center of Rosetta.

3.7.1. Conflict between local authorities in Rosetta.

There is conflict among the three authorities responsible for the city and its heritage. Al-Beheira Governorate: which is responsible for issuing licenses for the erection of new buildings, or the alteration or clearance of existing ones. The Ministry of Endowments: which is responsible for providing services to a number of historic mosques (maintenance, furniture, salaries for mosque employees. The Supreme Council for Antiquities: which is responsible for providing maintenance and restoration for historical buildings that are listed on the national registrar.
The lack of coordination among these authorities led to the decline of historic center.

3.7.2. Sewage and underground water level.

The preservation of Rosetta's historic buildings is faced by a persistent problem, largely due to the city's location on the Nile so close to where it flows into the Mediterranean. In addition, the city has no effective system to dispose the wastes and sewage water that causes a serious damage to the historic building in the city center.

3.7.3. Monuments Restoration without sustainable development program.

Most of the historic merchant houses and the other monument buildings have been the subject of many restoration projects over the past 20 years, but many of them have been regularly re-damaged by water and humidity and are now being re-restored. Unfortunately, few of them have even collapsed or had to be demolished. Proper conservation, coupled with regulated reuse of the buildings is paramount to their preservation. There are some plans to reuse the Ottoman houses in activities that assure their constant and proper maintenance. "Arab Kulli house" has already been turned into the National Museum of Rosetta and "AI-Baqirawalli house" is used as an office for the local inspectors. Ideally two or three houses could remain "show houses" while the rest could be allocated to customized activities or "adaptive reuse" but there are not any holistic program to conserve and manage the city center as whole.

4. Conclusion.

The research concludes that sustainable development programs in the historic city center of small and medium size cities may help to improve its opportunities to survive against modern urbanization, and monuments restoration projects alone without upgrading the whole context may be useless. Restoration is the first step but it should be accompanied with a long term developing programs to create sustainable system and increase the awareness of the inhabitants and local authorities about the importance of the heritage and how to benefit from it.
The conflict between local authorities in Egypt is the worst problem that faces cultural heritage conservation and historical centers development, after initiating the “Egyptian National organization for Urban Harmony” [22] by the Law 119 for the year 2008 it may be the right step to manage this conflict but it need to be the main authority that is responsible of the city center

heritage in all Egypt, Rosetta like most of the Egyptian medium and small cities suffers from neglecting and need to be inserted in the touristic map of Egypt by developing the traditional activities and upgrade the city infrastructure that will give an economic impact on the city from its heritage and that will preserve not only the monument but all the historic center as living sustainable place.

Sustainable conservation in the small historic city centers should start from the wide base that is inhabitant and their houses this should be parallel to upgrading the infrastructure and main services and training programs for the users local authorities finally any restoration project starts when there is enough fund.

References

[1] Abd El-Moneam Hassan (2000) "Study about Rashid", Citadel Ancient Islamic Studies Center, Cairo.

[2] Al-Sadeq M., Ismail H., Al-Kady G. (1999) "Rashid, Beginning Development and Decline", Dar Al-Afaq Al-Arabia, Cairo.

[3] Aref, Yasser G. (2009) "The Conservation of Heritage as a Means for Sustainability", Conference On Technology & Sustainability in the Built Environment, King Saud university, KSA, p221.

[4] Bianca Stefano, Jodidio Philip, eds (2004) "A New Path to Urban Rehabilitation in Cairo, Cairo: Revitalizing a Historic Metropolis", Umberto Allemandi &C. for Aga Khan Trust for Culture, Turin, Pp. 69-148.

[5] Boussaa, Djamel (2009) "Urban Conservation and Sustainability; Cases from Historic Cities", Conference On Technology & Sustainability in the Built Environment, King Saud university, KSA, P307.

[6] Brigham Young University–Idaho (2011) *www.byui.edu/SPC/Rosetta_Stone_handout.pdf on 22/4/2011*.

[7] Cannarozzo Teresa, Abbate Giuseppe, Trombino Giuseppe (2010) "historical towns and their hinterland: The Scicli case study", Alinea Editrice, Florence.

[8] Carta Giuseppe (2008) "I Centri Storici e gli Spunti da Orvieto", Tipograph ,Roma.

[9] Coleman Victoria (2004) "Conservation and Sustainability", A Discussion Paper, NSW Heritage office, National Trust of Australia, *www.heritage.nsw.gov.au.*

[10] Egyptian Antiquities information system (2008), "The historical Monuments of Egypt", volume1: Rosetta, Supreme Council of Antiquities, Cairo.

[11] Egyptian Ministry of culture, Supreme Council of Antiquities (1985) "Rosetta Monuments", EAO press, Cairo.

[12] Fairclough, G. , ed. (1998) "Historic Landscape Characterization", paper published at English Heritage Seminar held at the Society of Antiquaries, London.

[13] Gilmour Tony (2007) "Sustaining Heritage: Giving the Past a Future", Sydney University Press, Sydney.

[14] Hassler Uta, Algreen Gregers & Kohler Niklaus (2002) "Cultural heritage and sustainable development in SUIT", paper in the framework of the SUIT project - Sustainable development of Urban historical areas through an active Integration within Towns.

[15] Keiner Marco (2006) "The Future of Sustainability", Springer, The Netherlands.

[16] Knox Paul, Mayer Heike (2009), "Small Town Sustainability", Birkhauser Verlag AG, Berlin.

[17] Lamei Saleh (2008) "Rosetta, (Rasdid) Mediterranean City: Past, Present & Future of a living heritage", Center for conservation & preservation of Islamic architectural heritage, Cairo.

[18] Ministry of Housing, Utilities & Urban Development in Egypt (2006) "ROSETTA: Rapid Urban Sector Profiling for Sustainability ", UN-HABITAT, Nairobi.

[19] Rodwell Dennis (2007) "Conservation and Sustainability in Historic Cities", Blackwell publishing, Oxford, p7.

[20] ArchNet international online community, *www.archnet.org*

[21] Center for Documentation of Cultural and Natural Heritage, *www.cultnat.org*

[22] National Organization for Urban Harmony, Egyptian Ministry of Culture, www.urbanharmony.org

FIGURES

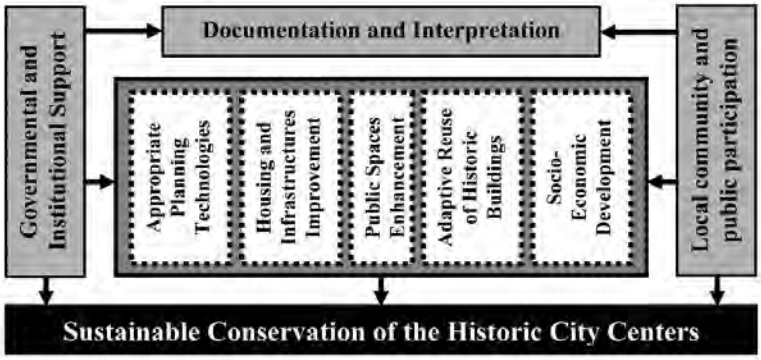


Fig.1 The main elements of the sustainable conservation.

Fig. 2 *Rosetta stone* [6].

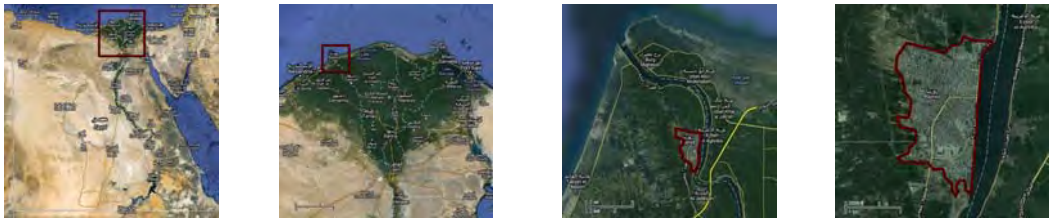


Fig. 3 Maps of Egypt, Nile Delta Rosetta Nile branch and Rosetta city (Google earth).

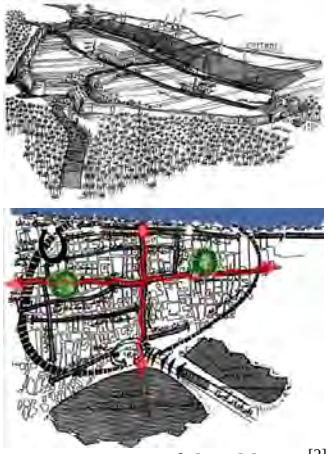


Fig. 4 Diagrams of the old city [2].

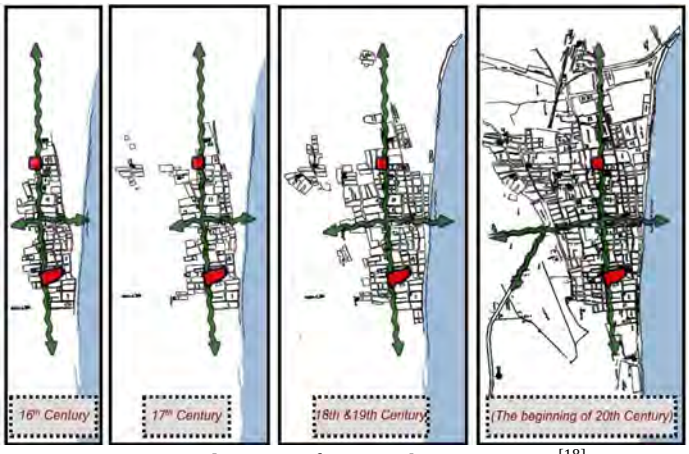


Fig. 5 Development of Rosetta historic center [18].

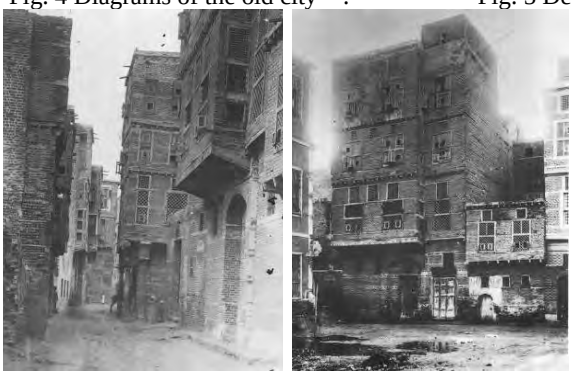


Fig. 6 some ancient postcards of Rosetta houses [20].

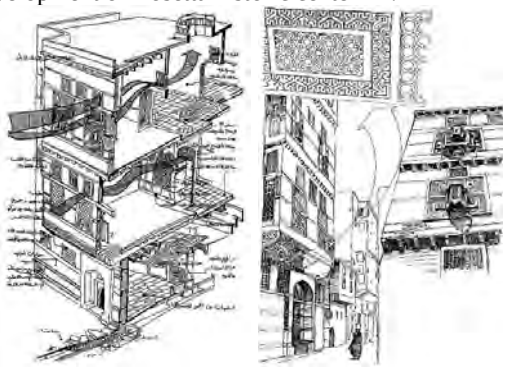


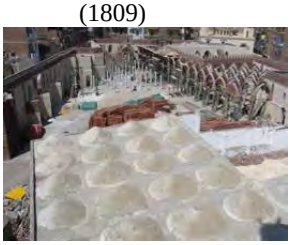
Fig. 7 Cross section and Elevation diagrams of Kandel house in Rosetta [1].


Mosque Al-Abbasi (1809)


Mosque Saleh Agha Dumaqsis (1704)


Mosque Al-Urabi (1720)


Dome As-Samit


Mosque Zaghlul (1577)


Mosque Al-Mahalli (1721)

Fig. 8 Mosques of Rosetta [11].

Fig. 9 Interior and Elevation Details of Uthman Agha Al-Amasyalli house in Rosetta


Al-Amasyali


Ismail Ramadan


Al-Qanadili


Al-Mayzuni


Arab Kulli

Fig. 10 Merchant houses.


Fig. 11 *Qaitbay Fortress*


Fig. 12 *Mill* Abo-Shahen.


Fig. 13 *Azzuz Bath*


Fig. 14 *Traditional activities markets Constructing Yachts in Rosetta.*


Fig. 15 *photos of the Palm groves and its typical products.*