

Reinvestment of the Urban Context in Historic Cities: The Case Study of El Sheikh Kandil Street, Rosetta, Egypt

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Abstract—Conservation and urban investment are a prerequisite to improve the quality of life. Since the historic street is a part of the economic system, it should be able to play an important role in the city development by upgrading all services, public open spaces and reuse of historical buildings and sites. Furthermore, historical conservation enriches the political, economic, social, cultural and functional aspects of the site. Rosetta has been selected as an area of study because it has a unique character due to its possession of a variety of monuments and historical buildings. The aim of this research is to analyze the existing situation of an historic street named El Sheikh Kandil, to be able to identify the potentials and problems. The paper gives a proposal for the redesign and reinvestment of the street and the reuse for the historical buildings to serve the community, users and visitors. Then, it concludes with recommendations to improve quality of life through the rehabilitation of the historical buildings and strengthening of the cultural and historical identity of the street. Rosetta city can benefit from these development proposals by preserving and revitalizing its unique character which leads to tourism development and benefits from the new investments.

Keywords—Adaptive reuse, heritage street, historic investment, restoration, urban design.

I. INTRODUCTION

HERITAGE is a record of past life history and is also an important source of creativity and inspiration. The revival of cities cultural heritage gives a place a special identity and value [1]. To insure that heritage will survive and be passed on to the next generation, a large number of countries have produced creative designs to protect and preserve their own cultural heritages. These designs aim to protect famous monuments, buildings, historical natural landscapes, hand crafts, and heritage buildings and objects that reflect the history and ways of life in each country [2]

Egypt is one of the oldest civilizations in the world, with some of the richest and most diverse areas of cultural heritage on earth [3]. Each city in Egypt has its own identity resulting from its unique history. This research focused on Rosetta city as it is one of the distinctive Islamic architectural treasures. It is rich with elegant houses, decorated mosques and several monuments. El Sheikh Kandil Street in Rosetta has been

chosen as a case study because of its potential of urban development in terms of tourism and local investments.

II. URBAN HERITAGE STREETS

Urban heritage streets have some common characteristics that define their style and history [4]. They can create a more livable community by providing several activities to be attractive for all people, and walkable to enhance the pedestrian experience [3]. The concentration of heritage buildings, sites, structures, and landscapes, as well as the consistency in visual elements throughout the district, including scale or built form, all give the impression of a distinct time period, and define the uniqueness of the area [5].

III. ROSETTA CITY

Rosetta is a port city of the Nile Delta, located 65 km east of Alexandria, in Egypt's Beheira governorate [6]. It has many advantages:

- 1) Good location.
- 2) Moderate climate.
- 3) The reputation of the Rosetta Stone, which was discovered and its role in translating the hieroglyphic language.
- 4) Wealth and uniqueness of many heritage buildings.
- 5) Many land uses and activities (agriculture, industry, trade, tourism).
- 6) Human potential, the Ottoman period is considered to be the most prosperous era for Rosetta (from the 12th - 18th centuries, CE), and was a time when many mosques, houses, bath houses, mills and castles were built, even the unique gates that still exist today.

A. Historical Background

The city was founded around in the 9th century. It was known by many names: Rechtu or Boltini (in the Pharaonic era), Rashit (in the Coptic era) and Rashid (the Arabs refer to it as Rashit) [7].

Rosetta city is historically famous for:

- 1) The discovery of the "Rosetta stone", black basalt engraved with Greek, Hieroglyphic and Demotic calligraphy.
- 2) The success of Rosetta in resisting the British campaign (Fraser expedition) to capture Alexandria in 1807.
- 3) More than 47 monuments, with most archeological buildings located on the avenue of the "royal vestibule".

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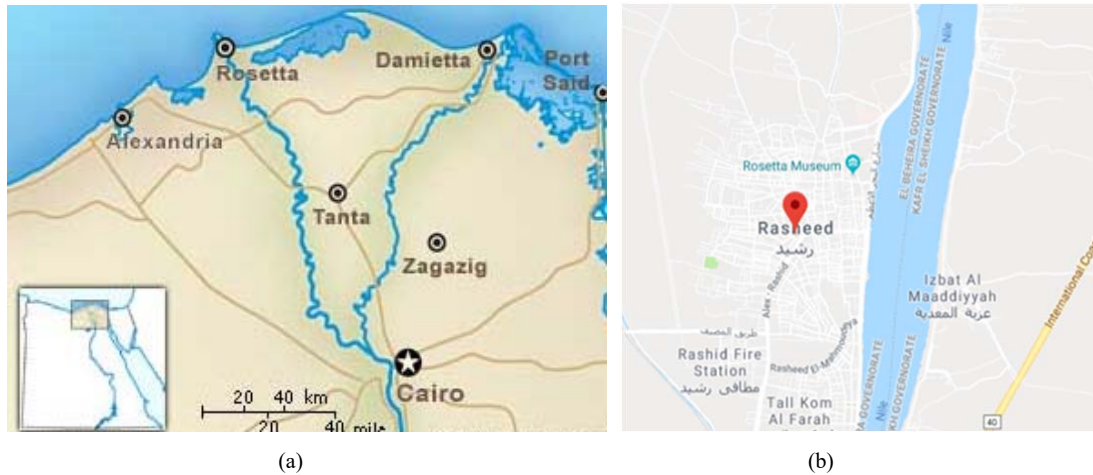


Fig. 1 (a) The location of Rosetta in Egypt [8] and (b) the site plan of Rosetta city

B. Location

The port city of Rosetta is located on the west bank of the Rasheed branch of the Nile Delta, 65 km northeast of Alexandria [6].

C. Architectural Style

Rosetta architecture is a mix between the styles of Ottoman and Eclectic neo-Baroque; this architecture style is similar to that of Baroque but with a mixture of different and new elements [9].

Some significant elements characterize this architectural style, such as the use of wooden 'mashrabiya' (Ottoman-style projecting wood and glass lattice window façade used to provide privacy and ventilation), as well as the arched openings and doors. The use of a wooden structural cantilever was one of the most important elements of this era [10]. Buildings of this period are also distinguishable by the presence of a unique façade decorated with red and black bricks [11].



Fig. 2 Arab Kely House (Rosetta museum)

IV. CASE STUDY

A. Site Analysis

El Sheikh Kandil Street is one of the most important avenues in Rosetta in terms of historical and architectural significance. It runs perpendicular to Dehleez Elmolk Street and parallel to Nile Cornich [12]. This street is surrounded by historical buildings such as Thabet house, Kanadily house and

El Sheikh Kandil mosque.

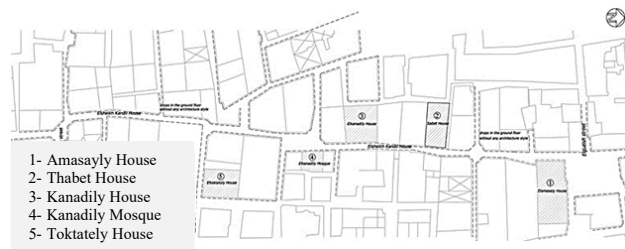


Fig. 3 Site plan for the existing condition of El Sheikh Kandil Street

B. Environmental Studies

The climate in Rosetta is moderate and ranges from 27°C to 15°C, with humidity ranging from 73% in January down to 64%, before rising again in September to 71%. Dry winds in summer blow from the northwest [12].

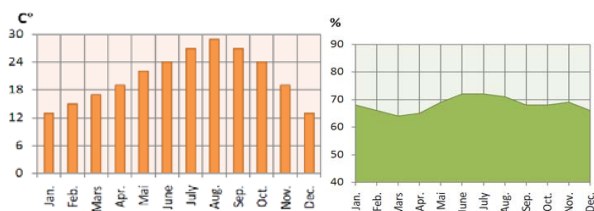


Fig. 4 Diagrams representing the temperature rates and the humidity ratio

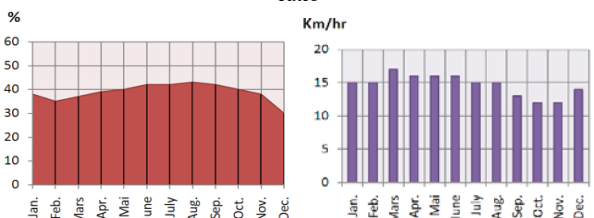


Fig. 5 The solar radiation intensity and the wind velocity

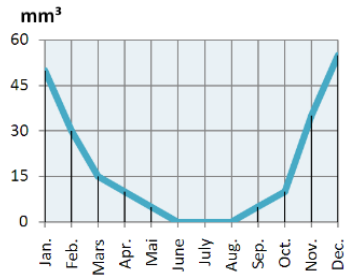


Fig. 6 The rain perception chances during the year

C. Problems Facing the City

The city suffers from multiple problems. These major problems could be summarized in the very low sources of development:

1) Economic State

The current economic status of Rosetta city is evident in the existence of unskilled workers and the number of unemployed individuals. Rosetta city was once a significant commercial city and trading and fishing port; however, this status was revoked with the breakdown of the city's main mills and the construction of the Aswan High Dam, which destroyed the specialized and lucrative sardine fishing industry.

The main craft of the city then became the fabrication of cages from palm trees to cover the agricultural crops and the production of red bricks for construction.



Fig. 7 Traditional crafts in the city

2) Urban Growth

Urban growth suffers from the increase in population density with the lack of planning and the random constructions with mixed uses. The city faces some obstacles that have limited the growth of the city such as the cemetery at the south edge of the city.

3) Lack of Infrastructure and Services

This problem results from the increasing number of population combined with exiting poor services; this is evident in:

- Insufficient sewage network in the city.
- Failure of available services to meet the needs of the population.
- Poor traffic network.

D. Architectural Features

1) Structural System

Buildings were constructed using the carrier walls system and were roofed with multilayered wood roofs (by means of wooden beams that are based on the carrier walls) and

sometimes were decorated with domes that are based on pillars such as the Zaghloul Mosque.



Fig. 8 Slums and compacted built area



Fig. 9 The position of historic buildings in the urban fabric



Fig. 10 Structure domes and wooden beams

2) Openings

The windows are limited to two shapes either rectangular shape or a rectangle shape that ends with semi-circular arches with the use of stained glass and wood, and sometimes metal.

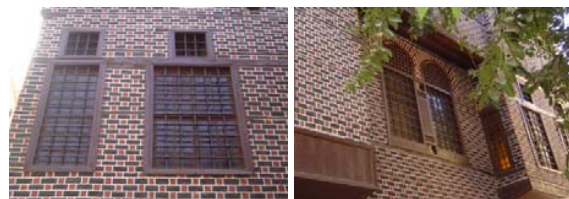


Fig. 11 Different shapes of windows

3) Arches

Traditional arches are circular or pointed in shape. For example, in the Arafa family house, circular arches were used.

4) Doors

This specific architecture style has many types of doors:

- Topped by a triangle pediment.
- Openings ending with a semi-circular or topped with semi-circular cornices.

- Topped with curved cornices, a common feature of most houses.
- Simple decorative iron mesh shapes.
- Intricate or dense geometric motifs.
- Modern art decorative iron mesh.
- Vegetal decorations engraved on wood alone or overlapping with geometric shapes.



Fig. 12 Different shapes of arches



Fig. 13 Different designs of doors

5) Columns

The main characteristic was the re-use of the columns saved from destroyed or old buildings in the mosques and houses, as those shown in the house of Al-Manadieli and the house of Arab Keli (Rosetta Museum). Mosques also made use of existing marble and granite columns in their interiors, despite the different heights and sizes.

6) Façades

- Bricks: Cast-off brick façades are designed with alternating red and black bricks with white strips appearing as a mortar between the bricks.
- Cantilever: The use of wooden beams to support the

façades and the cornices, as shown in the house of Hassiba Ghazal.

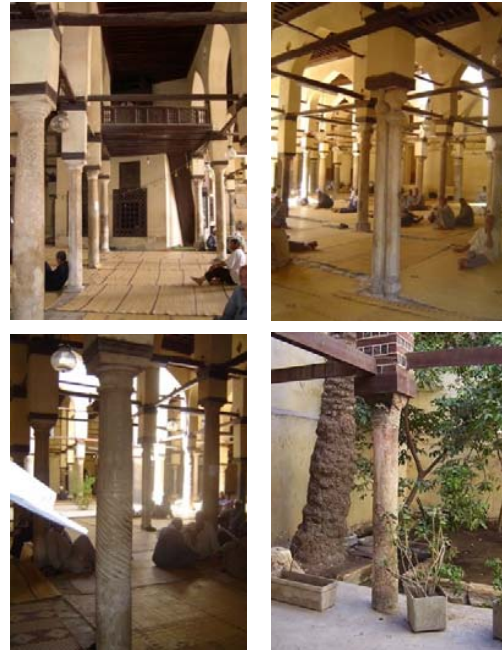


Fig. 14 Different types of columns



Fig. 15 The main elements in Rosetta significant façades

V.DESIGN PROPOSAL

The aim of this research stems from the revival of Rosetta city and the protection of its history in the form of the houses and mosques which made it the second important Islamic city in Egypt after Fatimid Cairo city. El Sheikh Kandil Street is rich with historic buildings in very good condition that has the potential to be reused for different functions. The proposed solution helps to upgrade the urban context and creates resources of income for the area. The proposed idea is to turn this historic street into an open museum respecting the ancient and artistic value of the architecture.



Fig. 16 Site plan for the proposed design of El Sheikh Kandil Street

The design proposed features and uses of the street monuments, as shown in the map:

- ① Use of new patterns to indicate the direction of the street.
- ② Design and installation of an Islamic-style water fountain in the open space.
- ③⑤⑥ Creation of an outdoor shaded seating area near Amasayly House, Thabet House and Kanadily House.
- ④ Reuse of the ground floor to be compatible with the new urban development of the street.
- ⑦ Development of Islamic-style bazaars (tradition handicraft stores) in the area adjacent to Kanadily Mosque.
- ⑧ Design of shaded area and kiosks in the open space.
- ⑨ Proposal of an outdoor cafe and restaurant located in the grounds of Toktately House

A. Historic Buildings

1) The Amasayly House

Constructed by Osman Aghakhan Tobaji Pasha, the building consists of three floors, and is characterized by its wonderful wooden crafts work. It has special interior design characterized by the decorative Kufic and Arabic writings on walls and ceilings [13].



Fig. 17 Pictures of Amasayly House

The house was divided, on the ground floor is a warehouse for grain and housing servants, the upper floor is reserved for men and guests, it has a kitchen to serve them.

2) The Kanadily House

The house of Kanadily, located in El Sheikh Kandil Street,

is characterized with the same architectural style of the houses of Rosetta in the period of the 18th century [14].



Fig. 18 Pictures of Kanadily House

3) El Sheikh Kandil Mosque

Named after the street on which it stands, El Sheikh Kandil Mosque was built in the late 18th century for Islamic prayer. The style of this mosque is characterized by two pointed arches mounted on marble columns. The mosque consists of three spaces and a tomb (Darih) of its owner in the western part. The roof of the mosque is elevated by hanging domes. The entrance consists of a semi-circular stone that distinguishes it from other archaeological mosques in Rosetta. It has three arches covered by solid red and black bricks. The mosque of El Sheikh Kandil has no minarets, unlike other ancient mosques [13].



Fig. 19 Pictures of the mosque façade

4) Thabet Zaki House

The house of Thabet Zaki Thabet dating back to the first half of the 18th century. The house is located in El Sheikh

Kandil Street. It consists of four floors. Two entrances occupy the ground floor on the east side, the first one leads to a storeroom and the second leads to a stairway [15].



Fig. 20 Pictures of Thabet House



Fig. 21 (a) The existing ground floor plan and (b) existing first floor plan of Thabet House

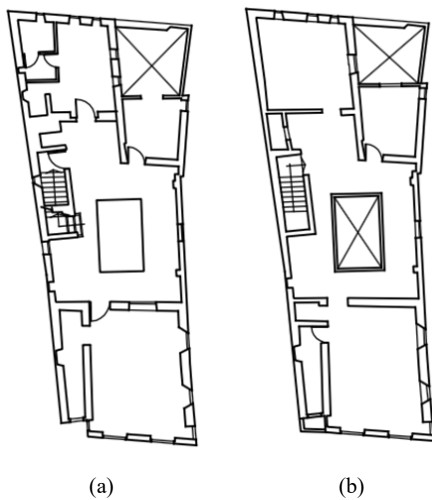


Fig. 22 (a) The existing second floor plan house and (b) existing third floor plan of Thabet House

5) Toktately House

Also known as Salih Mohammad Toktately, the house dates back to the first half of the 12th century. It is located on Mohammed Karim Street and has one façade facing the south

of El Sheikh Kandil Street. The building consists of four floors [16].



Fig. 23 Pictures of the façade of El Toktakely House

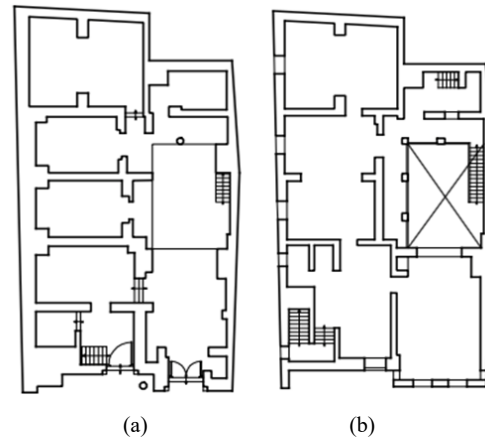


Fig. 24 (a) The existing ground floor plan and (b) existing first floor plan of Toktately House

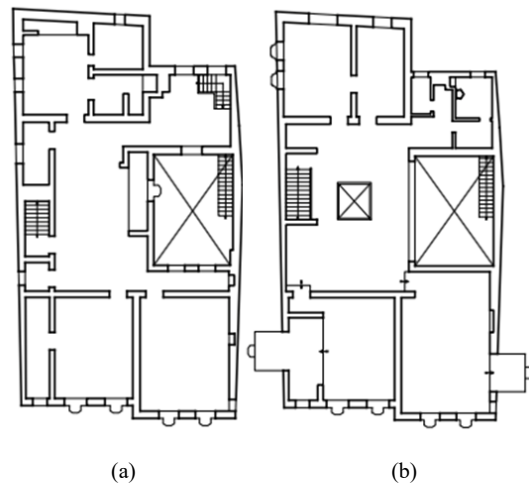


Fig. 25 (a) The existing second floor plan and (b) existing third floor plan of Toktately House

B. Adaptive Reuse Project

1) Thabet Zaki House

This house has the potential to be transformed into a handicrafts center that could serve as a cultural experience for tourists and provide local residents with commercial opportunities.



Fig. 26 (a) The proposed ground floor plan and (b) first floor plan of Thabet House

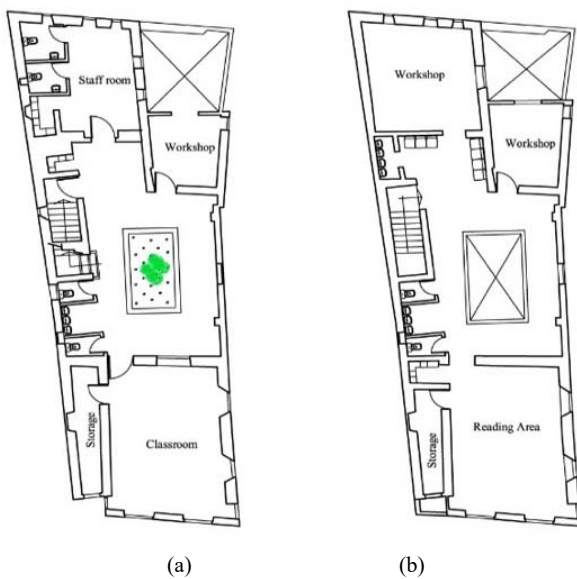


Fig. 27 (a) The proposed second floor plan and (b) third floor plan of Thabet House

2) Toktately House

This house has the potential to be transformed into a hotel that could serve visitors to the city. The building is adjacent to an open area that could house a bazaar selling traditional crafts and a cafeteria with outdoor seating area designed to create a traditional local mood for visitors.

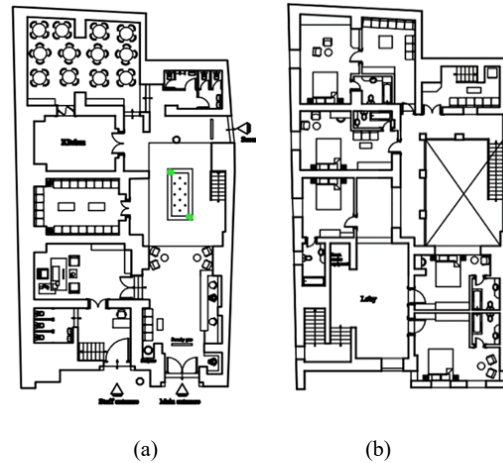


Fig. 28 (a) The proposed ground floor plan of and (b) first floor plan of Toktately House

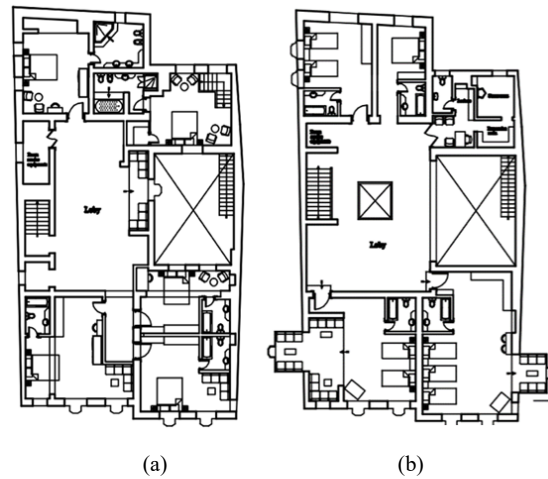


Fig. 29 (a) The proposed second floor plan and (b) third floor plan of Toktately House

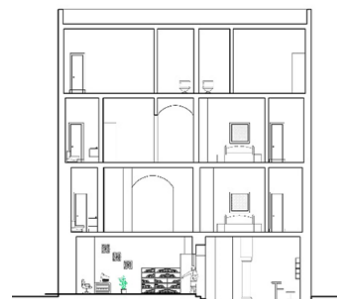


Fig. 30 Cross section of proposed Toktately House

3) Outdoor Oriental Café and Restaurant

This idea is proposed in the vacant land linked to Toktately House, which would serve as the proposed hotel and also to be a special destination for all tourists and visitors of the place.

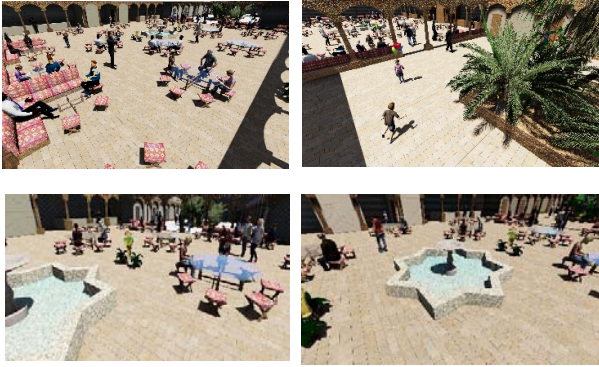


Fig. 31 Design proposal for the outdoor café

4) Traditional Open-Air Bazaar

The proposal includes a permanent traditional-design open-air bazaar which would showcase the ancient skills and crafts of the region, and which would add to the sense of value of the history of the city.



Fig. 32 Design proposal for the traditional open-air bazaar

VI. CONCLUSION

The conservation of historic streets is very important to attract visitors to an area, both local residents and tourists, creating unique sources of income and improving the quality of life of the district's surrounding neighborhoods. Deteriorated historic buildings in the street lost their identity and their original use especially by the absence of the owners.

The proposed development can be divided into four axes:

- 1) Urban street design,
- 2) Upgrade of infrastructure systems,
- 3) Conservation and restoration methods of the archaeological buildings, and
- 4) Tourism development of Rosetta city.

VII. RECOMMENDATION

The aim of this paper was to study the urban context of El Sheikh Kandil Street and the surrounding area and to analyze the existing historic buildings and calculate their possible productive solutions, and to offer a proposal for the redevelopment of the street, which can serve the entire city. The proposed redevelopment includes the following:

- 1) Creation of outdoor shaded seating areas.
- 2) Installation of a permanent Islamic-style bazaar to showcase the unique local and traditional crafts produced in Rosetta city.
- 3) Design and construction of an outdoor café and restaurant

that can serve both residences and visitors to the area, and attract tourists to the street.

- 4) Modernizing Toktately House to be transformed into a boutique hotel for tourists and visitors. The refurbishment would preserve original architectural features, which are compatible to the significant style of Rosetta city, and include furniture in the style of the period.
- 5) Transformation of Thabet Zaki House to be used as a handicraft center to host local craftsman, which will provide them a comfortable place to produce their works.
- 6) Modernization of the sanitary system, rainwater and drainage systems.
- 7) The restoration of unique architectural elements that are in urgent need of preservation.
- 8) The rehabilitation of heritage and historic buildings in the street.

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