INTERNATIONAL JOURNAL OF
MULTIDISCIPLINARY STUDIES IN HERITAGE
RESEARCH

ISSN: 2785-9622 VOLUME 4, ISSUE 1, 2021, 209– 259. www.egyptfuture.org/ojs/

Archaeological Study of Heritage Building from the First Quarter of the Twentieth Century in Egypt

Ghadeer Dardier Afify Khalifa
Associate Professor - Islamic Department- Faculty of Archaeology- Fayoum University-
Al-Fayoum City, Main Building of Faculty of Archaeology
Postcode: 63514, Al-Fayoum Governorate, Egypt
E-Mail: gdk00@fayoum.edu.eg

Abstract:
This study aims to discuss a heritage building from the first quarter of the Twentieth Century, where the residential buildings are one of the fundamentals of urban cities' construction and their proliferation is important for the continuity of city construction. Residential buildings are one of the remarkable features of stability and city center to the extent that they have become a criterion for reflecting the stages of the growth of the city. There is a commonly known proverb that states that the man who has a child, plants a tree and builds a house leaves a legacy for the next generations. By the end of the 19th and the beginning of the 20th centuries, architecture has witnessed a breakthrough in terms of the styles of establishing houses in Egypt. This was a consequence of Muhammad Ali's dynasty's influence by European architecture styles and its artistic standards. 'Alawiyya dynasty adapted new building styles which were distinct from those prevailing in Egypt in previous eras. Muhammad Ali's dynasty's persistent desire- to turn Egypt into a piece of Europe especially Cairo and Alexandria- has given its establishments a special and distinct style. The European influences - which were symbols of progress, urbanization and civilization - were not limited to Cairo as the capital of Egypt but they were transferred to other Egyptian cities, through the rise of trade traffic let alone the development of transportation which contributed to their spread then. In addition, the foreign architects and engineers circulated their foreign architectural concepts and ideas in the north and south of Egypt as well as in capital cities. Taking Al-Fashn city as an example, we could say that it has included a lot of residential buildings that were established in the first half of the 20th century A.D. One of the buildings that would be discussed in this study is Abd Al-Azim Abu El-Nil's house which represented the domestic style of the residential buildings in provinces, where it has preserved the domestic architectural traditions and is influenced by the European methods and styles in terms of the architectural and ornamental elements. The study will adopt the descriptive approach and analytical methodology for presenting this significant residential building through architectural along with artistic study and publishing for the first time.

Keywords: Heritage Buildings, 20th Century, Egypt, Floral Motifs, Fronton, Hermdanat, European Style.

ملخص:
تُعتبر العمائر السكنية من الضرورات التى لا تقوم الحواضر إلا من خلالها، ولا يكتمل عمران المدن إلا بانتشارها، فهى أبرز معالم الاستقرار ونواه المدن، حتى أنها صارت معياراً يعكس مراحل نمو المدن. لقد

INTERNATIONAL JOURNAL OF
MULTIDISCIPLINARY STUDIES IN HERITAGE
RESEARCH
ISSN: 2785-9622 VOLUME 4, ISSUE 1, 2021, 209– 259. www.egyptfuture.org/ojs/

شهدت العمارة إبان القرن التاسع عشر وبداية القرن العشرين الميلادى طفرة معمارية فى أساليب تشييد المنازل فى مصر، وذلك نتيجة تأثر أسرة محمد على بطرز العمارة الأوروبية وفنونها، حيث ادخلوا طرزاً جديدة فى البناء، وقد اختلفت عن الطرز المعمارية التى سادت مصر فى العصور السالفة، كما أن رغبة أسرة محمد على المستمرة فى جعل مصر كأنها قطعة من أوروبا خاصة مدينتى القاهرة والإسكندرية جعلت لمنشآت هذه الأسرة طابعاً خاصاً ومميزاً. ولم تقتصر التأثيرات الأوروبية التى كانت رمزاً للتقدم والتمدن والحضارة على القاهرة فحسب باعتبارها عاصمة البلاد، ولكنها انتقلت إلى باقى المدن المصرية من خلال رواج حركة التجارة التى ساعدت على إزدهارها؛ بالإضافة إلى التطور الذى حدث فى وسائل المواصلات فى مصر آنذاك. وهذا فضلاً عن دور المعماريين والمهندسين الأجانب الذين قاموا بنشر مبادئهم وأفكارهم المعمارية الغربية فى شمال مصر وجنوبها وعلى امتداد الحواضر. وبالتطبيق على مدينة الفشن فيمكن القول أنها اشتملت على العديد من العمائر السكنية التى أُنشئت فى النصف الأول من القرن العشرين الميلادى، ومن هذه العمائر التى سوف يتم تناولها فى هذا البحث هو منزل عبدالعظيم أبوالنيل، ويمتاز هذا المنزل بأنه يمثل الطراز المحلى للعمارة السكنية فى الأقاليم، كما أن المعمار احتفظ بالتقاليد المعمارية المحلية، بالإضافة إلى تأثره بالأساليب والطرز الأوروبية فى العناصر المعمارية والزخرفية، وسيتم تناول الدراسة من خلال منهجية الدراسة الوصفية والتحليلية لهذة المنشأة المتميزة معمارياً وفنياً.

الكلمات الدالة: منشآت تر؛ القرن العشرين الميلادي؛ مصر؛ زخارف نباتية؛ فرنتون؛ حرمدانات؛ الطراز الأوروبى.

Introduction:

During the 19th and the beginning of the 20th centuries, the Egyptian provinces have witnessed a significant architectural breakthrough. This breakthrough was related in the first place to the economic, social and political conditions of the population (1) and to the integration of the Egyptian countryside into civil life contrary to the common previous position of the countryside as the source of wealth and resources; a view held by the governors and governments that ruled the country. It is worth mentioning that with the dwindling of the Pasha's power and the transfer of the real power to the hands of princes, beys and notables, the large houses and palaces have become a centre for governing the country where the political resolutions were issued when the beys or notables meet with the prominent figures of the village or city to discuss governance and administrative issues of their relevant village or city, where these meetings were held at the most luxurious rooms of a house (2). As the saying goes, people follow the religion of their kings, so the notables and prominent figures started to establish palaces and wide houses not only in cities but also in villages since they were very interested in these buildings and brought their furnishings from

INTERNATIONAL JOURNAL OF
MULTIDISCIPLINARY STUDIES IN HERITAGE
RESEARCH
ISSN: 2785-9622 VOLUME 4, ISSUE 1, 2021, 209– 259. www.egyptfuture.org/ojs/

Europe through traders [3]. Since 1133 A.H. /1721 A.D., Al-Fashn was the central capital of Bahnasa province, and during the reign of Muhammad Ali Pasha, it was included the whole directorate of Beni Suef, the centers of Al-Fashn, Maghagha, Beni Mazar, as well as the northern half of Samalute center in Minya directorate. During the first half of 19th century, El-Fahn city was the capital of Bahnasa province and was a place of residence for the governor of the region as well as Egyptian and foreign senior officials [4]. It is noteworthy that the center and city of Al-Fashn was established in 1821 A.D. when the Bahnasawia state (Bahnasa province) was divided and was called Al-Fashn division as Al-Fashn was then the main competent court of jurisdiction which contained some regions located in the middle of Bahnasawia state that included Minya and Beni Suef directorates [5]. Currently, Al-Fashn is considered a city and a center which is administratively relevant to Beni Suef governorate. Al-Fashn center is composed of the city of Al-Fashn which is the capital of the center and some relevant villages distributed within the city area[6] . The residential architecture of Al-Fashn city is influenced by many European styles and Renaissance age's arts [7] . Thus various architectural and ornamental elements modeled on Gothic style [8], Neo-classical style [9], Renaissance style [10] and Eclectic style[11] emerged. During the reign of Muhammad Ali Pasha or generally during what is known as the 'Alawiyya dynasty, there were significant transformations have occurred in the Egyptian residential buildings, as a result of the use and assistance of foreign architects, where the upper classes of Egyptian society imitated residential buildings of foreign communities according to European architectural and artistic standards and systems. This led to the disappearance of the manifestations of simplicity and surfaces devoid of decorations that characterized residential facilities in Egypt before the nineteenth Century [12]. During the Nineteenth and Twentieth Centuries AD, there were architectural and artistic mutations or leaps occurred, where the residential buildings were characterized by clear differences in terms of architectural and geometrical planning, construction materials and architectural and decorative elements, and this was a natural result of these residential buildings being affected by the so-called European or Western style, or what is known as Westernization [13]. It can be said that although the residential buildings were affected by the characteristics of European styles, there was a careful regard of the general layout and the characteristics of the Arab Islamic style, which was a revival of the local style that was expressive of the combination of Islamic architectural and artistic elements from different historical periods and from various Islamic countries[14] .

1. The Founder of Building:

The house subject to this study was established by Abd Al-Azim Effendi Moustafa Muhammed Abu El-Nil[15] . A document issued by the ministry of interior for the Egyptian royal government on 16th of March 1985 corresponding to 20th of Ramadan 1313 A.H., that is concerned with the approval of the decree of the senate's committee of Minya directorate for appointing Abd Al-Azim Effendi Moustafa Abu El-Nil as a mayor of Al-Fashn center is examined. He was chosen for being characterized with his decency, outspokenness and full readiness to perform the duties of his job to the fullest. Thus he became responsible before the government for managing the affairs of Al-Fashn center and maintaining security[16] (See Document No.1). Having examined a document representing the passport of Abd Al-Azim

INTERNATIONAL JOURNAL OF
MULTIDISCIPLINARY STUDIES IN HERITAGE
RESEARCH
ISSN: 2785-9622 VOLUME 4, ISSUE 1, 2021, 209– 259. www.egyptfuture.org/ojs/

Effendi issued by the management department at the ministry of interior for the Egyptian royal government bearing no. 1198, it is found out that the position of the house's owner revealed that he made a journey from Suez port to Jeddah to perform pilgrimage in Mecca(17) (See Document No.2).

2. History of Construction:

The house was established during the first quarter of the 20th century, specifically in 1921(18) . There was a yard in the place of the house used as a store(19) . The house was owned by the heirs of Haj Moustafa Abu El-Nil and the store was demolished to be replaced with the house. It consisted of one floor and at the beginning of March 1923, the second floor was established and the house was sold by Abd Al-Azim Effendi Moustafa Muhammed Abu El-Nil to Mrs. Zubaydah Moustafa Muhammed Abu El-Nil under a sales contract registered in Minya mixed court on 30th of October for 1930(20). Then, in 1933, a share of 12 Meters of the mentioned house was sold by Mrs. Zubaydah Hanim Mustafa to Sheikh El-Arab Suleiman Mansour Latif under a contract registered on 7/2/1934(21) . Now, the first floor is occupied by Alexandria Company for Cotton(22) whereas the second floor is closed.

3. The Site:

The house of Abd Al-Azim Abu El-Nil is located at Samah El-Wogouh Street which was previously known as El-Mansheya El-Bahariya in Al Fashn city(23) of Beni Suef Governorate(24) (See Map No.1). It is bordered to the west by the street of the Mosque of Abu El-Nil and to the east by the house of the heirs of Mr. Ahmed El-Halabi and to the south by the mosque of Moustafa Abu El-Nil(25) (See Map No.2).

4. The Materials of Construction:

The materials used in building are stone and brick (26) .

5. Architectural Description:

The house consists of two floors and a basement(27) . Its architectural plan imitates the characteristics of the European architectural design(28) that is composed of a central hall surrounded by rooms(29) . The first floor consists of reception rooms whereas the second floor consists of bedrooms and a lounge imitating the plan of the first floor (See Fig.1). The house has two entrances; the main entrance in the north and the other entrance in the south. The house is characterized by having three facades(30) that are detached and a fourth facade in the east adjacent to some other buildings.

5.1. The Northern Facade (Main Facade):

This facade is considered the main one of the house, where this house is surrounded by an outer stony wall at a height of 1.20 m, topped by columns made of steel bars and the house's courtyard is accessed through an entrance in this wall. This entrance is closed by a steel door whose dimensions are 1.35 x 2.40 m, surrounded from both sides by stony pillars. The wall is extended to surround the north facade and part of the west one (See Plate No.1). There is a courtyard at the front side of the entrance which is a small one with stone ladder (31) at its center leading to the first floor and consisting of 11 steps leading to a verandah(32) .This ladder is surrounded by a rail made of stone balustrades (Barameq)(33) and at the bottom of the rail or handrail (34) , there is an entrance leading to the basement(35) (See Plate No.2).On the left side of the outer entrance, there is another ladder leading to a verandah and reception

INTERNATIONAL JOURNAL OF
MULTIDISCIPLINARY STUDIES IN HERITAGE
RESEARCH
ISSN: 2785-9622 VOLUME 4, ISSUE 1, 2021, 209– 259. www.egyptfuture.org/ojs/

rooms. The length of this facade is 11.70 m and its height is about 11.90 m. The walls of the facade are built with polished stone and the facade is divided into three sections;

A. The First Section:

This part is at the center of the main facade which lies in the north and the part is accessed through a stony ladder. The first layer of the facade is characterized by having two columns (36) fixed on rectangular bases topping the rail of the verandah. The columns hold up the ceiling of the verandah. This part of the facade is opened by three doors which are the main door of the house and the door of the reception room and a door of another room overlooking the northern facade. The verandah's ceiling is decorated with diverse ornaments. The designer of the facade has divided the ceiling into five divisions or parts over which he distributed the ornaments and covered the divisions with a white strip decorated with floral motifs taking the form of brown flowers. In the middle of the roof, there is a large wrapper which the designer filled with diverse colorful floral motifs and whose floor is blue whereas the floor of the four areas surrounding the wrapper is green and their ornaments take the form of flowers and plant branches and multi-petal flowers. All the ornaments are implemented on gypsum or stucco layer (37) (See Plate No.3). The second layer of this section of the facade has a verandah in its middle which is fixed on two stony columns with rectangular bases and Corinthian crowns (38)holding up the verandah. There are also another two columns adjacent to the wall of the facade on the two sides of the verandah with the Corinthian crowns. There is a wooden lintel at the lower area between the two columns that holdup the ceiling. The ornament of the ceiling of the verandah in the second floor takes the form of a hollow star in the middle of the ceiling. The top of the facade is crowned by an embossed stony frame fixed on stony Hermdanat (Corbels) (39)with floral motifs. This part of the facade ends with stony Fronton (40) (See Fig. 2), which is decorated with embossed floral motifs.

B. The Second Section of the Northern Facade:

It is on the right side of the middle section, where this part of the facade is divided into three horizontal divisions; the bottom of the first division consists of two windows connected by a segmental (41) arch (42) .The windows of the basement take the form of steel entanglements aiming at protecting the house since the holes of the windows are close to the street floor. The said two windows are the basement windows. The second division takes the form of two windows closed by from outside shutters 2.30 x 1.20 m, and these two windows are the windows of the first floor and are topped by a solid space that is topped by embossed stony cornice (43) which extends to the end of the first floor and the beginning of the second floor. The third division of this part of facade takes the form of two rectangles with a frame protruding beyond the direction of the facade whose dimensions are about 1.30m x 90 cm and has floral motifs(44) in its center. These ornaments consist of plant leaves and flowers implemented by high relief carving. The ornaments are neatly implemented and are topped by two windows closed by shutters and are in the second floor. The top of the two windows are decorated with embossed gypsum Rumi ornaments (45) .These two windows are topped by embossed stony cornice topped by five stony Hermdanat(Corbels) among which there are ornaments in the form of rosary beads decorating the upper frame of the facade from outside.

C. The Third Section of the Northern Facade:

INTERNATIONAL JOURNAL OF
MULTIDISCIPLINARY STUDIES IN HERITAGE
RESEARCH
ISSN: 2785-9622 VOLUME 4, ISSUE 1, 2021, 209– 259. www.egyptfuture.org/ojs/

It is on the left side of the middle section: this section is divided into two parts; the first part is on the same level of the right side of the facade and consists of two floors. The first floor is a door with dimensions of about 2.38 m x 1.20 m closed by two shutters (46) and this door leads to a reception room existing in the first floor whereas the second floor has a window closed by two shutters. The top of the facade is crowned by an embossed cornice held up by stony Hermdanat. The eastern side of the main facade protrudes beyond the direction of the facade by 3.28 M and includes two facades; the western one is divided into three horizontal parts; the first of which has a wooden ladder with six stairs and steel balustrade leading to a landing under which there is a doorway leading into basement. The second part represents the first floor which consists of a wooden door leading to a reception room. The third part represents the second floor which consists of a balcony with a wooden balustrade made of carved wood opened by a door with two shutters topped by floral motifs modeled on Rumi ornament implemented by gypsum or stucco above which there are three stony Hermdanat (Corbels) holding up an embossed cornice. The northern part of this section of the facade is opened from the bottom by a window closed by two shutters topped by an embossed cornice, and then comes the second floor which consists of a balcony with steel balustrade based on stony Hermdanat. The balcony is opened by a door closed by two shutters and its top is crowned by embossed gypsum floral motifs modeled on Rumi ornament. This is topped by three stony Hermdanat holding an embossed stony cornice decorating the top of the facade. This part of the facade stands out by protruding beyond the rest of the facade and having a stony cornice consisting of three embossed layers which wrap and crown the facade as well as the western and southern facades marking the end of the first floor and the beginning of the second floor.

5.2. The Western Facade:

This facade overlooks Abu El-Nil Mosque Street, and extends from north to south by a length of 20.45 m, and its southern part opens by a door with dimensions of 1.90 m x 2.80 m, and closed by a steel door based on two stony pillars leading to a path between the southern facade of the house and the northern facade of the mosque. This path leads to the doorway in the southern facade of the house. At one side of the northern facade, there is part of the fence which wraps around the main facade. The western facade is divided into three parts; the middle part of it starts from the bottom of the wall at around 60 cm and protrudes beyond the direction of the wall by 5 cm. This part is topped by two windows closed by two shutters; the height of each is about 2.38 m x 1.20 m. These windows open at the first floor (See Plate No.4), and are topped by a balcony protruding outward, which is made of brick and has five sides; the biggest of which overlooks the street. There is a window opening in each side and is closed by two shutters except for the first and last sides which are closed by one shutter. These windows are crowned by floral motifs modeled on the Rumi ornament and are topped by an embossed stony frame topped by nine stony Hermdanat implemented decoratively and hold up an embossed stony cornice. The top of the facade is crowned by rosary beads' ornament.

A. The Southern Section of the Western Facade:

It begins from the bottom by a wall protruding by about 5 cm up to a height of around 60 cm. This area is topped by two windows whose dimensions are 2.38 m x 1.20 m, and are closed

INTERNATIONAL JOURNAL OF
MULTIDISCIPLINARY STUDIES IN HERITAGE
RESEARCH
ISSN: 2785-9622 VOLUME 4, ISSUE 1, 2021, 209– 259. www.egyptfuture.org/ojs/

by two shutters topped by a wooden balcony based on four wooden cantilevers (Corbels). The balustrade of the balcony is made of steel and takes the form of circles penetrated by floral motifs (See Plate No.5). There are two doors opening in this balcony and are closed by two shutters and are crowned by floral motifs modeled on the Rumi ornament. They are topped by an embossed stony frame which is topped by five stony ornamented Hermdanat holding up an embossed stony cornice. This facade is marked by having a wooden skylight (Lantern or Shokhshikhah)(47) which tops the ladder court and used for lighting and provision of fresh air or ventilation.

B. The Northern Section of the Western Facade :

The architect followed the system of symmetry(48) in designing this facade in terms of the distribution of the windows and doors within the area surrounding the facade in addition to the most accurate details and the ornaments shown on the facade. Given that the facade is extended; it is noted that the architect supports this facade from the middle section by two pillars which protrude from the sides of the middle part of the western facade let alone the large number of Hermdanat used in designing the facade.

5.3. The Southern Facade:

This facade extends from the west to the east by a length of about 13.33 m, and a height of about 13 m. This is the highest facade due to the existence of a room topping the second floor from the south. This facade overlooks the mosque's northern facade, and it is separated from the mosque by an open corridor of a width around 4 m. There is an entrance that exists at the end of the western facade and closed by two steel shutters (See Plate No.6). This facade is divided into three sections as follows;

A. The Middle Section of the Southern Facade:

It is a protuberant memorial doorway knotted by a semicircular arch(49) and closed by a wooden door consisting of two shutters. The arch area is covered with steel bars and the top of the arch is crowned by an embossed stony cornice topped directly by a window closed by a wooden shutter. The top of this window is crowned by floral motifs taking the form of Rumi ornament. This window is topped by another one covered with glass and exists in the third floor and is crowned by leafy floral motifs. It is noticeable the windows that top the southern entrance are considered a court ladder for the house. It is thought that this entrance existing in the southern facade is devoted to the inhabitants of the house as the ladder leads to the bedrooms and a lounge for these inhabitants so the ladder safeguards privacy, as it is far from the main hall and the reception rooms existing in the first floor.

B. The Eastern Section of the Southern Facade:

This side is characterized by having two small windows knotted by semicircular arches which represent the basement's windows topped by two rectangular windows closed from outside by two wooden shutters and steel bars. The two windows are crowned by ornaments made of leafy floral motifs modeled on Rumi ornament that is topped by an embossed stony cornice marking the end of the first floor. This is topped by two windows closed by two shutters in addition to five Hermdanat holding up an embossed stony cornice. The third floor that represents the roof of the house is used for building rooms that are utilized during summer. These rooms are not left unembellished but are decorated with floral motifs. It is noticed that there is a room made of carved wood in the third floor overlooking outside and is used as a room for cleaning clothes as mentioned in the documents relevant to the house(50). It could be

INTERNATIONAL JOURNAL OF
MULTIDISCIPLINARY STUDIES IN HERITAGE
RESEARCH
ISSN: 2785-9622 VOLUME 4, ISSUE 1, 2021, 209– 259. www.egyptfuture.org/ojs/

said that the third floor is used as an outlet and as a method of ventilation for the house inhabitants during summer times.

C. The Western Section of the Southern Facade:

This side is similar to a great extent to the eastern side since it has a window closed by two shutters and its top is crowned by leafy floral motifs. This window is topped by an embossed stony cornice marking the end of the first floor. This is topped by a deep or sunken rectangular area engraved with embossed floral motifs topped by a window closed by two shutters and an embossed stony cornice decorated with four stony Hermdanat. This cornice is held by a solid wall and part of the skylight which lights up the southern ladder of the house.

6. The Architectural Description of the House from inside:

A. Basement(51):

The house includes a small courtyard in the northern side that leads to the basement which is described as an entire floor under the earth's surface consisting of a room and a bathroom in the east, and it also includes two rooms in the west. It is noteworthy that this description is mentioned according to the inventory notebook of A'wayed of El-Mansheya El-Bahareya Street, Notebook No. (12813/218/34) for the Year 1925, which is preserved in the general archives house in the Citadel of Egypt(52) . It was not possible to enter the basement due to being closed a long time ago and desolate, but it is concluded that the basement is an entire floor consisting of a number of rooms and a bathroom and some windows distributed among the northern, western and southern facades of the house and this is a proof that it is an entire floor under the earth's surface(53) .

B. The First Floor of the House:

The house is accessed through an ascending ladder existing in the northern facade and leading to the verandah as well as the main entrance of the house. The verandah is a rectangular area with dimensions of about 4.39 m x 3.92 m, and its floor consists of small tiles and the verandah overlooks the outside through stony pillars holding up its roof and is preceded from the north by stony balustrade (Handrail). The architect was interested in decorating the verandah's roof with various floral motifs colored blue, green and gold. The architect was interested not only in decorating the verandah's roof, but also the house's roofs as well as painting the roofs in general.

C. The Main Entrance of the House:

It is accessed through an opening in the door closed by wooden shutters with dimensions of about 2.70 m x 2.29 m, and consists of four parts. The width of each shutter is about 57 cm and the bottom of each is decorated with floral motifs that take the form of plant branches and trees. The upper part of each shutter is covered with glass supported by steel bars, whereas the top horizontal section of a door which is made of wood is divided into three parts; the middle part which is the biggest one and it is covered from the inside with glass and from the outside with steel bars. On both sides of this middle part, there were two oval areas covered with glass and steel bars. This is topped by an embossed wooden cornice surrounded from both sides by two wooden corbels (54) decorated with floral motifs that take the form of a vase with flowers (See Plate No.7).

7. The Planning of the House :

The house of Abd Al-Azim Abu El-Nil adopted the imported European design or the so-called European Planning newcomer(55) represented by the hall as the main element in the

INTERNATIONAL JOURNAL OF
MULTIDISCIPLINARY STUDIES IN HERITAGE
RESEARCH
ISSN: 2785-9622 VOLUME 4, ISSUE 1, 2021, 209– 259. www.egyptfuture.org/ojs/

design, where the rooms are distributed around it. Also, all the rooms lead to the hall and each line of rooms is open without partitions, and also there is a reception room (see Fig. 1).

A. The Central Hall[56]:

It is a rectangular area with dimensions of about 6.38 m x 4.42 m, and is opened from the north by a main entrance door with dimensions of about 2.70 m x 2.29 m. The western wall has two doors; each of which is a rectangular opening of about 3.37 m x 1.17 m, and are closed by two wooden shutters. The eastern wall has also two doors; each of which is a rectangular opening of about 3.37 m x 1.17 m, and are closed by two wooden shutters as well, and the southern wall has also two doors. As mentioned above, it is noteworthy that the design of the house is a central hall surrounded by three rooms from the west and three rooms from the east. The hall is opened by two doors from the southern side, and one of which leads to a bathroom and another hall. The corridor before the bathroom and the hall has a door leading to the ladder of the second floor and the entrance of the southern facade. The floor of the hall takes the form of small tiles. It is noticed that the height between the first floor and the ceiling of the hall and all the rooms is about 4.64 M (See Plate No.8).

B. The Ceiling [57] :

The ceiling of the hall of the house of Abd Al-Azim Abu El-Nil is one of the distinct ceilings, as it is decorated with marvelous floral motifs and geometric decorations. The ceiling includes an embossed plaster frame which has ornaments of Cores and Teeth[58] at its bottom. The frame is topped by another one that contains an ornamental strip that link them together through plant patterns taking the form of leaves decorated with the golden color. The ceiling has form of embossed pomegranates in its four corners, where in the middle of every two pomegranates, there is a wrapper decorated with embossed golden floral motifs. The ceiling has been ornamented with a strip inside which there were geometric decorations and floral motifs taking the form of multiple petal flowers. The center of the ceiling is a rectangular embossed plaster frame. In the middle of each side of the rectangle, there is a semicircular shape. The corners of the rectangle are decorated with floral motifs taking the form of golden plant branches on a green background. The center of the ceiling is ornamented with an embossed golden wrapper (Gamma) made of stucco or plaster from which floral motifs come out taking the form of golden plant branches on green background, where the lighting equipment are hanging from the central wrapper (Gamma) of the ceiling (See Plates Nos. 8,9, 10, and Fig. 3).

C. The Rooms of the First Floor:

- The First Room:

The first room is located to the right of the one entering the house to the west of the hall and is a rectangular area with dimensions of about 3.96 m x 4.91 m, and is accessed through two doors; one through the hall and the other through the verandah. Each door is a rectangular opening with dimensions of about 3.37 m x 1.17 m. The room is closed by a wooden door topped by a wooden partition; the top of which is opened by a fanlight covered with glass. It is characterized by having four windows; two windows for each wall for both the western and the northern walls. Each window is a rectangular area with dimensions of about 2.38 m x 1.20 m, and a depth of about 31 cm, where each is closed by two shutters and its southern wall has a door opening leading to the next room (See Plate No.11). The ceiling of the room is ornamented from the top of the walls with an embossed brown plaster frame topped by

INTERNATIONAL JOURNAL OF
MULTIDISCIPLINARY STUDIES IN HERITAGE
RESEARCH
ISSN: 2785-9622 VOLUME 4, ISSUE 1, 2021, 209– 259. www.egyptfuture.org/ojs/

another frame that are linked together by an ornamental strip decorated with geometric decorations which take the form of brown squares and rectangular shapes drawn with white. This strip is topped by another strip whose sides are decorated with semicircular shapes from which floral motifs emerge taking the form of vases. There is an embossed wrapper (Gamma) in the middle of the ceiling decorated with flower shapes and surrounded by bundles of floral motifs and vases from which roses and flowers emerge and implemented neatly in brown and silver colors on a white background achieving harmony and symmetry between colors. There is also a shape in the middle of the ceiling which is similar to Bukhariyya(59) (See Fig.4). There were floral motifs distributed across the corners of the room and were taken from the central ornaments of the ceiling that was painted with sky blue (See Plate No.12). The floor of the room was made of Parquet wood (60) and this room became now the office of the branch manager of Alexandria Cotton Exporters Association.

- The Second Room:

The second room is located to the right of the one entering the house to the west of the hall, where it is accessed through an opening at the door which is rectangular in shape with about 3.37 m width x 1.17 m length and with a depth of about 57 cm. The dimensions of the room are about 2.92 m x 4.94 m. It is noticeable that the entrance door to the eastern wall is a wooden one topped by a fanlight covered with glass. There are two windows to the western wall in this room. Each window is a rectangular opening with dimensions of about 2.38 m x 1.20 m. There is also a rectangular opening to the northern wall which takes the form of a door closed by two wooden shutters leading to the first room. There is also a door to the end of the eastern wall which is rectangular in shape with dimensions of about 3.33 m x 97 cm, and is closed by two wooden shutters and leads to the next room which is now closed and used as a wall cupboard. The ends of the room's walls are represented by a green embossed plaster frame topped by another brown one linked together by an ornamental strip decorated with geometric decorations (61) that take the form of intersecting hexagonal shapes. The brown plaster frame is followed by another similar one and both are linked by multiple petal flowers painted with yellow on a white background. The corners of the room's ceiling are ornamented with a four-petal flower painted with red inside a semicircular shape which is subdivided into floral motifs taken from nature represented by roses, leaves and plant branches. The four corners are linked together through plant leaves extended to be connected with each corner. The center of the ceiling is ornamented from its middle with a red wrapper (Gamma) filled with floral motifs taking the form of a little flower surrounded by another golden wrapper (Gamma) which is branched into floral motifs taking the form of plant branches and leafy floral motifs painted with gold (See Fig.5), (See Plate No. 13). The floor of the room is made of Parquet wood.

- The Third Room:

This room is located in the east and is dedicated to the reception of the men guests since it includes a ladder from the north and is independent from the main hall of the house. It protrudes beyond the direction of the main facade by 3 m, and its entrance door is accessed through a wooden ladder consisting of five stairs existing in the house's courtyard. The entrance door takes the form of rectangular opening with dimensions of about 3.37 m x 1.17 m, and is closed by two wooden shutters. This room is a rectangular area with dimensions of about 3.28 m x 3.35 m. There is a door opening to the southern wall that leads to the next

INTERNATIONAL JOURNAL OF
MULTIDISCIPLINARY STUDIES IN HERITAGE
RESEARCH
ISSN: 2785-9622 VOLUME 4, ISSUE 1, 2021, 209– 259. www.egyptfuture.org/ojs/

room. There is a window for the northern wall that overlooks the street with dimensions of about 2.38 m x 1.20 m. This window is raised above the floor of the room by about 1 m, and is closed by two shutters. The ceiling of the room begins with two embossed stony frames linked together by an unornamented strip. In the middle of the ceiling, there is a dark green wrapper (Gamma) which has a four-petal red flower in its center and is surrounded by a circle painted with silver and from which vases of modified floral motifs and antimony flower(62) (See Fig. 6), as well as other ornamental patterns in the form of shells(63) . All the ornaments are implemented inside a shape similar to Bukhariyya that exists in the middle of the ceiling (See Plate No.14). The floor of this room takes the form of tiles, and it is worth mentioning that this room is dedicated to reception, so it had to have an entrance separate from the house.

- The Fourth Room:

It is the first room on the left side of the main entrance to the east of the main hall of the house, as it is rectangular in shape with dimensions of about 5 m x 4 m. It has an entrance from the west that takes the form of a rectangular door opening with dimensions of about 3.37 m x 1.17 m. The room is closed by two wooden shutters topped by a fanlight covered with glass. The eastern wall to the room has two windows; each of which with dimensions of about 2.40 m x 1.19 m, and a depth of about 54 cm. The northern wall to the room has a rectangular opening closed by a wooden door with two shutters. It has a window overlooking the courtyard of the house in the northern facade. The southern wall has a door closed by two wooden shutters and leads to the next fifth room. This room is the connecting link between the hall and the reception room (See Plate No.15). The ceiling of this room begins from the bottom with an embossed plaster frame topped by another one and are linked together by an ornamental strip whose sides are decorated with geometric decorations followed by ornamental one surrounded by an embossed plaster frame decorated with modified flowers consisting of four petals with patterns repeated along the strip. In the corners of the frame, there is a rectangular shape painted with green, as the corners of the ceiling are ornamented with floral motifs that take the form of a vase from which modified plant branches emerge. In the middle of the ceiling, there is an embossed plaster wrapper (Gamma) decorated with embossed floral motifs into which lighting equipment is mounted. The wrapper (Gamma) is surrounded by floral motifs taking the form of plant branches as well as a flower and implemented in golden and white colors (See Fig.7). The floor of the room is made of wood (See Plates Nos.16, 17).

- The Fifth Room:

It is the second room on the left side of the hall to the east of the main entrance and is rectangular in shape with dimensions of about 5.38 m x 3.91 m. It has an entrance from the west which is a rectangular door opening with dimensions of about 3.37 m x 1.17 m, and is closed by two wooden shutters topped by a fanlight covered with glass. The northern wall has a door closed by two wooden shutters leading to the previous fourth room. It also has a small window with dimensions of about 2.41 m x 30 cm that overlooks the court. The eastern wall is solid whereas the southern wall has a door closed by two wooden shutters leading to a vestibule (corridor) that in turn leads to the bathroom and a door that leads to the ladder of the second floor. There is a part of the ceiling of this room is damaged, but the falling part of the ceiling made it possible for us to know the method of building the ceiling which was by using wooden boards and veins and then placing wooden planks under the veins and mounting a

INTERNATIONAL JOURNAL OF
MULTIDISCIPLINARY STUDIES IN HERITAGE
RESEARCH
ISSN: 2785-9622 VOLUME 4, ISSUE 1, 2021, 209– 259. www.egyptfuture.org/ojs/

plaster layer on the planks and implementing ornaments on the roof. The ceiling of the fifth room is characterized by having its corners ornamented through a circle implemented in golden color and surrounded from outside by floral motifs derived from nature. The ceiling of the room begins from the bottom by an embossed plaster frame followed by another one and both are linked by an ornamental strip whose top and bottom are decorated with floral motifs taking the form of eight-petal flower repeated along the ornamental strip. This strip is topped by another inside which floral motifs are implemented. The ceiling has in its middle a wrapper (Gamma) decorated with multi-petal flowers into which lighting equipment is mounted. The ornaments surrounding the wrapper (Gamma) take the form of plant leaves and modified plant branches implemented in golden color (See Plate No.18). The western direction of the room has a door closed by two wooden shutters leading to a vestibule (Dirkah, Corridor) that leads to the ladder of the second floor. The southern wall of the Dirkah has a door with dimensions of about 2.63 m x 79 cm closed by a wooden shutter and leads to a rectangular room with dimensions of about 1.85 m x 71 cm whose southern side has a window overlooking the southern facade of the house and is covered with glass. This small room is opened from the east by a door with dimensions of about 2.13 m x 71 cm arched by a pointed arch leading to the bathroom (See Plate No.19). It is noteworthy that the ceiling of the bathroom was a flat one made of white plaster, and the bathroom was lighted by circular shapes covered with glass which are similar to the artificial lighting or the so-called Madawi in Islamic bathrooms (Hammams) (See Plate No.20). As for the roof (ceiling) of the house of Abd Al-Azim Abu El-Nil, it takes the form of wood boards supported by wood planks covered with plaster and painted with oil colors on which various decorations were implemented.

D. The Upper Floors:

Through checking the inventory notebook of A'wayed of El-Mansheya El-Bahareya Street, which is preserved in the general archives house in the Citadel of Egypt(64) , it was found out that the second floor was added at the beginning of March 1923. The design of the second floor was similar to that of the first one. This floor consists of a hall with five rooms and Shakma(65) , and these rooms end with a corridor leading to a bathroom from the southern side. From the west, there is a room with a balcony. As for the third floor, it consists of a washing room(66) as well as a bathroom(67) .

8. Analytical Study of the House of Abd Al-Azim Effendi Abu El-Nil:

There is no doubt that during the reign of Muhammad Ali Pasha and afterwards, Egypt witnessed foreign influences that affected architecture in general and residential buildings in particular. This led to the difference in the architectural styles, ideas and design values that helped in the emergence of diverse styles reflected in the residential buildings of this period in Egypt(68) . During the reign of Muhammad Ali's dynasty, Egypt was influenced by the European architecture in particular as the rulers of the 'Alawiyya dynasty viewed Europe as one of the sources of civilization and advancement (69). So, Muhammad Ali did his best to push Egypt towards knowing about this civilization and carefully examine its distinctive architecture and different branches of arts, where this period in architecture was called "Tafarnuj or Westernization", which started at the beginning of the 19th century when Muhammad Ali introduced the modern centralized government which was derived from the European systems, where it is usual that if you adopt the culture and system of a certain

ISSN: 2785-9622 VOLUME 4, ISSUE 1, 2021, 209– 259. www.egyptfuture.org/ojs/

society, the dominant architectural styles of this society will necessarily be transmitted as well [70]. It is noteworthy that one of the main reasons that helped Egypt's shift towards the west was sending missions to European countries especially France and Italy, as Khedive Isma'il wanted to modernize Egypt along European lines, since he stayed and studied in Europe and wanted to turn Egypt into a center for cultural evolution[71]. It could be said that the 'Alawiyya dynasty sought the help of foreign engineers and workers who were made use of not only for their knowledge, but also for educating a number of Egyptians[72]. Moreover, the spread of education in Egypt led to the widespread adoption of the European architectural style in designing the residential buildings of the 19th and 20th centuries[73]. As a result, the Egyptian governorates were influenced by the dominant artistic and architectural trends in Cairo. It is noteworthy that the most important principles of European architecture derived from Islamic architecture and are put into practice again with their European forms and characteristics are repetition, balance and contrast, where contrast means harmony between residential units to give the building a touch of beauty and elegance [74] let alone the simplicity and similarity which characterized the residential buildings during the 19th and 20th centuries[75]. It is worth mentioning that there is a strong relationship between the characteristics of the building and social and economic standards of its owner taking the weather factor into account[76]. It is noteworthy that the concept of privacy has to be available in the residential buildings since it was prevalent in the buildings throughout the Islamic periods. Privacy is also maintained in the modern residential buildings since every type of buildings has a special nature relevant to and suitable for their design and outer structure and has to be in line with dominant ideas, religious beliefs and customs and traditions[77]. Privacy could also mean respecting the freedom of an individual which is represented by the persistent desire of the owner of the house to prevent strangers from looking into his house and to separate the boys and girls. In addition, the bedrooms (in the second floor) were far from the reception rooms (in the first floor), so there had to be a vertical extension to the house[78]. The planning of the house of Abd Al-Azim Abu El-Nil was influenced by the residential buildings' design during the 19th and 20th centuries, since it included a hall which was used as a place for receiving guests and practicing everyday life activities for the residents of the house or a palace[79]. The hall takes the form of a rectangular section[80] and has a ladder leading to the second floor. It is a central middle area surrounded by rooms through which all rooms are accessed. This style was adopted in designing the houses of Al-Fashn city, as is the case with Abd Al-Azim Abu El-Nil's house. The rooms are the most important parts of the house which located on the right and left sides of the central hall[81] whose projections range from square to rectangular shapes. The corridors too are important units which are indispensable inside each building[82], since they help connect the internal architectural units of the house quickly and smoothly [83] and this facilitates family communication and unity[84]. The floors of the house are tiles built on a layer of cement and sand and this is a modern method of construction[85]. This type of floors is used in Abd Al-Azim Abu El-Nil's house in addition to the wooden floors which are used in the house subject to this study. The roof is also considered one of the main elements of construction as the building is not complete without a roof. Though the walls of any building are important for

INTERNATIONAL JOURNAL OF
MULTIDISCIPLINARY STUDIES IN HERITAGE
RESEARCH
ISSN: 2785-9622 VOLUME 4, ISSUE 1, 2021, 209– 259. www.egyptfuture.org/ojs/

holding up the roof and defining the architectural space, this space could not be identified without a roof. The character of the building is defined by the type and form of its roof. In addition, the costs of any building increase by the cost of its roofs and decrease by the cost of its roofs(86) .As for the roofs of the house of Abd Al-Azim Abu El-Nil, they are of two types; the first is the flat horizontal roof, and the second was the sloping gable roof. It is noteworthy that the function of the roof is summarized in "Thermal Insulation"(87),"Sound Insulation" (88),"Giving the building artistic touch"(89), and "Protection against wind and rain" (90). Balconies are supplementary elements to the house since they are one of the modern elements derived from European architecture which had large spaces that connect between the indoor and outdoor of the house(91) , where the balconies are integrated into the three facades of the house of Abd Al-Azim Abu El-Nil. Then, the balcony becomes one of the repetitive architectural elements and is characterized by commonly adopting an engineering system in its construction, since balconies and verandahs were often of rectangular or square shapes, but balconies were smaller in space than verandahs. It is noteworthy that large-space balconies "verandahs" were in the north of the residential building during the 19th and 20th centuries, where the inhabitants of the house spend part of their time during summer time. There were tables and couches in the verandahs where the inhabitants of the house and visitors engage in a conversation during break and when having food and beverages (92). The equivalence of this element in the Islamic houses during Mamluk and Ottoman periods was the seat (93). It is worth mentioning that the Fronton which existed on the northern facade of the house subject to this study is one of the important architectural features which was common in the Greek architecture and continued to exist in the Roman architecture and was significant in the European architecture and modern era. This element was transferred to Egypt together with the European influences imported into Egypt during the 19th century (94). It is noteworthy that it is taken for granted that the facilities and buildings are built of building materials available in the governorate or the city where the facility is established (95). The building materials in the modern buildings do not depend on the building materials available in the local environment only such as; stones, adobe brick, gypsum and sand, but included also some imported materials such as; wood, steel and reinforced concrete which are the outcome of the industrial development influenced by the western countries (96). The spread of these new materials used in building resulted from the development in the modes of transportation. The design of the house of Abd Al-Azim Abu El-Nil in Al-Fashn city was influenced by the weather conditions given that Egypt's weather is hot in summer and warm in winter, so the main entrance and verandahs are in the north and there are a lot of windows installed at the facades at a high altitude to let ventilation into the house (97). Moreover, the northern western winds are often considered the mild factor in Egypt since they are the source of fresh air during summer. The architect tried to make use of the wind direction to help renovate and bring the pure air into the house. Wind blowing affected urban planning in Egypt as most of Egyptian cities were built in a way that suits the direction of the wind blowing from the north given that the north is the direction where winds blow to alleviate the hotness of summer(98). In addition, there are certain adjustments made by the architect in whom he takes into account building bathrooms in the south as much as possible in order to

INTERNATIONAL JOURNAL OF
MULTIDISCIPLINARY STUDIES IN HERITAGE
RESEARCH
ISSN: 2785-9622 VOLUME 4, ISSUE 1, 2021, 209– 259. www.egyptfuture.org/ojs/

prevent the foul odors from being smelt by the house inhabitants, so the bathroom of Abd Al-Azim Abu El-Nil's house was built and located in the south side.

9. Analytical and Comparative Study Between the House of Abd Al-Azim Abu El-Nil and Some Residential Buildings During the 19th and 20th Centuries

The house of Abd Al-Azim Abu El-Nil is one of the residential buildings that still exist in Al-Fashn city-Beni Suef governorate-Egypt. It is one of the architectural models that influenced by the European styles imported into Egypt(99) due to the spread of foreign engineers, architects and technicians who come to Egypt with the beginning of Muhammad Ali Pasha's rule and during the reign of his dynasty. Therefore, a number of architectural and ornamental elements of the residential buildings emerged and were obviously influenced by these European styles. The most important of those styles were the Gothic style (100), the Renaissance style (101) and the Eclectic style (102). It is noticed that there was a similarity between some architectural characteristics and the artistic features which were influenced by the aforementioned styles and their counterparts adopted in the residential buildings of the 19th and 20th centuries and this will be evident as follows:

- Floors multiplied in the house of Abd Al-Azim Abu El-Nil, the same as in the residential buildings of the 20th century such as Baron Palace which dates back to 1905-1911 and is located at El-Orouba Street, Masr El-Gedida (Heliopolis), Cairo(103). Baron Palace is characterized by having multiple floors which reached four consisting of the basement, the kitchens and the servants' rooms. The first floor is composed of a large central hall, three rooms and a billiard room. The second floor consists of lounges and bed rooms whereas the third floor (the roof) is an outlet for the palace's inhabitants to enjoy the fresh air of the summer time(104) . The characteristic of the multiple floors are also obvious in the Palace of Hamd Pasha El-Basal that dates back to 1902, which is located at Ezbet El-Basal affiliate to Etsa center in El-Fayoum governorate. Hamd Pasha's Palace consists of four floors, so it is similar to Baron's Palace in terms of the number of floors and the functional role of each of its four floors(105) . The same applies to Alexan's Palace which dates back to 1910 and is located at El-Mohafza Street in Assiut and consists also of four floors(106),so it is similar architecturally and functionally to the house subject to the study.
- It is noticed that parts of the floors of the house of Abd Al-Azim Abu El-Nil are covered with wood and this is evident in a lot of residential buildings in Cairo and Egyptian governorates in general. An instance of these buildings is "Anisa Wesa's Palace" that dates back to 1899 and is located at El-Mahkama El-Sharaia Street of El-Horeya Street in El-Fayoum governorate. The floor of this Palace is covered with Parquet wood(107) .In addition, Parquet wood is also used to cover the floors of "Princess Shivakiar's Palace" that dates back to 1900-1907 and is located in El-Matariya in Cairo, especially its salon and dining room(108). The same applies to "Aisha Fahmy's Palace" that dates back to 1922 to 1928 and is located at El-Zamalek district in Cairo, where Parquet wood is used to cover most of its floors(109) . It is generally noticed that Parquet wood was used for covering the floors of the Palaces of the 19th and 20th centuries and this is one of the remarkable characteristics of European Baroque style(110) .

INTERNATIONAL JOURNAL OF
MULTIDISCIPLINARY STUDIES IN HERITAGE
RESEARCH
ISSN: 2785-9622 VOLUME 4, ISSUE 1, 2021, 209– 259. www.egyptfuture.org/ojs/

- The existence of rectangular windows closed by glass shutters which is one of the European influences that does not suit the nature of the weather in Egypt, so the shutters were added to the windows to suit the nature of the weather. In addition glass is commonly used (111), where there are verities of windows' shapes (112) in the residential buildings in Egypt. Rectangular windows were installed on "Anisa Wesa's Palace" built in 1899, and "Abd El-Satar El-Basal's Palace that dates back to 1905-1907, which is located at Ezbet El-Basal affiliate of Etsa center in El-Fayoum governorate(113), as well as "Aisha Fahmy's Palace built in 1922 at El-Zamalek district in Cairo(114).
- The entrances of the house of Abd Al-Azim Abu El-Nil are multiplied, but the most important of which is the block of the main entrance that often lay in the middle of the facade so that it is distinct from the other subsidiary entrances. The entrances multiply also in the Palace of "Abd El-Kader El-Basal" built from 1924 to 1926, which is located at El-Seda El-Qiblia at Etsa center in El-Fayoum governorate(115) .
- The existence of the courtyard at the front of the building which becomes an alternative to the courtyard that lay at the center of the residential buildings during Islamic periods and is one of the imported European influences. So it could be said that the house with all its openings overlooks the outside through windows, balconies and entrances. This runs counter to the concept of privacy and preserving the sanctity of the inhabitants of the house.
- The multiplicity of the windows and doors has decreased the wall surfaces that are considered one of the clear Gothic influences in the house subject to the study. It is noteworthy that the few wall surfaces in the residential buildings in Egypt resulted from the evident influence by the imported styles in general and the Gothic style in particular (116).
- Balconies(117) are one of the European influences transferred to Egypt during the 19th century and one of the elements that are installed on the facades of the Abd Al-Azim Abu El-Nil's house in Al-Fashn city, as balconies and verandahs are widely installed on the facades of this house. Balconies also exist in a lot of Palaces and houses. Instances of which are as "Baron's Palace" in Masr El-Gedida (Heliopolis), Cairo, "Alexan's Palace" in Assiut, "Aisha Fahmy's Palace in El-Zamalek district in Cairo, as well as "Hamd El-Basal's Palace in El-Fayoum governorate.
- The use of supporting trusses and pillars that are installed on the west facade of the house of Abd Al-Azim Abu El-Nil and this is considered one of the Gothic influences.
- The existence of cornice (118) which is one of the influences derived from the Renaissance's age style that obviously crowned the facades of this house.
- The existence of Fronton(119) on the northern facade and at the top of the main entrance of the house of Abd Al-Azim Abu El-Nil, which is considered one of the remarkable elements of the Renaissance style especially the triangular Fronton(120) . Fronton also appeared in "Anisa Wesa's Palace in El-Fayoum, and "Alexan's Palace" in Assiut, as well as "Prince Said Pasha Halim" whose establishment dates back to 1895-1896 and is located at Champollion Street in Cairo, where Fronton is installed on the main facades of the palace(121) .

INTERNATIONAL JOURNAL OF
MULTIDISCIPLINARY STUDIES IN HERITAGE
RESEARCH
ISSN: 2785-9622 VOLUME 4, ISSUE 1, 2021, 209– 259. www.egyptfuture.org/ojs/

- Installing columns with Corinthian crowns[122] at the northern facade of the house of Abd Al-Azim Abu El-Nil and these columns emerged in Islamic architecture in general and are imported from Greek and Roman architecture. The Corinthian crown is much more complex and elaborate than the Doric and Ionic Orders. It is distinguished with its carved ornamentation as well as the existence of the leaf of acanthus [123].
- An increasing interest in the organization based on the principle of similarity and this is apparent through the facades of house especially the western and southern facades. It is noteworthy that similarity or symmetry principle[124] existed since Islamic periods in Egypt, where it could be said there is apparent influence by the Islamic style. In addition, there is an interest in implementing axial doors due to the existence of the northern and southern entrances on one axis and this is one of Islamic influences[125]. It is noticed that the middle of the western facade of Abd Al-Azim Abu El-Nil's house is similar to a great extent to the middle of the western facade of the Palace of Abd El-Kader El-Basal built in 1924 in El-Fayoum, where the house of Abd Al-Azim Abu El-Nil is similar to the Palace of Abd El-Kader El-Basal in terms of having a prominence protruding from the face of the walls and overlooking the outside through ribbed or polygonal walls, where each side of the walls has a rectangular window closed by shutters.
- In the middle of Abd Al-Azim Abu El-Nil's house, there is a main hall into which a number of rooms open. This architectural feature is one of the European influences that were common in residential houses during the 19th and 20th centuries such as the Palaces of "Anisa Wesa", "Hamd El-Basal", and "Abd El-Kader El-Basal" in El-Fayoum governorate[126].
- It is noticed that there is apparent influence by the Islamic style shown in the ornaments of Abd Al-Azim Abu El-Nil's house either the floral motifs represented by multi-petal flower, plant leaves and branches[127], as well as the geometric ornaments[128] represented by circles, semicircles and wrappers (Gammat) in addition to the types of Islamic arches[129] implemented in Abd Al-Azim Abu El-Nil's house such as the semi-circular arch existed in the southern entrance of the house and the pointed arch existed on the door leading to the bathroom. There are also some kinds of artificial lightings (Madawi) which installed into the ceiling of the bathroom represented by circles covered with glass and are considered one of the Islamic artistic influences.
- An interest in the interior ornaments implemented on the internal ceilings [130] of the house of Al-Azim Abu El-Nil such as the ceilings of the hall and rooms as well as the use of various colors. In addition, the ornaments of ceilings of Abd Al-Azim Abu El-Nil's house are similar to those of the ceiling of "Anisa Wesa's Palace built in 1899 in El-Fayoum, and this in terms of varying and merging between the floral motifs and geometric decorations, where the ornaments were influenced by Rumi ornament. Moreover, the varying ceilings ornaments were common in the residential buildings in Egypt during the 19th and 20th centuries.

10. Conclusion of the Study

During the 19th and the beginning of the 20th centuries, architecture witnessed an architectural leap or breakthrough in terms of the styles of establishing residential buildings in Egypt. This was due to Muhammad Ali's dynasty's influence by the European architectural styles and arts

ISSN: 2785-9622 VOLUME 4, ISSUE 1, 2021, 209– 259. www.egyptfuture.org/ojs/

since they introduced new styles in building which were different from the prevailing architectural styles in Egypt in the previous eras. In addition, Muhammad Ali's dynasty's persistent desire to turn Egypt into a piece of Europe especially the cities of Cairo and Alexandria, which has given the buildings of the dynasty a special and distinct style. The European influences - which considered as symbols of progress, urbanization and civilization- were not limited to Cairo as the capital of Egypt but they were transferred to other Egyptian cities through the rise of trade traffic let alone the development of transportation which contributed to their spread then. It is noteworthy that there was also a role played by foreign architects and engineers who circulated their foreign architectural principles, ideas in the north and south of Egypt as well as in capital cities. Al Fashn city in Beni Suef Governorate was set as an example as it included a number of residential buildings established during the first half of the 20th century and Abd Al-Azim Abu El-Nil's house is considered one of these distinct buildings artistically and architecturally since it stands out for adopting the domestic style of the residential building of governorates. Moreover, the house preserved the domestic architectural traditions and was influenced by the European methods and styles in terms of the architectural styles and ornamental elements. This study was adopted and addressed through the descriptive approach and analytical methodology for presenting the residential house of Abd Al-Azim Abu El-Nil. The civil architecture of Al Fashn city was influenced by a lot of European styles as well as the arts of the Renaissance's age. Therefore, the architectural styles and ornamental elements influenced by the Gothic style, the Baroque style, the Renaissance style and the Eclectic style which were emerged clearly in this period. The house subject to the study was established by Abd Al-Azim Effendi Moustafa Mohammed Abu El-Nil during the first quarter of the 20th century specifically in 1921 A.D. This residential house is located in Samah El-Wogoh Street which was previously known as El-Manshia El-Bahria Street in Al-Fashn city of Beni Suef Governorate. It is bordered to the west by the mosque of Abu El-Nil's Street and to the east by the house of the heirs of El-Sayyid Ahmed El-Halaby and to the south by the Mosque of Moustafa Abu El-Nil. The house of Abd Al-Azim Abu El-Nil consists of four floors including a basement. The architectural planning of the house follows the characteristics of the European design that consists of a central hall surrounded by rooms. The first floor consists of reception rooms, whereas the second floor consists of bedrooms and lounges. The house has two entrances; the main entrance in the north and the other entrance in the south. This residential house is characterized by having three free facades that are detached, whereas the fourth facade is in the east side and is adjacent to some other buildings.

11. Results and Recommendations of the Study

- Thorough the study, it turns out that there are hints or features of combining between the concepts of Islamic thought relevant to the residential buildings and the maintenance of the principle of privacy, as well as the trial of keeping abreast with the architectural development of the modern residential building's form.
- It turns out that the architect has taken into his account the weather conditions and the distribution of the architectural units inside the house and orienting the block of the main entrance towards the north to provide the building with the required ventilation or provision of fresh air.

ISSN: 2785-9622 VOLUME 4, ISSUE 1, 2021, 209– 259. www.egyptfuture.org/ojs/

- The Islamic influences are evident in the architecture and decoration of the house such as axial doors, the principles of similarity or symmetry, arches as well as the floral motifs, geometric decorations and artificial lightings (Madawi).
- The types of Islamic arches adopted in the house are varied such as; semi-circular arch in the southern entrance and the pointed arch at the door leading to the bathroom, as well as the artificial lightings (Madawi) installed into the ceiling of the bathroom which represented by the circles covered with glass and are considered one of the Islamic artistic influences.
- An increasing interest in the organization based on the similarity or symmetry principle and this is evident through the house's facades especially the western and southern facades. It is noteworthy that the similarity or symmetry principle existed since the beginning of Islamic periods in Egypt, and this indicated the apparent influence by the Islamic style. In addition, there is also an interest in making axial doors as the northern and southern entrances appeared on one axis and this is one of the Islamic influences appeared in this house.
- It is noticed that there is an influence by the Islamic style evident in the abundant use of the floral motifs in the house's ceilings, where these motifs take the form of multi-petal flowers, plant branches and leaves as well as the geometric ornaments.
- Oil colors are used to highlight the ornaments in addition to the blue and green colors that are used to help in relaxation and rest. The golden color is also used since it often signifies the richness and position of the owner of the house.
- The influence by the European architectural styles and artistic patterns, which are appeared in architecture of this house and shown by adopting the Gothic style, Baroque style and the Renaissance style.
- Thorough the study, it turns out that the windows are multiple to provide lighting and proper ventilation. In addition, the house includes a first floor dedicated to reception and a second floor dedicated to sleep and rest for house's inhabitants. The multiple floors in residential buildings are considered as a distinctive feature that was common during Muhammad Ali's reign and modern era.
- The existence of rectangular windows closed by glass shutters, which is one of the European influences in addition to the use of wood to cover the floors of the house, which is also one of the imported European influences.
- The entrances of the house are multiple and the block of the main entrance is considered the most important and is often in the middle of the facade, therefore it is distinct from the other subsidiary entrances. It is also noticed that there is a special entrance dedicated to the house inhabitants in the south side.
- The existence of the courtyard which is at the front of the house and was an alternative to the courtyard that is at the center of the residential buildings during Islamic periods. The house with all its openings overlooks the outside through windows, balconies and entrances and this highlights the imported European influences.
- It is noticed that there are many windows and doors so the wall surfaces are few in the house and this is one of the clear Gothic influences. In addition, the supporting uprights and stony pillars which are used in the western facade the house and this is also a Gothic influence.

ISSN: 2785-9622 VOLUME 4, ISSUE 1, 2021, 209– 259. www.egyptfuture.org/ojs/

- The existence of cornice which is one of the influences taken from the Renaissance style and this is apparent on the house's facades in addition to the existence of Fronton in the northern facade and at the top of the main entrance which is one of the distinctive elements of the Renaissance style especially the triangular Fronton, as well as the Corinthian columns which are also used in the north facade and are also one of influences of the Renaissance style.
- In the middle of the house, there is a main hall into which a number of rooms open and this architectural characteristic is one the European influences shown by the residential buildings during the 19th and 20th centuries in Egypt and is obvious in the house of Abd Al-Azim Abu El-Nil subject to the study.
- Balconies and verandahs were European influences that were transferred to Egypt during the 19th century. They are ones of the elements and influences that are evident in the facades of the house.
- The study recommends preserving the house of Abd Al-Azim Abu El-Nil through the supervision and direct follow up by the Supreme Council of Antiquities- Ministry of Antiquities in Egypt.
- The study recommends the importance of making the required renovations restorations to the house by specialists on condition that renovation, restoration and rehabilitation have to be in accordance with the proper scientific methods.
- The study recommends conservation of the Islamic architectural features of the house that still exist.
- The study recommends keeping and not to prejudice and damage the artistic characteristics and architectural manifestations that are witnesses to the architectural and heritage features of the residential buildings during the 20th century of which is the house of Abd Al-Azim Abu El-Nil subject to this study.

INTERNATIONAL JOURNAL OF
MULTIDISCIPLINARY STUDIES IN HERITAGE
RESEARCH

ISSN: 2785-9622 VOLUME 4, ISSUE 1, 2021, 209– 259. www.egyptfuture.org/ojs/

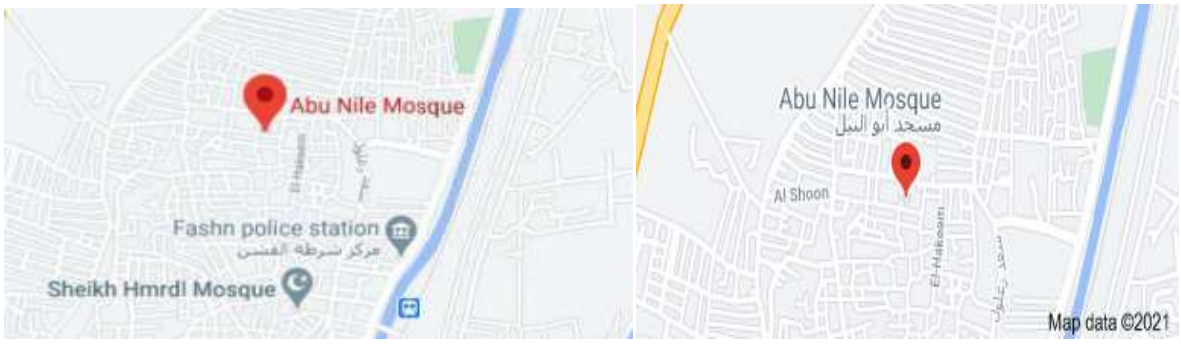
The Documents, Figures and Plates of the Study

Document No. 1: The appointment document of Abd Al-Azim Effendi Moustafa Abu El-Nil as a mayor of Al-Fashn center, which issued by the ministry of interior for the Egyptian royal government on 16th of March 1985 corresponding to 20th of Ramadan 1313 A.H.

Document No. 2: The Passport Document of Abd Al-Azim Effendi Moustafa Abu El-Nil, which issued by the management department at the ministry of interior for the Egyptian royal government bearing No. 1198, it is found out that the position of the house's owner revealed that he made a journey from Suez port to Jeddah to perform pilgrimage in Mecca.

INTERNATIONAL JOURNAL OF
MULTIDISCIPLINARY STUDIES IN HERITAGE
RESEARCH
ISSN: 2785-9622 VOLUME 4, ISSUE 1, 2021, 209– 259. www.egyptfuture.org/ojs/

Map No. (1): A Diagrammatic representation of the current location of Al Fashn.
After: Alhayyah Al'amah Liltakhtit Al'umranii (in Arabic=The General Authority for Urban Planning,
http://gopp.gov.eg/wp-content/uploads/2015/09/alfashn.jpg (Date of access 20/10/2020)



Map No. (2): A Diagrammatic representation of the location of the Mosque of Abd Al-Azim Abu El-Nil in Al-Fashn city-Beni Suef governorate.
After: Google Map: Abu Nile Mosque, Al Shoon, Madinet Al Fashn.
https://goo.gl/maps/VRG2ayReVvcdhkzU7 (Date of access 20/10/2020)

INTERNATIONAL JOURNAL OF
MULTIDISCIPLINARY STUDIES IN HERITAGE
RESEARCH
ISSN: 2785-9622 VOLUME 4, ISSUE 1, 2021, 209– 259. www.egyptfuture.org/ojs/

1. The Main Entrance
2. The Courtyard
3. The Verandah
4. The Hall
5. Reception Room
6. The First Floor Rooms
7. The Ladder
8. The Bathroom
9. The Southern Entrance
10. Area between the House and the Mosque

Fig.1: Planning and Horizontal Plan of Abd Al-Azim Abu El-Nil's house on a scale of 1: 150 (By the Researcher)

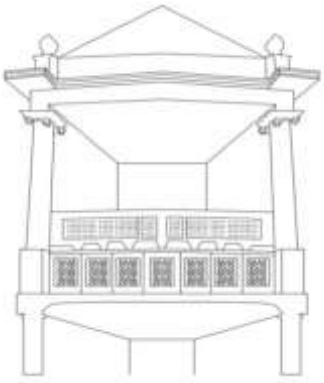


Fig.2: The Vertical Section of Verandah of the Second Floor of the Northern Facade (By the Researcher)

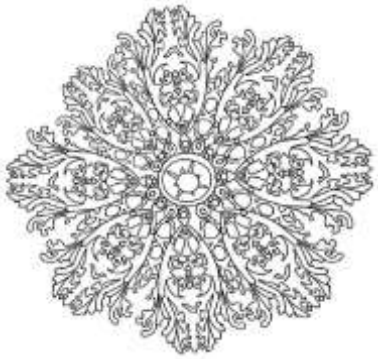


Fig.3: A Discharge of the Floral Motifs on the Ceiling of the Main Hall of the First Floor (By the Researcher)

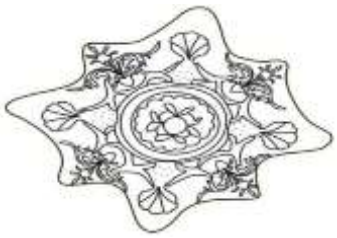


Fig.4: A Discharge of the Floral Motifs on the Ceiling of the First Room (By the Researcher)

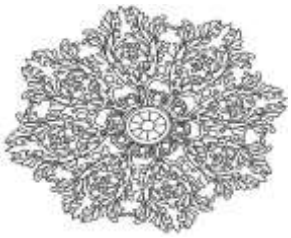


Fig.5: A Discharge of the Floral Motifs on the Ceiling of the Second Room (By the Researcher)

INTERNATIONAL JOURNAL OF
MULTIDISCIPLINARY STUDIES IN HERITAGE
RESEARCH
ISSN: 2785-9622 VOLUME 4, ISSUE 1, 2021, 209– 259. www.egyptfuture.org/ojs/

Fig.6: A Discharge of Different Forms of the Flower of Antimony (By the Researcher)

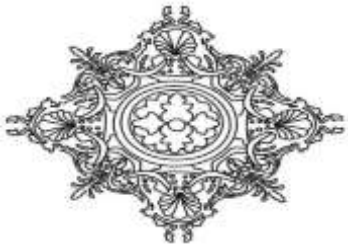


Fig.7: A Discharge of the Floral Motifs on the Ceiling of the Fourth Room (By the Researcher)

Pl.1: The Northern Façade of Abd Al-Azim Abu El-Nil's house (By the Researcher)

Pl.2: The Ascending Staircase to the Verandah and to the Entrance of the Basement in the Northern Façade (By the Researcher)

Pl.3: The Middle Part of the Northern Façade (By the Researcher)

Pl.4: The Western Facade of Abd Al-Azim Abu El-Nil's house (By the Researcher)

Pl.6: The Southern Facade of Abd Al-Azim Abu El-Nil's house (By the Researcher)

INTERNATIONAL JOURNAL OF
MULTIDISCIPLINARY STUDIES IN HERITAGE
RESEARCH
ISSN: 2785-9622 VOLUME 4, ISSUE 1, 2021, 209– 259. www.egyptfuture.org/ojs/

Pl. 5: Illustration of Architectural Elements in the Western Façade (By the Researcher)

Pl.7: The Main Entrance to the House in the Northern Facade (By the Researcher)

Pl.8: The Main Hall in the First Floor which shows the Decorative Details of the Hall Ceiling (By the Researcher)

Pl.9: Illustration of the Details of the Main Hall in the First Floor (By the Researcher)

Pl.10: Details of the Ornaments of the Ceiling of the Main Hall in the First Floor (By the Researcher)

Pl.11: The First Room and shows the Forms and Details of the Doors (By the Researcher)

Pl.12: The Ceiling of the First Room (By the Researcher)

INTERNATIONAL JOURNAL OF
MULTIDISCIPLINARY STUDIES IN HERITAGE
RESEARCH
ISSN: 2785-9622 VOLUME 4, ISSUE 1, 2021, 209– 259. www.egyptfuture.org/ojs/

Pl.13: Ceiling Decorations of the Second Room (By the Researcher)

Pl.14: Ceiling Decorations of the Third Room (By the Researcher)

Pl.15: Illustration of the Details of the Fourth Room (By the Researcher)

Pl.16: Ceiling Decorations of the Fourth Room (By the Researcher)

Pl.17: The Wooden Floor of the Fourth Room (By the Researcher)

Pl.18: The Ceiling of the Fifth Room (By the Researcher)

Pl.19: The Door arched with the Pointed Arch leading to the Bathroom (By the Researcher)

Pl.20: Illustration of the Bathroom Ceiling (By the Researcher)

INTERNATIONAL JOURNAL OF
MULTIDISCIPLINARY STUDIES IN HERITAGE
RESEARCH

ISSN: 2785-9622 VOLUME 4, ISSUE 1, 2021, 209– 259. www.egyptfuture.org/ojs/

Endnotes

)1(For more on the Economic, Social and Political Conditions during the Nineteenth and Twentieth Centuries in Islamic Egypt, see: Udovitch, A.L.,(Ed.). The Islamic Middle East 700-1900, Studies in Economic and Social History, Darwin Press, Princeton, 1974, p.18; Cook, M.A., Introductory Remarks, In: Cook, M.A.,(Ed.). Studies in the Economic History of the Middle East, Oxford University Press, 1970, p.78; Lewis, B., Sources for the Economic History of the Middle East, In: Cook,M.A.,(Ed.). Studies in the Economic History of the Middle East, Oxford University Press, 1970, p.71, 80; Owen, R., The development of Agricultural Production in the Ninteenth Century Egypt: Capitalism of what type? In: Udovitch, A.L., (Ed.). The Islamic Middle East 700-1900, Studies in Economic and Social History, Darwin Press, Princeton, 1974; Issawi, C., An Economic History of the Middle East and North Africa, Colombia University Press, 1991, pp.30, 32, 62, 64,186.

)2(Nigm, A., Qoswr Alaomra' walbashawat fi Madinat Alqaherah fi alqarn altasie' ashar, Draasah liltoroz alme'mariah walfaniyah(in Arabic= Palaces of the Princes and Pashas in the City of Cairo in the Nineteenth Century (A Study of Architectural and Artistic Styles), Vol.2, 1st ed., Zahraa Al-Sharq Library, Cairo, 2002, pp.261-262; Raymond, A., Cairo, History and Civilization, translated by Latif Farag, Dar Al-Fikr for Studies, Publishing and Distribution, First Edition, Cairo, 2004, pp. 273-274.

)3(Nigm, A., Qoswr Alaomra' walbashawat fi Madinat Alqaherah, pp.261-261; Raymond, A., Cairo, History and Civilization, pp. 273-274; Khayr al-Din al-Tunisi, Aqwam al-Masālik fī Ma'rifat Aḥwāl al-Mamālik, Dār al-Kitāb al-Lubnāni, Bayrūt, 2012, pp.73-74; Ali Mubarak, Al-Khitat Al-Tawfiqiyya Al-Jadida li-Misr al-Qahira wa-Muduniha wa-Biladiha al-Qadima wa-al-Shahira, Vol. 2, Al-Matba'a Al-Amiriyya / the Amiri Press in Bulaq, Cairo, 1304–1306AH/1886–1889AD, p.209.

)4(Ramzi,M.,Al-Qamus Al- Jughrafi Li Al- Bilad Al-Misriyya Min 'Ahd Qudamaa' al- Misriyyin Ila Sanat 1945, Albilad Alhaliah,(in Arabic=Geographical Dictionary Of The Egyptian Places From The Ancient Egyptians Dynasty to 1945,(The Present Countries),Section 2,Vol.3,The General Egyptian Book Authority,Cairo,1994, p.16.

)5(Ramzi,M., Al- Qamus Al- Jughrafi, Section 2, Vol. 3, pp.25, 186.

)6(For more about Al Fashn, see: Serageldin, A., 'iimkaniat alwusul bayn mudun muhafazat Beni Suef "Drasah Jughrafiah Tahliliah Muqaranah", (in arabic= Accessibility between the Cities of Beni Suef Governorate, "Analytical Geographical Comparative Study, "Journal of Faculty of Arts, Beni-Suef University, Special Issue, 2018 , pp. 15-135.

)7(The Renaissance style is the style that has been reinstated or restored some of the classical elements and some of the ancient Greek and Roman layouts together with architectural and decorative elements, which spread during the Fifteenth and Sixteenth Centuries AD. For more information see: Whittick, A., European Architecture in the Twentieth Century, 1st ed., Leonard Hill Books, New York, 1974, pp. 17-27; Piles, J, . A History of Interior Design, 3rd ed., Laurence King Publishing, London, 2005, pp. 305-327; Cruickshank, D, Sir Banister Fletcher's A History of Architecture, 20th ed., Architectural Press, London, 1996, pp. 1483–1484; Nigm, A., Qoswr Alaomra' walbashawat, pp.57-58.

)8(The Gothic style is an artistic style that was prevalent in Europe during the Middle ages or the so-called medieval Europe. The Gothic style emerged from the Romanesque style that was clearly seen in some European cities. It is considered one of the first architectural and artistic styles appeared in Europe, in which the architects were freed from the control of content and method or approach of the Roman and

INTERNATIONAL JOURNAL OF
MULTIDISCIPLINARY STUDIES IN HERITAGE
RESEARCH
ISSN: 2785-9622 VOLUME 4, ISSUE 1, 2021, 209– 259. www.egyptfuture.org/ojs/

Byzantine styles. For more information about the Gothic style, see: Kornwolf, J.D., High Victorian Gothic; or, the dilemma of style in modern architecture, Journal of the Society of Architectural Historians, 1975, pp. 37-47; Worsley, G., The Origins of the Gothic Revival: A Reappraisal: The Alexander Prize Essay, Transactions of the Royal Historical Society, Vol. 3, Cambridge University Press, 1993, pp.105-150; Nigm, A., Qoswr Alaomra' walbashawat, pp.31-34.

)9(Neoclassical style is one of the most important architectural and artistic styles that dominated in the architectural buildings and artistic artifacts during the nineteenth and beginnings of the twentieth centuries. For more see: Nigm, A., Qoswr Alaomra' walbashawat, pp.31-34, 57-59, 63-64; Rolf, T., (Ed.). Neoclassicism and Romanticism. Architecture, Sculpture, Painting, Drawings, 1750-1848, Könemann, Cologne, 2000.

)10(During the Nineteenth Century AD, there were many manifestations of the revival of classicism elements together with the patterns of the Renaissance style, which was known as the Neo-Renaissance style, which brought and moved to some of the palaces and residential buildings built in Cairo and generally in other cities in Egypt during the Nineteenth and Twentieth Centuries AD. For more see: Nigm, A., Qoswr Alaomra' walbashawat, pp.57-60; Abdel-Hafeez, M., Dawr Aljaliat al'ajnabiah Walearabiah fi Alhayat Alfaniyah fi Misr fi Alqarniiyn Alththamina'shr walttasiea'shr, Dirrasah 'athriatah Hadariah Watha'yiqiah (in Arabic=The role of foreign and Arab communities in artistic life in Egypt in the Eighteenth and Nineteenth Centuries, "A Cultural Archaeological and Documentary Study", PhD Thesis, Faculty of Archeology, Cairo University, 2000, pp.154-156.

)11(For more information see: Curl, J.S., & Wilson,S., The Oxford Dictionary of Architecture, 3rd ed., Oxford University Press, 2015; Aldrich, M., Gothic Revival, Phaidon Press, London, 2005, pp.82-85; Rolf, T., (Ed.). Neoclassicism and Romanticism, Architecture, Sculpture, Painting, Drawings, 1750-1848,Könemann,Cologne,2000;Paul,A.,&Clive, W., Pugin: A Gothic Passion, Yale University Press, New Haven and London, 1994, p.221; Carpo,M., "Architecture: Theory, Interdisciplinarity, and Methodological Eclecticism, Journal of the Society of Architectural Historians, Vol. Vol. 64, No.4,2005, pp. 425- 427; Hamlin, T, The Rise of Eclecticism in New York, Journal of the Society of Architectural Historians, Vol.11 (2), 1952, pp. 3-8; Meeks, C., Creative Eclecticism,Journal of the Society of Architectural Historians, Vol.12, Issue 4, 1953, pp. 15-18; Nigm, A., Qoswr Alaomra' walbashawat, pp.57-58.

)12(Nigm, A.,Qoswr Alaomra' walbashawat, pp.31-34,57-58; Abdel-Hafeez, M., Dawr Aljaliat al'ajnabiah Walearabiah, pp.142, 154-156.

)13(Abdel-Hafeez, M., Dawr Aljaliat al'ajnabiah Walearabiah, pp.142, 154-156; Nigm, A.,Qoswr Alaomra' walbashawat, pp.57-60.

)14(Abdullahi, Y., and Rashid, M., "Evolution of Islamic geometric patterns, Frontiers of Architectural Research, Vol.2, Issue 2, 2013, pp.243-251; El-Shorbagy, A., Traditional Islamic-Arab House: Vocabulary And Syntax,International Journal of Civil & Environmental Engineering,Vol.10,Issue 4,2010, pp.1-7; Grünbaum,B., and Shephard,G., "Interlace Patterns in Islamic and Moorish Art", Leonardo, Vol. 25, Issue 3, 1992, pp.331-339; Farazmand,P., and Sarbangholi, H., "Investigating the Patterns of Islamic Architecture in Architecture Design of Third Millennium Mosques", European Online Journal of Natural and Social Sciences, Vol.3, Issue 4 (Special Issue on Architecture, Urbanism, and Civil Engineering), 2014, pp.501-514.

)15(Dar Almahfuzat Al'eumumiah bialql'ah: Dafatr Jard 'awayid sharie' Samah Al-Wujuh (12960 /219/34) lisanat 1933, (in Arabic= The General Archives House in the Citadel-Egypt: The Inventory Notebook of A'wayed of Samah Al-Wujuh Street (12960/219/34) for the Year 1933 .

(16)Alhukumah Almalakiah Almisriah: Wizarat Alddakhiliah, Wathiqat Ta'eyin 'Abd al-'Azim 'Effendi Mustafaa Muhamad Abu al-Nil, Bitarikh 16 Mars 1895AD almuafiq 20 Ramadan 1313AH,(in Arabic = The Egyptian Royal Government: Ministry of Interior, The appointment document of Abd al-Azim Effendi Mustafa Muhammad Abu al-Nil, dated March 16, 1895 AD, corresponding to Ramadan 20, 1313 AH.

)17(Alhukumah Almalakiah Almisriah: Wizarat Alddakhiliah, Wathiqat Jawaz safar lilhijaj almisriiyn tahmil raqm 1198,(in Arabic= The Egyptian Royal Government: Ministry of Interior, The Passport document for Egyptian pilgrims with No.1198.

(18)Dar Almahfuzat Al'eumumiah bialql'ah: Dafatr Jard 'awayid sharie' Samah Al-Wujuh (12960 /219/34) lisanat 1933, (in Arabic= The General Archives House in the Citadel-Egypt: The Inventory Notebook of A'wayed of Samah Al-Wujuh Street (12960/219/34) for the Year 1933 .

(19) Dar Almahfuzat Al'eumumiah bialql'ah: Dafatr Jard 'awayid sharie' El-Mansheya El-Bahareya, raqm aldafatr (12793/217/34) lisinat 1921AD, (in Arabic= The General Archives House in the Citadel-Egypt: The Inventory Notebook of A'wayed of El-Mansheya El-Bahareya Street, Notebook No. (12793/217/34) for the Year 1921.

(20) Dar Almahfuzat Al'eumumiah bialql'ah: Dafatr Jard 'awayid sharie' El-Mansheya El-Bahareya, raqm aldafatr (12793/217/34) lisanat 1917AD, (in Arabic= The General Archives House in the Citadel-Egypt: The Inventory Notebook of A'wayed of El-Mansheya El-Bahareya Street, Notebook No. (12793/217/34) for the Year 1917.

(21) Dar Almahfuzat Al'eumumiah bialql'ah: Dafatr Jard 'awayid sharie' El-Mansheya El-Bahareya, raqm aldafatr (12813/218/34) lisanat 1925 AD, (in Arabic= The General Archives House in the Citadel-Egypt: The Inventory Notebook of A'wayed of El-Mansheya El-Bahareya Street, Notebook No. (12813/218/34) for the Year 1925.

(22) The United Cotton Ginning and Exporting Company, Registration No. 203 of 1999, see: List of cotton traders registered in the General Committee for Regulating Cotton Trade on the website: http://www.cotton-committee.com/merchants.html (Date of access: 11/10/2020). http://cotton-committee.com/new/?page_id=553 (Date of access: 11/10/2020).

(23) Al-Fashn is considered one of the ancient cities of the central regions between it and the Nile about three hundred reeds, and its old Coptic name as mentioned in the ancient sources is Vinshi. See:Ali Mubarak, Al-Khitat Al-Tawfiqiyya Al-Jadida li-Misr al-Qahira wa-Muduniha wa-Biladiha al-Qadima wa-al-Shahira, Vol.14, 3 rd Edition, Al-Matba'a Al-Amiriyya / the Amiri Press in Bulaq, Cairo, 1305AH, p.38. It was mentioned in the Dictionary of Countries, where it was said that Al-Fashn is a village in Egypt from the works of Al-Bahnasi and it was subordinate to Minya governorate until 1955 AD, and then it entered the geographical zone of Beni Suef governorate in this year mentioned above. See: Ramzi,M., Al- Qamus Al-Jughrafi Li Al- Bilad Al- Misriyya Min 'Ahd Qudamaa'al- Misriyyin Ila Sanat 1945, Section 2; The directorates of Giza, Beni Suef, Fayoum and Minya, Vol. 3, p.188.

(24) Beni Suef is one of Egypt's governorates, the capital of the governorate is Beni Suef city, which located almost 120 Km south of Cairo and on the west bank of the Nile River. For the etymology and original name of Beni Suef, See: Peust,C., Die Toponyme vorarabischen Ursprungs im modernen Ägypten, Göttinger Miszellen, Vol.8, Göttingen, 2010,p.91; and for more about Beni Suef, See: Abdel Raheam, A.,(et.al.) Characteristics' Analysis of Urban System in Northern Upper Egypt Region (NUE) Size Distribution Analysis of Urban Settlements; 1976-2016, Journal of Modern Research, Vol. 2, 2020, pp.84-96; http://www.benisuef.gov.eg/ (Date of access: 11/10/2020).

(25)Haji Mustafa Muhammad Abu Al-Nil built the mosque in the city of Al-Fashn in the Governorate of Beni Suef in 1908 AD during the reign of Khedive Abbas Hilmi II. See: Egyptian Endowments Ministry http://ar.awkafonline.com/ (Date of access: 11/10/2020).

(26) Agor, Bricks and Tiles are three kinds of the oldest building materials, which were used in construction and decorations of buildings. There are differences between fired bricks and mud bricks, where fired bricks require ignition, heating, burning or firing, making them more durable and so suitable for monumental building. Brick is a small rectangular block usually made of fired or sun-dried clay, which dried in the sun, rather than by artificial heat and used in construction processes. Tile is a large, thick, flat piece of stone, concrete, or may be a thin rectangular slab of fired clay, concrete, or other material, which used in overlapping rows for covering roofs or ceilings. For more See: Petersen, A., Dictionary of Islamic Architecture,1st Edition, Routledge Press, London & New York, 1996, pp.36-37; Ghoddousifar, S., and Zarean, D., Studying the Brickwork of Islamic Mosques as Architectural Decorations, Journal of Architectural Engineering Technology, Vol. 6, Issue 1, 2017, pp.1-6; Özen, A., and Sağiroğlu, Ö., Reviewing the bricks used in the traditional architecture with the shape grammar method, Gazi University Journal of Science, Vol. 29, Issue 4, 2016, pp.741-749.

(27) The Basement is a renovation of a series of spaces for the building; it is one or more floors of a construction, which are totally or partially at a lower level or layer than the first ground floor. Basement usually is used as beneficial spaces for a construction, in some cases the basements are frequently shaped to fill spaces of the building, moreover fitted out to a high standard and also used as living spaces. See: Petersen, A., Dictionary of Islamic Architecture, p.154, 290; Hwaish, A., Concept of the Islamic House; A case Study of the Early Muslims House, Proceedings of 4th IASTEM/International Conference,

Amsterdam, Netherlands, 2015,pp.86-93;Woodson, R. D., Build Your Dream Home for Less, Betterway Books, Cincinnati/USA, 1985, pp.60-61; Tan, R. Y.H.,Evaluation of deep basement construction techniques, Proceedings of the International Conference on Deep Foundation, Vol. 1, China Building Industry Press, 1986; Gray, P., Deep basement construction and facade retention, Architect and Surveyor,Vol.64,No.10,1989,pp.22-25.

(28)For more on the features and manifestations of the European Planning newcomer, see: Koller, M., Nineteenth Century Architectural Heritage in Europe-ROCARE, Paris, 2012, pp.1-27; Bremner, G. A., Architecture, symbolism, and the ideal of empire in Late Victorian Britain, 1887-93, Journal of the Society of Architectural Historians, 2003, pp. 50-73; Veigl, C., Ornamente für die Ewigkeit; Romanzemente und andere Baustoffe aus der Traumfabrik der Gründerzeit. In: Wiener Geschichtsblätter 64.Jg., 2009, pp. 18-55; Bristow, I., Exterior Renders designed to imitate Stone: A Review, In: Association for Studies in the Conservation of Historic Buildings, Transactions, Vol.22, London,1997, pp.13-30; Mead, C., Urban contingency and the problem of representation in Second Empire Paris, Journal of the Society of Architectural Historians, 1995, pp. 138-174.

(29)For more on stylistic features in the design of residential buildings and facades, See: Mohamed, N.G.,& Ali, W.H., Traditional Residential Architecture in Cairo from a Green Architecture Perspective, Arts and Design Studies, Vol.16, 2014, pp.6-26; Williams, C., Islamic monuments in Cairo: The practical guide, Cairo, 2005, pp. 232-235; Michell, G., Architecture of the Islamic world, UK, 1978, pp. 196-197.

(30)The building facade is usually one external part of a construction, commonly the front side, and in architecture is often the most important part from the viewpoint of structural designing , as it shapes the impression for the rest of the construction. From the geometric viewpoint of a building, the facade is as well of great significance or value great importance due to its influence on the quality of being efficient of the strength required for building. From the historical viewpoint of a building, there are many local, regional and international zoning rules or legislations that greatly put a limit on or even refuse to allow any alteration on the historical or heritage facades. See: Vozniak, E., & Butyrin, A., Classification of historical buildings façade's details on the basis of order theory, E3S Web of Conferences 91,05016,2019, pp.1-6; Korumaz, M.,& Korumaz,A.G., The Evaluation of New Buildings Behind Historic Façades in Terms of Sustainability, Surveying and Cultural Heritage I, 6253, Rome, Italy, 2012, pp.1-10; Keith, B., Exterior Building Enclosures, John Wiley & Sons, Inc. Press, New York, 2013, p.11.

(31)Staircase or Ladder consists of the steps connecting the floors of the architectural building, and it is called a staircase because it connects or delivers from one place to another or from one floor to another, and the staircase or ladder is one of the internal and external structural and architectural elements.See:Amin, M and Ibrahim, L., Almustalahat Almuemariah fi Alwatha'iq Almamlukiah,(in Arabic=Architectural Terminology in Mamluk Documents,1st Edition,American University in Cairo Press,Cairo,1990,pp.66-67;Rizq, A., Mu'jam Mustalahat Ale'amarah Walfunun Al-Islamiah, (in Arabic= The Dictionary of Terms of Islamic architecture and arts, 1st Edition, Madbouly Bookshop, Cairo, 2000, pp.149-150.

(32)Veranda or Verandah is an open-air porch or covered with a roof, and it is linked to the outside of the construction, where the veranda is usually to some extent surrounded by a railing and habitually extends across the front and sides of the building. The Veranda every so often extends along the full front of the houses in spite of the fact that in some conditions the veranda shared and occupied by a separate chamber. See: Petersen, A., Dictionary of Islamic Architecture,1st edition, Routledge Press, London & New York, 1996, p.10; Poppeliers, J.C., What Style is it?, John Wiley & Sons Press,New York, 1983, p. 106; Francis D.K.C., A Visual Dictionary of Architecture, John Wiley and Sons Press, New York,1995, p. 25.

(33) Barameq are the plural of Barmaq, sometimes it is mentioned as Baramak, which is a Turkish word meaning finger. It is made of wood, stone, plaster or iron and used in the handrails of stairs and pulpits (Minbars). Barameq may be square, rectangular, or conical with a round sector or spiral. See: Abdel-Hafeez, M., Almustalahat alma'mariah fi Wthaa'k a'sr Muhamad Ali wakhulafa'yih (1805/1879), (in Arabic= Architectural Terminology in Documents of the Era of Muhammad Ali and His Successors (1805 AD / 1879 AD), First Edition, Egyptian Marketing & Distribution Co. (EMDCO), Cairo, 2005, pp.29- 30; Rizq, A., Mu'jam Mustalahat Ale'amarah, pp.149-150.

(34) Handrail is a part of the parts of the fence or enclosure that consists of vertical posts and horizontal bars, and it may be made of wood or stone, and the handrail is the edges that surround the ladder that may be made of wood or stone or as a horizontal and vertical metal beams, and the vertical handrail pillars or the

INTERNATIONAL JOURNAL OF
MULTIDISCIPLINARY STUDIES IN HERITAGE
RESEARCH
ISSN: 2785-9622 VOLUME 4, ISSUE 1, 2021, 209– 259. www.egyptfuture.org/ojs/

so-called handrail uprights are called Barameq. See: Amin, M and Ibrahim, L., Almustalahat Almuemariah fi Alwatha'iq Almamlukiah, pp.45-46; Rizq, A., Mu'jam Mustalahat Ale'amarah,pp.149-150.

(35) For more about Basement see: Petersen, A., Dictionary of Islamic Architecture,1st Edition, Routledge Press, London & New York, 1996, p.154, 290; Hwaish, A., Concept of the Islamic House; A case Study of the Early Muslims House, Proceedings of 4th IASTEM/International Conference, Amsterdam, Netherlands, 2015, pp.86-93; Woodson, R. D., Build Your Dream Home for Less, Betterway Books, Cincinnati/USA, 1985, pp.60-61; Tan, R. Y. H., Evaluation of deep basement construction techniques, Proceedings of the International Conference on Deep Foundation, Vol. 1, China Building Industry Press, 1986;Gray, P., Deep basement construction and facade retention, Architect and Surveyor, Vol.64,No.10,1989,pp.22-25;Issa, A., Mustalahat Alfan Al-Islami,(in Arabic= Terminology of Islamic Art, Istanbul,1994, p.29.

(36)Column or pillar is a tall vertical structure made of stone, wood or metal and used as a support for a building or as a memorial pillar or monument. In architecture and structural geometry, it is a structural element transmitting the load of the structure above to other structural elements at a lower level or layer than. It is also applied especially to a large circular support that is the shaft of the column along with a capital and a base. See: Rahman, M., Islamic Architecture and Arch, International Journal of Built Environment and Sustainability/ IJBES 2(1), Published by Faculty of Built Environment, University Technology Malaysia,2015, pp.8-16; Petersen, A., Dictionary of Islamic Architecture, pp.82-83, 87.

(37) Stucco refers to coat the external side or surface of a building and Plaster to coat the inner parts of a building, where the material itself is often a little different between the two of them. Stucco is used as a decorative coating for walls, ceilings and external parts of a building, and it is also used as a sculptural and artistic material in architecture. For more see: Henry,A.;Stewart,J., (Eds.). Practical Building Conservation; Mortars, Plasters and Renders, Ashgate Publishing, UK/USA, 2011, p.87; Melander, J.; Farny,J., and Isberner, A., Portland Cement Plaster/Stucco Manual, Portland Cement Association, USA, 2003, pp.2-5; Nordmeyer, H., Stucco Handbook for Builders, Magna Wall, South Jordan, 2001, pp.2-4.

(38) Corinthian is derived from Corinth that is the ancient Greek city, and it is described a decorated column style, where the Capital of Corinthian Column is categorized as one of the most important classical orders of architecture. The Corinthian style is complex or made up of various parts or elements and often detailed; this is in comparison with the earlier patterns known as Doric and Ionic. For more see: Jones, M.W., Designing the Roman Corinthian order, Journal of Roman Archaeology, Vol.2, 1989, pp.35-69;Ebeling, H.L., The Origin of the Corinthian Capital, The Art Bulletin/The Bulletin of the College Art Association of America, College Art Association,Vol.6,No. 3,1924,pp.75-81; Creswell, K. A.C., A Short Account of Early Muslim Architecture, revised and supplemented by James W. Allen, Aldershot/Scolar Press, London, 1989, p.226;Creswell, K. A. C., Early Muslim Architecture, Vol.I, Hacker Art Books,New York,1978,p.149, 284; Creswell, K. A. C., The Muslim Architecture of Egypt, Vol. II, Ayyubids and Early Bahrite Mamluks, A.D. 1171-1326, Hacker Art Books, New York, 1978, pp.190-191, 197; Behrens-Abouseif, D., Cairo of the Mamluks; A History of Architecture and its Culture, AUC Press, Cairo , 2007, p.175.

(39) Hermdanat (Corbels) its singular is Heramdan that is derived from a Persian word, and it is used to carry and support some parts of the building, and to support what is prominent from the construction, and thus it can be said that the difference between the Corbels and the Hermdanat is the material of construction, so the raw materials of Corbels are wood, marble, bricks and metal. Corbels are projections extending out from a wall for supporting a structure at a higher level than it, where the corbels are one of the most essential architectural elements in supporting the outer protrusions of the walls, where metal Corbels were used on architecture during the modern times, which have been used for two purposes, the first is a functional and the other is aesthetic or artistic; The functional purpose represented in the consolidation, support and strengthening the projection outside the way of the wall. In conclusion, it can be said that the Hermdanat and the Corbels are among the important architectural elements that were distinguished by the precise structural design in order to fully fulfill the functional purpose built for it, and the similarity between them appears in terms of the functional purpose and the decorations found on both of them. For the Hermdanat, See: Rizq, A., Mu'jam Mustalahat Ale'amarah,p.80; Abd al-Rahman al-Jabarti, Aja'ib al-athar fi al-tarajim wal-akhbar, Vol. 3, Second Edition, Dar Al-Jeel of printing, publishing and distribution, Beirut,1978, p.150; Ibrahim, A., Alwatha'iq fi Khidmat Alathar "al'asar Almamlwky", silsilat aldirasat alwathayiqiati, (in Arabic = Documents in the Service of Antiquities "The Mamluk Era", Documentary Studies Series, The Arab Organization for Education, Culture and Science,

ISSN: 2785-9622 VOLUME 4, ISSUE 1, 2021, 209– 259. www.egyptfuture.org/ojs/

Cairo,1979,p.410;Ibrahim,N.,Alhrmdanat alhajriah fi Aleamarah Almamlukiah bimadinat Alqahirah, (in Arabic= The Stone Hermdanat in Mamluk Architecture in City of Cairo, an unpublished master's thesis, Faculty of Arts, Ain Shams University, Cairo, 2008. For more about the Corbels, See: Creswell, K. A. C., Early Muslim Architecture, Vol.I, p.149; Creswell, K. A. C., The Muslim Architecture of Egypt, Vol. II, pp.224, 227-228; Behrens-Abouseif, D., Cairo of the Mamluks, p.207; Hussein, I., The Corbel in Indian Islamic Architecture, Journal of Al-Frahedis Arts, Vol.11, Issue 39, Part II, 2019, pp.77-104; Abdel Razek, M.,Alkuabil fi al'amayir Al'iislamiah bialqahirah mundh bidayat al'asr Almamlukii wahataa nihayat 'asr Muhamad Ali "draasah Muemariah Faniah", (in Arabic= The Corbels in the Islamic Buildings in Cairo from the Beginning of the Mamluk Era to the End of the Muhammad Ali Era "An Architectural and Artistic Study", an unpublished Master Thesis, Faculty of Archeology, Cairo University, Cairo, 2008 .

(40) Fronton is derived from the Persian word called Fronton, which is a decorative composition, a tracery or an ornament, often triangular in shape, generally placed over a building entrance, door, or window, which appears as a gable form. It looks like the pyramidal part or the arch which appeared above the columns of the entrance to the temple in classical architecture, as this element moved to Egypt almost in the Nineteenth Century AD. In the Classical architecture, there is a triangular gable generally having a horizontal cornice, with gathered cornices on each side, covering or crowning a portico or other major part of a facade, end wall, arcade or a row of columns supporting a roof called colonnade. For more see: Harris, C. M., (Ed.) Illustrated Dictionary of Historic Architecture, Dover Publications, New York, 1983, p.386; Pérouse de Montclos,J., Architecture Méthode et vocabulaire, éditions du Patrimoine, Paris,2002, p.361; Vozniak, E., & Butyrin, A., Classification of historical buildings façade's details on the basis of order theory, E3S Web of Conferences 91, 05016, 2019, pp.1-6; Broze, M., &Talon, P., Atlas de la Renaissance, Brepols, 1993, p.100; Madrazo, L., The Concept of Type in Architecture, A dissertation submitted to the Swiss Federal Institute of Technology of Zürich for the degree of Doctor of Technical Sciences, Zürich, 1995, p.173; Denna,J., Architecture;the Whole History, Thames & Hudson Press,New York,2014,p.277;Issa, A., Mustalahat Alfan Al-Islami, p.79.

(41) The Segmental Arch is one of the strongest and distinctive patterns of arches, including a circular arch of less than 180 degrees, which is also known as a scheme arch. For more see: Rizq, A., Mu'jam Mustalahat Ale'amarah, p.203;Lolias, Y.,Structural Behaviour of Segmental Arch Structures, A Thesis submitted in partial fulfillment of the requirements for the degree of Bachelor of Engineering - Civil, Charles Darwin University, 2014, pp.14.ff; Harris, C.M., Illustrated Dictionary of Historic Architecture,Dover Publications, New York,1983,p.485;Smith, P.M.,Rivington's Building Construction, Routledge Press, London, 2015, p.6.

(42)Arches are one of the characteristics of Islamic architecture, as Islamic arches appear in doorways and inner parts of religious and cultural constructions, which divided into four basic styles: pointed arch , ogee arch, horseshoe arch and multifold arch. For more see: De Montequin, F.A., Arches in the Architecture of Muslim Spain: Typology and Evolution, Islamic Studies, Vol.30, Issue 1/2, 1991, pp.67-82.

(43) The Cornice is an ornamental molding around the wall of a room just below the ceiling, and is derived from the Italian word cornice meaning ledge, which is usually any horizontal ornamental molding on top of a building. The cornice is the highest element of the entablature or the horizontal and continuous lintel on top of a classical building supported by columns or walls, including the architrave, frieze, and cornice which used as a transition between the wall and the ceiling. For more see: Vogel,S.; Eckerstorfer, M., & Christiansen, H., Cornice dynamics and meteorological control at Gruvefjellet, Central Svalbard, The Cryosphere, Vol.6,2012,pp.157-171;Embi,M., & Abdullahi, Y., Evolution of Islamic Geometrical Patterns, Global Journal Al-Thaqafah,Vol.2,Issue2,2012,pp.27-39.

(44)The Floral Motifs are divided into three categories; the Rumi ornaments which consisted of depicted or stylized wings, beaks and legs of birds and animals, the Munhani ornaments which serried curves, and the Hatayi ornaments that are depicted and stylized floral motifs. Floral motifs were depicted and imitated with nature along with the rhythm laws. For more see: Etikan, S.,The Principles of Ornament in Islamic art and effects of these Principles on the Turkish Carpet Art, Religion and Science Publications, Vol. 3,Issue 2,2011,pp.87-95;Shafiq, J., Architectural Elements in Islamic Ornamentation:New Vision in Contemporary Islamic Art, Arts and Design Studies, Vol.21, 2014, pp.11-21.

(45)Rumi ornament is a motif name that can be seen in the traditional Turkish ornamental arts, consisting of a round or bulbous shape linked to the pointed end or having a sharpened or tapered tip or end. For more see: Aksu, H., Rumi Motifin İlk Öncüleri, Türkler, Vol. 4, No.12, 2002, pp.182-192; Yazar, N.,& Yazar, T., Re-

Generating Continuous Rumî Compositions, The International Bridges Conference; Mathematics, Art, Music, Architecture, Education, Culture, Vol.1, Stockholm / Sweden, 2018, pp.1-9.

(46)Shutters are a set of two parts used together or considered as a unit consisting of a pair of attached and hinged slabs, regularly fixed inside or outside a window in order to be closed for keeping security with privacy and also to keep out light. Shutters may be louvered, where a louver is a blind window or with shutters consisting of horizontal slats that are inclined to allow light and air, however to keep out rain together with direct sunshine. For more see: Petersen, A., Dictionary of Islamic Architecture, p.282; Yeomans, R., The Art and Architecture of Islamic Cairo, 1st Edition, Garnet Publishing, UK, 2006, pp.118, 230; Yüksel, M., (et.al.), A Review of Basic Interior Design Elements in Mosques From Seljuk and Ottoman Periods, the 7th International Scientific and Technical Conference, Bulgaria, 2014, pp.1-11.

(47) Lantern or Shokhshikhah is an architectural element made of wood and has small slots, gaps, or openings that allow air to enter through it into the hall. It is commonly used to cover major spaces and key areas to supply fresh air to a room or a building, so it is a method for ventilation and indirect lighting. Moreover, it also works with the so-called wind catcher or Al-Malqaf to moderate air temperature, which ejects hot air that usually found at the highest point of the room and thus Al-Malqaf gets cold air as an alternative to the inner spaces. Al-Shokhshikhah is also considered one of the smart architectural solutions, as it provides lighting and ventilation, especially in small spaces in light of the overcrowding of cities with buildings in various parts of the city, and it sometimes replaces the courtyard and thus it solves the problems resulting from the harm of a lack of privacy. For more see: Azab, K., Fiqh Al Umran Al Islamy, (in Arabic=The jurisprudence of Islamic urbanism), Al-Dar Al- Masriah Al-Lubnaniah for Publishing, Cairo, 2013, pp. 107, 298; Creswell, K., The Muslim Architecture of Egypt, Vol.1,Clarendon Press,Oxford,1952, p.263; Behrens-Abouseif, D., Islamic Architecture in Cairo; An Introduction, AUC Press, Cairo, 1996; Lézine, A., Les Salles Nobles des Palais Mamelouks, Vol.1, Institut Français d'Archéologie Orientale/ IFAO, Annales islamologiques, Vol.10/3, Le Caire, 1972, pp. 109-110.

(48) Symmetry is a kind of balance, harmony and proportionality; this is why most things in nature evolve toward symmetry. Moreover, symmetry is agreement in dimensions, due proportion and arrangement; it also refers to a sense and realization of convenience and shapely proportion and balance. In architecture, symmetry comes true through the external sights of buildings in Islamic architecture, where most Islamic structures use principles of symmetry, both in their construction and in their ornamentation. For more see: Rozsa, E., "Symmetry in Muslim Arts", International Journal Computers and Mathematics with Applications, Vol.12B, No. 3/4,1986, pp.725-750;Mangho, A., and Loeb, A., "Tessellations in Islamic Calligraphy", Leonardo, Vol.28, Issue 1,1995, pp. 41-45;Saliba, G., "Artisans and Mathematicians in Medieval Islam; The Topkapi Scroll: Geometry and Ornament in Islamic Architecture by Gülru Necipoğlu (Review), Journal of the American Oriental Society, Vol.119,Issue 4, 1999, pp.637-645;Broug, E., Islamic Geometric Patterns, Thames and Hudson Press, London, 2008,pp.183-185,193;Bonner, J., Islamic Geometric Patterns: their historical development and traditional methods of construction, Springer, New York, 2017, p.1.

(49) Semicircular arch or the semi rounded arch is from the oldest arches that usually are constructed of heavy stonework or masonry, where arches can also be shaped or configured to create vaults and arcades. There are many forms of arches which classified into some categories such as; Circular, Pointed, and Parabolic. For more see: Rahman, M., Islamic Architecture and Arch, International Journal of Built Environment and Sustainability/ IJBES 2(1), pp.8-16; Draper, P., Islam and the West: The Early Use of the Pointed Arch Revisited, Architectural History/ Journal of the Society of Architectural Historians of Great Britain, Vol.48,2005,pp.1-20;Roth,L.M., Understanding Architecture: Its Elements History and Meaning,Westview Press, Oxford,1993, pp.27-28; Sandaker, B.N.; Eggen, A.P., and Cruvellier, M.R., The Structural Basis of Architecture, Routledge Press, London, 2013, pp.325-326; Ambrose, J., Building Structures, John Wiley & Sons, Inc. Press, New Jersey,2012,pp.30-32;Rizq, A.,Mu'jam Mustalahat Ale'amarah,pp.194-195.

(50)Dar Almahfuzat Al'eumumiah bialql'ah: Dafatr Jard 'awayid sharie' El-Mansheya El-Bahareya, raqm aldafatr (12793/217/34) (in Arabic= The General Archives House in the Citadel-Egypt: The Inventory Notebook of A'wayed of El-Mansheya El-Bahareya Street, Notebook No. (12793/217/34).

(51) For more about Basement see: Petersen, A., Dictionary of Islamic Architecture, p.154, 290; Hwaish, A., Concept of the Islamic House,pp.86-93;Woodson, R. D., Build Your Dream Home, pp.60-61;Gray,P.,Deep basement construction,pp.22-25;Issa,A.,Mustalahat Alfan Al-Islami,p.29.

ISSN: 2785-9622 VOLUME 4, ISSUE 1, 2021, 209– 259. www.egyptfuture.org/ojs/

(52)Dar Almahfuzat Al'eumumiah bialql'ah: Dafatr Jard 'awayid sharie' El-Mansheya El-Bahareya, raqm aldafatr (12813/218/34) lisanat 1925 AD, (in Arabic= The General Archives House in the Citadel-Egypt: The Inventory Notebook of A'wayed of El-Mansheya El-Bahareya Street, Notebook No. (12813/218/34) for the Year 1925.

(53) The researcher's point of view.

(54)For more about Corbels see: Creswell, K. A. C., Early Muslim Architecture, Vol.I,p.149; Creswell, K. A. C., The Muslim Architecture of Egypt, Vol. II, p.224, 227-228; Behrens-Abouseif, D., Cairo of the Mamluks, p.207; Hussein, I., The Corbel in Indian Islamic Architecture, pp.77-104; Rizq, A., Mu'jam Mustalahat Ale'amarah, pp.248-249.

(55) For more about the features of the European Planning newcomer, see: Koller, M., Nineteenth Century Architectural Heritage, pp.1-27; Bremner, G. A., Architecture, symbolism, and the ideal of empire, pp. 50-73;Veigl, C., Ornamente für die Ewigkeit, pp. 18-55;Bristow, I., Exterior Renders, pp.13-30;Mead, C., Urban contingency, pp. 138-174.

(56) In architecture, a hall is a comparatively large area enclosed by a ceiling and walls. The hall is varied or ranged in size from a large reception area in a public building to a corridor or vestibule of a house, where there is a long passage in a building from which doorways lead up to rooms. For more see: Hillenbrand, R., Islamic Architecture; Form, Function and Meaning, Edinburgh University Press, Edinburgh, 1994, p.247;Arjmand, R.; Mirsafa, M., and Talebi, Z., Islamic Educational Spaces: Architecture of Madrasah and Muslim Educational Institutions, In: Daun, H., and Arjmand, R., (Eds.), Handbook of Islamic Education, International Handbooks of Religion and Education, Vol.7, Springer International Publishing, New York, 2017, pp.2-42.

(57) Ceiling is the upper inner surface of a room and other similar compartments. The ceiling and vault are used as essential architectural elements to form the inner spaces of architectural constructions. For more see: Tkachuk, H., and Bilinska, O., The evolution of the ceiling in architecture, International Youth Science Forum "Litteris et Artibus", 23–25 November, 2017, Ukraine, pp. 232-239; Rizq, A., Mu'jam Mustalahat Ale'amarah, pp.141-146.

(58) Cores and Teeth are small decorative units having the shape of a cube, which ornamented the facades and the roofs or ceilings of rooms and halls and were always visible at a lower level than the cornice. The Romans added these decorative units to the ornamentation of cornice of the Greek Doric column. They are one of the decorative elements that spread in the palaces of the city of Cairo during the Nineteenth Century, these decorative elements were designed and influenced by the styles of neoclassicism and Renaissance, and these elements appeared in the Renaissance and in many classical buildings and Roman temples. For more see: Nigm, A., Qoswr Alaomra' walbashawat, pp.63-64; Hammad, M., Altoroz alm'maria (in Arabic = Architectural Styles, Arab Press Agency /Publishers for Printing, Cairo, 2019, p.40.

(59) Bukhariyya is derived from the name of Bukhara in zone of Uzbekistan, or may be the quarter of Bukhariyya in Basra. It is a decorative element of a round or oval form and filled with patterns of an ornamental design consisting of intertwined flowing lines, known as arabesque, in addition to an ornament of radiating petals that resemble the leaflets of a palm or palmette decorating either end. It is used on almost all types of decorations, buildings, textiles, metalworks, woodworks and manuscripts. For more see: O'Kane, B.,(Ed.). Creswell Photographs Re-examined: New Perspectives on Islamic Architecture, AUC Press, Cairo, 2009, pp.172-173; "Bukhariyya" In: Technical Glossary, the Islamic Art Network, the Thesaurus Islamicus Foundation, http://www.islamic-art.org/Glossary/glossary.asp (date of access: 1/10/2020); Amin, M and Ibrahim, L., Almustalahat Almuemariah fi Alwatha'iq Almamlukiah, p.20.

(60) Parquet, Parquet wood or woodwork parquet are a geometrical wooden mosaic used for decorative role in flooring. For more about Parquet wood see: Kimball, F., The Creation of the Rococo, Philadelphia Museum of Art, 1st edition, Philadelphia,1943, pp.47-48; Amro, D., & Zafer, H., The Effects of Flooring Material on Thermal Comfort in a Comparative Study Marble and Parquet Flooring, United International Journal for Research & Technology, Vol.1, Issue 5, 2019, pp.31-35.

(61) The Islamic geometrical shapes are one of the most important patterns of Islamic decorations. In Islamic art, the geometric patterns are often performed on collections of repeated squares and circles overlapping and interweaving or interlacing, such as in arabesques that are often merged in order to shape very convoluted or detailed shapes, including a vast variety of tessellating a surface which known as tessellations. For more see: Broug, E., Islamic Geometric Patterns, pp.183-185,193; Bonner, J., Islamic

Geometric Patterns, pp.1-2; Saliba, G., Artisans and Mathematicians in Medieval Islam; The Topkapi Scroll: Geometry and Ornament in Islamic Architecture,pp.637-645;Mangho, A., and Loeb, A., Tessellations in Islamic Calligraphy, pp.41-45.

(62) Flower of Antimony is one of the small flowers making up a composite flower head known as floret. The objects or creatures of antimony are used as little Greek ornaments or motifs. In fact, the branches of the needle crystals of antimony seem like flowers a lot, which were used as a Greek decoration. Antimony is derived from the two Greek words "Antos Amunus", meaning the flower of the god Amun-Jupiter, who is the chief of the Roman gods. Scientifically, antimony known as Plantago that is a genus of approximately 200 species of organisms of floral plants in the family of Plantaginaceae, commonly called plantains or fleaworts that is a low-growing plant that typically has a rosette of leaves and a slender green flower spike, widely growing as a weed in lawns. Fore more see: Endlich, F. M., "On Some Interesting Derivations of Mineral Names", The American Naturalist, Vol.22, Issue 253, 1888, pp. 21-32;Moorey, P. R. S., Ancient Mesopotamian Materials and Industries: the Archaeological Evidence, Clarendon Press, New York, 1994, p. 241;Samuelsen, A.B.,"The traditional uses, chemical constituents and biological activities of Plantago major L.A review", Journal of Ethnopharmacology, Vol.77, Issue 1/2,2000, pp.1-21;Russell,C.A., "Antimony's Curious History", Notes and Records of the Royal Society of London, Vol.54, Issue1, 2000, pp.115-116; Wilson, N. J.; Craw, D., and Hunter, K., "Antimony distribution and environmental mobility at an historic antimony smelter site, New Zealand", Environmental Pollution, Vol.129, Issue 2, 2004, pp.257-266; Albach, D. C.; Meudt, H. M. and Oxelman, B.,"Piecing together the "new" Plantaginaceae", American Journal of Botany, Vol.92, 2005, pp.297-315; Talo, M., Almashhur fi funun alzakhrifih a'br al'usur (in Arabic =The most famous in decorative arts through the ages, Damascus Publishing House, Damascus, without date, pp.50-51; Talo, M., Alfnoun alzkhrfiah (in Arabic= Decorative Arts, Damascus Publishing House, Damascus, 2007, pp.11.ff.

(63) Seashells or shells of nautical mollusks are one of the most important elements of Islamic art, which associated with the Rococo decoration that is an elaborately decorative late Baroque pattern of ornamentation prevalent in 18th-century together with asymmetrical patterns involving motifs and spiral lines or patterns, especially as cut by a scroll saw known as scrollwork. Rocaille is originally a decoration method which used pebbles, seashells, where the shaped or molded seashell motifs were merged with palm leaves or twisting grapevines to decorate architectural elements. For more see: Wagner, M., From Gaul to De Gaulle: An Outline of French Civilization, Peter Lang Publishing, Switzerland, 2005, p.139; Ducher, R., Caractéristique des Styles, Flammarion Press, Paris,1988,pp.136, 144; Lovreglio, A., Dictionnaire des Mobiliers et des Objets d'art du Moyen Âge au XXIe siècle, Le Robert, Paris, 2006, p.369.

(64) Dar Almahfuzat Al'eumumiah bialql'ah: Dafatr Jard 'awayid sharie' El-Mansheya El-Bahareya, raqm aldafatr (12793/217/34).

(65) Shakma is derived from the Turkish origin of the word "Shaqma", meaning prominence or output and it was used in architectural documents to express an Iwan that protrudes from the building and may be based on two or more columns. The Shaqma was used to sit inside and enjoy privacy and moderating wind without exposure to sunlight, the Shaqma usually overlooks a garden, courtyard, or facade of a building. In architecture, the Iwan or Shaqma consists of a vaulted area surrounded on three directions and open to a courtyard or central place on the fourth side, as Iwan means portico, open gallery and porch. The Iwan or Shaqma may generally be defined in as a part or division of a building enclosed by walls, floor, and ceiling, also it is a room or hall opening, on the one direction or one side, directly or by a portico towards outside, as it also refers to various architectural forms or designs like a wider and greater vertical extent room or columned hall. For more see: Abdel-Hafeez, M., Almustalahat alma'mariah, p.116;Reuther, O., Parthian Architecture, A Survey of Persian Art, 1st ed., Oxford University Press, Oxford, 1967, pp.428; Peker, A., The Monumental Iwan: A Symbolic Space or A Functional Device?, METU Journal of the Faculty of Architecture, Vol.11, Issue 1/2, 1991, pp.5-19.

(66) A washing room is also called a laundry house that was existed in the Palaces and Sarayas (Chateaux), which dedicated to washing clothes, including a terrace for washing and a number of basins topped by copper faucets, a fireplace and a copper stove to heat water. For more see: Abdel-Hafeez, M., Almustalahat alma'mariah, p.15.

(67) Dar Almahfuzat Al'eumumiah bialql'ah: Dafatr Jard 'awayid sharie' El-Mansheya El-Bahareya, raqm aldafatr (12793/217/34).

ISSN: 2785-9622 VOLUME 4, ISSUE 1, 2021, 209– 259. www.egyptfuture.org/ojs/

)68(Nigm, A., Qasr Alsakakyni "Drasah Me'maryah Fanyah"(in Arabic=El Sakakini Palace "Architectural and Artistic Study, Master's thesis, Faculty of Archeology, Cairo University,1996, pp.15-17; Nigm, A., Qoswr Alaomra' walbashawat, pp.57-60.

(69) Hunter, F. R., Egypt Under the Khedives, 1805–1879: From Household Government to Modern Bureaucracy,the American University in Cairo Press,Cairo,1999,pp.20-22,24-26; Abdel-Gawad, T., Tarikh ala'marah, ala'sour almtoustah wala'ouroubiah walislamiah (in Arabic= History of Architecture, Middle, European and Islamic Ages, Vol.2, The Anglo-Egyptian Library,Cairo,2009;Sameh, K.,Lamahat fi Tarikh al'eamarah Almisriah "mnadh 'aqdam al'eusur hataa al'easr alhadiyth", (in Arabic= Notes in the History of Egyptian Architecture "From the ancient times until the modern era", First Edition, Dar Nahdet al-Sharq, Cairo 2004, p.65.

(70) Fahmy, K., The era of Muhammad 'Ali Pasha, 1805-1848, In: Daly, M., (Ed.). The Cambridge History of Egypt, Vol.2, Modern Egypt, from 1517 to the end of the twentieth century, Cambridge University Press, Cambridge, 2008, pp.139-179; Fathy, H., Al'eamarah Alearabiah Alhadriah bialsharq al'awsat, (in Arabic=Arab Urban Architecture in the Middle East, Dar Al Ahad Press, Beirut,1971, p.21.

(71)Ismail,M.,Madinat Alqaherah "mn wilayat Muhammed Ali 'iilaa Isma'il", (in Arabic = The City of Cairo "From the reign of Muhammed Ali to Ismail", Second Edition, Dar Al-Afaq Al-Arabiya Press, Cairo 1999, p. 359; Ali, A., Alqahrerah fi 'asr 'Isma'il, (in Arabic = Cairo in the reign of Ismail, First Edition, Al Dar Al Masriah Al Lubnaniah For Publishing, Cairo, 1998, pp.13:28; Sakr, T., Early Twentieth-Century Islamic Architecture in Cairo, The American University in Cairo Press, Cairo, 1993, pp. 12-14.

(72)Hunter, F.R., Egypt under the successors of Muhammad 'Ali, In: Daly, M., (Ed.). The Cambridge History of Egypt, Vol.2, Modern Egypt, from 1517 to the end of the twentieth century, Cambridge University Press, Cambridge, 2008, pp.180-197; Abdel-Wahhab, H., Tarikh Almasajid Al'athariah fi Alqaherah, (in Arabic= History of Archaeological Mosques in Cairo, Vol.1,First Edition, Awraq Sharqiyah for Printing, Cairo, 1946, p.21.

(73)Ibrahim, H., The Egyptian Empire, 1805-1885, In: Daly, M., (Ed.). The Cambridge History of Egypt, Vol.2, Modern Egypt, from 1517 to the End of the Twentieth Century, Cambridge University Press, Cambridge, 2008, pp.198-2016; Al-Alfi, M.,Al'amarah Al'islamiah fi Misr khilal alqarn altase' 'ashar "'usrat Muhammed Ali bialqaherah" (1805-1899), (in Arabic=Islamic Architecture in Egypt during the Nineteenth Century, The Muhammed Ali Dynasty in Cairo (1805-1899 AD), Unpublished PhD Thesis, Faculty of Engineering, Cairo University, 1986, p.9; Ebeid, M., Altatawur Alaijtima'e fi Misr wata'thirah 'alaa Almaskan Alm'asir, (in Arabic= Social Development in Egypt and its Impact on Contemporary Housing, Unpublished MA Thesis, Faculty of Engineering, Cairo University, 1986, p.93.

(74)Al-Junaidi, M., Athr Al'arab 'alaa Al'emarah Algharbiah "mnadh Al'islam hataa al'asr alhadith",(in Arabic=The Influence of the Arabs on Western Architecture "From the time of Islam until the Modern Era", Unpublished PhD Thesis, Faculty of Engineering, Cairo University, 1982, p. 269.

(75)Kaufmann, E., Architecture in the age of Reason, Harvard University Press, 1955, p. 212.

(76)Raymond, A., Almudun Al'arabiah alkubra fi al'asr Al'uthmani, Translated by Latif Farag, (in Arabic = The Great Arab Cities in the Ottoman Era, First Edition, Dar Al-Fikr for Studies and Publishing, Damascus-Syria, 1991, p.207.

(77)Taqtak, J., Albu'd Al'insani fi Al'amarah Alsakniah, (in Arabic=The Human Dimension in Residential Architecture, Unpublished MA Thesis, Faculty of Engineering, Cairo University, 1999, p.142.

(78)Al-Bastawisi, A., Alkhususiah fi Takhtit Watasmim Almanatiq Alsakaniah, (in Arabic= Privacy in Planning and Designing Residential Areas, Unpublished MA Thesis, Faculty of Engineering, Cairo University, 1998, pp.44:56; Mahmoud, H., Al'amarah Alddakhiliah limanazel Al'asr Al'uthmani fi Alqahirah, (in Arabic= Interior Architecture of Houses of Ottoman Era in Cairo, Unpublished MA Thesis, Faculty of Fine Arts, Helwan University, 2000, pp.100:107.

(79)Reynolds, J. S.,Courtyards "Aesthetic –Social and Thermal Delight", New York, 2002,p.4.

(80)Denny, W. B., Palace of Gold Light, "the Palace and the Capital", Palace Arts Foundation, Washington-DC, 2000, p.20.

(81)Ünsal, B., Turkish Islamic Architecture "in Seljuk and Ottoman Tiems 1071-1923", London, 1959, pp.70:72.

(82)Al-Kafrawy, Y., Asalib Tatwir Almaskan Tsmymaan limuajahat Taghayur Ihtyajat Alsukkan,(in Arabic= Methods of Housing Development Designed to overcome with Changing of Population Needs, Unpublished MA Thesis, Faculty of Engineering, Helwan University, Egypt, 2003,pp.2-3.

(83)Abdel Hady, D., Simat Al'amarah Aldakhiliah Al'islamiah lilbuyut Al'athariah fi Alqahirah, (in Arabic= Characteristics of Islamic Interior Architecture for Archaeological Houses in Cairo, Unpublished MA Thesis, Faculty of Fine Arts, Helwan University, Egypt,1999, p.97.

(84)Abd El-salam, Y., Tahlil 'anaser Alfaragh Alme'amari Aldakhili Al'islami Watawzifuha fi Almaskan Alm'aser, (in Arabic= Analysis of the Elements of the Islamic Interior Architectural and the Employment in Contemporary Dwelling House, Unpublished PhD Thesis, Faculty of Fine Arts, Helwan University, Egypt, 2003, p. 87.

(85)For more about the modern methods used in construction, See: Abdel-Gawad, T., Tarikh ala'marah fi Msr fi Alqrn Ala'shrin (in Arabic= History of Modern Architecture in the Twentieth Century, Vol.4, The Anglo-Egyptian Library, Cairo, 2011; Raafat, A., Fan ale'amarah walkhirsanah almusalaha (in Arabic= The Art of Architecture and Reinforced Concrete, Franclin Foundation for Printing and Publishing, Cairo, 1970; Raafat, A., Tholathayt al'ibda' almiemari, (in Arabic= Triad of architectural creativity,Inter Consult Research Center,Cairo,2007,p.14;Ahmed,S.; Sharif, M., and Shakra, K., Tajwid watahsin tatbiqat 'iistkhdam alkhursanah kamadah 'iinshayiyah wazukhrufiah fi ale'amarah almueasirah fi Misr, (in Arabic= Improving the applications of using concrete as a structural and decorative material in contemporary architecture in Egypt, Engineering Research Journal, Faculty of Engineering, Minoufiya University, Egypt, Vol. 37, No. 2, 2014, pp.277-291.

(86)Waziry, Y., Almujtama' Wathaqafat Al'umran, (in Arabic= Society and Urban Culture, Dar El Shaab Press and Publishing, Cairo 2002, p.51.

(87)Dombayci, Ö., and Özturk, H., Insulation of Ceiling with Different Insulation Materials and its Effect on Energy Saving, International Journal of Materials Science and Applications,Special Issue:Energy and Materials,Vol.5,No. 6/1,2016,pp.1-5;Georgea, N.; Obianwub, V.; Akpabioc, G., and Obotd, I., Comparison of thermal insulation efficiency of some select materials used as ceiling in building design, Scholars Research Library, Archives of Applied Science Research, Vol.2, Issue 3, 2010, pp. 253-259; Al-Khouly, M., Almu'atharat Almunakhiah Wale'amarah Al'arabiah, (in Arabic= The Effects of Climate and Arab Architecture, Dar Al-Ma'arif Press, Cairo, 1977, p.28.

(88) Scelo, T.,Impact Sound Transmission through Floor/Ceiling Systems, Building Acoustics, Multi-Science Publishing, Vol.16, Issue 1, 2009, pp.47-66; Rindel, J., "Acoustic Quality and Sound Insulation between Dwellings", Journal of Building Acoustics, Vol.5, 1999, pp.291-301; Rindela, J., Sound insulation of buildings, Conference of Inter-Noise, Istanbul, Turkey, 28-31 August 2007, pp.1-16.

(89)Lauriola, D., Combining Efficiency and Aesthetics through the Integration Of Structural Topology Optimization in Architecture, Master thesis of Science and Building Technologies in Architecture, Faculty of Architecture and Building Engineer, Technical University of Cartagena, 2017, pp.1-3, 8-9.

(90)Gamal El-Din, H., Almua'amah bayn Alwazifah Walqim Altashkiliah lil'asquf fi alhayizat aldakhiliah, (in Arabic = The Harmony between the Function and the Formative Values of the Ceilings in the Interior Spaces, Unpublished MA Thesis, Faculty of Fine Arts, Alexandria University, Egypt,1999, p.199.

(91)Shawky, I.,Alfan Waltasmim, (in Arabic= Art and Design, Zahraa al-Sharq Library, Cairo, 2000, p.202.

(92) Ghandar, I., Qasr Anisa Waisa bialfyoum "Dirasah Athariah", (in Arabic= The Palace of Anissa Weissa in Al Fayoum "an archaeological study", Journal of Alosour, Vol.17/2, 2007, p.136.

(93) Lezine, A., Trois Palais D'époque Ottomane Au Caire, Le Caire, 1972, p.51.

(94)Nigm, A., Qasr Alsakakyni, p.78.

(95) Ünsal, B., Turkish Islamic Architecture, p. 82.

(96)Ibrahim,A., Almanzur Altarikhi lil'amarah fi Almashriq Al'arbi, in Arabic=The Historical Perspective of Architecture in the Arab Mashreq, 1st Edition, Center for Planning and Architectural Studies,Cairo,1987, p.104.

(97)For more, see: Markaz Aldirasat Altakhtitiah wmarkaz e'adat ehya' Turath Al'emarah Al'islamiah: 'usus Altasmim alme'amari waltakhtit Alhadri fi Al'usur Al'islamiah Almukhtalifah bialeasimah Alqahirah, (in Arabic= Center for Planning Studies and Center for Reviving the Heritage of Islamic Architecture: Foundations of Architectural Design and Urban Planning in Different Islamic Ages in the Capital Cairo, Organization of Islamic Capitals and Cities for Publishing, Jeddah, Kingdom of Saudi Arabia, 1990, p.510.

(98) Agwa, E., Alhulul Alm'emariah Almu'alajah lilzawaher Almunakhiah bi'emarat Alqaherah mundh nash'atiha hataa nihayat al'asr al'uthamani, (in Arabic= Architectural solutions addressing climatic phenomena in Cairo architecture from its beginning until the end of the Ottoman era, Unpublished PhD Thesis, Faculty of Archeology, Cairo University, 2009, p.19.

(99) For European newcomer influences and styles, See: Ghandar, I., A'amal Al-manafie' al'amah bialqahirah fi al qarn alttasie' a'shar (in Arabic= Public Utilities Works in Cairo in the Nineteenth Century, PhD Thesis, Faculty of Archeology, Cairo University, 2005, pp.658-659; Nigm, A., Qoswr Alaomra' walbashawat, pp.57-58, 259-261; Abdel-Hafeez, M., Dawr Aljaliat al'ajnabiah, pp.157-159; Whittick, A., European Architecture in the Twentieth Century, 1st ed., Leonard Hill Books, New York, 1974, pp.17-27; Piles, J, A History of Interior Design, 3rd ed., Laurence King Publishing,London,2005, pp. 305-327; Cruickshank, D, Sir Banister Fletcher's A History of Architecture, 20th ed.,Architectural Press,London,1996, pp. 1483-1484.

(100) For more information about the Gothic style, see: Kornwolf, J.D., High Victorian Gothic; or, the dilemma of style in modern architecture, Journal of the Society of Architectural Historians, 1975, pp. 37-47; Worsley, G., The Origins of the Gothic Revival: A Reappraisal: The Alexander Prize Essay, Transactions of the Royal Historical Society,Vol. 3,Cambridge University Press, 1993, pp.105-150; Nigm, A., Qoswr Alaomra' walbashawat, pp.31-34.

(101) For more about this see: Nigm, A., Qoswr Alaomra' walbashawat, pp.57-60; Abdel-Hafeez, M., Dawr Aljaliat al'ajnabiah, pp.154-156.

(102) For more about this see: Curl, J.S.,& Wilson,S., The Oxford Dictionary of Architecture, 3rd ed., Oxford University Press, 2015;Aldrich, M.,Gothic Revival, Phaidon Press, London, 2005,pp.82-85; Rolf, T., (Ed.). Neoclassicism and Romanticism. Architecture, Sculpture, Painting, Drawings, 1750-1848, Könemann, Cologne, 2000; Paul,A., &Clive, W., Pugin: A Gothic Passion, Yale University Press, New Haven and London, 1994,p.221;Carpo,M., "Architecture: Theory, Interdisciplinarity, and Methodological Eclecticism, Journal of the Society of Architectural Historians, Vol. Vol. 64, No.4,2005, pp. 425- 427; Hamlin, T, The Rise of Eclecticism in New York, Journal of the Society of Architectural Historians, Vol.11 (2), 1952, pp. 3-8; Meeks, C., Creative Eclecticism,Journal of the Society of Architectural Historians, Vol.12 (4), 1953, pp. 15-18; Nigm, A., Qoswr Alaomra' walbashawat, pp.57-58.

(103) For more about this see: Beattie, A., Cairo: A Cultural History, Oxford University Press, Oxford, 2005, pp. 182-187; Dobrowolska, A., & Dobrowolski, J., Heliopolis-Rebirth of the City of the Sun, American University in Cairo Press, Cairo, 2006, pp.176ff; Elsheshtawy, Y., Planning Middle Eastern Cities: An Urban Kaleidoscope in a Globalizing World, Routledge Press, London, 2004, pp.144-151.

(104) Al-Tarabili, A., 'ahya' Alqaherah Almahrusah, (in Arabic= The Neighborhoods of Cairo Al Mahrousa, Al Dar Al Masriah Al Lubnaniah, Cairo, 2003, pp.351:361.

(105) Khalifa, G., Alqusur bimuhafazat Alfayoum "khlal alqarn alththalith 'ashr walrub' al'awal min alqarn alrabie' 'ashr Alhijri- alqarn alttasie 'ashar wabidayat alqarn Al'eshrin almilady" Derasah 'athariah faniah, (in Arabic= Palaces in Fayoum Governorate "During the Thirteenth and First Quarter of the Fourteenth Century AH-the Nineteenth Century and the Beginning of the Twentieth Century AD" Artistic Archaeological Study, Unpublished PhD Thesis,Faculty of Archeology,Cairo University,Egypt, 2010,p.27.

(106) Alwan, M., Qasr Alexan bimadinat Asiut 1328AH/ 1910AD, Derasah Aithriah M'emariah, (in Arabic= The Palace of Alexan in the city of Asiut1328 AH / 1910AD, "Archeological and Architectural Study", The Twenty-first Arab Archaeologists Conference, Vol.19, Cairo, 2018, pp.762:790.

(107) Ghandar, I., Qasr Anisa Waisa bialfyoum, pp.111:155; Khalifa, G., Alqusur bimuhafazat Alfayoum, pp.10:25.

(108) Abd al-Rahman, M., 'ama'er Al'amirah Shiwh-kar Albaqiah bimadinat Alqaherah, "Draasah Athariah Faniah Muqaranah", (in Arabic=The Remaining Buildings of Princess Shivakiar in the city of Cairo, "A Comparative Archaeological and Artistic Study," Unpublished MA Thesis, Faculty of Archeology, Cairo University, Egypt, 2011, p.229.

(109) Abdel-Majid, A., Qasr 'Aisha Fahmy bialzamalek "Draasah Athariah Faniah Muqaranah", (in Arabic =The Palace of Aisha Fahmy in Zamalek "A Comparative Archaeological and Artistic Study", Unpublished MA Thesis, Faculty of Archeology, Fayoum University, 2020, pp. 51:53, 277:281.

(110) Nigm, A., Qoswr Alaomra' walbashawat, p.130.

(111)On the uses of glass in the residential architecture, see: Nabil, M., Alzujaj fi Al'amarah Aldakhiliah, (in Arabic= Glass in Interior Architecture, Unpublished MA Thesis, Faculty of Fine Arts, Helwan University, 2004, p.253.

(112)On Windows and their shapes in the residential architecture, see: Amer, W., Ta'thir Alzuruf Albi'iyah 'alaa Tasmim Alfatahat Alkharijiah lilmubani "Alnafidhah Almisriah",(in Arabic= The Impact of Environmental Conditions on the Design of External Openings of Buildings "The Egyptian Window", Unpublished MA Thesis, Faculty of Engineering, Cairo University, Egypt,1976, p.43.

(113)Khalifa, G., Alqusur bimuhafazat Alfayoum, pp.10:25, 42:53.

(114)Abdel-Majid, A., Qasr 'Aisha Fahmy bialzamalek, pp.285:289.

(115)Khalifa, G., Alqusur bimuhafazat Alfayoum, p.54.

(116)Al-alfy, A., Elmogaz fi Tarikh El-fan El'amm (in Arabic = The Brief in the Public History of Art), Nahdet Misr Library, Cairo,1980, p.230.

(117)Balconies are raised levels surfaces on which people can stand on, which are platforms surrounded by a wall or balustrade on the external side of a building accessing from a window or door on the upper floor. The Mashrabiya used as a balcony and the surrounding area is independent from the rooms of the upper floor, where it can be accessed through these rooms with windows opening through it. In some cases when the building faces an open landscape or a river, the woodwork can be reduced to make the mashrabiya look like a covered balcony. For more about this see: Abdel-Gawad, A., Veiling Architecture: Decoration of Domestic Buildings in Upper Egypt 1672-1950, the American University in Cairo Press, Cairo, 2012, pp.6-10;Badr, A., Alharamlek and Almsari in the Egyptian and Andalusian Residential Architecture in the Islamic Era, (A comparative archaeological study), Journal of American Science, Vol.9, Issue 7, 2013, pp.60-75;Sakr, T., Early Twentieth-Century Islamic Architecture in Cairo, pp.19-20; Goodwin, G., A History of Ottoman Architecture, Thames and Hudson Press, London, 1971, pp. 296-297, 361- 362.

(118)For more about Cornice, see: Vogel,S.; Eckerstorfer, M., & Christiansen, H., Cornice dynamics and meteorological control at Gruvefjellet, Central Svalbard, The Cryosphere, Vol. 6, 2012, pp.157-171; Embi, M., & Abdullahi, Y., Evolution of Islamic Geometrical Patterns, Global Journal Al-Thaqafah, Vol.2, Issue 2, 2012, pp.27-39.

(119)For more about Fronton, see: Harris, C. M., (Ed.) Illustrated Dictionary of Historic Architecture, Dover Publications, New York, 1983, p.386; Pérouse de Montclos,J., Architecture Méthode et vocabulaire, éditions du Patrimoine, Paris,2002, p.361; Vozniak, E., & Butyrin, A., Classification of historical buildings façade's details on the basis of order theory, E3S Web of Conferences 91, 05016, 2019, pp.1-6; Broze, M., &Talon, P., Atlas de la Renaissance, Brepols, 1993, p.100; Madrazo, L., The Concept of Type in Architecture, A dissertation submitted to the Swiss Federal Institute of Technology of Zürich for the degree of Doctor of Technical Sciences, Zürich, 1995, p.173; Denna,J., Architecture;the Whole History, Thames & Hudson Press,New York,2014, p.277; Issa, A., Mustalahat Alfan Al-Islami, p.79.

(120)For more about Triangle Fronton see: Nigm, A., Helwan Mdinah Alksour Walsrayat drasah a'thriah wthaa'kiah la'mran Almdinah Wa'tharha Albakiah Walmndthrah (in Arabic= Helwan, the city of palaces and chateaux, "A documentary archaeological study of the city's architecture and its remaining and extinct antiquities"), Zahraa Al Sharq Library, Cairo, 2006, pp.298-299.

)121(Nigm, A., Qoswr Alaomra' walbashawat, p.197.

(122) For more about Corinthian Column see: Jones, M.W., Designing the Roman Corinthian order, Journal of Roman Archaeology, Vol.2, 1989, pp.35-69; Ebeling, H.L., The Origin of the Corinthian Capital, The Art Bulletin/The Bulletin of the College Art Association of America, College Art Association,Vol.6,No. 3,1924,pp.75-81; Creswell, K. A. C., A Short Account of Early Muslim Architecture, revised and supplemented by James W. Allen, Aldershot/Scolar Press, London, 1989,p.226; Creswell, K. A. C., Early Muslim Architecture, Vol.I, Hacker Art Books, New York,1978,p.149, 284; Creswell, K. A. C., The Muslim Architecture of Egypt, Vol.II, Ayyubids and Early Bahrite Mamluks, A.D. 1171-1326, Hacker Art Books, New York, 1978, pp.190-191, 197; Behrens-Abouseif, D., Cairo of the Mamluks, p.175.

(123) Acanthus leaf was one of the most prevalent plant forms to produce foliage ornament. Acanthus leaves were the aesthetic base for crowns or capitals that were emerged in the architecture of Corinthian order. For more about Ornament of Acanthus see: Riegl, A., & Kain, E., Problems of Style; Foundations for a history of ornament, Princeton, 1992, pp.187-206; Strong, D.E., Some Early Examples of the Composite Capital, Journal of Roman Studies,Vol. 50,1960,pp.119-128; Shafi'i, F., Al'emarah Al'arabiah fi Misr Al'islamiah,

ISSN: 2785-9622 VOLUME 4, ISSUE 1, 2021, 209– 259. www.egyptfuture.org/ojs/

(in Arabic= Arab Architecture in Islamic Egypt, Vol.1, The Era of the Rulers, The General Egyptian Book Authority, Cairo, 1994, pp.212-213; Abdel-Gawad, T., Tarikh Al'emarah walfunun Alislamiah, (in Arabic= History of Islamic Architecture and Arts, Vol.3, The Anglo-Egyptian Library, Cairo,2010, p.76.

(124)For more about Symmetry, see: Rozsa, E., "Symmetry in Muslim Arts", International Journal Computers and Mathematics with Applications, Vol.12B, No. 3/4,1986, pp.725-750; Mangho, A., and Loeb, A., "Tessellations in Islamic Calligraphy", Leonardo, Vol.28, Issue 1, 1995, pp.41-45; Saliba, G., "Artisans and Mathematicians in Medieval Islam; The Topkapi Scroll: Geometry and Ornament in Islamic Architecture by Gülru Necipoğlu (Review),Journal of the American Oriental Society, Vol. 119, Issue 4, 1999, pp.637-645;Broug, E., Islamic Geometric Patterns, Thames and Hudson Press, London,2008, pp.183-185,193;Bonner,J.,Islamic Geometric Patterns: their historical development and traditional methods of construction,Springer,New York,2017,p.1.

)125(For more about Characteristics and Influences of the Islamic style, see: Abdullahi, Y., and Rashid, M., "Evolution of Islamic geometric patterns,Frontiers of Architectural Research, Vol.2, Issue 2, 2013, pp.243-251; El-Shorbagy, A., Traditional Islamic-Arab House: Vocabulary And Syntax,International Journal of Civil & Environmental Engineering, Vol.10,Issue 4,2010, pp.1-7; Grünbaum,B., and Shephard,G., "Interlace Patterns in Islamic and Moorish Art", Leonardo, Vol. 25, Issue 3, 1992, pp.331-339; Farazmand,P., and Sarbangholi, H., "Investigating the Patterns of Islamic Architecture in Architecture Design of Third Millennium Mosques", European Online Journal of Natural and Social Sciences,Vol.3, Issue 4 (Special Issue on Architecture, Urbanism,and Civil Engineering), 2014, pp.501-514.

(126)For more about these Palaces, see: Khalifa, G., Alqusur bimuhafazat Alfayoum, pp.10:25, 27:41, 54:68.

(127)For more about floral motifs, see: Etikan, S.,The Principles of Ornament in Islamic art and effects of these Principles on the Turkich Carpet Art, Religion and Science Publications, Vol.3,Issue 2,2011, pp.87-95;Shafiq,J., Architectural Elements in Islamic Ornamentation: New Vision in Contemporary Islamic Art,Arts and Design Studies,Vol.21,2014,pp.11-21.

(128)For more about Islamic geometrical shapes, see: Broug, E., Islamic Geometric Patterns, pp.183-185,193; Bonner, J., Islamic Geometric Patterns, pp.1-2; Saliba, G., "Artisans and Mathematicians in Medieval Islam; The Topkapi Scroll: Geometry and Ornament in Islamic Architecture, pp.637-645; Mangho, A., and Loeb, A., "Tessellations in Islamic Calligraphy", pp. 41-45.

(129)For more about Arches, see: De Montequin, F.A., Arches in the Architecture of Muslim Spain: Typology and Evolution, Islamic Studies, Vol.30, Issue 1/2, 1991, pp.67-82; Rizq, A., Mu'jam Mustalahat ale'amarah, p.203;Lolias, Y., Structural Behavior of Segmental Arch Structures, A Thesis submitted in partial fulfilment of the requirements for the degree of Bachelor of Engineering - Civil, Charles Darwin University, 2014, pp.14.ff; Harris, C.M., Illustrated Dictionary of Historic Architecture,Dover Publications, New York,1983,p.485;Smith, P.M.,Rivington's Building Construction, Routledge Press, London, 2015, p.6.

(130) For more about Ceilings, see: Tkachuk, H., and Bilinska, O., The evolution of the ceiling in architecture, International Youth Science Forum "Litteris et Artibus",23–25 November, 2017,Ukraine,pp.232-239;Rizq, A., Mu'jam Mustalahat ale'amarah,pp.141-146.

ISSN: 2785-9622 VOLUME 4, ISSUE 1, 2021, 209– 259. www.egyptfuture.org/ojs/

Bibliography

- Abd al-Rahman al-Jabarti, Aja'ib al-athar fi al-tarajim wal-akhbar, Vol. 3, Second Edition, Dar Al-Jeel of printing, publishing and distribution, Beirut,1978.
- Abd al-Rahman, M., 'ama'er Al'amirah Shiwh-kar Albaqiah bimadinat Alqaherah, "Draasah Athariah Faniah Muqaranah", (in Arabic=The Remaining Buildings of Princess Shivakiar in the city of Cairo, "A Comparative Archaeological and Artistic Study", Unpublished MA Thesis, Faculty of Archeology, Cairo University, Egypt, 2011.
- Abd El-salam, Y., Tahlil 'anaser Alfaragh Alme'amari Aldakhili Al'islami Watawzifuha fi Almaskan Alm'aser, (in Arabic= Analysis of the Elements of the Islamic Interior Architectural and the Employment in Contemporary Dwelling House, Unpublished PhD Thesis, Faculty of Fine Arts, Helwan University, Egypt, 2003.
- Abdel Hady, D., Simat Al'amarah Aldakhiliah Al'islamiah lilbuyut Al'athariah fi Alqahirah, (in Arabic= Characteristics of Islamic Interior Architecture for Archaeological Houses in Cairo, Unpublished MA Thesis, Faculty of Fine Arts, Helwan University, Egypt,1999.

ISSN: 2785-9622 VOLUME 4, ISSUE 1, 2021, 209– 259. www.egyptfuture.org/ojs/

- Abdel Raheam, A., (et.al.) "Characteristics' Analysis of Urban System in Northern Upper Egypt Region (NUE) Size Distribution Analysis of Urban Settlements; 1976-2016", Journal of Modern Research, Vol. 2, 2020, pp.84-96.
- Abdel Razek, M., Alkuabil fi al'amayir Al'iislamiah bialqahirah mundh bidayat al'asr Almamlukii wahataa nihayat 'asr Muhamad Ali "draasah Muemariah Faniah", (in Arabic= The Corbels in the Islamic Buildings in Cairo from the Beginning of the Mamluk Era to the End of the Muhammad Ali Era "An Architectural and Artistic Study", an unpublished Master Thesis, Faculty of Archeology, Cairo University, Egypt, 2008.
- Abdel-Gawad, T., Tarikh ala'marah, ala'sour almtoustah wala'ouroubiah walislamiah (in Arabic= History of Architecture, Middle, European and Islamic Ages, Vol.2, The Anglo-Egyptian Library, Cairo, 2009.
- Abdel-Gawad, T., Tarikh Al'emarah walfunun Alislamiah, (in Arabic= History of Islamic Architecture and Arts, Vol.3, The Anglo-Egyptian Library, Cairo, 2010.
- Abdel-Gawad, T., Tarikh ala'marah fi Msr fi Alqrn Ala'shrin (in Arabic= History of Modern Architecture in the Twentieth Century, Vol.4, The Anglo-Egyptian Library, Cairo, 2011.
- Abdel-Gawad, A., Veiling Architecture: Decoration of Domestic Buildings in Upper Egypt 1672-1950, the American University in Cairo Press, Cairo, 2012.
- Abdel-Hafeez, M., Dawr Aljaliat al'ajnabiah Walearabiah fi Alhayat Alfaniyah fi Misr fi Alqarniiyn Alththamina'shr walttasiea'shr, Dirrasah 'athriatah Hadariah Watha'yiqiah (in Arabic= The role of foreign and Arab communities in artistic life in Egypt in the Eighteenth and Nineteenth Centuries, "A Cultural Archaeological and Documentary Study", PhD Thesis, Faculty of Archeology, Cairo University, Egypt, 2000.
- Abdel-Hafeez, M., Almustalahat alma'mariah fi Wthaa'k a'sr Muhamad Ali wakhulafa'yih (1805/1879), (in Arabic= Architectural Terminology in Documents of the Era of Muhammad Ali and His Successors (1805 AD/1879 AD),First Edition, Egyptian Marketing & Distribution Co. (EMDCO), Cairo, 2005.
- Abdel-Majid, A., Qasr 'Aisha Fahmy bialzamalek "Draasah Athariah Faniah Muqaranah", (in Arabic = The Palace of Aisha Fahmy in Zamalek "A Comparative Archaeological and Artistic Study", Unpublished MA Thesis, Faculty of Archeology, Fayoum University, Egypt, 2020.
- Abdel-Wahhab, H., Tarikh Almasajid Al'athariah fi Alqaherah, (in Arabic= History of Archaeological Mosques in Cairo, Vol.1, First Edition, Awraq Sharqiyah for Printing, Cairo, 1946.
- Abdullahi, Y., and Rashid, M., "Evolution of Islamic geometric patterns", Frontiers of Architectural Research, Vol.2, Issue 2, 2013, pp.243-251.
- Agwa, E., Alhulul Alm'emariah Almu'alajah lilzawaher Almunakhiah bi'emarat Alqaherah mundh nash'atiha hataa nihayat al'asr al'uthamani, (in Arabic= Architectural solutions addressing climatic phenomena in Cairo architecture from its beginning until the end of the Ottoman era, Unpublished PhD Thesis, Faculty of Archeology, Cairo University, Egypt, 2009.
- Ahmed,S.; Sharif, M., and Shakra, K., "Tajwid watahsin tatbiqat 'iistkhdam alkhursanah kamadah 'iinshayiyah wazukhrufiah fi ale'amarah almueasirah fi Misr", (in Arabic= Improving the applications of using concrete as a structural and decorative material in contemporary architecture in Egypt, Engineering Research Journal, Faculty of Engineering, Minoufiya University, Egypt, Vol. 37, No. 2, 2014, pp.277-291.
- Aksu, H., "Rumi Motifin İlk Öncüleri", Türkler, Vol. 4, No.12, 2002, pp.182-192.
- Al-Alfi, M., Al'amarah Al'islamiah fi Misr khilal alqarn altase' 'ashar "'usrat Muhammed Ali bialqaherah"(1805-1899), (in Arabic=Islamic Architecture in Egypt during the Nineteenth Century, The Muhammed Ali Dynasty in Cairo (1805-1899 AD), Unpublished PhD Thesis, Faculty of Engineering, Cairo University, Egypt, 1986.

- Al-alfy, A., Elmogaz fi Tarikh El-fan El'amm (in Arabic = The Brief in the Public History of Art), Nahdet Misr Library, Cairo, 1980.
- Albach, D. C.; Meudt, H. M. and Oxelman, B., "Piecing together the "new" Plantaginaceae", American Journal of Botany, Vol.92, 2005, pp.297-315.
- Al-Bastawisi, A., Alkhususiah fi Takhtit Watasmim Almanatiq Alsakaniah, (in Arabic= Privacy in Planning and Designing Residential Areas, Unpublished MA Thesis, Faculty of Engineering, Cairo University, Egypt, 1998.
- Aldrich, M., Gothic Revival, Phaidon Press, London, 2005.
- Alhukumah Almalakiah Almisriah: Wizarat Alddakhiliah, Wathiqat Jawaz Safar lilhijaj almisriiyn tahmil raqm 1198, (in Arabic= The Egyptian Royal Government: Ministry of Interior, the Passport document for Egyptian pilgrims with No.1198.
- Alhukumah Almalakiah Almisriah: Wizarat Alddakhiliah, Wathiqat Ta'eyin 'Abd al-'Azim 'Effendi Mustafaa Muhamad Abu al-Nil, Bitarikh 16 Mars 1895AD /almuafiq 20 Ramadan 1313AH,(in Arabic = The Egyptian Royal Government: Ministry of Interior, The appointment document of Abd al-Azim Effendi Mustafa Muhammad Abu al-Nil, dated March 16, 1895 AD, corresponding to Ramadan 20, 1313 AH.
- Ali Mubarak, Al-Khitat Al-Tawfiqiyya Al-Jadida li-Misr al-Qahira wa-Muduniha wa-Biladiha al-Qadima wa-al-Shahira, Vol. 2, Al-Matba'a Al-Amiriyya / the Amiri Press in Bulaq, Cairo, 1304–1306AH/1886–1889AD.
- Ali Mubarak, Al-Khitat Al-Tawfiqiyya Al-Jadida li-Misr al-Qahira wa-Muduniha wa-Biladiha al-Qadima wa-al-Shahira, Vol.14, 3 rd Edition, Al-Matba'a Al-Amiriyya / the Amiri Press in Bulaq, Cairo, 1305AH.
- Ali, A., Alqahrerah fi 'asr 'Isma'il, (in Arabic = Cairo in the reign of Ismail, First Edition, Al Dar Al Masriah Al Lubnaniah for Publishing, Cairo, 1998.
- Al-Junaidi, M., Athr Al'arab 'alaa Al'emarah Algharbiah "mnadh Al'islam hataa al'asr alhadith", (in Arabic=The Influence of the Arabs on Western Architecture "From the time of Islam until the Modern Era", Unpublished PhD Thesis, Faculty of Engineering, Cairo University, Egypt, 1982.
- Al-Kafrawy, Y., Asalib Tatwir Almaskan Tsmymaan limuajahat Taghayur Ihtyajat Alsukkan, (in Arabic= Methods of Housing Development Designed to overcome with Changing of Population Needs, Unpublished MA Thesis, Faculty of Engineering, Helwan University, Egypt, 2003.
- Al-Khouly, M., Almu'atharat Almunakhiah Wale'amarah Al'arabiah, (in Arabic= The Effects of Climate and Arab Architecture, Dar Al-Ma'arif Press, Cairo, 1977.
- Al-Tarabili, A., 'ahya' Alqaherah Almahrusah, (in Arabic= The Neighborhoods of Cairo Al Mahrousa, Al Dar Al Masriah Al Lubnaniah, Cairo, 2003.
- Alwan, M., "Qasr Alexan bimadinat Asiut 1328AH/ 1910AD, Derasah Aithriah M'emariah", (in Arabic= The Palace of Alexan in the city of Asiut1328 AH/1910AD,"Archeological and Architectural Study",The Twenty-first Arab Archaeologists Conference,Vol.19,Cairo,2018,pp.762-790.
- Ambrose, J., Building Structures, John Wiley & Sons, Inc. Press, New Jersey, 2012.
- Amer, W., Ta'thir Alzuruf Albi'iyah 'alaa Tasmim Alfatahat Alkharijiah lilmubani "Alnafidhah Almisriah", (in Arabic= The Impact of Environmental Conditions on the Design of External Openings of Buildings "The Egyptian Window", Unpublished MA Thesis, Faculty of Engineering, Cairo University, Egypt,1976.
- Amin, M and Ibrahim, L., Almustalahat Almuemariah fi Alwatha'iq Almamlukiah, (in Arabic = Architectural Terminology in Mamluk Documents, 1st Edition, American University in Cairo Press, Cairo, 1990.

ISSN: 2785-9622 VOLUME 4, ISSUE 1, 2021, 209– 259. www.egyptfuture.org/ojs/

- Amro, D., & Zafer, H., "The Effects of Flooring Material on Thermal Comfort in a Comparative Study Marble and Parquet Flooring", United International Journal for Research & Technology, Vol.1, Issue 5, 2019, pp.31-35.
- Arjmand, R.; Mirsafa, M., and Talebi, Z., "Islamic Educational Spaces: Architecture of Madrasah and Muslim Educational Institutions", In: Daun, H., and Arjmand,R., (Eds.), Handbook of Islamic Education, International Handbooks of Religion and Education, Vol.7, Springer International Publishing, New York, 2017, pp.2-42.
- Azab, K., Fiqh Al Umran Al Islamy, (in Arabic=The jurisprudence of Islamic urbanism), Al-Dar Al-Masriah Al-Lubnaniah for Publishing, Cairo, 2013.
- Badr, A., "Alharamlek and Almsari in the Egyptian and Andalusian Residential Architecture in the Islamic Era",(A comparative archaeological study), Journal of American Science,Vol.9, Issue 7, 2013, pp.60-75.
- Beattie, A., Cairo: A Cultural History, Oxford University Press, Oxford, 2005.
- Behrens-Abouseif, D., Islamic Architecture in Cairo; An Introduction, AUC Press, Cairo, 1996.
- Behrens-Abouseif, D., Cairo of the Mamluks; A History of Architecture and its Culture, American University in Cairo Press, Cairo, 2007.
- Bonner, J., Islamic Geometric Patterns: their historical development and traditional methods of construction, Springer, New York, 2017.
- Bremner, G. A., "Architecture, symbolism, and the ideal of empire in Late Victorian Britain, 1887-1893", Journal of the Society of Architectural Historians, 2003, pp. 50-73.
- Bristow, I., "Exterior Renders designed to imitate Stone: A Review, In: Association for Studies in the Conservation of Historic Buildings", Transactions, Vol. 22, London 1997, pp.13-30.
- Broug, E., Islamic Geometric Patterns, Thames and Hudson Press, London, 2008.
- Broze, M., &Talon, P., Atlas de la Renaissance, Brepols, 1993.
- Carpo, M., "Architecture: Theory, Interdisciplinarity, and Methodological Eclecticism", Journal of the Society of Architectural Historians, Vol. Vol. 64, No.4, 2005, pp. 425- 427.
- Cook, M.A., Introductory Remarks, In: Cook, M.A.,(Ed.). Studies in the Economic History of the Middle East, Oxford University Press, Oxford, 1970.
- Creswell, K., The Muslim Architecture of Egypt, Vol.1, Clarendon Press, Oxford, 1952.
- Creswell, K. A. C., Early Muslim Architecture, Vol.I, Hacker Art Books, New York, 1978.
- Creswell, K. A. C., The Muslim Architecture of Egypt, Vol.II, Ayyubids and Early Bahrite Mamluks, A.D. 1171-1326, Hacker Art Books, New York, 1978.
- Creswell, K. A.C., A Short Account of Early Muslim Architecture, revised and supplemented by James W. Allen, Alders hot/ Scholar Press, London, 1989.
- Cruickshank, D, Sir Banister Fletcher's A History of Architecture, 20th ed., Architectural Press, London, 1996.
- Curl, J.S., & Wilson,S., The Oxford Dictionary of Architecture, 3rd ed., Oxford University Press, Oxford, 2015.
- Dar Almahfuzat Al'eumumiah bialql'ah: Dafatr Jard 'awayid sharie' El-Mansheya El-Bahareya, raqm aldafatr (12793/217/34) lisanat 1917AD, (in Arabic= The General Archives House in the Citadel-Egypt: The Inventory Notebook of A'wayed of El-Mansheya El-Bahareya Street, Notebook No. (12793/217/34) for the Year 1917.
- Dar Almahfuzat Al'eumumiah bialql'ah: Dafatr Jard 'awayid sharie' El-Mansheya El-Bahareya, raqm aldafatr (12793/217/34) lisinat 1921AD, (in Arabic= The General Archives House in the Citadel-Egypt: The Inventory Notebook of A'wayed of El-Mansheya El-Bahareya Street, Notebook No. (12793/217/34) for the Year 1921.

ISSN: 2785-9622 VOLUME 4, ISSUE 1, 2021, 209– 259. www.egyptfuture.org/ojs/

- Dar Almahfuzat Al'eumumiah bialql'ah: Dafatr Jard 'awayid sharie' El-Mansheya El-Bahareya, raqm aldafatr (12813/218/34) lisanat 1925 AD, (in Arabic= The General Archives House in the Citadel-Egypt: The Inventory Notebook of A'wayed of El-Mansheya El-Bahareya Street, Notebook No. (12813/218/34) for the Year 1925.
- Dar Almahfuzat Al'eumumiah bialql'ah: Dafatr Jard 'awayid sharie' Samah Al-Wujuh (12960 /219/34) lisanat 1933, (in Arabic= The General Archives House in the Citadel-Egypt: The Inventory Notebook of A'wayed of Samah Al-Wujuh Street (12960/219/34) for the Year 1933.
- De Montequin, F.A., "Arches in the Architecture of Muslim Spain: Typology and Evolution", Islamic Studies, Vol.30, Issue 1/2, 1991, pp.67-82.
- Denna, J., Architecture; the Whole History, Thames & Hudson Press, New York, 2014.
- Denny, W. B., Palace of Gold Light, "the Palace and the Capital", Palace Arts Foundation, Washington-DC, 2000.
- Dobrowolska, A., & Dobrowolski, J., Heliopolis-Rebirth of the City of the Sun, the American University in Cairo Press, Cairo, 2006.
- Dombayci,Ö., and Özturk, H., "Insulation of Ceiling with Different Insulation Materials and its Effect on Energy Saving", International Journal of Materials Science and Applications, Special Issue: Energy and Materials,Vol.5,No. 6/1,2016,pp.1-5.
- Draper, P., "Islam and the West: The Early Use of the Pointed Arch Revisited", Architectural History Journal of the Society of Architectural Historians of Great Britain, Vol.48, 2005, pp.1-20.
- Ducher, R., Caractéristique des Styles, Flammarion Press, Paris, 1988.
- Ebeid, M., Altatawur Alaijtima'e fi Misr wata'thirah 'alaa Almaskan Alm'asir, (in Arabic= Social Development in Egypt and its Impact on Contemporary Housing, Unpublished MA Thesis, Faculty of Engineering, Cairo University, Egypt, 1986.
- Ebeling, H.L., "The Origin of the Corinthian Capital", The Art Bulletin/The Bulletin of the College Art Association of America, College Art Association, Vol.6, No. 3, 1924, pp.75-81.
- Egyptian Endowments Ministry http://ar.awkafonline.com/ (Date of access: 11/10/2020).
- Elsheshtawy, Y., Planning Middle Eastern Cities: An Urban Kaleidoscope in a Globalizing World, Routledge Press, London, 2004.
- El-Shorbagy, A., "Traditional Islamic-Arab House: Vocabulary and Syntax", International Journal of Civil & Environmental Engineering, Vol.10, Issue 4, 2010, pp.1-7.
- Embi, M., & Abdullahi, Y., "Evolution of Islamic Geometrical Patterns", Global Journal Al-Thaqafah, Vol.2, Issue 2, 2012, pp.27-39.
- Endlich, F. M., "On Some Interesting Derivations of Mineral Names", The American Naturalist, Vol.22, Issue 253, 1888, pp. 21-32.
- Etikan, S., "The Principles of Ornament in Islamic art and effects of these Principles on the Turkish Carpet Art", Religion and Science Publications, Vol. 3, Issue 2, 2011, pp.87-95.
- Fahmy, K., "The era of Muhammad 'Ali Pasha, 1805-1848", In: Daly, M., (Ed.). The Cambridge History of Egypt, Vol.2, Modern Egypt, from 1517 to the end of the twentieth century, Cambridge University Press, Cambridge, 2008, pp.139-179.
- Farazmand,P., and Sarbangholi, H., "Investigating the Patterns of Islamic Architecture in Architecture Design of Third Millennium Mosques", European Online Journal of Natural and Social Sciences, Vol.3, Issue 4 (Special Issue on Architecture, Urbanism, and Civil Engineering), 2014, pp.501-514.
- Fathy, H., Al'eamarah Alearabiah Alhadriah bialsharq al'awsat, (in Arabic=Arab Urban Architecture in the Middle East, Dar Al Ahad Press, Beirut, 1971.
- Francis D.K.C., A Visual Dictionary of Architecture, John Wiley and Sons Press, New York, 1995.

- Gamal El-Din, H., Almua'amah bayn Alwazifah Walqim Altashkiliah lil'asquf fi alhayizat aldakhiliah, (in Arabic = The Harmony between the Function and the Formative Values of the Ceilings in the Interior Spaces, Unpublished MA Thesis, Faculty of Fine Arts, Alexandria University, Egypt,1999.
- Georgea, N.; Obianwub, V.; Akpabioc, G., and Obotd, I., "Comparison of thermal insulation efficiency of some select materials used as ceiling in building design", Scholars Research Library, Archives of Applied Science Research, Vol.2, Issue 3, 2010, pp. 253-259.
- Ghandar, I., A'amal Al-manafie' al'amah bialqahirah fi al qarn alttasie' a'shar (in Arabic= Public Utilities Works in Cairo in the Nineteenth Century, PhD Thesis, Faculty of Archeology, Cairo University, Egypt, 2005.
- Ghandar, I., "Qasr Anisa Waisa bialfyoum "Dirasah Athariah", (in Arabic= The Palace of Anissa Weissa in Al Fayoum "an archaeological study", Journal of Alosour, Vol.17/2, 2007, pp.111-136.
- Ghoddousifar, S., and Zarean, D., "Studying the Brickwork of Islamic Mosques as Architectural Decorations", Journal of Architectural Engineering Technology, Vol. 6, Issue 1, 2017, pp.1-6.
- Goodwin, G., A History of Ottoman Architecture, Thames and Hudson Press, London, 1971.
- Gray, P.,"Deep basement construction and facade retention", Architect and Surveyor, Vol.64, No.10, 1989, pp.22-25.
- Grünbaum, B., and Shephard, G., "Interlace Patterns in Islamic and Moorish Art", Leonardo, Vol. 25, Issue 3, 1992, pp.331-339.
- Hamlin, T, "The Rise of Eclecticism in New York", Journal of the Society of Architectural Historians, Vol.11, Issue 2, 1952, pp. 3-8.
- Hammad, M., Altoroz Alm'maria (in Arabic = Architectural Styles, Arab Press Agency / Publishers for Printing, Cairo, 2019.
- Harris, C.M., Illustrated Dictionary of Historic Architecture, Dover Publications, New York, 1983.
- Henry, A.; Stewart, J., (Eds.).Practical Building Conservation; Mortars, Plasters and Renders, Ashgate Publishing, UK/USA, 2011.
- Hillenbrand, R., Islamic Architecture; Form, Function and Meaning, Edinburgh University Press, Edinburgh, 1994.
- http://www.benisuef.gov.eg/ (Date of access: 11/10/2020).
- Hunter, F. R., Egypt Under the Khedives, 1805–1879: From Household Government to Modern Bureaucracy, the American University in Cairo Press, Cairo, 1999.
- Hunter, F.R., "Egypt under the successors of Muhammad 'Ali", In: Daly, M., (Ed.). The Cambridge History of Egypt, Vol.2, Modern Egypt, from 1517 to the end of the twentieth century, Cambridge University Press, Cambridge, 2008, pp.180-197.
- Hussein, I., "The Corbel in Indian Islamic Architecture", Journal of Al-Frahedis Arts, Vol.11, Issue 39, Part II, 2019, pp.77-104.
- Hwaish, A., "Concept of the Islamic House; A case Study of the Early Muslims House", Proceedings of 4th IASTEM / International Conference, Amsterdam, Netherlands, 2015, pp.86-93.
- Ibrahim, A., Alwatha'iq fi Khidmat Alathar "al'asar Almamlwky", silsilat aldirasat alwathayiqiati, (in Arabic = Documents in the Service of Antiquities "The Mamluk Era", Documentary Studies Series, The Arab Organization for Education, Culture and Science, Cairo,1979.
- Ibrahim,A., Almanzur Altarikhi lil'amarah fi Almashriq Al'arbi, (in Arabic= The Historical Perspective of Architecture in the Arab Mashreq, First Edition, Center for Planning and Architectural Studies, Cairo,1987.
- Ibrahim, H., "The Egyptian Empire, 1805-1885", In: Daly, M., (Ed.). The Cambridge History of Egypt, Vol.2, Modern Egypt, from 1517 to the End of the Twentieth Century, Cambridge University Press, Cambridge, 2008, pp.198-2016.

ISSN: 2785-9622 VOLUME 4, ISSUE 1, 2021, 209– 259. www.egyptfuture.org/ojs/

- Ibrahim,N.,Alhrmdanat alhajriah fi Aleamarah Almamlukiah bimadinat Alqahirah, (in Arabic= The Stone Hermdanat in Mamluk Architecture in City of Cairo, an unpublished master's thesis, Faculty of Arts, Ain Shams University, Egypt, 2008.
- Ismail, M., Madinat Alqaherah "mn wilayat Muhammed Ali 'iilaa Isma'il", (in Arabic = The City of Cairo "From the reign of Muhammed Ali to Ismail", Second Edition, Dar Al-Afaq Al-Arabiya Press, Cairo 1999.
- Issa, A., Mustalahat Alfan Al-Islami,(in Arabic= Terminology of Islamic Art, Istanbul,1994.
- Issawi, C., An Economic History of the Middle East and North Africa, Colombia University Press, Colombia, 1991.
- Jones, M.W., "Designing the Roman Corinthian order", Journal of Roman Archaeology, Vol.2, 1989, pp.35-69.
- Kaufmann, E., Architecture in the age of Reason, Harvard University Press, Harvard, 1955.
- Keith, B., Exterior Building Enclosures, John Wiley & Sons, Inc. Press, New York, 2013.
- Khalifa, G., Alqusur bimuhafazat Alfayoum "khlal alqarn alththalith 'ashr walrub' al'awal min alqarn alrabie' 'ashr Alhijri- alqarn alttasie 'ashar wabidayat alqarn Al'eshrin almilady" Derasah 'athariah faniah, (in Arabic= Palaces in Fayoum Governorate "During the Thirteenth and First Quarter of the Fourteenth Century AH - the Nineteenth Century and the Beginning of the Twentieth Century AD" Artistic Archaeological Study, Unpublished PhD Thesis, Faculty of Archeology, Cairo University, Egypt, 2010.
- Khayr al-Din al-Tunisi, Aqwam al-Masālik fī Ma'rifat Aḥwāl al-Mamālik, Dār al-Kitāb al-Lubnāni, Bayrūt, 2012.
- Kimball, F., The Creation of the Rococo, Philadelphia Museum of Art, 1st edition, Philadelphia, 1943.
- Koller, M., Nineteenth Century Architectural Heritage in Europe-ROCARE, Paris, 2012.
- Kornwolf, J.D., "High Victorian Gothic; or, the dilemma of style in modern architecture", Journal of the Society of Architectural Historians, 1975, pp. 37-47.
- Korumaz, M., & Korumaz, A.G., "The Evaluation of New Buildings Behind Historic Façades in Terms of Sustainability", Surveying and Cultural Heritage I, 6253, Rome, Italy, 2012, pp.1-10.
- Lauriola, D., Combining Efficiency and Aesthetics through the Integration Of Structural Topology Optimization in Architecture, Master Thesis of Science and Building Technologies in Architecture, Faculty of Architecture and Building Engineer, Technical University of Cartagena, Cartagena, 2017.
- Lewis, B., Sources for the Economic History of the Middle East, In: Cook, M.A., (Ed.). Studies in the Economic History of the Middle East, Oxford University Press, Oxford, 1970.
- Lézine, A., "Les Salles Nobles des Palais Mamelouks", Vol.1, Institut Français d'Archéologie Orientale/ IFAO, Annales islamologiques, Vol.10/3, Le Caire, 1972, pp. 63-148.
- Lezine, A., Trois Palais D'époque Ottomane Au Caire, Le Caire, 1972.
- Lolias, Y., Structural Behavior of Segmental Arch Structures, A Thesis submitted in partial fulfillment of the requirements for the degree of Bachelor of Engineering - Civil, Charles Darwin University, Australia, 2014.
- Lovreglio, A., Dictionnaire des Mobiliers et des Objets d'art du Moyen Âge au XXIe siècle, Le Robert, Paris, 2006.
- Madrazo, L., The Concept of Type in Architecture, A dissertation submitted to the Swiss Federal Institute of Technology of Zürich for the degree of Doctor of Technical Sciences, Zürich, 1995.
- Mahmoud, H., Al'amarah Alddakhiliah limanazel Al'asr Al'uthmani fi Alqahirah, (in Arabic= Interior Architecture of Houses of Ottoman Era in Cairo, Unpublished MA Thesis, Faculty of Fine Arts, Helwan University, Egypt, 2000.

- Mangho, A., and Loeb, A., "Tessellations in Islamic Calligraphy", Leonardo, Vol.28, Issue 1, 1995, pp. 41-45.
- Markaz Aldirasat Altakhtitiah wmarkaz e'adat ehya' Turath Al'emarah Al'islamiah: 'usus Altasmim alme'amari waltakhtit Alhadri fi Al'usur Al'islamiah Almukhtalifah bialeasimah Alqahirah, (in Arabic= Center for Planning Studies and Center for Reviving the Heritage of Islamic Architecture: Foundations of Architectural Design and Urban Planning in Different Islamic Ages in the Capital Cairo, Organization of Islamic Capitals and Cities for Publishing, Jeddah, Kingdom of Saudi Arabia, 1990.
- Mead, C., "Urban contingency and the problem of representation in Second Empire Paris", Journal of the Society of Architectural Historians, 1995, pp.138-174.
- Meeks, C., "Creative Eclecticism", Journal of the Society of Architectural Historians, Vol.12, Issue 4, 1953, pp. 15-18.
- Melander, J.; Farny, J., and Isberner, A., Portland Cement Plaster/Stucco Manual, Portland Cement Association, USA, 2003.
- Michell, G., Architecture of the Islamic world, UK/London, 1978.
- Mohamed, N.G., & Ali, W.H., "Traditional Residential Architecture in Cairo from a Green Architecture Perspective", Arts and Design Studies, Vol.16, 2014, pp.6-26.
- Moorey, P. R. S., Ancient Mesopotamian Materials and Industries: the Archaeological Evidence, Clarendon Press, New York, 1994.
- Nabil, M., Alzujaj fi Al'amarah Aldakhiliah, (in Arabic= Glass in Interior Architecture, Unpublished MA Thesis, Faculty of Fine Arts, Helwan University, Egypt, 2004.
- Nigm, A., Qasr Alsakakyni "Drasah Me'maryah Fanyah"(in Arabic=El Sakakini Palace "Architectural and Artistic Study, Master's thesis, Faculty of Archeology, Cairo University, Egypt, 1996.
- Nigm, A., Qoswr Alaomra' walbashawat fi Madinat Alqaherah fi alqarn altasie' ashar, Draasah liltoroz alme'mariah walfaniyah(in Arabic= Palaces of the Princes and Pashas in the City of Cairo in the Nineteenth Century (A Study of Architectural and Artistic Styles), Vol.2, 1st ed., Zahraa Al-Sharq Library, Cairo, 2002.
- Nigm, A., Helwan Mdinah Alksour Walsrayat drasah a'thriah wthaa'kiah la'mran Almdinah Wa'tharha Albakiah Walmndthrah (in Arabic= Helwan, the city of palaces and chateaux, "A documentary archaeological study of the city's architecture and its remaining and extinct antiquities"), Zahraa Al Sharq Library, Cairo, 2006.
- Nordmeyer, H., Stucco Handbook for Builders, Magna Wall, South Jordan, 2001.
- O'Kane, B., (Ed.). Creswell Photographs Re-examined: New Perspectives on Islamic Architecture, AUC Press, Cairo, 2009.
- Owen, R., The Development of Agricultural Production in the Ninteenth Century Egypt: Capitalism of what type? In: Udovitch, A.L., (Ed.). The Islamic Middle East 700-1900, Studies in Economic and Social History, Darwin Press, Princeton, 1974.
- Özen, A., and Sağiroğlu, Ö., "Reviewing the bricks used in the traditional architecture with the shape grammar method", Gazi University Journal of Science, Vol. 29, Issue 4, 2016, pp.741-749.
- Paul,A., &Clive, W., Pugin: A Gothic Passion, Yale University Press, New Haven and London, 1994.
- Peker, A., "The Monumental Iwan: A Symbolic Space or A Functional Device?",METU Journal of the Faculty of Architecture, Vol.11, Issue 1/2, 1991, pp.5-19.
- Pérouse de Montclos, J., Architecture Méthode et vocabulaire, éditions du Patrimoine, Paris,2002.
- Petersen, A., Dictionary of Islamic Architecture,1st Edition, Routledge Press, London & New York, 1996.

- Peust,C., Die Toponyme vorarabischen Ursprungs im modernen Ägypten, Göttinger Miszellen, Vol.8, Göttingen, 2010,pp.90-95.
- Piles, J., A History of Interior Design, 3rd ed., Laurence King Publishing, London, 2005.
- Poppeliers, J.C., What Style is it?, John Wiley & Sons Press, New York, 1983.
- Raafat, A., Fan ale'amarah walkhirsanah almusalaha (in Arabic= The Art of Architecture and Reinforced Concrete, Franclin Foundation for Printing and Publishing, Cairo, 1970.
- Raafat, A., Tholathayt al'ibda' almiemari, (in Arabic= Triad of architectural creativity, Inter Consult Research Center, Cairo, 2007.
- Rahman, M., "Islamic Architecture and Arch", International Journal of Built Environment and Sustainability/ IJBES 2(1), Published by Faculty of Built Environment, University Technology Malaysia, 2015, pp.8-16.
- Ramzi, M., Al-Qamus Al- Jughrafi Li Al- Bilad Al-Misriyya Min 'Ahd Qudamaa' al- Misriyyin Ila Sanat 1945, Albilad Alhaliah,(in Arabic=Geographical Dictionary Of The Egyptian Places From The Ancient Egyptians Dynasty to 1945,(The Present Countries),Section 2; The directorates of Giza, Beni Suef, Fayoum and Minya,Vol.3,The General Egyptian Book Authority,Cairo,1994.
- Raymond, A., Almudun Al'arabiah alkubra fi al'asr Al'uthmani, Translated by Latif Farag, (in Arabic = The Great Arab Cities in the Ottoman Era, First Edition, Dar Al-Fikr for Studies and Publishing, Damascus- Syria, 1991.
- Raymond, A., Cairo, History and Civilization, translated by Latif Farag, Dar Al-Fikr for Studies, Publishing and Distribution, First Edition, Cairo, 2004.
- Reuther, O., Parthian Architecture, A Survey of Persian Art, 1st ed., Oxford University Press, Oxford, 1967.
- Reynolds, J. S., Courtyards "Aesthetic –Social and Thermal Delight", New York, 2002.
- Riegl, A., & Kain, E., Problems of Style; Foundations for a history of ornament, Princeton, 1992.
- Rindel, J., "Acoustic Quality and Sound Insulation between Dwellings", Journal of Building Acoustics, Vol.5, 1999, pp.291-301.
- Rindela, J., "Sound insulation of buildings", Conference of Inter-Noise, Istanbul, Turkey, 28-31 August 2007, pp.1-16.
- Rizq, A., Mu'jam Mustalahat Ale'amarah Walfunun Al-Islamiah, (in Arabic= The Dictionary of Terms of Islamic architecture and arts, 1st Edition, Madbouly Bookshop, Cairo, 2000.
- Rolf, T., (Ed.). Neoclassicism and Romanticism. Architecture, Sculpture, Painting, Drawings, 1750-1848, Könemann, Cologne, 2000.
- Roth, L.M., Understanding Architecture: Its Elements History and Meaning, Westview Press, Oxford,1993.
- Rozsa, E., "Symmetry in Muslim Arts", International Journal Computers and Mathematics with Applications, Vol.12B, No. 3/4, 1986, pp.725-750.
- Russell, C.A., "Antimony's Curious History", Notes and Records of the Royal Society of London, Vol.54, Issue1, 2000, pp.115-116.
- Sakr, T., Early Twentieth-Century Islamic Architecture in Cairo, AUCPress, Cairo, 1993.
- Saliba, G., "Artisans and Mathematicians in Medieval Islam"; The Topkapi Scroll: Geometry and Ornament in Islamic Architecture by Gülru Necipoğlu (Review), Journal of the American Oriental Society, Vol. 119, Issue 4, 1999, pp.637-645.
- Sameh, K., Lamahat fi Tarikh al'eamarah Almisriah "mnadh 'aqdam al'eusur hataa al'easr alhadiyth", (in Arabic= Notes in the History of Egyptian Architecture "From the ancient times until the modern era", First Edition, Dar Nahdet al-Sharq, Cairo 2004.

ISSN: 2785-9622 VOLUME 4, ISSUE 1, 2021, 209– 259. www.egyptfuture.org/ojs/

- Samuelsen, A.B., "The traditional uses, chemical constituents and biological activities of Plantago major L.A review", Journal of Ethnopharmacology, Vol.77, Issue 1/2,2000, pp. 1-21.
- Sandaker, B.N.; Eggen, A.P., and Cruvellier, M.R., The Structural Basis of Architecture, Routledge Press, London, 2013.
- Scelo, T., "Impact Sound Transmission through Floor/Ceiling Systems", Building Acoustics, Multi-Science Publishing, Vol.16, Issue 1, 2009, pp.47-66.
- Serageldin, A., 'iimkaniat alwusul bayn mudun muhafazat Beni Suef "Drasah Jughrafiah Tahliliah Muqaranah", (in arabic= Accessibility between the Cities of Beni Suef Governorate, "Analytical Geographical Comparative Study", Journal of Faculty of Arts, Beni Suef University, Special Issue, 2018 , pp. 15-135.
- Shafi'i, F., Al'emarah Al'arabiah fi Misr Al'islamiah, (in Arabic= Arab Architecture in Islamic Egypt, Vol.1, The Era of the Rulers, The General Egyptian Book Authority, Cairo, 1994.
- Shafiq, J., "Architectural Elements in Islamic Ornamentation: New Vision in Contemporary Islamic Art", Arts and Design Studies, Vol.21, 2014, pp.11-21.
- Shawky, I., Alfan Waltasmim, (in Arabic= Art and Design, Zahraa al-Sharq Library, Cairo, 2000.
- Smith, P.M., Rivington's Building Construction, Routledge Press, London, 2015.
- Strong, D.E., "Some Early Examples of the Composite Capital", Journal of Roman Studies, Vol. 50,1960, pp.119-128.
- Talo, M., Alfnoun alzkhrfiah (in Arabic= Decorative Arts, Damascus Publishing House, Damascus, 2007.
- Talo, M., Almashhur fi funun alzakhrifih a'br al'usur (in Arabic= The most famous in decorative arts through the ages, Damascus Publishing House, Damascus, Without date.
- Tan, R. Y. H., Evaluation of deep basement construction techniques, Proceedings of the International Conference on Deep Foundation, Vol. 1, China Building Industry Press, China, 1986.
- Taqtak, J., Albu'd Al'insani fi Al'amarah Alsakniah, (in Arabic=The Human Dimension in Residential Architecture, Unpublished MA Thesis, Faculty of Engineering, Cairo University, Egypt,1999.
- Technical Glossary, the Islamic Art Network, the Thesaurus Islamicus Foundation, http://www.islamic-art.org/Glossary/glossary.asp (date of access: 1/10/2020).
- The United Cotton Ginning and Exporting Company, Registration No. 203 of 1999, see: List of cotton traders registered in the General Committee for Regulating Cotton Trade on the website: http://www.cotton-committee.com/merchants.html (Date of access: 11/10/2020). http://cotton-committee.com/new/?page_id=553 (Date of access: 11/10/2020).
- Tkachuk, H., and Bilinska, O., "The evolution of the ceiling in architecture", International Youth Science Forum "Litteris et Artibus", 23–25 November, 2017, Ukraine, pp. 232-239.
- Udovitch, A.L.,(Ed.). The Islamic Middle East 700-1900, Studies in Economic and Social History, Darwin Press, Princeton, 1974.
- Ünsal, B., Turkish Islamic Architecture "in Seljuk and Ottoman Tiems 1071-1923", London, 1959.
- Veigl, C., "Ornamente für die Ewigkeit; Romanzemente und andere Baustoffe aus der Traumfabrik der Gründerzeit". In: Wiener Geschichtsblätter 64, 2009, pp. 18-55.
- Vogel, S.; Eckerstorfer, M., & Christiansen, H., "Cornice dynamics and meteorological control at Gruvefjellet, Central Svalbard", The Cryosphere, Vol. 6, 2012, pp.157-171.
- Vozniak, E., & Butyrin, A., "Classification of historical buildings façade's details on the basis of order theory", E3S Web of Conferences 91,05016,2019, pp.1-6.
- Wagner, M., From Gaul to De Gaulle: An Outline of French Civilization, Peter Lang Publishing, Switzerland, 2005.

ISSN: 2785-9622 VOLUME 4, ISSUE 1, 2021, 209– 259. www.egyptfuture.org/ojs/

- Waziry, Y., Almujtama' Wathaqafat Al'umran, (in Arabic= Society and Urban Culture, Dar El Shaab Press and Publishing, Cairo 2002.
- Whittick, A., European Architecture in the Twentieth Century, 1st ed., Leonard Hill Books, New York, 1974.
- Williams, C., Islamic monuments in Cairo: The practical guide, Cairo, 2005.
- Wilson, N. J.; Craw, D., and Hunter, K., "Antimony distribution and environmental mobility at an historic antimony smelter site", New Zealand", Environmental Pollution, Vol.129, Issue 2, 2004, pp.257-266.
- Woodson, R. D., Build Your Dream Home for Less, Betterway Books, Cincinnati/USA, 1985.
- Worsley, G., "The Origins of the Gothic Revival: A Reappraisal: The Alexander Prize Essay", Transactions of the Royal Historical Society, Vol. 3, Cambridge University Press, 1993, pp.105-150.
- Yazar, N.,& Yazar, T., Re-Generating Continuous Rumî Compositions, The International Bridges Conference; Mathematics, Art, Music, Architecture, Education, Culture, Vol.1, Stockholm / Sweden, 2018.
- Yeomans, R., The Art and Architecture of Islamic Cairo, 1st Edition, Garnet Publishing, UK, 2006.
- Yüksel, M., (et.al.), "A Review of Basic Interior Design Elements in Mosques From Seljuk and Ottoman Periods", the 7th International Scientific and Technical Conference, Bulgaria, 2014, pp.1-11.

Received: April 2021
Accepted: June 2021