

*Original article***ARCHITECTURE AND BILLS OF QUANTITIES OF THE SAINTS' MOSQUES IN LOWER EGYPT DURING KHEDIVÉ ABBAS HELMY II THROUGH ARCHIVES OF THE PUBLIC WORKS DEPARTMENT: AN ARCHAEOLOGICAL ARCHITECTURAL DOCUMENTARY STUDY IN LIGHT OF SAMPLES**

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**Abstract:**

The research paper is concerned with the architecture and bills of quantities of the mosques of the saints in the villages of Lower Egypt during the reign of Khedive Abbas Helmy II by sampling three ruined mosque samples: Sidi Saeed Mosque in Mit Badr Halawa, affiliated with Gharbia Governorate, and two mosques in Kafr El-Mandara, affiliated with Dakahlia Governorate. With the spread of Sufism throughout Egypt, people were blessed by the saints and built shrines attached to mosques and attributed them to saints. People used to regularly visit these mosques to seek blessings and help with their various needs. Therefore, villages, particularly in Lower Egypt, abound with this type of religious establishment. However, these mosques have not been adequately studied, especially those in villages rather than cities. The study adopted the inductive approach of the Egyptian National Archives in addition to the descriptive, analytical, and comparative approaches. The results showed the major role played by the Public Works Department during Khedive Abbas Helmy II in constructing religious buildings, including the mosques of the saints. Moreover, they revealed the method by which village mosques in Lower Egypt were designed and prepared during the reign of Khedive Abbas Helmy II. The paper published and studied the bills of quantities and designs of the three mosques of saints in villages in Lower Egypt.

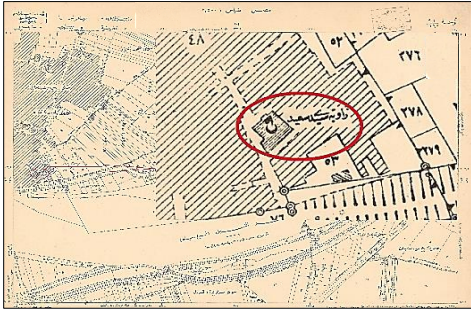
**1. Introduction**

The architecture of the mosques of the saints<sup>(a)</sup> [1] received great attention in Egypt, especially during the era of the Muhammad Ali dynasty, because of their religious rank among Egyptians. This interest peaked with the contribution of the ruling class to the architecture of some mosques of the saints<sup>(b)</sup> [2-5]. Saints enjoyed such a rank due to their great closeness to God, as highlighted in many Qur'anic verses, such as 62:64 of Surah Yunus and 63-68 of Surah Al-Furqan, which specify their characteristics [6,7]. The study focuses on this type. The study focuses on this type of mosque within a geographical and temporal framework, i.e., in Lower Egypt<sup>(c)</sup> [8] during the reign of Khedive Abbas Helmy II<sup>(d)</sup> [9,10] (1309-1333/1892-1914). It sampled three unpublished models, i.e., the Sidi *Saeed* mosque in Mit Badr Halawa and two mosques in Kafr El-Mandara, identifying the characteristics of this type of mosque and comparing their plans with similar models by answering these questions. "What were the reasons for the emergence and use of this type of mosque?" What were the entities funding the construction of this type of mosque? Who were the implementing agencies for the construction

of these mosques? Who were the architects who planned and constructed these mosques? How to prepare and submit a bill of quantities<sup>(e)</sup> [11,12]? How to draft contracts and specify requirements? What was the cost of these mosques? What were the components and features of the saints' mosques in Lower Egypt? What were the factors affecting the design and architecture of this style? The researcher reviewed the literature, such as [11], which addressed many bills of quantities of this era without addressing Sidi Saeed Mosque and two mosques in Kafr El-Mandara [13] and [14]. However, they didn't address the mosques under study. The present paper adopted the inductive approach of the Egyptian National Archives in addition to the descriptive, analytical, and comparative approaches.

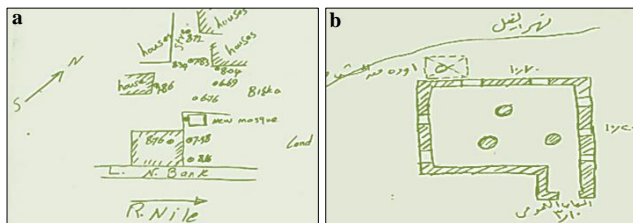
**2. Overview of the mosques of Sidi Saeed**

Sidi Saeed mosque is located in the village of Mit Badr Halawa<sup>(f)</sup>, which used to be affiliated with Zifta locality<sup>(g)</sup> and currently with Samannoud<sup>(h)</sup> in Gharbia Governorate<sup>(i)</sup> [15-18], fig. (1).



**Figure (1)** a. a map of the village of Mit Badr Halawa and details from the map of the village of Mit Badr Halawa, showing the Sidi Saeed mosque (After: Egyptian Survey Authority 1932-1936) [19]

An archival map of the Public Works Department fig. (2-a & b) identified the location of the mosque on the western bank of the Damietta branch. It also showed the surrounding houses, streets, and lands [20]. A field visit showed that the mosque had been demolished and recently rebuilt. In his plans for the village of Minyat Badr Halawa and the Mosque of Sidi Saeed, Ali Pasha Mubarak (d.1310/1893) reported that it is “a village in Al-Gharbiyya District in Samanoud locality on the western bank of the Damietta branch, about an hour and a half to the south of Bana Busir District and about half of the distance to the north of Shubra Al-Yaman. Most of its buildings are made of red brick. It has two mosques, one of which has a minaret” [15]. This description is consistent with the mosque understudy, which lacked a minaret. The Ministry of Irrigation (Zifta Irrigation Inspection) rebuilt this mosque in 1328/1909 [20], which was attributed to one of God’s righteous saints called Sheikh Saeed, who was renowned for his righteousness and Sufism. The villagers reported that he was a follower of the Sufi leader Ahmed Al-Badawi<sup>(i)</sup> [21,22]. The building served the function of a mosque for the five daily prayers because it did not contain a pulpit, despite being called “J’ mi’ - جامع” in the archive files of the Public Works Department. Additionally, the shrine attached to the mosque was called in the Archives of the Public Works Department “maqam- مقام, awadah- أواده” [20], fig. (2-b). The building was also called “Zāwiyah- زاوية” on the Egyptian Survey Authority’s map of 1932-1936. fig. (1-a & b).



**Figure (2)** Sidi Saeed mosque in Mit Badr Halawa, a. a location map after its reconstruction, b. sketch plan before its reconstruction (After: Public Works dept., File No. 4003-030403) [20]

### 3. Architecture of Sidi Saeed Mosque

The architecture of the mosque and the attached shrine underwent two main stages.

#### 3.1 The first stage

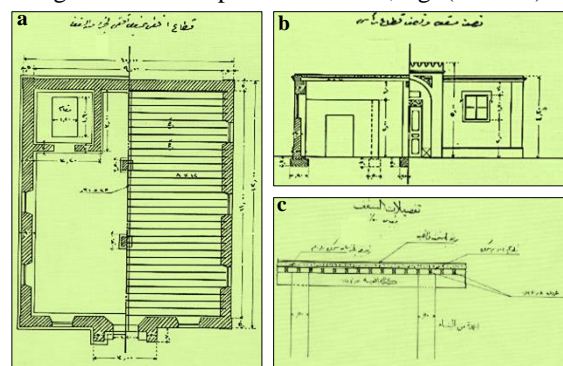
It was the foundation stage before Abbas Helmy II. The Mosque consisted of a rectangular area (10.2×9.7 m); its walls were built of mud bricks. The main entrance of the mosque was monumental and stood out at the western end of the

western façade. This monumental entrance was 3.10 m long, with the entry door in the middle. The SE and NW façades each had two windows, while the southwestern façade had three windows due to the increase in its extension by adding the entrance block. The third window was allocated for lighting and ventilating the entrance space, and the roof of the mosque rested on three circular pillars irregularly distributed in two rows. The first row, facing the Qibla, included one pillar, and the second contained two pillars. The mosque was covered with a flat wooden roof made of battens and boards. The roof might be supported by three wooden beams, consistent with the simplicity of the building material and the wooden roof. The eastern façade was preceded by a wooden room called “awadah أواده” that was used as a shrine for Sidi Sheikh Saeed fig. (2-b) [20]. Due to the deteriorating constructional and architectural condition of the mosque and its building before February 3, 1909, the Irrigation’s inspector of Zefta decided to rebuild it, according to the archives of the Public Works Department. This Department established an engineering committee to evaluate the situation and determine what could be reused from old building materials that are no longer used [16].

#### 3.2. The second stage

##### 3.2.1. The mosque and shrine from the outside

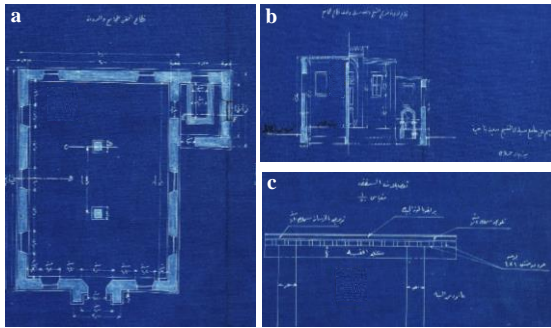
The Mosque and shrine included four free façades. The NW façade extended irregularly to a length of 10 m, and its wall thickness ranged between 50 and 80 cm. The architect divided it into three sections, the middle representing the entrance, whose façade extended 3 m in length and 5 m in height. It ended with trefoil leaves. The entrance protruded 70 cm beyond the facade line. It was crowned with a semi-circular arch, whose spandrels were decorated with floral ornaments (arabesques). On the front of the entrance was an opening for the entry door. A wooden door with two leaves closed it, with a maksalāh on both sides of the entrance. The two side sections of the façade extended to a length of 3.5 m and a height of 4.3 m, and each was interspersed with a doorway measuring 3 m wide and 4 m high. Each of them included a window about 80 cm wide and 1.3 m high, closed by a wooden shutter covered with transparent glass panels, fig. (3-a & b). The SW and NE façades extend to a length of 12 m and a height of 4.3 m. Each had three vertical entrances; each was 11 m wide. Each included a window like the windows on the NW façade. The SE façade extended in a straight line for 10 m, containing a rectangular blocked apse of 9 m wide, fig. (3-a & b).



**Figure (3)** Sidi Saeed mosque before the residents’ request for amendment a. plan, b. section and façade, c. details of the mosque roof (After: Archives of the public works department, file no. 4003-030403) [20]

### 3.2.2. The mosque and shrine from the inside

The mosque consisted of a rectangular area of 11×9 m, built of red brick. The SW wall was interspersed with three rectangular windows that widened inward and tapered outward. The NE wall was interspersed with two windows that matched the shape of the windows of the southwestern wall. The entrance opening was in the middle of the NE wall, which was rectangular and closed with two wooden shutters; on either side of the entrance opening was a window similar to those on both the SW and NE walls. The mosque was covered with a wooden ceiling consisting of beams and wooden boards topped with a cement layer and then a concrete layer. The roof rested on two square pillars made of bricks covered with mortar: the northern pillar (70×70 cm) and the southern pillar (50×50 cm), fig. (4-a & b). The rectangular shrine, measuring 3.2×3 m, was located on the eastern side of the mosque. The thickness of the wall ranged from 30 to 50 cm. Its NE wall was in the middle of the entrance hole. Inside the shrine was a wooden cenotaph of Sidi Sheikh *Saeed*. It was rectangular, measuring 1.9×1.2 m; the shrine had a flat wooden roof as in the mosque, fig. (4-c).



**Figure (4)** sidi Saeed mosque after the residents' request for amendment **a.** plan, **b.** section and façade, **c.** details of the mosque roof (After: archives of the Public Works department, File No. 4003-030403) [20]

### 3.2.3. Planning the second stage (modified)

The residents submitted a petition to the Irrigation's inspector of the Zefta Department to remove the shrine outside the mosque, as it contradicted the Islamic principles and teachings, which urged avoiding the construction or integration of a shrine inside a mosque. In addition to establishing a fountain and toilets "*adabkhanat*"<sup>(b)</sup> [23] on May 1, 1909 [20], the archival plans of the mosque showed that a change was made to its layout. It included transferring the shrine to the southern *Zāwiyah* outside the mosque while keeping the same area and layout. The layout of the shrine consisted of a rectangular area measuring 4×3.25 m. The NW and NE walls were permeated by a rectangular entrance opening 1 m wide. It was topped with relieving arches, one of which (the western) was designed to enter the shrine from outside the mosque, and the other entrance (the eastern), which was originally a window, is designed to enter the shrine from inside the mosque, fig. (4). The southeastern and southwestern walls of the shrine were punctuated by a window similar to those of the mosque. In the middle of the shrine was a wooden cenotaph of Sidi Sheikh Saeed fig. (4). As a result of removing the shrine outside the boundaries of the mosque, a window was opened on the eastern end of the northeastern wall of the mosque fig. (4).

## 4. Bill of Quantities of Sidi Saeed Mosque and its Contract

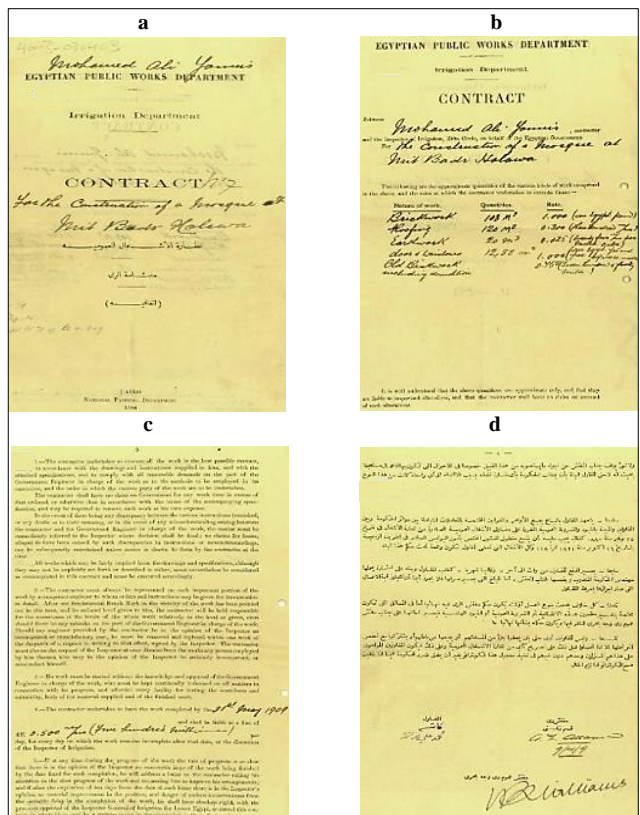
The Irrigation Department, represented by Zefta Inspection, was responsible for rebuilding the Mosque and the shrine. It commissioned the Public Works Department to implement necessary plans, determine building requirements, and take procedures for building bids and bill of quantities, thereby putting the construction process out to tender for contractors; the contractor submitting the lowest bid would implement the mosque and shrine. A time frame was set to complete the work, with a daily fine applied in the event of a delay. The contractor, Muhammad Ali Younis, implemented the construction in accordance with the contract concluded with the Public Works Department, fig. (5) [20].

### 4.1. The cost of building sidi Saeed mosque (budget)

The contract concluded between the funding entity and the contractor allocated the budget for construction works in Egyptian pounds according to tab. (1) & fig. (5).

**Table (1)** details of the measurement of Sidi Said mosque, quoted from the contract concluded between the contractor and the public works department, archives of the public works department, file no. 4003-030403.

Nature of work	Quantities	Rate	Total
Brick work	108 m <sup>3</sup>	1.000	108
Roofing	120 m <sup>2</sup>	0.300	36
Earth work	20 m <sup>3</sup>	0.025	0.5
Door and windows	12.32 m <sup>2</sup>	1.000	12.32
Old Brick work		0.750	0.750
			<b>157.57</b>



**Figure (5)** a-d. contract for the construction of the Meet Badr Halawa Mosque (After: Archives of the public works department, File No. 4003-030403) [20]

#### 4.2. Terms of the contract for the construction of Sidi Saeed mosque

The contract concluded between the funding entity and the contractor listed the names of both parties, and the value of the works was detailed on the first and second pages. The third and fourth pages included the terms of the contract, fig. (6), as follows: *The 1<sup>st</sup> page* included a headline titled “Contract of a mosque of Mit Badr Halawa” in addition to titles in the names “Irrigation Department” and “Egyptian Public Works Department”. The second page showed that the contract was concluded between the contractor Muhammad Ali Younis and the Zefta Irrigation’s inspector. It also included the requirements, quantities, and costs, noting that the quantities were approx. only, and subject to alteration, and that the contractor shall have no claim on account of such alterations, fig. (5-a & b) [20]. **1)** The contractor undertook to execute all the work in the best possible manner, strictly in accordance with the drawings, instructions, and specifications, and to comply with all reasonable demands on the part of the government engineer in charge of the work as to the methods to be employed in its execution, and the order of the parts of the work. The contractor shall have no claim on the government for any work done more than that ordered, but in accordance with the terms of the specification, and may be required to remove such work at his own expense fig. (5-c). If there were any discrepancy between the various instructions furnished, any doubt as to their meaning, or any misunderstanding arising between the contractor and the government engineer in charge of the work, the issue must be referred to the inspector whose decision shall be irrevocable; no claims for losses, alleged to have been caused by such discrepancies in instructions or misunderstandings, could be subsequently entertained unless a notice was drawn to them by the contractor at the time, fig. (5-c). All works that might be implied from the drawings and specifications, although they might not be explicitly set forth or described in either, must nevertheless be considered as complementary to this contract and must be executed accordingly. **2)** The contractor must always be represented on each important part of the work by a competent engineer to whom orders and instructions might be given for its detailed execution. After one fundamental benchmark in the vicinity of the work was pointed out and its reduced level given to this contractor, he would be responsible for correcting the relative levels of the entire work, even if there were any mistakes on the part of the government engineer in charge of the work. Should any incompetent engineer provided by the contractor be, in the opinion of the inspector, he must be replaced within one week of the dispatch of a written request, signed by the inspector. The contractor must also, at the request of the inspector, immediately dismiss any person he employed thereon who may, in the opinion of the inspector, be seriously incompetent or engage in misconduct himself, fig. (5-c). **3)** No work must be started without approval of the government engineer, who must be kept continually informed on all relative matters in progress and afforded every facility for testing the soundness and suitability of both the material supplied and of the finished work, fig. (5-c) [20]. **4)** The contractor undertook to have the work completed by May 1909 and shall be liable to a fine of L.E. 0.500 (five hundred millimes) per day for every day on which the work remains incomplete after

that date, at the discretion of the inspector, fig. (5-c). **5)** If, during the work, the rate of progress was slow so that there was, in the opinion of the inspector, no reasonable hope of the work being finished by the date fixed, he would address a letter to the contractor drawing his attention to the slow progress and requesting him to improve his arrangements. If after ten days from such letter, there was, in the inspector's opinion, no material improvement, and danger of serious inconvenience from the probable delay in the completion of the work, he should have absolute right, with the previous approval of the inspector general of the Irrigation for Lower Egypt, to cancel this contract in whole or in part by a written notice to the contractor. Nothing would stop the inspector from doing what he deemed appropriate for this kind of work, especially when the work was urgent. Consequently, the contractor might ask the government for any loss incurred by him as a result of resorting to any intermediary, fig. (5-c & d). **6)** The contractor undertook to follow all rules and bylaws related to mutual transactions between government departments and contractors, which were set forth in the general restrictions and conditions imposed on public works contractors issued by the supervisor of Public Works on Nov. 25, 1880. The contractor had to follow the circular of police matters issued in the Official Gazette on Nov. 25, 1880, and Oct. 19, 1891, number 118. All works given to the contractor shall fall under the provisions of this clause, fig. (5-d). **7)** Payment was usually made by the contractor monthly, as requested by the contractor, based on a form prepared by the delegated government engineer and presented by the inspector. As for the amounts to be allocated, they might never exceed the value of the work that had been carried out by the contractor, fig. (5-d). **8)** For every dispute on the type of work, the Irrigation’s inspector’s ruling would be irrevocable. As for matters related to changing the content of this agreement, general conditions, or engineering restrictions, it would then be referred to the inspector general of Lower Egypt for consideration, and his ruling would be irrevocable, fig. (5-d). **9)** Contractors did not have the right to outsource a part or all of their work to a third party unless they previously obtained a written permit from the Public Works’ supervisor. Accordingly, the contractors who signed this contract were solely responsible for implementation without causing harm to the government if it requested cancellation, if necessary, fig. (5-d) [20]. At the end of the contract, Zefta Irrigation’s inspector (G.T. Brooke)<sup>(1)</sup> [24], fig. (5-d) and the general inspector of Lower Egypt signed on the right, and the contractor, Muhammad Ali Younis, signed on the left.

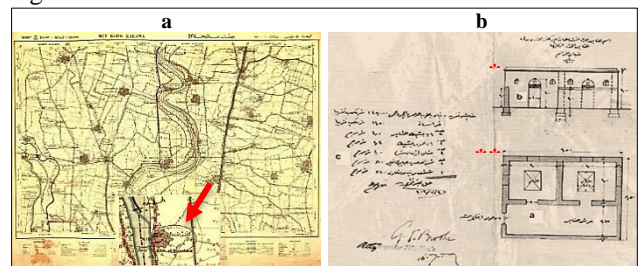


Figure (6) a, a map of the village of Mit Badr Halawa, showing the village of Kafr El Mandara and its mosque (After: Egyptian Survey Authority 1933) [19], b, Kafr El-Mandara mosque initial bill of quantities \*plan, and \*\* section, (After: public works department, File No. 4003- 030402) [26]

### 4.3. Timeframe for establishing Sidi Said mosque

The contract concluded between the financing party and the contractor specified the timeframe for the construction works, from April 9, 1909, to May 31, 1909. One of the terms of the contract also specified the value of the fine for delay in implementing the works as 500 millimes, fig. (5-c) [20].

### 5. Overview of the Two Mosques of Kafr El-Mandara<sup>(m)</sup>

The two mosques and shrines are in Kafr El-Mandara<sup>(n)</sup>, fig. (6-a) [17,25], affiliated with the Aja Locality<sup>(o)</sup> in the Dakahlia Governorate<sup>(p)</sup> [16-18], specifically on the eastern bank of the Damietta Branch. On the other side is the village of Mit Badr Halawa. Kafr al-Mandara is rich in shrines of saints<sup>(q)</sup>. The two mosques were rebuilt in 1327/1909, as shown in the archives, including the bill of quantities and plans [26]. Notably, the terms *Maqam*, fig. (6-b), and "J'mi' - جامع" were given to the two mosques [26], despite their simple design, small size, and lack of pulpits. Perhaps the term "J'mi' - جامع" has become common and has been applied even to small mosques.

### 6. Architecture of the Two Mosques of Kafr El-Mandara

A mosque consists of a rectangular area of 9.5×8.5 m. It is divided into two parts, namely the courtyard and the two shrines. The first is an open rectangular courtyard measuring 8.8×3.15 m. The courtyard is accessed through a rectangular main door 1.2 m. wide and 2 m. high. A simple wooden door closes it. The first section (the courtyard) is connected to the second (the two shrines) through two entrances, each of which is a rectangular space measuring 1 m. wide and 2 m. high, closed by a wooden door, surmounted by a lintel decorated with floral scrolls, and surmounted by a semi-circular arch with a small window. Each of them leads to a shrine. On either side of the two entrances are two rectangular windows, fig. (6-b). This courtyard was used as a prayer area [26]. The second section consists of two identical shrines, each a square area with a side length of 4 m. The lower level of the two outer sides of each shrine is interspersed with a rectangular window about 1 m. wide, arched with a semi-circular arch, and closed by two wooden shutters. The upper level is often interspersed with a window on either side of the lower level of the window; these windows resemble the windows of the upper level on both sides of the entrance door to the shrine, and the windows are used for lighting and ventilation, fig. (6-b) [26]. In the middle of the two shrines is a rectangular wooden cenotaph measuring 2×1.4 m. The two shrines are covered with a flat roof made of 8×14 cm. thick panels, 2 cm. thick boards, and cement mortar, fig. (6-b) [26]. The architect used concrete for the foundations and bricks and homra (crushed or ground red clay brick) mortar to build the walls. Notably, the thickness of the walls of the two shrines was 50 cm., while the thickness of the walls of the courtyard was 35 cm, probably because the walls of the courtyard did not bear beams or a roof, while those of the two shrines carried a heavy roof.

### 7. Bill of Quantities and Cost of the Two Mosques of Kafr El-Mandara

Examining the archives of the Public Works Department regarding the construction of the two mosques in Kafr El-Mandara (announcement of bidding and bill of quantities) [26], fig. (7),

revealed that the entity financing the construction was the Irrigation Department, represented by Zefta Inspection in Mansoura, which commissioned the Public Works Department to implement the plans, sections, and façades, fig. (6-b), specifying the structural requirements for the mosque and the shrine [26]. The engineer of the Public Works Department prepared the architectural drawings, consisting of a horizontal plan and a vertical section. He determined the initial bill of quantities, wrote them on the drawing board, and wrote "work with my knowledge" and signed at the bottom in English on (4/7/1909), fig. (6-b). The details are listed in tab. (2). Then, the Public Works Department addressed a letter in English to Zefta Irrigation's inspector, dated July 19, 1909, regarding the construction of the mosques in Kafr El-Mandara, containing a detailed comparison of the construction requirements and costs for the Kafr El-Mandara mosques, along with an emergency financial item. It also concluded with a total item at the end of the letter (worth 220 Egyptian pounds), fig. (7); its terms are listed in tab. (3). The cost was approved by the Zefta Irrigation's inspector (G.T. Broohe) and signed on 7/16/1909 [26], fig. (6-b & 7).

Figure (7) mosques bill of quantities letter of the construction work of the Kafr El-Mandara two mosques (quoted from the Public Works Department No. 4003-030402) [26]

Table (2) initial bill of quantities of the Architecture of the two Kafr El Mandara mosques (quoted from the Archives of the Public Works Department No. 4003-030402, fig. 6-b & 7)

Raw materials and their quantity	Total quantity
<b>Building with red, lime and red bricks</b>	14,500 m <sup>3</sup>
<b>Concrete</b>	11.50 m <sup>3</sup>
<b>2 simple doors for two shrines</b>	4.2 m <sup>2</sup>
<b>1 simple public door</b>	2.4 m <sup>2</sup>
<b>4 skylights (small window)</b>	4.00 m <sup>2</sup>
<b>2 iron sails for the two interior doors</b>	0.6 m <sup>2</sup>
<b>1 ceiling</b>	32.00 m <sup>2</sup>

Table (3)

Nature of work	Quantities	Rate	Total
Earth work in excavation for foundations	100 m <sup>3</sup>	0.025	2.500
Concrete in lime & homra mortar in foundation	11.50 M <sup>3</sup>	1.000	11.500
Masonry in best baladi bricks in lime & homra mortar	155 M <sup>3</sup>	1.100	170.500
Single doors & windows 1 m l. painting	10.4 M <sup>2</sup>	0.700	7.280
Roof, including rafter 8×14 planks 2/m. think. mat and mortar	32 M <sup>2</sup>	0.500	16.500
			207.780
		contingencies	12.220
			<b>220 L.E.</b>

### 7.1. Announcing the construction work of the two mosques of Kafr El-Mandara

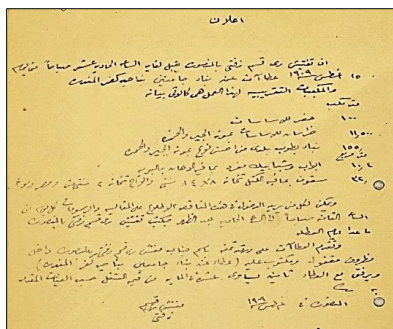
**Announcement:** The irrigation Inspection of Zefta Department in Mansoura was accepted until 11 am on Aug. 15, 1919. Bids were about building two mosques in the Kafr El-Mandara district. The approx. cubes for this work were 100 m<sup>3</sup> excavations for foundations, 1.500 m<sup>3</sup>. concrete for foundations with lime and red mortar, 155 building with local bricks of the best type, with lime and red mortar, 10.4 m<sup>2</sup>. single doors and windows, including paint, 32 m<sup>2</sup>. ceilings, including blocks with a thickness of 8×14 cm., panels with a thickness of 2 cm., and mortar. Bidders could view the bill of quantities and plans daily from 8 am to 1 pm at the Irrigation Inspection Department of Zefta Department in Mansoura, except on holidays. Bids shall be submitted on stamped paper in the name of the Irrigation’s inspector of Zefta Department in Mansoura, in a sealed envelope, reading “Bid for construction of mosque in the Kafr El-Mandara district”. An insurance policy equal to 10% of the job’s value is attached to the bid, per the samples and data provided in August 1909 to Zefta Irrigation’s inspector in Mansoura [26].

### 7.2. Architect of the two mosques in Kafr El-Mandara

The architect of the two mosques was Wafaei, as evidenced by his signature on the general plan. He carried out many other architectural works, such as planning three wooden bridges on Maghagha Canal [24] and Ezbet Amin Pasha Road Bridge in Minya [27].

### 7.3. Timeframe of the construction of the two mosques of Kafr El-Mandara

Reviewing the Archives of the Public Works Department and the plans and letters it included regarding the two mosques of Kafr El-Mandara revealed that the timeframe was as follows: **1)** preparation of plans and initial bill of quantities work dated 7/4/1909, fig. (6-b); **2)** Sending a letter to Zefta Irrigation’s inspector in Mansoura regarding the final bill of quantities in July 1909, fig. (7); **3)** The approval of Zefta Irrigation’s inspector of the bill of quantities dated 7/16/1909, fig. (9); **4)** Announcing the bid to build the two mosques in August 1909, fig.(8). The completion date of the works was not specified, unlike the Mit Badr Halawa’s mosque [22].

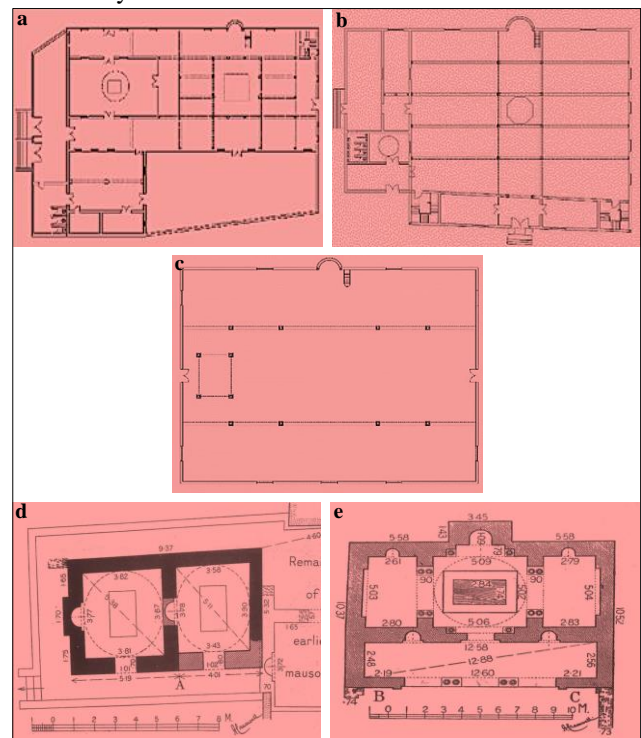


**Figure (8)** the announcement of the construction work on two mosques in Kafr El Mandara (quoted from the Public Works Department No. 4003-030402) [26]

## 8. Planning Style

Analyzing the plans of the mosques understudy revealed two main styles, as follows: **The 1<sup>st</sup> style** adopted in Sidi Said mosque consists of a rectangular space divided into two porticoes, with the roof resting on a pair of pillars. This plan, devoid of

an internal courtyard, follows a non-traditional Arabic-style plan [28,29]. It was implemented in many of the saints’ mosques in the villages of Lower Egypt during the reign of Khedive Abbas Helmy II, such as Salem al-Bili Mosque in Kafr El-Sheikh (1321/1903), fig. (9), Abdul Aziz al-Darini mosque in Derin, Dakahlia Governorate (1322/1904), fig. (9-b), and Sidi Khamis mosque in Menoufia (1327/ 1909), fig. (9-c) [14]. This layout was used in some mosques in the villages in lower Egypt during the reign of Khedive Abbas Helmy II, such as Ezbet El-Burj mosque in Damietta [30]. Among its models in upper Egypt are Muhammad Sultan mosque in Barjaya, Minya (1308/1890), Dakrouri mosque in Abbasiya, Minya (1315/1895) [31], and al-Atiq mosque in Al-Jabalaw, Qena [32]. **The 2<sup>nd</sup> style** consists of a rectangular area divided into two parts: An open courtyard, used as a prayer hall, and covered areas used as shrines. Kafr al-Mandara mosques follow this style. This layout is similar to the architecture of some Fatimid Mashad, such as the shrines of al-Jaafari and Atika (493-514/1100-1120), fig. (9-d), and Almashad of Sayyida Ruqayyah (527/1133) [33-35], fig. (9-e), with the difference in coverage. In the shrines of the Kafr al-Mandara mosque, the architect used a flat roof covered with cement mortar, while Almashad of Al-Jaafari, Atka, and Sayyida Ruqayyah are covered by domes.



**Figure (9)** **a.** plan of Salem Al-Baily mosque, Kafr El-Sheikh, **b.** plan of Abdel Aziz Al-Darini mosque in the village of Darin, Dakahlia, **b.** plan of Sidi Khamis mosque and Shrine in Menoufia (After: Noha Muhammad Fawzi Al-Batawi, 2016) [14], **d.** plan of the shrines of Al-Jaafari, Atka, **e.** plan of the shrine of Sayyida Ruqayyah, Atka (After: Creswell, 1952) [33]

Some observations are highlighted on the layout of the Sidi Saeed mosque and the Kafr El-Mandara Mosque. They were devoid of mihrabs, minarets, ablution facilities, and toilets; the most important components, units, and requirements of mosque architecture. However, people sent a request to bu-

ild toilets and ablution facilities in the Sidi Saeed mosque while taking the shrine outside. The request to remove the shrine was addressed, but the request for ablution and toilets was ignored. This confirms that the main purpose of the construction of these buildings was to build the shrine, just as the two shrines, for example, are the focus of planning Kafr El-Mandara mosques [20]. Perhaps because the building is as close as possible to the Zāwiyah of the shrine's owner and his followers, and the building was indeed given this name on a map of the Egyptian Survey Department from 1932-1936. Notably, the architect overlooked some details in Sidi Saeed Mosque, distributing the mosque's pillars irregularly in the 1<sup>st</sup> stage fig. (2-b). This probably resulted from the construction carried out by the people of the village. This mistake was corrected when the mosque was rebuilt by the Public Works Department. The architect also placed the pillars in the 2<sup>nd</sup> stage on the axis of the mihrab and the entrance, contrary to tradition, although the Public Works Department's supervisors and architects planned and supervised the architecture of this mosque, fig. (3 & 4). The architect also considered the ease of access to the shrines. In the modified plan of the second stage of Sidi Saeed mosque, the architect opened two entrances to the shrine: one connecting the mosque and the shrine, and the second connecting the street to the shrine. He also did not neglect the ease of visual communication with the shrine by opening two windows; one on the SE wall and the other on the SW wall, thereby facilitating visits. In the shrines of the Kafr El-Mandara mosques, an entrance and two windows were allocated for each shrine, fig (6-b). All these actions confirmed that the main purpose of the architecture of these mosques was the shrine. An important factor that influenced the architecture of these mosques was the social factor related to the people's love for the saints and closeness to them, which was the main motive behind the establishment of these mosques and shrines. The function of the building (the functional factor) was considered, i.e., a shrine for a saint. Therefore, the shrine was the focus of the plan and the architect's interest, especially in selecting distinctive sites for the shrines. At Sidi *Saeed* mosque, the architect placed it on the eastern side at the front of the mosque. When people asked him to remove it from the mosque, he placed it on the southern side outside it. As for the two mosques of Kafr El-Mandara, the shrine occupied the SE side in front of the courtyard of the prayer hall. The third factor, i.e., the environmental factor, was evident in the use of environmentally compatible building materials in the first stage of the construction of the Sidi Saed mosque, where mud bricks and wooden beams (*baratim*) were used. Mud bricks are distinguished by their abundance in the local environment, their low cost, their ease of manufacture, and their availability on the banks of the Nile River, which affected the increase in the thickness of the walls. Additionally, this period was characterized by increased wall thickness and improved environmental suitability [36,38]. The building material available in the environment (clay) continued to be used in the construction of the second stage of the Sidi Saeed Mosque and in the rebuilding of the two mosques of Kafr El-Mandara. However, after they were burned, bricks were used for construction at this stage.

## 9. Results

The study showed the major role played by the Public Works Department during Khedive Abbas Helmy II in constructing religious buildings, including the mosques of the saints. It showed that interest in establishing shrines of saints was not limited to the followers and the rich; some official authorities, such as the Ministry of Irrigation, also participated in their establishment. The study revealed the method of designing and establishing village mosques in Lower Egypt during the reign of Khedive Abbas Helmy II. The study confirmed that the main reason for establishing many village mosques in Lower Egypt at the time was to attach a shrine to a saint. It published and studied the bill of quantities and designs of the three mosques under study. The study concluded that the cost of the mosques and shrines of the saints: Sidi *Saeed* Mosque amounted to 157.57 pounds, and the two mosques of the Kafr El-Mandara amounted to 220 pounds. The study showed a clear impact of social factors, such as loving the saints and being blessed by them, and the environmental factors on the design and architecture of the saints' mosques in Lower Egypt. It concluded that the shrines of the saints under study were covered with flat concrete roofs rather than the usual domes, influenced by advances in building materials during the reign of Khedive Abbas Helmy II.

## 10. Discussion

The study explored the architecture of saints' mosques in Lower Egypt during the reign of Khedive Abbas Helmy II by sampling three ruined models, namely Sidi Saeed mosque in Mit Badr Halawa and the two mosques of Kafr El-Mandara. It tackled their aspects and characteristics in comparison with the contemporary saints' mosques in lower Egypt. The Nile Valley in lower Egypt is rich in mosques and shrines of saints; thus, these structures were fully managed by the Egyptian Ministry of Irrigation, which influenced their architecture. The Ministry of Irrigation entrusted the rebuilding and architecture of these mosques and shrines to specialized construction agencies, namely the Egyptian Public Works Department, which gave them architectural and aesthetic value in contrast to the randomness of people's actions. Its archives also preserved details of the architecture of these mosques and shrines, including engineering drawings (plans, sections, and façades), a bill of quantities listing construction materials and their quantities, and the cost of the construction work. It also preserved archives of contracts concluded among the Ministry of Irrigation, the Public Works Department, and the contractor. It revealed the method of designing and implementing mosques and shrines of saints.

## 11. Conclusion

*The research paper addressed the architecture and bills of quantities of the mosques of the saints in the villages of lower Egypt during the reign of Khedive Abbas Helmy II, sampling three ruined mosques, i.e., Sidi Saeed mosque in Mit Badr Halawa, affiliated with Gharbia governorate, and two mosques in Kafr El-Mandara, affiliated with Dakahlia Governorate. It revealed that the people's love for the saints was a major factor in the construction of mosques and shrines for them in Lower Egypt during the reign of Khedive Abbas Helmy II. The archives of the Public Works Department also served as the*

main source for detailing the characteristics of this type of building, as well as its planning, cost, and the planning and implementing agencies. They clarified the roles of the Ministry of Irrigation and the Public Works Department in the construction of mosques and shrines of saints. The study also identified the religious, environmental, and social factors influencing the architecture of this type of Islamic architecture.

## Endnotes

- (a) Its singular word is wali, meaning supporter and ally. The saint has been mentioned in several places in the Holy Qur'an, and they are of two types. The first are the guardians of evil, Surah Al-A'raf, verse 3, and Surat Al-Ma'idah, verse 51. The second type is the guardians of goodness, the righteous guardians of God, and they are the intended subject of the study. He is the righteous and pious, who He raises to the level of guardianship, and they are the heirs of the prophets [1].
- (b) This interest is represented, whether in construction, addition, or renovation. Examples of these mosques in Cairo include, for example, Al-Ashmawi Mosque, Sheikh Saleh Abi Hadid Mosque, Al-Rifai Mosque, and other mosques. Examples of these mosques in the governorates include Al-Ahmadi Mosque in Tanta and Sidi Ibrahim Al-Desouki Mosque in Dessouk. And other mosques [2-5].
- (c) Lower Egypt means the administrative and geographical division of Egypt into the governorates overlooking both the Mediterranean Sea and the Delta, which are Alexandria, Sharqia, Beheira, Kafr El-Sheikh, Ismailia, Damietta, Qalyubia, Gharbia, Menoufia, and Dakahlia [8].
- (d) He was born in Cairo in (1291 AH / 1874 AD) and was a ruler of Egypt from the Alawiyya dynasty. He assumed the throne after the death of his father in (1309 AH./1892 AD) and continued until being removed from the throne in (1333 AH/1914 AD). He died in (1363 AH/ 1944 AD) [9,10].
- (e) It is a type of contracting document for construction works that includes building materials, raw materials, quantities in specific units of measurement, and costs [11,12].
- (f) The village is located on the western bank of the Damietta Branch, and opposite it is the village of Kafr El-Mandara on the other end of the Damietta Branch. It is located south of the Bana and Busir districts and in the north of Shubra Al-Yemen. Its original name is Minyat Badr, and it was known as Minyat Badr Halawa in the Ottoman era, and it was known as Mit Badr Halawa in the 14<sup>th</sup> century AH/20<sup>th</sup> century AD [15-18].
- (g) The Zefta Center was established in 1241 AH/1826AD, and it was known as the Zefta Department. It was named the Zefta Center in 1871 AD. It was a village known as Minyat Zefta, located on the banks of the Nile [16-18].
- (h) It is one of the ancient Egyptian cities. It was known as Tannotre, then Samnot. It was the capital of Egypt during the era of the Thirtieth Pharaonic Dynasty. It is located on the banks of the Nile. A department was established under the name Samanoud Department in the Gharbia Directorate in 1241 AH/1826 AD, and it was established as a center in 1288 AH/1871 AD for the first time [15,18].
- (i) It was known as the Gharbiyya District in the Fatimid era, and it was called Al-Gharbiyya because it was located

west of the eastern branch of the Nile. It was named Al-Amal Al-Gharbiyya in 715 AH/1315 AD, Al-Gharbiyya Governorate in 933 AH/1527 AD, Al-Gharbiyya District in 1248 AH/1833 AD, and Tanta became the capital of the region in 1251 AH/1836 AD [16-18].

- (j) One of the poles of Sufism. He had a famous Sufi method and was followed by many disciples and devotees. He was born in Fez (596 AH/1199 AD) and died in Tanta (675 AH/1276 AD) [21,22].
- (k) Its singular word is "adabkhana," which is a word composed of two words. The first is "adab," which is Arabic, and the second is "khana," which is a Persian word meaning "a place," and together they mean "a toilet" or "rest chair" [23].
- (l) There were many inspections for Zefta irrigation during the era of G. T. Brooke, as he was the signatory to the contract for the construction of the Umm Jalajil Wooden Bridge in 1906 AD, and the construction work of the Sidi Saeed Mosque (Figure 4), as well as the two Kafr El Mandara mosques fig. (9, 10) was the subject of the study under his charge and with his signature [24].
- (m) The review of the archives of the Public Works Department and the field visit did not provide us with the names of the two mosques.
- (n) It is one of the outskirts of the village of Mandara, and it was separated from it in 1228 AH/1813 AD. Its original name is Shabrablona, and it was known as Al-Mandharah after that, and the name was changed to Mandara [17,25].
- (o) Aja became a center on the second spring 1325AH/June 2, 1907 AD, and is located on the railway link between Mansoura and Mit Ghamr [16-18].
- (p) It is one of the regions of lower Egypt. It was established in the era of the Fatimid state, disappeared in the administrative division of Egypt during the era of Al-Nasir Muhammad ibn Qalawun, and was known in the Ottoman era as the state of Dakahlia [16-18].
- (q) The field visit showed that the village of Kafr al-Mandara includes many shrines other than the shrines subject to another period of time, such as the shrine of Sidi Abdullah Ibn Sultan Marwan Abu Shabana, d. 645AH/1247AD, and the shrine of Sidi Nasr al-Din Ibn Sultan Marwan Abu Shabana, who died in the year 647AH/1249AD, and they are both disciples. Sidi Ahmed Al-Badawi, and the maqam of Sidi is the maqam of Sidi Saif Al-Maghribi.

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