

The Architectural Development of Church Tower in East Delta during the Era of Muhammed Ali Dynasty

Hossam Hassan Hameda¹

Moataz Ahmed Marie²

^{1 2}Tourism Guidance Department, Faculty of Tourism & Hotels, University of Sadat City

Abstract

The church tower is considered one of the most significant architectural elements in churches, as it's used to inform the Christian people of their daily prayer time. Besides, it has another spiritual function as a means for guiding the Christian faithful to find their way to God, so the historians and researchers have agreed to name it "*al-Manārah*", especially in Egypt and the East. The church tower is designed as a high standing building that usually has a cross-shaped top. It is typically built beside or attached to the church, so it's considered a characteristic feature of the church. The region of East Delta has preserved for us a number of remaining church towers that date back to the reign of Muhammed Ali Pasha and his successors. These towers are distinguished by the difference in their types and styles, especially the European ones such as the Neo-Gothic, Romanesque, and Baroque. Besides, these towers are characterized by the variety of their materials, architectural details, and decorative elements. Therefore, the main aim of this research is to study the architectural types and artistic styles of church towers in the governorates of East Delta during the reign of Muhammed Ali's family.

Keywords: church tower - "*al-Manārah*"- East Delta - Muhammed Ali Dynasty

Introduction

The tower - known as "*al-Burj*" in Arabic-, is a high vertical building that is proportionately tall compared to the dimensions of its base ¹. It could be built either freestanding or attached to a construction or a wall of another structure, such as cities, palaces, and fortresses. There are several shapes of towers, such as square, octagonal, semi-circular, cylindrical, and pyramidal. Besides, there are various types of towers that vary according to the function or purpose of building. Among these types are defensive towers, offensive towers, watchtowers, church towers, and so on ².

The church tower is considered one of the most famous kinds of towers. It is regarded as one of the most important architectural elements in churches, because its function is represented mainly in announcing the Christian prayer time and inviting the Christian worshippers to perform it ³. It is worth mentioning that the origin of church tower is

¹ مجمع اللغة العربية، (1980)، المعجم الوجيز، مطابع دار التحرير، الطبعة الأولى، القاهرة، ص43.
² عبد الرحيم غالب، (1988)، موسوعة العمارة الإسلامية، الطبعة الأولى، بيروت، ص82-83؛ عاصم محمد رزق، (2000)، معجم مصطلحات العمارة والفنون الإسلامية، مكتبة مديبولي، القاهرة، ص34.
³ عبد الرحيم ربحان، (2005)، أصل وتطور البازيليكا، بحث في "مجلة الاتحاد العام للآثار بين العرب، العدد السادس، القاهرة"، ص101.

derived from the Sumerian Zaquet⁴. Its design is formed as a high standing tower, which usually consists of two -or more- square stories⁵, and is topped by either: a dome, a conical top, or a pointed head. The shape of this top varies depending on the style of the church tower, either it was built according to the Romanesque style, the Gothic style, or the Baroque style. Finally, the building of the church tower is mostly crowned by a cross⁶.

The church tower is often located beside the main entrance of the church, either if it is attached to or separate from the structure of the church⁷. Sometimes, the church may have two towers, usually occupying the two sides of the main entrance on the western façade⁸. This tradition is related to a religious belief of the Christian people. They think that the two towers of the church symbolize the two guardian angels, who are helping in guarding the Christian worshippers and carry their prayers to God⁹.

In Egypt, the church tower is called “*al-Manār*” or “*al-Manārah*” which is an Arabic word giving the meaning of a beacon, that describes a maritime lighthouse or signaling tower that is used in guiding sailors and travelers¹⁰. The use of this expression -“*al-Manārah*”- in Coptic architecture is related to the function of the church tower as a place for guiding the Christians and helping them find their way to God, as well as fighting the devil by performing their prayers and other religious rituals¹¹. It must be mentioned that the term “*al-Manārah*” is also used in Islamic architecture to describe the minaret¹² in

-
4. أمينة أحمد مجاهد منشأوي، (2011)، التأثيرات القوطية علي العماائر الإسلامية والقبطية بمدنيتي القاهرة والإسكندرية خلال القرن التاسع عشر وحتى العقد الأول من القرن العشرين، (رسالة ماجستير، كلية الآثار، جامعة القاهرة)، ص223.
5. رفيف رضا زارع موسى، (2010)، العمارة الداخلية لكنائس القاهرة خلال النصف الأول من القرن العشرين، (رسالة ماجستير، كلية الفنون الجميلة، جامعة حلوان)، ص67.
6. أمينة أحمد مجاهد منشأوي، (2015)، العماائر المسيحية في محافظة الشرقية ومدن القناة منذ عصر الخديوي عباس حلمي الثاني حتى نهاية عصر الأسرة العلوية (1892-1952). دراسة أثرية فنية مقارنة، (رسالة دكتوراه، كلية الآثار، جامعة القاهرة)، ص234-235.
7. محمد خليل نايل، محمد أمين عبد القادر، (1943)، تاريخ فن العمارة، المطبعة الأميرية ببولاق، القاهرة، ج1، ص 9؛ فادية عطية مصطفى، (2011)، الأديرة والكنايس الباقية بمحافظة الجيزة، (رسالة دكتوراه، كلية الآثار، جامعة القاهرة)، ص10.
8. سامر سمير يوسف، (2006)، تأثير الاتجاهات العقائدية على تصميم الكنايس في مصر، (رسالة ماجستير، كلية الفنون الجميلة، قسم العمارة، جامعة حلوان)، ص238.
9. رفيف رضا زارع، العمارة الداخلية لكنائس القاهرة خلال النصف الأول من القرن العشرين، ص77.
10. Bloom, Jonathan M., (2013), The minaret, Edinburgh University Press, Edinburgh, p. 46-47.
11. القس منقريوس عوض الله، (1947)، منارة الأقداس في شرح طقوس الكنيسة القبطية، الطبعة الأولى، القاهرة، ج1، ص 27؛ رفيف رضا زارع، العمارة الداخلية لكنائس القاهرة خلال النصف الأول من القرن العشرين، ص77.

12. For more details about the minaret and its development, see:

Gottheil, Richard J. H., (1910), The Origin and History of the Minaret, in “*Journal of the American Oriental Society, Vol. 30, No. 2, p. 132-154*”; Creswell (K.A.C), The Evolution of The Minaret with Special Reference to Egypt, in “*The Burlington Magazine for Connoisseurs, Vol. 30, 134-140*”; Sameh (Kamal el-Din), (1955), The Birth and Evolution of Minarets in Islam, in “*The Bulletin of the Faculty of Engineering, Cairo university, 1954 – 1955*”; Aboseif (Doris), (1985), The Minarets of Cairo, The American University in Cairo Press.; Bloom (Jonathan M.), (1989), Minaret. Symbol of Islam, Oxford.; السيد عبد العزيز سالم، (1958)، القاهرة مدينة المآذن، بحث في “*مجلة المجلة، السنة الثانية، العدد 16*”؛ كمال الدين سامح، (1983)، العمارة في مصر الإسلامية، هيئة الكتاب المصرية، القاهرة، ص86-93؛ السيد عبد العزيز سالم، (1959)، المآذن المصرية. نظرة عامة عن أصلها وتطورها منذ الفتح العربي حتى الفتح العثماني، مؤسسة شباب الجامعة للطباعة والنشر، الإسكندرية؛ عبد الله كامل موسى، (1999)، تطور المئذنة بمدينة القاهرة من الفتح العربي وحتى نهاية العصر المملوكي. دراسة معمارية زخرفية مقارنة مع مآذن العالم الإسلامي، (رسالة دكتوراه، كلية الآثار، جامعة القاهرة)؛ محمد أحمد عبد اللطيف، (2006)، مآذن العصر العثماني في مدينة

the mosque (“*al-Mi’danah*” in Arabic), as it mostly has the same function as the church tower¹³. This function is represented in calling the Muslim people and collecting them to do their prayers in the mosque five times daily. The call for prayer is known as “*al-’Adān*” which is usually performed by a person known as “*al-Mu’adin*” or the caller. Like the belltower, this function of the minaret gives us an interpretation for its naming as “*al-Manārah*”, because it’s believed that “*al-Mu’adin*” holds a light while reciting the call for prayer at night, giving the observer below the impression of a light-tower¹⁴.

In Europe, the church tower has other names that differ from its naming in Egypt. It’s known as the belltower, the steeple, or the belfry. These names come from its design as a tower to hold one or more ringing bells, even if it has none¹⁵. These bells are often rung from the tower to empower them to be heard from a long distance away. These bells are mainly utilized for a religious purpose, as they are used to declare the fixed prayer times that the Christians perform each day. Additionally, they are rung on special occasions like weddings and funerals¹⁶. It must be mentioned that the church belltower has another name in Europe, particularly in Italy. It’s known as the campanile, which is a term derived from the Italian word “*campana*” that means “the bell”¹⁷.

The historians and researchers state that the first appearance of the church tower dates back to the 5th or 6th century¹⁸, when the Coptic church in Alexandria started to use it as a means to inform the Christians of their daily prayers¹⁹. At the beginning of the 7th century, the idea of church tower was transferred to the European church²⁰. Before the appearance of church towers, the early Christians used clappers instead of the Jewish horns that were utilized to collect the Jewish faithful²¹. After that, the Christians established the church tower to do the same function as the clappers, which represented in announcing the daily prayers of the Christian worshipers²².

القاهرة. دراسة أثرية معمارية، (رسالة دكتوراه، كلية السياحة والفنادق، جامعة حلوان).؛ مصطفى حسن البدوي، (2008)، لطائف الإشارات في أسرار المآذن والمنارات، الوايل الصيب للإنتاج والتوزيع والنشر، الطبعة الأولى، القاهرة؛ مجدى عبد الجواد علوان، (2013)، مآذن العصريين المملوكي والعثماني في دلتا النيل. دراسة أثرية ضمن حلقة تطور التراث المعماري الإسلامي في مصر، الطبعة الأولى، مطبعة الكلمة، أسبوط.

¹³. Islamic beliefs, practices, and cultures, (2010 Edition), Tarrytown, N.Y. : Marshall Cavendish Reference, p. 77.

¹⁴. Gottheil, The Origin and History of the Minaret, p. 132-133.

¹⁵. نعمت اسماعيل علام، (1991)، فنون الغرب في العصور الوسطى والنهضة والبارون، الطبعة الثالثة، دار المعارف، القاهرة، ص28.

¹⁶. Dryer, George Herbert. (1896), History of the Christian Church: The preparation for modern times 600-1517 A.D, Curts & Jennings, New York, p.119.;

سامر سمير يوسف، تأثير الاتجاهات العقائدية على تصميم الكنائس في مصر، ص 238.

¹⁷. Available at: <https://theodora.com/encyclopedia/c/campanile.html>, Accessed on: 26-10-2022.

¹⁸. ألفريد بتلر، (1993)، الكنائس القبطية القديمة في مصر، ترجمة: إبراهيم سلامة إبراهيم، الهيئة المصرية العامة للكتاب، القاهرة، ج2، ص71.

¹⁹. سامر سمير يوسف، تأثير الاتجاهات العقائدية على تصميم الكنائس في مصر، ص 236.

²⁰. Dieter Arnold, (2003), The Encyclopedia of Ancient Egyptian Architecture, Cairo, p.18.

²¹. ألفريد بتلر، الكنائس القبطية القديمة في مصر، ج2، ص71.

²². منال محمود على محمد، (2019)، الوحدات والعناصر المعمارية المستخدمة في عمارة المداخل الكنائسية بالقاهرة، بحث في "مجلة وقائع تاريخية، مركز البحوث والدراسات التاريخية، عدد يوليو 2019، ص ص 449-504، القاهرة"، ص467.

Unfortunately, there is no remaining church tower in Egypt before the 18th century, though it had existed since the beginning of Middle Ages. This may be due to that the old church towers were built from wood, bricks, or other materials that couldn't resist the time factors²³.

After giving a preface about the church tower (*al-Manārah*), its definition, origin, and design, the research will shed light on the study area, which is the region of East Delta.

The Delta is considered one of the most important areas in Egypt. It's formed as a triangle that starts from Menoufia Governorate in the south and extends to the Mediterranean Sea in the north, as well as stretching from Port Said in the East to Alexandria in the West. According to the Egyptian General Organization for Physical Planning, the Delta contains eleven governorates that are distributed in three main regions: the Middle Delta, the East Delta, and the West Delta. The region of the East delta includes the governorates of Sharqia, Dakahlia, Damietta, Ismailia, and Port Said²⁴. This region contains several remaining church towers that are characterized by the variety in their designs, styles, and architectural details. As a result, the research will introduce a descriptive and analytical study of the church towers in the East Delta region.

The Descriptive Study

Sharkia Governorate

Tower of The Angel Michael Church (13 Cen. H./ 19 Cen. A.D.), (Fig. 1, pl. 1)

This church is located in the village of *Kafr al-Dīr*²⁵ in *Minia al-Qamḥ*²⁶. It is built on the ruins of an ancient monastery that was situated in the middle of the village. This church is built on the Coptic plan²⁷ which was common in designing the Egyptian

²³ فادية عطية مصطفى، (2019)، العمارة الكنسية اللاتينية بمدينة القاهرة في القرن العشرين. كنيسة سيدة الكرمل نموذجاً، بحث في "مجلة كلية الآداب، جامعة سوهاج، العدد 52، ص ص 501-536"، ص 516.

²⁴ Available at: <http://www.gopp.gov.eg/>, Accessed on: 15-10-2022.

²⁵ This village is considered one of the modern villages in *Minia al-Qamḥ* town, Sharqia Governorate. In ancient times, this village was originally a part of the village of "*Sinīṭat Abu Ṭuwāla*", then it became an independent village starting from the year (1260 H./ 1845 A.D.). This village lies 9 km. north to the city of *Minia al-Qamḥ*. Its naming comes from the existence of an ancient monastery in it, so the people gave it the name "*Kafr al-Dīr*".

محمد رمزي، (1994)، القاموس الجغرافي للبلاد المصرية منذ عهد قدماء المصريين حتى عام 1945، الهيئة المصرية العامة للكتاب، القاهرة، القسم الثاني، ج 1، ص 148.

²⁶ It was originally one of the villages of *al-'Azīziya* City, Sharqia Governorate. In 1875 A.D., it became an independent town that contained a number of villages surrounding it. Firstly, it was called "*Miniat al-Qamḥ*", then the name was changed to "*Minia al-Qamḥ*".

محمد رمزي، (1994)، القاموس الجغرافي للبلاد المصرية، ج 1، ص 146.

²⁷ This plan appeared for the first time in the 16th century A.D., and it was used in designing most churches in Egypt during the 18th and 19th centuries A.D. This plan was a mix of both the Basilica and Byzantine plans. The churches that were built according to this plan consist of a rectangular area divided into three parts: the naos in the middle, the sanctuaries in the East, and the narthex in the west. The sanctuaries are separated from the nave by wooden screens used in carrying the archaeological icons. This

churches of the 18th and 19th centuries²⁸. It consists of a square building that is divided - by two rows of rectangular piers- into three main parts: the front of the church, the naos, and the back of the church.

The church tower lies beside the north-eastern corner of the church. This tower is built from bricks and is separate from the church structure. It is a high standing building that consists of a square block base topped by three square stories followed by a small dome. The first storey is decorated with shape of a cross and small arched niches. The second storey is taller than the first one and is decorated with the 'Anḥ sign, which is placed inside a vertical recess crowned by a tri-lobed arch. The third storey is decorated by openings crowned by semi-circular arches. Finally, the church tower is crowned by a small dome carried on a short room that has small rectangular openings crowned by pointed arches. This dome is topped by a standing cross.

Tower of Saint Tadrus al-Mašriqī Church (1332 H./1913 A.D.), (Fig. 2, pl. 2)

This church is situated in the village of *al-Jadīda*²⁹ in *Minia al-Qamḥ*. It is built by Mr. Sorial Girgis Sorial, who was born in the village of *Mīt Bašār*, *Minia al-Qamḥ* City, and was one of the famous members of the Egyptian Parliament at the beginning of the 19th century. He established it as a response to the request of the Christian people in the village of *al-Jadīda* to use it in performing their prayers and rituals³⁰. This church consists of a rectangular area that was designed according to the Coptic Plan. It contains a Naos in the shape of a square hall without aisles or arcades, and covered by a central dome, so the church is classified within "churches with one hall". There are three square sanctuaries lying to the east of this Naos, each one of them is roofed by a shallow dome.

This church has two similar towers that are attached to the church structure. They are built from bricks covered by a layer of stucco. These two towers are located on either side

plan is characterized by using domes and vaults to roof its parts. Sometimes, this plan is also called the plan of twelve domes, because it is based on using "twelve" domes in roofing the building of the church (nine for the naos and three for the sanctuaries), even if the number of domes was more or less than twelve. For more information, see:

مصطفى شريحة، (1988)، دراسات في العمارة والفنون القبطية، هيئة الآثار المصرية، القاهرة، ص 64؛ أشرف سيد محمد البخشونجي، (1998)، دراسة أثرية للكنائس الباقية بمصر الوسطى خلال العصر الإسلامي، (رسالة دكتوراه، كلية الآثار، جامعة القاهرة)، ص 10-15؛ أشرف سيد محمد البخشونجي، (2001)، دراسة أثرية معمارية مقارنة للتخطيطات الكنائسية القبطية، بحث في "مجلة كلية الآداب، جامعة سوهاج، عدد 24، ج 1، ص ص 167-135"، ص 149-147؛ محمود حسن الملاح وآخرون، (2020)، تطور العمارة الداخلية للكنيسة القبطية في القرن العشرين، بحث في "مجلة العمارة والفنون والعلوم الإنسانية، الجمعية العربية للحضارة والفنون الإسلامية، عدد 22، ص ص 38-22"، ص 27.

²⁸ محمد ناصر عفيفي، (2019)، كنيسة الملاك ميخائيل بكفر الدير: دراسة أثرية معمارية فنية، بحث في "مجلة كلية الآداب، جامعة سوهاج، عدد 50، ج 1، ص ص 614-567"، ص 568.

²⁹ This village lies 9 km. north of the city of *Minia al-Qamḥ*. This village is considered one of the ancient villages in Sharqia region. Firstly, it was known as *Jadīdat al-Masā'ida*, because it was located beside the village of *al-Masā'ida*. Starting from the year (1259 H./ 1844 A.D.) its name has been changed to its current name "*al-Jadīda*".

محمد رمزي، (1994)، قاموس الجغرافي للبلاد المصرية منذ عهد قدماء المصريين، ج 1، ص 136.

³⁰ أمينة أحمد مجاهد، العمانر المسيحية، ص 26.

of the main entrance in the western façade, one of them occupies the south-western corner, while the other occupies the north-western corner. Each of them is a tall building that is projecting from the church structure. It consists of a rectangular base topped by three stories, followed by the top of the tower that takes the shape of a dome. The base is raised to the same height as the church's roof. This base is supported at its corners by engaged columns ornamented with vertical lines. This base is decorated with a vertical recess that contains two arched open niches, one over the other. The first storey is a short square storey that has no decorations. The second storey is the tallest one, and it is decorated by four small arched openings placed inside a recess. The third storey has one large niche with a pointed arch on each side of it. This storey is crowned by a pointed fronton followed by the top of the tower that takes the shape of a dome. This dome is crowned by a cross.

Tower of The Virgin and Saint Maryouhanna Church in Zaqāzīq (1344 H./ 1925 A.D.), (Fig. 3, pl. 3)

This church is located in *Tall'at Harb* St. beside Banque Misr in the city of *Zaqāzīq*³¹. It was built by the Greek Orthodox Community in (1344 H./ 1925 A.D.) as it's inscribed on the construction text that is written in Latin over the main entrance³². Firstly, the church was called "The Church of Three Moons of the Saints", then its name was changed to "The Church of the Virgin Mary and Saint Maryouhanna the Apostle". This church is built according to the Basilica Plan³³, that it consists of a rectangular area extended from

³¹. This city is the capital of the Sharqia Governorate and is considered one of the most famous and largest cities in Delta. It lies 80 km. to the north-east of Cairo. Its naming is derived from the name of *Ibrāhīm Zaqzūq al-Kabīr*, whose origin comes from the village of *Kafr al-Zaqāzīq*. He was the chief of workers in the project of establishing barrages near this site during the reign of Muhammad Ali Pasha in the year 1827 A.D. He took a large number of workers from his family and village to work with him in this project. They lived in and occupied the area surrounding the barrages, so the whole area was called *Zaqāzīq* after the project was finished in 1832 A.D.

محمد رمزي، (1994)، القاموس الجغرافي للبلاد المصرية منذ عهد قدماء المصريين، ج 1، ص 89-92.
³². أمينة أحمد مجاهد، (2016)، كنيسة العذراء وماريونا بالزقازيق 1925م: دراسة أثرية معمارية، بحث في "مجلة كلية الآداب، جامعة القاهرة، مج 76، ج 7، ص ص 62-13"، ص 16.

³³. It is considered the oldest plan for designing the churches and religious buildings of the Christians. The Basilica is a term derived from the Greek word "Stoa Basilica" meaning "the royal hall", which was a kind of building that was used during the Greek Era as a center for nobility, businessmen, and judges. The basilica plan consists of a rectangular area divided into three or six aisles by a number of arcades. There are various opinions about the origin of this plan: the first states that it is derived from Hellenistic Houses, the second mentions that its origin came from Jewish synagogues, the third says that the Basilica is derived from the design of Roman Rule Halls, and finally, the fourth states that this plan is derived from the Hall of Thutmose III in Karnak Temple. The first appearance of this plan in designing buildings in general was during the reign of Julius Caesar in 184 A.D. It must be mentioned that the Basilica was used in building churches for the first time during the reign of Emperor Constantine. Starting from this time, the Basilica was the common plan for designing most churches in early Christianity. For more information, see:

Grossmann, (P.), "The Basilica" in the Coptic Encyclopedia, vol. 2, p. 353-354.; Emerson, Howland Swift, (1951), Roman Sources of Christian Art, New York, p. 12.; Ahmed, (G.), (1986), The Continuity of

the west to the east. This area is divided into three aisles by two rows of columns and piers carrying semicircular arches. The middle aisle is the widest, and its ceiling is higher than the other two aisles. This aisle is roofed by a gable ceiling, while the two side aisles are roofed by a flat ceiling.

This church has two similar towers at the south-western and north-western corners of the main façade (the western façade). These two towers are attached to the building of the church and are located on either side of the main entrance. Each tower of them is built from brick and consists of a tall rectangular base topped by four stories. It can be noticed that the base with the first three stories, all are crowned by a square cornice resting on a number of Kabuli, while the last storey is crowned by a circular cornice. The base has two small arched windows on its two outer sides. This base is topped by the first storey which is rectangular in shape. Each side of this storey has a pierced niche that is placed inside a rectangular recess topped by two Kabuli. This niche is divided into three parts and is crowned by a semi-circular arch. The second and third stories look like each other. Each one of them is square in shape and is decorated at its four sides with a twin window crowned by a semi-circular arch. This window has a cylindrical column in the middle of it, separating between its two openings. Over the cornice of the third storey, there is an octagonal gallery surrounding the ground of the fourth storey which is a circular storey. This storey is decorated with eight arched windows. Finally, the tower is crowned by a top in the shape of a dome resting on the fourth storey. This dome is topped by a cross.

Tower of The Evangelical Church in Zaqāzīq (1353-1354 H./ 1934-1935 A.D.), (Fig. 4, pl. 4)

This church was built by the evangelical community during the reign of King Fouad 1st, who issued a royal decree for its establishment in (1353 H./ 1934 A.D.), and the construction works were completed in (1354 H./ 1935 A.D.). It lies in the city of *Zaqāzīq*, facing the building of the security directorate. The plan of this church looks like the plan of The Saint *Tadrus al-Mašriqī* Church in *al-Jadīda, Minia al-Qamḥ*, which called the plan of “the church with one hall”. The church consists of a rectangular area that extends from south to north. This area is divided into three aisles by two arcades of Ionic columns. The middle aisle represents the naos of the church, which is wider and higher than the two side aisles. There is a sanctuary lying to the east of the naos.

Ancient Egyptian Style in the Coptic Architecture, (PhD., Faculty of Archaeology, Cairo University), p. 95-97.

محمد أنور شكرى، (1970)، العمارة في مصر القديمة، القاهرة، ص 219-220؛ محمود إبراهيم حسين، (1984)، تاريخ الفن الأوروبي، مكتبة نهضة الشرق، القاهرة، ص 36، 51؛ داود خليل مسيحة، (1995)، دراسة تحليلية للعمارة القبطية الدينية بمحافظة سوهاج من القرن الخامس حتلا القرن الثامن عشر الميلادي، (رسالة ماجستير، كلية الفنون الجميلة، جامعة حلوان)، ص 3-7؛ سومرز كلارك، (1997)، الآثار القبطية في وادي النيل. دراسة في الكنائس القديمة، ترجمة: إبراهيم سلامة إبراهيم، القاهرة، ص 53؛ أشرف البخشونجي، دراسة أثرية معمارية مقارنة للتخطيطات الكنائسية القبطية، ص 139-145؛ عبد الرحيم ربحان، (2005)، أصل وتطور البازيليكا، بحث في “مجلة الاتحاد العام للآثار بين العرب، القاهرة، العدد السادس”، ص 77.

The church tower is built over the main entrance, in the middle of the southern façade. It consists of a high rectangular tower, which ends with a conical top. Each side of this storey is decorated by a simple *Qandiliya*, which consists of two rectangular windows with pointed arches topped by a circular window. Over this *Qandiliya*, there are two small arched windows. Finally, the shaft is decorated at its highest part by a fronton in the shape of pointed arches covered by brick moldings. This fronton is crowned by the pyramidal top of the tower, which is topped by a cross.

Dakahlia Governorate

Tower of The Virgen Mary Church at al-Raydānia (1324 H./ 1906 A.D.), (Fig. 5, pl. 5)

This church is located in the village of *al-Raydānia*³⁴ in *al-Mansūra*³⁵. The current church is built in (1324 H./ 1906 A.D.), and it replaced an old church dating back to (944 H./ 1537 A.D.)³⁶. This church is built on the Coptic plan. It consists of a naos, which is a square area divided into nine square parts covered by domes and vaults. The middle part is the largest and covered by a central dome, which is higher than the ceilings of other parts. This central dome is surrounded by four shallow domes at the four corners, while the other four parts are covered by vaults. There are three sanctuaries lying to the east of this naos. Each one of them is roofed by a dome.

The church tower is built from bricks and is attached to the south-western corner of the church building. It's a short tower consisting of a rectangular base topped by two stories, and finally the pointed top of the tower that crowned by the cross. The first storey contains a large arched opening on each of its four sides. The second storey is shorter than the first and decorated with small block arched niches.

³⁴. This village is one of the ancient villages in the *Dakahlia* region. At the Ottoman period, it was one of the dependent villages of the town of *Dikirnis*. After that, it became one of the villages of *al-Mansūra* city.

على مبارك، (1994)، الخطط التوفيقية الجديدة، الطبعة الثانية، الهيئة المصرية العامة للكتاب، القاهرة، ج 11، ص 209؛ محمد رمزي، (1994)، القاموس الجغرافي للبلاد المصرية منذ عهد قدماء المصريين حتى عام 1945، الهيئة المصرية العامة للكتاب، القاهرة، القسم الثاني، ج 1، ص 214.

³⁵. This city is the capital of the *Dakahlia* Governorate. It originally was founded during the Ayyubid Era by Sultan al-Kamil to be a military center for his army in facing the Crusaders who invaded Damietta. He gave it the name "*al-Mansūra*" as a good omen of his victory against the Crusaders. After that, this city has flourished during successive eras, becoming one of the most important and beautiful cities in Delta.

على مبارك، الخطط التوفيقية الجديدة، ج 15، ص 260-261؛ سعاد ماهر، (1966)، محافظات الجمهورية العربية المتحدة وآثارها الباقية في العصر الإسلامي، المجلس الأعلى للشنون الإسلامية، القاهرة، ص 11؛ محمد رمزي، (1994)، القاموس الجغرافي للبلاد المصرية منذ عهد قدماء المصريين، ج 1، ص 215-216.

³⁶. محمد هاشم أبو طربوش، (2010)، كنيسة السيدة العذراء بالريديانية بمحافظة الدقهلية، بحث في "كتاب المؤتمر الثالث عشر للأثريين العرب: دراسات في الوطن العربي، الندوة العلمية الثانية عشر، ص ص 1634-1672، القاهرة"، ص 1636.

Ismailia Governorate

Tower of Saint Mark Church in Ismailia (famous for the French Church) (1343-1348 H./ 1924-1929 A.D.), (Fig. 6, pl. 6)

This church is considered one of the most famous and beautiful Christian establishments in Egypt. It also known as “the Cathedral³⁷ of Ismailia” or “the French Church”. It lies in ‘Urabi St. (previously Empress Eugenie St.) in Ismailia. This church was established to memorialize Saint Mark, so it carries his name, and it was dedicated to the Catholic and Armenian sects in Ismailia. Firstly, it was founded by the French community and opened officially by Ferdinand de Lesseps in (1281 H./1864 A.D.). After that, the French community wanted to enlarge the area of the church in (1343 H./1924 A.D.). This reconstruction work took five years, and the current building of the church was officially opened in (1348 H./ 1929 A.D.)³⁸. It must be mentioned that this church is designed on the Basilica Plan by the famous French architect Louis – Jean Hulot. It takes the shape of a rectangular building that is formed as a Latin cross extended from the north to the south, and its longest side ends with the chapel. The church building is roofed with different levels of ceilings.

The church tower is located in the eastern corner of the northern facade. It’s considered one of the most beautiful and well-designed towers because it is characterized by its square style and its red color, as it is covered with moldings of red brick. It consists of a square base topped by two stories crowned by a huge conical top that has a cross upon it. Each side of the base has a metal grill window crowned by a semi-circular arch. This arch is flanked by an architectural ornament made of red bricks. This base is crowned by two friezes decorated with small cube units that are stacked side by side and look like kernels and teeth (*al-Nawāyā wa al-Asnān* decoration). Between these two friezes, there are several colored geometrical ornaments and crosses.

The first storey is rectangular in shape and is decorated on its four sides by two adjacent recesses with semi-circular arches. Each recess contains three arched windows that are placed vertically, one over the other. This storey is crowned by two ornamented friezes, which are the same as those running on the top of the base. The second storey is square and shorter than the first one. Each side of this storey is decorated with an arcade of three semi-circular arches resting on two rectangular piers on the two sides plus two columns in the middle. This storey is crowned by a projecting stone cornice that rests on several

37. The term “Cathedral” is derived from the Greek word “*Cathedra*” which means a chair. This term is used to describe the place or the church that contains “The Patriarchal Chair” or “The Episcopal Chair”. For more information, see:

أثاناسيوس المقارى، (2002)، مقدمات في طقوس الكنيسة: "قاموس المصطلحات الكنسية"، ثلاثة أجزاء، الطبعة الأولى، دار الكتب المصرية، القاهرة، ص 155؛ داليا عادل جورج، (2005)، تطور التصميم الداخلي للعمائر القبطية في مصر، (رسالة ماجستير، كلية الفنون الجميلة، جامعة الإسكندرية)، ص 52.

38. كلودين بياتون، (2008)، عمارة القرن التاسع عشر والقرن العشرون: الإسماعيلية، ترجمة: سيلين فريمور و رؤوف عباس، المعهد الفرنسي للأثار الشرقية، القاهرة، ص 45؛ أمينة أحمد مجاهد، العمائر المسيحية، ص 117-118.

Kabuli decorated with shapes of flowers and crosses. Over this cornice, there is another arcade of small arched windows, that is placed directly below the conical top of the tower. Each side of this top has a small window topped by a triangle fronton.

Tower of The Evangelical Church in Ismailia (1343 H./ 1924 A.D.), (Fig. 7, pl. 7)

This church is situated in 'Adlī Yakan St. in Ismailia. It is also known as "The Ancient Protestant Synagogue" and "All Saints Church". It is founded by the British Evangelical community in Ismailia in (1343 H./ 1924 A.D.). This church is built on the Basilica Plan, and it was designed by Aozhust Busoh, who was one of the architects in Suez Canal Authority ³⁹. It consists of a rectangular area taking the shape of a Latin Cross extended from the south to the north. The church building is roofed by a gable vault covered by red bricks and is made in different levels.

The church tower lies in the middle of the southern façade, directly upon the main entrance. It's a very simple tower, as it consists of a short rectangular storey topped by a conical top and crowned by a cross. Each side of this shaft has an open niche arched with a semi-circular arch. There is a brass bell hanging inside this shaft.

Tower of The Nuns Church in Ismailia (known as Saint Agathe church) (1344 H./ 1925 A.D.), (Fig. 8, pl. 8)

This church lies inside the Hospital of the Suez Canal Authority (previously the Hospital of Saint-Vincent-de-Paul) in Ismailia. It is also called the Church of the Virgin Mary, also known as "Guardian of the Canal". Firstly, it was a small building that was founded during the construction of the hospital in (1306 H./1888 A.D.). It was built by the French community on the hands of Charles Aimé, son of Ferdinand de Lesseps, who named it after the name of his dead mother, Agathe Delamall. After that, the church was renewed, and its old building was replaced by the current building in (1344 H./1925 A.D.) ⁴⁰. This church is designed according to the Basilica Plan. It consists of a rectangular building that takes the shape of a Latin cross extended from the west to the east. This building is roofed by a gable vault made in different levels and covered by red bricks.

The church tower lies in the middle of the western façade, directly upon the main entrance. It's a short tower built from red bricks. It consists of a square base topped by four triangle transition zones at the four corners. Upon this base, stands an open octagonal storey that consists of eight columns carrying eight semi-circular arches surrounded by decorative stucco bands. This shaft is crowned by a wooden cornice that carries the top of the tower. This top takes the shape of a wooden dome covered by red bricks and topped by a cross. There are four small bells hanging from this dome.

³⁹ . كلودين بياتون، عمارة القرن التاسع عشر والقرن العشرون: الإسماعيلية، ص 46؛ راجية إسماعيل أبو زيد، (1999)، تاريخ مدينة الإسماعيلية من النشأة حتى منتصف القرن العشرين، (رسالة دكتوراه، كلية الآداب، جامعة عين شمس)، ص 216.

⁴⁰ . كلودين بياتون، عمارة القرن التاسع عشر والقرن العشرون: الإسماعيلية، ص 233.

Port Said Governorate

Tower of Saint Eugenie Church in Port Said (1308 H./ 1890 A.D.), (Fig. 9, pl. 9)

This church is located in *al-Šarq* district, in Port Said. Firstly, it was built from wood in (1284 H./ 1867 A.D.) bearing the name of Saint Eugenie and dedicated for the Catholic community in Port Said. After that, it was rebuilt from stone in (1308 H./ 1890 A.D.)⁴¹. This church is designed on the Basilica plan, that it consists of a rectangular area divided into three aisles by two arcades of square piers.

The church tower is attached to the western corner of the north-western façade. It is built from stone and designed according to the Neo-Gothic style. This tower consists of a square base topped by a rectangular storey crowned by a conical top. The base is raised to the same level as the church's roof. It has a small entrance door to the tower on its north-eastern side. This base is supported at its four corners by Roman Tuscan columns⁴², and crowned by a stone projecting cornice. This base is topped by a rectangular shaft divided into three stories: the first storey is a short rectangular shaft supported at its corners by rectangular piers. Each side of this storey is decorated with a double semi-circular arch. This storey is crowned by a row of marble balusters that are placed between two horizontal friezes. The second storey is the tallest part of the tower's shaft, and it contains a large arched window at each side. Each window is arched by a semi-circular arch and is closed by wooden shutters. This storey is crowned by a square gallery that has a metal balustrade running around the third storey, which is a short square shaft. It contains the tower's clock and is crowned by a semi-circular fronton decorated with floral ornaments. This fronton is topped by a wooden conical top plaited with lead. Finally, there is a standing iron cross over this top.

Tower of Saint Youhanna Church in Port Said (known as the Greek church) (1317-1321 H./ 1899-1903 A.D.), (Fig. 10, pl. 10)

This church is situated on *al-Talāṭīnī* St. in Port Said. Firstly, it was a small building that was founded in (1306 H./ 1888 A.D.) for the Roman Orthodox Community and follows the Greek Church, so it's also called "the Greek Church". After that, the area of the

41. بدر عبد العزيز بدر، (2018)، أبراج عمائر مدينة بورسعيد في عصر أسرة محمد علي باشا. دراسة أثرية معمارية، بحث في "مجلة كلية الآداب، جامعة بورسعيد، عدد 12، ص ص 720-782"، ص 727؛ هبة محسن أبو عجيلة، أسماء سلامة، (2021)، الطرز الأوروبية في القرن التاسع عشر وتأثيرها على إحدى العمائر الباقية بمدينة بورسعيد بالتطبيق على كنيسة سانت أوجيني: دراسة تاريخية وصفية، بحث في "مجلة اتحاد الجامعات العربية للسياحة والضيافة، كلية السياحة والفنادق، جامعة قناة السويس، مج 21، عدد 4، ص ص 212-244"، ص 219.

42. The Tuscan column, also known as the Doric column, is a kind of columns that is characterized by a cylindrical base and a simple crown free of decorations. Its name is derived from the region of Tuscany in Italy.

Sir Banister Fletcher's, (1990), History of architecture, University of London, p. 139.;

محمد حماد، (1952)، الطراز والأعمدة المصرية، بحث في "مجلة العمارة، مج 8، عدد 7، القاهرة"، ص 11-15.

church was enlarged depending on the increasing number of Christian Greeks in Port Said. These renewal works for the church's building lasted six years, from (1317 H./1899 A.D.) to (1321 H./1903 A.D.)⁴³. This church is designed according to the Basilica plan. It took the shape of a Latin cross extended from west to east and divided into three vertical aisles by two rows of pillars. There is a horizontal aisle located behind these three aisles on the western side. The church building is roofed by a flat ceiling with a central dome in the middle, covering the choir of the church.

This church has two similar towers occupying the north-western and south-western corners of the western façade. These two towers are built from stone and characterized by their square form and European style. Each one of them consists of a rectangular base topped by two square stories. The base is raised to the same height as the church's ceiling. Each side of this base contains a small arched rectangular opening that is placed inside a rectangular recess, which is filled by various ornaments surrounding the arched window. These ornaments include floral leaves, geometrical decorations, and shapes of a cross. This base is crowned by a cornice of stucco, rests on a number of Kabuli, and is decorated with shapes of circles and crosses. The first storey is rectangular in shape and is divided into two divisions by a cornice. The lower division is shorter than the upper one and is devoid of decorations. The upper division has a bundle of three engaged piers at each corner, which are topped by three projecting stucco friezes. Each side of this division is decorated with two friezes gathering three Kabuli between them. Over these two friezes, there is an opening arched by double semi-circular arches. This division is crowned by a square gallery supported by several Kabuli and running around the lower part of the second storey. This gallery has a balustrade made of stucco and decorated with flowers in the shape of a cross. The second storey is square in shape and is supported at its four corners by rectangular piers. Each side of this storey is decorated with two adjacent open niches separated by a cylindrical column. Each niche of them is arched by double semi-circular arches. At the top of this storey, there are three friezes decorated with circles. This storey is crowned by a square gallery carried on a cornice that rests on a number of Kabuli.

Tower of the Italian Church in Port Said (1328 H./ 1910 A.D.), (Fig. 11, pl. 11)

This church is attached to the Italian Embassy in Port Said, and it was dedicated for the Italian Catholic community, so it's named "The Italian Church". It was built to memorialize the famous Italian saint Giovanni Bosco, so it also bears his name⁴⁴. This church is built on the Basilica plan, and it's designed in the shape of a Latin cross extended from east to west.

This church has two similar towers built in the Neo-Gothic style. These two towers are built of stone and occupy the north-western and south-western corners of the western

43. أمينة أحمد مجاهد، العمانر المسيحية، ص 68.

44. بدر عبد العزيز بدر، أبراج عمانر مدينة بورسعيد، ص 729.

façade. Each tower consists of a square base that contains a small entrance door to the tower at its eastern side. This door leads to the ascending spiral staircase to the top of the tower. Each of the other three sides of this base has two small rectangular openings that look like arrow slits, one above the other. This base is topped by a pyramidal transition zone carrying the octagonal storey of the tower that is crowned by a conical top. This shaft is divided into two divisions: the first one consists of eight cylindrical Doric columns carrying eight tri-lobed arches. Each arch is flanked by two small decorative rectangular piers that are used as an architectural ornament surrounding the arch. This division is crowned by a wide, sloping cornice running below the second division, which is octagonal in shape. This division is divided into eight sides by eight rectangular engaged piers with Gothic crowns. This second division is crowned by a stone cornice that bears the conical top of the tower, which is ornamented with the shape of fish scales (*Qušūr al-Asmāk* decorations).

Tower of the Roman Cathedral in Port Said (1353-1356 H./ 1934-1937 A.D.), (Fig. 12, 13, pl. 12)

This cathedral (also known as the Cathedral of Angel Michael and the Virgin Mary) is situated on 23 July St. in Port Said, beside the northern portal of Suez Canal. It is founded near the area that witnessed the passing of the Holy Family during their journey in Egypt. This cathedral dates back to the reign of King Fouad 1st, who issued a royal decree for its establishment for the Latin Catholics in Port Said. The construction works started in (1353 H./ 1934 A.D.) and were completed in (1356 H./ 1937 A.D.)⁴⁵. This cathedral was designed by the famous French architect Louis-Jean Hulot, who was also the supervisor for designing the Church of Saint Mark (the French Church) in Ismailia (1343–1348 H./1924–1929 A.D.). This cathedral is built on the basilica plan, and it consists of a rectangular area taking the shape of a Latin cross extended from the north to the south. The longest side of this cross ends with a semi-circular chapel.

The tower of this cathedral lies in the middle of the northern facade, and it's designed in the Baroque style. This tower is considered one of the most beautiful towers in the Egyptian churches, that it's ornamented with various decorations that relate to the Baroque style, such as shapes of shields, cogs, circles, horns, birds, animals, and other European ornaments⁴⁶. It consists of a square base topped by two stories. The base is decorated at its four sides by a large open niche arched by a semicircular arch. These four arches are carried on four rectangular piers in the four corners of the base. The upper part of the south-western side is ornamented with a decorative circle, that contains shapes of cogs and crosses with human arms, as well as foreign letters representing the monogram

⁴⁵. أبيذياكون نصحي عطية، (1998)، تاريخ إبيارشية بورسعيد، معهد الدراسات القبطية، القاهرة، ص 118؛ ضياء الدين حسن القاضي، (2002)، موسوعة تاريخ بورسعيد، دار الكتب المصرية، القاهرة، ص 185؛ أمينة أحمد مجاهد، العمانر المسيحية، ص 96-97.

⁴⁶. بدر عبد العزيز بدر، (2011)، الطرز المعمارية لمدينة بورسعيد في عصر أسرة محمد علي باشا، بحث في "كتاب المؤتمر الرابع عشر للأثاريين العرب: دراسات في الوطن العربي، الندوة العلمية الثالثة عشر، القاهرة"، ص 684.

of the Christ⁴⁷. Besides, the upper part of the north-western side is ornamented with two decorative circles. The right one is decorated with the shape of an eagle placed inside a cog, which is flanked by two floral offshoots and crowned by the shape of a cross. The left one is also decorated with a cog that has inside it a human face and the shape of a cross with human arms. This cog is surrounded by metal circles, geometrical lines, and floral rolls.

This base is topped by a tall rectangular storey supported at its four corners by hexagonal piers. The lower part of this storey is surrounded by a stone gallery resting on a number of Kabuli and having a balustrade of 16 columns. Each side of this storey is decorated with a large recess crowned by a circular arch consisting of five levels. This recess contains six rectangular areas placed in three levels -two beside each other-. These areas are ornamented with pierced stucco geometrical decorations represented in stars and circles that formed the shape of the cross. These six areas are topped by a circular window that is surrounded by a lobed decorative frame. At the top of this storey, directly over the arch of each recess, there are six small windows with semi-circular arches. This storey is crowned by a stone cornice decorated with small cube units that are stacked side by side and look like kernels and teeth.

The second storey is very short and has six sides. Each side of them contains two adjacent rectangular windows with semi-circular arches. This storey is crowned by a hexagonal gallery that rests on several stone Kabuli and has a balustrade of pierced decorations in the shape of semi-circular arches. Finally, this storey is topped by a cross.

It must be mentioned that this tower was supposed to bear the statue of the Virgin Mary upon it, but the statue was not placed because of the extreme height of the tower⁴⁸.

Tower of Saint George Church in Port Said (1362-1372 H./ 1943-1952 A.D.), (Fig. 14, pl. 13)

This church lies on Mohamed Ali St. in Port Said. It was built to memorialize the great martyr Saint George, and it's dedicated to the Coptic Orthodox sect in Port Said. The construction works continued for about ten years, from (1362 H./ 1943 A.D.) to (1372 H./ 1952 A.D.). This church is designed according to the Basilica plan, as it takes the shape of a rectangle extended from west to east and roofed by a gable vault covered by red bricks.

47. The monogram appeared for the first time in Europe during the Renaissance Age, when the nobles used it as a symbol of themselves. It is an inscription symbol or logo consisting of two Latin letters that symbolize the first letter of the founder and the first letter of his family name. These inscription symbols are sometimes used to refer to the Christ monogram, which consists of the two Latin letters (XP).

عبد المنصف سالم حسن، (2002)، قصور الأمراء والباشوات بمدينة القاهرة في القرن التاسع عشر الميلادي، مكتبة زهراء الشرق، القاهرة، ص 145.

48. أمينة أحمد مجاهد، العمانر المسيحية، ص 100.

This church has two similar towers that are attached to the north-western and south-western corners of the main façade. Each one of them is built from stone and consists of a square base that is raised to the same height as the church's ceiling. This base is topped by two stories: the first is rectangular and crowned by a stone triangle fronton. Each side of this storey is decorated with an open niche arched with a semi-circular arch. This niche is filled with pierced geometrical ornaments. Upon the niche, there is a circular window surrounded by a projecting frieze. The second storey is shorter than the first and takes the shape of a square. Each side of this storey has three rectangular windows. This storey is crowned by a stone cornice running below the conical top of the tower, which is topped by a cross.

The Analytical Study

- The number of towers in the churches of the east delta is differentiated, as some of these churches contain one tower (*Manārah*), whereas other churches have two similar towers. The appearance of two towers in one church is considered a Christian architectural tradition related to a religious conviction of the Christian people. They believe that the two church towers symbolize the two guardian angels, who are helping to guard the Christian worshippers and reach their prayers to God ⁴⁹. The following table (No. 1) shows a classification of churches in the governorates of the east delta depending on the number of their towers:

Churches with one tower	Churches with two towers
1. Saint Michael Church in <i>Kafr al-Dīr, Minia al-Qamḥ</i>	1. Saint Tadrus al-Mašriqī Church in <i>al-Jadīda, Minia al-Qamḥ</i>
2. The Evangelical Church in Zaḳāzīq	2. The Virgin and Saint Maryouhanna Church in Zaḳāzīq
3. The Virgen Mary Church at al-Raydānia	3. Saint Youhanna Church in Port Said
4. Saint Mark Church (the French Church) in Ismailia	4. The Italian Church in Port Said
5. The Evangelical Church in Ismailia	5. Saint George Church in Port Said
6. The Nuns Church in Ismailia	
7. Saint Eugenie Church in Port Said	
8. The Roman Cathedral in Port Said	

- In general, the church tower is built either attached to or separate from the structure of the church ⁵⁰. In this research, all examples of church towers are built attached to the church building, except for only two examples: the tower of Saint Michael Church in *Kafr al-Dīr* in *Minia al-Qamḥ* and the tower of the Roman Cathedral in Port Said. Table (2) shows the churches that have attached towers as well as those which have separated towers:

49. رفيق رضا زارع، العمارة الداخلية لكنائس القاهرة خلال النصف الأول من القرن العشرين، ص 77.
 50. محمد خليل نايل، محمد أمين عبد القادر، تاريخ فن العمارة، ج1، ص 9؛ فادية عطية، الأديرة والكنايس الباقية بمحافظة الجيزة، ص10.

Attached Towers	<ol style="list-style-type: none"> 1. Two towers of Saint Tadrus al-Mašriqī Church in <i>al-Jadīd</i> 2. Two towers of The Virgin and Saint Maryouhanna Church in <i>Zaqāzīq</i> 3. Tower of The Evangelical Church in <i>Zaqāzīq</i> 4. Tower of The Virgen Mary Church at <i>al-Raydānia</i> 5. Tower of Saint Mark Church (the French Church) in <i>Ismailia</i> 6. Tower of The Evangelical Church in <i>Ismailia</i> 7. Tower of The Nuns Church in <i>Ismailia</i> 8. Two Towers of the Saint Youhanna Church in <i>Port Said</i> 9. Tower of Saint Eugenie Church in <i>Port Said</i> 10. Two Towers of the Italian Church in <i>Port Said</i> 11. Two Towers of Saint George Church in <i>Port Said</i>
Separated Towers	<ol style="list-style-type: none"> 1. Tower of Saint Michael Church in <i>Kafr al-Dīr, Minia al-Qamḥ</i> 2. Tower of the Roman Cathedral in <i>Port Said</i>

- **The location**

It can be noticed that the location of church tower varies from one church to another in this study:

- Five are situated in the south-western and north-western corners of the church building, occupying both sides of the main entrance. These examples are represented in two towers of Saint Tadrus al-Mašriqī Church in *al-Jadīda*, *Minia al-Qamḥ*, two towers of the Virgin and Saint Maryouhanna Church in *Zaqāzīq*, two towers of the Saint Youhanna Church in *Port Said*, two towers of the Italian Church in *Port Said*, and two towers of Saint George Church in *Port Said*.
- Three church towers are located in the middle of the main façade, directly over the main entrance: two of them lying in the middle of the southern facade (tower of The Evangelical Church in *Zaqāzīq* and the tower of the Evangelical Church in *Ismailia*), while the third one lies in the middle of the western façade (tower of the Nuns Church in *Ismailia*). It must be mentioned that the Tower of the Roman Cathedral in *Port Said* is also situated in the middle of the main façade (northern façade), but it's built directly in front of the main entrance and separate from the church building.
- The other church towers in the area of East Delta are distributed in various parts of the churches' buildings, as the Tower of The Virgen Mary Church at *al-Raydānia* is situated in the south-western corner, while the tower of Saint Michael Church in *Kafr al-Dīr*; in *Minia al-Qamḥ* lies in the north-eastern corner, as well as the tower of Saint Eugenie Church in *Port Said* is located in the western corner, and finally the tower of Saint Mark Church (the French Church) in *Ismailia* lies in the eastern corner.

We can notice that the Christian architect chose the location of the church tower carefully. He used to construct it in the corners or upon the entrance to give it the needed support. It must be mentioned that this architectural tradition is considered one of the mutual influences between the church tower and the mosque minaret, as the Muslim architect used to construct the minaret in those specific locations.

- The Material

The Christian architects used different materials in constructing church towers in the governorates of East Delta, such as:

1. **Brick:** is one of the most famous and oldest construction materials, as it has been utilized for construction purposes since earlier times and continued to be a popular building material due to its strength, durability, and versatility. It is made of earthy materials such as clay or other types that are burned at high temperatures to create a hard, long-lasting product⁵¹. Although the brick was manufactured in Egypt for hundreds of years, but it was imported from Italy and France during the 19th and 20th centuries⁵². This may be because most buildings and establishments during this era were founded by foreign architects, who preferred to use imported brick. As a result, there are two types of bricks are used in constructing the church towers of our study: the municipal brick which was manufactured in Egypt and the imported brick that was brought from Europe. Brick, which is usually covered by a layer of stucco and mortar, was utilized in building five church towers in this study: the tower of The Virgin Mary Church at *al-Raydānia*, tower of the Saint *Tadrus al-Mašriqī* Church *al-Jadīda*, Minia *al-Qamḥ*, tower of the Virgin and Saint Maryouhanna Church in *Zaqāzīq*, tower of the Evangelical Church in *Zaqāzīq*, and tower of the Evangelical Church in Ismailia.
2. **Stone:** is also considered one of the most famous and popular building materials. It's used in the construction of most church towers in Port Said, as well as other establishments. These stones were brought from the quarries of *al-Max* and *Jabal Jinīfa*, which are located near Port Said on the railway road between Suez and Ismailia⁵³. Stone is utilized in establishing four towers in Port Said: the tower of Saint Eugenie Church, two Towers of Saint Youhanna Church, two towers of the Italian Church, and tower of Saint George Church.
3. **Red brick:** is a kind of construction material that is characterized by its sturdiness, power, and resistance to fire. It's made from clay, sand, and iron oxide, which is used in its manufacturing to give it the red color, so it's distinguished by its beautiful and decorative shape⁵⁴. Red brick is utilized in building two church towers in East Delta: the tower of Saint Mark Church (the French Church) in Ismailia, and the tower of the Nuns Church in Ismailia.
4. **Concrete:** is a composite construction material composed of cement, aggregate (such as sand, gravel, or crushed stone), water, and chemical admixtures. Because of its sturdiness, strength, and adaptability, it is frequently utilized for building purposes.

⁵¹. عبد الرحيم غالب، موسوعة العمارة الإسلامية، ص 28؛ عاصم محمد رزق، معجم مصطلحات العمارة والفنون الإسلامية، ص 11؛ سامي محمد نوار، (2003)، الكامل في مصطلحات العمارة الإسلامية من بطون المعاجم اللغوية، الطبعة الأولى، دار الوفاء لدنيا النشر، القاهرة، ص 10.

⁵². أحمد رجب، (2016)، واجهات العمائر الدينية والمدنية بمدن القناة في عصر الأسرة العلوية (1372-1220هـ / 1805-1952): دراسة أثرية، (رسالة ماجستير، كلية الآداب، جامعة طنطا)، ص 290.

⁵³. أحمد رجب، واجهات العمائر الدينية والمدنية بمدن القناة في عصر الأسرة العلوية، ص 292.

⁵⁴. سامي محمد نوار، الكامل في مصطلحات العمارة الإسلامية، ص 10.

Concrete is excellent for a wide range of constructions because it can be shaped into different shapes and forms. The first appearance of concrete in the foundation of the archaeological establishments in Egypt dates back to the 19th century⁵⁵. The concrete is utilized interlaced with brick moldings, in the foundation of two church towers in this study: the tower of the Angel Michael Church in *Kafr al-Dīr*; *Minia al-Qamḥ* and tower of the Roman Cathedral in Port Said.

The following table (No. 3) presents a classification of the church towers in the region of east Delta depending on the material used in their construction:

The Material	Examples of Church Towers
Bricks	<ol style="list-style-type: none"> 1. Tower of The Virgen Mary Church at al-Raydānia 2. Tower of The Saint Tadrus al-Mašriqī Church in <i>al-Jadīda</i> 3. Tower of The Virgin and Saint Maryouhanna Church in Zaḡāzīq 4. Tower of The Evangelical Church in Zaḡāzīq 5. Tower of The Evangelical Church in Ismailia
Stone	<ol style="list-style-type: none"> 1. Tower of Saint Eugenie Church in Port Said 2. Two Towers of the Saint Youhanna Church in Port Said 3. Two Towers of the Italian Church in Port Said 4. Tower of Saint George Church in Port Said
Red bricks	<ol style="list-style-type: none"> 1. Tower of Saint Mark Church (the French Church) in Ismailia 2. Tower of The Nuns Church in Ismailia
Concrete	<ol style="list-style-type: none"> 1. Tower of The Angel Michael Church in <i>Kafr al-Dīr</i> 2. Tower of the Roman Cathedral in Port Said

- The Style

The Christian architects used some famous European styles in designing the church towers in the governorates of East Delta during the era of Muhammed Ali Dynasty, such as the Neo-Gothic, Romanesque, and Baroque styles.

The Romanesque style:

It's considered one of the famous European styles that is used in designing church towers. It transferred to Egypt during the reign of Muhammed Ali, on the hands of the Italian Architects. In this style, the tower is a square building crowned by a projecting Corniche that is carried on columns and rests on a Kabuli of brick moldings⁵⁶. The tower of the Nuns Church in Ismailia (Fig. 8, pl. 8) is considered an example of a church tower that is built on the Romanesque style in the East Delta.

⁵⁵. محمد أفندي عارف، (1897)، خلاصة الأفكار في فن المعمار، المطبعة الأميرية ببولاق، القاهرة، 1315 هـ، ص 84.

⁵⁶. محمد خليل نابل، محمد أمين عبد القادر، تاريخ فن العمارة، ج1، ص 9.

The Neo-Gothic style:

The Gothic style is considered one of the most famous and prominent styles used in designing different types of buildings in Europe during the Medieval Ages. It witnessed more development and innovation in artistic features and characteristics than the Roman and Byzantine styles. The Gothic style continued for about five centuries, as it appeared in the 12th century and continued to the 17th century. The Neo-Gothic style appeared in the second half of the 19th century and was based on the revival of the Gothic style's features. Since that time, it has been considered one of the most famous and prominent styles for designing churches and their towers in Europe. This style was introduced to Egypt by Italian and French architects. It has been widely used in designing palaces, churches with their towers, and other kinds of buildings in Alexandria and Cities of the Suez Canal. Church towers designed in this style are typically crowned by a conical or pyramidal top and distinguished by the abundance and variety of their decorations and ornaments⁵⁷. In this study, there are five church towers built in the Neo-Gothic style: the of the Evangelical Church in *Zaqāzīq* (Fig. 4, pl. 4), tower of Saint Mark Church (the French Church) in Ismailia (Fig. 6, pl. 6), tower of Saint Eugenie Church in Port Said (Fig. 9, pl. 9), two towers of the Italian Church in Port Said (Fig. 11, pl. 11), and the tower of Saint George Church in Port Said (Fig. 14, pl. 13).

The Baroque style:

This style is characterized by gathering features from the Classical, Gothic, and Renaissance styles, which resulted in a great richness in its artistic and architectural characteristics. It was widely used in building church towers in Europe during the 17th and 18th centuries. After that, it appeared in Egypt during the 19th century and became the prominent style that used in designing different types of buildings at that era. The church towers that are built on this style are characterized by: the variety of decorative elements, as well as the existence of friezes, Corniches, and different shapes of Fronton⁵⁸. The tower of the Roman Cathedral in Port Said is regarded as the best example of this style in East Delta church towers (Fig. 12, pl. 12).

⁵⁷. Pevsner, Nicolaus, (1953), *An Outline of European Architecture*, London, p. 60.; Bracans, Joes, (1990), *The Key to Gothic Art, England*, p.3.; fletcher, Banister, (1990), *A history of architecture*, university of London, p. 268.;

توفيق أحمد عبد الجواد، (1969)، *تاريخ العمارة والفنون في العصور المتوسطة الأوروبية والإسلامية*، المطبعة الفنية الحديثة بالزيتون، القاهرة، ص 77؛ حنا سميكة، (1970)، *محيط الفنون، الجزء الأول، الفنون التشكيلية*، دار المعارف، القاهرة، ص 235؛ نعمات إسماعيل علام، (1991)، *فنون الغرب في العصور الوسطى والنهضة والباروك*، الطبعة الثانية، دار المعارف، القاهرة، ص 26؛ ثروت عكاشة، (1994)، *فنون العصور الوسطى*، ضمن سلسلة موسوعة تاريخ الفن، الطبعة الأولى، دار سعاد الصباح، الكويت ج-1، ص 140-142؛ عبد المنصف سالم، (2000)، *الطرز المعمارية والفنية لبعض قصور الأمراء والباشوات في مدينة القاهرة في القرن التاسع عشر الميلادي "دراسة مقارنة"*، (رسالة دكتوراة، كلية الآثار، جامعة القاهرة)، ص 328.

⁵⁸. ثروت عكاشة، *فنون عصر النهضة والباروك*، دار السويدي للنشر و التوزيع، أبو ظبي، ص 9؛ توفيق أحمد عبد الجواد، *تاريخ العمارة والفنون في العصور المتوسطة*، ص 205؛ نعمات إسماعيل علام، *فنون الغرب في العصور الوسطى والنهضة والباروك*، ص 179؛ عبد المنصف سالم، *الطرز المعمارية والفنية لبعض قصور الأمراء والباشوات في مدينة القاهرة*، ص 145.

- The Design and Formation

In general, the church tower is a high standing building consisting of a base topped by a number of stories and finally crowned by the top of the tower. In this study, the number of stories varies from one church tower to another. There are five towers that contain one story standing upon the base, such as tower of the Evangelical Church in *Zaqāzīq* (Fig. 4, pl. 4), tower of the Evangelical Church in Ismailia (Fig. 7, pl. 7), tower of the Nuns Church in Ismailia (Fig. 8, pl. 8), tower of Saint Eugenie Church in Port Said (Fig. 9, pl. 9), two towers of the Italian Church in Port Said (Fig. 11, pl. 11). Whereas there are five towers comprised of a base topped by two stories such as: tower of the Virgen Mary Church at *al-Raydānia* (Fig. 5, pl. 5), tower of Saint Mark Church (the French Church) in Ismailia (Fig. 6, pl. 6), two towers of the Saint Youhanna Church in Port Said (Fig. 10, pl. 10), tower of the Roman Cathedral in Port Said (Fig. 12, pl. 12), and tower of Saint George Church in Port Said (Fig. 14, pl. 13). In addition, there are two towers with three stories standing upon the base, such as the tower of the Angel Michael Church in *Kafr al-Dīr* (Fig. 1, pl. 1), and two towers of the Saint *Tadrus al-Mašriqī* Church in *al-Jadīda* (Fig. 2, pl. 2). Finally, there is only one example of church towers that have four stories upon the base. It is represented in the two towers of the Virgin and Saint Maryouhanna Church in *Zaqāzīq* (Fig. 3, pl. 3).

Besides, the top of the church tower is built according to different shapes, such as a dome, a conical or pyramidal top, and so on. The following table (No. 4) shows the various forms of the top in East Delta church towers.

Shape of the top	Examples of church towers
Conical top	<ol style="list-style-type: none"> 1. Tower of The Evangelical Church in <i>Zaqāzīq</i> (Fig. 4, pl. 4) 2. Tower of Saint Mark Church in Ismailia (Fig. 6, pl. 6) 3. Tower of The Evangelical Church in Ismailia (Fig. 7, pl. 7) 4. Tower of Saint Eugenie Church in Port Said (Fig. 9, pl. 9) 5. Two Towers of the Italian Church in Port Said (Fig. 11, pl. 11) 6. Two Towers of Saint George Church in Port Said (Fig. 14, pl. 13)
Dome	<ol style="list-style-type: none"> 1. Tower of The Angel Michael Church in <i>Kafr al-Dīr</i> (Fig. 1, pl. 1) 2. Two towers of Saint <i>Tadrus al-Mašriqī</i> Church (Fig. 2, pl. 2) 3. Two towers of The Virgin and Saint Maryouhanna Church in <i>Zaqāzīq</i> (Fig. 3, pl. 3) 4. Tower of The Virgen Mary Church at <i>al-Raydānia</i> (Fig. 5, pl. 5) 5. Tower of The Nuns Church in Ismailia (Fig. 8, pl. 8)
Square gallery	<ol style="list-style-type: none"> 1. Two Towers of Saint Youhanna Church in Port Said (Fig. 10, pl. 10)
Hexagonal gallery	<ol style="list-style-type: none"> 1. Tower of the Roman Cathedral in Port Said (Fig. 12, pl. 12)

- **The Decorations**

The church towers of East Delta are ornamented with various decorations, such as those in the shape of arched niches and openings. This kind of decoration appeared in all examples of church towers in this study. This style of decoration is considered the most common kind of ornament on church towers in Delta during the era of Muhammed Ali and his successors because of its decorative purpose in addition to its functional use as a means of light and ventilation. It must be mentioned that the arched niches and openings are used to decorate the minarets in Egypt starting from the Mamluk Era ⁵⁹, so it's regarded as one of the mutual influences between the minarets in Islamic architecture and the church towers in Coptic architecture.

Besides, other types of distinguished decorations are used in ornamenting the church towers in East Delta, especially those that are designed in European styles, such as:

Fish Scales decorations (*Oušūr al-Asmāk* decorations)

It is regarded as one of the most beautiful types of decorations. Firstly, it was used in ornamenting the Assyrian and Sassanian artistic pieces, then it was transferred to the Islamic era and became one of the famous decorations on the ceramic pieces during the Fatimid, Siljuk, Mamluk and Ottoman periods ⁶⁰. This type of decoration was used in ornamenting the tops of the Gothic church towers during the reign of Muhammed Ali. In East Delta, the fish scale decorations appeared on the tower of the Virgin and Saint Maryouhanna Church in *Zaqāzīq*, tower of Saint Eugenie Church in Port Said (pl. 9), and two towers of the Italian Church in Port Said (pl. 11).

The Kernels and Teeth ornaments (*al-Nawāyā wa al-Asnān* decoration)

This kind of ornament is considered one of the old classical decorative elements, and it was used especially in ornamenting the facades and running below the galleries, and the corniches. It consists of small cube units that are stacked side by side and form the shape of kernels and teeth ⁶¹. This type of decoration appeared in the tower of Saint Mark Church in Ismailia (Fig. 6, pl. 6), and tower of the Roman Cathedral in Port Said (Fig. 12, pl. 12).

⁵⁹ عبد الله كامل، تطور المنذنة بمدينة القاهرة، ص 575.
⁶⁰ العربي صبري عبد الغني، (2000)، التأثيرات الساسانية على الفنون الإسلامية من الفتح الإسلامي حتى القرن 15 الميلادي. دراسة أثرية فنية مقارنة، (رسالة ماجستير، كلية الآثار، جامعة القاهرة)، ص 150 - 154؛ عبد الخالق علي عبد الخالق، (2002)، التأثيرات المختلفة على الخرف الإسلامي في العصر المملوكي (923-648هـ/1250-1517م). دراسة أثرية فنية، (رسالة ماجستير، كلية الآثار، جامعة القاهرة)، ص 326.

⁶¹ عبد المنصف سالم حسن، (2000)، الطرز المعمارية والفنية لبعض قصور الأمراء في مدينة القاهرة، ص 523؛ تقيدة عبد الجواد، (2011)، واجهات القصور بمحافظة الغربية والمنوفية بالنصف الثاني بالقرن 19 وحتى نهاية النصف الأول من القرن 20: دراسة أثرية للعناصر المعمارية والزخرفية، بحث في "كتاب المؤتمر الرابع عشر للأثاريين العرب: دراسات في الوطن العربي، الندوة العلمية الثالثة عشر، القاهرة"، ص 729.

The Shields and Cogs Decorations:

This type of decoration, which originally dates back to the Greek civilization, is commonly used in buildings that are designed in the Baroque style, especially facades and towers⁶². These shields and cogs appear in different shapes on the tower of the Roman Cathedral in Port Said. These shapes contain various ornaments and inscriptions that are related to Coptic art, such as the cross, the monogram of Christ, human arms, birds, and so on (Fig. 13).

Conclusion

This research introduced a descriptive study to (13) remaining church towers in the East Delta region during the era of Muhammed Ali's Dynasty, in addition to analyzing their architectural and artistic styles. These towers are distributed among different areas in the governorates of the East Delta: Sharqia, Dakahlia, Ismailia, and Port Said. This study presented some notable results:

1. These towers are constructed in different parts of the East Delta churches, especially in the corners or over the entrance, in order to provide a kind of support to the tower building.
2. The study proved the variety in the design and planning of these church towers, which are built in different styles, such as the Neo-Gothic, Romanesque, and Baroque styles.
3. The number of towers varies from church to church, as the study showed that eight churches contain one tower, while five churches have two similar towers.
4. These church towers are built using different materials, such as bricks, stone, and concrete.
5. The study showed the variety in the decorative elements that are utilized in ornamenting these towers, such as arched niches and openings, shields and cogs, kernels and teeth shapes, and fish scales decorations.
6. The tops of these church towers appeared in various forms, such as a dome, a conical or pyramidal top, a square gallery, and so on.
7. The study proved that there are some mutual influences between the church towers in Coptic architecture and the minarets in Islamic architecture, such as the location, the formation, the kind of decorations, and so on.

62. سحر محمد القطري، (2011)، سراي الحقانية بمدينة الإسكندرية 1303هـ/1886م: دراسة أثرية معمارية، بحث في "كتاب المؤتمر الرابع عشر للآثار بين العرب: دراسات في الوطن العربي، الندوة العلمية الثالثة عشر، القاهرة"، ص 886.

References

Foreign References

- Aboseif (Doris), (1985), The Minarets of Cairo, The American University in Cairo Press.
- Ahmed, (G.), (1986), The Continuity of Ancient Egyptian Style in the Coptic Architecture, (PhD., Faculty of Archaeology, Cairo University).
- Arnold, Dieter, (2003), The Encyclopedia of Ancient Egyptian Architecture, Cairo.
- Bracans, Joes, (1990), The Key to Gothic Art, England.
- Bloom, Jonathan M., (1989), Minaret. Symbol of Islam, Oxford.
- Bloom, Jonathan M., (2013), The minaret, Edinburgh University Press, Edinburgh.
- Creswell (K.A.C), The Evolution of The Minaret with Special Reference to Egypt, in " *The Burlington Magazine for Connoisseurs, Vol. 30, 134-140* ".
- Dryer, George Herbert. (1896), History of the Christian Church: The preparation for modern times 600-1517 A.D, Curts & Jennings, New York.
- Emerson, Howland Swift, (1951), Roman Sources of Christian Art, New York.
- Fletcher, Banister, (1990), A history of architecture, university of London.
- Gottheil, Richard J. H., (1910), The Origin and History of the Minaret, in " *Journal of the American Oriental Society, Vol. 30, No. 2, 132-154* ".
- Grossmann, (P.), "The Basilica" in the Coptic Encyclopedia, vol. 2.
- Islamic beliefs, practices, and cultures, (2010 Edition), Tarrytown, N.Y.: Marshall Cavendish Reference.
- Pevsner, Nicolaus, (1953), An Outline of European Architecture, London.
- Sameh (Kamal el-Din), (1955), The Birth and Evolution of Minarets in Islam, in " *The Bulletin of the Faculty of Engineering, Cairo university, 1954 – 1955* ".

Arabic Sources

- على مبارك، (1994)، الخطط التوفيقية الجديدة، الطبعة الثانية، الهيئة المصرية العامة للكتاب، القاهرة.

Arabic References

- أبيذياكون نصحي عطية، (1998)، تاريخ إيباشية بورسعيد، معهد الدراسات القبطية، القاهرة.
- أثناسيوس المقاري، (2002)، مقدمات في طقوس الكنيسة: "قاموس المصطلحات الكنسية"، ثلاثة أجزاء، الطبعة الأولى، دار الكتب المصرية، القاهرة.
- أشرف سيد محمد البخشونجي، (2001)، دراسة أثرية معمارية مقارنة للتخطيطات الكنائسية القبطية، بحث في "مجلة كلية الآداب، جامعة سوهاج، عدد 24، ج 1، ص ص 135-167".
- السيد عبد العزيز سالم، (1958)، القاهرة مدينة المآذن، بحث في "مجلة المجلة، السنة الثانية، العدد 16".
- السيد عبد العزيز سالم، (1959)، المآذن المصرية. نظرة عامة عن أصلها وتطورها منذ الفتح العربي حتى الفتح العثماني، مؤسسة شباب الجامعة للطباعة والنشر، الإسكندرية.
- ألفريد بتلر، (1993)، الكنائس القبطية القديمة في مصر، ترجمة: إبراهيم سلامة إبراهيم، الهيئة المصرية العامة للكتاب، القاهرة.
- القس منقريوس عوض الله، (1947)، منارة الأقداس في شرح طقوس الكنيسة القبطية، الطبعة الأولى، القاهرة.

- أمينة أحمد مجاهد، (2016)، كنيسة العذراء وماريوحنا بالزقازيق 1925م: دراسة أثرية معمارية، بحث في "مجلة كلية الآداب، جامعة القاهرة، مج 76، ج 7، ص ص 62-13".
- بدر عبد العزيز بدر، (2011)، الطرز المعمارية لمدينة بورسعيد في عصر أسرة محمد علي باشا، بحث في "كتاب المؤتمر الرابع عشر للآثار بين العرب: دراسات في الوطن العربي، الندوة العلمية الثالثة عشر، القاهرة".
- بدر عبد العزيز بدر، (2018)، أبراج عمائر مدينة بورسعيد في عصر أسرة محمد علي باشا. دراسة أثرية معمارية، بحث في "مجلة كلية الآداب، جامعة بورسعيد، عدد 12، ص ص 720-782".
- تقيدة عبد الجواد، (2011)، واجهات القصور بمحافظتي الغربية والمنوفية بالنصف الثاني القرن 19 وحتى نهاية النصف الأول من القرن 20: دراسة أثرية للعناصر المعمارية والزخرفية، بحث في "كتاب المؤتمر الرابع عشر للآثار بين العرب: دراسات في الوطن العربي، الندوة العلمية الثالثة عشر، القاهرة".
- توفيق أحمد عبد الجواد، (1969)، تاريخ العمارة والفنون في العصور المتوسطة الأوروبية والإسلامية، المطبعة الفنية الحديثة بالزيتون، القاهرة.
- ثروت عكاشة، (د.ت.) فنون عصر النهضة والباروك، دار السويدي للنشر و التوزيع، أبو ظبي.
- ثروت عكاشة، (1994)، فنون العصور الوسطى، ضمن سلسلة موسوعة تاريخ الفن، الطبعة الأولى، دار سعاد الصباح، الكويت.
- حنا سميقة، (1970)، محيط الفنون، الجزء الأول، الفنون التشكيلية، دار المعارف، القاهرة.
- سامي محمد نوار، (2003)، الكامل في مصطلحات العمارة الإسلامية من بطون المعاجم اللغوية، الطبعة الأولى، دار الوفاء لندنيا النشر، القاهرة.
- سحر محمد القطري، (2011)، سراي الحفانية بمدينة الإسكندرية 1303هـ/1886م: دراسة أثرية معمارية، بحث في "كتاب المؤتمر الرابع عشر للآثار بين العرب: دراسات في الوطن العربي، الندوة العلمية الثالثة عشر، القاهرة".
- سعاد ماهر، (1966)، محافظات الجمهورية العربية المتحدة وآثارها الباقية في العصر الإسلامي، المجلس الأعلى للثقون الإسلامية، القاهرة.
- سومرز كلارك، (1997)، الآثار القطبية في وادي النيل. دراسة في الكنائس القديمة، ترجمة: إبراهيم سلامة إبراهيم، القاهرة.
- ضياء الدين حسن القاضي، (2002)، موسوعة تاريخ بورسعيد، دار الكتب المصرية، القاهرة.
- عاصم محمد رزق، (2000)، معجم مصطلحات العمارة والفنون الإسلامية، مكتبة مدبولي، القاهرة.
- عبد الرحيم ربحان، (2005)، أصل وتطور البازيليك، بحث في "مجلة الاتحاد العام للآثار بين العرب، القاهرة، العدد السادس".
- عبد الرحيم غالب، (1988)، موسوعة العمارة الإسلامية، الطبعة الأولى، بيروت.
- عبد الله كامل موسى، (1999)، تطور المنذنة بمدينة القاهرة من الفتح العربي وحتى نهاية العصر المملوكي. دراسة معمارية زخرفية مقارنة مع مآذن العالم الإسلامي، (رسالة دكتوراه، كلية الآثار، جامعة القاهرة).
- عبد المنصف سالم حسن، (2002)، قصور الأمراء والباشوات بمدينة القاهرة في القرن التاسع عشر الميلادي، مكتبة زهراء الشرق، القاهرة.
- فادية عطية مصطفى، (2019)، العمارة الكنسية اللاتينية بمدينة القاهرة في القرن العشرين. كنيسة سيده الكرمل نموذجاً، بحث في "مجلة كلية الآداب، جامعة سوهاج، العدد 52، ص ص 501-536".
- كلودين بيانون، (2008)، عمارة القرن التاسع عشر والقرن العشرين: الإسماعيلية، ترجمة: سيلين فريمور و رؤوف عباس، المعهد الفرنسي للآثار الشرقية، القاهرة، ص 45؛ أمينة أحمد مجاهد، العنصر المسيحية.
- كمال الدين سامح، (1983)، العمارة في مصر الإسلامية، هيئة الكتاب المصرية، القاهرة.
- مجدى عبد الجواد علوان، (2013)، مآذن العصريين المملوكي والعثماني في دلتا النيل. دراسة أثرية ضمن حلقة تطور التراث المعماري الإسلامي في مصر، الطبعة الأولى، مطبعة الكلمة، أسيوط.
- مجمع اللغة العربية، (1980)، المعجم الوجيز، مطابع دار التحرير، الطبعة الأولى، القاهرة.
- محمد أحمد عبد اللطيف، (2006)، مآذن العصر العثماني في مدينة القاهرة. دراسة أثرية معمارية، (رسالة دكتوراه، كلية السياحة والفنادق، جامعة حلوان).

- محمد أفندي عارف، (1897)، خلاصة الأفكار في فن المعماري، المطبعة الأميرية ببولاق، القاهرة، 1315 هـ.
- محمد أنور شكرى، (1970)، العمارة في مصر القديمة، القاهرة.
- محمد حماد، (1952)، الطراز والأعمدة المصرية، بحث في "مجلة العمارة، مج 8، عدد 7، القاهرة".
- محمد خليل نايل، محمد أمين عبد القادر، (1943)، تاريخ فن العمارة، المطبعة الأميرية ببولاق، القاهرة.
- محمد رمزي، (1994)، القاموس الجغرافي للبلاد المصرية منذ عهد قدماء المصريين حتى عام 1945، الهيئة المصرية العامة للكتاب، القاهرة، القسم الثاني.
- محمد ناصر عفيفي، (2019)، كنيسة الملاك ميخائيل بكفر الديار: دراسة أثرية معمارية فنية، بحث في "مجلة كلية الآداب، جامعة سوهاج، عدد 50، ج 1، ص ص 567-614".
- محمد هاشم أبو طربوش، (2010)، كنيسة السيدة العذراء بالريديانية بمحافظة الدقهلية، بحث في "كتاب المؤتمر الثالث عشر للأثريين العرب: دراسات في الوطن العربي، الندوة العلمية الثانية عشر، ص ص 1634-1672، القاهرة".
- محمود إبراهيم حسين، (1984)، تاريخ الفن الأوروبي، مكتبة نهضة الشرق، القاهرة.
- محمود حسن الملاح وآخرون، (2020)، تطور العمارة الداخلية للكنيسة القبطية في القرن العشرين، بحث في "مجلة العمارة والفنون والعلوم الإنسانية، الجمعية العربية للحضارة والفنون الإسلامية، عدد 22، ص ص 22-38".
- مصطفى حسن البدوي، (2008)، لطائف الإشارات في أسرار المآذن والمنارات، الوايل الصيب للإنتاج والتوزيع والنشر، الطبعة الأولى، القاهرة.
- مصطفى شيحة، (1988)، دراسات في العمارة والفنون القبطية، هيئة الآثار المصرية، القاهرة.
- منال محمود على محمد، (2019)، الوحدات والعناصر المعمارية المستخدمة في عمارة المداخل الكنائسية بالقاهرة، بحث في "مجلة وقائع تاريخية، مركز البحوث والدراسات التاريخية، عدد يوليو 2019، ص ص 449-504، القاهرة".
- نعمات إسماعيل علام، (1991)، فنون الغرب في العصور الوسطى والنهضة والباروك، دار المعارف، القاهرة.
- هبة محسن أبو عجيلة، أسماء سلامة، (2021)، الطرز الأوروبية في القرن التاسع عشر وتأثيرها على إحدى العوائل الباقية بمدينة بورسعيد بالتطبيق على كنيسة سانت أوجيني: دراسة تاريخية وصفية، بحث في "مجلة اتحاد الجامعات العربية للسياحة والضيافة، كلية السياحة والفنادق، جامعة قناة السويس، مج 21، عدد 4، ص ص 212-244".

Theses

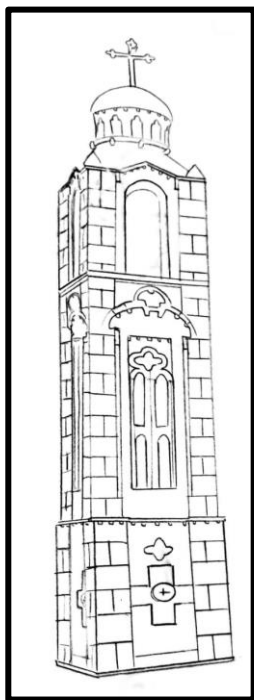
- أحمد رجب، (2016)، واجهات العمائر الدينية والمدنية بمدن القناة في عصر الأسرة العلوية (1220-1372 هـ/1805-1952): دراسة أثرية، (رسالة ماجستير، كلية الآداب، جامعة طنطا).
- أشرف سيد محمد البخشونجي، (1998)، دراسة أثرية للكنائس الباقية بمصر الوسطى خلال العصر الإسلامي، (رسالة دكتوراه، كلية الآثار، جامعة القاهرة).
- العربي صبري عبد الغنى، (2000)، التأثيرات الساسانية على الفنون الإسلامية من الفتح الإسلامي حتى القرن 15 الميلادي. دراسة أثرية فنية مقارنة، (رسالة ماجستير، كلية الآثار، جامعة القاهرة).
- أمينة أحمد مجاهد منشأوي، (2011)، التأثيرات القوطية على العمائر الإسلامية والقبطية بمدن القاهرة والإسكندرية خلال القرن التاسع عشر وحتى العقد الأول من القرن العشرين، (رسالة ماجستير، كلية الآثار، جامعة القاهرة).
- أمينة أحمد مجاهد منشأوي، (2015)، العمائر المسيحية في محافظة الشرقية ومدن القناة منذ عصر الخديوي عباس حلمي الثاني حتى نهاية عصر الأسرة العلوية (1892-1952). دراسة أثرية فنية مقارنة، (رسالة دكتوراه، كلية الآثار، جامعة القاهرة).
- داليا عادل جورج، (2005)، تطور التصميم الداخلي للعمائر القبطية في مصر، (رسالة ماجستير، كلية الفنون الجميلة، جامعة الإسكندرية).

- داود خليل مسيحة، (1995)، دراسة تحليلية للعمارة القبطية الدينية بمحافظة سوهاج من القرن الخامس حتلا القرن الثامن عشر الميلادي، (رسالة ماجستير، كلية الفنون الجميلة، جامعة حلوان).
- راجية إسماعيل أبو زيد، (1999)، تاريخ مدينة الإسماعيلية من النشأة حتى منتصف القرن العشرين، (رسالة دكتوراه، كلية الآداب، جامعة عين شمس).
- رفيق رضا زارع موسى، (2010)، العمارة الداخلية لكنائس القاهرة خلال النصف الأول من القرن العشرين، (رسالة ماجستير، كلية الفنون الجميلة، جامعة حلوان).
- سامر سمير يوسف، (2006)، تأثير الاتجاهات العقائدية على تصميم الكنائس في مصر، (رسالة ماجستير، كلية الفنون الجميلة، قسم العمارة، جامعة حلوان).
- عبد الخالق علي عبد الخالق، (2002)، التأثيرات المختلفة على الخرف الإسلامي في العصر المملوكي (648-923هـ/ 1250-1517م). دراسة أثرية فنية، (رسالة ماجستير، كلية الآثار، جامعة القاهرة).
- عبد المنصف سالم، (2000)، الطرز المعمارية والفنية لبعض قصور الأمراء والباشوات في مدينة القاهرة في القرن التاسع عشر الميلادي "دراسة مقارنة"، (رسالة دكتوراه، كلية الآثار، جامعة القاهرة).
- فادية عطية مصطفى، (2011)، الأديرة والكنائس الباقية بمحافظة الجيزة، (رسالة دكتوراه، كلية الآثار، جامعة القاهرة).

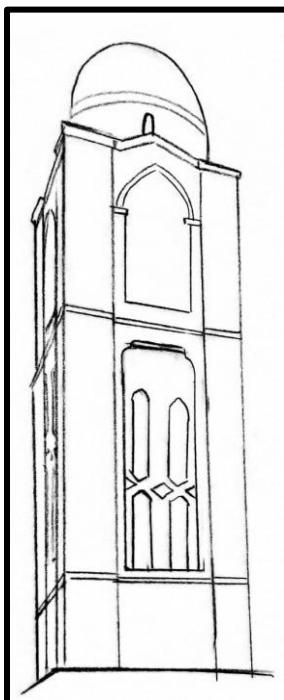
Internet Sites:

- <https://theodora.com/encyclopedia/c/campanile.html>, Accessed on: 26-11-2022.
- <http://www.gopp.gov.eg/>, Accessed on: 15-11-2022.

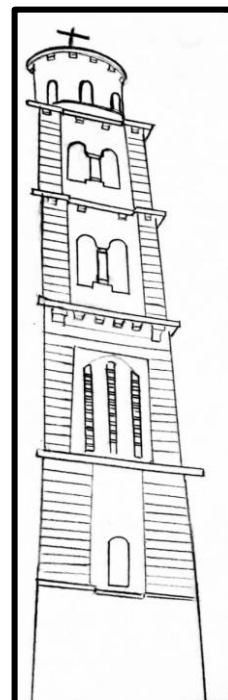
Figures:



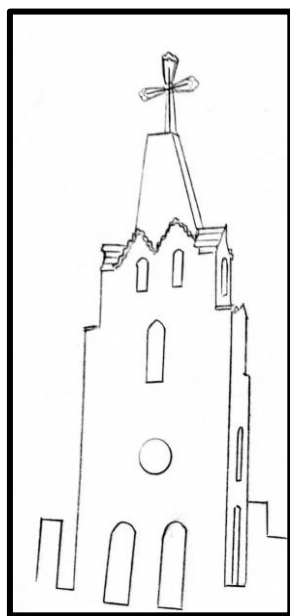
**Fig. 1: Tower of Angel Michael Church
(By the Researcher)**



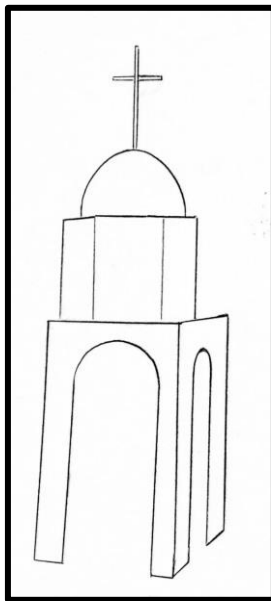
**Fig. 2: Tower of Saint Tadrus al-Mašriqī Church
(By the Researcher)**



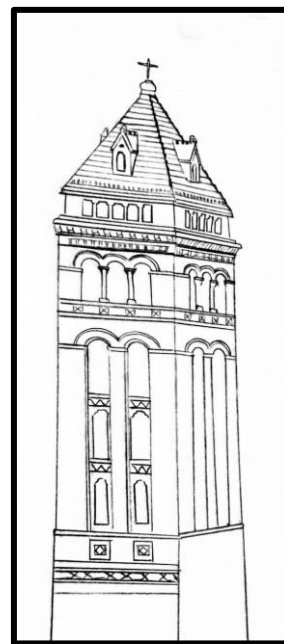
**Fig. 3: Tower of The Virgin and Maryouhanna Church
(By the Researcher)**



**Fig. 4: Tower of The Evangelical Church in Zaqāzīq
(By the Researcher)**



**Fig. 5: Tower of The Virgin Mary Church
(By the Researcher)**



**Fig. 6: Tower of Saint Mark Church (the French Church)
(By the Researcher)**

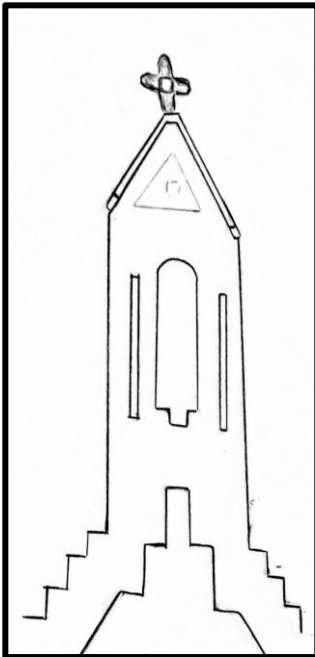


Fig. 7: Tower of The Evangelical Church in Ismailia
(By the Researcher)

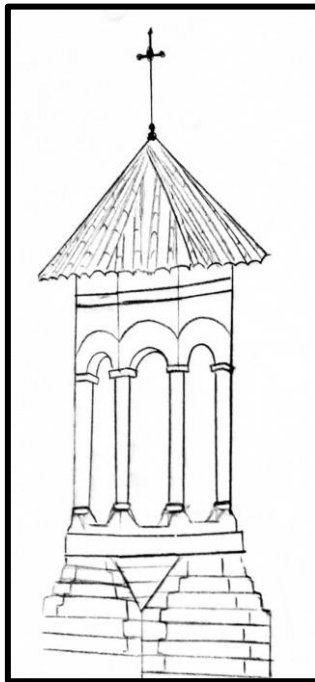


Fig. 8: Tower of The Nuns Church in Ismailia
(By the Researcher)

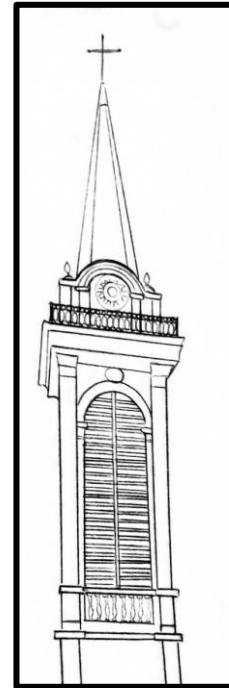


Fig. 9: Tower of Saint Eugenie Church
(By the Researcher)

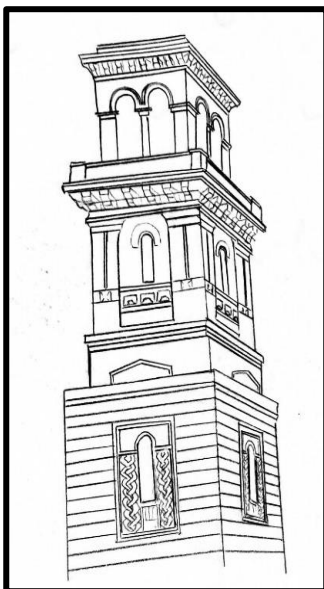
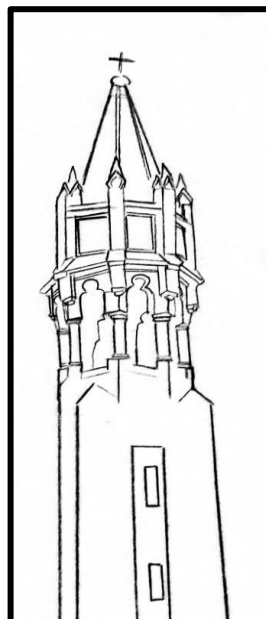


Fig. 10: Tower of the Saint Youhanna Church
(By the Researcher)



Pl. 11: Tower of the Italian Church
(By the Researcher)

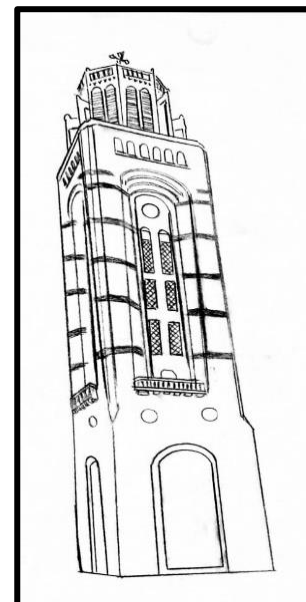
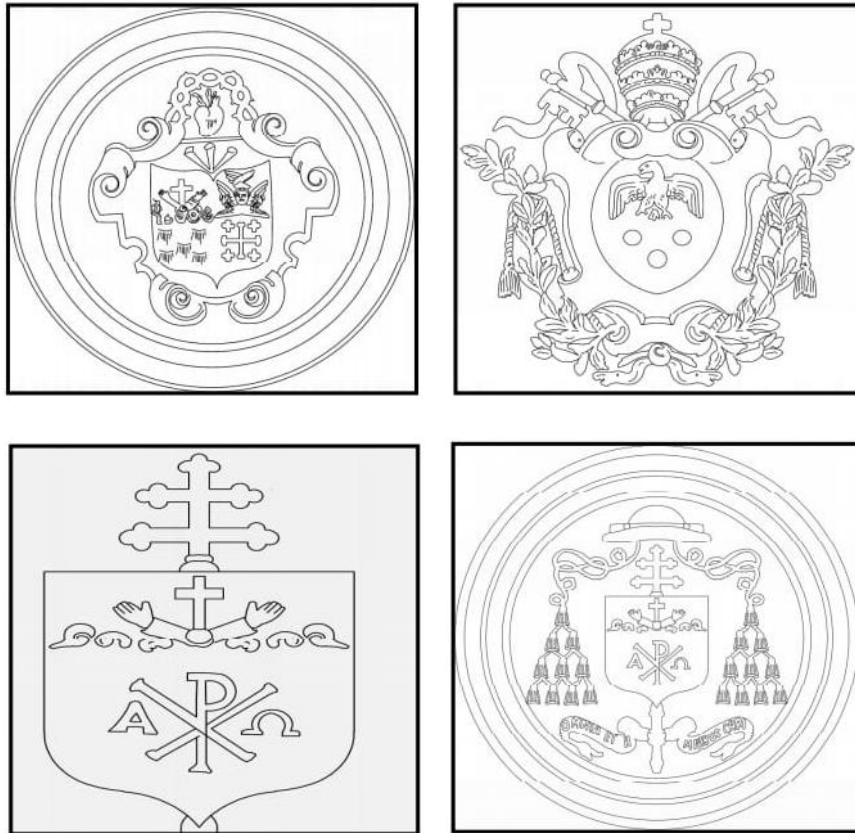
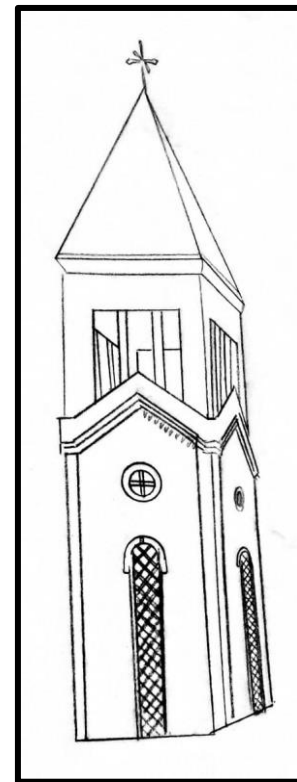


Fig. 12: Tower of the Roman Cathedral
(By the Researcher)

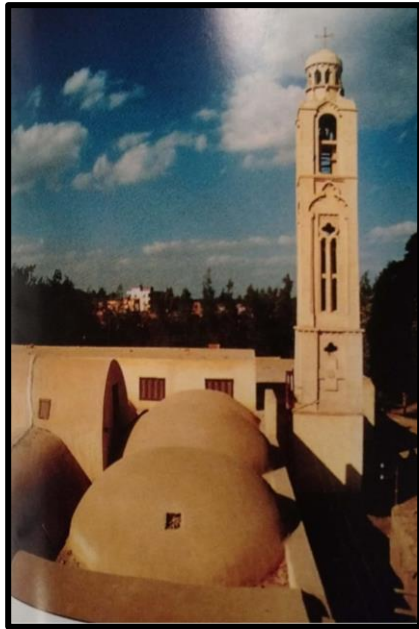


**Fig. 13: Details of the decorations on the base of the Roman Cathedral Tower
(By the Researcher)**



**Fig. 14: Tower of Saint George Church
(By the Researcher)**

Plates



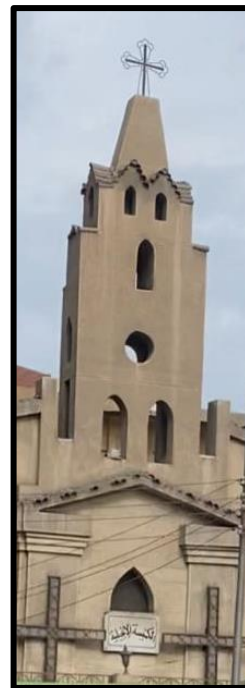
**Pl. 1: Tower of Angel Michael Church in *Kafr al-Dīr, Minia al-Qamḥ.*
(By the Researcher)**



**Pl. 2: The Two towers of Saint Tadrus al-Mašriqī Church *al-Jadīda, Minia al-Qamḥ.*
(By the Researcher)**



**Pl. 3: The two towers of The Virgin and Maryouhanna Church.
(By the Researcher)**



**Pl. 4: Tower of The Evangelical Church in *Zaḡāzīq.*
(By the Researcher)**



**Pl. 5: Tower of The Virgen Mary Church at al-Raydania.
(By the Researcher)**



**Pl. 6: Tower of Saint Mark Church (the French Church) in Ismailia.
(By the Researcher)**



**Pl. 7: Tower of The Evangelical Church in Ismailia.
(By the Researcher)**



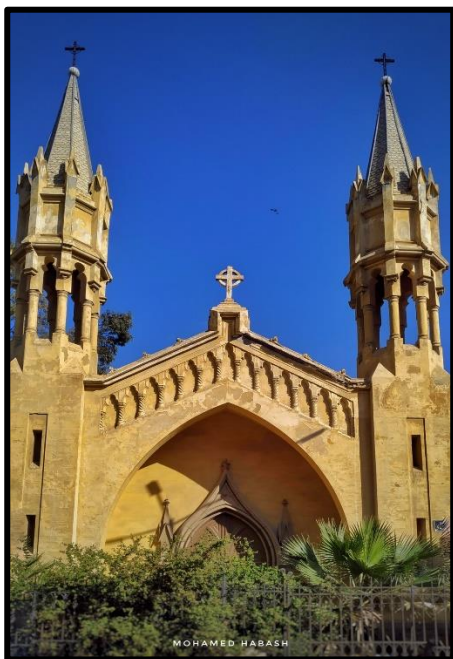
**Pl. 8: Tower of The Nuns Church in Ismailia.
(By the Researcher)**



**Pl. 9: Tower of Saint Eugenie Church in Port Said.
(By the Researcher)**



**Pl. 10: The two towers of the Saint Youhanna Church in Port Said.
(By the Researcher)**



**Pl. 11: Two towers of the Italian Church in Port Said.
(By the Researcher)**



**Pl. 12: Tower of the Roman Cathedral in Port Said.
(By the Researcher)**



Pl. 13: Two towers of Saint George Church in Port Said.

(By the Researcher)

برج الكنيسة وتطوره المعماري في شرق الدلتا في عصر أسرة محمد علي

حسام حسن حميدة¹ معتر أحمد مرعي²
¹ قسم الارشاد السياحي - كلية السياحة والفنادق - جامعة مدينة السادات

الملخص العربي

يعتبر برج الكنيسة واحدا من أهم العناصر المعمارية المسيحية والسمات المميزة للكنائس بشكل عام، حيث تتركز وظيفته الأساسية في إعلام المسيحيين بأوقات الصلاة اليومية، كما ارتبط وجوده بوظيفة أخرى ذات طبيعة روحانية تتمثل في اعتقاد المسيحيين بأنه وسيلة ضرورية لهدايتهم وانارة طريقهم وإرشادهم لكي يجدوا طريقهم إلى الله سبحانه وتعالى، لذا فقد جرت العادة على تسميته بـ "المنارة"، خاصة في مصر ودول الشرق الأوسط. وبالنظر إلى تخطيط وتصميم برج الكنيسة، نلاحظ أنه يتكون من بناء مرتفع يتكون من قاعدة مربعة أو مستطيلة يعلوها عدة طوابق يتوجها في النهاية قمة على هيئة قبة أو ذات شكل مخروطي، وقد اعتاد معماريو العصر المسيحي على تشييد البرج أعلى المدخل أو في أحد الأركان، وقد يكون متصلا بمبنى الكنيسة أو منفصلا عنه. وتجدر الإشارة إلى أن محافظات شرق الدلتا يوجد بها عدد من أبراج الكنائس الباقية والتي يرجع تاريخها إلى عصر أسرة محمد علي باشا، وتتميز تلك الأبراج بتنوع طرزها وأنماطها المعمارية، وخاصة الأوروبية منها مثل الطراز القوطي والطراز الرومانسيكي وطراز الباروك، هذا إلى جانب تنوع مواد بنائها وعناصرها المعمارية والزخرفية. لذلك يهدف هذا البحث إلى دراسة الطرز المعمارية والفنية لأبراج كنائس شرق الدلتا في عصر أسرة محمد علي.

الكلمات الدالة: برج الكنيسة - المنارة - شرق الدلتا - أسرة محمد علي