

The evolution of the architectural design methodology with different time and spatial periods (A study of Egyptian architecture in the era of openness)

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Abstract:

The research is a study of the most important transformations and developments in architectural thought in Egypt especially since the end of the nineteenth century until now with the mention of the most important models buildings that show that this development in architecture. Therefore, the research problem is the control of western architecture, which is rumored to be a building suitable for any place and time, and a decline in the architectural output expressing the local revolutions of each country. Some general concepts related to architecture were reviewed by reviewing its movements and studies, seeing the concepts of architectural thought, and knowing the general concepts and their different systems that had a direct impact on architectural thought. He then analyzed some examples of buildings in the era of economic openness and then used this in the construction of architectural thought and how architectural thought developed and the Egyptian architectural production became parallel to the intellectual development observed while preserving the principles of architectural culture. Given the period in question, we are witnessing a cultural and intellectual crisis that Egyptian intellectuals and architects have gathered on, affecting all fields, i.e. it is a general crisis, and since architecture is a cultural product, it has suffered from this crisis and continues, even in the current period we produce buildings and do not produce architecture, so the architectural experience at the moment is a translation and expression of the cultural level of the society. Our society has become a huge gap between the culture of society and architectural thinking, which made the society not to care about what is placed in the urban composition of its cities and villages, which led to a general imbalance in the cultural balance of architecture, and the result was the spread of architectural chaos that has wasted Egypt's civilization and values and caused the distortion of Egypt's face with a building free of any aesthetic values or civilization.

Key Words:

Thought- Architectural- Development- Buildings

الملخص:

البحث عبارة عن دراسة لأهم التحولات والتطورات في التصميم المعماري في مصر خاصة منذ نهاية القرن التاسع عشر وحتى الآن مع ذكر أهم الأمثلة التي تدل على هذا التطور في العمارة. لذلك تكمن مشكلة البحث في رصد هذا التطور و محاولة توثيقه مع اختلاف الزمان و المكان ، وتراجع الناتج المعماري الذي يعبر عن الاحداث المحلية لكل دولة. تمت مراجعة بعض المفاهيم العامة المتعلقة بالعمارة من خلال مراجعة تحركاتها ودراساتها ، والاطلاع على مفاهيم الفكر المعماري ، ومعرفة المفاهيم العامة وأنظمتها المختلفة التي كان لها تأثير مباشر على الفكر المعماري ، ثم قام بتحليل بعض أمثلة المباني في العصر. من الانفتاح الاقتصادي ثم استخدم هذا في بناء الفكر المعماري وكيف تطور الفكر المعماري

وأصبح الإنتاج المعماري المصري موازيا للتطور الفكري الملحوظ مع الحفاظ على مبادئ الثقافة المعمارية. أزمة فكرية اجتمع عليها المثقفون والمعماريون المصريون ، طالت جميع المجالات ، أي أنها أزمة عامة ، وبما أن العمارة هي نتاج ثقافي ثقافي ، فقد عانت من هذه الأزمة وما زالت مستمرة ، حتى في الفترة الحالية ننتج المباني ونقوم بها. لا تنتج الهندسة المعمارية ، لذلك فإن التجربة المعمارية في الوقت الحالي ترجمة وتعبير عن المستوى الثقافي والثقافي للمجتمع. أصبح مجتمعنا فجوة كبيرة بين ثقافة المجتمع والتفكير المعماري ، مما جعل المجتمع لا يهتم بما يوضع في التكوين العمراني لمدنه وقراه ، مما أدى إلى خلل عام في التوازن الثقافي للعمارة ، و كانت النتيجة انتشار الفوضى المعمارية التي أهدرت حضارة مصر وقيمتها وتسببت في تشويه وجه مصر ببناء خالٍ من أي قيم جمالية أو حضارة.

الكلمات المفتاحية:

الفكرة؛ المعمارة؛ التطوير؛ المباني

Introduction

Given the period in question, we are witnessing a cultural and intellectual crisis that Egyptian intellectuals and architects have gathered on, affecting all fields, i.e. it is a general crisis, and since architecture is a cultural product, it has suffered from this crisis and the situation is continuing, even in the current period we produce buildings and do not produce architecture, so the architectural experience at the moment is a translation and expression of the cultural and cultural level of society. Our society has become a huge gap between the culture of society and architectural thinking, which made the society do not care about what is placed in the urban composition of its cities and villages, which led to a general imbalance in the cultural balance of architecture, and the result was the spread of architectural chaos that wasted Egypt's civilization and value and caused the distortion of Egypt's face with a building free of any aesthetic values or civilization.

Research problem

The world and Egyptian architectural production suffers from the control of western architecture, which is rumored to be a building suitable for everywhere. Most architects have followed the world architectural thought fully as it is the model to be followed in order to move forward, and in return for this control the architectural arena is witnessing a decline in the architectural production expressing the local cultures of each country.

Search objectives

- 1-Taking advantage of past experiences in changing the contemporary architectural situation.
- 2-Stay away from attempts of cultural and technical alienation to which Arab and Islamic countries are exposed.

Importance of the research

Linking architecture as a science to different political, economic and social sciences, which achieves a more comprehensive vision that helps us to objectively address our architectural problems within an integrative framework.

1-The concept of architecture

When the name architecture in the Western world appeared in its modern sense in the 16th century, there was no separation between art and science. The architects of that period boasted of their scientific knowledge, philosophies, arts and various public knowledge, and most of the

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time we found the architect practicing many other professions and even practicing construction directly, contrary to what we find the architect at the moment. Architecture as we mentioned includes everything around us and it is not possible to determine what is a building and what is not a building, all the installations, buildings, bridges, streets, squares and under the building of different names.

2-Architectural thought

Thought in general is commonplace for many people, yet it is one of the most mysterious and difficult concepts to define. This may be due to the fact that thought is not only about understanding the mechanism by which it is being carried out, but it is a complex multi-step process in which many factors are involved and influenced by many factors. It's also an activity that happens in the brain after feeling a certain reality, which leads to a mental interaction between abilities of intelligence and this feeling and the experiences that the thinker has, and this happens based on a motive to achieve a particular goal away from the influence of obstacles.

Definition of architectural thought

It is a thought based on finding an interactive balance between man (both material and moral) and the environment (both physical and moral), using appropriate methods and construction materials.



Fig (1) Eliseyev Emporium (1903) in ST. Petersburg, Russia Source: History of Architecture

3-Early modern architecture

3-1 Pre Modern Movement

This movement existed in the late 18th century and coincided with the Industrial Revolution, which was called the Battle of the Models between classical and Gothic and the triumph of classicalism in the late 19th century. During this period, the industrial revolution was witnessed and the separation of the old and the modern began, and the art NovEaU building, which was the product of premodern architecture, appeared.

3-2 Modern Movement

Technological and scientific progress in the first half of the twentieth century has had a strong impact and concepts of material thought have been established that move away from spiritual and heritage aspects as well as from social and cultural dimensions, reflecting on literature, art, architecture and urbanization, where they have moved away from the reality and values of man. The emergence of the Bau House School in eastern Germany played a major role in consolidating the architecture of modernity, and the 1928 World Meeting of Modern Dr. Ahmed Al Hussein tohlob 'The evolution of the architectural design methodology with different time and spatial periods (A study of Egyptian architecture in the era of openness)' Mağallaġ Al- 'imārah wa Al-Funūn wa Al-'ulūm Al-Īnsāniyyaġ·vol9 no.45·may 2024. 86

architecture in the presence of Le Corbusier had an impact on the prevailing ideas urging that the introduction of heritage and return to the old is reactionary and backward and has had a major impact on the loss of architecture and facades of aesthetic or decorative elements and the trend towards explicit architecture far from the human scale.



fig (2)– Bao House School
Source: History of Architecture

3-3 post modernism movement:

At the beginning, this movement was known as being against modernity, a return to traditionalism and heritage, to social and cultural values and a restoration of the identity and personality of society.

This is despite the fact that it coincided with the second industrial revolution in the 1940s and 1960s, with the development of new building materials, the changing concept of users and their ability to absorb advanced technology, as well as the growing information and communications revolution. In this global movement, intellectual currents returned to traditional, as engineers around the world began to look for the genre in architecture instead of simplification and not to use the architecture of the past, which was deprived of modern architecture, and the trend of merging modern forms with classical architecture has emerged as a return to heritage and traditionalism by mixing the old and the modern.



Fig (3) Portland_Building_1982
Source: History of Architecture
<https://www.skyscrapercenter.co>
Portland_Building last Access 9-8-2022



Fig (4) "Humana Building
Source: History of Architecture
Available on:
<https://www.skyscrapercenter.com/building/humana-building/10523> last
Access 9-8-2022

4- The industrial revolution and its impact on architectural thought

By the end of the 19th century, the impact of the industrial revolution became evident in the fields of architecture and urban planning, where the industrial revolution helped to increase energy and develop construction and materials technology, leading to the rapid implementation of cities and the extension of urbanization. The use of steel, iron and reinforced cement has helped to increase span between columns and create multi-story buildings. In 1786, Victor Lewis used the wrought to cover the roof of the Paris Theatre, which provided wide seas of unprecedented distance. New industries and scientific innovations have had a return on the field of construction on the one hand and mechanical work on the other, for example elevator works such as the Otis mechanical elevator (Otis), which helped produce new types of buildings such as skyscrapers. Many new theories and ideas have also emerged, such as open projection, structural system and glass facades.



Fig (5) J Golden Gate Bridge– Available on: www.al-7up.com last Access 12-5-2022

5- The beginning of economic openness and expansion of the private property of the Egyptian individual

After the victory of the Egyptian army on October 6th, 1973, and the call to boil peace and end wars, which brought about fundamental changes in Egyptian society and a major shift in all fields (political, economic, social, cultural), one of the important events that affected architecture and urbanization was Egypt's agreement with the INTERNATIONAL Monetary Fund (IMF) in 1975 and the beginning of the infusion of foreign funds in Egypt, where the state abandoned socialist thought and orientation and moved towards openness to the world and capitalist thought and embodied this thought in the "policy of economic openness" adopted by the state through the issuance of a set of laws, the most important of which was the law of economic openness, which was aimed at turning the Egyptian economy into an open economy. Allowing international capitalism to enter Egypt's banking sector.

6- Architectural response to economic openness policy

Architecture in Egypt was influenced by the general openness of Egyptian society at all levels and encouraged the freedom of consumer openness to import a building strange spirit and the formulation "European-American" as the ideal modern civilized architecture and it was progressed by the continued dispatch of educational missions abroad to study architecture and the influx of Egyptian architects from abroad, after completing their studies of western architectural ideas and concepts, even the architecture curricula in Egyptian universities were towards me inside them, and the ideas of the modern Western orientation represented this period as a continuation of Western dependency and the choice of the "Western model" is the preferred model of Egyptian architecture. That period has witnessed architectural and urban activity accompanying the policy of openness and forward-looking thought of Egyptian society where

the structural formulations and new architectural ideas are not compatible with the local environment but express the society and its orientations and aspirations in addition to the materials and methods of construction hidden from them (aluminum, reflective glass, glass curtains, pre-industrial notes) due to the flow of foreign investments and opening the way for institutions, companies and houses of foreign expertise to work within Egypt.

Example of the most important buildings of this period

Ramses Hilton Architect's Hotel on the Walkerton Bold Sheraton Island Architectural Hotel "by Salah Shehata. "

Semiramis Intercontinental Cairo Architect " Benjamin Thompson in partnership with Sabour Engineering Office. Al Maadi Hotel on the Nile Corniche. Marriott Hotel for the architect "Sayed Madboli".

Sadat Academy of Management Sciences in the hostile "Guest House" the Architect is Rafat. " Kairu plaza Hotel Administrative Project on the Nile Corniche.

Architectural production of public buildings in Egypt for this period reflects modern Western architecture in the ideas, formulation and architectural treatments of the facades where the use of large flats of reflective glass and the use of aluminum strips in the formation of facades with the use of iron structural structure and the towering heights of buildings "towers" were unfamiliar to Egyptian society and all these architectural treatments do not suit the Egyptian climate and environment.

7- Analysis of architectural models of the architecture of public buildings in Egypt during that period

Model: Semiramis Intercontinental Architectural Hotel: Benjamin Thompson, 1981

Location: Nile Corniche- Tahrir square-Cairo

The architectural output of public buildings of this period is analyzed according to Charles Jenks' vision of modern architecture.

1-The exterior expression of the building is characterized by directness, candor and non-cost of architectural expression through the large, regular concrete mass.

2- The exterior expression of the building is simple in its formal structure, vocabulary and architectural elements.

3- This is illustrated by the regular significance of the building and the definition of the architectural vacuum.

4- The facades of the building are characterized by abstract architectural vocabulary using sharp straight geometric lines free of any additions with the use of a duplicate modular unit in the processing of the façade.

5- This is illustrated by the abstract architectural mass free of any costly architectural additions and the emergence of pure, modular openings free of any additions.



Fig (6) J Symramis Intercontinental Available on: www.emeco.com last Access 8-4-2022

6- The building is characterized by a few coordinates architectural vocabularies and does not represent a language of dialogue that addresses the culture of the recipient nor expresses the community.

7-The architectural formulation of the facades shows that there are no formative decorations expressing any classical styles, as the building expressly declares its total rejection of the decorations through horizontal ends.



Fig (7) J Symramis Intercontinental Available on: www.emeco.com
last Access 8-4-2022

8- Moving towards historical and heritage roots

a) Heritage revival

According to the pioneers of this trend, heritage is given to contemporary Egyptian architecture personal identity, we find a team linking architecture to its historical roots, whether it is (Pharaonic, Coptic, Islamic) and the rooting of its aesthetic, architectural and civilizational values, and finds in this rooting a way out of the crisis and an entrance to solve the problem of architecture in Egypt, describing the experiences of Hassan Fathi and Ramses Wisa and the ideals that embodied in their architecture the elements of the local society and manifested in their buildings the creative abilities of the Egyptian artisans.

First: Inspiration from pharaonic heritage

Supreme Constitutional Court Building 2001

Architects Ahmed Mustafa Meto - Ahmed Khaled Aliwa

The architects in the design of the building took care to achieve the functional purpose of it to the fullest while giving it a gift in form and luxury, so they used the vocabulary of the composition emanating from the Pharaonic style in addition to the great heights of the sense of awe and this distinguishes the Pharaonic style.

The Luxor Temple-style Supreme Constitutional Court building was built on 14 pharaonic obelisks on the ground floor and 14 obelisks from the first to the fourth floor, taking into account the design of Egyptian temples, columns and crowns decorated with lotus flower and papyrus.

The columns were 28 meters high, and a lotus-shaped fountain was erected.



Fig (8) J The main façade of the Supreme Constitutional Court
Available on: www.emeco.com

last Access 10-4-2022



Fig (9) Lotus columns adorn the façade of the building
Available on: www.emeco.com

last Access 10-4-2022

Second: Inspired by the heritage of local architecture

Hassan Fathi is considered the most prominent who revived the methods of local design and construction, especially the old Nuba building, and one of his most famous works is the village of Qurna, which was built between 1946 and 1953, and as an extension of this trend emerged in the 1980s and 1990s many architectural works that focused mainly on buildings and residential palaces on the outskirts of Cairo city in Harania, Badrashin and others, in addition to using this trend in the establishment of many tourist villages in Hurghada, Sharm el-Sheikh and others. This illustrates a surprising paradox as Hassan Fathi, when he began calling for this trend, it was under the slogan "Building for the poor", but over time this trend has been harnessed in the construction of palaces, private residences and tourist resorts for the rich.

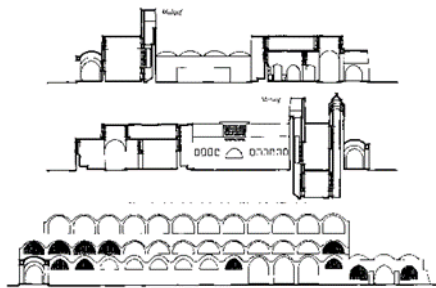


Fig (10) Footage of al-Qurna village buildings. Available on: www.emeco.com
last Access 10-4-2022

Egyptian Opera House Building 1988

Japan World Cooperation Authority (JICA) (Nikken Sikhei) (

Some vocabulary of Islamic architecture was used, and the ratios were increased to the opened facades, as well as the historical touch of Arab architecture so that the Khedive theater is located on the left side and is matched on the right side by a similar square and the same area as well as the Islamic decorations of the doors.

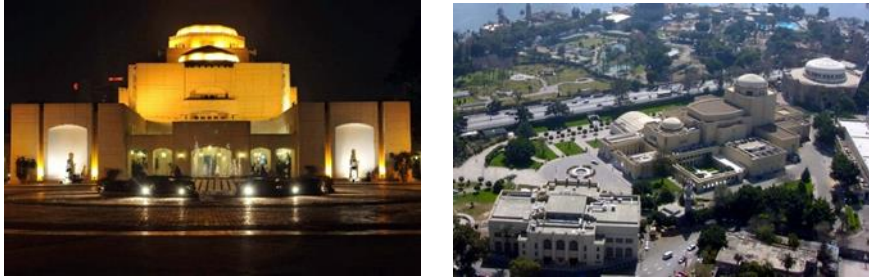


Fig (11) Egyptian Opera. Available on: www.emeco.com
last Access 10-4-2022

9- Direction 2 (Universal Architecture)

Depends entirely on western thought and its architectural as a source of its ideas, where it calls for the universality of architecture as a result of the splendor of the developed world and its different directions, and the work of its architects to apply its ideas and principles without adaptation and without exploitation or development of local craft skills and without regard to environmental and climatic factors, this current does not view architecture as a cultural building that has its heritage rewards that move from one era to another, but is seen as an expression of the material civilization of the developed world that must be associated with it and deal with its global language. Through this trend, the architect receives the messages of the Western architect and transports them within the urban space of Egypt, regardless of the different social and cultural values of the two communities and the factors and circumstances that have produced this architecture that currently prevails: The architecture of advanced modernity and postmodern architecture, and this was reflected in the Egyptian architectural production.

10-New Administrative Capital

In less than 6 years, the dream has turned to reality. The administrative capital is the project of Egypt of the future, and became one of the symbols of the new republic, which attracted the attention of the whole world. Not only will it be limited to ministry buildings, but also it includes a development in the government's thinking and performance in the coming period, and the government has completed the preparation of a guide to serve as a document identifying the role and responsibility of each participant in the transition process, supported by indicators to measure performance, and the plan for the transfer of staff to the administrative capital has been divided into major activities for specific entities to implement, such as: information infrastructure, human resources, and incentives for the transition to the new capital, including the provision of housing units for employees to be transferred from during the provision of payment facilities, to facilitate them, as well as the means of transportation to be provided, and their routes.

Hence the development in architectural thought and design began in a big way until the buildings of the administrative capital reached the world and became under the eyes of all peoples, and one of the most important of these projects is the project of the Iconic Tower.

11-1 The design of the iconic tower in the new administrative capital

All eyes are on the iconic tower in the new administrative capital, where it will be the highest building in Africa, although in recent years there have been a number of contenders for the title of Africa's tallest tower, including the Leonardo Tower in Johannesburg, South Africa (227 meters) and the Bank of Africa Tower in the Moroccan capital Rabat (250 meters), but all attempts are not comparable to the iconic tower in the new administrative capital, which stands among the most important towers in the world, and has been based on elements that reflect ancient Egyptian history, as well as looking to the future, these are some facts about the tower's distinctive design:

- 1-The architectural design of the iconic tower was inspired by ancient Egyptian style and decorative art or Art Deco.
- 2-The proportions and dimensions of the tower were simulated from the original design and dimensions of the Pharaonic obelisk, which is one of the most important Egyptian symbols in the whole world, which embodies geometric perfection and structural stability.
- 3-The Nile was present in the design by representing it in the canals connecting the corners of the project to the land.
- 4-The façade of the tower is inspired by the design of the lotus flower, which symbolizes ancient Egyptian civilization, and has an environmental concept.
- 5-The design has Art Deco-inspired vents that rotate according to the sun's mile, reducing heat throughout the day.



Fig (12) The iconic tower of the new administrative capital

Available on: <https://www.skyscrapercenter.com/building/iconic-tower/34420>

last Access 27-5-2022

11-2 Parliament building in the new administrative capital

The House of Representatives building in the new administrative capital is an architectural masterpiece launched by Egyptian hands in accordance with international standards, a huge project completed in a record time not more than a year and a half, and the building is decorated from the outside with a dazzling night lighting system. The hall also features two middle and upper domes, and is one of the largest domes implemented in the world, and is supposed to enter the Guinness Book of Records, noting that the metal median dome weighs 320 tons and was installed by 3 cranes, and the upper dome is 57 meters in diameter weighing 250 tons was fully implemented and poured with a modern machine, pointing out that the height of the building reaches 75 meters.



Fig (13) layout -Parliament building in the new administrative capital Available on:
<https://www.arabcont.com/english/project-589> last Access 27-5-2022



Fig (14) Parliament building in the new administrative capital Available on:
<https://www.arabcont.com/english/project-589> last Access 27-5-2022

Results

- 1- Architectural thought is influenced by the surrounding climate of ideas and beliefs and develops with the development of the society in which it is located.
- 2- The architectural output of each era and everywhere is only a mirror of this era reflected in the events that took place.
- 3- Looking at past experiences of similar events, we find that the current situation can be exploited to create new architectural trends that suit and express the Egyptian environment.
- 4- There is a relationship between architectural production and social aspects and evolution affects architectural thought with different appearances.
- 5- Influenced by architectural thought, Egyptian culture, use of technology in design and implementation of architectural thought.
- 6- Presenting the model of the new administrative capital in a sophisticated way and preserving the Egyptian architectural gene.

Recommendations

- 1- Egyptian architects are urged to take advantage of the situation and interact with it to create new architectural currents in keeping with the New Egyptian era.
- 2- In the architecture departments, we should be interested in teaching transformations in international architectural thought in order to learn about the principles and methods of application and what is appropriate with local architecture to reach a suitable development method for it, and can be subjected to experience.
- 3- Encourage graduate students and researchers to deal with and analyze contemporary architectural thought in Egypt and compare it to global trends in an analytical way that explains the extent to which each direction is applied to benefit from it in a suitable development and can be subjected to experience
- 4- The development of architectural critical thought through seminars and conferences, which helps to open the new mind with different views in each architectural product, also spread cultural awareness among architects.

- 5- The engineer who designs the cultural roots of society so that he can produce a building integrated with this society and its civilization.
- 6- Interacting with global architectural trends in community integration.
- 7- Reaching an Egyptian architectural thought together that is in keeping with the global development of the accident, characterized by a global and local capacity at the same time by interacting in digression with developments at the international level in all fields.

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