

Research Article

Observation and analysis of Cairo squares among different time periods

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Abstract

Squares are considered a container of the events and activities that happen in the urban environment. This is why we should preserve them as they contribute in the development of the civil life in the city as well as encouraging people to visit it. This will reflect on improving communities from environmentally, socially, financially and urban wise. The severe deterioration of Cairo squares that is accompanied by dense traffic and the harmony in spaces have vanished. As well as the disappearance of proportions and lack of balance. All these points became an input for this research to determine the current problems that the urban squares in Cairo suffer from. The research will work by choosing ten urban squares in Cairo in different time periods that represent the urban squares in Cairo. An observational, analytical and evaluation will be held to form some solutions to decrease the pressure on the squares' users and to fulfill their needs. The research is divided into three parts. The first part is concerned with observing and analyzing these squares. The second part is concerned with evaluating these squares and holding a comparative study between them. The third part is the results and recommendations.

Keywords: *Square Classification, Architectural formation, Furniture Elements , Human Activities ,Creativity and Formation - Function*

1. Introduction

Cairo's squares have been used all through history for training, gathering and showing armies. They are also used as public parks for various celebrations, feasts and events such as sports, horsemanship and shooting. In the present period, squares suffer many urban and architectural issues which drove people away from gathering there and enjoying their time. Thus, the current study focuses on the most important squares at Cairo which belong to different epochs and represent the urban and architectural history of Cairo. These squares are different with respect to the architectural and urban formation in addition to function and importance to Cairo. This way, the urban and architectural formation of Cairo can be analyzed thoroughly to stand upon the most pressing issues Cairo suffers from nowadays, in order to find comprehensive solutions and determine the best square in the achievement of each standard of urban design standards and determine the best Square in Cairo in terms of achievable for all urban design standards. It focuses on Al-Hussein Square from Fatimid Cairo, Ramsis and Talaat Harb Squares from Cairo Kdiop, squares of Al-Korba, Roxi and Al-Hegaz at

Heliopolis, As-Sa'ah Square located in Nasr City, and finally Mustafa Mahmoud and Lebanon Squares at Al-Mohandessin

2. Analysis of Cairo squares

2.1 Al-Hussein Square

It is located in Old Cairo at Al-Hesenyah Quarter in Fatimid Cairo, and it is considered one of the oldest squares which dates back to the Fatimid era. At its North Eastern border lies Al-Hussein Mosque, built in 1154 A (Hussein Square - Wikipedia, 2016) and Al-Azhar Mosque is located at its South. At its Western side lies Khan Al-Khalili market which is considered one of the oldest Eastern markets since the Mamluk's period and up till now, as old as 600 years. Al-Azhar Bridge passes over it, and Al-Hussein Hospital looks over it.

Square Classification in Terms of Formation, Closing and Function, Figure1

Al-Hussein Square has an indefinite formation but is defined by buildings; besides, the bridge passes over it to act as a ceiling. A religious atmosphere spreads all over the Square as the mosques of Muhammad Bey

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Abu Al-Dahab, Al-Azhar and Al-Hussein are located at it. It is also characterized by being a trade and touristic square stores, hotels such as Al-Hussein Touristic Hotel and Al-Islamy Hotel, coffee shops and restaurants which attract tourists from inside Egypt and are located there.

Urban Characteristics

Ratio: The Square is known for its width where the ratio between its length and width is more than 1:1.

Scale: As a commemorative Square, its longest side reaches 140 meters. Also, the richness of the archaeological details of the buildings surrounding it such as Al-Hussein Mosque, Al-Azhar Mosque, Khan Al-Khalili and Al-Hussein Hotel have further enriched its humanistic aspect, especially, that Al-Azhar Bridge visually divides the space into three sub-spaces.

Containment: It is very poor at Al-Hussein Square due to the void space when comparing the height to the low heights of the buildings surrounding it, and the ratio can reach 1:11.



Fig.1 Square's Urban Composition

Architectural formation, Figure (1)

- **Rhythm:** The vertical rhythm dominates the Square as mosque's minarets such as Al-Hussein Mosque and Al-Azhar Mosque overlook it. The elements of Islamic architecture in designing facades which are governed by vertical pattern were also used.
- **Balance:** Balance in the architectural formation for the Square's façade was created by the balance between the vertical formation which appears in the minarets and the shape of the openings in addition to the vertical and horizontal formation at the end of the buildings surrounding it.
- **Repetition:** It appears in the shape of Al-Hussein Mosque's openings which occupy a huge space in the square and the façade of Al-Hussein Mosque and Khan Al-Khalili. Also, the colors used in the facades are repeated.
- **Openings:** There are various shapes for the openings used in the facades of the buildings overlooking the Square which range from round arched openings to pointed and rectangular arched openings. This design gives the facades an Islamic style and created diversity in the architectural formation of the square's facades.

- **Colors:** Beige is the dominant color for the buildings' facades which gives a unified general character of the Square.
- **General style:** The Square's general character is Islamic as it embraces many Islamic establishments and the Islamic elements of architectural formation are used in the design of the facades.



Fig.2 Square's Architectural

Furnishing Elements

Natural Elements: The Square has some palm trees and green grass, and there is no trace for water elements.

Non-Natural Elements: There are no seats for pedestrians or even guiding signs. In addition, there is no trace for garbage bins around the Square, and no furniture for pedestrians exists except for street lighting columns.

Human Activities

Walking and Picnicking: The front space of Al-Hussein Mosque is used for walking and shopping as it is full of trade and touristic stores in addition to Khan Al-Khalili. There are also street vendors who attract passers-by with their low-priced touristic goods.

Sitting and Relaxation: There is not any place for sitting and relaxation in the Square; however, some passers-by and worshippers sit on the pavement of the Square's space. There are also coffee shops at the main space which overlooks the Square, thus inviting people to sit and interact together.

Bicycling: This activity cannot take place in the Square because there are no special lanes for bicycles, and the streets are not qualified for such a sport because they are very crowded and full of various means of transportation.

Celebrations: The Square is famous for religious festivities such as the Prophet's Birthday and Al-Hussein's Birthday which take place all year long. Also, there are celebrations for the Lesser and Greater Bairams in addition to the Bairams' prayers.

Food: The Square has many coffee shops and famous restaurants where people all over Cairo and tourists from all over the globe head for to taste the Egyptian foods and enjoy the historic ambience.

Social Interaction: As the Square is full of several mosques, several social activities are conducted such as betrothals where the bride and the groom celebrate with their families by taking photos at the Square's space.

Political Interactions: The space is used during the time of elections for candidates' publicity meetings whereby the inhabitants of the area share their election platform.

Religious Function: This is the most significant square in Egypt because it has Al-Hussein Mosque and Al-Azhar Mosque which are visited by many people all over Egypt and Islamic countries.

2.2 Tahrir Square

It is one of the biggest squares in Cairo. It was called Ismailia Square upon its establishment which is ascribed to Khedive Ismail, then it was changed later into Tahrir (Liberation) as a symbol for freedom from colonialism during 1919 Revolution. The Square is similar in its design to Charles de Gaulle Square which has the Triumphal Arch at the French capital, Paris.

Location: At the center of Tahrir Square is a large and busy traffic circle. On the north-east side is a plaza with a statue of nationalist hero Omar Makram, celebrated for his resistance against Napoleon I's invasion of Egypt, and beyond is the Omar Makram Mosque. The square is the northern terminus of the historic Qasr al-Ayni Street, the western terminus of Talaat Harb Street, and via Qasr al-Nil Street crossing its southern portion it has direct access to the Qasr al-Nil Bridge crossing the nearby Nile River. The area around Tahrir Square includes the Egyptian Museum, the Mogamma government building, the Headquarters of the Arab League building, the Nile Hotel, Kasr El Dobara Evangelical Church and the original downtown campus of the American University in Cairo. The National Democratic Party-NDP headquarters building stood here until it was set on fire during the revolution and demolished in (Tahrir Square – Wikipedia, 2015).

Square Classification in Terms of Formation, Closing and Function

The Square is circular pivotal open square surrounded by a network of main roads which connect the downtown area. It is characterized by being administrative as it includes several administrative buildings such as Mogamma Al-Tahrir (Tahrir Complex), embassies and the headquarters of the Arab League. It is also considered a touristic square where the Egyptian Museum is located. This Square has witnessed the most substantial Egyptian historic events since its establishment, so it has become a touristic site. It is also a main transportation station for the downtown area due to the subway station and the central public bus station. Finally, the American University in Cairo and Omar Makram Garage overlook the Square.

Characteristics of Tahrir Square, Figure 3

Ratio: Tahrir Square is distinguished by being a wide, round square.

Scale: It is considered a commemorative square, and its longest side is 200 meters as many important administrative, touristic, religious and educational buildings overlook it.

Containment: It is very poor at the Square as the ratio between the void's width and the height of buildings reaches 8:1 which is very low.



Fig.3: Tahrir Square's Ratio, Scale, Containment

Architectural formation, Figure 3,4

- **Rhythm:** The vertical rhythm of the Square's facades is reinforced through a series of vertical bulging shoulders, the use of vertical windows in the facades and the heights of buildings which reach 21 meters.
- **Balance:** The balance in the design and formation of the facades overlooking the Square is achieved through the balance between the skyline, the buildings' formation and the repetition of the formation of openings in addition to the vertical shoulders for the buildings overlooking the Square.
- **Repetition:** It is achieved via the repetition in using the same fine elements for the Square's walls, the vertical rhythm for the buildings surrounding it, the fence unit all through the trails of movement in addition to the same exterior finishing for the facades and the colors used.
- **Openings:** Rectangular openings dominate the facades of the Square, and there is no trace for variety in the shape of the openings except for the façade of Omar Makram Mosque looking over the Square and the façade of Tahrir Palace which is characterized by round arches.
- **Colors:** Beige and white are the dominant colors of buildings' facades overlooking the Square; nonetheless, the color orange is used for the façade of the Egyptian Museum.
- **General Style:** The Square has a crystal clear style owing to the unity in the colors used and the elements of architectural formation of the facades from the balconies' openings, buildings' parapets and vertical shoulders. All these elements contribute in giving a general style for the buildings, and this is the style of new architecture. Figure 4 shows the general ambience of Tahrir Square and the elements of architectural and urban elements of formation.

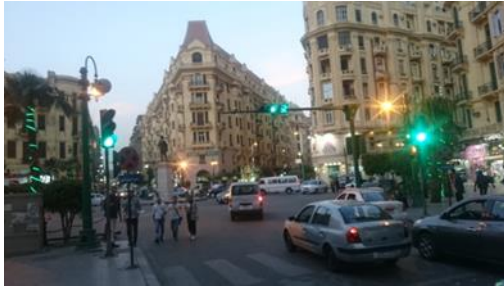


Fig.4 Tahrir Architectural and Urban Composition

Furnishing Elements

Natural Elements: Green areas, especially, trees and green grass are the Square's distinctive elements.

Non-Natural Elements: The Square has pedestrian seats at the central peninsula and light fences used as pedestrian seats; there are single and double lighting columns in addition to indicator lights. The Square also has Omar Makram Statue and Egypt's flagpole. Traffic lights are used at the Square and guiding signs for the pedestrians. In addition, there are plastic garbage bins at the Square's borders and the sides of the road.

Human Activities

Walking and Picnicking: Due to the political and historic significance of the Square, its role is not limited to the functional role alone as it is one of the most important factors for movement and a means of reaching administrative buildings. Besides, it is used for walking and picnicking.

Sitting and Relaxation: For security reasons, the number of people who sit to relax there is decreasing in number, and there are only waiting seats.

Bicycling: This activity does not exist at this Square because there are no special lanes for bicycles, and the streets are disqualified and crowded.

Celebrations: This Square is mainly used for annual political celebrations such January 25th Revolution and June 30th Revolution which are now considered official celebrations in the country.

Food: Many passers-by use this Square, so a large number of restaurants are common all over the place. Sometimes, people buy food from the nearby restaurants and eat them at the Square.

Social Interaction: Citizens gather during the times of feasts, national occasions, and revolutionary festivities which creates a strong social bond among them.

Political Interactions: This Square has witnessed the most important historic events in Egypt as 1919 Revolution started from it. Also, the 1935 protests against the English colonialism, the 1977 Bread Revolution, January 25th Revolution in 2011 and June

30th Revolution took place at this Square, so all the national celebrations in Cairo occur there.

Religious Function: Omar Makram Square is located at Tahrir Square which is used as a place for worshippers, especially, at the time of feasts where they gather from neighborhood areas for praying.

2.3 Ramsis Square

Ramsis Street reached Abbassiyah when it was incised during the era of Abbas the First in 1850 A.D., and at that time it was called Abbas Al-Awel Street. Egypt Railway Station was established after Khedive Tawfik signed an agreement with the English government to establish a railway line between Cairo and Alexandria. When the Statue of Nahdet Masr (Renaissance of Egypt) was put in the middle of the Square in 1926 A.D., the Square was given the name Nahdet Masr and the street was known as Nahdet Masr Street. Moving the Statue and replacing it with Ramsis II Statue post 1952 Revolution; thus, the street has become known as Ramsis Street, and the Square as Ramsis Square (Ramses Square- Wikipedia,2016).

Location: Egypt Railway Station and the National Authority for Tunnels are located at the Northern side of the Square; Al-Fath Mosque and Water Corporation for Greater Cairo are located at its South. Al-Azbakeya Police Station lies at its South Western border, and 6th October Bridge passes over it.

Square Classification in Terms of Formation, Closing and Function

Ramsis Square is open and dynamic without a clear formation or features as it does not have a definite geometrical shape. The fact that 6th October Bridge passes over it makes the Square with a ceiling, and a network of main roads divides it. As the Square includes Egypt Railway Station which is the central train station for all the governorates in the Republic, the subway station and public transportation station, it is considered a regional and national station for movement transfer to all squares. Figure 5 shows Egypt Railway Station and 6th October Bridge.

Characteristics of Ramsis Square, Figure 5,6

Ratio: Ramsis Square is deep as the approximate ratio between its length and width is more than 1:2.

Scale: The scale of Ramsis Square makes it one of the most significant squares of Cairo as its longest side is 250 meters long. The Square is considered the main station leading to different areas across Egypt, and this scale is in accordance with its regional and national significance.

Containment: It is very poor at Ramsis Square as the ratio between the void's width and the height of buildings reaches 9:1 which is very low.



Fig.5 Egypt Railway Station



Fig.6 Passers-by Sitting on Green Grass

Architectural formation

- **Rhythm:** There is no clear rhythm for the Square; nonetheless, the vertical and the horizontal rhythm overlap without any fixed rhythm.
- **Balance:** The enormous disparity in the heights of buildings, the functions of the Square and the architectural style of the surrounding buildings do not promote balance in the facades overlooking it.
- **Repetition:** None of the Square's elements are repeated whether furniture, pavements, the elements of architectural formation of facades or the fences as they have various shapes and designs as reflected in Figure 5 .
- **Openings:** The openings of the buildings overlooking the Square have various shapes and sizes; those opposite Al-Fath Mosque are circular. The administrative and residential buildings overlooking the Square have either square or rectangular openings.
- **Colors:** Beige is the dominant color for the facades; moreover, grey and pink are used in one of the buildings overlooking the Square.
- **General Style:** The Square has no distinctive style due to the diverse architectural formation of facades and the clear random design which proves that the architectural formation of the Square's facades is governed by no rules

Furnishing Elements

Natural Elements: There are no furnishing elements in the Square except for green grass sieged by an iron fence to protect it from pedestrians.

Non-Natural Elements: The Square has no seats for pedestrians, so they have to sit on the green grass. Around it, there are several traffic lights, road lighting columns and garbage bins, but there is absence of

compositional elements. There are no columns for pedestrians, and the Square is surrounded by an iron fence.

Human Activities

Walking and Picnicking: The Square has a functional role as it acts as a regional and local mobility station leading to Egypt's squares, cities and administrative buildings. As it contains the central train station which links all the areas of the Arab Republic of Egypt, the subway station and public transportation station together, passers-by do not use it for picnicking as it is a means of reaching their destination.

Sitting and Relaxation: Since there are no seats for pedestrians, they sit on the green grass to take a rest but not to enjoy their time and relax, especially, that the Square has heavy traffic. It is also so crowded that it does not promote relaxation. Figure (4) shows how people use the Square's green grass for seating.

Bicycling: There are no lanes for bicycles, so none practices this activity. Also, the streets are not qualified for such a means of transportation, especially with crowdedness.

Celebrations: It is not used for any national or religious celebrations, but January 25th protests in 2011 extended from Tahrir Square to reach it.

Food: Though it is so crowded with heavy traffic, it has no restaurants.

Social Interaction: Social interaction occurs among pedestrians while waiting for a means of transportation to take them from a place to another; this creates a solid social bond.

Political Interactions: Ramsis Street which overlooks the Square includes plenty of syndicates such as the Association of Engineers and the Bar Association which have always been used across history as a medium for expression of opinion and objection to some political decisions and laws issued by the government.

Religious Function: Al-Fath Mosque is located in the Square, and Ramsis space is used by worshippers at the time of feasts for prayer.

2.4 Talaat Harb Square

It was formerly known as Former Soliman Pasha Square, and it is one of the most famous and important squares in Cairo due to its unique location at the heart of Cairo; it is linked to many other main squares and streets. The statue of the founder of modern economy, Talaat Harb, is situated in the middle of the Square. The Square lies in the center of Cairo- 400 meters away from its South is Tahrir Square, 775 meters away from its North is Al-Tawfikeya Square, 850 meters away from its East is Al-Salam Square and 400 meters away from its West is Abdel Moneim Riyadh Square. The streets of Talaat Harb, Mohamed Sabry, Abo Alam, Kasr Al-Nil and Mohamed Basiouny pass by it (Talaat Harb, Wikipedia,2016).

Square Classification in Terms of Formation, Closing and Function

The Square has a circular open arch where Talaat Harb Statue lies at its center, so it is named after it. It is considered a trade square since it contains many malls such as Grand Plaza Mall and other stores. It is also considered an administrative square because it has several banks like Arab African International Bank, the Central Bank and Abu Dhabi Bank.

Characteristics of Talaat Harb Square, Figure 7:

Ratio: Talaat Harb Square is round and wide.

Scale: The scale is memorial as its longest side reaches 73 meters long. The architectural richness of the buildings around it and the statue that lies at its core add a humanitarian scale characterized by architectural richness.

Containment: It is very poor because the ratio between the Square's width and the heights of the walls which looks at it reaches 3:1.



Fig.7 Square Characteristics

Architectural formation, Figure7,8

- **Rhythm:** The vertical rhythm for the Square's facades is reinforced by repetition of the vertical bulging shoulders and the heights of buildings which reach 21 meters, and Talaat Harb Statue is located at its heart.
- **Balance:** Symmetry and unity of the colors used in the outer finishing and facades with one dominant style create balance in the design and formation of buildings' facades overlooking the Square.
- **Repetition:** It is achieved through using the same formation elements of the Square's walls and the repetition of the vertical rhythm of buildings surrounding the Square, colors and the material used in finishing the outer walls.
- **Openings:** The facades of the buildings overlooking the Square rest on diversity as they range from rectangular openings to semi-circular arches, and this is what characterizes Kdiop Cairo.
- **Colors:** Unified colors are used for the exteriors, and the beige color is the dominant.
- **General Style:** The facades follow the eclectic style which dominated Europe in the nineteenth century. This style emphasizes the ground floor to

give weight to the building by using horizontal joints or bulging stones. It is also known for the height of the ground floor whereas the frequent floor is smooth. Also, the style stresses the ends of the buildings by using classical corniches and decorative formation. Figure 8 reflects the general style dominating the Square.

Furnishing Elements

Natural Elements: Some shrubs and trees are traced in the Square, but there are no water elements.

Non-Natural Elements: There are no seats for pedestrians in the Square as indicated by Figure 7. The distinctive tag for the Square is Talaat Harb Statue which is as indicated by figure 8 is a fine element. At intersections, the Square includes traffic lights, guiding signs, uncovered fixed plastic garbage bins in addition to ATMs.



Fig.8 The Architectural Composition

Human Activities

Walking and Picnicking: These activities occur all day long due to the splendid architectural composition of the buildings. The classical style makes the pedestrians feel the Square's grandeur, especially, with the existence of restaurants, coffee shops and stores which open at 10:00 A.M. till midnight; this encourages walking and picnicking.

Sitting and Relaxation: As there are no seats for pedestrians to rest and as the Square is so crowded with heavy traffic, it does not promote relaxation.

Bicycling: This activity is not possible at the Square due to the absence of lanes for bicycles, and crowdedness does not qualify the streets for such a means of transportation.

Celebrations: No celebrations take place at the Square.

Food: The Square is full of restaurants and coffee shops which encourage people to visit the Square.

Social Interaction: While shopping or sitting at coffee shops and restaurants, social interaction happens among pedestrians.

Political Interactions: Throughout history, the Square has not displayed any political activity.

Religious Function: There are not any religious activities taking place as the Square has no mosques

2.5 Roxi Square

It is one of the most important squares of the area of Heliopolis. The streets of Ibrahim AL-Lakani, Al-Khalifa Al-Mamon and Al-Hegaz branch from it. It is surrounded from the North East by Roxi Cinema.

Square Classification in Terms of Formation, Closing and Function

Roxi Square has a definite triangular arch, known for its commercial, sportive and entertainment activities. It looks over Heliolido Sporting Club, and close to it lies Heliopolis Club and Maryland Park. It also includes Roxi Cinema, and there are several stores, restaurants and coffee shops at the Square. It is also close to Al-Ithadeya Palace, Al-Khalifa Al-Mamoun School and The New College of Education.

Characteristics of Roxi Square, Figure 9

Ratio: Roxi Square is known for its width as the ratio between its length and width is 1:1.

Scale: It has a memorial scale as its longest side reaches 140 meters long which is appropriate with the function and importance of the surrounding buildings such as Roxi Cinema, Heliolido Club and Maryland Park

Containment: It is very poor because the ratio between the Square's width and the building heights reaches 14:1.

Architectural formation, Figure 9, 10

- **Rhythm:** The horizontal and vertical rhythm overlap though the vertical dominates the facades overlooking the Square as indicated by the use of shoulders. The horizontal rhythm is evident in the use of horizontal balconies and the closeness of buildings' heights which stresses the horizontal line at its end in addition to the employment of curbstones in the pavements.
- **Balance:** Balance is established in the facades by balancing vertical and horizontal rhythm and the repetition of the same architectural procedures and colors for the facades looking over the Square.
- **Repetition:** It is clear in the architectural elements used in the design of the facades overlooking the Square in addition to the repetition of the same color and vertical shoulders for the facades.
- **Openings:** The distances of the openings vary; they also have various shapes: square and rectangular in the horizontal side and rectangular at the vertical side. The semi-circular arches strengthen the diversity governing the formation of the facades overlooking the Square.
- **Colors:** The color beige with all its shades is dominant.
- **General style:** The Square has the dominant architectural style of the fifties in the previous century where the facades do not include many

architectural details and some formational elements appear in the facades. However, some more ancient buildings generate the architectural diversity in formation which is in accordance with the architecture of the fifties as seen in Figure 9.



Fig.9: Square's Scale and Architectural formation



Fig. 10: The Small Pyramid

Furnishing Elements

Natural Elements: Some palm trees and shrubs were traced within the peninsula of the Square. There is a fountain near the Square, but it does not look over it.

Non-Natural Elements: No seats for pedestrians are found in the Square. Currently, a small pyramid is placed in the middle of the peninsula acting as a fine element to distinguish the Square. It is important to note that the pyramid's size as compared to the buildings' heights around it is very small as clear in Figure (10). The Square also includes traffic lights, guiding signs for pedestrians, but there are no garbage bins.

Human Activities

Walking and Picnicking: The Square is one of the most pivotal motion paths as it helps in regulating the traffic flow among main motion axis. In the evening, motion and work increase as the circumference of the Square is used for sport, trade and entertainment purposes due to the existence of Roxi Cinema and Holiolido Club.

Sitting and Relaxation: There are no seats for pedestrians to rest. The Square has heavy traffic flow and crowded which does not promote relaxation.

Bicycling: This activity does not exist at the Square owing to lack of bicycles paths. Besides, the streets are not qualified for such a means of transportation because of crowdedness.

Celebrations: The Square is not used for celebrations.

Food: Roxi Square includes plenty of fast food restaurants which encourage users to have food.

Social Interaction: It occurs when passers-by go shopping at stores which create a social bond.

Political Interactions: Roksi Square is part of the events taking place in June 30th and July 3rd 2013. It has also witnessed the episode of January 25th.

Religious Function: This Square is not used for any special religious activity, especially that it only includes Al-Kholafa Al-Rashedeen Mosque which does not directly look over the Square; this mosque is only used at the time of feasts, religious occasions and social activities like receiving condolences.

2.6 Al-Korba Square

It is located in the area of Heliopolis which was established in 1604, and the first step of building it was completed in 1929. This Square has a triangular style where its three sides look over huge buildings designed by the Belgium Baron Edward Imban. The making of Heliopolis started from this Square which includes the famous historic arcades.

Square Classification in Terms of Formation, Closing and Function

Al-Korba Square is closed with an indefinite shape. It is distinguished by its trade and religious activities as brand stores, restaurants and coffee shops spread in addition to Saint Cyril Church.

Characteristics of Al-Korba Square

Ratio: Al-Korba Square is known for its wide circular space.

Scale: The Square has a humanitarian scale as the longest side reaches 33 meters long. It is appropriate with the humanitarian scale for the area which was first designed to be a residential area alone. When the usage changed to be for trade, traffic congestion took place.

Containment: It has poor containment because the ratio between the Square's width and the height is 4:1.

Architectural formation, Figure 11

- **Rhythm:** Harmony dominates the horizontal and vertical rhythm via the repetition of pointed arches along the façade, towers and corner turrets; some of which are centered at the facades and covered with a dome whereas the horizontal rhythm governs the facades surrounding the Square because these buildings are high with horizontal facades.
- **Balance:** Balance is established in the facades between the vertical and horizontal rhythm and the architectural formation used along the facades looking over the Square.
- **Repetition:** It is clear along the ground floor trial and the repetition of the arched openings along the façade in the frequent floor. Also, the same colors are repeated along the facades looking over the Square.

- **Openings:** The distances and shapes of the openings vary to include pointed arches, rectangular openings towards the vertical side and square openings. Openings of the same building also vary that openings with wide arches can extend from the ground floor to the first are found. They are also repeated in the second floor which has small repeated openings.
- **Colors:** The color beige with all its shades dominates, and it constitutes the general ambience for the Square.
- **General Style:** The gothic style controls the Square, and it is distinguished by pointed edged arches carried over round single and double columns. Sometimes, it includes the three pointed arches which characterize the gothic style and decorative formation along the facades, especially, in the handrails of the balconies and the parapet of buildings and sometimes around the pointed arches.



Fig.11 Square's Architectural Composition

Furnishing Elements

Natural Elements: There are no plantation or water elements at the Square.

Non-Natural Elements: No seats for pedestrians or compositional elements exist in the Square. There are some guiding signs for pedestrians and car parking, but they are not enough. There are signboards to identify the surrounding places in addition to huge garbage bins in the middle of the Square and other closed fixed bins distributed to the stores.

Human Activities

Walking and Picnicking: Walking and picnicking in the Square are almost daily activities. In the morning, there are banks and companies; in the evening, there are many restaurants, coffee shops and stores. The stores open at 10 A.M. and close at midnight, and they lie along the ground floor trial which characterizes the area. The Square is famous for the beauty of the classical architectural composition of its historic buildings.

Sitting and Relaxation: As the Square is always crowded with heavy traffic and no seats for pedestrians to take a break, it does not encourage relaxation.

Bicycling: This activity is practiced only on Friday morning across Heliopolis where the inhabitants gather to go picnicking with bicycles.

Celebrations: As indicated in Figure 12,13, an annual celebration is held at Al-Korba Square.



Fig.12 Floor Painting



Fig.13 Putting Ornaments at Korba Festival

Food: Al-Korba Square is surrounded by many fast food restaurants, but the Square’s users cannot have food in the Square as there is no place for this.

2.7 Al-Hegaz Square

It is situated in the area of Heliopolis, and Fared Semeka Street branches from its North side across its South border. From the Eastern side, Al-Hegaz Street goes down across the Western side.

Square Classification in Terms of Formation, Closing and Function, Figure 14:

Al-Hegaz Square is round-arched with definite corners, and main streets spread from it. It is surrounded by Abu Yusuf Al-Sahabi Mosque and St. Fatima School; it also encompasses the central public bus station. Characteristics of the Square, Figure 14,15

Ratio: The Square is characterized by its width as the ratio between its length and width is 1:1.

Scale: The Square has a memorial scale where the longest side reaches 187 meters long because it is the most important square in Heliopolis.

Containment: It has poor containment because the ratio between the Square’s width and height is 6:1



Fig.14: Square Characteristics



Fig.15: Architectural Composition

Architectural formation, Figure 15

- Rhythm: The horizontal rhythm governs the facades of the Square due to the existence of balconies and horizontal windows. The horizontal cobble of floors has different colors than the facades in the frequent floors. This strengthens the horizontal rhythm as in Saint Fatima School, Omar Effendi Mall and most of the residential buildings overlooking the Square.
- Balance: It is achieved in the facades through the buildings overlooking the Square around a vertical axis which divides them into two typical parts. A one-unit style is also used and repeated across the façade as in Saint Fatima School, Omar Effendi Mall and most of the residential buildings overlooking the Square. This is the style which controlled Egypt in the seventies when all these buildings were built.
- Repetition: It shows itself in repeating the space and shape of the openings in addition to frequent floor cobble and their paint which are different than the rest of the facade overlooking the Square.
- Openings: Rectangular openings are used in all the facades overlooking the Square which gives it a definite style.
- Colors: Beige and white in all their shades are used in the residential buildings whereas white and brown are used for Omar Effendi Mall; the white and pink colors are used at Saint Fatima School.
- General Style: The definite architectural design of the Square is clear in the usage of the same shape for the openings. There is only one style for all the facades overlooking the Square characterized by the usage of the same colors, balconies, horizontal openings along the facades; consequently, the same atmosphere of the seventies in Egypt is maintained in the Square.

Furnishing Elements

Natural Elements: The Square has a variety of plants, trees, shrubs and palm trees.

Non-Natural Elements: No seats were traced for pedestrians except at the bus station and the subway. The Square includes non-fixed plastic and metal garbage bins distributed at the beginning of streets, but they are in a very bad state. Though the Square includes street lighting columns and ATMs, it does not have any signboards.

Human Activities

Walking and Picnicking: In the morning, the Square's role is limited to the functional as the Square is an indispensable motion path to reach governmental buildings, banks and educational institutions. In the evening, it is used for walking and picnicking as the stores attract users.

Sitting and Relaxation: There is no room for relaxation as the Square has no seats for pedestrians due to the heavy flow of traffic and crowdedness.

Bicycling: This activity only occurs on Friday morning where the bicyclists go picnicking all over Heliopolis.

Celebrations: The Square is not used for celebrations.

Food: Al-Hegaz Square is surrounded by many fast food restaurants, but as the Square has no seats they cannot eat in it.

Social Interaction: The Square does not support social interaction.

Political Interactions: During January 25th Revolution in 2011, Egyptians gathered and a protest marched from it. Same occurred during June 30th Revolution as citizens gathered and moved to Al-Ithadeya Palace.

Religious Function: The Square has Yusuf Al-Sahabi Mosque at its East side which is used for prayers during the feasts.

2.8 Al-Sa'ah Square

It is located at Nasr City which is one of the new areas of Cairo; it was established as a continuation of Heliopolis. It is the biggest streets of Cairo in terms of area which extends over 250 km², and the total area of the capital is 1445 km². It was established after July 23rd Revolution within the urban expansion programme, initiated at the end of the fifties. As the government wanted the urban expansion to occur outside the agricultural land, it headed towards the East at the area of Nasr City Desert. It was planned to be an integrated cultural zone located at the Eastern side of Abbassiyah Desert. The Square extends from the Northern side where Al-Nozha Street is located to Al-Nasr Road at the Southern side. Rab'ah Garage is located at the East whereas Al-Nasr Buildings are situated at the West side (Nasr City - Wikipedia).

Square Classification in Terms of Formation, Closing and Function

Al-Sa'ah Square has a triangular arch with definite corners and surrounded by a network of main roads from all sides. It is an administrative, trade Square where the Workers University and the Civil Registrar overlook it. It is also located within the following locations at its borders: Nasr City Traffic Department, Foreign Affairs Legalization Office and the Holding Company for Gas, Tiba Outlet Mall and Raba'ah Al-Adaweya Compound.

Characteristics of Al-Sa'ah Square, Figures 16,17

Ratio: It is characterized by its width and semi-circular shape.

Scale: The Square has a memorial scale as the longest side reaches 90 meters long which is not appropriate with the heavy traffic flow. It, thus, has a small scale which causes traffic congestions.

Containment: It is poor as the ratio between the Square's width and the height is 3:1.



Fig.16 Square's Ratio and Scale



Fig.17 Square's Space

Architectural formation, Figures 18

- **Rhythm:** The vertical rhythm governs the facades as a result of the height of the buildings surrounding the Square, especially, the buildings of Al-Nasr Road and Rab'ah Al-Adaweya buildings which reach fourteen floors. The horizontal rhythm is clear in the façade of Workers University which is wide and its height reaches 3 floors, but it does not affect the general style for the Square.
- **Balance and Repetition:** They are achieved through the repetition of the design, formation, height and colors of Rab'ah and Al-Nasr Road buildings. This repetition weakens the mental image and does not help the users to develop a sense of belonging. The style is the same as the tradition Egypt has followed since the seventies where most of these buildings were established.
- **Openings:** Rectangular openings are used in all the facades overlooking the Square which lead to boredom.

- Colors: Only one shade of beige is used which marginalizes the humanitarian aspect of the Square and causes poorness in the urban environment as all the beauty features in the architecture formation are missing.
- General Style: The Square does not have a distinctive style due to the repetition of the architectural design used in all the residential buildings overlooking the Square, their height which reaches 14 floors and facades which have no architectural details and using one color only



Fig.18: Square's Architectural Composition

Furnishing Elements

Natural Elements: The Square has green grass.

Non-Natural Elements: A clock lies at the center of the Square as a fine element, so it is called Al-Sa'ah (The Clock). No seats were traced for pedestrians, but there are sign boards and a board to determine road directions for cars. There are uncovered, metal garbage bins hung to the sign boards columns. There are also single street lighting columns and ATMs.

Human Activities

Walking and Picnicking: In the morning, the Square's role is limited to the functional as it is a pivotal motion path leading to governmental buildings and banks. In the evening, it is used for walking and picnicking because it has a lot of stores.

Sitting and Relaxation: There is no room for relaxation as the Square has no seats for pedestrians due to the heavy traffic flow and crowdedness.

Bicycling: This activity does not occur due to heavy traffic in addition to lack of motion paths for bicycles and qualified streets for this kind of activity.

Celebrations: The Square is not used for celebrations.

Food: It is a crowded, busy Square where such an activity is not possible.

Social Interaction: The Square does not support social interaction.

Political Interactions: The Square has never displayed any political activity all over history.

Religious Function: The Square has no religious activity as it does not contain any mosques.

2.9 Mostafa Mahmoud Square

It is situated at Al-Mohandessin which was established in the beginning of the 1950s on agricultural land as an area for villas. With the increase in population since 1970, the area started to lose its distinctive features, so the villas have become residential buildings. From the North East, Game't Al-Dewal Al-Arabeyah Street branches off which extends till the South East of the Square. From the Square's North emerges Wadi Al-Nil Street, and Syria Street from the West. It is one of the most significant squares at Al-Mohandessin as the revolutions of January 25th in 2011 and June 30th in 2013 occurred at it. The Square is called after the name of Mostafa Mahmoud Mosque which offers health and social services for the inhabitants of the area; this mosque is the main at the area where celebrations of the feasts occur (Engineers (Giza)- Wikipedia,2016).

Square Classification in Terms of Formation, Closing and Function, Figure 19

Mostafa Mahmoud Square is definite and round. Buildings set its borders, and the existence of a mosque makes it a religious square. It is close to Al-Hamedeya Al-Shazleya Mosque, Al-Zamalek Club and the Malaysian Embassy; finally, it is surrounded by restaurants and stores.

Characteristics of Mostafa Mahmoud Square, Figures (19)

Ratio: It is characterized by being wide and round.

Scale: The Square has a memorial scale as its longest side reaches 200 meters long. It is a node and religious square.

Containment: It is very poor containment as the ratio between width and the height is 10:1.



Fig.19: Square's Characteristics

Architectural formation, Figure 20

- Rhythm: The vertical rhythm governs the Square because the height of buildings reaches 16 floors. There is also vertical salience in parts of the facades; colors and glass are used in a vertical style along the height of the façade. The rhythm is also affected by the existence of Mostafa Mahmoud Mosque with its minaret and dome in addition to

the architectural design of Qatar Embassy which is seven floors and has a pointed arch.

- Balance: It is not achieved in the Square due to the discrepancy in the heights of the buildings overlooking the Square which stresses irregularity.
- Repetition: It is clear in the design of the facades of residential buildings which follows the Egyptian architectural style in the seventies. Nevertheless, the facades look different depending on the function of the building. For instance, semi-circular, pointed and triangular arches are used in the Qatar Embassy. The Islamic style appears in the design of Mostafa Mahmoud Mosque as evident in the Square's façade.
- Openings: There are varied openings in the facades overlooking the Square; the residential buildings have rectangular openings and openings with pointed and



Fig.20: Facades' Architectural Composition

- Semi-circular arches as in Qatar Embassy and Mostafa Mahmoud Mosque.
- Colors: Beige and white with their shades are used with blue glass in the façade of one of the buildings overlooking the Square Figure 21.

General Style: There is no distinctive style for the Square as the facades overlooking the Square are different. The heights and architectural formation vary from the architecture of the seventies and the Islamic style imposed by the façade of Mostafa Mahmoud Mosque; the Islamic style dominates the façades of the Square and the Qatar Embassy



Fig.21: Mustafa Mahmoud Mosque overlooking the square

Furnishing Elements

Natural Elements: The Square has green grass and palm trees.

Non-Natural Elements: No seats for pedestrians were traced. There are no fine elements, sign boards or garbage bins around the Square. There is not any furniture except for street lighting columns.

Human Activities

Walking and Picnicking: The Square is confined to its functional role as one of the most pivotal motion path. It also organizes mobility across the main motion axis. In the evening, the rates of motion and walking increase as trade activities take place at the Square.

Sitting and Relaxation: Since there is no place for pedestrians to rest and due to heavy traffic, the Square has no room for relaxation.

Bicycling: This activity has no occurrence at the Square because the traffic is heavy and the streets are unqualified.

Celebrations: No celebrations take place in the Square.

Having Food: It is a crowded, busy Square where having food is not an appropriate activity.

Social Interaction: Social interaction is supported by the mosque as it offers health and social facilities to the residents of the area and the neighborhood in addition to the religious celebrations at the time of feasts.

Political Interactions: The Square has become one of the most important squares in Cairo as protestors used it in the revolutions of January 25th in 2011 and June 30th in 2013. It was a meeting point for protestors whether from Mohandessin or its neighborhood due to its width, especially, that Mostafa Mahmoud Mosque offers health care for protestors.

Religious Function: The Square includes Mostafa Mahmoud Mosque whose space overlooking the Square is used for feast prayers as worshippers gather from the neighborhoods.

2.10 Lebanon Square

It is located at the heart of Al-Mohandessin, and it is one of the most significant squares there. July 26th Corridor passes over it, and many investment banks, big firms, famous restaurants and important stores lie there.

Classification of Lebanon Square in Terms of Formation, Closing and Function

Lebanon Square has semi-circular arch, and buildings lie at its borders. July 26th Bridge passes over it, and it is surrounded with a network of roads which all act as a ceiling for the Square. It is an administrative, trade Square which has many banks such as Audi Bank, Barclays Bank, Bloom Bank and Abu Dhabi Islamic

Bank. It is also surrounded by stores, restaurants and coffee shops, and it is close to Al-Tersana Club.

Characteristics of Lebanon Square, Figure22

Ratio: It is characterized by being wide and round.

Scale: The Square has a memorial scale as the longest side reaches 100 meters long. It is designed to be a residential square, but with the passage of time it has become an administrative, trade square. This change resulted in traffic congestion and crowdedness all day long.

Containment: It is poor as the ratio between the width and height of the void is 5:1.



Fig.22: Square's Characteristics

Architectural formation, Figure 23

- **Rhythm:** The horizontal rhythm governs the facades overlooking the Square due to the use of vertical balconies along the façade; also, the rectangular openings are used. The cobble of frequent floors is seen and painted in different colors than the façade, but the intersection between it and the vertical rhythm owing to the height of the buildings surrounding the Square.
- **Balance:** It is not achieved in the facades of the Square due to the discrepancy in the buildings' heights, but the repetition of the architectural design somehow provides balance.
- **Repetition:** The shape of the openings is rectangular in the buildings. The same architectural style is repeated for the facades with an emphasis of the cobbles of frequent floors. This repetition created unity in the architectural formation.
- **Openings:** The openings in the buildings' facades are rectangular, and they are regularly distributed along all the facades overlooking the Square.
- **Colors:** The color beige dominates the facades looking over the Square.
- **General style:** The character is that of Egypt in the seventies of the previous century which is the functional design for buildings without any

aesthetics in the facades. There is also emphasis on the cobbles of frequent floors with paint that is different than the façade. Sometimes, balconies which are as wide as the facades are used with some structural elements.



Fig.23 Square's Architectural Composition

Furnishing Elements

Natural Elements: The Square has green grass and palm trees.

Non-Natural Elements: No seats for pedestrians were traced. There are no fine elements, sign boards or garbage bins around the Square. There is not any furniture except for street lighting columns.

Human Activities

Walking and Picnicking: The Square's role in the morning is confined to the functional as it is an essential motion path; it is a means of reaching governmental buildings and banks. In the evening, it is used for walking and picnicking because it has many stores.

Sitting and Relaxation: Since there is no place for pedestrians to rest and due to heavy traffic, the Square has no room for relaxation.

Bicycling: This activity has no occurrence at the Square because the traffic is heavy and the streets are unqualified.

Celebrations: No celebrations take place in the Square.

Having Food: Many fast food restaurants are scattered along the Square; nonetheless, the users do not have food in it because it is crowded with no seats.

Social Interaction: Social interaction is not supported at all.

Political Interactions: No political activity is known for the Square.

Religious Function: The Square is not used for any religious activities as it does not have any mosques.

Conclusions

The squares of Cairo were established in different epochs, and they encounter various urban issues which can be summed as follows.

Movement Paths

- Complexity of traffic flow due to lack of organization for the movement paths whether for cars or public transportation.
- Absence of pedestrian paths except for a few pavements used by street vendors; this leads to confusion in the movement of cars with pedestrians which result in the slow flow of traffic.
- Absence of bicycling lanes and paths in order to reduce the usage of bicycles despite its importance in solving the problems of Cairene streets and squares through the reduction of reliance on public transportation and cars.
- Taxi and public transportation drivers do not stick to drop off the passengers at the stops which causes traffic jams.
- Second row parking for cars which leads to traffic jam at the branching off streets and squares.

Architectural Formation

The surrounding urban environment for the squares are distorted for the following reasons

- The fact that there are no binding laws to determine the urban formation for the walls of squares causes absence of unified definite style for the squares which were created in the fifties of the last century, further leading to a distortion of the visual image.
- Squares established during the Kdiop Cairo period does not suffer this issue because its design is already definite and distinguished from the start. In addition, the government pays much attention to this area, makes projects to revive it and puts laws to protect the area from visual and architectural distortion.
- Al-Korba Square is branded for its distinguished architectural formation, but the lack of binding laws and the country's carelessness about protecting it as is the case with Kdiop Cairo resulted in visual impairment for the Square and the whole area since the establishment of extra floors and nests at the top of the historic sites.
- The absence of binding laws in the design of display windows and banners for stores, coffee shops and restaurants which caused distortions in the visual image.
- Squares established since the 70s have poor facades in terms of beauty as they lack distinctive architectural styles.

Function

- Squares at Cairo have various functions such as commercial, administrative, touristic and traffic. The squares have succeeded in fulfilling most of their functions like administrative, trade and touristic functions meanwhile they suffer traffic issues because uses overlap with traffic flow.
- The furnishing of the squares is very poor because seats for pedestrians barely exist.
- Most of the squares have attained the parameter of social interaction through the existence of restaurants, coffee shops and stores which encourage socialization.

The User

- Thermal and acoustic comfort are not provided at the squares due to heavy traffic flow and lack of public services which diminishes the belonging factor; nonetheless, they are characterized by security because the functions of squares entail mobility all day long.

Efficiency and Continuity

- No maintenance or restoration activities are taking place at these squares except for Kdiop Cairo revival project which focuses on Kdiop Cairo squares.
- There are no binding laws for the administrative bodies and the user in order to preserve the urban environment.

Users do not contribute to the preservation of the squares due to lack of public services or furnishing which enable the users to sit and relax. Also, the disturbances and the pollution do not encourage users to preserve it.

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