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The effect of facade deterioration on urban life: a historical analysis of the Korba area in Cairo

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Abstract

In heritage conservation and revival, much of the focus is placed on the techniques and methods to preserve, restore, and revive heritage structures and locations. However, less research examines how deterioration happens and effects they have on the area's character and socio-economic status. To this end, this research aims to examine the decline and its effect in the El Korba area in Heliopolis, Cairo, Egypt. El Korba was designed with a unique architectural character to stimulate social and economic life. However, the area has been on a path of physical deterioration that is corroding the social life on its streets.

Previous research proposed a framework that connected six street-level façade design parameters to the social interactions on streets and sidewalks: complexity and architectural character, permeability, territoriality and personalization, enclosure, ground-floor use, and physical comfort. This research builds on this framework to study the changes in El Korba's buildings' architectural features through a diachronic analysis in Ibrahim El-Lakkani Boulevard of El Korba using descriptive analysis. Architectural features of the street level during both the original state (1906) and the current state (2021) are broken down and categorized in those six parameters to understand their decline or improvement over time.

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It was found that the parameters that have decreased over the years and caused the deterioration are complexity and architectural character, permeability, territoriality and personalization, and physical comfort. Based on these findings, revival projects can focus on physical parameters that create synergistic benefits by preserving and renewing heritage locations and revitalizing their socio-economic potential.

Keywords:
Architectural character, conservation, enclosure, ground-floor use, El Korba, permeability, personalization, physical comfort, social life, territoriality.

1. Introduction

El Korba is and always has been known for its interesting street energy stimulated by its strong architectural character. This is due to a few factors that are present in El Korba and not in other places in Cairo. The design of Heliopolis in 1906 was initially as two ‘oases’ that were to be connected through a big avenue. The first oasis (where El Korba is now) was a residential area for the high-income class and foreigners, while the second oasis, much farther from Cairo, was designed for the lower-income classes [1, p. 7]. Later, specifically during the ’50s and ’60s, the center of Heliopolis as we know it now became its old part, known as El Korba.

This part still included the commercial functions, whereas all the parts of it that were being developed anew were mainly residential [1, p. 33]. Later, during the Infitah (globalization) era, Heliopolis underwent changes that could be described as uncontrollable, and expansions manifested in the façade designs of buildings. Despite all that, the district is still one of Egypt’s most popular areas for socialization [2, p. 69].

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Many theorists have discussed the importance of place-making and social interaction between people in the design of cities. Such theorists include Jane Jacobs, Jan Gehl, and Henri Lefevre. Jane Jacob's 'Eyes on the Street' theory [3] proves that buildings promoting street social activities make for safer and better looked-after cities. Jan Gehl's '5 Rules for Designing Great Cities' [4] include making public life the driver of urban design and designing for multisensory experiences. Henri Lefebvre's 'The Production of Space' [5] urged architects and designers to focus on the 'production of space' rather than the 'things in a space'. Lefebvre's seminal work proves that what happens in space, from interaction with a building to interactions with one another, is more important than what a space simply encompasses of objects. He further proves this point by stating, "In designing a façade and its ornamentation, the architect helps animate the street and contributes to the creation of urban space" [5, p. 315].

It becomes important therefore to question how the modifications that were made have affected the social interaction potential of its ground floor and sidewalks, which was one of Heliopolis' main defining features.

The paper conducts a diachronic analysis between the inaugural and the current states of the buildings to understand the adaptations and changes they have undergone. The research makes use of and builds on the six parameters suggested by Hassan et al. [6] in their research to understand the aspects that have changed over time and the effect these changed aspects had on the potential of street-level social interaction in the El Korba area.

2. Literature Review

2.1 Heliopolis: Now and Then

As Dobrowolski stated, "One thing that remains certain: the 1920's Heliopolis was, and still is, a very powerful architectural statement". [7, p. 73]. As one goes from Cairo to Heliopolis, the tram [back before it was removed and replaced with regular streets] would pass first through the entertainment area, the hippodrome, the Luna Park, the cinemas, and the shopping area, and then it would reach the residential parts [1, p. 11]. Everything in the design of Heliopolis in its inaugural stage was planned and regulated.

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This includes the height of the buildings, the number of floors, the percentage of built area, and the width of the roads, which considered the predicted traffic increase even in the ‘60s [1, p. 14]. Egyptian and European specialists also helped give Heliopolis its strength and its originality in character [1, p. 17]. The designers also considered the effect of the climate; loggias and arcades were placed to protect from the sun since Heliopolis was built before air-conditioners. [1, p. 19]. Elokda also states in his research that the communities and neighborhoods that were designed in the 1900s were designed for better walkability and designed to provide for a more active street life [8, p. 41].

The changes that were made during the Infitah era were most manifested in the facade designs of buildings [1, p. 56]. During the era of Sadat, and specifically during the Infitah period, some transformations began to appear in the façade designs of buildings, such as discontinuity in the architectural language of elements shared on the same facade. Examples of said changes are the implementation of AC units, the addition of many advertisements, signs, ornaments, and diverse materials [1, pp. 56-57]. Added to that, shops too started to be treated as independent units as opposed to being a part of a greater local identity. This was in the sense that stores and shops started to adapt colors and materials unrelated to the 1920’s facades or the local identity given to the area upon erection.

Most researchers agree that the indoor activities on the ground floor in El Korba buildings contribute to the occurrence of social activities in the outdoor spaces. They state that some indoor activities may take advantage of the extension outwards into the adjacent public space. They also agree that it is a negative sign that nowadays people no longer sit or watch activities happening in the main public spaces, arguing that this affects the usage of the spaces as public spaces, which is their original function in the 20th-century design [9, p. 839]. Some researchers, however, concluded against the notion of having mixed-use ground floors, as their extensions to the sidewalk create difficulty in parking and therefore traffic problems in the street [10, p. 153].

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A study that was published in 2010, where people were asked to list the public spaces they enjoy being in the most shows that El Korba was among the first places listed [11, p. 56]. In another study, it was found that the locations of commercial activities were mostly concentrated near or in the buildings of the 1920s condition of Heliopolis [12], which confirms the findings shown in the 2010 study. According to their research, this is mainly because these locations were originally designed to accommodate commercial functions and activities [12, p. 72]. In this regard, researchers have agreed that even though El Korba district is still one of the most diverse districts commercially, socially, and industrially [12], it is now in danger of actual deterioration in these fields due to the lack of consideration for the users' needs in a planned and regulated way [12, p. 69]. An example of this is shown in one study, where people were asked about the issues that the district is facing, they revealed their concern for pedestrian pavements in the present-day Heliopolis saying it needs more attention regarding maintenance [10, p. 154]. Another issue that is not being regulated as closely as it used to be in Heliopolis is building heights and changes to façade features. A study has shown that the buildings in El Korba today are higher than those in the 1920s condition of Heliopolis [3, p.61]. The study went on to prove that many extensions were made to various buildings in Heliopolis. Another prominent issue is the blockage of openings in the façade, a change made among many to the facades of the buildings [1, p. 56].

2.2 Parameters that Impact Staying and Social Activities on Ground Floors

Several researchers have studied the relationship between architecture and activity levels. Hassan et al. [6] extracted parameters that were proven in their research to have an impact on the occurrence of what was labeled as 'staying activities'. These are activities such as "socializing, eating, watching, window-shopping, buying and selling, or talking on the phone" [6, p. 459].

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It was found in this same research which uses these six parameters on Baghdad and Ibrahim Streets in El Korba that the parts of a street that were characterized as being highly social were the ones in which the below parameters were successfully met, and the parts labeled as less social were the ones these parameters were lacking in. These parameters are:

Complexity and architectural character: this is the "façade articulation, scale, and rhythm, and human-scale…which includes texture, size, color, façade irregularity [niches, recesses, etc.] and shape" [6, p. 459].
Permeability: this is both visual and physical permeability. Visual permeability allows people to see the activities happening beyond the façade threshold, and physical permeability allows people into and out of the façade threshold.
Territoriality and personalization: this is the users marking their territory because that causes a sense of security and surveillance in the street. This can be through personalization where people for example put "signs, decorative elements, seats, shades, and canopies, flower boxes or landscape areas, and fences or shrubs that define territories" [6, p. 459].
Enclosure: this is the degree to which streets and public places are defined visually by buildings, walls, trees, and other elements, as Voltolini defined it [6, p. 459]. This enclosure is another factor that creates a sense of security among the users of the area.
Building ground-floor use: these are the ground-floor spaces that overlook the street because they have a huge role in instigating sidewalk activities. Examples of popular spaces that have such an effect are restaurants, cafes, stores, etc.
Physical comfort: this is the physical comfort of the user because physical comfort encourages the user to participate in staying activities on the sidewalk. Physical comfort includes options for seating, like benches, chairs, stools, ledges, short walls, etc. It also includes protection from the weather, like shading from the sun and heat.

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3. Methodology

Overall, the literature succeeded in describing the intention of the 1920s condition of Heliopolis as well as the current condition of buildings in the Korba district. It still, however, does not provide a diachronic analysis of this design over time and the deterioration that may have happened from the 1920s condition of these buildings to the current situation with regards to the given six parameters. It also does not study how these changes could have impacted social interaction in the Korba district over time.

The main method used in this paper to test the hypothesis is this missing diachronic analysis. It will be conducted between various sources to test the 1920s condition and current condition of El Korba against the six parameters presented above. The research uses diverse sources that include photographs, books, anthropological and architectural descriptions, transcribed interviews, books, and base maps. These sources were obtained from the Special Reserves Collection in the library of The American University in Cairo. Three historical photographs will be used to conduct this comparison over time, all of which are from the Special Reserves in the AUC Library. In comparison to these three photos from the 1920s, three photographs of present-day El Korba are used, all of which are taken and annotated by the authors.

It is worth noting that the 6 parameters focus on the architectural features of the design as opposed to the number of people found in pictures. This is to ensure there is no bias against the older photographs which may not have been as spontaneous as the recent ones. Based on the available literature and the field observations from the site the 6 parameters that are used have each been broken down into various components to reach concrete conclusions on the specific factors that may have contributed to the deterioration and decrease of social interactions in present-day El Korba. This breakdown is as follows:

- Complexity will be broken down into the types and frequency of occurrence of ornamentation, and the diversity and frequency of occurrence shapes.

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- Permeability will be broken down to the types, numbers, and the existence of depth behind openings
- Territoriality will be broken down to the techniques, diversity of colors, compatibility with the facade, size, and visibility from the street of the interventions made.
- Enclosure will be broken down to the distance between buildings, the occurrence of trees, and the occurrence of parked cars.
- Ground-floor use will be broken down to the surrounding activities and the functions and frequency of occurrence of the most popular spaces.
- Physical comfort will be broken down into environmental comfort (shading and greenery) and seating options (in terms of diversity, safety, and quality).

These parameters are compared in three case studies in El Korba: Ibrahim Street, Baghdad Street, and Al-Ahram Street. Then an overall indicator is given to each parameter in each case study to assess the occurrence and quality of the parameters. The solid upwards arrow (▲) indicates an increase or enhancement in the parameter, the downwards solid arrow (▼) indicates a decrease or deterioration in the parameter, and the solid square (■) indicates little to no change in the parameter over the years. Indications are decided based on the presence of the assessed parameters in each of the chosen photographs for assessment in the case studies. This is through a qualitative analysis process, that depends on the author's assessment which is informed by available resources and data.

4. Results and Discussion

The following is the analysis conducted on Ibrahim Street, Baghdad Street, and Al-Ahram Street in the El Korba area.

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4.1Case Study 1: Ibrahim Street

Fig. 4: Boulevard Ibrahim El-Lakkani. Top: 1920s [7, p. 58] and Bottom: 2021 (taken by author)

4.1.1 Complexity and Architectural Character

Analysis of 1920s Condition

- Ornamentations (Types): Ornamentations are mostly stucco designs on the arcades and around some significant openings.
- Ornamentations (Frequency): The occurrence of ornamentation is quite frequent. There are ornamentations between every window, every balcony and the other, and every arch in the arcade and the other.
- Shapes (Diversity): There is great diversity in shapes.
- Shapes (Frequency): There is a high frequency in the occurrence of different shapes.
- Deterioration: None. The design was then newly executed, and the factors of time and environment have not yet passed on it.

Analysis of Current Condition

- Ornamentations (Types): Ornamentations are mostly left the same as they were in the 1920s Condition, with no new additions or removals.
- Ornamentations (Frequency): The frequency of the occurrence of shapes has not changed much because the design has been left (in the greater scheme) as it was in the 1920s condition
- Shapes (Diversity): Little or no change
- Shapes (Frequency): Little or no change
- Deterioration: There is deterioration due to age and environmental factors.

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Overall Indicator ▼

4.1.2 Permeability

Analysis of 1920s Condition

- Openings (Types): Openings are mainly for windows, balconies, or underneath the arcades.
- Openings (Number): The frequency of openings in each facade leads to many openings observed from the street level. This creates very high permeability.
- Openings (Depth): Depth behind some openings, like balconies and arcades, allowed for there to be privacy for the space inside, while permeability was still achieved.

Analysis of Current Condition

- Openings (Types): The types of openings have not changed.
- Openings (Number): The number of balconies decreased because users block them, so the space does not function as a balcony so much.
- Openings (Depth): There is deterioration in the concept of depth between openings and the actual livable space of a building. The blocking of balconies affected the aspect of different layers and depths of a facade.

Overall Indicator ▼ due to the blocking of balconies

4.1.3 Territoriality and Personalization

Analysis of 1920s Condition

- Interventions (Techniques): Interventions are mainly the addition of shading devices for the pedestrians to find shade under a store, restaurant, or cafe.
- Interventions (Colors): All shades abide by a specific color to ruin the view from the street with clashing colors and designs.
- Interventions (Compatibility): The compatibility of the various interventions, in general, was taken strictly into consideration in the 1920s condition of Heliopolis. Therefore, the compatibility of these interventions with the overall design of the facade was nicely met.

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- Interventions (Size): The size of interventions (fabric shades) in this photograph is large in comparison with the portion of the facade where pedestrians interact with.
- Interventions (Visibility): Most of the interventions (if there are more than the shades) are not visible from the street level. This is mainly because the stores are protected behind a general arcade, the architectural style of which is designed with the rest of the facade. This creates space and freedom for store owners to make small interventions to personalize their stores without these interventions being visible from the street. This ultimately protects the area's local identity code while allowing for room for territoriality and personalization.

Analysis of Current Condition

- Interventions (Techniques): The techniques used in this area for creating territoriality and personalization entail using very specific colors and materials for each store. Also, some stores extended their shop activity to be happening immediately outside their store.
- Interventions (Colors): There is a higher diversity in colors due to the usage of each store to the colors appropriate to the store's identity but not to the area's identity.
- Interventions (Compatibility): While these interventions may successfully attract users, it does not follow the local identity code and disrupts the architectural character of the overall façade.
- Interventions (Size): The store signs differ in size; but relative to the facade size on the ground floor where users are interacting with the building, they are considered of huge size which makes their impact large.
- Interventions (Visibility): Arcades hide many of the stores' interventions, in the 1920s and today. The impact of the intervention on the overall design is thus much smaller because of the arcades and are exaggerated in the shops that don't have them.

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Overall Indicator ▼

4.1.4 Enclosure

Analysis of 1920s Condition

- Distance between Buildings: The distance between buildings is defined by the borders of the buildings and nothing much more than that. There is not much happening in the middle between buildings, mainly because that space is where the tram passed, so there could not be many obstructions there.
- Trees: There are not many trees in this part of El Korba as observed from the photograph. This could be due again to the fact that the tram passed and so there was no room for trees in the middle of the road. Also, stores and activities adjacent to the facade were protected in other ways and this created very little need for trees there as a shading device.
- Parked cars: Back when the 1920s condition of the El Korba was made, there were not yet many vehicles on the street. However, they were accommodated in the design to prepare for a foreseen increase in them. There was not a need for cars to park in front of the facades. They would usually just drop people off and move to a different place to wait.

Analysis of Current Condition

- Distance between Buildings: Because this space no longer serves as a railway for the tram that used to pass through it, but instead became a regular street for much smaller vehicles, there became the space for a division in the middle between the two opposite lanes. This creates more chances for the creation of a better sense of enclosure.
- Trees: The presence of a few planted trees in front of various façade parts enhances the sense of enclosure in front of the buildings.
- Parked cars: The parked cars create an indirect barrier between the pedestrians and the façades as they become an obstacle one must bypass to make it to the façade, therefore creating a disturbance of activities along the sidewalk, as well as congestion in the area’s traffic.

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Overall Indicator ■

4.1.5 Ground-Floor use

Analysis of 1920s Condition

- Most popular spaces (function): The ground floor functions were mostly pastry shops and retail shops, which were popular among the user group and suited their needs and interests.
- Most popular spaces (frequency): The popular shops are quite frequent in this design of El Korba.

Analysis of Current Condition

- Most popular spaces (function): A survey of people in Baghdad Street revealed that the most popular spaces in the street are the retail shops. Two ladies even remarked that they enjoy shopping in the retail shops on Baghdad Street because they are outdoors and not in a mall, which to them provides a better experience.
- Most popular spaces (frequency): The frequency of retail shops on Baghdad Street has not quite changed.

Overall Indicator ■

4.1.6 Physical Comfort

Analysis of 1920s Condition

- Environmental (shading): The shades that were added in front of the storefronts make it more comfortable for users to linger under and around them and interact with them and with others.
- Environmental (greenery): Greenery has almost completely disappeared from this area
- Seating Options (safety): Seating was well-designed in the 1920s condition of Heliopolis. And that is evident in Ibrahim Street, where no seating is exposed directly to the street.
- Seating Options (quality): The seating quality was also very good because they were always considered in the design.

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Analysis of Current Condition

- Environmental (shading): Shading is well-taken care of in present-day Ibrahim Street. The arcades provide a good source of shade, and the trees planted by some of the facades allow for extra options of shade.
- Environmental (greenery): The island added in the middle of the street allows room for greenery where there previously was none.
- Seating Options (safety): Some places' seating was directly on the sidewalk. While it may be of no problem to users today, it is a downgrade from the 1920s condition regarding safety.
- Seating Options (quality): The seating in other places in the space between the arcade and the actual building is safer. But again, it is a downgrade from the 1920's condition with regards to quality.

Overall Indicator ▼

4.2 Case Study 2: Baghdad Street

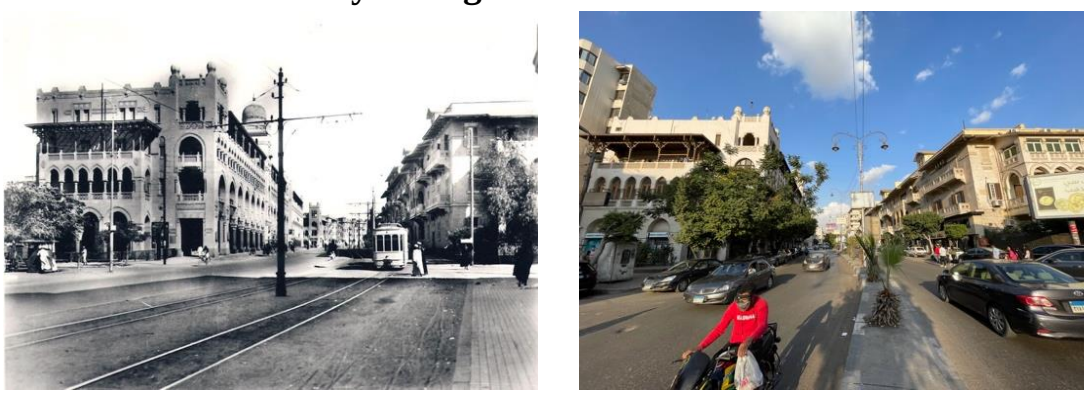

Fig. 10: Baghdad Street. left: 1920's [7, p. 60] and right: 2021 (taken by author)

4.2.1 Complexity and Architectural Character

Analysis of 1920s Condition

- Ornamentations (Types): The main types of ornamentation are stucco decorations around openings and rosetas between the arches of arcades
- Ornamentations (Frequency): Ornamentation is not manifested to be very frequent in this photograph. However, ornamentation was quite frequent throughout the street portrayed in this photograph (Baghdad Street).

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- Shapes (Diversity): In the 1920's Condition there is a lot of diversity in shapes. This is mainly seen in windows, balconies, other openings, and in the stucco decorations.
- Shapes (Frequency): Because this diversity of shapes is spread across different platforms, the frequency of their occurrence is high. This creates a robust architectural character
- Deterioration: None. The design was newly executed, and the factors of time and the environment have not yet passed on it.

Analysis of Current Condition
- Ornamentations (Types): The types of ornamentations that are done have not changed much since the 1920s Condition.
- Ornamentations (Frequency): The frequency also of ornamentations has not changed much since the buildings did not undergo great changes.
- Shapes (Diversity): Because the buildings have not been through major changes, the diversity of shapes too was not affected.
- Shapes (Frequency): The shapes' frequency was not affected except for the missing parts that fell or were ruined over the years.
- Deterioration: The deterioration level in the current situation is much higher than it was in the 1920s condition due to the passing of time and environmental factors.

Overall Indicator ▼

4.2.2 Permeability

Analysis of 1920s Condition
- Openings (Types): openings are mainly either windows, arcades, balconies, doors, or other significant openings.
- Openings (Number): Because there is a high diversity of openings, they are very frequent.
- Openings (Depth): Depth behind some openings, like balconies and arcades, allowed for there to be privacy for the space inside, while permeability was still achieved.

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Analysis of Current Condition

- Openings (Types): The types of openings have not changed much. The openings remain mostly the same because the building has not changed significantly.
- Openings (Number): The number of openings has not significantly changed. The building facade still has the windows, openings, arches, etc. that were in the 1920s condition.
- Openings (Depth): Many of the openings in the facade, especially those which are balconies have been blocked with glass or by other means (to create extra living space, perhaps). This caused a deterioration in the previous richness of depth in facades where balconies provided different depths to a single facade. Also, some of the glass behind windows has been changed to be opaque or tinted in a color that does not suit the facade design. This causes deterioration firstly in the architectural character, but it more directly affects the permeability of the facade.

Overall Indicator ▼

4.2.3 Territoriality and Personalization

Analysis of 1920s Condition

- Interventions (Techniques): Not many interventions were made as visible in this photograph. The only intervention that could be observed is the man selling something under the tree. The boundaries of this tree and the corresponding sidewalk then became his small territory.
- Interventions (Colors): The colors made in this man's intervention abide with the overall design, as the shade above him seems to be made of wood which was the material used for many of the decorations, windows, and balconies in the design of buildings.
- Interventions (Compatibility): This makes the intervention compatible enough with the design of the buildings.
- Interventions (Size): The size of the intervention is also not great as the shading tree above him easily covered it, so it does not obstruct the area's design in any way.

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- Interventions (Visibility): In the 1920s condition when buildings did not have arcades to hide the small interventions made in front of the store behind them, stores abided strictly by the local identity code of the area. This prevented visible interventions from the street. Even though interventions were made, they were very minimal and could not be easily spotted from the street. An example is a man selling under a tree. It protected the view by hiding the activity happening and not making it very visible

Analysis of Current Condition
- Interventions (Techniques): Store owners in present-day Baghdad Street use the signs of their shops to express territoriality and personalization. This
- Interventions (Colors): The colors of these signs are expressive of each store owner's shop, but they do not abide by the local identity code of the area.
- Interventions (Compatibility): These signs, therefore, are not compatible with the facade design nor even with one another. This creates clashing and ruins the quality of the experience from the street.
- Interventions (Size): Because the intervention is on store signs, its size is considerably large, especially as observed from the street.
- Interventions (Visibility): The absence of arcades in the conjunction between Baghdad Street and Ibrahim Street makes any small intervention much more easily visible from the street; whereas previously, there was not this issue because interventions were not easily made in the first place.

Overall Indicator ▼

4.2.4 Enclosure

Analysis of 1920s Condition
- Distance between Buildings: The distance between buildings was great because the tram would pass in this street and so it was wide to accommodate the tram. This did not allow for much enclosure except that which was created by the buildings themselves.

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- Trees: Trees in Baghdad Street were planted near buildings to provide shade, or as seen from the photograph, to create enclosure and therefore protection for certain activities that may be happening on the street.
- Parked cars: There are not any parked cars in the street since there were not many vehicles during that era.

Analysis of Current Condition
- Distance between Buildings: The distance has been divided into two lanes to separate vehicles that are coming from those which are going. In the space in-between, there is an island that holds very small trees, which helps enhance the sense of enclosure in the street.
- Trees: Trees are the main factor in the middle of the street and on the sidewalks that serve to enhance the sense of enclosure.
- Parked cars: The many parked cars on either side of the two parts of the divided street create congestion in the traffic of the street, which echoes the sidewalk activities.

Overall Indicator ■

4.2.5 Ground-Floor use

Analysis of 1920s Condition
- Most popular spaces (function): The ground floor functions were mostly pastry shops and retail shops, which were popular among the user group at the time and suited their needs and interests.
- Most popular spaces (frequency): The popular shops are quite frequent in this design of El Korba.

Analysis of Current Condition
- Most popular spaces (function): A survey of people in Baghdad Street revealed that the most popular spaces in the street are the retail shops. Two ladies even made a remark that they enjoy shopping in the retail shops on Baghdad Street because they are outdoors and not in a mall, which to them is a better experience.

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- Most popular spaces (frequency): The frequency of retail shops on Baghdad Street has not quite changed. There are lots of retail shops on this street varying from clothes to jewelry, to bags and shoes and other accessories.

Overall Indicator ■

4.2.6 Physical Comfort

Analysis of 1920s Condition

- Environmental (shading): Shading was done mainly through the trees and the arcades.
- Environmental (greenery): The trees planted near buildings created a higher occurrence of greenery. This served to regulate the weather, provide a more pleasant view, and create better opportunities for shading.
- Seating Options (safety): Seating was not exposed to the street and was therefore provided in rather protected and safe environments.
- Seating Options (quality): Because seating was provided in places which are designed beforehand, the quality of these seating areas was good which made them more enjoyable.

Analysis of Current Condition

- Environmental (shading): The shading level has not changed due to the arcades and the few planned trees near the building facades immediately.
- Environmental (greenery): The span between greenery is not enough to create sufficient shade.
- Seating Options (safety): Seating is still provided but is located mainly behind the arcades and is therefore unsafe.
- Seating Options (quality): Because seating is mostly provided by chairs in front of the stores behind the arcade, the quality of seating is questionable. That is especially considering that the seating option is the bases of the columns on which people sit.

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Overall Indicator ▼

4.3 Case Study 3: Al-Ahram Street

Fig. 13: Ahram Street. Top: 1920's [1] and Bottom: 2021 (taken by author)

4.3.1 Complexity and Architectural Character

Analysis of 1920s Condition

- Ornamentations (Types): The style of architecture followed closely that of the previous two streets. It had a powerful identity. The ornaments were mainly stucco decorations and the use of various materials.
- Ornamentations (Frequency): The frequency of the occurrence of ornamentation was high as there diversity of platforms on which it appeared.
- Shapes (Diversity): There is a high diversity of shapes along the facades of the buildings on this street.
- Shapes (Frequency): Because of this diversity, the frequency also is high.
- Deterioration: None. The design was newly executed, and the factors of time and the environment have not yet passed on it.

Analysis of Current Condition

- Ornamentations (Types): Unlike the buildings in Baghdad and Ibrahim streets, the buildings in El-Ahram Street were not as well-reserved. Many of them changed, which caused deterioration in the types of ornamentation. It is mainly implemented using different materials such as wood.
- Ornamentations (Frequency): This use of wood does not occur very often. And other than that, there are hardly any other ornamentations on the facade designs.

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- Shapes (Diversity): The diversity of shapes also suffered considerably from this change. The main shapes now are those of the rectangular balconies.
- Shapes (Frequency): These new shapes occur often, however.
- Deterioration: Because the building changed, there are very few signs of deterioration on the buildings.

Overall Indicator ▼

4.3.2 Permeability

Analysis of 1920s Condition

- Openings (Types): Openings are mainly doors, windows, balconies, and some openings for entrances to the buildings.
- Openings (Number): The number of openings is large due to the wide range of openings provided to apply on each facade.
- Openings (Depth): There is depth in the design as most openings are not blocked and entrances are left open to invite people. This enhances the permeability of the facade.

Analysis of Current Condition

- Openings (Types): Openings are mainly windows, doors, and balconies.
- Openings (Number): The number of these openings is still quite high regardless of the change of style. This is a positive thing as it enhances the permeability of the facade.
- Openings (Depth): While openings (balconies specifically) in other streets very close to this one in Heliopolis were blockers, the openings and balconies in these new buildings are not blocked and provide sufficient visual permeability to the facade.

Overall Indicator ■

4.3.3 Territoriality and Personalization

Analysis of 1920s Condition

- Interventions (Techniques): Interventions in this street were rarely done, so there are no signs of any interventions that stand out, as seen in this photograph.

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- Interventions (Colors): This means that if interventions were made, they abided strictly with the local identity code in terms of color.
- Interventions (Compatibility): This also means that when interventions were made, they were policed to ensure that they do not ruin the view but are compatible with the buildings' design.
- Interventions (Size and Visibility): The size of these interventions also must not have been too big as they are not visible from the street as a pedestrian would observe it.
- Interventions (Visibility):

Analysis of Current Condition
- Interventions (Techniques): The interventions made are mainly the addition of advertisement signs and the expression of territoriality and personalization through store signs.
- Interventions (Colors): This causes lots of clashes in color and obstructs the view completely.
- Interventions (Compatibility): It also creates a lack of compatibility with the surviving parts of the old design as well as the new buildings that have replaced the older ones.
- Interventions (Size): The size of these interventions varies but many are signs of stores which means that they are quite big from the pedestrian's point of view from the ground level.
- Interventions (Visibility): The size and lack of any means of hiding these interventions make them very visible from the street level.

Overall Indicator ■

4.3.4 Enclosure

Analysis of 1920s Condition
- Distance between Buildings: The distance between the buildings on this street was large.
- Trees: However, it was filled with gardens and trees in the middle to accommodate for the sense of enclosure.
- Parked cars: There were no parked cars on the sidewalks and there were not many vehicles to start with, so there was no traffic congestion.

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Analysis of Current Condition

- Distance between Buildings: The distance between the buildings has not changed.
- Trees: The trees and the gardens in the middle between the buildings which created an adequate sense of enclosure were removed and train tracks were added in their place instead. This destroys the existing means of enclosure and does not replace it with anything to accommodate for the loss.
- Parked cars: Because the street width is considerably large, the presence of parked cars by the sidewalks does not create the issue of congestion in the traffic as in the previous 2 case studies.

Overall Indicator ▼

4.3.5 Ground-Floor use

Analysis of 1920s Condition

- Most popular spaces (function): The ground floor functions were mostly pastry shops and retail shops, which were popular among the user group at the time and suited their needs and interests.
- Most popular spaces (frequency): The popular shops are quite frequent in this design of El Korba.

Analysis of Current Condition

- Most popular spaces (function): The functions of the ground-floor spaces have not much changed, as there are still many shops and restaurants that engage the users.
- Most popular spaces (frequency): The frequency of shops and restaurants in El- Ahram Street has not changed.

Overall Indicator ■

4.3.6 Physical Comfort

Analysis of 1920s Condition

- Environmental (shading): Shading in these spaces was sufficient because it was provided for in the facades themselves and the gardens and trees prided in the central island.

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- Environmental (greenery): there was enough greenery provided in the street that served to create an enclosure, but more importantly, to create to moderate the temperature and create more opportunities for shade to avoid an urban heat island due to the large space between buildings.
- Seating Options (safety): the safety of seating was taken well into consideration in the 1920s condition as no seats can be seen exposed to the street.
- Seating Options (quality): The seating quality was also well-designed within the spaces.

Analysis of Current Condition
- Environmental (shading): shading continues to be efficient near buildings with the help of a few planted trees near some of the facades.
- Environmental (greenery): Most of the greenery was removed, which caused an urban heat island in the huge space between building facades. This is a very uncomfortable environment for users using this space during the day.
- Seating Options (safety): Many of the seats were on the sidewalk in front of food outlets. The space in which the chairs were placed was not properly enclosed, creating an unsafe seating situation.
- Seating Options (quality): This also reduces the quality of the seating by a lot.

Overall Indicator ▼

4.4 Overall findings and discussion

In the parameter of complexity and architectural character, it is clear that the 1920s condition had streets that were wide enough so that vehicles did not hinder the view of the buildings' facades. Now, however, the facade cannot be seen clearly due to many obstacles that come in the way. These include an overload of parked cars in one and sometimes two rows by the sidewalk, therefore creating an indirect barrier between the pedestrians and the building facade.

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Another factor is an overload of advertisements along the middle island between two lanes; it too hinders the view down the street and prevents pedestrians from seeing the building's ground-floor shops. These obstacles result in a lowered sense of the area's architectural character. In areas with arcades, this can be seen nowadays too, where the shops are somewhat hidden in the grand scheme but still accessible to those who want to reach them. However, in other building parts like building corners, this was not the case. And so, when the store owner changed their storefront, the overall building identity was affected.

When it comes to permeability, in present-day El Korba, many of the buildings' facades have changed, and visual permeability is now blocked in many places where the 1920s condition was intended for transparency. In the 1920s condition of El Korba, a lot of the balconies were left open and made for an outdoor terrace area for the residents. In areas where total visual permeability could not be met, the original designers added glass panels that were identical across the facade for all units

The main issue with territoriality and personalization today in El Korba is that they are done in clashing ways. The 1920s condition of El Korba was able to accommodate that parameter without hurting the overall character or local identity of El Korba. However, nowadays, the rules and regulations which were discussed in the Literature Review section of this paper are not at all abided by.

Even though the 1920s condition of Heliopolis was spacious, in the necessary parts, enclosures were well designed and implemented to strengthen the sense of security among the shop owners and the pedestrians and passersby**.** This was clear in the interview conducted by Dobrowolski and Dobrowolski [7, p. 3] with one of the jewelry shop owners in Heliopolis, Mr. Berge Touloumbadjian, who noted that his son "appreciates the sense of security and closely-knit network of neighboring businesses" of the Heliopolis he was born in. [7, p. 3]. Today, this sense of enclosure is threatened by the changes introduced to the ground floors.

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The ground-floor use of buildings has not changed much; the functions on the ground floor are still popular among the current users. Back when Heliopolis was designed for high-income users, the functions were appropriate to their interests. Now the user group of El Korba changed to be more towards the middle and low-income users, and the functions today serve their interests with that respect.
Finally, when it comes to physical comfort, seating was originally added in well-shaded and well-protected areas which were accessible to whoever needed them. Now, however, seating areas are not as well-shaded or protected.

The assessment of the parameters in the results also highlights the overall performance of each street in the case studies. The summary of their performance can be found in Table 1.
Table 2 presents an overall summary of the six parameters, highlighting the general deterioration in the Korba area.

Table 1: Summary of the performance of the three streets in the cases studie

Case Study Name	Street's parameter indicators	Overall Performance of the street
Case 1- Baghdad Street	Complexity: ▼ Permeability: ▼ Territoriality: ▼ Enclosure: ■ Ground floor use: ■ Physical comfort: ▼	▼
Case 2- Ibrahim Street	Complexity: ▼ Permeability: ▼ Territoriality: ▼ Enclosure: ■ Ground floor use: ■ Physical comfort: ▼	▼
Case 3- Al-Ahram Street	Complexity: ▼ Permeability: ■ Territoriality: ■ Enclosure: ▼ Ground floor use: ■ Physical comfort: ▼	Tie

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Table 2: Summary of the analysis of the six parameters across the three cases studied

Parameter	Overall Indicator across 3 cases studies	Comment
Complexity and Architectural Character	▼	The complexity and architectural character is mostly the same in both cases. The only difference that happened occurred due to the deterioration of the materials from the weather and the passing of years on the buildings. Otherwise, the buildings still possess a very similar number of ornamentations and shapes because the facades were not changed much from their original design.
Permeability	▼	The permeability in the original case was much more successfully met than it is in the current situation.
Territoriality and Personalization	▼	While there were interventions made in both the original design and the current situation, both were relatively big. The old design was rendered better because of the strict local identity and the policing of the interventions to make sure they abide by this identity
Enclosure	■	The quality of enclosure in both the original design and the current situation is quite the same. The only change was the removal of the tram and addition of a few trees by the buildings' facades. While this may encourage people to linger a bit longer in these spaces for the shade, they do not affect the sense of enclosure enough.
Ground Floor Use	■	The ground-floor use has been relatively successful in both the original design as well as the current situation. The popular spaces were frequent in both cases which enhanced the impact of ground-floor use on the social life on sidewalks.
Physical Comfort	▼	While Ibrahim Street in both the original design and the current situation offered various forms of physical comfort, the original design offered it in a safer way and with better quality.

5. Conclusion

This research studied the changes in the architectural features of Heliopolis through a diachronic analysis of three case studies in El Korba. El Korba has always been known for having a very strong architectural character which helps stimulate a strong urban life. It has very strong potential, but it has been on a path of deterioration. Previous research and studies about this topic cover the Korba area in terms of history, politics, and urban life. Some studies also describe the deterioration. No research however studies the impact of this deterioration on the urban life in El Korba with regards to the 6 parameters of facade design which are proven in research studies to have a direct impact on social interactions. Said six parameters are: complexity and architectural character, permeability, territoriality and personalization, enclosure, ground-floor use, and physical comfort.

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In this paper, a diachronic analysis was conducted in the El Korba area to study the impact of the changes done to the facades over the years on the urban life in the adjacent streets and sidewalks. Three case studies in Ibrahim El-Lakkani Boulevard from El Korba were assessed against these 6 parameters to track their increase, decrease, or stability. And for concrete results, each of the six parameters was broken down into smaller components for the assessment process. Descriptive analysis was then used for the assessment process, and overall indicators were given to compare each case study with regards to the parameters and to compare each parameter across the case studies to pinpoint the parameters that are causing this deterioration in the urban life on the streets and sidewalks. The results showed that the parameters that have decreased enough over the years to cause deterioration are complexity and architectural character, permeability, territoriality and personalization, and physical comfort. Therefore, if changes are to be made to stop this deterioration, it can be done by tackling each of the four parameters individually; or choosing to start with 1 tactical intervention that can positively impact several of these parameters at once.

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