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Emergent Trends in Architecture and Urbanism in Modern Cairo: Shifts in the Built Environment

Abstract: *This paper examines the shifts and transformations of the different built environments within Greater Cairo's urban agglomeration and argues that shifts and transformations are inevitable in order to achieve sustainability, especially urban social sustainability in the urban context.*

It starts out by depicting a quick image of modern Cairo, starting 1798, while highlighting the shifts and transformations that inevitably occurred in the built environment over time. New Cairo City- to the east of Greater Cairo- is taken as an example of these contemporary shifts and transformations, demonstrating the problem of unsustainable urban development and concentrating on the lack of urban social sustainability. At the end, an approach towards a solution to achieve urban social sustainability within the urban context is discussed.

Keywords: Cairo, shifts, transformations, built environment, New Cairo City, Urban Social Sustainability

Shifts and Transformations of Modern Cairo

Cairo is a dynamic city that has been shaped by distinct urban-fabric-accumulations over time. In 1798, the French invaded Egypt for three years, during which the Egyptians were confronted with the full impact of Western civilization. Then came the Rule of Muhammad Ali from 1805 till 1848, when the foundations of modern Egypt were truly laid. Khedive Ismail took over the rule of Egypt, between 1863 and 1879 and built Wasat Al-Balad: a new Europeanized quarter- based on Haussmann's planning methods, with a well-defined street system- to the west of the old, traditional city. In 1882, under the British Occupation, a unique colonial city had been developing; and in 1905, with the mechanization in public transport, Heliopolis- a suburban residential quarter- was built to the northeast of the city *designed in the latest manner of Ebenezer Howard's Garden Cities*- ten kilometers from the centre of Cairo. It is worth mentioning that not only has the transportation link allowed the growth of Heliopolis itself, but it has also resulted in the emergence of a continuous band of urban settlements stretching all the way between Wasat Al-Balad and Heliopolis. Between 1882 and 1937, Cairo's population increased greatly and by 1950, the city's economy had enjoyed a boom and it was ready to expand at a scale never before seen in history- (Abu-Lughod, 1971). By then, large migrations from the countryside had started taking place and until the early 1960s the city expanded substantially through state-aided social/ public housing projects, especially after the 1952 revolution- (Sims, 2012).

By 1960, under Nasser's Regime, Cairo's rapid population growth resulted largely from natural increase, as well as from large migrations from the countryside, which not only resulted in the formation of planned districts, such as Mohandessin over agricultural land on the west bank of the Nile, but also in the emergence of the first informal settlements. The June 1967 war stopped all of Cairo's *planned* urban expansions and Egypt rapidly shifted to a

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wartime economy; this continued until the October 1973 war. However, at that time, informal settlements had continued to grow- (Sims, 2012).

Figure 1- from left to right: Cairo in the early 19th century; Cairo in the second half of the 19th century, showing the development of Wasat Al-Balad; the development of Heliopolis in the early 20th century; the built-up area in 1950 in comparison to the built-up area in 2009; large informal settlements of Greater Cairo in 2008
Sources: Scharabi, 1989; Elmokadem, 1997; Heliopolis Company Book, 1969; Sims, 2012

Nasser's policies were followed in the mid-1970s by President Sadat's *infitah,* or Open Door Policy, which had deep effects on the urban development of Cairo. Madinat Nasr (Nasr City), a huge, 7000-hectare concession on state desert land, directly to the south of Heliopolis, became the most significant city extension. Also, by that time, plans to execute new urban communities to the east and to the west of Cairo had been unavoidable due to the numerous problems the city was facing because of the rapid increase in population.

From 1986 to1996, Greater Cairo, as a whole, witnessed a significant slowing of its population increase; however, informal settlements were still growing substantially, because of the inability of the government to meet the housing demand. In terms of population shifts in the existing city, the most significant phenomenon was the depopulation of the older, especially historic districts in central Cairo- (Sims, 2012). In the 1990s and 2000s, new urban communities have seriously taken off, representing an important shift and transformation in the development of the urban agglomeration of Cairo. At that time, there have been a number of improvements, especially in terms of infrastructure: the ring road was built in stages, the 26th of July corridor to the west, and more flyovers have been constructed- (Sims, 2012). In 2006, Greater Cairo's population had reached almost 16 million inhabitants and in 2012, it had reached almost 18 million, most of which from massive population increases in informal settlements.

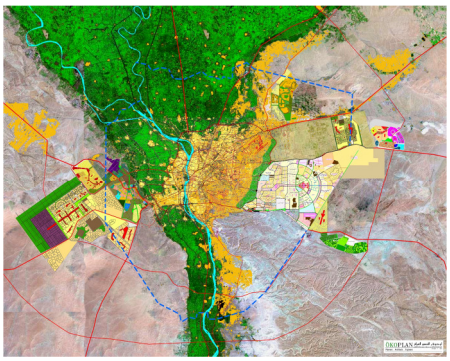

Figure 2- Greater Cairo Region in 2009, including the new urban communities to the east and to the west of the ring road- Source: Ökoplan Engineering Consultations, Cairo

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New Cairo City: A Representation of the Contemporary Shifts and Transformations in the Built Environment of Greater Cairo

In 1993, ten years after the 1983-General Planning of Greater Cairo Region was prepared and due to the numerous problems that resulted from the rapid increase in population and internal migration, lots of investments and construction activities have been directed to the new urban settlements located to the east and west of Cairo. The result was an increase in the areas designated for new urban settlements and a reconsideration of their distribution around Greater Cairo; in particular for the first, third and fifth urban settlements, lying to the east of the Ring Road, and included between the Cairo-Suez Road to the north and the Cairo-Ain Al-Sokhna Road to the south. These three small urban settlements have, since then, been contained within the borders of one large urban settlement called: New Cairo City; and the in-between areas have been divided and sold to individuals, as well as to investment companies that established large residential and recreational projects on them. In addition, new areas have been added to the east of the three urban settlements, designated for residential use- (El Khorazaty, 2006).

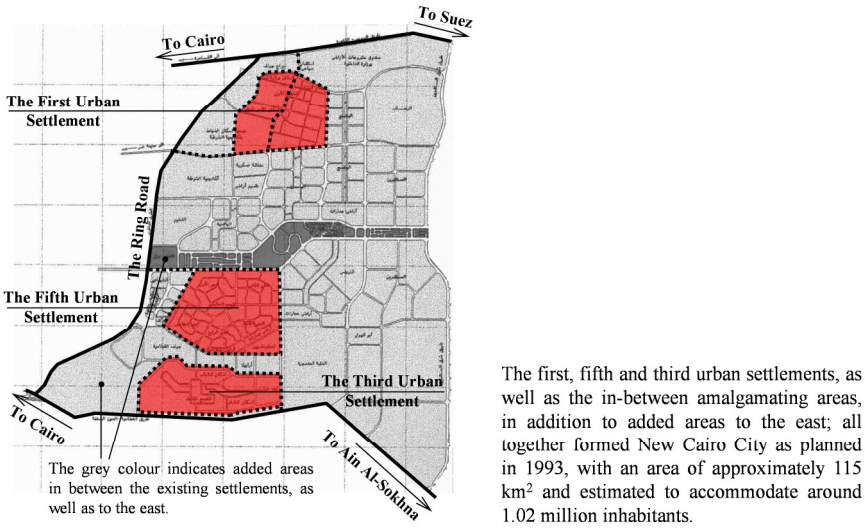

Figure 3- The emergence of New Cairo City- Source: El Khorazaty, 2006

The combination of the first, third and fifth urban settlements, as well as the filled-up, in-between areas and the added parts to the east had formed New Cairo City, which then covered an area of approximately 115 km^2 (11,500 hectares) and was planned to accommodate 1.02 million inhabitants- (El Khorazaty, 2006). In 1998, an extension had been planned to the east of the previously laid out urban settlement, increasing the area of New Cairo City to reach 188.16 km^2 (18,800 hectares), to accommodate, in total, approximately 4 million inhabitants. From the beginning, New Cairo City has been meant to become a center of regional services, including office parks, as well as recreational, commercial and educational activities.

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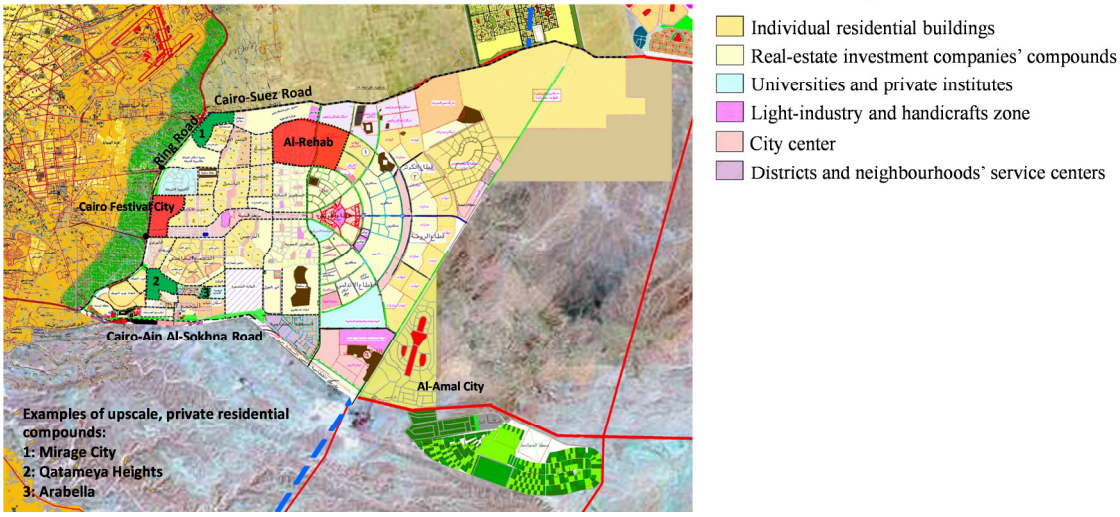

Figure 4- New Cairo City master plan, showing the residential areas, the neighbourhoods and the hierarchy of service centers- Source: Ökoplan Engineering Consultations

Referring to Figure 4, and through field observations, it is noticed that urban development areas in New Cairo City include, Private Gated Residential Compounds, *fenced with strong security controls*; Semi-Private Gated Residential Compounds, *fenced, but open to the public with minimal security controls*; Public Housing, *provided by the government*; Private Individual Residential Buildings, *outside residential compounds*; Services and Amenities; Individual Office Buildings; and Large Mixed-Use Developments, *including office parks, as well as retail and entertainment complexes, owned by private investors on fairly large parcels*. It is thus clear that New Cairo City represents a shift in the urban development of Greater Cairo as a whole, which is clear in the emergence of new land uses and activities: ones that weren't there in the existing city, within the first ring road.

Also, the way the city is being developed is different from what occurred over more than 1000 years in the existing city within the ring road. It is worth mentioning that New Cairo City is still in the development process and has not yet reached its planned population targets. Despite this, the growth of New Cairo City over the past 20 years has not been incremental. On the contrary, the government has always been providing the main road and infrastructure networks and has been selling parcels to investment companies, as well as individuals to develop their own projects, according to the building regulations and codes of New Cairo City. As a result, the whole urban settlement has spread out and has long been defined over an expanse of desert land that is approximately 15 km wide, to the east of the ring road and 12 km long, from the Cairo-Suez Road to Al-Ain Al-Sokhna Road: a land area, not far from that of the existing city, within the first ring road. This has taken place, at least over the past ten years, with many parcels left empty, until the real-estate market dynamics allow their development.

Another observation is that the *physical* plan of the city is not flexible enough to accommodate changing demands and sustainability measures. In order to achieve sustainable urban development, the three pillars of sustainability have to be accommodated in the

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planning and design of the city. Through field observations, it is clear that the city is somewhat economically sustainable, with all the services it provides- *including offices, large commercial/ retail complexes, schools, universities and others*- and accordingly the job opportunities it creates. Moreover, within New Cairo City, there is a light-industry/ handicraft zone, providing an economic base. In addition, it is adjacent to the industrial area of Al-Amal City to the southeast. Moreover, environmental sustainability is not achieved either on the urban scale or on the building scale, especially that it is not a building requirement in the development of any project- it is an issue left for the developer to decide. Likewise, the physical environment does not offer social sustainability. This is clear from the following observations:

- The low population densities within the city.
- The lack of communal public spaces that don't involve retail or any other "paid" services. This, *in turn,* causes deficiencies in social interactions and in the creation of social networks in the community.
- The lack of public transport connections within the city; it is worth mentioning that public transport connections to the "Existing City" are also non-existent.
- The existence of low safety measures for pedestrians in wide streets, designed for high-volume traffic with minimal pedestrian facilities. The city is not exactly walkable because of poorly designed and poorly constructed streets: there is a shortage of sidewalks and pedestrians face difficulties in crossing streets. The problem might be simpler inside the neighbourhoods, where streets are smaller and the scale is more intimate.
- The existence of gated residential compounds: a phenomenon that deliberately separates a sector of the people living in the city from the others, causing an incision in the society. Nevertheless, in case of gated compounds, safety and social interactions *do* exist. In addition, people living there have a better sense of place: they *know* and *feel* that the place *belongs* to them: a fact that makes social sustainability more effective.

Finally, it is worth pointing out that because of the lack of urban social sustainability, the people living in New Cairo City will transform their surrounding built environment by themselves, not according to a general framework or a collective vision, which will result in developing the city randomly instead of incrementally building up an organized complexity that is responsive to transformations over time.

Conclusion: An Approach towards a Solution to achieve Urban Social Sustainability within the Urban Context

Through the previous analysis, it has become clear that shifts and transformations in the built environment are inevitable in order to achieve sustainability, especially urban social sustainability. It has also been observed that informal settlements have emerged in response to socio-economic factors that occurred in the city of Cairo over the years and that their existence- *however negatively perceived*- has actually sustained the metropolis and has

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allowed the large numbers of inhabitants to find the shelter, which the government has not been able to provide for years.

Nevertheless, *because of the numerous problems found in informal settlements, and the rapid urbanization in Cairo,* the government has shifted the built environment towards new urban communities, for which clear physical master plans have been developed and have *mostly* been implemented, however, lacking many aspects of sustainability. In order to reach sustainable urban development, the three pillars: economic, environmental and social should be accommodated in cities. The government *and* the people should work cooperatively to include environmental and economic aspects in building laws, regulations and codes. The first two pillars (environmental and economic) are not the focus of this paper, but the concentration here is on the social aspects, which- *if not tended to*- inevitably cause unwanted transformations.

After briefly examining New Cairo City, it has become clear that urban social sustainability has almost *not* been achieved for the city as a whole. In a recent report, created in collaboration between The Berkeley Group, Social Life, and Prof. Tim Dixon from the University of Reading, entitled *Creating Strong Communities: How to Measure the Social Sustainability of New Housing Developments,* it is stated that:

"Social Sustainability is about people's quality of life, now and in the future. It describes the extent to which a neighbourhood supports individual and collective well-being. Social sustainability combines design of the physical environment with a focus on how the people, who live in and use the space relate to each other and function as a community. It is enhanced by development, which provides the right infrastructure to support a strong social and cultural life, opportunities for people to get involved, and scope for the place and the community to evolve."- (Bacon, Cochrane, & Woodcraft, 2012)

From the above statement, it is clear that in order to achieve urban social sustainability in an urban context- *in this case, New Cairo City is taken as an example*- urban planning should address and enhance the following aspects:

- Public participation in decision-making should be adopted when planning areas in the city. This allows the people to develop a sense of belonging to a place: they know it is theirs and they act accordingly.
- Through public participation methods and through observing the places where normally there are large volumes of pedestrians, it can be decided where to develop communal public spaces, including- *but not limited to*- parks, in order to start establishing social networks in the community.
- Population densities should be increased according to a collective vision and based on agreed upon guidelines.
- Public transport networks within the city must be established so as to achieve better connectivity.

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- Suitable sidewalks and safe crossing points must be established to give pedestrians the required safety, security and ease to walk through the city.
- It is also suggested to design bicycle lanes, adjacent to car lanes to provide another environmental-friendly mode of transportation.
- Gated residential compounds should be minimized.

It is also suggested that cooperative organizations carry out the projects within the city, since a "co-operative" is a form of organization that is owned and democratically controlled by its shareholders and members. A co-operative is also known as a mutual organization or a "co-op", run for the mutual benefit and support of its members or the promotion of a specific purpose or a social benefit.

Transformations over the years are unavoidable, but when they happen according to a certain collective vision, the result is organized complexity. It is thus important to allow the people to participate- *with the regulating body*- in a collective vision for the place where they are to live. This gives the community a kind of stability, pride and a sense of place, which- *in turn*- guarantees a good quality of life and urban social sustainability.

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