

# URBAN SUSTAINABILITY AND CONNECTIVITY IN GATED COMMUNITIES IN CAIRO, EGYPT

USAMA NASSAR<sup>1</sup>, AHMAD FATHY<sup>2</sup>, AHMED SALEH<sup>3</sup>

## Abstract

What is called 'sustainable urbanism and connectivity' – the ability to move around town easily – is essential to the properly functioning city, especially in the past few decades which witnessed a practical orientation toward gated communities and divided cities. Given that gated communities are spatially a kind of enclave, Setha M. Low, among other anthropologists, in her book (*Behind the Gates: Security and the New American Dream*) has argued that they have a negative effect on the overall social capital of the broader community outside the gated community (Low, 2004).

Some argue that Gated Communities offer promises of healthy, comfort, convenience, various services, peace and quiet environment. Other emphasize lush manicured landscape, architecture character, security, and distinctive amenities and services facilities (Ahmed, 2009). Other argue that Gated Communities provide the desire for an imaginary or imagined community leads consumers to look for enhanced suburban environments of the kind promised by these contemporary movements .

This paper will define the term "Gated Community ", then understand how it started globally, followed by its significant criticism. Through analyzing the recent practice of gated communities in Cairo region, and comparing it with sustainable urban principles of good community, and examine its connectivity with the Egyptian urban fabric, the paper will end up formulating a series of recommendation which can achieve better connectivity and sustainability, and how to benefit from this type of urban development. Paper assumes that these new trends in developing new cities can create different urban, functional, social and economic problems, which can be adapted and solved through developing a new vision to connect the urban fabric with the surrounding housing areas.

---

<sup>1</sup>Assistant Professor, department of Architecture, faculty of engineering, SCU, Egypt.

<sup>2</sup>Assistant Professor, department of Architecture, faculty of engineering, SCU, Egypt.

<sup>3</sup>Assistant Professor, department of Architecture, faculty of engineering, SCU, Egypt.

To prove that, some important questions will be answered through the research process:

- What are the different types of gated communities?
- Are there any design principles codes for each similar community in Cairo?
- Is there any role of public authorities in understanding and directing this type of communities according to greater vision of urban development?
- Do gated communities have a one way impact only on adjacent community or micro community? Or there is a double impact on both macro public community and also micro private community?

**Key Words:** Sustainable Urbanism, Connectivity, Cairo, Gated Communities, Urban Sustainability, Shorouk City.

## 1. Introduction

For many centuries, gated communities have housed the rich and famous in countries around the world. However, in recent decades, they have become a way of life for millions of Egyptians. The gated communities of Cairo are important part of the Egyptian culture, and the expansion into the desert is held as necessary for Cairo's modern future (Sims 2010, p. 170).

The paper offers a brief overview of different types of gated communities and its definitions, and its origin globally. Considering the relation between sustainability and this type of housing, the paper will analyze the new cities adjacent to the GCR<sup>4</sup> and presents various types of gated compounds in Shorouk city as an example. The study will end up with a new vision and recommendations towards better connectivity and more sustainable urban city.

## 2. Gated Communities and Sustainability

### 2.1. Definitions and Types

According to the classical definition (Lukovich, 1997), a gated community is a group of houses, surrounded by fences or walls, from which the adjacent streets are closed off by gates, which may be either electronic or guarded. In between the houses, there is an inner network of streets as well as dead-end streets, the latter in order to prevent through-traffic. Walling the residential communities is done in order to control private spaces, streets and open areas.

Gates and barriers indicate the depth of the safety concerns contemporary cities must address: crime, traffic, loss sense of community, and fear of mixing (Shouse and Silverman, 1999).

---

<sup>4</sup>GCR, Greater Cairo Region, is the integrated urban area around Cairo, spanning across part of three governorates', Cairo, Giza and Qaliobyia.

Blakely and Snyder (1999) provided one of the most thorough investigations of gated communities available, and presented the most frequently discussed typology of the phenomenon. They identified three types of gated community: lifestyle, prestige, and security zone communities. In theory, the categories represent ideal types that serve certain markets. In practice, they say, communities may show a mixture of features from these types.

Table (1): Blakely & Snyder's (1999) general typology of gated communities

Type	Feature	Subtypes	Characteristics
Lifestyle	Emphasize common amenities and cater to a leisure class with shared interests	Retirement	shared access to amenities for an active lifestyle
		Golf and leisure	
		Suburban new town	
Prestige	Reflect desire for image, privacy, and control; they focus on exclusivity over community	Enclaves of rich and famous	secured and guarded privacy to restrict access for celebrities & rich
		Top-fifth developments	
		Executive middle class	
Security zone	Reflect fear; involve retrofitting fences and gates on public streets; controlling access	City perch	restricted public access, closed access to some streets
		Suburban perch	
		Barricade perch	

### 2.2. History of Gated Communities

First gated communities were built for wealthy foreigners who travelled to distant countries (mostly in the Far East) “on duty.” The design of the buildings provided them with their accustomed milieu on the one hand, while affording them a safe haven in a foreign environment on the other. In this aspect, gated developments were so efficient and became so popular, that they gradually appeared in almost every country in the world. Over the past fifty years, gated neighborhoods have been built in high numbers, mostly in major cities and seaside settlements in the United States, Mexico, Brazil, and China, but by the end of the 20th century, the wave also reached Eastern Europe, where with the boom in private housing, this solution is slowly starting to dominate the sphere of significant residential development. According to many studies, the global spread of gated community has been triggered by the experience of the United States of America. About 1 in 6 Americans were living in some sort of fortified community, gated and barricaded from the outsiders (Glasse, 2002). By 2008 nearly 60 million residents were living in GCs in USA (Jill, 2008). The UK is fast moving towards the US experience with the number of GC growing at an exponential rate (Cletus, 2003). The phenomena were spread in the central-east and eastern European countries, South Africa and the Middle East. GC has increased dramatically worldwide.

### 2.3. Urban Sustainability

Around the world, urban sustainable development has become a top policy discussion as countries struggle to maintain or enhance economic growth without

compromising the future. Nowhere is the issue more pressing than in Egypt, where urban areas and their economies are expected to grow rapidly over the next few decades. Sustainability should include various criteria such:

### **2.3.1 Environmental Criteria**

Gated Communities physically isolated from its context; hence it creates inaccessible buckets or islands inside urban fabric that cut the continuity of the urban fabric. They exclude public access of adjacent area residents. Moreover, environmental design that could improve the development is to be compact form with short distance buildings, services, and in walking distance so reduce resources consumption and reduce polluting the environment. On the contrary, in micro scale are in low density with large sprawled areas of lands, with divided large distance buildings, segregated separated services, and not on walking distance, so commuting depends on private cars and consume more frequent long distances trips which consume more commute time and fuel. (EEA, 2006)

### **2.3.2 Economic Criteria**

According to Legoix, the impact of gates and walls on property values over time is very notable. Meanwhile, such communities have a cost, and homeowners must sustain both the cost of building infrastructure and collective goods (roads, streets, sidewalks, water and communication networks) that are usually borne by public governments. (Legoix, 2005). Such relationship can be confident to the adjacent land value, and in some cases can be a direct cause to increase violence and crime rate.

### **2.3.3. Social Criteria**

Gating creates controversy in some places, because enclosures can limit access to public spaces, or change traffic patterns on public streets. Enclaves can privatize the public realm, depriving local residents of access to community resources (Webster, 2002). Those resources most in demand may be most vulnerable to privatization. Although, as Webster and Lai (Webster, 2003) note, societies which respect private property, inevitably experience a level of exclusion and democratic discourse provides venues in which those deprived of formerly shared goods may challenge perceived spatial inequities. Thus gating can create social rifts in communities.

## **2.4. Connectivity (Social Interaction)**

The most significant contribution that the built environment can make to community vitality is to enable people to walk, the greater the percentage of people who walk, the more vital a community will be in terms of the potential for its members to create various connections and simply to engage with one another.

According to Leyden, these casual contacts can occur at neighborhood corner shops, at local parks, or on the sidewalk.

To many residents, such contacts develop a sense of familiarity and predictability that most users find comforting (Leyden, 2003). However, Taaffe defined connectivity as 'when a network is abstracted as a set of edges (linkages) that are linked to a set of vertices (nodes), a fundamental question is the extent to which all pairs of vertices are interconnected. The level of connection between all vertices is defined as the connectivity of the system (Taaffe, 1973).

Gated communities are always criticized by sociologists as being exclusionary and reinforcing differences along class or racial lines. In addition, having physical barriers placed between many neighborhoods often impairs bicycle and pedestrian connectivity (Wang, 2011). It creates what is called 'Dead space', which is defined as space with only one function, or a space without any reading or memories, a place of total alienation (Taipale, 2006). Through the case study, the paper will examine to what extent gated communities affect connectivity between external urban setting.

### 3. The Case Study

Cairo is surrounded by eight new cities (satellite and settlements), New Cairo and the other new urban settlements to the east, in addition to 6th. of October City and its adjacent areas to the west (New Towns include New Cairo, Shorouk, 10th Ramadan, El Obour, Badr, 15th May, 6th. October, and El- Sheikh Zayed.). The main aim of the new cities around the GCR is to divert the population growth away from the arable land towards the desert to the east and south-west.

The first generation of these towns is perceived as economically independent new towns, it struggled to attract residents. The subsequent wave relied on developing new satellites that are closer to the urbanized area, it started attracting residents after replacing the settlements for low income groups to higher suburban settlements with better services to be developed by the private sector. Such transformation took place in El-sheik-Zayed, New Cairo, Shorouk and part of 6th October city (GOPP, UNDP, 2008).

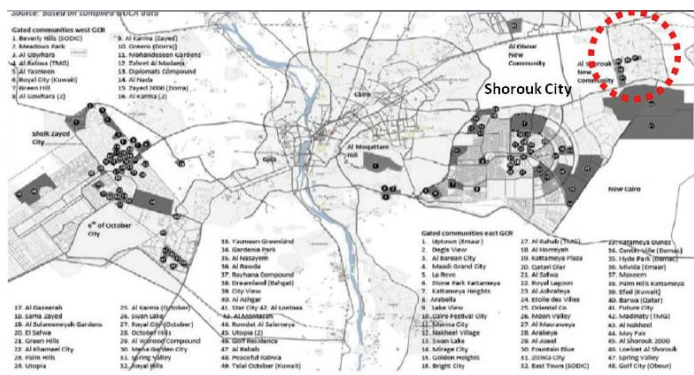


Fig. (1): Gated Communities in the Greater Cairo Region (GCR) and location of Shorouk City (Ahmed Y., 2009)

### 3.1. Shorouk City

The city was established by presidential decree in 1995, it lies along Km 37 Cairo in Ismailia desert road, with a total area of 11.9 thousand acres of which 9200 acres are an urban community (Residential areas - services - tourism and recreation). The total number of housing units is 56 thousand of which 26 thousand performed by New Urban Communities Authority in addition to 30 thousand housing units performed by private sector. The city current population is 155 thousand inhabitants, targeting to be 500 thousand inhabitants, (NUCA). For the study purpose, a selective three gated compounds in Shorouk city will be analyzed in details to examine its relationship between inside and outside, they were chosen to cover the main three different types of gated housing communities as mentioned in table (1). From such comparison it will be clear how such types of housing compounds affected the urban form of the city and to what extend it is missing the urban sustainability guidelines.

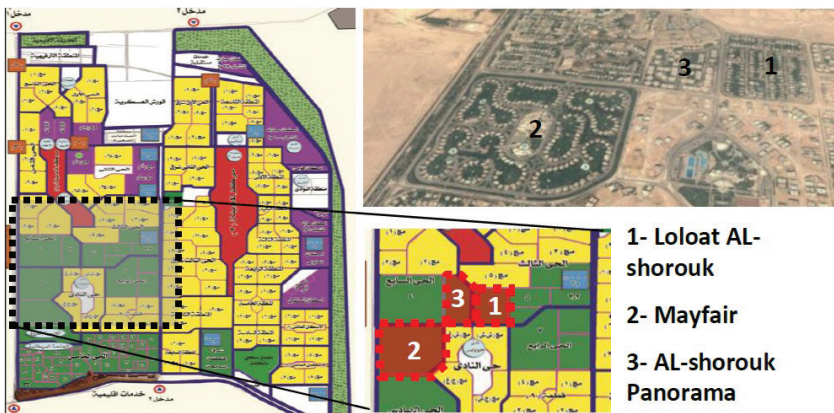

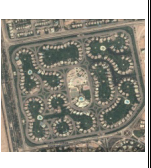



Fig. (2): Shorouk city master plan and location of selected case studies (NUCA)

### 3.2. Selected Gated Communities in Shorouk City

Table (2) shows the comparison of primary data for the selected case studies in the city, they were chosen as an example of various community styles and with a varied areas, and still close to each other to measure the impact both on the urban setting and similar other gated communities.

Table (2): Basic information of three selected case studies in Shorouk City (Google Earth , site visits and reports from Shorouk City Council)

Type and Name of GC	Security Zone Loloat AL-shorouk	Prestige " Elite Mayfair	Life style AL-shorouk Panorama
Lay out			
Total area (Fadden)	58	140	32
Housing Type	Villas & apartments	Villas	Apartments
Services	No services inside the compound, counting on external services by the same owner	Mosque, School, medical center, sport club, pharmacy, bank and some restaurants	A mosque inside, and shopping center by the fence approached from outside
Building Coverage	25 %	15 %	30 %
Green Area Ratio	40 %	55 %	20 %
Density ( Person / Fadden )	141	8.5	73
No. of population	7500	1185	5850
Length of Perimeter (m)	1450	2880	1820
Length of borders a × b (m)	420 × 510	810 × 705	350 × 380
X- y ratio	1 : 1.1	1 : 0.9	1 : 1.2
No. of Gates	2	2	2
Fence	Height	2 m	3-8 m
	Material	Iron and pushes	Trees and pushes
	Permeability	Semi-transparent	Opaque
			Concrete and Iron transparent

From the above table, it can be noticed that:

- Mayfair is the most closed compound, containing all the needed services inside; it is clear from the fences height and numbers of facilities.
- The social level of housing in each compound is connected strongly to the type and percentage of green areas and building coverage.

#### 4. Analysis of Features Affecting Connectivity and Urban Sustainability

The study at this point analyze some characteristics of gated communities that affect connectivity (social interaction) and urban sustainability between them and neighboring areas, such as: gate form, fence, services location, block distance & size, and surrounding streets.



Table (3): Impact of Gate Form on Connectivity & Urban Sustainability




Type and Name of GC	Security Zone Loloat AL-shorouk	Prestige " Elite Mayfair	Life style AL-shorouk Panorama
Gate Form			
Description	Massive	Intimate scale	Massive
Impact on: <b>Connectivity (Social Interaction)</b>	Not enhance (x)	Enhance (✓)	Not enhance (x)
	- increase segregation and social exclusion - reduce sense of community	- decrease segregation and social exclusion - increase sense of community	- increase segregation and social exclusion - reduce sense of community
Impact on: <b>Urban Sustainability</b>	- In spite gated communities can decrease crime; they can increase the feeling of fear. - Behind the walls and gates, residents' fear of crime may be lessened giving them a sense of security - The more number of entrances could be a better solution to: <ul style="list-style-type: none"> <li>• reduce median distance between entrances</li> <li>• develop relevant external connectivity between micro and adjacent area</li> </ul>		

Table (4): Impact of Fence on Connectivity & Urban Sustainability




Type and Name of GC	Security Zone Loloat AL-shorouk	Prestige " Elite Mayfair	Life style AL-shorouk Panorama
Fence			
Description	Semi-transparent & Average height	Opaque & High	Transparent & Average height
Impact on: <b>Connectivity (Social Interaction)</b>	Partial Enhance	Not Enhance (x)	Enhance (✓)
	- To some extent- increase segregation and social exclusion - To some extent reduce sense of community	- increase segregation and social exclusion - reduce sense of community	- make a visual Interaction - increase sense of community - reduce segregation and social exclusion
Impact on: <b>Urban Sustainability</b>	- Fences and walls causes: <ul style="list-style-type: none"> <li>• public paths bad appearance</li> <li>• Isolation – sense of separation from the rest of the community</li> <li>• Harm security and safety; remove sense of belonging and identity which affect public life in the city.</li> </ul> - This influence is parallel to the parameter, and depends mainly on the nature of the fence (land use, height, nature). - The high-income gated community residents (such as Mayfair) reported a significantly lower sense of community, significantly higher perceived personal safety and comparative community safety.		



Table (5): Impact of Services Location on Connectivity & Urban Sustainability




Type and Name of GC	Security Zone Loloat AL-shorouk	Prestige " Elite Mayfair	Life style AL-shorouk Panorama
Services Location			
Description	No Facilities	Facilities in the center	Facilities along two sides
Impact on: <b>Connectivity (Social Interaction)</b>	Not enhance (x)	Not enhance (x)	Enhance (✓)
	- increase segregation and social exclusion - reduce sense of community	- increase segregation and social exclusion - reduce sense of community	- reduce segregation and social exclusion - increase sense of community
Impact on: <b>Urban Sustainability</b>	<ul style="list-style-type: none"> <li>- When the public facility is located at the center. It is small in service radius and convenient for internal residents to use, but it can only be used by internal residents.</li> <li>- If the public facility is located along one or two sides. This form could provide services both for residents living inside and outside.</li> <li>- Services were provided inside the community: schools, malls, clubs, hospital, mosque, bank branches, etc. that reduce the need of the residents to travel outside the community, (such as Mayfair). And it can be a drain and irrational exploitation of resources</li> <li>- Increasing the separation between rich and poor as poor are excluded from the good services that lead to social division.</li> </ul>		

Table (6): Impact of Surrounding streets on Connectivity & Urban Sustainability



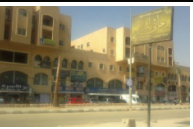
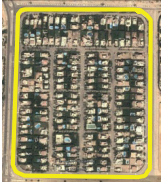


Type and Name of GC	Security Zone Loloat AL-shorouk	Prestige " Elite Mayfair	Life style AL-shorouk Panorama
Surrounding streets			
Description	Dead Space	Dead Space	Alive Space
Impact on: <b>Connectivity (Social Interaction)</b>	Not enhance (x)	Not enhance (x)	Enhance (✓)
	- increase segregation and social exclusion - reduce sense of community	- increase segregation and social exclusion - reduce sense of community	- decrease segregation and social exclusion - increase sense of community
Impact on: <b>Urban Sustainability</b>	<ul style="list-style-type: none"> <li>- Single use streets have adverse impacts on the livability of the city; Isolating streets from its life, and converting it to merely some areas and walls, which motor paths have cut it.</li> <li>Highly rates of crime could be expected in these dead streets.</li> <li>- The long (residential - commercial) boundary could reduce adverse affected area and paths so it makes streets full of use and full of live</li> <li>- Mix of activities, and make a continuous eye on street, hence enhance security and safety, visual appearance of street.</li> </ul>		

Table (7): Impact of Block Distance and Size on Connectivity and Urban Sustainability

Type and Name of GC	Security Zone Loloat AL-shorouk	Prestige " Elite Mayfair	Life style AL-shorouk Panorama
Block Distance & Size			
Description	Perimeter =1820 m a x b = 420 x 510 m	Perimeter =2880 m a x b = 810 x 705 m	Perimeter =1450 m a x b = 350 x 380 m
Impact on: Connectivity (Social Interaction)	Not enhance (x) - increase segregation and social exclusion - reduce sense of community	Not enhance (x) - increase segregation and social exclusion - reduce sense of community	Partial enhance - increase segregation and social exclusion - reduce sense of community partially
Impact on: Urban Sustainability	- Gated Communities in macro scale are spatially segregated that divide and cut the continuity between neighbors society residents. It tend to diminish public realm, leading to dividing urban form and massive trend to enclosing large areas of land inside the city, turned to just walls with no use, with no public urban spaces. - Efficiency of urban fabric (Accessibility-permeability-connectivity-visual appearance) is affected inversely with increasing gated area. - Environmentally gated communities, use huge area of lands, large amount of water for irrigating green area. Meanwhile, it discourage the varieties of transportation that lead to increase the usage of private cars and as a result increase the pollution - Urban fabric is related inversely to gated community's x-y ratio, and that compact one is better.		

#### 4. Conclusion

After studying three compounds in Shorouk as samples covering all types of GCs, and examined these communities through main features affecting urban sustainability and connectivity. This discussion concluded some points for a better connection with urban setting, which are:

- The urgent need to achieve design guidelines for new compounds in Cairo, and adapt it with the general urban vision for greater Cairo Region.
- Simplicity in gates and fences design would enhance more social interaction and connection with surrounding urban context.
- Allocating GC services along the side to be doubled served from inside and outside - with respect to compound privacy - could be a positive added value both on social and economic level to the community.
- To decrease urban fragmentation, the max. Side length for the community should be 300m or less.
- The location of GC in the new cities urban setting should be by its sides in a linear way, to avoid dead streets between compounds.
- Gated communities with a total area from 10 to 20 Fadden proves to be more interacting with the urban setting, and has less negative impact on the hierarchy of open spaces system in the context.

## References

- Ahmed Y., 2009. The Privatization of Urban Development in Cairo: Lessons Learned from the Development Experience of Al Rehab Gated Community. Faculty of Urban and Regional Planning, Cairo University , Egypt.
- Blakely, E.J; Snyder, M.G., 1999. Fortress America. Gated communities in the United States, Washington D.C/Cambridge.
- Cletus M., 2003. Gated Communities: Violating the Evolutionary Pattern of Social Networks in Urban Regeneration, University of Glasgow , England.
- EEA, 2006. Urban Sprawl in Europe: the ignored challenge, Copenhagen.
- Glasze C., Frantz K., 2002. The global spread of gated communities, Environmental and Planning B, Planning and Design(editorial), vol.29, 315- 320.
- GOPP, UNDP., 2008. Strategic Urban Development Plan for Greater Cairo Region.
- Jill L. Grant., 2008. Challenging the Public Realm : gated communities in history, Dalhousie University, School of Planning, Canada.
- Legoix, R., 2005, The Impacts of Gated Communities on Property Value: evidence of changes in real estate market. International symposium TCE, Territory Control and Enclosure.
- Leyden, K., 2003. Social capital and the built environment: The importance of walkable neighborhoods. American Journal of Public Health, 93(9), pp. 1546-1551.
- Low, Sheta, 2004. Behind the Gates: Security and the New American Dream. Routledge, New York and London.
- Lukovich Tamás, 1997. A posztmodern kor városépítészetének kihívásai [Challenges of urban architecture in the postmodern era]. Szószabó Stúdió
- NUCA, New Urban Community Authority, it is a governmental sector in charge of the establishment and development of new urban communities. [http://www.newcities.gov.eg/english/New\\_Communities/shrouk/default.aspx](http://www.newcities.gov.eg/english/New_Communities/shrouk/default.aspx)
- Setha M. Low, 2001. The Edge and the Center: Gated Communities and the Discourse of Urban Fear. American Anthropologist, Vol. 103, Issue 1, pp 45–58.
- Shouse N, Silverman R., 1999. Public facilities in gated communities, Urban Land 58(6) 54.
- Sims, David, 2010. Understanding Cairo: the logic of a city out of control. Cairo: The American University in Cairo Press.
- Taaffe, Edward J., and Howard L. Gauthier. 1973. Geography of transportation. Englewood Cliffs, N.J.
- Taipale, K.,2006. Public spheres and their boundaries. University of Tampere, Finland, 1–22.
- Wang Q., 2011. The Impact of Gated Community on Connectivity & Accessibility, National University of Singapore, Singapore.
- Webster C, 2002. Property rights and the public realm: gates, green belts, and Gemeinschaft. Environment and Planning B: Planning and Design 29 397: 412
- Webster C, Lai LW-C., 2003. Property Rights, Planning and Markets: Managing Spontaneous Cities (Edward Elgar, Cheltenham, Glos).