

# Urban Structure Transformation between the Role of Urban Planning Methods and Real Estate Market Force – Case Study: the New Millennial Cities in Egypt

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## 1 ABSTRACT

Over the past forty years, many new cities have emerged in Egypt, including millennial cities. It noted that there are many urban changes in these cities since the beginning of their inception until now. Includes city area, patterns, characteristics, rates and percentages of land uses within the city, the decrease or increase of some elements ratios, disappearing of other uses, in addition to transfer of some uses from its usual place to another inside the city.

Many reasons have led to these changes as: the change of housing policies especially that deals with systems of subsidization, emerging of new housing patterns and models, and the strong participation of private sector in development of cities and residential areas.

The research aims to monitor the changes and urban transformations occurring within the major millennial cities within Greater Cairo region in Egypt since the beginning of its inception at late 1970th up to now, studying the different reasons that led to these changes, then deriving some indicators and set guide lines and put foundations and standards that Helps to develop urban planning of major new cities structure in Egypt.

Keywords: New Millennial Cities, Urban changes and transformations, urban planning, Housing policies and housing patterns.

## 2 INTRODUCTION

The city is always created to serve its inhabitants and to fulfill their requirements and their desires in a given society by using the available capabilities. The city influences society and the environment, and then city and its characteristics change. These changes are not limited to urban structure, environment and human behavior, but also change its economy, its components and its potentials.

Many studies indicate that cities have a strong ability to attract and establish a strong economy in many fields like production, service or administrative, and the real estate economy, which represents an important part of national economy for any country.

Many factors have a strong impact on the city planning and its urban structure, such as;

- environmental, and socio-economical characteristics that elaborate the basic requirements and desires of the population.
- Housing policies, construction elite responsible and political decision.
- Regulations, urban planning laws, planning methodologies within its specific steps [15].
- Real estate market and Finally,
- Technological development affects all aspects, and has an influential role in the physical changes of the city

In Egypt, housing policies have been changed, and due to that the city have been changed too. The individuals, associations, and private sector have been involved in development of various lands which allocated by government. The question now is [18];

- What is the most powerful player in making the new city structural changes? Is it real estate marketing or planning?
- Is there any impact of real estate marketing on urban transformations of cities?
- Is there a relationship between urban planning methodology and real estate marketing? Which Factor has the strongest impact on the other?

In response to this issues, two cases of the new Egyptian millennial cities were studied (as planned):

(a) New Cairo City (East of Cairo)

(b) 6th of October City (west of Cairo)

The research will follow the changes that have taken place in both cities since the beginning of their inception in the 20th century, while studying the policies and The used planning methods for planning and implementation, as well as those responsible development during that period. As follows:

(2) Housing and the New Million Cities in Egypt

The idea of establishing new cities in Egypt started with ancient Egyptian civilization. They put the regulation of housing to all social sectors, as in Tall-ElAmarnah city. At mid-1970s Egyptians aimed to create new urban communities to make a comprehensive change in all aspects of life in Egypt (economic, social, environmental and urban). In 1979 the issuance of Law 59 to build integrated urban cities in the Egyptian desert and coasts, and was assigned to the New Urban Community Authority (NUCA) which manage new cities and communities in four generations.

- G1 Includes 10th of Ramadan, Sadat, 6th of October, Burg Al Arab and Damietta, ten new communities in Greater Cairo, most of which were later transformed into cities [23] [24].
- G2 Included the cities of Bard, Sheikh Zayed, Menia, Beni Suef and Thebes.
- G3 New Cairo which included (1-3-5) communities, Shorouq (Com. 2), New Assiut.
- G4 Included New city of Toshka and many cities that are twinned with the old cities in most of the country's governorates as; New Fayoum, Sohag and Beni Mazar.

These cities were established through ministerial decisions issued with the change of housing policies and the institutional framework, followed by the change of attitudes, Planning methodology, and housing elites.

New Millennial Cities, was began at 1992 after planning of the New Cairo city including communities (1-3-5) combined with the inter- areas east, while 6th October city turned into a millennial city at 2006, where planned population reach 1.5 million, followed by the New Administrative Capital at 2014 east of Cairo, of nearly 7 million people [2].



Figure 1: first New Millennial City (New Cairo)

(3) Institutional framework and changing the elite and officials:

The Ministry of Construction and New Urban Communities (NOAH) was established in 1978. It was headed by Eng. Hasaballah Al-Kafrawi, who adopted the policy of establishing new urban communities and started the establishment of 18 new cities. They aimed to provide low cost housing units for low-income peoples (ranging from 60 to 70%) [11] while the State shares with individuals and Real estate developer for provision of middle, upper middle and Upper class. [12]. At 1990th, Dr. Mohammed I. Suleiman enforced the vital role of private sector by spread of resorts and housing projects in the new cities. Ahmed El Maghraby take the responsibility in 2006 for his policy of managing new urban communities and decision-making in the manner of the businessman and the tendency to employ Egyptian and foreign expertise houses [17].



Figure 2: low income housing at 5th settlement (10000 units) and Alshorouk (10000 units)

This kind of development of new cities continued until 1992 when they decide that the state will only carry out the implementation of main basic facilities, and put the conditions for the land to speed up implementation in accordance with specific standards and requirements for quality. They give the private sector a greater role in development of various housing projects by giving them large and mid. land lots with relatively low prices. Many major projects had strong beginnings, including Al Rehab in New Cairo on about 3500 acres as total area, And Dream Land at 6th October city on 2000 acres, they use new thoughts and marketing ideas that has a strong role and influences on Community planning.

Egyptian state continues providing lands including small and med-sized lots areas ranging from 10 to 2000 acres for private communities such as Hyde Park, Mivida, new giza, and Helio Park in New Cairo and 6th October, on other hand they sell large areas for Egyptian and foreign real estate companies, as 8000 acres (Madinaty), and 11,500 acres for Mostaqbal city [4]. These companies make many large and med-sized communities included inside New Cairo and 6th of October .

State also provided many types of housing for low-income people by achieving Mubarak's presidential program, including Youth Housing Project in 1997, Future Housing Project in 1998. During period from 2005 to 2012, NUAH implemented national housing project in all provinces, (established 500000 housing units) [17]. They have partnered with some real estate associations and investors according to specific governmental housing models. And also adopted the Social Housing Program Family Housing Project which aims to create one million housing units within five years (between 2006 and 2011), as middle-income families within the Dar Masr project and Build your house project [18].

The state also provides lands ranging from 200 to 1200 m<sup>2</sup> with complete infrastructure for individuals and small developers. At 2006, the state began to offer lands for real estate projects with auction system, they started with two lots of an area of 80 acres at New Cairo and 200 acres in 6th October, the price reach 4050, and 1200 EGP\m respectively, which is higher price about 6 times than the allocation by acquisition in city of 6th October, and 20 times in New Cairo. The new prices had a strong impact on the prices of units, where it rose from 2 to 3 times in only 1 year.

As a result of land price increase, developers and investors of real estate market has to find a new housing types and ideas to compete with other projects on land with less prices, these ideas were based on the achievement of environmental, recreational and social dimensions in addition to increase the quality of life especially in gated communities, similar to old romantic areas as Garden City and Heliopolis (at Cairo), they come back to dream cities, utopian city, the European countryside cities. Most of them depend on the centrality of the green, recreational and sports zones in central areas, and the main basic services and non-residential uses were placed on outer ring for privacy of the residents.

#### (4) Methodologies and planning process for the millennial cities.

Two types of planning Methodologies emerged for the new cities: The physical planning approach, which follow set of steps and studies to produce Master Plan which determine the landuse distribution for housing, services and economic uses for a certain population [1].

The second Methodology is carried out by real estate developers, especially those who develop communities (50 to 500 thousand inh.), they compose development team including planners, analysts, administrators, economists and representatives, All team members has new genius ideas and applicable proposals, They also must be good representatives and depend on comprehensive concepts, and must care about sustainable development by achieving conservation of resources and capabilities for future generations. They use following planning tasks to develop the land, its stages and steps [18].

- (a) Preparing a preliminary strategic real estate idea: where planners and visionaries propose visions and ideas to do a preliminary feasibility study include a forecast of costs, expected activities, and a determined plan of what can be done to achieve the vision of real estate of the company.
- (b) Preparing detailed outline plan of real estate element: including units and land for all uses, then determines proposed financing and marketing plan and determine pricing for each.
- (c) Preparation of project management documents: Which include advertising plans, financing, marketing and pricing, as well as planning documents and implementation management.
- (d) Marketing activities (selling, sorting and spare, renting, leaving.)
- (e) Securing and financing the project.
- (f) Design and urban planning: includes legal and executive plans, implementation documents and all related to the aspects of urban in line with marketing plan.
- (g) Construction and implementation stages
- (h) Delivery and Accreditation
- (i) The practice of selling or leaving or renting
- (j) Insurance and efficiency during the warranty periods

Both two types begin with study and then analyze, followed by plans for mid. long periods, they care for people and users because their products remain for long years. They are responsible for covering all areas related to real estate development, implementing various projects for profit, contributing to Gross Domestic Production, generating jobs in various economic projects, and forming the physical and natural environment with its buildings and spaces [2].

#### (5) The role of the state, individuals, real estate investors in new cities planning in Egypt

Between 1996 and 2006, there were about 7.9 million Housing units built in Egypt, including urban housing units, 3.9 million was implemented by three groups, the state by related authorities and public bodies (about 10.5% of the total units), while private sector (investors, real estate developers and social associations), implement 24.3% of units, the remaining 65.2% of housing was built by individuals in an informal settlement [18].

- Real estate in Egypt is involved in the construction of about 948 thousand units, most of which are distributed to the Greater Cairo region and Alexandria [18].
- In new cities, the state participated in deveoping about 35.9% of the total units of 902 thousand units, while individuals built more than 41.5%, and about 12%by housing associations, and also 10.1% by investors (real eastate companies [18].



Figure 3: private communities by Real estate



- Here after the real estate major companies that had an active role in the planning and development of major projects and development were the following companies [26]:
  - Orascom Development Holding is a mid-level residential
  - Talaat Mustafa Group is a high level residential unit
  - Palm Hills Development of high level residential units
  - SODIC residential units of upper high level
  - Miemar Al Morshedy is a medium level residential unit
  - Emaar Egypt is a high level residential unit
  - DAMAC residential units of high standard
  - Qatari Dear high-level housing units

Most of private sector developers employ experts or contract with consulting firms including urban planners to accomplish development tasks and contractors to carry out the construction. Some of them have their own team work. They develop residential compounds, mostly implemented at five new cities around Greater Cairo, (New Cairo, 6th October, Sheikh Zayed, Obour and Shorouk). they focus on luxury homes, med. and upper med. housing such as (Talaat Mustafa Group and Eemaar Morshedy). On other hand individuals and small developers build housing for the less affluent people, which represent about 41.5% of Egypt's total urban housing production. and promote these projects through direct Media and/or marketing agencies [17].

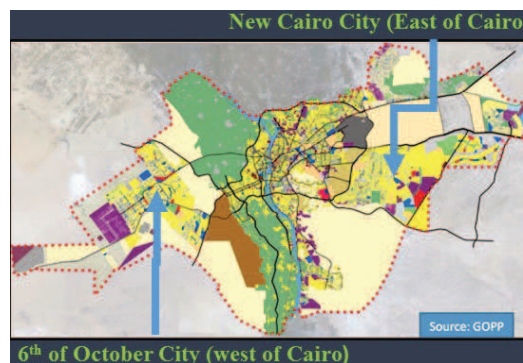


Figure 4: The case study millennial cities

### 3 CASE STUDY 1: (NEW CAIRO CITY):

At early 80th, three urban communities (1, 3 and 5) starts with an area ranging from 2000 to 3000 acres and a population of 200 to 250 thousand inh. per each one. At 1992 the first millennial city of areas about 27,600 acres including the three communities and areas in between [23], the city was surrounded by a green belt with an area of 2600 acres. The service center was planned in leaner form to represent an extension of Nasr City main service axis at east direction of Cairo, and to emphasize the fill the spaces between the three communities at 1992. during this period, the beginning of allocation of lands to real estate developers such as Al-Rehab Community, which represent large participation of real estate developer in cities.

At 2006 the city become one of major cities with an area 67000 acres to accommodate 3.7 million inhabitants [10]. It has allocated a number of medium and large lands for investors such as Madinaty, Heliopark, Future city, Hyde Park and other several gated communities. Then the city increased to reach about 78000 acres in 2014 to accommodate nearly 5,5 million. and including 4 other new communities (Sectors) to be developed by government and the private sector [18].

The city axial service center extending about 20 km from first ring road to east ended with services area in rectangular shape, its areas is about 19.5% of the total area, including 11% basic services and 8.5% green areas recreational services, these services are excluding special elements such as the fossilized forest on the south as well as the various services within the gated communities developed by private sector within the city [11]. These gated communities divided the city internally into fenced zones, the pace of construction has increased. Most of communities (1,3,5), and other gated community's zones have been totally completed. Here is some Communities at new cairo. The services areas ratio decrease by time specially the basic

services but the green and recreational areas ratio are increased specially for communities developed by real estate as shown in table (1) [27].

City/community	total urban area Acres	Basic services	%	Green & Recreation	%	total area	%
<b>5<sup>th</sup> community 1986</b>	2175	380	16.46	235	10.8	615	27.26
<b>New Cairo 2014</b>	78000	8580	11	6630	8.5	15210	19.5
<b>Al-Rehab City 1992*</b>	3500	315	9	298	8.5	613	17.5
<b>Madenaty 2004*</b>	8000	640	8	960	12	1600	20
<b>Abo Elhool 2004**</b>	700	42	6	100	14	142	20
<b>Mostaqbal city 2006*</b>	11500	805	7	1550	13.5	2355	20.5
<b>Heliopark 2006*</b>	1695	120	7	170	10	290	17
<b>beit Elwatan 2014**</b>	3500	300	8.5	420	12	720	20.5

\*- They are a part of New Caro city

\*\* - developed by state

Table 1: services ratio at New Cairo and its communities

(a) Al-Rehab City- New Cairo (Talaat Mustafa Development) 1992-1997 [22]:

Al Rehab is considered the first large integrated residential community established by private real estate developer. Its located in New Cairo city near the Cairo-Suez Desert Road, it was built on 3500 acres to accommodate 200,000 people. Its divided into ten neighborhoods each on an area of 250-300 acres, in addition to basic services (9%) which distributed on the outskirts of the city, recreational green areas is about (8.5%), including sports club and gardens in central area, while other smaller basic services are distributed as an intermediate ring within the city including some of green areas.

(b) Urban Community (Madinaty)- (Talgat Mustafa Development) 2004 [5]:

The city was built on 8000 acres to accommodate 600 thousand inh. The planning idea based on the Axial centralization of Green and recreational area, the basic services is about (8%) and 12% for green areas and recreational services. Many services that serve on a regional level, such as the media village, mega malls, smart village and Olympic sports village which have been settled on city outer ring.

(c) Abo Elhool Family house - New Cairo (State development) 2004 [14]:

It was about 700 acres, and is located near Cairo-Ain Sokhna road to the east of the fossilized forest. It was developed by the authority to accommodate and serve 100,000 inh. The residential community was divided into three district, in addition to a park, recreational areas, club, and mixed uses in the central area. Services represent 20% of the total area including 6% basic services and was distributed on its outer borders, and 14% for recreational, greens and a central park.

(d) The Mostaqbal City (The Arab Contractors) 2006 [6]:

The city was planned to accommodate more than 500 thousand people in about 11,500 acres. its located east of the Greater Cairo region and bordered by Cairo-Suez road at north, and by regional ring road from the east. The planning idea was based on locating large recreational area as central axis of the city surrounded by residential Zones, while services were distributed outer ring including basic services of about 7%, while recreational services and green areas reached 13.5%.

(e) Hyde Park Residential Complex - New Cairo (GCC real estate company) 2006.

The Community area is 1,120 acres and developed by gulf real estate company to accommodate between 25 and 30 thousand inhabitants, it contains a large green heart, where residential areas was settled around it. The total service is 25.5% of the total area including basic service which represent 9%, and distributed in organic forms on the outskirts of the residential zones, and there is 16.5% for green parks and recreational services. The community is located at south east of New Cairo.

(f) Helio Park - New Cairo (Development of New Egypt Real estate) 2006 [25]:

The city area is about 1695 acres, planned for 100 thousand people, its divided into 6 residential district located around a linear green center with total area 1060 acres which includes some commercial services too, each district has a central garden. There a regional civic center parallel to the Cairo / Suez road. The basic services area represent (9%), and is located on the outskirts of districts. Recreational areas and gardens

represents (7%) concentrated in the central axis. Other green areas are electricity lines and within each district, which represent about (10%) of the total area.

(g) Lake view- New Cairo (By Egyptian Oil Company subsidiary) 2006:

On 500 acres, residential Compound was located in the heart of the city axial central to accommodate about 10000 inh., where the state replaces a part of the central services with Luxury housing and sporting club, some Basic services distributed at north and south, and 5-star hotel too.

The idea of its plan was based on locating sports and recreation area in the center of the community surrounded by residential groups from the east, west and south. Basic services in the city is 8%, while green areas and recreational services represent 16.5%.

(h) Beit Al Watan Project (State Authority) 2014

Its located on Cairo-Suez Road, east of Greater, with an area about 3500 acres, Its planned to accommodate more than 200,000 people. its idea of planning was based on central leaner green axis extends from north to south surrounded by 8 residential districts, a concentration of huge services area at north and south. The basic services ratio is 8.5%, and the green and recreational service is 12.



Figure 5: The case study urban communities developed by state and private real estate

#### 4 URBAN STRUCTURE CHANGES OF NEW CAIRO MILLENNIAL CITY

Through the study of New Cairo city, it noticed that many changes in city structure, as follows: -

- The state starts to change the city Urban Structure by gathering the three isolated communities (1-3-5) to form the first millennial city which follow the model of linear city with a long axial civic center surrounded by residential districts.
- The real estate developers have established communities surrounded by fences which called the Gated community, as Al Rahab, Lake View, Mivida, Hyde Park, that include mid size cities that emerged within the city and its borders as (Madinaty– HelioPolis and Future City).
- The communities which developed by real estate developers change the city internal composition including the planned uses and its urban patterns. There are landuse transformations of some sites, as the the chang of a part of the axial civic center to residential areas (as Lake View for example), and Abo Elhool area, which has transformed from secondary service centre to a residential community around a central park, also many basic service areas have been transformed into recreation areas such as to the Central Bank Club in the north.
- There are transformations from residential to regional service as (AUC) which has been transformed from residential uses into educational services.



- The huge change in the city is the ratio of basic service and the green elements. Basic serviced decrease and the green area increase in all communities that developed by real estate and the recent citeis that developed by the state.



Figure 6: Urban changes of New Cairo

## 5 CASE STUDY 2: (6TH OF OCTOBER CITY):

6th of October is residential and industrial City located near Giza Pyramids area at west of Greater Cairo 38 km from the center. It connected by Cairo-Alexandria road, Wahat and Cairo-Fayoum road. It was planned in linear urban model. The service centers are representing the city artery. The whole city was surrounded by green belt, and also green Zone to separate industrial area at west from adjacent residential areas. The residential districts and neighborhoods contains its basic services. At the south there is different uses areas (tombs- housing of workers- residential areas- universities- clubs- recreational projects such as Dream Park).

The city Cardoon at (1978) is starts with 85680 acres to accommodate about 500000 people [23], the basic services area at that time represent about 8.1% and the recreation and green represent 7.3%. At 1992 the state allocated large and medium land to real estate developers such as Sodik, Dream Land, Mina Garden City for many private residential projects [8]. The planned population increased at year (2000) to 96390 acres for 1.5 million, and reached 2.5 million at 2012, and then reached more than 4 million in (2014-2015) plan, with an Urban area of about 80000 acres. The total service area ratio reached 19.4 %, including basic services 6%, while recreational and green areas represent 13,4 [16]. The services and green areas in 6 October city changes through time as shown in next schedule (2).

City/community	total urban area Acres	Basic services	%	Green & Recreation	%	total area	%
<b>6 October City 1979</b>	13700	1100	8.1	900	7.3	2000	15.4
<b>6 October City 2006</b>	75400	5500	7.3	4650	6.2	10150	13.5
<b>6 October City 2014</b>	98900	6430	6.5	12857	13	19287	19.5
<b>dreamland 1992*</b>	2000	130	6.5	310	15.5	440	22
<b>Sheikh Zayed 1986*</b>	10000	1500	15	1500	15	3000	30
<b>Mena Garden City 1992*</b>	210	7	3	38	18	45	21

\*- They Developed by Real estate companies and are a part from October City[27]

Table 2: services ratio at 6 October and its communities

The city has many internal communities as:

(a) Mena Garden City Residential Complex (Mena Tourist Housing Company) 1992[3] [13]:

The city has adopted the distribution of the urban structure on a dedicated strip center for recreational services, sports clubs. There is one basic service center in the south, other one located on north west, it was established at the end of the twentieth century for Luxury villas and palaces on an area of 210 acres located in the tourist area in the city, and to accommodate about 8000 people. At the beginning of the 21st century was intensified housing with Townhouse and Twin House villas which increase the population to about 15 thousand people. The area of basic services represent only 3%, while recreational services, sports and green area of 18%, and the total area represent 21%.



(b) Dreamland Housing Group (Bahjat Group Companies Development) 1992[19]:

The project began at early 1990s and consider as the first major real estate projects in the City, its located on the Cairo -Wahat Road and ring road. It was planned on 2,000 acres to accommodate 40,000 homes (about 180 thousand people), 20% of its area is Residential buildings, and the rest is for roads, green spaces and services, services represent 22% of the total area, include 6.5% for basic services while 15.5% for gardens and recreational services [9].



Figure7: Two examples of Private sector development for urban communities

## 6 URBAN STRUCTURE AND ACTIVITIES CHANGES IN 6TH OCTOBER:

- The state planed the city using the linear model as a basic form, later on many changes to the activities and uses happened within the city, including transformation of some areas that were planned as service centers to housing projects due to increasing housing demand.
- Policies was made to apply of fair and homogeneous distribution of main and basic services and greens on many places of the city but later on the services distributed in un homogeneous order.
- The private real estate developer depends on concentrating green areas and recreational services such as social and sports clubs in the city center, (as Dreamland, Mena and others Gated communities), and distribute the domestic service on other decentralized places.
- Some changes come by changing services areas to housing projects such as (Build your home project) and some other gated communities.

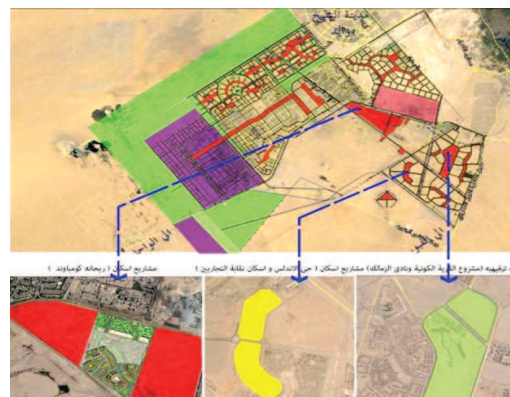


Figure 8: Urban changes of 6th October.

## 7 RESULTS

(a) The State plans to follow well-known planning models for city planning such as the central and linear model, and they plan to provide max. low income housing in those communities.

(b) Millennial city urban structure change coincides with the transformation of the state role through its institutions from main developer to legislator and observer only, and it's also coincides with the change of housing policies in the state and the change of elite and officials.

(c) The city Changes include new Urban patterns and planning Models for units, as well as change of the whole city urban structure, there is also Changes in proportions of uses as basic services, recreational services and green, that

(d) The private sector and real estate developers actively participate and plan their land on an innovative model based on customer preferences. New models show their centers have no basic services, but have green areas and recreational uses.

(e) The state on late decade follow the experience of private developers in city planning. The same developers planning models was applied by state, such as green centers instead of basic service in city centers. The state investigates the requests of some investors to provide some activities within the city instead of the previously planned activities, where some services moved out of the civic center and replaced by residential areas or gardens and recreational.

(f) The internal change in the city has emerged through green centers and basic services on the outer ring. and at the whole city level through changes in some activities and uses, also the ratio of basic services decreases about 5% and the greens and recreations has increase twice times.

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