Modern High-Rise Residential Complexes: the Modernization of Slums in the Formation of the Silhouettes of Capital Cities (on the Example of Baghdad)

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Abstract. Urbanization as a socio-economic process manifested in the concentration of the population in modern big cities- especially the capitals - contributes to the development of high-rise residential complexes construction, which formation of the silhouettes of cities. City residents put forward new architectural and functional requirements to urban infrastructure. This calls for the creation of new types and forms of residential buildings, the structure of the city and transport networks. In addition, the need to develop high-rise building construction is justified by the growing demand for residential, public and administrative buildings and the lack of free space and the modernization of slums. Slums are a reality that many developing countries have to face. Despite all the efforts made to contain its growth, slums areas are increasing and it seems that removing them and providing formal housing for all its residents or at least compensating them for their investments is impossible, the modernization remains the best possible options in dealing with these areas. The paper analyses the modernization of slums in the formation of the silhouettes of capital city (Baghdad), by building modern high-rise residential complexes.

1. Introduction
The article deals with modern high-rise residential complexes in the city of Baghdad, by highlighting the modernization of slums and the reasons behind this, and their positive or negative impact on shaping silhouettes in Baghdad, which reflects the urban image of the city. Whereas, after a population increase and an increase in slums, and the problem of restoring the spatial planning of the great Iraqi city - the capital, Baghdad, which was destroyed during the war of 2003-2017. Relevant today to ensure their sustainable development and the formation of a comfortable, safe and environmentally oriented urban environment. And what it will follow later is conditioned on its solutions with high-rise residential complexes. Therefore, it should be based on the foregoing the establishment of residential complexes in harmony with all local assets, historical roots and environmental requirements. The research assumes that the formation of silhouettes in Baghdad is reflected through the construction of high-rise modern residential complexes. As for the two secondary research hypotheses, they are: The designer and planner bear the greatest responsibility in achieving the construction of high-rise modern residential complexes studied and balanced, which positively affects the city scene. As for the second hypothesis: The society has a role in confronting the phenomenon of slums and their growth in the city.
of Baghdad, and setting some solutions to address it and limit its spread in coordination with government agencies.

2. Slums areas, their concept, causes, problems, characteristics and types

2.1. The concept of slum areas and their designations

There are many different studies that dealt with the definition of what is meant by informal areas, some of which are based on legal and political aspects as contradictory areas (not licensed for construction) [1], and some of which indicate urban and social problems [2], and the slum based on this basis is not limited to its existence with developing societies only, but we find it in some cities of Europe and North America as well.

Traditionally, slums mean construction operations that take place outside the frameworks of the state, that is, they are outside the formal framework with the state and its institutions [3]. Studies rely on the definition of informal areas (areas deprived of service, or areas with a heterogeneous urban fabric that consists of unlicensed housing in areas deprived of public facilities and basic services. There are many forms and images of these areas in the absence of general planning for cities and out of the laws regulating urbanization and protection of agricultural lands) [4].

Slums are also defined as residential areas that lack the right to ownership and legitimacy, because they are built without building permits and violate land use and planning and building laws, and most of them suffer from a lack of basic infrastructure and social services [5].

As noted, the concept of residential slum is broad and unstable, so we can define slum areas as areas within the administrative boundaries of the governorate that have arisen without previous land secretion schemes based on public or private property that led to unplanned random urban expansion. The region is not required to have a certain area, as their area ranges from a group of small houses to a group of entire neighborhoods, and they vary in size and area spontaneously and are not subject to planning rules. [6] .The reasons that contributed to the formation of slums vary in many countries of the world in general and developing ones in particular, there are factors specific to the state's own policies, and other factors as a result of wrong initiatives and solutions on the part of individuals to confront the problem of the lack of housing or shelter for them [7]. Slum areas properties include the following: Buildings: the majority of them lack the approved planning and architectural foundations; Services: Services are distributed in those areas randomly; Road network; Infrastructure; Urban design: does not conform to the standards of urban design; the environment: Lack of green areas and open areas; Social and security [8].

2.2. The reality of slum areas in Baghdad

Baghdad city divided into (14) municipalities (Karkh, Kadhimiya, Mansour, Rasheed, Al-dora, Shuala, Rusafa, Adhamiya, Ghadeer, Shaab, Karrada, new Baghdad, Sadir (1) and Sadir (2)), as shown on figure(1) .Tigris river divides Baghdad city into two parts ( Karkh ) and (Rusafa ) district.
The functional and morphological structure of Baghdad has been greatly affected by the phenomenon of random housing. Since the change of the previous regime in 2003 and the weakening of the state’s institutions, the problem of informal residential areas has emerged in another way, as it took government buildings, their departments, and the neighboring lands belonging to the state as its location [9]. In the city center and in places near the distinctive environments in the city, which requires a special pause and new thought in dealing with this phenomenon by building modern high-rise residential complexes on its lands. This also affects the formation of silhouettes of the city of Baghdad, but it is less harmful than functional and morphological effects being studied and organized.

The size of the random housing phenomenon in Baghdad city has been studied through (a comparison of the number of sites, homes, and areas in the random housing areas). The total number of slum areas in the Baghdad city for the year 2011 was around (316) slums areas ((261) on the Rusafa district and (55) on the Karkh district), reached (24836) houses.). As shown on figure (2).

The indicators above confirm that there is a real problem that should be identified and addressed.

Table 1 shows the modern high-rise residential complexes in new areas of Baghdad for the year 2020, its area and the number of built houses within it. The proposed districts for modern high-rise residential complexes lie within the boundaries of Baghdad Governorate - outside the boundaries of Baghdad City (figure 3).
Table 1. Parameters of modern high-rise residential complexes in new areas of Baghdad.

| Municipalities          | The names of modern high-rise residential complexes | Area / acres | Number of dwellings/apartments | The height of the modern high-rise residential complexes / meters |
|-------------------------|-----------------------------------------------------|--------------|--------------------------------|---------------------------------------------------------------|
| 1 Al-Mansour            | Princess Tower                                      | 0.775 acres  | 80 apartments                  | 80 m                                                          |
| 2 Al-karkh              | Iraqi Gate                                          | 7 acres      | 3280 apartments                | 63 m                                                          |
|                         | Al Rashid                                           | 75 acres     | 160000 apartments              |                                                               |
|                         | Residential City Project                            |              |                                |                                                               |
| 3 Al-Karrada            | The Al-Ayadi Project Complex                         | 47 acres     | 1369 apartments                | 45 m                                                          |
| 4 Al-Mansour            | The Zuhur Baghdad Project Complex                   | 170 acres    | 5400 apartments                | 63 m                                                          |
| 5 New Baghdad           | Al Yamama City Project                              | 12 acres     | 868 apartments                 | 45 m                                                          |
| 6 Al-Kadhimiya          | Al-Mahaba Residential Project                       | 15 acres     | 448 apartments                 | 32 m                                                          |
| 7 Al-Rasheed            | The Jawaher Dijla Project Complex                   | 50 acres     | 1500 apartments                | 60 m                                                          |
| 8 Al-Kadhimiya          | Dar Al-Salam Residential Towers, Borouge project    | 50 acres     | 576 apartments                 | 72 m                                                          |
|                         |                                                    | 116 acres    | 2650 apartments                | 104 m                                                         |
| Total                   |                                                    | 542.775 acres| 176471 apartments              |                                                               |

Figure 3. The proposed districts for modern high-rise residential complexes.
3. Modern high-rise residential complexes and their influence in the formation of the silhouettes of city

Residential architecture represents the widest area in all cities of the world compared to what the architecture occupies with its various activities and functions from the space in the city’s structure or its spaces[10]. Where housing represents the basic unit for installing the city within the land uses, as it occupies more than 50% of the land uses [11]. Because of the growing numbers of people and because of the severe shortage in the preparation of housing units and the increase in slums in the capital, Baghdad, it was necessary to find a new pattern to bridge that shortfall and to accommodate that preparation of the population, the urgent need to implement a rapid housing plan and build modern high-rise residential complexes to accommodate the largest number of families [12].

Residential complexes multiply in their forms due to the multiplicity and different forces and determinants that govern them and affect their formation [13]. Buildings, including housing, are the result of an existing interaction between several factors, Rapoport has classified them into two factors: Cultural factors and other factors [14]. From the foregoing it becomes evident that there are two main factors for the purpose of the formal production of housing complexes: the human being with all his psychosocial concerns and what his civilization dictates to him in the form of customs, traditions and the way he deals with others. And nature with all its components, climate and nature of the earth and integrates with the first factor.

In its plan for Baghdad, Paul Service Corporation suggested using the modern high-rise residential complexes to put an end to the crisis of housing and start the stage of increasing the number of apartments to 70% and reduce the percentage of separate houses to 30% [15]. Residential complexes are an urban style that fits the ongoing social transformations and the developments imposed by changes in light of economic and political transformations and architectural thought [16]. Residential compounds are not only an alternative to solving the housing crisis, as it greatly affects the urban landscape and the formation of silhouettes of the city, so it is necessary to develop a policy for this housing style and not to follow the patching policy and then distort the silhouette of the city with vertical structures that are not controlled Design, which negatively affects the formation of silhouettes of cities in general and capitals in particular, and leads to confusion and distortion [17]. Therefore, attention must be paid to the location of residential complexes, the way they are designed, and the relationships between their constituent elements of facades. Housing does not include being a shelter or a place to reside but rather must achieve several things, including what relates to its external face and its influence in shaping the silhouettes of the city as a whole.

4. Conclusions

Modern high-rise residential complexes are buildings whose height is distinct and clear in an urban environment [18], and it has a clear effect on the horizon, since it is the most visible gate to space and time, affecting the silhouettes of capital cities.

The importance of high-rise residential complexes is also evident in the urban system, since high-altitude dominants are vital in an important topic for each city, especially Baghdad, seeking to find a special place for it in a successful planning policy, with an emphasis on the architectural and compositional features of the formation of high-rise dominants in the urban landscape for Baghdad, where high-rise dominants are a symbol of the values of decision makers in the past and present, they are symbols of the city, especially to the modernization of slums. Which are considered problems and still lack radical solutions, despite all legislation and laws. Therefore, modernization of the poor neighborhoods through the construction of modern high-rise residential compounds friendly to the environment. The treatment process is necessary to advance the wheel of development and the prosperity of society, a process in which responsibilities are entangled and multiple parties overlap, and emphasize the need to activate the role of the private sector, including developers and investors, to achieve the result. We need a foundational base from which to proceed in objective judgment on the problems of slums, through careful analysis of these studies and statistics.
In general, modern high-rise residential complexes lack balanced, studied, formalities in an architectural language consistent with a unified and homogeneous with the neighboring urban landscape and with the silhouettes of the city of Baghdad secondly, which negatively affected the silhouette of the capital Baghdad, where it was characterized by distortion and confusion as a result of the formal anarchy created by the complexes Modern high-rise residential in terms of location. The scene of modern high-rise apartment complexes greatly affects the silhouette of the capital, Baghdad, which it contains by building residential complexes with high and varying heights with the surrounding environment. In general, the high-rise residential complexes witness a general state of discontinuity from the surrounding urban landscape as a result of ignoring the characteristics and relationships of this scene as well as ignoring the local heritage and using emergency architectural vocabulary in the formation of the silhouettes of capital cities.

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