

AVOID SLIDING RESIDENTIAL NEIGHBORHOODS TO RANDOM BETWEEN URBAN PLANNING AND THE REALITY OF IMPLEMENTATION

Abdulrahman A. Majrashi¹;

¹Assistant Prof. of Architecture and Urban Planning, Islamic Architecture Department,
Faculty of Engineering and Islamic Architecture, Umm Al-Qura University

Mohamed Osama Khozium²

²Professor, Department of Engineering & Applied Science - Computers, MCC
Umm Al-Qura University, Makkah Al-Mukarramah, Saudi Arabia

Abstract

It is noticed that many of the residential areas and neighborhoods that were planned and implemented during the past few decades, have undergone many changes differently than their actual planning, not in terms of the division of lands and streets but in terms of the third and fourth dimensions (height and time), changing the building systems and increasing the building and housing densities and converting some of them from lands for the purposes of independent villas to condominium buildings, which is a normal development, but the problem lies in the repetition and continuity of this process in new projects, neglecting the fourth dimension of time and its expectations, ignoring the expectations of a future population doubling upon completion of housing projects, and a sharp decrease in the level of services.

The research aims to make the best use of the experiences of planning areas and residential neighborhoods during the past few years and decades, analyzing and evaluating them, and extracting useful ones for the purpose of reorienting them in the future with new plans, through detailed and more comprehensive planning ideas and standards, and planning and design legislation, in a scientific, realistic and balanced manner that serves the future of housing, residential areas, city planning and sustainability, capable of accommodating comprehensive development processes. It also aims to address the imbalance of the imbalanced relationship between each of the areas planning and residential neighborhoods and the level of basic services, management and implementation on the ground, especially when the completion of the implementation of those projects in the future.

Keywords:

Residential neighborhood, planning standards, basic services, housing systems followed.

1. INTRODUCTION

The rate of rapid technological and economic and social progress and the expansion of cities during the past few decades in the Kingdom of Saudi Arabia, accompanied by a lot of urban and social secretions and changing some concepts, including the concept of housing, and this is normal, and such has happened in many societies during crossing this stage of development, and the accumulated experiences resulting from it yielded many lessons that can be found and benefited from when developing similar plans, including plans and housing schemes, as the more rapid urbanization in developing countries, the expansion of cities, and social and urban change, result in complex and more blurry future visions. When linking the thought directed to planning areas and residential neighborhoods with the speed of

urbanization, the speed of social and cultural mobility, and the change of housing concepts, it seems that the starting points of planning thought are still behind these variables. The study and analysis of the scheme study area as a model for the premises thought areas planning and neighborhood residential that point of time, the amount of that imbalance is clear, because some planning ideas have remained constant for decades, and have not changed with the new residential concepts, and it continues to proceed from the idea of dividing the plans to plots of land with specific areas, Each plot is for one family, and neglects the expected population in the future at the level of each plot of land and the neighboring region as a whole, and the relationship of all this with the basic services needed for them.

From this it is clear that the subsequent variables were not balanced with it. The planning ideas behind the secretions of urbanization were delayed, and the relative change of the residential concepts accompanying them at a large segment of the urban population, while the essence of the planning ideas remained the same for more than four decades, and this is what he showed Analysis of the Zahra Residential Scheme – which will be denoted by ZRS – plan as a model for the project ideas for that period, and for some subsequent housing projects, where the idea of the master plan was that each plot of land is considered an independent housing of one or two floors for housing a single family, and upon implementation it was converted to different housing systems, a system of residential buildings with opposite apartments, which led to an increase in housing units, the number of residents and densities to more than three times what was planned, while the services lands and buildings and their level remained as planned in the approved plan.

Thus, from the point of view of planning and standards, the residential area lost its planning balance, which is the main problem that the research attempted to highlight and raise, and search for solutions to address it with existing and new housing projects, with an emphasis on the need to restore balance and continuity between the foundations of planning areas and residential neighborhoods and the housing concepts and systems changing of the feedback of previous experiences.

The paper has been divided into six sections, the first section is this introduction, and then the second section is the related work on urban planning of residential neighborhoods, district and areas, the third section was about Urban planning standards in general and then a Case study was covered in the fourth section. In the fifth section, the study was discussed and the summary followed in the sixth section.

2. RELATED WORK

In the stage of rapid development and urbanization, cities expand and population densities increase, and thus building systems change towards medium and high-rise residential buildings, and their legislation rises in parallel with these variables, as the main services requirements expand to be more than just an elementary school, and this results in intensive investment of land horizontally and vertically, With the fulfillment of all the standard requirements for housing, health and service, and even higher level of requirements.

From the foundations of some of these experiences and changes, the first ideas emerged in England in the 1940s to address the emerging requirements. The neighborhood unit was taken as a basic cell with a population of 6000 people and every 2-4 neighborhoods formed a residential district (17000-23000 people), then a few residential districts gathered to be a major residential area (90,000 people) and each has its services. [7]

With the development of housing and housing studies expanded globally through international conferences, studies and research to settle later the hierarchical structure of residential areas at the following city level: see figure 1

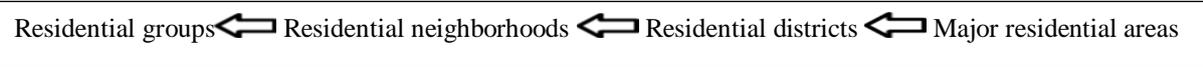


Figure 1 hierarchical structure of residential areas

Then with the urban population growth stabilizing later, the concept and size of the residential neighborhood in England settled for 10,000-15,000 people with the determination of their standard installed services [7], followed by a change in the size of the residential districts. This was repeated in the planning of residential neighborhoods in all countries of the developed world, although its details differed. From this we conclude that the size of the residential neighborhood in terms of population and its details changed with the change of population and urban growth and its transition from the stage of rapid population and urban growth to the stage of stable population and urban growth. It is an evolutionary process accompanying the harbingers of contemporary urban transformations, and is very similar to what is being experienced by contemporary urban housing systems in many developing and rapidly changing countries, including the cities of the Kingdom, and it seems that the (neighboring) ZRS has reduced that population transformation at the level of the size of the residential neighborhood, It began planning with a population, according to the analyzes, not exceeding 4000 people, to settle currently more than 20,000 people, but it did not maintain its relative balance between the number of the neighboring population and the efficiency of the services needed for the population.

There are many studies that deal with residential areas and neighborhoods in the Kingdom [16], [17], [18], [19], [20], but they are few compared to the scale of the problem, especially studies that address the summary of their experiences, direction and expectations of their future, and that their impact on the changes in the reality of planning and implementation is limited, which requires diving more by studying the reality of implementing its general plans at the level of residential areas and neighborhoods. And also its details on the level of its plots, forms, and residential systems, low - medium - high, and is it independent (villas) or apartments?, and then all this reflects on the standards and requirements of building and improving them, and there are some studies that deal with the content of some of these details, such as considering the apartment as a type of housing for the Saudi family, as a new pattern and their proportions are constantly increasing in large cities [2], it is a tangible and witnessed reality and constitutes the largest proportion among the various types of housing systems currently being implemented in some major cities, including the city of Makkah Al-Mukarramah, and there are studies dealing with affordable housing with small areas of land with an independently expanding, vertical housing, and its area suggests that it does not exceed 200 meters, 8 meters wide and 25 meters high, to meet the needs of the Saudi family [5]. They are studies that address the details, all of which reflect the sense of expectations of the severity of the problem, and it is a problem that the research tries to discuss its roots related to residential neighborhood plans.[16], [18], [19].

Future studies should also be linked to the reality of population and urban growth and the degree of urbanization and change with cultural, urban and residential concepts, and their

impact on the housing systems actually followed and widespread in many major cities, and completely different from what was planned, and also must be considered realistically for the housing planning that is produced by the urban reality, and working to reorient it, and avoid the contradiction between the utopian (idealistic) desired housing and the actual implementation that differs in its content from what is planned, especially the densities and the level of services, and the resulting urban problems.

3. URBAN PLANNING STANDARDS IN GENERAL

The planning criteria were drawn from urban and housing experiences accumulated for decades, with the aim of organizing residential areas and neighborhoods in cities, and to achieve the most important housing and environmental requirements, population comfort and city organization.

Therefore, the criteria for planning areas and residential neighborhoods are the main legislative reference for planning operations, commitment and implementation of them is a prerequisite for preparing, approving and implementing housing plans. Also, the re-evaluation of housing projects that have been implemented in previous stages of time is done by comparing their efficiency and the extent to which they meet these standards, which was followed and discussed in this research. Considering that the reassessment of implemented housing projects is no less important than preparing new plans, it is an integrative process and mutual nutrition, and the basis for development. From this it can be said that the criteria for planning areas and residential neighborhoods are the judgment in the process of planning, accreditation and implementation, and then evaluation and reassessment, and any defect or deficiency in their applications is a lack of the efficiency of those plans, And when the shortage is limited, it can be absorbed and addressed, but when that shortage exceeds a certain limit and the efficiency of planning becomes deficient and unfulfilled to the housing requirements, especially standard services as standard, the intervention begins to fix it or it continues to collapse and head towards slums. So the planning criteria were the judgment in the evaluation of housing projects, including the ZRS in Makkah Al-Mukarramah, which was randomly chosen as an old project that was planned, approved and implemented more than 35 years ago, it was analyzed, evaluated, compared and achieved to the approved standards. And through it as a model, it is possible to assess the level and efficiency of many previous similar projects and what followed, with the aim of drawing useful lessons to guide future housing projects.

And Table (1) shows selected examples of the basic criteria for residential areas and neighborhoods in the Kingdom, and focused on extracting the criterion per capita per capita for its importance and accuracy in determining the lands for basic services, because many of the residential schemes take generalities, which are compatible with the generalities of assumptions, and avoid details (such as the average area of a person and the type of construction) that may change the concept of land use divisions and the areas needed for services, and thus reduce the number of plots of land and reduce the material investment return.

Table (1) shows some planning standards for public service buildings in residential areas and neighborhoods in the cities of the Kingdom

	Criteria	Economically assumed population for service	Their percentage of the population%	Average area of person per square meter	Service scope	Notes
Education	1- Kindergarten	1500	6 %	5 – 10 (15-20)	200 - 300	
	2- Primary	3000	12 – 15 %	15 – 25	500	
	3-Preparatory	6000	9 %	25 – 30	750	
2	4- High School	10,000	5 – 7 %	25 – 35	2,500	
Religious	1-The local mosque	750	-----	1.2 – 1.3	150 – 200	
	2) The whole mosque	3000	-----	1.5 – 1.8	500 – 800	
	3) Quran memorization			-----		
4	Health Unit	4000	-----	0.12 – 0.15	800	
5	Health center	15,000				
6	Neighborhood mall			0.25 – 1.5		
	Gardens and green spaces			0.4 – 0.5 Hectare		
Individual per capita in recreational areas - ref. Guide to the graphic references of services, pp. 18 and 19 [1], [9], [10]						
	Neighborhood garden	3000 and more	-----	0.8 – 1.66		
	District garden	10,000 – 15,000		0.33 – 1.0		
Note: The table shows only the most important criteria, while there are other criteria, such as sports and cultural clubs, libraries, and others that have not been discussed.						

4. CASE STUDY

Planning of residential areas and neighborhoods in the city of Mecca

The planning of residential areas and neighborhoods in the city of Makkah theoretically does not differ much from the planning procedures not only in the cities of the Kingdom and the Arab cities, but in many cities of the world, all of which are based on its general concept of scientific engineering planning principles and legislation and organized standards. The main problem that the research focused on discussing is the large gap that exists between planning areas and residential neighborhoods and the level of implementation, especially with regard to changing housing systems, building and residential densities, and the level of services from what was planned in the approved plans, in order to know the percentage and level of that gap that increases with increasing urbanization and changing building systems, And the increase in population in residential areas, and may be limited in its beginning, which can be absorbed and addressed, but when they exceed a certain extent is the big problem, which the research

attempts to discuss, expose and highlight it, with the aim of addressing it and avoiding repetition in future new projects.

The study will focus on analyzing the ZRS - as a model for many residential areas in Makkah Al-Mukarramah, and was chosen as an example to provide information related to its planning and its similarity to many of the residential areas and neighborhood plans in the city, and to confirm the findings of the research, there is a large discrepancy between the contiguous planning ideas when adopted and the actual reality of their implementation and the relationship of all of that to the level of service efficiency. All this for the purpose of understanding and understanding the past planning experiences and extracting lessons and benefiting from them in reorienting the work procedures of the current and future plans of the city and its areas and neighborhoods to maintain its relative balance with the requirements of contemporary development planning, environment and sustainability.

A - Layout of ZRS in Makkah

Location: It is located near the Kuda area south of the third ring road and is about 4 km away from the Haram. Figure 2 was planned as a residential neighborhood in 1406 AH (1986 AD), in the stage of rapid urbanization and improvement in the level of per capita income, In this

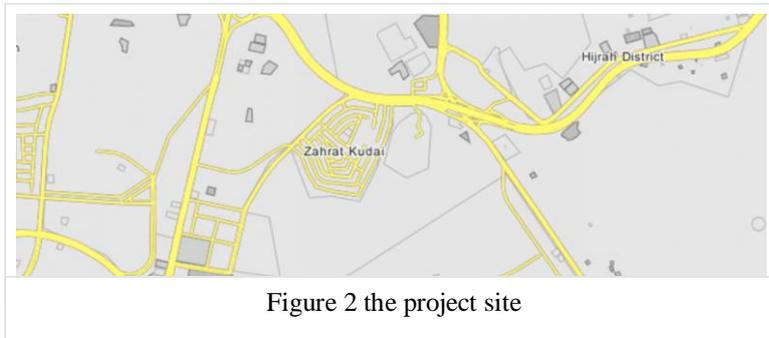


Figure 2 the project site

stage, the city expanded a lot, and many similar plans were conducted in different regions of Makkah Al-Mukarramah, and from its study as a model for the plans of that stage and what followed it, it is possible to know the transformations that took place and are taking place in the processes of planning areas and residential neighborhoods in the city of Mecca, and some other cities, especially the large ones. By analyzing its layout and the accompanying tables showing its land uses for different jobs and their proportions, it is clear that its master plan included an area of 32 hectares, which is less than the reality of its plan, which has been revised and installed in the Secretariat network scheme with the same schedule to be corrected and becomes 44.36 hectares (Figure 2) [8]. Due to the difference in areas, its validity has been confirmed. So it was taken as a reference for analyzing the divisions and uses of the land, its proportions and the different densities in it.

B - Summary of approved ZRS schema content

Area: 44.36 hectares - contains 645 plots, the average area of each plot is 454 square meter.
- Population: The population was not specified, but they were inferred from the services area of the approved plan, according to the criteria, and from the reality of the determinants of neighborhood planning for those for a stage. Criteria followed: Through comparison, investigation, question, and planning reality, which indicates that each floor is defined for one family, with an average of about 6.2 family members (2), which results in approximately 4000 people, and with an average total housing density of 90 people / hectare. (At the time, the neighboring population was always estimated to be 4000-6000 people.) - The land area specified for basic services. The region: Based on the estimated population when planning, it

is clear that most of the areas and proportions of services on the schedule of land use attached to the scheme achieve the estimated population, and the average standards, for example, the number of pupils corresponding to a population of 560 students need two schools each school 5900 square meters. Almost 11800 square meters, and the area, the suitable proportion, and so forth, Table (1). From this it is clear that the level, area and types of all services have been determined based on the estimated population of 4000 people, with a total area of 3.5 hectares and by 7.87%, the area of roads and parking spaces is 11.5 hectares with a rate of 26.13%, while the remaining area and percentage is 66%, which is the net land divided as plots for purposes Housing, which is a very high rate Table (2).

Table (2) Shows details of the division and use of land for different functions - Schedule attached to the approved plan for ZRS

The total population of the plot			645	
Area survey details				
Usage	Approved scheme	Percentage	Network Secretariat scheme	Scheme percentage
Housing	168.412.16 sq.	51.34 %	292.768.3 sq.	66%
Education	8.210 sq.	2.5 %	11.708.53 sq.	2.64%
Commercial	5.150 sq.	1.56 %	4.238.08 sq.	0.95 %
Religion	5.712 sq.	1.74 %	4.590.33 sq.	1.03 %
Facilities	2.922 sq.	0.89 %	3.528.01 sq.	0.79 %
Gardens	8.332.84 sq.	2.53 %	10.877.5 sq.	2.45 %
Total services	30.327.84 sq.	9.22 %	34.942.45 sq.	7.87%
Roads and parking	129.450 sq.	39.44 %	115.931.51 sq.	26.13 %
Total	328.190 sq.	100 %	443.642.26 sq.	100 %

Indeed, the adjacent schematic thought was almost done in this way to the modernization of urbanization and its speed, and the stage was found (a method that still influences the settings of the new plans). Theoretically, the general evaluation resulted in a high structural density and low population density.

C - Change in the approved urban planning for the ZRS

It appears that the speed of urban and urban growth and the change in cultural and housing concepts was faster than the planning thought of residential areas and neighborhoods, and even preceded its expectations, which led to the transformation of residential building systems before the beginning of their construction from the independent housing system of one family such as villas, to the system of mid-rise residential buildings with apartments Contiguous, for the purpose of intensive investment of the land, which is the current situation with an average building of residential buildings of four floors in each building, two apartments in each floor and eight apartments in architecture, which means housing 25800 people, which is a large population, but for the purpose of research we assume in the analysis and calculation only 6 apartments in each building with a decrease of 25% It is expected that, given that some of the ground floors of some buildings are part of services, And some families live in more than one apartment, as there are apartments converted for other service purposes, thus the total of apartments will be 3870 apartments with an expected population of

19,350 people (i.e. 645 (architecture) x 6 (counting apartments) x 5 average family members (3) = 19,350 people)) It is the population that is expected to be settled in the region when all apartments are vacant with the population, which results in a housing density of 435 people / hectare, i.e. the population doubled to more than 4 times what was planned, while the level of services remained as determined in the approved plan.

Note that when adopting the plan, he determined the building heights as maximum two floors for one family, but it was later modified to become four floors, which encouraged the owners to increase the floors [8], and the field visit to the residential area confirmed that the heights of the buildings in the area are mostly between 3 5-Turn Figure 3. And it turns out that work is underway in some buildings to increase roles.



Figure (3) increasing the number of floors for five floors - a phenomenon prevalent in the region – source : the researcher

1. In fact, the population in the region is very high with this area and with this housing system, and it approaches the population of the neighborhood, which was indicated by criteria for planning areas and residential neighborhoods in the Kingdom from 10-15 thousand people [10], and density may seem to be 435 people / hectare high and not possible Because it is difficult to achieve with mid-rise apartment buildings, but it is a reality and the problem is thus: The very high exploitation of neighboring lands for housing purposes, and the high percentage of land designated for plots of land, at the expense of public service lands and buildings, green spaces, urban spaces and parking lots, as well as residential environmental quality (ventilation, lighting and insolation), It is noticed from the table of the uses of neighboring lands, that the percentage of residential use is 66% of the neighboring land, at first glance it may seem that the ratio is acceptable and close to the criteria, but in reality it is high, and is not standard because it is a net percentage that represents only the total area of the plots of land, and does not include the roads connected It has a standard, or according to the detailed criteria of many countries, it is assumed that it does not exceed 45% in this type of housing system, Or 65% as the maximum percentage in the case that included

some urban spaces for residential groups and sub-streets connected to the entrances of buildings, and international standards The proportion was determined by this measurement in the range of 35 - 40%, provided that it does not exceed 45% of the total land area [4]

2. Intensive exploitation of residential plots, especially the high percentage of built land from plots of land, despite the height of the buildings for more than 18 meters, and the depth of some buildings more than 18 meters, but the side and back spaces between the largest buildings do not exceed 4 meters, which is a very small distance that does not achieve lighting requirements Natural ventilation, not even the lowest standards of residential privacy, and if they met building requirements, Figure 4.



Figure 4 shows the side and congenital spaces between the buildings, most of which are no more than 4 meters, for buildings that exceed 20 meters in depth, width of more than 15 meters, and height not less than 18 meters (four floors and a jacket), and this does not achieve the lowest requirements for lighting, ventilation, and privacy (ZRS).

3. The putative service lands are converted into residential plots, which increases the proportion of land allocated for housing and residential density more. Almost 15% of the supposed adjacent land for services is converted into residential land, i.e. more than 6.6 hectares, about 125 plots of land or architecture (750 apartments and 3750 people), which were supposed to be for the purposes of basic services for the scheme corresponding to the population inferred for this type of housing system Figure 4.

5. DISCUSSION

And now, after more than 30 years of its approval and the beginning of its construction, many experiences and useful feedback have accumulated from it and similar projects as a dominant planning system, and also with the progress of science and studies related to planning, housing and environmental requirements, so when that planning system and the levels of its implementation are subject to reality living under evaluation, whether for the purpose of evaluating its general planning and intellectual premises as a reality that has become a pension, or with the aim of benefiting from it for re-planning those areas and new areas of expansion, and re-tuning and directing them to achieve what was included in the standards of planning residential areas and residential neighborhoods and contemporary requirements for sustainability. So where does the schematic deficiency lie? In fact, this deficiency can be summarized by the acute deficiency in the level of the main services represented in education and health, urban and religious urban spaces, etc., which are the responsibility of the state, and it is assumed that they are provided by a standard authority by the authorities concerned

with urban planning and its detailed plans, especially the plans of residential areas and residential neighborhoods. For this reason, the research focused on analyzing the level of services in the scheme, considering that the efficiency of neighboring services and the environmental level within the housing and its surroundings, is the basic criterion for evaluation, and Table (3) shows the assumed services corresponding to the population of the region, has been analyzed and extracted from the various approved standards used for the regions and residential neighborhoods in the Kingdom, based on the population drawn from the reality of its residential buildings.

Table (3) shows some necessary services corresponding to the population of the neighborhood (19,350 people)_[9], [10]

No.	Criteria	Unit	The ratio of the total population	the number	Per capita (m2)	Expected number	Total area		percentage %
							m2	Hectare	
Education	Kindergarten	Child	3%	580	15	4	8700	0.87	
	Primary	Pupil	12%	2322	15	4	34800	3.5	
	Preparatory	Student	5%	968	20	4	19400	1.94	
	High school	Student	4%	774	25	2	19400	1.94	
The total land allocated for education							76480	8.25	18.5%
Religion	The local mosque	Person	The whole population		0.4	4	7600	0.76	
	The masjid	Person	The whole population		0.2	1	3800	0.38	
The total land area of mosques							11400	1.14	2.7%
	public park				0.6	1	11400	1.14	2.6%
Total area and proportion of basic services without commercial								10.53	23.7%
	Commercial				0.3		5700	0.57	1.3%
Total services with commercial								11.1	25%

The table shows the most important basic services that proper planning must provide in accordance with the standards, with the aim of finding a balance between the population and services, and their lack leads to a breach of the quality of housing and residential areas, Which is difficult to address and provide after planning, which is the reality experienced by many similar areas and has taken the standard with a minimum and some of it is less than the lowest, but it is acceptable to assess the current situation, which is compatible with the variables of population growth. From the analysis it is clear that there is a decrease in the level of basic services, by more than 300% from what is present, and by a decrease of a land area for services 7 hectares, and if the population and housing units are assumed to be constant in the current housing system, the borrowed area added to the neighborhood is 7 hectares, for a total area of 51.4 Hectare, To achieve the minimum basic services according to the approved and followed standards, this being considered as a residential neighborhood, and neglecting its normative hierarchical structure as a residential neighborhood with other additional services. And Table (4) is a comparison of the basic services level for the region between the approved official plan to accommodate approximately 4000 people, and the expected planning situation that will be on it in the future based on the housing system currently used in the region, which is 19,350 people. This is in the event that building requirements in the region continue to remain unchanged, but in the case of increased floors, the matter may change and the density increases, which is a possibility that remains valid by virtue of the proximity of the area to the campus and the high price of land in it.



The neighboring area is 44.4 hectares
 First: the foundations of its layout
 Expectations of its population when planning it, by analyzing the level of its services as follows:
 1) - Population (645 plots) x (6 persons) = 3,870 people, or approximately 4,000 people.
 2) - The services are almost suitable for the population
 Second: Its current planning reality:
 Expectations of its population when all its housing units are vacant.
 1) The number of buildings is 645, each building has 3 floors and two apartments in each floor and the average number Family members 5 people and a total number Population: 19,350 people, and housing density Total 435 person / ha
 2) The same services as they are in the approved plan - its deficiency exceeds 300%

Figure 5 ZRS from which its location and planning, the formation of its buildings and the level of its services are evident. [11]

Table (4): An analysis of the land uses of the scheme, a standard comparison - the current and the assumed situation

	Usage	Current status hectare (%)	Assu med	Standard	Notes
1	Residential	29.3	29.3	%0	The actual standard sets a maximum of 65%, with sub-streets leading to housing, or 45% without it
	Ratio	66%	57%	-9%	
2	Educational	1.17	7.5	-5.7 ha	A very severe deficiency and difficult to treat
	Ratio	2.64%	17%	-14.36% ha	
3	Religious	0.46	1.2	-0.74 ha	Standard deficient but it can be treated
	Ratio	1.03%	2.7%	-1.67%	
4	Facilities	0.35	0.62	-0.27 ha	It refers to government assistance services, related to the type of population
	Ratio	0.79%	1.4%	-0.61%	
5	Gardens	1.09	1.15	-0.06 ha	It is intended as a public park for residential neighborhood only, without other green spaces
	Ratio	2.45%	2.6%	-0.15%	
	Total services	3.5	10.47	-6.97 % ha	The services are related to the quality of housing systems and densities, and range from 15-25%.
		7.87%	20.4 %	-66.6%	
6	Streets & parking	<u>11.6</u>	<u>13.3</u>	<u>1.7</u>	The concept needs to be analyzed, in terms of differentiating between the main and sub inside neighboring.
	Ratio	<u>26.13%</u>	<u>30%</u>	<u>3.87%</u>	
7	Commercial	0.42	0.58	0.16-	It is enough and it can be added because it is a private investment.
	Ratio	0.95%	1.3%	0.35%	
		100%	100%		

Notes:

- The area of ZRS plot is 44.4 hectares - the land is 645 plots, - the planned population is 4,000 people

- The housing units expected to be built in the current state of 3870 apartments, - The expected population in the region is 19,350 people

1- The standard per capita area for different services has been followed, because it is more realistic and is compatible with the housing regulations followed.

2- The percentage of residential use increased at the expense of services, due to the blurring of the concept of land division ratios. And its rise, because the analysis considered it as a neighborhood, and neglected the services of the region as a residential neighborhood.

3- The adjacent public park is standard, and does not contain green spaces between and among residential groups.

6. CONCLUSION

From the analytical comparison of the planning of ZRS, as a model of many similar residential neighborhoods that reflect the planning thought of some stage of urban development, especially in some large cities and the city of Makkah Al-Mukarramah.

It is clear that there is a gap that varies between the procedures used for planning areas and residential neighborhoods approved by their scientific And between its implementation and its current and expected current reality, and it traced the recent history of the stages of contemporary urban growth to the city of Mecca during the past few decades, it shows that some of this change is a result of the unexpected rapid development when preparing housing plans for some areas, such as the Aziziyah area, some of whose independent buildings are still witnessing to its basic planning. Despite what happened to most of its buildings of removal and replacement, there are later plans in which planning coincided with the traditional idea, with the implementation on the ground of those plans with new non-traditional thought, r in other words, the content of the planning thought of residential areas and neighborhoods was late for the development and change of many social and urban concepts, including the concept of housing for a large segment of the population, Therefore, as soon as some of these plans were approved, implementation started directly but with new systems, which is the system of residential buildings with mostly opposite apartments for investment purposes and improving the level of individuals 'income, Implementation, aspirations, interests and needs, and late examples of this type are many.

It seems that the planning of ZRS area was found at the beginning of this stage, because its limitations and current reality tend to it. All its buildings since its inception are residential buildings with opposite apartments, unlike Al-Azizia, in which the removal and replacement occurred as a result of the development. This has created a large and frank gap between the ideas of its ideal planning, with its services balanced in standard with the supposed population at the time, about 4000 people, and the implementation of its residential buildings with contiguous apartments, which raised the housing and building densities more than 3 times when planned. While maintaining the area of the basic services lands as defined in the approved plan.

From the comparative analysis of the level of basic services for the region, which is considered a basis for the quality of housing, it became clear that what is available of services does not exceed 33% of the assumed standard, that is, the level of deficiency based on the criteria constitutes more than 200%. It means scientifically in terms of planning its direction towards randomness.

From the above we conclude the following:

- 1- The speed of economic and urban growth, and the change in culture and housing concepts in a large segment of society, was faster than the planning thought of residential areas and neighborhoods, which led to: There is a great discrepancy between preparing plans and adopting them and implementing them in reality, and it needs to be reset, a problem that at its beginning is limited in its impact, but it gradually increases and reaches its peak when the project is completed. Intensive investment of land is positive and effective when achieving the requirements of parallel services for the population according to the criteria, and negative when it does not, this is evident in the ZRS, where the intensive investment of land came at the expense of the severe shortage of basic services and the quality of housing.

2- From following up many of the subsequent housing schemes, it is noted that there is a continuity of the discrepancy between the approved plans and ideology directed between reality practices, which needs to be re-adjusted. The research finds that the core of the problem of planning areas and residential neighborhoods lies in the starting points of the idea of urban planning related to the division and formation of its lands, the number of residents, building systems and services.

From studying the ZRS as a model for many residential neighborhood plans in the city of Makkah, it becomes clear that there is a large accumulated gap for years between planning residential neighborhoods and implementation, and the gap does not lie in the general form of planning and dividing the land and determining its area, but more importantly, how it is to be built, its population and its housing units, and the shortage of basic services balanced with them. These experiences should be used to plan new projects in expansion areas. The most important recommendations are summarized as follows:

- 1) The research proposes to change the essence of the concepts of planning for residential areas and neighborhoods when preparing their plans from considering the division of plans to plots of land as a basis for determining the number of residents and services, to consider the number of families and expected population as a measure of the division of land uses and their proportions between different jobs.
- 2) Reconsidering the ways of dividing the plots of land planned for housing, and conducting economic and environmental studies linking the relationship between its width and length, because that relationship has a major impact on the economics of land economic use and on the design of buildings and the treatment of their internal and external voids.
- 3) The need to reconsider by studying the areas and proportions of the division of the land between the different uses of areas and residential neighborhoods, in a manner commensurate with the quality of the expected future housing systems in each region, and avoiding the blurring of concepts.
- 4) The necessity of linking the criteria for planning services for residential areas and neighborhoods with housing systems, densities and the expected future population for each region, according to accurate scientific studies that are identical to the reality of their future.
- 5) The research suggests that the residential neighborhood standards and building requirements be linked to the quality of the plans and their implementation, which can be different in each of the projects of integrated planning and implementation schemes and projects division of land requirements.
- 6) Careful studies of the standards of housing plans when linked to the actual number of people expected in the future may show that some of them are exaggerated, so moderation and balance are required in determining them.

REFERENCES

- [1] General authority of Statistics, KSA, <https://www.stats.gov.sa/en>, last visit Dec.,22.2019.
- [2] Shedi Waad Abdullah, “The apartment as a housing style for the Saudi family”, The Second Symposium of Charitable and Affordable Housing in Saudi Arabia: Creative Solutions Khubar, Book of Proceedings, 28-30 April, 2008 .
- [3] Al-Wakeel, Shafak Al-Awadi, Urban Planning, Part Two - College of Engineering, Al-Azhar University, September 2007.
- [4] Bernard Granotia - Translated by Bahjat Al-Fadhli (1987) - Urban Housing in the Third World: Problems and Solutions - Publisher, Al-Ma'arif Establishment, Alexandria.
- [5] Bahhamam - Ali bin Salem, an independent facilitated residence that fulfills the needs of the Saudi family: a design experiment, Architecture and Planning Magazine M31 (2) Riyadh 2019
- [6] Ahmed Khaled Allam, Muhammad Abdullah, Mustafa Al-Dinari, "History of Town Planning", the Anglo Egyptian Library – Cairo, www.cpas-egypt.com > pdf > A_K_Allam > Books
- [7] Musa - Mohamed Azmy Ahmed - Urban Planning - 1988.
- [8] Sendi, Fahd - Evaluation of housing projects in the Kingdom of Saudi Arabia in the light of the cultural, social and environmental heritage - a comparative study - 2019 M.Sc. thesis not published.
- [9] Ministry of Municipal and Village Affairs, Deputy Ministry for Town Planning. Guide to planning neighborhood centers and residential neighborhoods - first edition 1426 AH - pp. 3-5.
- [10] Ministry of Municipal and Village Affairs, Ministry Deputy for Town Planning - Summary of Developed Standards for Services, 1437 AH.
- [11] Google Earth 2018.
- [12] Chinese urban planning standards(2004), Publishing house architectural books, Beijing China.
- [13]Norah Farooqi; Adnan Gutub and Mohamed Osama Khozium, “Smart Community Challenges : Enabling IoT/M2M Technology Case Study” Life Science Journal, 16(7), July, 2019.
- [14]Ali Mohammed Al-Sharey; Reem Alshalawi and Mohamed Osama Khozium, “Smart Cities : Integration of GPS and IoT Approach" MULTI-K KNOWLEDGE Comprehensive Journal For Education And Science Publications (MECSJ), ISSUE (18), Apr.,2019.
- [15] Abdulrahman Majrashi and Mohamed Osama Khozium, “Smart Cities: From the perspective of urban planning and designing of buildings”, International Journal in IT & Engineering (IJITE), Volume 7 Issue 12, December 2019
- [16]Abdullah Saeed Karban, “ Developing a framework for neighborhood-level urban sustainability assessment in Saudi Arabia”, Thesis for: Master, Umm Al_qura University, Aug.,2014.



- [17] Ahmed M Shehata, "Gis Application In Documenting And Analyzing Architectural Heritage", Conference on Heritage Cities, Arab Construction ministers council, Hergada, Egypt, volume 1, Jan. 2006.
- [18] Ahmed M Shehata and Islam Hamdi Elghonaimy , "Multimedia Application in Recording Buildings with Cultural Values", Urban heritage in Arab Countries between preservation and Modernization symposium, Halab, Arab Republic of Syria, 2001.
- [19] Ahmed M Shehata, "Gis Application In Documenting And Analyzing Architectural Heritage", Conference on Heritage Cities, Arab Construction ministers council, Hergada, Egypt, volume 1, Jan. 2006
- [20] B Alsolami, M R. Embi, Abdulrahman Majrashi, A S. Karban," Assessing the Effects of Crowding Perception and Gender Among Southeast Asia Pilgrims in Mina, Saudi Arabia", International Journal of Engineering & Technology; Vol 7, No 2.29, 2018.