



## Affordable Housing and Cost Reduction Factors for Affordable Housing

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### ABSTRACT

The importance of affordable housing has emerged recently due to the suffering of most urban areas and developing countries in particular from the high rates of population growth and migration to cities, in addition to the conditions of poverty and war, which led to the loss of many families for their housing units. (The need for a comprehensive knowledge framework clarifying the concept of affordable housing, choosing the best housing type and cost reduction factors (facilitation aspects) at the local level in light of the country's urgent need for affordable housing.) Accordingly, the objective of the research was to: (Provide a comprehensive knowledge framework that clarifies the concept of affordable housing and choose the best housing type and cost reduction factors (facilitation aspects) in accordance with local privacy).

The research hypothesis : (The factors and means of reducing housing costs (aspects of facilitation mentioned in the research) at the two levels (housing complex and housing unit) as well as choosing the housing style (vertical or horizontal) a role in achieving the principle of affordable housing and solving a large part of the housing crisis.

For the purpose of solving this problem, three phases were identified, including the construction of a theoretical framework, which included (4) vocabularies (characteristics of affordable housing, cost-raising factors, cost reduction factors, and dimensions of affordable housing). This is followed by the application of these vocabulary by electing two local samples. The extent of facilitation and comparability between them. The results showed that the vertical building pattern (residential buildings) is characterized by its lack of large areas of residential land, thus it is characterized by being less expensive than horizontal construction. This does not prevent investors from building high-quality residential towers targeting the rich.

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### 1-Theoretical framework:

#### 1-1Definitions:

##### 1-1-1 Definition of affordable housing Linguistically and Idiomatically

-The concept of (Affordable) in the major dictionaries, pointing to two aspects, the first related to the cost of something or the cost available to all and the second with a property associated with the output.

As for the first aspect, he described the concept of facilitation according to the cost of the thing, as the Oxford Lexicon pointed out that it refers to (reasonable price), (Merriam-Webster) noted that it is Bear the cost (affordable).

The second aspect referred to a property involved in the output ' The Oxford glossary said he was referring to "at hand."

-Idiomatic definitions included three directions : Where the first trend indicated that it is linked to a certain category of income ranging from the middle to low category, the second trend has been linked to the average income, and the third to the cost of housing units (rent or ownership), which must be medium relative to income, and agreed tariffs in Being a housing whose cost does not exceed 30% of the annual income.

##### 1-1-2-Definition of Affordable Housing in Architecture:

- Dr. Dbayeh is defined as housing that is provided to the family to meet its actual needs at a cost commensurate with its income in the current term and for the foreseeable future in a way that achieves the dimensions of sustainable housing development (1).

-Azren is defined as the ability to buy a home, or is the ability of a family to afford urban housing, up to the social and economic stability of a country (6).

- Abdul Majeed defined it as the relationship between family income and housing costs. Average access to a particular area to obtain adequate housing and pay for it without facing undue financial suffering (4).

- (Stephen) "is housing that meets the needs and requirements of the current generation without compromising the ability of future generations to meet their housing needs" (8).

- (Bahamam) is a dwelling that takes into account the actual needs of the resident and works to raise the quality of the neighborhood by providing basic services and quality of the housing unit by providing strength and safety in the building and the use of appropriate technologies to reduce the consumption of water and energy sources in addition to the fulfillment of social needs and desires and excludes wasteful space and materials The components, through the simplicity of the design, provide studied areas in addition to avoiding unutilized areas

implementation of the housing in stages and the possibility of future expansion (3).

Defining Affordable Housing :Framing an AH policy firstly involves defining what it is and what it is not: the parameters affordability is measured on. Defining AH is also important to create targeted policies aimed at making financing more accessible, providing mechanisms such as interest rate subsidies, or favourable terms on par with infrastructure financing. (9).

#### 1-2- Previous Studies:

1- The first study :(A Case Study Analysis of Sustainable and Affordable Housing) :(Pullen, Stephen and other' 2015).

The study confirmed that the success of any affordable housing must be emphasized on two important axes, the first axis of cost and reduce it while the second axis are aspects associated with the relationship of affordable housing with the dimensions of sustainability of environmentally, socially and economically.

The study also referred to affordable housing through the need to provide several characteristics and principles must be available in the design of houses, the most important two axes represent the first axis materials used in construction, the second may represent the degree of dependence on renewable energies.

It concluded that affordable housing has economic, social and environmental dimensions in terms of three aspects: design, construction and operation of the house. The surrounding community) - the market value of the dwelling (8).

2- The Second study: (Is there a spatial mismatch between housing affordability and employment opportunity in Melbourne?): (Jago,Dodson' 2005).

Five characteristics were targeted, the first was to link the affordable housing with the price, the second dealt with the economic and social patterns and the third. Down to the job opportunities the closer the housing to the center the higher the price.

The research found that the distance of housing from the center of the city may lead to the emergence of the so-called social exclusion because these families can not behave more freely as the inhabitants of the center, and families that do not have private means of transport and cannot use public transport is likely Access to community services and employment opportunities remains restricted.

The study found the need to provide job opportunities in the outer suburbs, which are often spatially isolated. The study also recommended the need to provide an integrated transport system that includes a highway and a railway. Transport between residential and working areas is not environmentally sustainable, so the study recommended the need to improve economic and social deprivation. (7)

3- The third study :( A Conceptual Overview of Socio-spatial Pattern for Housing Affordability of

Urban Area in Malaysia). (Hassan, Azren M and other, 2017).

Referring to the study of the concept of affordable housing in terms of its relationship with the user, specifically targeting middle and low income and this was done through seven axes, the first axis was linked to the relationship of affordable housing with the geographical location, the second axis has touched on the relationship of affordable housing, and the third touched on the socio-demographic background, The fourth touched on the relationship between urban space and society, the fifth on the national economy, and finally the sixth axis on the role of costs in providing housing.

The study also showed many determinants of affordable housing, which were not limited to one specific classification, classified into three direct or indirect factors, and other fixed ones. The directness was represented by location and costs, while the indirect ones were represented according to the quality of the housing unit. The effect of the direct factors represented by the geographic location and the cost is significant without the other determinants. study showed that the affordable housing is affected according to its proximity to the city center. Between neighborhoods and employment and employment centers. The second section came according to the costs resulting from the purchase of the housing unit or the purchase of urban land in addition to the cost of services and the cost of building materials. The secondary factors were according to the socio-demographic background in terms of household income, home ownership and population growth in urban areas, while the factor of the relationship of urban space with society is the interaction of the inhabitants with space, and finally the factor of the national economy represented by providing job opportunities and creating industrial sectors (production - finance - Maintenance - Insurance) (6).  
١-٣-Identify the problem, objective and steps of the research:

١-٣-١- Research problem: (The need for a comprehensive knowledge framework that clarifies the concept of affordable housing, choosing the best housing type and cost reduction factors (facilitation aspects) at the local level in light of the country's urgent need for affordable housing).

١-٣-٢-The objective of the research is to: (Provide a comprehensive knowledge framework that clarifies the concept of affordable housing and choose the best housing type and cost reduction factors (facilitation aspects) in accordance with local privacy).

١-٣-٣-Research Methodology

- Constructing the abstract theoretical framework.
- Selection of samples.
- Provide accurate measurement for the application of the theoretical framework to selected samples.
- Apply the theoretical framework to the selected samples.

#### ١-٤- Theoretical framework Abstract:

<b>Table (1): Theoretical Framework for Affordable Housing and Cost Reduction Factors</b>			
<b>Main</b>	<b>Secondary</b>	<b>Possible values</b>	
<b>Objectives and characteristics of affordable housing</b>	<b>Cost reduction</b>	<b>Reduce construction costs</b>	
		<b>Short implementation period</b>	
		<b>Best value for cost paid</b>	
		<b>Save electricity consumption</b>	
		<b>Rationalization of water consumption</b>	
		<b>Reduce maintenance and operation costs</b>	
	<b>Raise the quality</b>	<b>Achieving social requirements</b>	
		<b>Suitable for various housing desires</b>	
		<b>Raising the standard of living quality</b>	
		<b>Suitable climatic factors</b>	
	<b>Approval of need</b>	<b>Not to harm the environment</b>	
		<b>Growth with increasing family size</b>	
		<b>Provide maximum functional degree of vacuum</b>	
<b>Possibility of financing according to family capabilities</b>			
<b>Reasons for high housing costs</b>	<b>Social reasons: the desire of families to exceed housing standards</b>		
	<b>Economic reasons: related to high prices of construction materials, labor and monetary inflation</b>		
	<b>Technical reasons: low level of industrialization and the adoption of alternatives primitive and traditional</b>		
	<b>Organizational and administrative reasons: The lack of organization of the contracting sector in the field of public and housing projects in particular</b>		
<b>Housing cost reduction factors (facilitation aspects)</b>	<b>Residential project</b>	<b>Economic alternatives related to site selection, design, streets, reducing the lengths of the services of technical infrastructure</b>	
		<b>Use appropriate construction technology</b>	
		<b>Use standard formatting and standardization</b>	
		<b>Directing and organizing the implementation sector in a way that contributes to reducing the cost per housing unit</b>	
		<b>The distance between neighborhoods and work and employment centers</b>	
	<b>Housing unit</b>	<b>Location and housing relationship with the city center</b>	
		<b>Allow change and flexibility of spaces and reap untapped spaces</b>	
		<b>Elements of housing and area</b>	
		<b>Re - employment of spaces</b>	
		<b>Simplicity in design and implementation</b>	
		<b>Standardization and profiling</b>	
		<b>Optimal use of building materials</b>	
		<b>Implementation of housing in stages</b>	
		<b>Method of implementation</b>	
<b>Affordable housing dimensions</b>	<b>Economical</b>	<b>Low household income</b>	
		<b>Weak purchasing power</b>	
	<b>Social</b>	<b>The interaction of the inhabitants with space</b>	
		<b>Community participation in achieving affordable housing</b>	
	<b>Environmental</b>	<b>Reduce the footprint environment</b>	
	<b>Other</b>	<b>Demographic dimensions</b>	<b>High population growth especially in the urban sector</b>
			<b>Increased urbanization</b>
		<b>Sustainability dimensions</b>	<b>Efficient use of energy</b>
			<b>Relying on renewable energies</b>
			<b>Reduce fossil fuels</b>
<b>Using economic service methods</b>			
<b>Efficient use of water</b>			

**۲- Practical study:**

In order to enhance the theoretical part of the research, the practical part will be completed, as this paragraph aims to start the practical study and prepare its requirements through a set of sub-paragraphs, namely: (Selection of research samples - determination of the measurement method).

۲-1- Research Samples: Two local samples will be elected for the field study. The first sample was (Salhia Residential Complex) as one of the previously implemented vertical housing projects, and the residents occupied for more than 28 years, which includes some aspects of affordable housing. While the second site is a project (Muthanna district for single houses in Ziona), where these samples will be identified according to the terms of the theoretical framework to see the extent of facilitation and comparison between them.

۲-۲- Data Collection ( Method of measuring ): The research adopted the measurement method questionnaire (questionnaire group of specialists and residents), where the paragraphs of the questionnaire was a set of questions including the vocabulary of theoretical framework of the extent to know the achievement of vocabulary in the selected samples and compare them.

۲-۳- Description of Research Samples:

2-3-1- Description of the first sample (Salhia residential project / vertical housing):

Salhiya: is one of the neighborhoods in the city of Baghdad, , which includes centers for broadcasting television and radio channels, and was considered the center of Baghdad and a geographical area near the garage of Allawi, in this region there is a residential complex (for high-rise buildings built in 1984 and designed and implemented by two Japanese companies). Figure (1) shows the sections of the project in general. General aerial view of the residential complex.

1. Residential apartments (Section I) and their services
2. Residential apartments (Section II) and their services
3. A street that penetrates the area (the project) and connects it to the Allawi garage (Allawi al-Hilla)
4. Street and Alsinak bridge linking the region with Rusafa and its administrative center (Khellani)
5. A street linking the area with Bab Sharqi garage (city center)
6. Haifa Street connects the area with Bab Al-Muadham garage

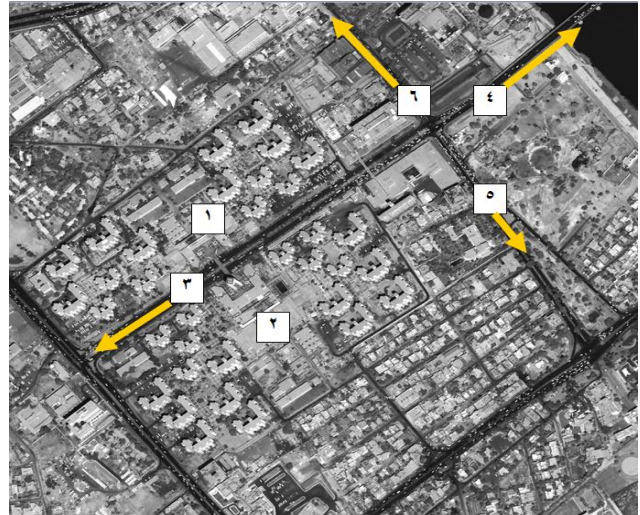


Figure (1): sections of Salhia residential complex



Figure (2): Attention to the ways of pedestrian traffic and cleanliness compared to the green spaces and their breadth



Fig. (3) No direct correlation of spaces with the outer perimeter (change in lines of movement with transitional spaces) as well as determination of ownership of open spaces behind residential buildings (fences)



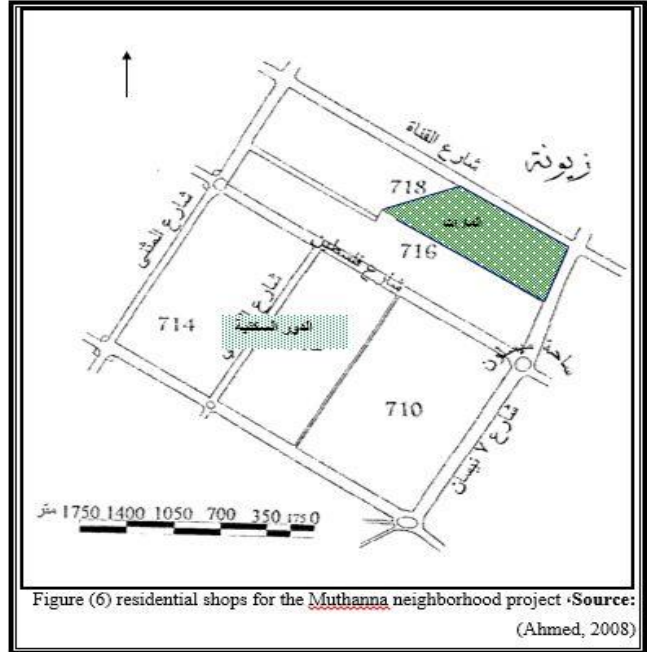
Fig. (4) Seats on some green places, note the neglect that has affected these parts (natural and artificial elements)



Figure (5): the interest in the cleanliness and openness of open spaces

٢-3-2- Description of the second sample (Al Muthanna neighborhood project for single houses in Zayouna / horizontal housing):

The district of Muthanna for single houses in Zayouna is one of the areas of modern Baghdad and it belongs to the new Baghdad sector one of the sectors of the city of Baghdad, where it began its establishment in 1959 of the last century, where the Ministry of Public Works and Housing The project then consists of five residential Neighborhoods (M 710, M 712, M 714, M 716 and M 718), as shown in Figure (٦), which represents the residential role in the project.



The area is characterized by the presence of large green areas inside the neighborhood as well as the presence of nursery school and public park that separates the neighborhood from the main street, which passes in front of the ( Alshaabb International Stadium ), and this has helped raise the degree of calm and security of the residents of the neighborhood in addition to green areas for housing. The roads in this neighborhood are like the rest of the modern neighborhoods in Baghdad, characterized by straightness and width dedicated to the passage of cars, and passes within the region a main street is Palestine Street and a secondary street is the alrbye. The residential units in (Al-Muthanna) are characterized by large areas, regularity and openness to the outside and contain private gardens, and the average area of residential pieces (338 m<sup>2</sup>), so the introduction of car spaces in this form as well as other open and wide areas all led to increased distances and forced pedestrians to move Within the scale of the car in this case is difficult to address the climatic aspects such as shading and protection from wind and dust ..... etc.



Figure (7) shows horizontal housing units and large areas compared to vertical housing.

### ۳. Analysis of the results :

The results show that the principle of affordable housing is achieved through eight factors (the most realized factors), the first is the geographical location in terms of the housing relationship with the city center, the second is the efficient use of the land, the third is the flexibility of design and avoid lost and unutilized areas, the fourth is simplicity in design and implementation The fifth is the standard components (typical and standardization).

#### 1 - Location of the housing for the city center:

The results indicate that little variation in the site generates the maximum amount of affordable housing. The site is considered an important part to provide the term of affordable housing and not only the price of housing and household income. The proximity of the city center to a higher price than those in the suburbs or rural areas, which enjoy low prices, which are often spatially isolated. Its economic and low-income (6) (7).

Housing far from the city center reduces the cost of land and unit price.

#### 2. Efficient Land Use:

One of the most important factors influencing lower house prices is the effective use of land. The small size of the plot provides its value and the cost of the infrastructure needed for the residential unit, because the excessive size of the residential unit leads to the generation of additional costs resulting from the price of the land and the choice of building materials, and reducing bounces leads to providing additional space for the residential unit The edge of the plot is a successful way to invest in small plots From the lands, widening the recession and increasing the areas and elements in it constitutes an impediment to the process of facilitating access to housing, as housing consists of components that differ in number and size vary from one community to another and from one family to another, according to the needs

actual. The size of the dwelling as the larger the impact on the costs of maintenance, operation and care; which requires the owner to be aware of the method of determining the needs of his family of the elements of the dwelling and components, and determine the appropriate spaces for each element by function and activity in which it will be important to enable the family to obtain the dwelling Facilitator (3).

Determination of actual household needs of rooms and elements achieves space savings and construction, maintenance and operation costs.

#### 3 - Flexibility of design and avoid unused areas:

The results showed that in some modern dwellings, unutilized areas cannot be utilized. The presence of these spaces in housing leads to the cost of building the housing, and thus the high costs of maintenance and renovation. Additional costs associated with the construction, furnishing, maintenance and maintenance of unused space are among the reasons for the high cost of housing, and thus the inability of many families to own it. Ensuring that the design is free of unutilized spaces is therefore essential to achieving affordable housing. By making the spaces in the housing unit capable of accommodating several functions simultaneously or over time (3).

Where the idea of functional flexibility within the dwelling is achieved in cooperation between the owner and the architectural designer, where the designer, owner and his family share the responsibility to achieve the principle of flexibility of use of the rooms and spaces of the dwelling. The success of the application of the principle of flexibility is highly dependent on the cooperation of the family, its acceptance of it, and its cooperation with the architect to achieve it. Where an important factor must be taken into account in the design of affordable housing (the hierarchy of the place) is how to stay space works with changing the size of the family, the possibility of converting areas from specific areas for children to areas suitable for the elderly, the unit must allow multiple activities at the same time, especially families that It has multiple children and the rooms can be easily formed using light partitions and joints and materials easy to install.

The architect should also consider the following observations in order to arrive at a design that provides suitable rooms and spaces to serve multiple functions and accommodate different activities:

- \* Take care to determine the dimensions and area of the rooms taking into consideration the functions and activities to be practiced in the dwelling.

- \* Take care to provide space with lighting units, electrical outlets, windows, doors and any other requirements that serve the needs of the inhabitants to carry out their various activities.

- \* The necessity of studying the interior design of the house properly and the way to furnish it in a way that brings convenience to users (2).

Some studies have determined the minimum of some accessible spaces represented in the living room is 252 square feet (about 14 x 18 inches), the dining room is 136 square feet and can accommodate a minimum of 4 people, while the footpaths are not less than 20-30 feet to encourage social interaction. The pool areas are not less than 100-200 feet minimum with the need for rooms to be flexible and change depending on the life cycle of the family or family (5).

A flexible design free from untapped spaces is one of the goals of affordable housing.

#### 4 - Simplicity in design and implementation:

To achieve low costs through the principle of simplicity the architectural designer must take care of its application in all stages of the design starting from the design of horizontal plans, facades, yards and gardens and how to address them and ensure to reduce the areas allocated for movement as much as possible and preferably avoid the design of circular stairs for high cost of implementation, the principle of simplicity in design is one The pillars of providing affordable housing, because it comes in importance immediately after the importance of care to reduce the built-up area. Whenever the architect adheres to the principle of simplicity in the distribution of the elements of the housing, away from the architectural and structural complexities, on the condition that it does not prejudice the basic functional needs of the family, or neglect the aesthetic requirements, which is a positive step in facilitating the process of obtaining and owning the home (2).

The simplicity of the house makes it quick and easy to implement and reduces its cost.

#### 5. Reducing costs by applying normative components (standardization and the pattern):

The standardization of components of the housing unit and the use of the standard unit system (modular system) is one of the factors that achieve low cost and speed of implementation, where the standard components are manufactured according to technical standards and engineering specifications. The dimensions of these components comply with the approved engineering and technical requirements, and the materials used in their manufacture are environmentally friendly materials and comply with the prevailing local conditions; thus ensuring high performance efficiency. In addition, the production of these components in factories under the supervision and strict technical control ensures their quality and conformity with specifications. The automated manufacturing process, continuous monitoring during the manufacturing process, and repeated testing of products ensure their quality and improper exclusion from them. Vertical and horizontal (2).

The use of the modular system achieves a reduction in the cost per unit price.

#### 6 - Optimal use of building materials:

The economy contributes to the quantities of building and finishing materials used to a great extent in reducing the cost of housing. For the great development in the building materials industry, which requires the owner and the architectural designer to identify the possibilities and characteristics of these materials, and choose the most appropriate ones, and thus use them optimally and applied in a manner that achieves the idea of affordable housing (2).

#### 7 - Implementation of the house in stages and the possibility of expansion in the future:

The size of the dwelling and the requirements of the beds vary as the stages of their growth change. Where the implementation of the entire housing unit can be divided according to the stages of the growth of the family and in this case the housing must be designed in a way that allows the possibility of implementation in stages according to the change of the family's needs and potentials Building elements that we do not need because they may increase the initial cost of implementation, generating material relief for newly formed families. Therefore, the design of the dwelling must be characterized by the flexibility to re-use rooms and spaces, change the size, or add new elements according to the desire of the family and new requirements (2).

The ability of the Residential unit to grow according to the needs of the family enables it to own it.

#### 8 - Method of implementation

The cost of building materials and labor costs should be taken into consideration. The method of implementation of each part of the structure should be considered taking into account the standardization of construction elements and the replacement of difficult parts or elements of the building that require traditional labor intensive site. The construction industry for the production of affordable housing units such as prefabricated housing, which will be collected later on the site and this provides speed of completion add to the durability and quality and reduce the cost of labor.

#### 4. Conclusions:

1 - Good planning, design, management and organization of housing projects, positively affect the total costs and factors of reducing these projects.

2- Reasons for the high cost of housing: -

Social reasons: the desire of families to exceed housing standards.

Economic reasons: related to high prices of construction materials, labor and monetary inflation.

Technical reasons: low level of industrialization and the adoption of alternatives primitive and traditional.

- Organizational and administrative reasons: The lack of regulation of the contracting sector in the field of public and housing projects in particular.

- There is another reason for the lack of supply and demand for housing units, which leads to speculation in the real estate sector.



3 - Factors and means of reducing housing costs: -

- Economic alternatives related to site selection, design, streets, reducing the lengths of the services of technical infrastructure.

- Use appropriate construction technology.

- Use of standard coordination and standardization.

- Directing and organizing the implementation sector in a way that contributes in reducing the cost of the housing unit.

4 - In housing projects is characterized by the pattern of vertical construction (residential buildings) that does not need large areas of residential land and thus characterized by the fact that it is less expensive than horizontal construction.

5. Vertical housing construction is important in providing housing units for low-income people, especially when the implementation of this construction in the form of housing complexes by the public sector, and when there are banking facilities and other by the state for the benefit of this segment.

6 - There is a large disparity in the prices of residential land between the city center and its outskirts, which calls for the dependence on the type of vertical housing (vertical construction) in the areas of the center, the importance of economic costs in this regard.

7- The adoption of vertical housing projects, especially when the method of implementation by the method of prefabricated construction, this leads to rapid completion and abundance in the production of housing units, which can be considered or given the status of large-scale production, and therefore reflected on the costs and reduce.

8- The lack of space occupied by vertical construction compared to horizontal construction is also accompanied by a lack of length in infrastructure services networks, and this also reflects on the economic cost and time required to implement well.

9 - Residential buildings are usually structural structural system (the structure transports live and dead loads to the foundations), so this design facilitates the process of using alternative materials such as light concrete or thermston in the construction of the walls of these buildings, which gives thermal insulation leads to energy saving used for Air conditioning is also cheaper and cheaper than traditional materials such as bricks and blocks and therefore reflects on the final costs of housing projects.

10- For the success of housing plans, especially in the vertical housing projects, it is necessary to provide the basic requirements, which is primarily to provide traditional and modern construction materials through the establishment of factories and factories for these various materials to meet the need, so that the production of construction materials and construction of housing units in parallel, because The reality now is the scarcity and high cost of

construction materials which makes the construction process very expensive.

11 - Access to economy in the design requires control of areas and sizes and try to reduce them as much as possible within the minimum acceptable for residential comfort and the specific needs and requirements and size of the population of the population, waste in areas for housing and areas beyond need lead to high costs.

12 - The choice of residential buildings with a height ranging between (3 - 4) floors and housing units (apartments) is less expensive and more effective in all aspects of social, economic and planning and achieve population density that can not be achieved in the horizontal housing and high floors, and for this reason has This pattern has been followed in different countries of the world after it has been adapted to its reality.

#### ◦. Recommendations:

1- The need to go to the low-cost economic construction in order to facilitate the access of the groups with the actual need for housing. This does not prevent investors from constructing high-quality residential towers targeting the rich category, but within certain limits and limits.

2. Stabilizing the housing market and reaching real estate prices to reasonable limits by opening outlets to facilitate the construction process through the Real Estate Bank and the Housing Fund, adopting the installment sale formula for eligible housing units, and announcing housing plans and projects to create a state of trust in the citizen in the presence of a future opportunity. Him for decent accommodation.

3 - The need to pay attention and focus on construction industries of all kinds to reach self-sufficiency because the outputs of this industry is the raw material for the production of housing units, and these industries should develop through scientific research to obtain alternatives to traditional materials that are consistent with the standards of conservation of the environment.

4- rationing the process of continuing the distribution of plots of land to citizens, because this increases the expansion of cities in a horizontal unwanted, and can contribute little to solve the problem of housing, as the need for housing is large in Iraq and can not be solved in traditional formats.

5 - Finding new formulas for the distribution of residential land, for example we propose (collective building formula) where plots of land are identified within selected residential complexes built as residential buildings within a residential project, and by a group of beneficiaries be as many as the number of housing units in each building, and this must be The land is served by the public sector with all the services needed by the residential complex, and thus there is a tendency and keenness on the part of the beneficiaries and interaction and social participation

that will certainly lead to the success of this experience.

6 - The implementation of residential buildings by some Iraqi contractors in Baghdad and the provinces have given a bad idea of the vertical construction in addition to some rumors about the nature of social relations in this type of residential construction.

7. Rehabilitation of companies affiliated to the Ministry of Housing and Construction such as FAO and others and directing them to build vertical housing complexes and create competition among them in this direction, and give a greater role for the private sector in order to contribute to the construction of housing units.

8. Rehabilitation of the factory factories and the construction of more ready to contribute to the process of production of housing units because of the characteristic of this method of rapid implementation and reduction in costs, especially related to external finishes.

9 - Towards the adoption of multi-storey residential buildings with a height between (3-4) floors in order to contribute effectively in the face of the accumulated and growing housing needs and the characteristic of this type of residential buildings of suitable housing densities through which to provide the necessary services to the population and the application of all planning standards For the residential areas, and the introduction of some green building standards to these residential buildings, these buildings also feature efficient and economical use of the land, and reduce housing costs as they do not need mechanical and electrical means to reach the upper floors.

10-The various ministries to build housing complexes for their employees and according to their needs through construction companies that each ministry creates, as well as the restoration of the Military Housing Authority to build housing complexes for the military, all these means lead to contribute to fill a part of the housing need and a little stability of the real estate market.

11- Attention to the aspect related to the quality control of building materials and the application of all standard specifications on them because of the importance of this subject related to the type and durability of origin and future maintenance necessary for it.

12. Giving priority to housing complex projects in banking, tax and import facilities for the purpose of encouraging investors to go to this area.

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