

THE POTENTIAL ROLE OF HOUSING UNIT DIVERSITY IN GATED COMMUNITIES IN SOCIAL COHESION

HAIDER MAJID HASAN, HUSSEIN ISMAEL AHMED, NISREEN KHALIL ABED, ALYAA RAZZAQ ABED, SHAHAD ABD A-HUSSEIN, AHMED JAMEEL DASHAR

College of Engineering, University of Wasit, Iraq

(Accepted for Publication: November 27, 2023)

ABSTRACT

Perhaps the new gated communities are good examples of urban design in their own right, and the questions that the paper raises are how the diversity of housing unit space affects social cohesion and how we can design communities to increase social cohesion among its occupants in the future. The diversity of land uses facilitates better social cohesion and bonds, as good street coordination and open spaces calming traffic contribute to creating a suitable built environment for residents to generate a sense of place. Gated residential compound models seek to create residential units that provide a safe, luxurious and private life for its residents. They achieved it simply by gated themselves. Studies have confirmed that the main reason that prompted investors to build gated communities is their desire to achieve quick wealth and that the diversity in the area of the residential unit in it contributed well to the speed of marketing the residential units built in it, so this research paper seeks to show the effect of the diversity of the area of the residential unit on the efficiency Residential use in gated communities. The research concluded that the gated community has achieved a state of balance in residential use through the diversity of housing units.

KEYWORDS: Diversity of land use; Gated Communities; Social cohesion; The residential unit; Urban design

1. INTRODUCTION

Recently, the phenomenon of walled communities has increased and developed in many countries of the world in general and Iraq in particular, which expresses new characteristics of the urban product. Despite the multiplicity of urban patterns of walled communities from one country to another, and even from one city to another within the same country, they are similar in a number of characteristics, and investors have recently moved towards building walled communities in Iraqi cities, especially the city of Kut, which was discussed in the research. There are studies that indicated the importance of gated communities in achieving a number of dimensions of urban sustainability by ensuring privacy, security and a luxurious social life. Perhaps the new gated communities are good examples of the success of

urban design in itself and its role in achieving social cohesion for residents. The idea or belief that social cohesion at the neighborhood level can be created or enhanced through urban planning and design is certainly not new. For example, the concept of “neighborhood unity” coined by Clarence Perry[1] was based on the assumption that the localization of facilities and services can help create neighborhoods that are characterized by greater face-to-face interaction between neighbors and a stronger sense of community than was prevalent in the modern urban environment. The same idea also influenced the work of neo-urban planners such as Clarence Stein and Michael Corbett, however, it is the writings and works of neo-urbanists that generated the current enthusiasm and wide interest in this very idea[2]. In order to create socially diverse neighborhoods, the new urbanists advocate careful integration of different dwelling sizes and different types of

hmajid@uowasit.edu.iq,
hussienismael303@uowasit.edu.iq,
nabed@uowasit.edu.iq,
alyaarazzaq@uowasit.edu.iq,
shahadabd303@uowasit.edu.iq,
ahmedjameel303@uowasit.edu.iq

tenure[3]. Neighborhood design principles established to promote social cohesion among residents deal mainly with issues such as the integration of land uses, the location of services, the layout of streets, the design of streets and other public spaces, the width of residential lots, and the relationship between house and sidewalk[4]. Based on these design principles, new urbanists have developed typical zoning codes, which have been adopted by many municipalities around the world for their zoning ordinances. These design principles have also been incorporated into the urban and architectural codes that have guided the planning and regulation of construction in a rapidly growing number of new urban development's[5]. The research dealt with the walled residential community that was built by an investment company in the university residential neighborhood in Al-Kut as a case study, so the research problem is raised through several questions that lie in showing the extent of the impact of urban design on social cohesion and how can we design communities to increase social cohesion in the future, and whether Social cohesion can be enhanced through the personal characteristics of residents, and that the aim of the research is to demonstrate the impact of the diversity of residential use on the efficiency of the walled community, and that the hypothesis of the research lies in that the diversity of residential use is necessary to achieve social connections and contributes to achieving the requirements of balance in the urban design of walled communities. The research relied on the descriptive and quantitative analytical method to reach the results.

2. GATED COMMUNITIES

Gated Communities are societies that are characterized by calm and serenity and include the elite and the class. High-end social, which has prestigious lifestyles, and these methods are achieved through a set of traits Common elements of natural environment coordination, security, safety, distinctive architectural character and services[6]. It is also defined as those cities that are surrounded by walls and have several entrances that are controlled and controlled by security guards, or through electronic control points. These settlements are equipped with their needs of services such as large shopping centers, large commercial centers, recreational facilities,

open areas and parks, in addition to artificial lakes and swimming pools[7]. There are some reasons that led to the emergence of this type of society, which are those related to the reality of the existing urbanization, represented in many urban problems, such as the general deterioration of urban spaces due to high densities, traffic congestion of roads, pollution, as well as the low performance and efficiency of services, represented by the decrease in the per capita share of green and open spaces. All of the above is considered as centrifugal forces that pushed some residents to leave their communities to escape to those communities in search of a better lifestyle[8].

2.1 Features of planning and managing gated communities

Gated communities affect urban planning and management issues, but there are concerns about the monitoring and management of these gated communities, and there are questions about the powers of each of the residents, associations and private security agencies individually or with a joint responsibility with the residents of those communities as bodies responsible for managing such types of societies as these communities create a kind of large social division that in turn reflects a pattern of urban separation urban separation, which requires double services and facilities to serve residents within those communities and others to serve other classes outside them, and this also raises many concerns about the traditional role of government and the potential impact on urban management in the future[9].

2.2 The concept of urban management

The residential community is a dynamic life system that has many components that vary according to time and place, but its components cannot be separated, otherwise a defect occurs, and it should improve the management of this system to achieve the needs of citizens, which is called urban management[10]. This system includes the public and urban services sectors in addition to the housing sector, and enters the process of providing services under the crucible of urban management in the residential community, including the elements of planning, implementation and management and the set of relations between the parties involved in it (the city apparatus, the urban plan, the state, the private sector, the population), as the time has passed when the state was carrying out all the burdens of development in planning,

implementation and follow-up[11] The overlap of the parties involved in urban management without coordination or a general framework governing relations between them leads to a disjointed and uncoordinated result and does not achieve real sustainable development, as the management of urbanization has many elements for its success, such as participation, transparency and justice. All these elements must be integrated, and good management also requires adequate resources such as material funding and labor[12] .

With good urban management, residential communities flourish and social and economic conditions in communities improve, and good urban management aims at the following[13]:
Activate the participation of actors, stakeholders and residents in management and decision-making (decentralization of management).

Accept the role of the government as an observer and regulator of the process, while acknowledging the participation of the population and all parties in decision-making.

2.3 Urban Design and Social Cohesion

Social cohesion is a concept that is difficult to define in its most general sense. It refers to a type of glue that binds a community together. Social cohesion in a neighborhood is often linked to building a neighborhood's sense of community. The literature most relevant to the study of the potential impact of urban design on social cohesion among the various components of society can be divided into two main directions. These two trends can be clearly identified in the international literature. The first approach focused on the relationship between urban design and social cohesion at the neighborhood level, or a sense of community[14].]This focus on the neighborhood has been based, in large part, on the assumption that tight-knit neighborhoods are viable units for implementing social and economic development programs and that, with the associated strong sense of community among their residents, they are important to the general well-being for the individual and the benefit of the family and society as a whole[15]. Within this first orientation, two distinct groups of literature can be identified.

First, there is the literature associated with and defense of the principles of the New Urbanism movement. is the latest urban design movement that proposes specific design principles to create socially diverse neighborhoods with a strong sense of community among residents[16]. The second trend includes literature that has focused on the impact of design on the livability of urban public spaces outside the neighborhood scale. Following the early work of researchers such as Whyte and Appleyard[17] , this literature has investigated the impact of design characteristics on the increased presence of people in public spaces such as plazas, squares, streets, and parks. This approach is relevant to the study of social cohesion between different residents. Our research will focus on the first approach.

2.4 Case Study: The Gated Residential Community Project In The Univesity Neighborhood

The residential investment university neighborhood project is one of the projects of the National Investment Commission in Wasit Governorate, Al-Kut District, according to the investment license 42/ S / 2018. The project is located in the city of Kut, on the right side of the Tigris River, in District 45 Um Halana. The use of the land according to the basic residential design (horizontal) With an area of 29.25 Hectare, about (292,500) square meters. The project includes 542 housing units and service facilities divided according to the sectorial design No. 887, Kut Municipality and its amendments. The lands in the project were re-divided for the purpose of reducing the number of lands with a large area into parts with smaller areas, and after dividing the lands allocated for building residential units, the total number became 776 housing units, note that the available areas before dividing the areas are 500 square meters, 240 square meters, and 200 square meters after the division, models have been added 170 square meters, 120 square As in Figure No.1 which shows the location of the project geographically, and Figure No.2 which shows the location of the project in the master plan of the city of Al-Kut



Fig.(1):- The location of the project in relation to the master plan for the city of Kut. Reference: Researcher



Fig. (2):- The location of the project in relation to the master plan for the city of Kut. Reference: Researcher

3. ANALYSIS

3.1 The method of implementing the project

The method of implementing the project is through the investing company, it is sold directly to the citizen through a sale and purchase contract between him and the company According to the investment law, the ownership of the residential land is transferred in the name of the company, provided that the reservation sign is placed in favor of the Kut Municipality Directorate until the completion of the construction of the housing unit and the transfer of its ownership to the beneficiary (to ensure that there is no speculation on the lands. And after collecting the amount of the

housing unit according to the concluded contract, its ownership will be transferred to the beneficiary under a formal transfer transaction in the competent Real Estate Registration Directorate. The Central Bank's initiative for the years 2020 and 2021 to grant real estate loans to citizens (an interest-free loan for a period of 20 years) and to support investment projects contributed to the growth and success of the project, in order to increase the citizen's demand for a decent housing house. Figure No.3 shows the design of the project according to the approved final plan.

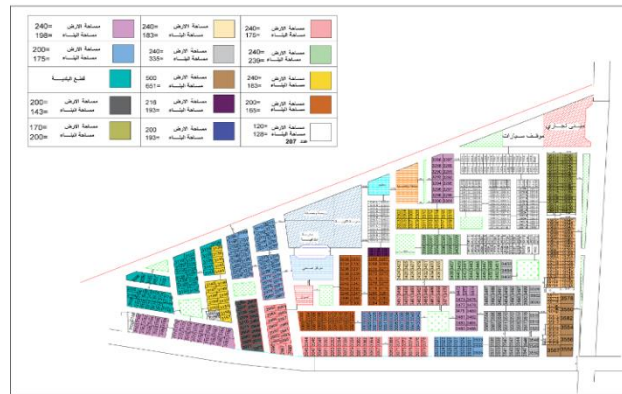


Fig.(3):- Shows the design of the project according to the approved final plan

3.2 Land uses in the gated residential community

The gated community was initially designed according to the activities and uses shown in Table No. (1), and with regard to residential use

in the gated community, the housing units were divided according to the areas and numbers indicated against each of them, as indicated in Table No. (2).

Table(1):- Land uses in the gated residential community of the university neighborhood (before the change)

The type of land use	The area before the change is m2
Elementary school	4536
High school	5905
Kindergarten and nursery	2966
commercial area	1300
Health Center	3470

Table (2):-The number of housing units by area in the gated investment residential community of the university (before the change)

The area of the residential unit (M2)	The number
500	38
240	371
200	133
total summation	542

Whereas, according to the Investment Law (Article 10-V-D), investment projects are exempted from the controls of the excretion of the second paragraph of the dissolved Revolutionary Command Council Resolution No. 850 of 1979 amended by Resolution No. 940 of 1987, and the ownership of 5% of the allocated housing units must return to municipality after the completion of the project.

The investment license for the project was issued for the divided housing units, which numbered 542 housing units, in addition to the housing units belonging to the municipality, according to the percentage referred to above in

the investment law, which numbered (39) units. Thus, the total number of housing units within the area designated for residential use is 581 housing units. Changes in land use in the gated residential community. A number of modifications took place in the land uses of the gated residential community, as shown in Table No. (3), and there was also a change in the residential use of the gated community, where the area of a number of housing units was divided as shown in Table No. (4). Table (3) Land uses in the gated residential community of the university neighborhood (After the change)

Table (3):- Land uses in the gated residential community of the university neighborhood (After the change)

The type of land use	The area after the change is m2	Notes
Boys primary school	2268	Divide into two halves
Girls primary school	2268	Divide into two halves
Boys High School	2952	Divide into two halves
Girls High School	2952	Divide into two halves
Kindergarten	1483	Divide into two halves
Incubation	1483	Divide into two halves
commercial area	1300	
Health Center	3470	

Table (4):- The number of housing units by area in the gated investment residential community of the university (After the change)

The area of the residential unit (M2)	The number
500	7
240	289
200	178
170	93
120	209
total summation	776

4. RESULTS

4.1 Diversity Indices

Diversity index is a quantitative measure to measure the number of different species present in a data set of population[18]. These indicators are statistical representations of the diversity of land uses in the gated residential community as well as the diversity in the area of housing units in different aspects (richness, parity, and control). A comparison was made to measure the diversity index of land uses in general and residential use

in the form of the design stage and the implementation stage in which land uses and the area of housing units were modified within the residential use[19].

4.2 Shannon-Weiner Index

A widely used indicator that takes into account species richness and evenness is the Shannon Wiener Diversity Index, originally proposed by Claude Shannon in 1948. It is also known as the Shannon Diversity Index[20].

$$H = - \sum_{n=1}^{\infty} P_i * \ln * P_i \quad (1)$$

where P_i = proportion of individuals of types i , and \ln is the natural logarithm, and S = Types richness.

The value of H ranges from (0) to H (max), whereas H (max) is different for each community and depends on species richness.

Diversity analysis was conducted for the residential units of the gated community before and after changing the area of the housing units, as shown in Tables 5 and 6.

Table (5):- Analyzing the diversity of housing units before changing their area

type	Residential units before changing their area			
(m ²)	count.(n)	Pi	Ln(pi)	Pi*Ln*pi
500	38	0.7	-2.66	-0.19
240	371	0.68	-0.39	-0.27
200	133	0.25	-1.39	-0.35
170	0	0		
120	0	0		
S=3	N=542	H = - $\sum P_i * \ln * P_i$ = 0.81		

Table (6): - Analyzing the diversity of housing units after changing their area

Residential units after changing their area				
type				
(m2)	count.(n)	Pi	Ln(pi)	Pi* Ln*pi
500	7	0.01	-4.61	-0.05
240	289	0.37	-0.99	-.37
200	178	0.37	-1.47	-0.34
170	93	0.12	-2.12	-0.25
120	209	0.27	-1.31	-0.35
S=5	N=776		H= - $\sum P_i * \ln P_i = 1.36$	

Through the results of the above indicator, the urban design of the gated residential community after changing the area of the housing units within the residential use in it is more diversified, and the modified housing units' design is richer in type than the previous design.

5. CONCLUSIONS

The research proved that there is a better understanding of the potential role of the diversity of housing units in gated communities in contributing to social cohesion among the various components of society in the city of Al-Kut through the case of good diversity that appeared in the residential use in the closed residential community, which reinforced the presentation of relevant literature. Through the current knowledge reached by the research, it became possible to clarify the directions of the future urban design required, where the literature was discussed and the results of the research indicated that it is possible to manipulate the design characteristics of the neighborhood environment to enhance the neighborhood cohesion or the neighborhood's sense of belonging to the community, despite the social homogeneity Culture among residents is an important precondition for neighborhood cohesion. The idea of trying to create diverse, culturally and socially cohesive neighborhoods through design and/or politics does not appear to be the appropriate or most appropriate way to achieve cohesion between the various components of the greater community, and to promote social cohesion of the greater community. In a community, the size of homogenous areas should be small enough to allow people to identify with others. According to this approach, there

are two needs:

The first: the need to determine the appropriate size for homogenous communities or residential neighborhoods,

Second, the need to identify the types and nature of urban public spaces that may play the role of neutral settings that can attract people of different social groups and where communication and interaction between them can occur.

REFERENCES

- Meenakshi, "Neighborhood Unit and its Conceptualization in the Contemporary Urban Context," *India J.*, vol. 8, no. September, pp. 81–87, 2011.
- J. P. Halsall, "The problem with community cohesion," *Int. J. Soc. Syst. Sci.*, vol. 5, no. 3, p. 283, 2013, doi: 10.1504/ijss.2013.055890.
- K. Day, "New Urbanism and the challenges of designing for diversity," *J. Plan. Educ. Res.*, vol. 23, no. 1, pp. 83–95, 2003, doi: 10.1177/0739456X03255424.
- M. Ghorbi and H. Mohammadi, "A Critical View on New Urbanism Theory in Urban Planning: From Theory To Practice," *Sp. Ontol. Int. J.*, vol. 6, no. 3, pp. 89–97, 2017.
- Douglas Frantz, "Celebration , U . S . A . : Living in Disney ' s Brave New Town Paperback – September," p. 2000, 2000, [Online]. Available: <https://www.amazon.com/Celebration-U-S-Living-Disneys-Brave/dp/0805055614>
- B. H. Sodic, A. Gowhara, A. R. Tmg, and A. Gowhara, "The Privatization of Urban Development in Cairo : Lessons Learned from the Development Experience of Al Rehab Gated Community Ahmed M . Yousry Faculty of Urban and Regional Planning , Cairo University Abstract Since the mid - 1990s , the Egyptian governme," no. Meyer 2000, pp. 1–17, 2007.
- A. Einifar, R. Madani, B. Judd, and M. Jalili, "The physical factors affecting the social livability of

- gated communities: a case study of gated communities in Tehran,” *Int. J. Archit. Eng. Urban Plan*, vol. 29, no. 2, pp. 127–139, 2019, doi: 10.22068/ijaup.29.2.127.
- M. G. Abdelmonem, “The Abject Dream of Neo-Capital: Capitalist Urbanism, Architecture and Endangered Live-Ability of the Middle East’s Modern Cities,” *Open House Int.*, vol. 41, no. 2, pp. 38–46, 2016, doi: 10.1108/OHI-02-2016-B0006.
- K. Landman, “2nd Southern African Conference on Sustainable Development in the Built Environment Strategies for a Sustainable Built Environment 23-25 August 2000 Pretoria, South Africa Title of Paper: GATED COMMUNITIES AND URBAN SUSTAINABILITY: TAKING A CLOSER LOOK A,” no. August, 2000.
- L. I. U. Qing-hua and S. N. Limited, “Urban management of Iran after city council establishment (local governments),” vol. 10, pp. 5783–5786, 2013.
- Z. Muhammed and I. R. Abubakar, “Improving the Quality of Life of Urban Communities in Developing Countries,” no. January, pp. 357–370, 2020, doi: 10.1007/978-3-319-95726-5_25.
- A. ARIBIGBOLA, “IMROVING URBAN LAND USE PLANNING AND MANAGEMENT IN NIGERIA:: THE CASE OF AKURE,” vol. 3, no. 9, pp. 1–14, 2018.
- D. Schleuter, M. Daufresne, F. Massol, and C. Argillier, “A user’s guide to functional diversity indices,” *Ecol. Monogr.*, vol. 80, no. 3, pp. 469–484, 2010, doi: 10.1890/08-2225.1.
- Y. M. Moustafa, “Design and Neighborhood Sense of Community: An Integrative and Cross-Culturally Valid Theoretical Framework,” *Int. J. Archit. Res.*, vol. 3, no. 1, p. 73, 2009, doi: 10.26687/archnet-ijar.v3i1.254.
- S. Brint, “Gemeinschaft revisited: A critique and reconstruction of the community concept,” *Sociol. Theory*, vol. 19, no. 1, pp. 1–23, 2001, doi: 10.1111/0735-2751.00125.
- J. L. Grant and K. Perrott, “Producing diversity in a new urbanism community: Policy and practice,” *Town Plan. Rev.*, vol. 80, no. 3, pp. 267–289, 2009, doi: 10.3828/tpr.80.3.3.
- A. Latham and J. Layton, “Social infrastructure and the public life of cities: Studying urban sociality and public spaces,” *Geogr. Compass*, vol. 13, no. 7, pp. 1–15, 2019, doi: 10.1111/gec3.12444.
- P. D. I. Torino, O. Esmail, and P. M. Bolzoni, “CAIRO ’ S SELF-PLANNED COMMUNITIES : STIGMATIZATION , REPRESENTATIONS , AND ACTIONS FROM BELOW,” 2022.
- H. M. Hasan, “A comparative Study to Show the Effect of Reducing Urban Space on Spatial Organization,” *Al-Muthanna 2nd International Conference on Engineering Science and Technology, MICEST 2022 - Proceedings*, pp. 77–82, 2022, doi: 10.1109/MICEST54286.2022.9790131.
- M. K. Konopiński, “Shannon diversity index: A call to replace the original Shannon’s formula with unbiased estimator in the population genetics studies,” *PeerJ*, vol. 2020, no. 6, 2020, doi: 10.7717/peerj.9391.