

The Social Sustainability in Oman Residential Neighborhood, Case Study Barka, AL Margh

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Abstract

The housing community plays an important role in individuals' leadership and social communication. Despite the Omani government's efforts to provide more housing to people in various forms, they ignore the social life in the new residential neighborhood when designing it sustainably. This paper deals with the study of the Maragh residential neighborhood to transform it into a socially sustainable residential neighborhood. In this research, the study used a literature review method and also a comparison method between the Maragh residential neighborhood in the state of Barka with the socially sustainable residential neighborhood Royal flight housing complex in the state of Seeb. Finally, the study transformed the Maragh residential neighborhood into a socially sustainable residential neighborhood by developing it as specified in the study.

Keywords: social sustainability, residential neighborhood, Al Margh, Royal flight housing complex

1. Introduction

Residential neighborhoods an area within the geographical boundaries of a local government that is delineated or otherwise designated by the local government for general use, primarily for single-family residences, excluding multiple commercial properties, and subject to speed restrictions and traffic controls equivalent to the area of a residential district. The concept of sustainable development is divided into three pillars: economic, environmental and social. The study will focus on social sustainability, which means protecting social capital by investing in and building services that provide a framework for social work, including attempts to address social problems such as poverty, inequality and social distance.

In this study, Researcher will address the solution to the problem of social distancing and also the shortcomings of social sustainability in the residential neighborhood.

The research, will specifically identify Barka area in the Maragh residential neighborhood (The history background as the residents of this area They were in an area adjacent to the sea, and all of those people had close relationships, but the government moved them to the Maragh residential neighborhood for a reason, The purpose of this move is to demarcate coastlines and reduce the danger to them from marine hazards, and when they moved, they branched out into houses that were physically close but socially isolated. This study will achieve several clear goals, including: improving residential communities, providing integrated sustainable services, achieving social sustainability in residential neighborhoods, developing infrastructure in residential neighborhoods, and the relationship between sustainability and services.

The residential area of Maragh lacks many services, so the study will add services that are beneficial to society and social relations. Key services include children's gardens, schools, walkways, shopping centers and all amenities to serve all residents age group.

2. Methodology

This study targets social sustainability in the residential neighborhood (Al-Maragh), to achieve a clear goal, which is to develop the community and achieve sustainability to solve the problem of the lack of integration in the residential neighborhood to achieve these goals the study will a literature review, SWOT analysis and comparative analytical methods.

Fist, a literature review: we collected research conducted by specialists to study residential neighborhoods and compiled the results of research related to them. By collecting this information and results from the research, we concluded that there is a problem for this study.

Second, comparative analytical methods: We chose two residential neighborhoods in the Sultanate of Oman to conduct a study to clarify the strength of the social relationship between members of society. We chose the residential neighborhood (Al-Margh) from the state of Barka and (Royal flight housing complex) from the state Al seeb .

Table 1: General Information, Source. Authors

	Royal flight housing complex	Al-Margh
Number of houses	61	70
Length	650 m	270 m
Width	270 m	450 m
The total area	175500 m2	161100 m2



Figure 1.a: Al-Margh



Figure 1.b: Royal flight housing complex

Figure 1: Master plan of case study, 18/October/2023

Table 2: Available services in Al-Margh, Source. Authors

Available services in Al-Margh	Very weak	weak	Neutral	strong	very strong
Mosque					✓
supermarket			✓		
restaurant	✓				
school	✓				
garden	✓				
Swimming pool for adults	✓				
Children's swimming pool	✓				
Gangway	✓				
Private parking for homes		✓			
Stadium	✓				
Petrol station					✓

Table 3: Available services Royal Flight housing complex, Source. Authors

Available services Royal Flight housing complex	Very weak	weak	Neutral	strong	very strong
Mosque					✓
supermarket			✓		
restaurant				✓	
school					✓
garden					✓
Swimming pool for adults					✓
Children's swimming pool					✓
Gangway					✓
Private parking for homes					✓
Stadium					✓
Petrol station					✓

3. literature review

Littig and Griebler (2005) describe that social sustainability theory is actually based on the concepts of society's wants, needs and income. The activities carried out by humans to satisfy human needs take into account the interdependent process of society and nature and emphasize the relationship between humans and nature in human activities. This is a productive interaction that affects the stability of all natural resources. The social sustainability model developed by WCOSS (2002) reveals five key principles of social sustainability, including equity, diversity, quality of life, connectivity, and democracy and governance of urban areas.

As for Corandino (2009) define social sustainability as the way in which individuals, communities and societies can live together, aiming to achieve the common social goals of the development model they establish for themselves and society, taking into account the chosen natural and environmental aspects of their Boundaries of place.

Social sustainability has been studied and researched extensively and therefore treated or defined in different ways. There are a variety of concepts used to describe people's connections and relationships with their surroundings and places: attachment, social sustainability, quality of life, life satisfaction, spatial identity, place dependence, sense of place, urban connectedness and sustainability or sense of community, each concept is associated with a different framework and meaning, although their actual differences are unclear. Most research on social sustainability can be divided into three contexts: personal context, natural environment context, and community context.

In the study social sustainability and urban form: evidence from five British and Evaluation of Social Sustainability in Residential Neighborhoods, they followed the same methodology in their studies, where they reached similar results: In the first study, they reached social outcomes related to relationships, satisfaction, and electronic compatibility. Social interaction outcomes tend to improve as density rises to a moderate level and decreases at a higher level. Local services reflect positively on the social aspect, and increasing the use of local services contributes to increasing the level of sustainability. In the second study According to the findings of the survey, neighborhood sustainability is of higher importance than dwelling and city scale, while dwelling sustainability was more significant than city sustainability.

In a study introduced to achieve a sustainable neighborhood, they followed a theoretical approach and literature review and did not reach a conclusion, but they did come up with a recommendation: neighborhoods should be sustainable and attractive to people of all kinds.

In the research Improve Urban Form to Achieve High Social Sustainability in a Residential Neighborhood Salam New City as a Case Study to study residential neighborhoods, I follow a clear methodology to reach useful results, which is quantitative and qualitative methodology by using literature review, simulation, and comparative analytical methods. And he reached social interaction and activities improve by 48% and social integration will improve by 74% over the base case of the New Peace City case study when using aspects of urban form (green ratio 35%, mixed land use 40%, street network 7% with a D/H ratio of 4/ 1), which leads to improving social life in the selected area.

In studying various frameworks for defining social sustainability measurements indicators future focus and process framework. Their goal in this study was Understand the Social sustainability of residential neighborhood in relation to the Indian context as they followed the methodology Based on existing body of knowledge and past research done in the area of Social Sustainability and they reached the conclusion Various frameworks for defining social sustainability indicators measurements future focus and process framework.

The authorities set out principles for a sustainable urban planning approach. The selected case study area requires the adoption of a set of sustainability principles and sustainability criteria.

Three of these principles are particularly relevant to urban sustainability, as articulated in the adopted Rio Conference on Environment and Development (RDED) (United Nations 1992b):

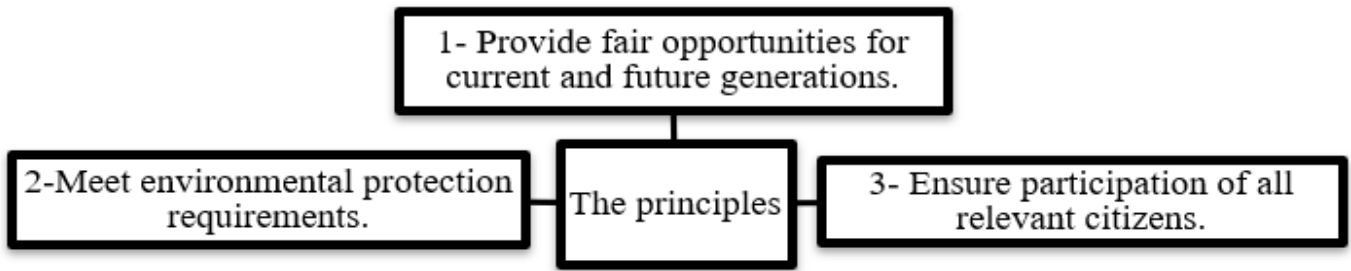


Figure 2: principles for a sustainable urban planning approach, Rauscher, R. C., & Momtaz, S. (2015)

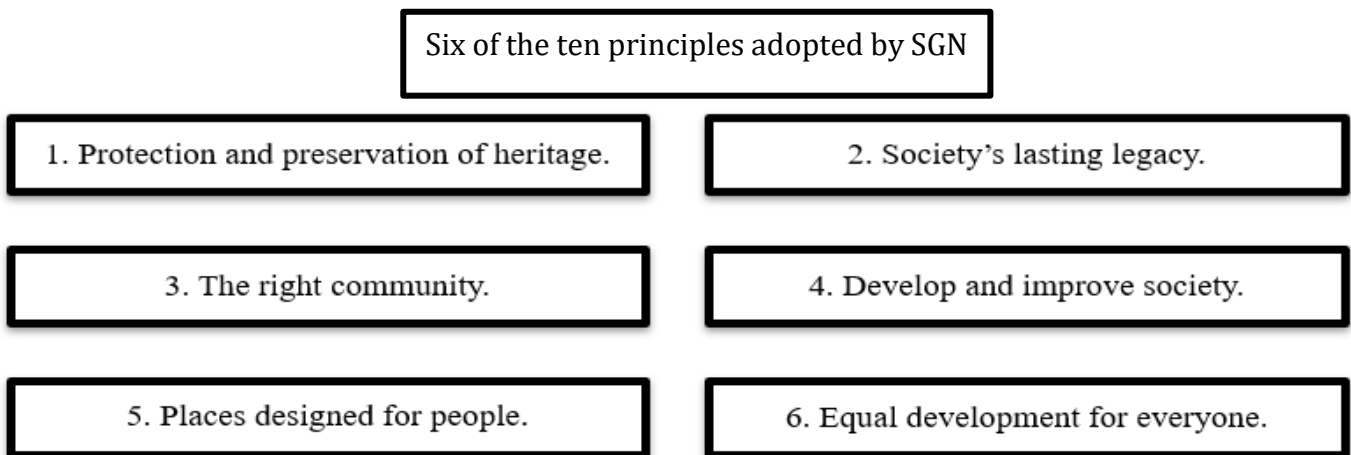


Figure 3: principles adopted by SGN, Rauscher, R. C., & Momtaz, S. (2015)

This conclusion was reached by researcher Vineet Shrivastava and Jagdish Singh during a study of residential areas believes that what makes the neighborhood unit approach successful is that it is a central area with clear neighborhood boundaries, conservation lines, pedestrian-oriented open space distribution, mixed-use land and high density. They also concluded that in studies where sustainability depends largely on research and planning, the social aspect is neglected. They focused on and developed economic and environmental sustainability, particularly in the context of planning and communities, where problems depleted resources and communities encouraged construction.

The book "Designing for Sustainable Development in Society" mentions that between 1946 and 1970, 32 settlements were built in the United States to accommodate more than 1 million people, but they have long faced criticism and problems due to planning issues. Research in China also shows that social interaction is compromised, noting the need for social structures, good local services and community support to provide residents with opportunities to meet and share social experiences. It was also made clear that, with social support, these communities will work to come together to form vibrant communities with a sense of place, belonging and identity. Based on an evaluation of international experience, the Youth Foundation developed a framework of four elements that are critical to building new communities that are successful

and sustainable in the long term. These are: amenities and social infrastructure; social and cultural life; sound and effect; and room for growth.

Basic principles of sustainable neighborhood planning: UN-Habitat, an organization that supports a better urban future, has proposed five principles of sustainable neighborhood planning, including: adequate road space and effective road network, high density, mixed land use, limited utilization, social mixing and land use specialization. This is explained below (UN-Habitat, 2011; Teed et al., 2013; Falk and Carley, 2012).

1. Sufficient road space and a well-functioning road network:

- The purpose of this principle is to develop appropriate and efficient road networks. In order to develop sustainable communities by focusing on the mobility dimension, street design should also consider the following characteristics:
 - Roads must be clear and suitable for cyclists
 - Public transportation should be vigorously developed
 - The street hierarchy should be highly interconnected
 - Parking spaces should be sufficient

2. High density

- High density means a concentration of people and their activities. Key benefits of high-density development:

Use land efficiently to accommodate more people per unit area, reduce the cost of public services such as emergency response, school transport, water, sanitation and roads, support better municipal services, support public transport, pedestrians and cyclists, improve and support public Quality open spaces, improved efficiency, reduced energy and pollutants.

3. Mixed land use:

- The aim of this principle is to develop a well-coordinated range of activities and land uses in locations that are sufficiently suitable and flexible.

4 Social mix:

- This principle aims to increase cohesion and interaction between different social groups within the same group
- The community aims to create equal opportunities in existing urban areas by planning different types of housing.

5 Limited land use specialization:

- The objective of this principle is to reduce the use of functional zoning in order to promote mixed land use.
- social sustainability parameters in neighborhood:

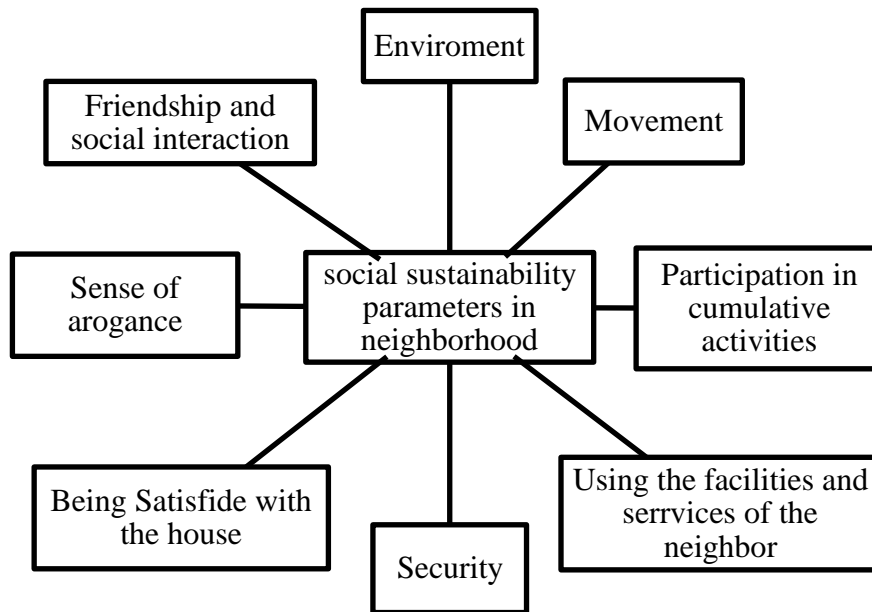


Figure 4: social sustainability parameters in neighborhood, Bojago, E. (2022)

In book environmental resilience and management, the area and cumulative life are closely related, and this connection can be traced back to concepts that support their theoretical and applied applications. Social or cumulative life is an opportunity to remove the obstacles of daily life, spend leisure time, engage in social interactions, bring different people and groups together, and give them the opportunity to exercise their right to freedom of expression while maintaining the atmosphere. The cumulative life in public spaces is based on enhancing social interaction, attracting different people and groups, social security, thus encouraging the reduction of tolerance between different groups in the environment, socialism, and finally creating a new community and active environment. Life and areas are affected in the social sustainability of the neighborhood by factors:

- 1- Geographical characteristics of public atmosphere
- 2- Socio-cultural characteristics of society
- 3- Pattern of spending free time

Figure 5: Factors affecting social sustainability in regions, Bojago, E. (2022)

The results of the study indicated the achievement of several goals:

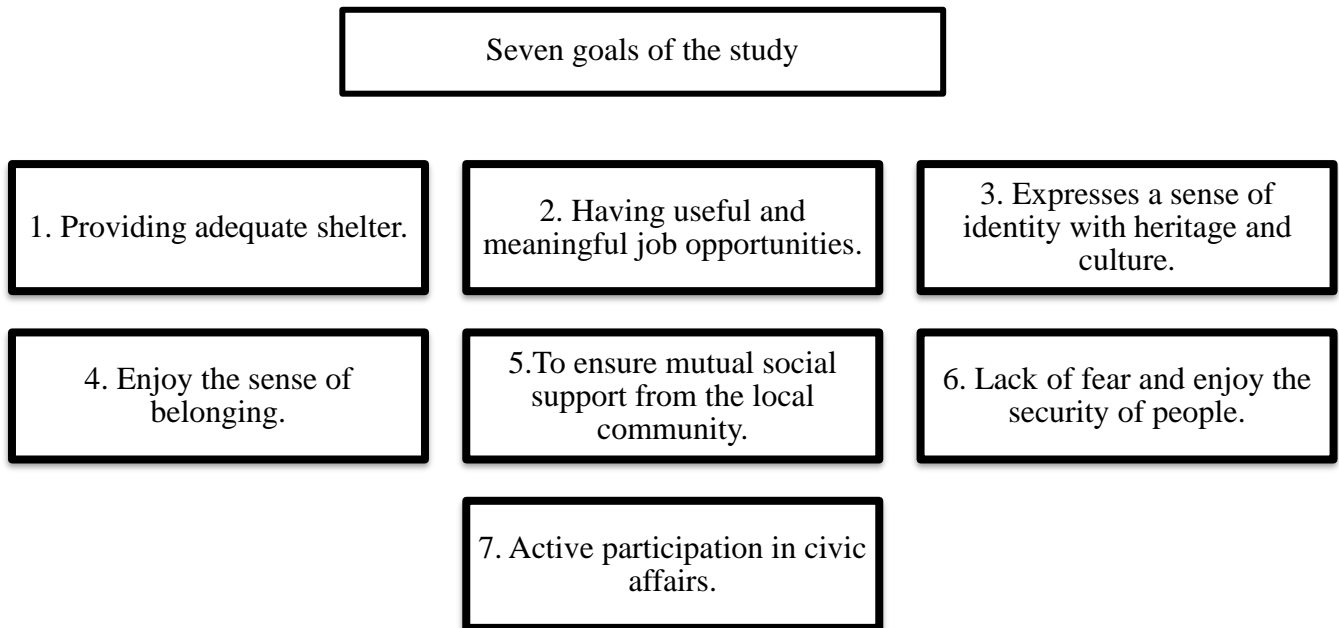


Figure 6: The objectives achieved by the study, Bojago, E. (2022)

4. Case Study

4.1 Existing Situation in Al-Margh

Al-Maragh neighborhood is located in the Sultanate of Oman, in the state of Barka. It is a residential neighborhood that needs some additions as it lacks a set of services. The area of the Al-Maragh residential neighborhood is 161,100 square meters and the number of houses in this neighborhood is 70.

The Maragh residential neighborhood needs to be redeveloped to become a socially sustainable residential neighborhood, as the most important disadvantages of this neighborhood are the lack of services, the lack of suitable commercial stores, a children’s park, a walkway, and green spaces. To raise the level of social sustainability, services will be provided, and these will help bring individuals closer together. After these services are available, neighborhood residents can benefit from them, for example, using the park to hold an event, and this contributes to the gathering of neighborhood residents.

4.2 Existing Situation in Royal flight housing complex

The Royal Flight Housing Complex neighborhood is located in the Sultanate of Oman, the state of Seeb, and it is an integrated residential neighborhood. The area of the Royal Flight Housing Complex residential neighborhood is 175,500 square meters and the number of houses in this neighborhood is 61.

This neighborhood is a socially sustainable residential neighborhood with many services, including shops, a restaurant, a walkway, a school, a children’s park, a sports field, swimming pools for children and adults, and green spaces.

4.3 Comparative analytical Study:

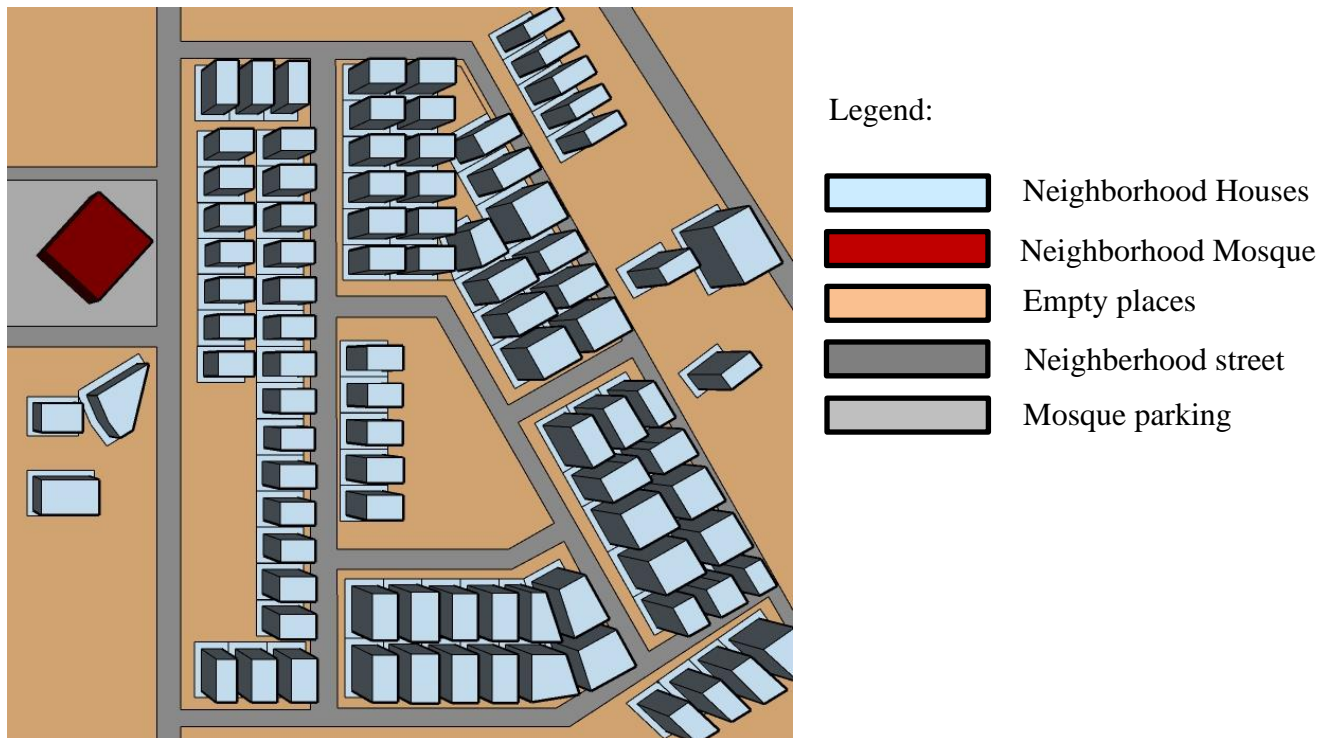
A comparison will be made between the Maragh residential neighborhood and the Royal Flight housing complex through a SWOT analysis to clarify the strengths, weaknesses, opportunities, and threats.

Table 4. SWOT Analysis of case study, Source. Authors

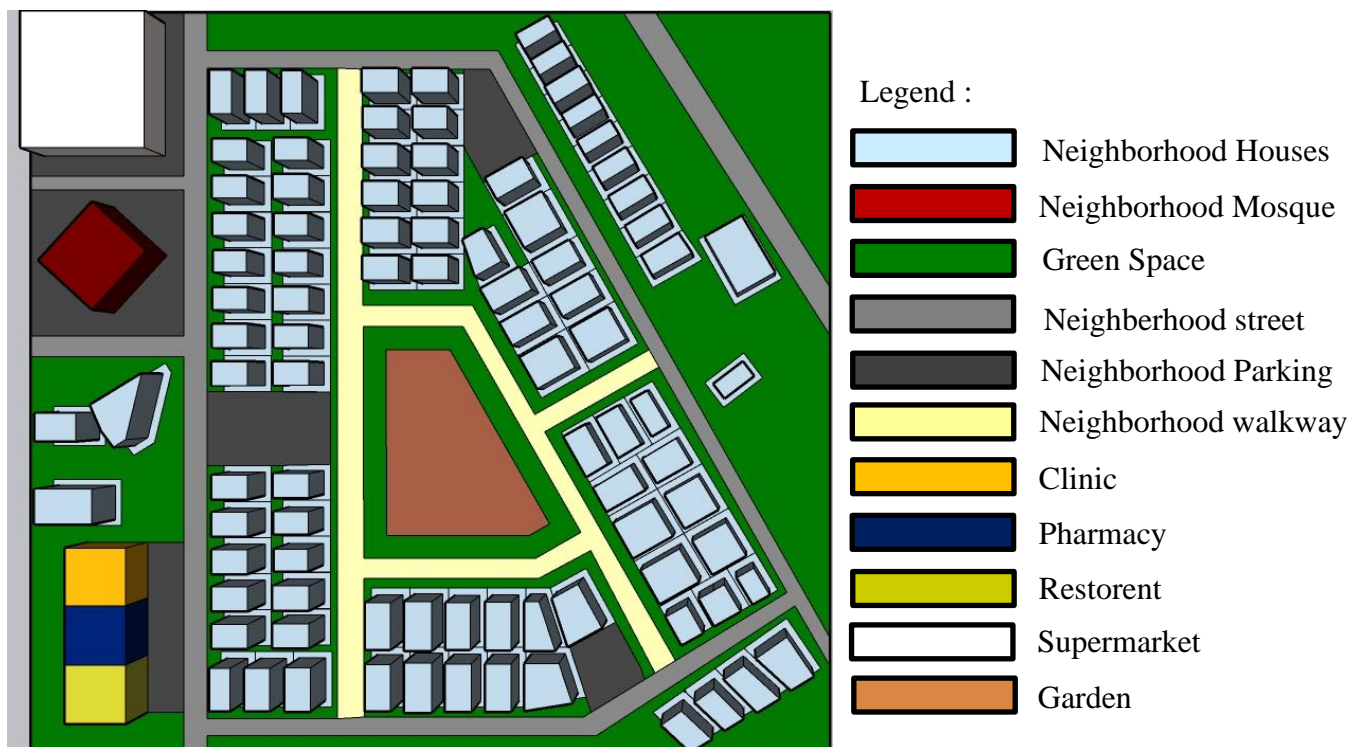
	Al-Margh	Royal flight housing complex
Strengths	1-Empty spaces	1-The presence of various services. 2-There is a private walkway. 3-There is a children's garden. 4-There are agricultural spaces
Weaknesses	1-There are no services. 2-There is no place for pedestrians. 3-There are no green spaces.	1-Internal streets
Opportunities	1- Providing services. 2- Providing green spaces.	1- People getting close together a lot. 2- A safe place. 3- Providing an effort for residents to provide services in the neighborhood.
Threats	1- Not getting close to people much. 2- The safety rate is low.	1- The danger of internal streets for children.

4.4 Discussion and Recommendation:

In this research, the Al-Maragh residential neighborhood will be transformed into a socially sustainable residential neighborhood by providing the most Important shortcomings should be added to this neighborhood. Figure 8 shows the current status of the residential neighborhood, and Figure 9 shows a proposal for the residential neighborhood intended to be socially sustainable. After conducting a SWOT analysis, The study came up with solutions to the weaknesses and threats present in the Al-Maragh residential neighborhood. The study will solve the empty spaces by providing green spaces, and to increase the level of safety within the neighborhood, the internal streets will be removed to create a safe walkway and path for children. As for house parking, parking will be provided in a suitable place for all houses, and a children’s play park will be provided in the middle of the residential neighborhood. It will be useful as a meeting place for the neighborhood residents to gather and interact to make it a socially sustainable neighborhood. Due to the limited services, various services will be provided, such as a shopping center, restaurant, clinic, and pharmacy. A passable road will also be constructed to reach the mosque.



Figur 7. Al-Maragh residential neighborhood, Source. Authors



Figur 8. Al-Maragh sustainable residential neighborhood, Source. Authors

5. Conclusion

The objectives of this study were to improve residential communities, provide integrated sustainable services, achieve social sustainability in residential neighborhoods, develop infrastructure in residential neighborhoods, and the relationship between sustainability and services. Several methods were used for research, which are literature reviews, SWOT analysis, discussion, comparative study was conducted to reach important results, namely, transforming the Al-Magh residential neighborhood into a socially sustainable residential neighborhood. The result of this study is that various services must be added, such as a supermarket, a park, a place for walking and entertainment, a clinic, and a pharmacy. The safety aspect must also be taken into account by removing internal streets and providing private parking in a safe manner.

One of the most important recommendations that is that all aspects be taken into account before starting to form any residential neighborhood.

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