

## SUSTAINABLE DEVELOPMENT OF PRINCE FAWAZ NEIGHBOURHOOD

Linah A. Bakhsh<sup>1</sup>, Sama Badawi<sup>2</sup>

<sup>1,2</sup>College of Architecture and Design, Effat University, Qasr Khuzam St., Kilo.2, Old Mecca Road. P.O.BOX 34689, Jeddah 21478, Saudi Arabia.

E-mail: [ljabakhash@effatuniversity.edu.sa](mailto:ljabakhash@effatuniversity.edu.sa), [sbadawi@effatuniversity.edu.sa](mailto:sbadawi@effatuniversity.edu.sa)

Received: 20.04.2020

Revised: 24.05.2020

Accepted: 15.06.2020

### Abstract

The organization of neighbourhoods around the world varies according to the state's environmental conditions. Saudi Arabia is known to have a large population and many environmental differences in its neighbourhoods. Jeddah City is known as the country's economic and tourism capital, and this work will address one of the neighbourhoods in Jeddah City, North Prince Fawaz Neighbourhood. WadiGhulil is considered the largest valley in the province of Jeddah. The floods from the mountains east of Jeddah to the sea from the south, passing through most of the new and popular neighbourhoods, such as the Galilee and Nazala districts, the industrial warehouses and the Prince Fawaz district. This phenomenon caused the drowning of the Neighbourhood of Prince Fawaz. The aim of this work is to develop the North Prince Fawaz neighbourhood into a neighbourhood that is sheltered, well-planned and built to be sustainable, based on the needs and needs of residents and that also develops socially, environmentally and economically healthy aspects.

**Keywords**-- sustainable, village, neighbourhood, Saudi Arabia,

© 2020 by Advance Scientific Research. This is an open-access article under the CC BY license (<http://creativecommons.org/licenses/by/4.0/>)  
DOI: <http://dx.doi.org/10.31838/jcr.07.08.94>

### INTRODUCTION

Sustainability and sustainable development have steadily gained popularity around the world over the last decade [1]. This is partly due to an increased awareness of the environmental impacts human society has had in the last century. Furthermore, population growth and urban neighbourhood development are inevitable in cities around the world [2]. Many neighbourhoods around the world today face a number of challenges that have had an impact on culture, social association, economic outlook and the environment. Urban sustainable development should therefore address the social and cultural perspectives of each community within the environmental and economic contexts [3]. The concept of a neighbourhood being considered is an area where people live and interact with each other [4]. Neighbourhoods tend to have their own personality among the general population living in and around them [5]. Residents may have comparable types of families, income and education. Neighbourhoods may include restaurants, bookshops, and parks. Saudi Arabia is known to have a large population and many environmental differences in its neighborhoods [6]. Jeddah City is known as the country's economic and tourism capital, and this research will address one of the neighborhoods in Jeddah City, North Prince Fawaz Neighborhood.. According to Vision 2030 of Saudi Arabia [7], there is a need to improve the neighbourhood sustainability system to suit the city's natural environment and provide opportunities to live and live in the valley with an integrated security system that meets all people's needs and needs and builds a vibrant community of people there. Thus, this work presents a brief proposal on the sustainable development of Prince Fawaz Neighborhood.

### BRIEF REVIEW ON SUSTAINABLE NEIGHBOURHOOD

#### The Definition of Sustainable Neighbourhood

A sustainable neighborhood is one that is economically, environmentally and socially healthy and resilient [8]. It addresses challenges through integrated solutions instead of fragmented approaches that meet one of these objectives at the expense of the other. The three pillar of sustainability are environmental, economy, and society [9,10]. The environmental pillar includes the protection and sweetening of native and regional ecosystems and biological diversity [9]. It also includes conservation of water, land, energy and non-renewable

resources. The economic pillar includes community members who benefit equitably from a strong and healthy community-based economy [9]. The pillar of society includes the satisfaction of basic human desires for clean air and water and regionally sourced, uncontaminated food [9].

#### The Seven Ways to Create Sustainability in Neighbourhood

There are seven ways to create sustainability in the neighborhood [11]. Those seven methods are flood prevention, waste reduction, solar energy conservation, water conservation, green communities, walkable communities and regenerative design [11]. For flood prevention, it includes Reducing the amount of impervious surface, improving subdivision design and maintenance, minimizing reliance on levee protection, and planting and maintaining appropriate vegetation, often native plants. For waste reduction, it includes reduce, re-use, recycle waste. For the conservation of solar energy, this includes the generation of electricity using solar cells. For the conservation of water, this includes the reduction of water wastage and the introduction of rainwater collection techniques. For green communities, it includes implementation of green methods for energy conservation among the local communities.

#### COMPARISON BETWEEN A SUSTAINABLE AND AN UNSUSTAINABLE NEIGHBOURHOOD

Table 1 shows the comparison between sustainable neighborhood and unsustainable neighborhood.

**Table 1.** The differences between sustainable and non-sustainable neighborhood

Sustainable Neighborhood	Non-Sustainable Neighborhood
Walk to shops	No service
Safe streets	No safety
Get around easily	No gathering places
Housing choices	No discharge of rain and flood water
Gathering places	No environmental protection
City services	No exploitation of environmental wealth

**SITE SELECTION**

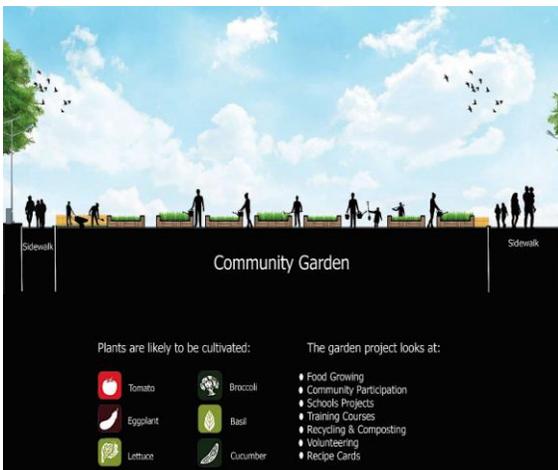
In this work, the selected site is Prince Fawz Neighborhood (Figure 1). This site was selected due to its neighbourhood. Second is due to the lack of security, entertainment, services, landscaping and the preservation of the natural surroundings of the neighbourhood, while it is one of the famous old neighbourhoods in Jeddah City. Thus, a sustainable neighbourhood for Prince Fawz Neighborhood is required. In addition, it requires an improvement to the landscape and it requires improvement in the drainage solutions. In addition, the key surroundings of this neighbourhood are Althaghar Hospital, King Abdulaziz Medical City, Event mall and Alreaily Station.



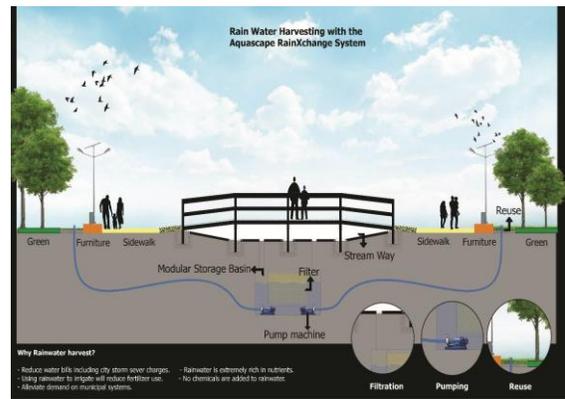
**Figure 1.** Prince Fawz Neighborhood

**PROJECT DESIGN**

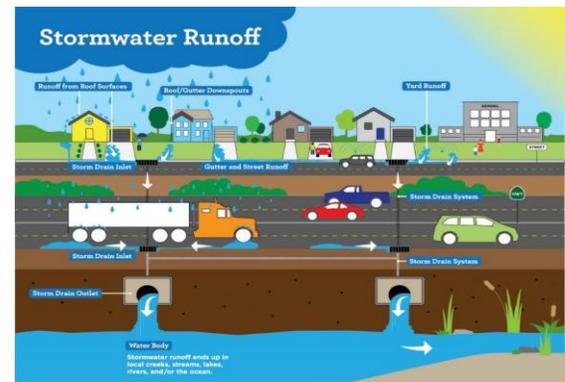
Vision 2030 is a bold yet workable blueprint for an ambitious nation. It expresses the nation long-term goals and expectations and builds on the unique strengths and capabilities of Saudi Arabia country. It guides the aspirations of Saudi Arabia towards a new phase of development—to create a vibrant society in which all citizens can fulfil their dreams, hopes and ambitions to succeed in a prosperous economy. The sustainable development goals are a blueprint for a better and more sustainable future for all. They address the global challenges that Saudi Arabia face, including those related to poverty, inequality, climate change, environmental degradation, prosperity, and peace and justice. The objectives are interlinked and, in order to leave no one behind, it is important that Saudi Arabia achieve each goal and target by 2030. Figure 2 to Figure 10 shows the proposed sustainability features, design and development for Prince Fawz Neighborhood.



**Figure 2.** Community garden section



**Figure 3.** Rain X Change



**Figure 4.** Stormwater runoff



**Figure 5.** Kinetic pavement



**Figure 6.** Master plan of the Development neighborhood



**Figure 7.** Internal view of Prince Fawz Neighborhood



**Figure 8.** The park of Prince Fawz Neighborhood

## CONCLUSION

In this work, a brief proposal on the sustainable development of Prince Fawaz Neighborhood is presented. The main objective was to design a sustainable urban neighborhood for Price Fawaz Neighborhood. As a result, this work presented North Prince Fawaz Neighborhood as a neighborhood that is sheltered, well-planned and built to be a sustainable urban development based on the needs and needs of residents, while also developing socially, environmentally, economically sound aspects.

## REFERENCES

1. Sampson R J 2017 Urban sustainability in an age of enduring inequalities: Advancing theory and econometrics for the 21st-century city *Proc. Natl. Acad. Sci.* 114 8957–62.
2. Kytta M, Broberg A, Haybatollahi M and Schmidt-Thomé K 2016 Urban happiness: context-sensitive study of the social sustainability of urban settings *Environ. Plan. B Plan. Des.* 43 34–57
3. Zheng H W, Shen G Q P, Song Y, Sun B and Hong J 2017 Neighborhood sustainability in urban renewal: An assessment framework *Environ. Plan. B Urban Anal. City Sci.* 44 903–24
4. Sharifi A 2016 From Garden City to Eco-urbanism: The quest for sustainable neighborhood development *Sustain. Cities Soc.* 20 1–16
5. Shi Q, Yu T, Zuo J and Lai X 2016 Challenges of developing sustainable neighborhoods in China *J. Clean. Prod.* 135 972–83
6. Maddah R, Song J And Deguchi A 2016 Motorization and Pedestrianization Issues based on Design Standards in Planned Neighborhoods in Jeddah City, Saudi Arabia *Urban Reg. Plan. Rev.* 3 187–202
7. Mitchell B and Alfuraih A 2018 The Kingdom of Saudi Arabia: Achieving the Aspirations of the National

Transformation Program 2020 and Saudi Vision 2030 Through Education *J. Educ. Dev.* 2 36.

8. Yigitcanlar T, Kamruzzaman M and Teriman S 2015 Neighborhood sustainability assessment: Evaluating residential development sustainability in a developing country context *Sustainability* 7 2570–602
9. Boyle L, Michell K and Viruly F 2018 A critique of the application of neighborhood sustainability assessment tools in urban regeneration *Sustainability* 10 1005
10. Hussain, A., Mkpojiogu, E.O.C., Kamal, F.M.(2016). The role of requirements in the success or failure of software projects. *International Review of Management and Marketing*, 6 (7Special Issue), pp. 305-310.
11. Cloutier S, Berejnoi E, Russell S, Morrison B A and Ross A 2018 Toward a holistic sustainable and happy neighborhood development assessment tool: A critical review of relevant literature *Ecol. Indic.* 89 139–49