



(REVIEW ARTICLE)



Urban green spaces and public realm design in Cairo: Enhancing quality of life and environmental sustainability

Ahmed Ayman GalalEldin ElKousy *

Department of Architecture, Faculty of Engineering Ain Shams University, Cairo, Egypt.

International Journal of Science and Research Archive, 2024, 13(01), 2034–2037

Publication history: Received on 28 August 2024; revised on 02 October 2024; accepted on 05 October 2024

Article DOI: <https://doi.org/10.30574/ijrsra.2024.13.1.1895>

Abstract

The paper explores the pressing challenges and promising initiatives in enhancing urban green spaces and the public realm in Cairo, a metropolis grappling with rapid population growth and environmental degradation. As the city struggles with density, air pollution, and a shortage of green areas—far below the recommended standard for urban health—the article highlights key efforts to revitalize public spaces. Notable projects include the creation of large parks like Al-Azhar Park, the redevelopment of the Nile riverfront through projects such as Mamsha Ahl Misr, and the introduction of green infrastructure solutions like street trees, green roofs, and sustainable urban drainage systems.

Despite these advancements, Cairo faces significant obstacles, including limited public land, budget constraints, and water scarcity. However, there are opportunities to address these challenges through innovative urban agriculture, public-private partnerships, and community participation in green space development. The paper suggests that through continued investment and thoughtful urban design, Cairo can foster a more sustainable, livable environment. By integrating green infrastructure into future development projects, the city holds potential to transform its landscape and improve the quality of life for its residents in the coming decades.

Keywords: Urban green spaces; Air pollution; Water scarcity; Nile riverfront; Urban design; Sustainable environment; Quality of life.

1. Introduction

Cairo, the hustling and bustling capital of Egypt, is usually faced with the city problems of the urban boom. As of 2021, the population has increased to over 20 million in the metropolitan area, which has brought in such issues as density, air pollution, and the lack of public green spaces. Nevertheless, there are promising projects that point to the revitalization of the public realm in Cairo through landscape architecture and urban design interventions. The following article will explore the areas in which Cairo is targeting for live ability and sustainability development: urban green spaces, the Nile riverfront, and the integration of green infrastructure in the city.

2. Urban Green Spaces

2.1. Nature Islands in the City

Cairo city has not been a city full of green areas with only about 0.8 square meters for every individual left, which is very much below the 9 square meters that the World Health Organization thinks a man needs to feel good and stay healthy in a city.

* Corresponding author: Ahmed Elkousy

This has led to great changes in the quality of life of the people, the environment, and the public health of the nation.

Nevertheless, where there is a will there is a way, and so the government is putting a lot of effort to raise and improve Cairo's urban green spaces:

2.2. Al-Azhar Park

The 30-hectare park that was Al-Azhar Park (opened in 2005) replaced a former landfill and has been Cairo's biggest green space since. The concept was developed by the super-talented company Sasaki Associates where the park is a copy of Islam pretty gardens, which include lots of fountains and geometric patterns. The park is a place where all the residents can enjoy, and it is also getting back the historical neighborhood to its shiny days again¹.

2.3. Heliopolis Public Gardens

The historical part of Heliopolis gardens includes Merry land Park and Heliopolis Club gardens as well; thus, these are among the most intrinsic gardens of Cairo. Yet in reality, the last developmental programs mainly concentrated on imbuing and upgrading the areas with the new infrastructures to accommodate the thriving modern life, yet not forgetting them point-to-point to the cultural heritage inherited².

2.4. New Administrative Capital

The new administrative capital of Cairo, which is planned to be situated on the east part of the city, is expected to include large green tracts, parks, and walkways in its final design. Besides these eco-treasures it will be a beacon for many other urban projects in Egypt that do so¹.

2.5. Community Gardens

In certain parts of Cairo, community garden plans started with using dearth set spaces for light farming. While most of these projects were small in size but they are little steps to convert Cairo from nonuse to green².

3. Revitalizing the Nile Riverfront

The Nile River is the backbone of Cairo and public enjoyment of the river has been a major happening in the last few years. There are just many initiatives that aim to facilitate the interaction of the public with the Nile River.

3.1. Mamsha Ahl Misr (Promenade of the People of Egypt)

This is a very large project that is developing a 54-kilometer-long walking and biking path along the Nile's eastern bank through Cairo. Consequently, it is to be a long belt of promenade having facilities like sport, big green spaces, and cultural related areas all along the riverbank for the benefit of the public¹.

3.2. Zamalek Corniche

The affluent island of Zamalek is setting up new facilities at the Nile Corniche with the addition of pedestrian and cycling tracks, resting places, and landscape installations, that will make the promotion of the public space more effective².

3.3. Imbaba Bridge Park

An addition of a pedestrian and bicycle bridge across the Nile, which will form and function as linear parks and public spaces of the public, is a way to a green way between the east and west banks¹.

3.4. Nile City Towers Waterfront

This private development has gained the use of a part that was not accessible during the previous period and has hence set up a wanted place for strolling and organizing different events, thus making private-public partnerships clear in the riverfront rejuvenation. The development happened at a location of Nile City Towers Waterfront².

4. Integrating Green Infrastructure

The city of Cairo notices serious environmental issues, such as the heat island effect and air pollution as well as water scarcity. The use of green infrastructure, all over the city, can meet the above problems directly through:

4.1. Street Trees and Urban Forestry

Planting projects with trees along the streets and the creation of urban forestry are being run in Cairo, which has a potential to be the future of green architecture in the city. For instance, it can reduce the high temperatures, clean the air, and make a pedestrian-friendly environment¹.

4.2. Green Roofs and Walls

On the other hand, there are some new developments that are, in fact, using green roofs and living walls as supplementary factors to their masterplan in getting more plants into the tense urban areas. The new campus of the American University in Cairo is an example of how these technologies can also be developed to consume the sun-based power needed to sustain life².

4.3. Sustainable Urban Drainage

Cairo is introducing sustainable drainage systems in some of its new developments, which is the use of vegetation and [or] permeable surfaces to naturally control the stormwater and in turn, reduce flood risks and pollution¹.

4.4. Urban Agriculture

Rooftop farming projects are now being set up districts, as a way of ensuring both food security at the local level and the enjoyment of the greenery that these districts offer. The Ezbet Project in slums is very good at that as urban agriculture is being applied in poor communities².

5. Challenges and Opportunities

5.1. Despite the steps taking by Cairo in terms of enhancing its public spaces and afforestation, there are still serious challenges in this respect

- A small public land amount in overpopulation areas
- No budget to develop the public space
- Water shortage caused by lack of water for irrigation
- People must be informed with green space benefits in a public manner
- Developing the place found, with difficulty having to balance it with the remaining green areas

However, there are also promising opportunities

- The reassessment of those areas that are underused like rooftops, leftover lands, and infrastructure channels
- Communities to be included on the participatory development and maintenance of public spaces
- Implementation of water-efficient gardening through use of new technologies
- Establishment of joint ventures between public entities and private enterprises to fund and manage green spaces
- Integrating green infrastructure into new urban development projects

6. Conclusion

Cairo faces immense challenges in providing adequate green spaces and high-quality public realms for its growing population. However, through strategic landscape architecture and urban design interventions, the city is working to enhance livability and sustainability. By expanding urban green spaces, revitalizing the Nile riverfront, and integrating green infrastructure, Cairo can create a more resilient and enjoyable urban environment for its residents.

Continued focus on innovative, context-appropriate solutions will be key to overcoming resource constraints and maximizing the impact of public space improvements. With sustained effort and investment, Cairo can transform its urban landscape to better serve its people and environment in the 21st century.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

References

- [1] <https://isdsnet.com/ijds-v8n1-03.pdf>
- [2] <https://jeas.springeropen.com/articles/10.1186/s44147-021-00067-z>
- [3] <https://ojs.wiserpub.com/index.php/GBCE/article/view/2243>
- [4] https://mgaleg.maryland.gov/cmte_testimony/2023/ent/1zOF_3PkcBbIwBC7GbiHXhPWOJFua11PJ.pdf
- [5] <https://aps.aucegypt.edu/en/articles/947/cairos-green-sprawl-the-move-of-urban-green-space-towards-exclusivity>
- [6] https://www.researchgate.net/figure/ndividual-share-of-green-spaces-in-Cairo-based-on-2020-data_fig4_358263502