



The importance of green spaces in urban planning and the challenges facing the Greater Tripoli Municipality in integrating them with environmental elements

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ABSTRACT

This study aimed to highlight the concept of green spaces / landscapes and their importance in urban planning, as well as the environmental, climatic, health, and social footprint resulting from providing these spaces. It also addressed the necessity of integrating nature with gray structures, the dangers of transitioning from green to gray areas, their interaction with various environmental elements, and the importance of preserving them. The study reviewed the experiences of several developed countries that have prioritized green spaces in their urban planning, and examined a research study that demonstrated the importance of providing green spaces within residential neighborhoods and their impact on human health. Given that municipalities are the primary entities through which the state implements certain visions for development and sustainability, this study focused on the role of municipalities in general, and the Greater Tripoli Municipality in particular, in designing and landscaping parks, their primary role in maintaining them, and the challenges they face in urban planning.

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1.Introduction to the importance of green spaces in urban planning

With the recent rapid urban expansion that has come at the expense of green spaces, cities are no longer the places people aspire to live, especially as they have become deficient in essential environmental elements. Despite the availability of public services and their proximity to residential areas, the absence of a key element such as green spaces (including public and private parks, gardens, playgrounds, etc.) has significantly contributed to creating a heterogeneous environment. Green spaces are not merely aesthetically pleasing; they are the lungs through which cities breathe and provide a safe haven from the various pressures of life, whether social, health-related, psychological, or otherwise.

From this perspective, several questions arise, including: What is the concept of green spaces? What are the effects of providing and designing green spaces in urban planning? How can specialists integrate these green



spaces with existing structures? What challenges might they face and which should be among their priorities? This research paper will attempt to answer these questions in a simplified manner.

1.1. The Concept of Green Spaces:

Green spaces are areas organized by a specialized administrative body within a field of urban planning. They take the form of fenced or open spaces and can be integrated into city neighborhoods. They can be in a stable or shared state and contain cultivated and planted plants, selected based on the appropriate plant species according to the climate and the terrain, for the purpose of providing a benefit and fulfilling a legitimate need (www.bbc.com/news/magazine-11889768) [1].

Green spaces are places for life; they are urban amenities for the public good, possessing social, recreational, climatic, and health functions(www.bbc.com/news/magazine-11889768) [2].

Therefore, green spaces can be defined as natural spaces that are designed, coordinated, and organized during the planning of cities and residential neighborhoods. They are planted with vegetation such as grasses and trees, integrated with other natural elements, and are embodied in public parks, private residential building gardens, street and road edges, orchards, and playgrounds. They provide people with an opportunity to connect with nature. Green spaces are a fundamental element within urban areas, alongside gray structures, in urban planning due to their health, social, environmental, and psychological impacts.

1.2. The Impact of Green Spaces on Urban Planning and Their Integration with Environmental Elements

Many international and local studies have examined the importance of green spaces and the significant impact they generate when integrated into urban planning and residential areas. In addition to the aesthetic appeal they create when combined with building courtyards, roads, and public spaces, they have a significant role in creating a cohesive environment with a dominant element in urban areas. The most prominent impacts can be summarized as follows:

The impact of green spaces:

Environmental and climatic impact

Health impact

Social impact





1-Environmental and Climatic Impact:

Areas and spaces covered with vegetation have a significant impact on temperatures, moderating the overall atmosphere and increasing humidity, especially in desert and semi-desert regions, due to the plants' ability to absorb heat and water. They also increase the percentage of oxygen in the atmosphere, necessary for the respiration of living beings, and reduce the percentage of carbon dioxide. Furthermore, they provide a safe haven for many birds.

Margaret Lipscomb, Urban Programs Manager at the Tree Council, says that trees bring numerous benefits to people's lives. "Trees are not only attractive, but they are also practical. They provide shade in the summer and then shed their leaves, allowing light to enter when needed in the winter. They are beneficial for local climate change because they return water to the atmosphere, cooling the area. They also contribute to biodiversity, as tree-lined streets provide wildlife corridors for birds and insects to travel."¹



¹ <https://www.bbc.com/news/magazine-11889768>



2-Health Impact:

Green spaces are a key element for human mental and physical health. They help with relaxation, create space for exercise (if possible), reduce stress and tension, lower the risk of depression, and provide a respite from crowds and noise. They also give individuals a private space for thinking and concentration. See Figure (1), which illustrates the benefits of green spaces on mental health (alemarageography.yoo7.com/t109-topic) [3]. Therefore, the creation of green spaces is not limited to public parks, gardens, and residential building courtyards within residential zones. It extends to hospitals, schools, universities, and public and private institutions due to its impact on raising the level of health well-being. A Dutch study indicated that every 10% increase in green spaces can postpone health complaints in communities for five years. Another American study stated that patients with a view of nature through their hospital windows recover better after surgery.²

2 <https://www.bbc.com/news/magazine-11889768>

- + Positive effect
- Negative effect
- Anxiety

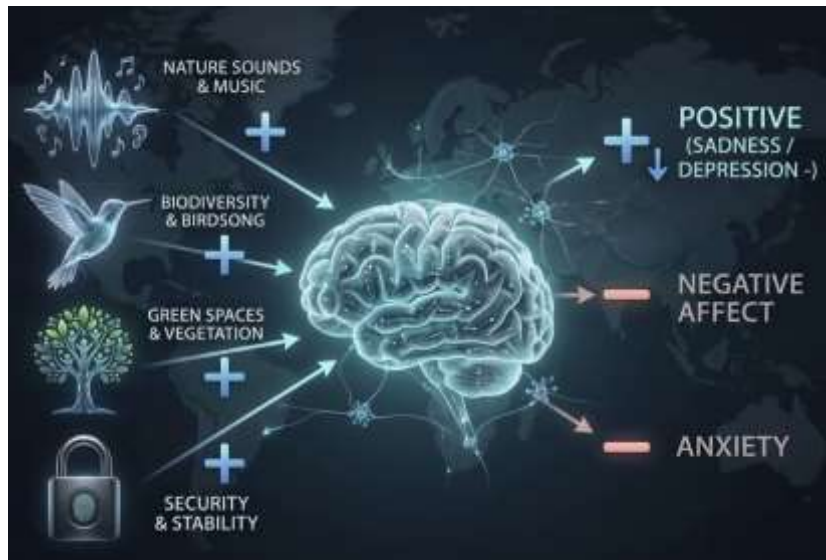


Figure 1: which illustrates the benefits of green spaces on mental health

3-Social Impact:

Green spaces that cover multiple areas, whether between residential neighborhoods, public gardens, parks and orchards, are a suitable place to strengthen social relations and consolidate family ties, as they open a room for residents of all ages and cultures to meet outside, exchange conversation and cultural dialogues, strengthen relationships, and are a suitable place for children to play under the supervision of adults and enjoy the natural scenery(www.dm.gov.ae/2024/01/21/) [4].

Case Studies

Many international and national cities have paid significant attention to green spaces within their development plans to produce human-friendly environments. Many studies have been conducted that reflect the importance



of coordinating and designing public parks and green spaces of all kinds. Below, I will list some studies and examples of cities that have been able to reflect the true value of the impact resulting from green spaces, whether they are public or private parks, or within streets, walkways, or other areas.

1-Dubai:

Dubai is the second largest city in the United Arab Emirates after Abu Dhabi in terms of area, covering 114.4 square kilometers. It is a prime example of a city's commitment to park design and landscaping, considering them an integral part of urban planning and a fundamental element for achieving human well-being and fostering urban development.

While urban expansion often comes at the expense of green spaces, Dubai has taken a completely different approach. It has prioritized public parks and green areas. The first park in Dubai, Mushrif Park, was established in 1974, and the network of parks and green spaces expanded rapidly thereafter. Green spaces within public parks now cover 13 million square meters (Dubai Municipality / Government of Dubai / Official Website), and the total green space area is approximately 42 million square meters. Dubai officials aim for green spaces to occupy 8% of the city's total land area in the long term.³

3 <https://alemarageography.yoo7.com/t109-topic>





This expansion of green spaces has had a significant impact on the well-being and public amenities of Dubai residents in particular, and has created aesthetically pleasing, relaxing, and recreational areas for tourists. It has also had a major effect on the city's climate, protecting it from air pollution and moderating the atmosphere.

Despite the challenges posed by Dubai's climate - where temperatures can reach 50 degrees Celsius and water is scarce due to its desert environment, requiring a large workforce to maintain the green spaces - the city has overcome these obstacles by adopting drip and automated irrigation systems and selecting trees suitable for the region's environment.

Dubai has planted 41 million palm trees across its green spaces, in addition to 150 million fruit-bearing forest trees (noting that it planted 185,000 trees in 2023 alone).⁴

⁴ <https://www.dm.gov.ae/2024/01/21/>



2-Greater Amman Municipality:

The Greater Amman Municipality, as part of its plans, seeks to increase the area of green spaces within its boundaries. The capital city includes 143 public parks, in addition to King Abdullah II Park and Al Hussein Gardens, and efforts are being made to ensure their sustainability. The municipality also aims to increase the per capita share of green spaces to 2.5%, up from 1.6%. This was confirmed by Dr. Mirvet Mhairat, Deputy City Manager for Health and Agriculture Affairs, during an interview with Ammon News. She stated that green



spaces are not limited to providing places for recreation and leisure, but have become part of a system for changing human behavior and promoting healthy habits. The municipality has been able to use modern irrigation methods to maintain and sustain green spaces, especially during the summer, given their significant role in reducing carbon dioxide emissions and their contribution to Amman's climate change plan.⁵

⁵ <https://www.ammonnews.net/article/690353>

The Greater Amman Municipality also produces agricultural seedlings in its nurseries and distributes them free of charge to citizens who are keen to plant them in streets, roads, waste areas, and within residential boundaries, and distributes them to government institutions and municipalities to achieve the Municipality's goal of making the capital a green city.



3-England / A study by Dr. Ian Alcock at the University of Exeter

Dr. Ian Alcock conducted research on the long-term impact of green spaces. The study involved 1,000 British households. Data was collected through questionnaires completed by the households over a five-year period.



Participants were divided into two groups: one group lived in a less green area for two years and then moved to an area with abundant green spaces, while the other group did the opposite. Data was collected from the participants over the five years, and researchers observed that those who moved to greener urban areas experienced a significant improvement in mental health that persisted for three years after the move, even after controlling for other factors such as income, education, and employment(www.ammonnews.net/article/690353) . [5]

Based on the above findings, we can see the impact of green spaces on health, particularly mental health and a sense of well-being. These results are important for urban planners in planning and sustaining cities for the local British community.

The Role of Municipalities in Designing, Creating, and Protecting Green Spaces

Looking at the regulations and laws in force in the Kingdom's municipalities, we find that the planning and organization regulations stipulate the necessity of securing and maintaining green spaces. For example, the most recent regulations issued to date, the Buildings, Urban and Rural Planning Regulation No. 1 of 2008, requires that, for the purpose of licensing residential buildings, public and governmental institutions, commercial complexes, etc., a specific and fixed percentage of the land be designated as green spaces. However, the implementation of this provision has not been taken seriously when licensing buildings, and even when it is included in the plans, it is often disregarded during construction, especially after occupancy permits have been granted to the owners.

Municipalities also have a key role in planting trees along the edges of streets, roads, medians, and roundabouts under their jurisdiction, as well as maintaining, pruning, and watering them. This has a significant impact on aesthetic appeal and psychological well-being. Several studies have indicated that planting trees along roadsides reduces accidents because drivers are less likely to speed on roads with green spaces. Municipalities consistently allocate funds within their annual budgets for the establishment of public recreational parks, in accordance with the needs of the local community, or seek external funding for the construction and maintenance of these parks by the relevant municipal departments. See Figure (2).





Figure 2: The Role of Municipalities in Designing and Landscaping Parks:

Ensuring the provision of green spaces within private gardens belonging to residential buildings.

Planting green spaces along roadsides, in public squares, and roundabouts.

Allocating funds within the municipal budget for the establishment of public recreational parks.

Regularly monitoring the irrigation and maintenance of green spaces and raising awareness among the local community about their preservation.

Green Spaces within the Greater Tripoli Municipality

Greater Tripoli Municipality is located in the northwestern part of Libya, on the Mediterranean coast, and serves as the country's political and administrative capital. It encompasses the Municipality of Tripoli Centre and numerous surrounding municipalities (such as Tajoura, Janzour, Souq Aljuma, Hay Al Andalus, Abu-Sleem, Qasr Bin Ghashir, and Assawani), and includes the area at the head of Al Jefara Plain. It enjoys a Mediterranean climate.

Geographical Location and Boundaries:

North: The Mediterranean Sea

East: Tajoura Area

West: Janzour Area

South: Assawani Area and Al Nawahi Al Arba'a

Key Features:

Administrative Center: Greater Tripoli is an administrative unit established to unite the city and its adjacent areas, promoting shared governance.



Location: Greater Tripoli spreads to include the "inland" and "adjoining" municipalities (approximately 10 sub-municipalities), forming a large urban area.

Climate: Mediterranean coastal climate (hot, dry summers and mild, rainy winters). See Figure (3).

General Information about the Governorate - Tripoli



Figure 3: Location: Greater Tripoli spreads to include the "inland" and "adjoining" municipalities (approximately 10 sub-municipalities), forming a large urban area.

The municipality is concerned with designing and developing green spaces and plays a significant role in their maintenance and inclusion in its plans. It also has the authority to increase green areas within its jurisdiction during urban planning and to diversify vegetation to adapt to the prevailing climate, characterized by cold rainy winters and hot dry summers. Furthermore, it is essential to find ways to preserve, maintain, and care for green spaces to ensure their sustainability. Upon reviewing the urban plans and comparing the areas designated as green spaces within the municipality's boundaries with those designated as green areas, we find that the total area designated as green spaces is approximately 35 km², while the area designated as parks does not exceed 0.50 km², and most of this is concentrated in a central area. See Figure (4).



Figure 4: Regulatory boundaries.

- Organized as gardens and threatened with change of status if located within private property.



The Greater Tripoli Municipality has been consistently and noticeably striving, particularly recently, to expand green spaces within its boundaries, despite urban and regulatory expansion - which has come at the expense of agricultural land. The municipality has established a dedicated nursery to produce various types of vegetation adapted to the city's climate. These plants are used to cultivate roadsides, streets, and public parks, and are also sold to residents for planting on their own land and in their gardens. The municipality also undertakes regular maintenance and care to preserve the green spaces and enhance their aesthetic appeal. Furthermore, it actively seeks funding from various institutions and organizations to establish public parks, gardens, and other green spaces in residential areas.

However, the municipality continues to face challenges due to the encroachment on these green spaces by residents and the failure of building owners to adhere to the designated green areas included in their approved architectural plans. After obtaining occupancy permits, these spaces are often used for other purposes.

Tripoli Municipality's Urban Planning Department faces challenges in preparing land use plans due to public resistance to allocating land for green spaces and dissatisfaction with the requirement to plant green areas within existing buildings. This has significantly hampered zoning planning.

Results and Recommendations

Results:

In this context, green spaces are a crucial and effective element in urban planning, given their positive impact on various aspects (psychological, health, social, and environmental). As demonstrated above, many countries, particularly developed cities, have prioritized green spaces in their urban planning, raising awareness of their importance to human well-being. Green spaces are not merely aesthetic; they have other dimensions, as previously mentioned, and are essential for human life. Government ministries in general, and municipalities in particular, play a vital role in maintaining a balanced urban environment and integrating green spaces into their urban plans.

Recommendations:

- 1- Activate the clause regarding green space provision in all building permits, as stipulated in the Building and Urban and Rural Planning Regulations No. 1 of 2009, and mandate that occupancy permits not be granted until these spaces are secured and monitored.
- 2- Raise awareness within the local community about the importance of planting vegetation in private gardens, according to their capabilities.
- 3- Pay attention to the type of vegetation selected for planting in designated green spaces, ensuring it is suitable for the prevailing climate in the region to guarantee its sustainability and human suitability.
- 4- The municipality shall provide regular grants to distribute seedlings free of charge or at nominal prices to encourage afforestation.





- 5- Appropriate penalties should be levied for encroachment on green spaces within public parks, along roadsides, and in traffic medians and roundabouts.
- 6- Public parks and green spaces should be mandatory in urban planning schemes, especially within residential neighborhoods, ensuring their proximity to homes for residents' convenience.
- 7- An exclusive urban plan should be developed for a specific area, serving as a model for integrating nature with urban development.
- 8- Street remainders and unusable land waste should be utilized for planting various types of vegetation adapted to the region's climate, rather than simply selling, disposing of, or neglecting such surpluses.

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