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From neglect to nurture: redefining pocket gardens as community vitality centers – case study of Al-Shorouk City, Egypt

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Abstract:
This paper investigates the potential of pocket gardens to enhance community vitality, focusing on Al-Shorouk City in Egypt. Pocket gardens, often neglected, can be transformed into functional public spaces that foster community engagement and recreational use. This study employs a mixed-methods approach, including a literature review and observational studies to evaluate the physical attributes, maintenance, and usage patterns of three residential gardens in Al-Shorouk City. The findings reveal significant issues such as neglect, lack of amenities, and inadequate maintenance, which limit the gardens' functionality and social potential. Recommendations for improvement include regular upkeep, enhanced irrigation, diverse plantings, and the introduction of essential amenities. The study highlights the importance of community involvement and effective collaboration among stakeholders to create vibrant and sustainable urban green spaces. The insights gained can inform urban planning policies and practices to better integrate pocket gardens into the urban fabric, promoting environmental sustainability and social well-being.

Keywords:
pocket gardens, urban vitality, urban green spaces, Al-Shorouk City, public spaces

1. Introduction

Urban green spaces play a crucial role in enhancing the quality of life in cities, offering environmental, social, and economic benefits. Among these, pocket gardens – small, accessible green spaces – are particularly significant in densely populated urban areas [1]. The paper examines the role of pocket gardens, focusing on their potential to enhance community life in Al-Shorouk City, Egypt. It finds that these gardens are often underutilized and mainly decorative rather than functional. The study uses a mixed-methods approach, including literature reviews, observations, and author feedback, to investigate how factors like design, users' age, and community involvement affect the vitality of these gardens. The objective of this study is to provide insights and recommendations for the enhancement of the design, maintenance, and utilisation of pocket gardens, with a view to enhancing urban vitality and sustainability.

2. Aim and methodology

This paper hypothesizes that pocket parks in Al-Shorouk City are primarily decorative rather than functional public spaces that foster community engagement and recreational use. A mixed-methods approach integrating qualitative and quantitative methods is employed to comprehensively understand the study objectives. The methodology includes:

- Literature Review: Formulate and investigate how the physical arrangement, users' age, and residual spaces potentially contribute to urban vitality in pocket gardens.
- Observational Studies: Three residential gardens in Al-Shorouk City were examined from July 19 to 29, 2024, chosen for their size, location, and design. Observations documented physical attributes, including landscape elements, maintenance, and accessibility, and recorded resident behavior to understand garden use and perception.

The article concludes with recommendations for addressing implementation issues in residential areas.

3. Theoretical framework: urban planning theories related to green spaces

3.1. Designing neighborhood gardens for urban vitality

Lynch's [2] notion of urban vitality highlights the importance of environments that cater to human functions and biological needs, suggesting that urban vitality reflects a city's liveliness and dynamism influenced by its physical structure, social activities, and environmental quality. Montgomery [3] expands on this, connecting urban vitality to the presence of cultural events, active street life, and a vibrant atmosphere. He argues that mixed-use developments, pedestrian-friendly streets, and accessible public spaces enhance urban vitality. Jalaladdini and Oktay [4] emphasize that visual appeal and a variety of activities are integral to vitality. However, they also identify security as essential to improving urban quality of life. They contend that urban vitality encompasses not only physical attributes, but also social interactions and the sense of safety offered by space. Urban vitality resists a singular definition; it should be evaluated based on elements contributing to a space's health, identity, and dynamism [5]. Jacobs [6] identifies critical attributes for fostering street diversity, including varied

functions, short block lengths, diverse building conditions, and adequate population density.

3.2. Physical layout effect on social interaction in public spaces

Gehl [7] identifies five ways physical arrangement affects visual and auditory contact: walls, distance, speed, levels, and face-to-face orientation. The environment shapes outdoor activities in various ways, influencing pedestrian, recreational, and social interactions between buildings. Such spaces foster low-intensity connections, supporting maintaining contacts, acquiring social information, and enhancing communication. Outdoor activities are categorized into necessary (commuting, shopping), optional (walking, sunbathing), and social (play, conversations) [7]. Necessary activities occur year-round, optional ones depend on conditions, and social activities need others' presence. In Copenhagen squares, it was noted that benches near pedestrian routes attract more users [8]. Urban spaces prioritize human activity over the physical environment [7]. Poorly designed outdoor areas lead to disengagement and social issues [9].

3.3. Residual space's role and potential

Residual spaces, also known as leftover, interstitial, or urban voids, are crucial elements of urban environments. Emerging from a period of industrial decline, infrastructure changes, and socio-economic shifts [10], these unplanned areas contrast with the orderly urban grid, leading to neglect and underuse [11]. Despite this, they offer flexibility and potential for creative uses [12]. Madanipour [10] views these spaces as assets for innovative design. [13] see them as laboratories for experimental uses, enhancing social interaction and community cohesion. Lefebvre [14] theory of space production highlights their role in marginalized groups' cultural expressions, supported by [15], who demonstrates how communities adapt these spaces for local needs. Environmental sustainability is another key aspect. [16] advocate for integrating these spaces into green networks to boost biodiversity and reduce urban heat islands. [17] notes that repurposing residual spaces for community gardens and urban forests contributes to sustainable development. Challenges in transforming these spaces include land ownership, regulatory issues, and funding [18].

3.4. User psychology and age in landscape design

In landscape design, incorporating user psychology and age considerations is essential [19]. An observational study in a low-rise Chicago neighborhood found that trees notably increased outdoor space use and social activity across all ages, with participation rising by 28% to 114% [20]. Specifically, adults engaged in social activities 114% more in green spaces compared to barren ones [21].

Children favor playing in streets, parking areas, and near building entrances over designated play zones, gravitating towards natural spaces with diverse play opportunities. Conversely, adults prefer spaces with predefined functions [22]. Older adults' park use is shaped by spatial form, safety, peer support, and community programs [23].

[19] established that individuals of all age groups expressed a preference for vibrant floral displays and balanced green spaces with trees and grass. Wood benches are preferred over concrete or plastic. Parks with a mix of bright and shaded areas are popular, though excessive stairs deter older visitors. Younger users like waterfalls, while pools have less impact. Older individuals prefer evergreens, and grass is favored for walkways due to its smooth texture. Proximity is more crucial for the 19-25 age group, while the 61-65 group is less affected. Walking is the most popular park activity, though it declines with age.

A neighborhood survey emphasized the need to preserve and increase green spaces [24]. [19] suggest that designers should cater to the varied needs of different age groups to enhance park enjoyment.

4. Definition and characteristics of pocket parks

Pocket parks, also known as vest-pocket parks, neighborhood parks, or mini parks, are a subset of public spaces categorized under "parks [1]. Defined by the latest "Urban Green Space Classification Standard," pocket parks are characterized by their independent land use, diverse forms, ease of accessibility for local residents, specific recreational functions, and a total area of less than 1 hectare with at least 65% green coverage [25]. They serve a catchment area up to a four-block radius, with most users residing within a one- to two-block radius [26]. The development of pocket parks aims to enhance urban quality of life by improving accessibility to public green spaces [27].

4.1. Design and accessibility of pocket parks

Pocket parks can be situated in corner lots, midblock lots, or through-the-block lots, providing a welcoming and secure environment for local communities [28]. These compact parks cater to various needs, including event spaces, play areas for children, relaxation spots, and lunch break areas [29]. Unlike larger parks and neighborhood gardens, pocket parks are designed to be within closer proximity in urban settings, ideally reachable within a 10-minute walk from residences and accommodating populations of approximately 500–1,000 people within a 400-meter radius [1]. They should be accessible by foot or bicycle and feature a minimum street frontage of 30 meters to ensure visibility from multiple street sides [1].

4.2. Social and environmental impact of pocket parks

Pocket parks serve various functions based on their location and user demographics, including community gardens, neighborhood backyards, shaded plazas, or areas for children and workers [28,29]. Survey data indicate a clear preference for pocket parks among residents. Walking interviews reveal that these parks significantly contribute to neighborhood engagement [30]. Residents of inner-city apartment complexes benefit from well-utilized urban green spaces, fostering improved neighbor relationships, heightened safety perceptions, reduced graffiti and other nuisances, and decreased crime rates [31,32]. Understanding long-term sustainability metrics for pocket gardens involves analyzing various indicators and their impact over time. These metrics encompass environmental, social, and economic aspects, reflecting the comprehensive benefits of these urban green spaces [33].

4.3. Boosting residential development with landscape design

Landscape design crucially impacts property values and residential development. Elements like parks, water features, and varied plantings markedly enhance property appeal and marketability [34,35,36]. Incorporating softscape features into residential settings boosts property values and economic returns [37,33]. Prioritizing superior landscape design helps cities

achieve a balance of functional, social, and economic goals, fostering a dynamic urban environment.

Green urban spaces – parks, gardens, and forests – are essential for sustainable, vibrant, and livable cities, offering environmental, social, and economic benefits that improve urban life quality [35]. Thoughtful landscape design that addresses diverse user needs and incorporates varied elements can enhance urban areas, making them healthier and more appealing [36]. Small-scale projects like pocket gardens and parklets demonstrate how minimal interventions can significantly boost community engagement and recreation [36,37]. As urban areas develop, green spaces will continue to play a key role in crafting resilient and thriving urban landscapes [34,38]. Integrating social, physical, and spatial elements into urban design can greatly enhance the vibrancy and functionality of public spaces, leading to more livable and resilient urban areas [39].

5. Potential in Cairo new urban community cities; case study of Al-Shorouk city gardens

A study in Al-Shorouk City investigated three types of pocket parks – corner lots, midblock lots, and through-the-block lots – by observing them multiple times a day during peak summer. The observations, initially at noon, 7 PM, and 10 PM, were later adjusted to cooler times (7 PM, 8 PM, and 10 PM). Detailed documentation was made through photos, videos, and notes on plant health, irrigation, human activity, soil quality, and maintenance. A checklist evaluated design aspects like accessibility, greenery, maintenance, shading, lighting, walking paths, activities, seating, and safety. The findings aim to guide the creation and maintenance of new pocket parks in urban areas.

5.1. Midblock lots

The structure, which covers approximately 4500 m2, is shaped like a rounded rectangle and is surrounded by residential housing and a circular street. It features a lawn divided by interlocking cement paths into a central plaza. The paths, partially overgrown with dead and living grass, sand, and rocks, lack kerbs and include steps. Shrubs obstruct movement on some paths, and the surrounding pavement has dead plants accumulating, possibly due to resident behavior. An electricity kiosk is on the eastern side, and without a fence, the park uses a rubber hose for watering due to the limited sprinkler range. The park's main vegetation includes tall grass, spiky cacti, and trees like Cassia javanica and Tecoma stans, with tall shrubs obscuring parts of the park. Litter, including used tissues, plastic bags, and dead animal skin, is scattered around. There are no shaded seating areas or playgrounds, though people sit on the pavement. Lighting is provided by four functional double-loaded posts and ten additional posts, with eight operational at night. Dogs inhabit the park, initially preventing close inspection.

5.2. Through-the-block lots

The site encompasses an area of approximately 2900 m² and is delineated by four residential blocks, including one vacant plot and one under construction. Vegetation dominates the park, which has two pedestrian paths: an eastern path used for parking and delivery with five steps and an interlock cement block surface, and a western path with sand and broken bricks that ends abruptly. Displaced kerbs and broken concrete pavement are present, and a large trash bin and dead plants are located on the northern pavement. The park lacks fencing, sprinklers, and a clear watering method. Main vegetation includes yellowing lawn, trees like Cassia javanica and Ficus Nitida, and shrubs that obstruct visibility. Litter such as tissues and plastic bags is scattered, with no observed cleaning. There are no shading devices, seating areas, or playgrounds, though some people lie under a tree for shade. Lighting is provided by four double-loaded posts, with only two functional at night, and additional posts on the pavements. Cats are often seen in the park, and a high voltage uncovered cable is noted on the northern side.

5.3. Corner lots

The site is 450 m² in size, and its configuration is irregular. It is located at a street corner in proximity to a residential house and an under-construction park. It features a hill of vegetation surrounded by a 30 cm high interlock brick pavement. Lawn areas between the bricks are mixed with dead leaves. An electricity kiosk is on the eastern side, and water sprinklers are used for irrigation. Main vegetation includes yellowing lawn, Indian Jasmine trees, cacti, Ficus Hawaii, Yucca Aloifolia, and a Duranta gold shrub fence, with three palm trees present. The park is mostly clean with minimal trash, lacks shading devices, seating, playgrounds, or picnic areas, and has a single functional lighting post. No animal settlements were observed, but children occasionally play in the park before heading to the mall.

5.4. Results and discussion

Observations in Al-Shorouk City's gardens reveal significant issues affecting their vitality, including neglect, dead plants, litter, and overgrown lawns due to inadequate maintenance. These problems could be mitigated by regular upkeep, improved irrigation, and planting diverse species. The gardens lack essential amenities like shading devices, seating areas, playgrounds, and picnic spots, limiting their functionality and potential for social and recreational activities. The presence of litter and neglect highlights the need for better community engagement, education, and effective collaboration between local authorities, community organizations, and residents. Well-maintained green spaces enhance surrounding housing developments and quality of life, while neglected spaces detract from appeal. Improvements should align with Sustainable Development Strategy (SDS) goals, emphasizing efficient irrigation, waste management, and community involvement. Consistent neglect and underutilization across garden types suggest systemic management and design issues. The findings underscore the importance of well-maintained public spaces in urban vitality and the need for structured community involvement and better resource allocation. Table 1 summarizes observation key data findings, Source own study.

6. Conclusion and future directions

6.1. Summary of key findings

The study in Al-Shorouk City revealed significant issues across three types of pocket parks – corner lots, midblock lots, and through-the-block lots – primarily due to inadequate maintenance. Observations highlighted neglect, dead plants, litter, and overgrown lawns, which could be addressed by regular upkeep, improved irrigation, and diverse plantings. The lack of essential amenities like shading devices, seating areas, playgrounds, and picnic spots limits their functionality and social potential. The presence of litter and neglect underscores the need for better community engagement, education, and collaboration among local authorities, community organizations, and residents. Well-maintained green spaces enhance surrounding housing

developments and quality of life, while neglected spaces detract from their appeal. The findings suggest systemic issues in management and design, emphasizing the importance of well-maintained public spaces in urban vitality.

Table 1. Summarizing observation key data findings. Source own study

Feature	Midblock Garden	Through-the-Block Garden	Comer Park
Photos			
			
Main Cover	Lawn	Lawn and Plantation	Lawn and Plantation
Path Material	Interlock cement blocks, some areas with dead/alive lawn, sand, and rocks	Interlock cement blocks, sand, broken bricks	-
Kerbs	Missing in many parts	Displaced and found within park	Present
Pavement	30 cm high, similar condition to paths, broken in some parts	30 cm high concrete, broken in some parts	30 cm high, lawn growing in between
Plant Condition	Lawn with Noticeable height, presence of spiky yellow shapes and cacti	Yellow and dead in many areas	Yellow and dead in small areas
Trees	Cassia javanica, yellow Tecoma stans	Cassia javanica, Ficus Nitida	Indian Jasmine, cacti, Ficus Hawaii, Yucca aloifolia
Shrubs	Concentrated in one quarter, >3m height	Concentrated along the ramped path and in the middle of the park	Duranta gold small shrub fence
Palms	One with dried dates	Two in the northern part	Three tall in good condition
Watering	Sprinklers with low radius, rubber pipe used	No sprinklers or rubber pipe	Sprinklers
Electricity Kiosks	One on the eastern side	Two on the southern side	One on the western side
Litter	Used tissue, plastic bags, plates, bottles, and dead animal skin	Used tissue, plastic bags, plates, and bottles	None observed
Animal Presence	Dogs	Cats in middle center	None observed
Shading Devices	None	None	None
Seating Areas	None, people sit on the pavement	None, people use arranged kerbs for shade	None
Playgrounds/Picnic Areas	None	None	None
Lighting	Three working double-loaded, eight working posts on the pavement	Two double-loaded posts are working, two working posts on the pavement	One working post on the pavement
Maintenance Observed	None	None	Clean, no trash

6.2. Recommendations for policy makers and urban planners

To address the observed issues in Al-Shorouk City's pocket parks, policy makers and urban planners should implement regular maintenance schedules, improve irrigation systems, and introduce diverse, resilient plant species. Adding essential amenities such as shading devices, seating areas, playgrounds, and picnic spots will enhance the functionality and social potential of these spaces. Effective collaboration and clear responsibility delineation among local authorities, community organizations, and residents are crucial for sustainable management. Community engagement and education should be prioritized to foster a sense of ownership and responsibility for public spaces. Aligning improvements with Sustainable Development Strategy (SDS) goals, including efficient irrigation, waste management, and enhanced green space management, will contribute to the long-term sustainability and attractiveness of urban communities.

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