



SUSTAINABLE VEST -POCKET PARKS AS AN EFFECTIVE TOOL IN SUSTAINABLE URBAN DESIGN-EGYPT

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ABSTRACT

With the rapid increase in population and the enlarged accumulation of buildings in Egypt, green areas shrunk, to reduce the share per person much less than in developed countries which led to appearance of several environmental and social complications. In view of the current existing design of the small spaces between residential units, they suffer from poor design and high cost, making them less popular. The research purposes to achieve sustainability in designing spaces between residential units (vest -pocket parks) and to recognize remarkable local and international experiences to comprehend and discover the advantages and disadvantages, as well as comparing the cost of construction with traditional materials and methods and the use of some methods that decrease the cost in the long term and achieve sustainability. The research furthermore seeks the participation of users and the Designers throughout constructing and implementing a questionnaire. The research ends with the selection of an open space between residential units (Zahraa Al Helmiya City-Helmiya El Zatoon-Cairo) as a case study to acquire a sustainable design as an effective tool in sustainable urban design.

Keywords: sustainable urban design, vest -pocket parks, green areas shortage, planning criteria, Egypt.

INTRODUCTION

The public open green space is problematic challenging especially in Egypt where it fosters diversity of confronts. Cairo's figures of green spaces per person are far-off from the international standards, which fluctuate between 20 and 40 m² per person for developed countries, Figure-1, 12 and 18 m² per person for developing ones (El-Zafarany, 2004). In the furthestmost reporting, above half of Cairo's population have only 0.5m²/person. The percentage of green areas to the whole urban built area in the city is only 3.85%, which was showed through the correspondence of the CCBA (Cairo Cleanness and Beautification Agency) data and a current IKONOS satellite imagery analysis, in spite of such a figure is very low, nevertheless still 6 districts of a total entire population of 1,338,554 inhabitants, have fewer than 1% of green areas to the built area (Kafafy, 2009).

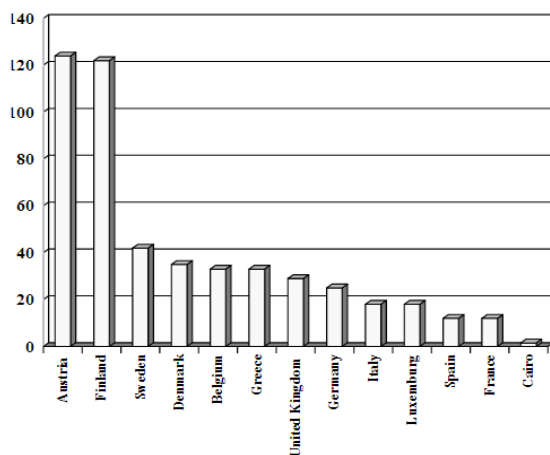


Figure-1. Comparison between share per person in Egypt with share per person of green areas in European Union countries.

Green space is an essential part of complex urban ecosystems that illustrates a central role in enriching improved life quality for increasingly urbanized society. Urban green spaces include: public parks and gardens, playgrounds, natural green spaces, amenity green spaces, green corridors and others. Urban green spaces have several significant environmental benefits such as; air and water purification, wind filtering, noise reduction, soil protection and microclimate stabilization. Moreover, they afford plenty of aesthetical, recreational, health, social and psychological benefits, (Coles, R. & Grayson, N., 2004).

Trees provide a multiplicity of environmental principles, including screening of unpleasant odors, absorption of noise and decrease of pollution and temperatures in the cities. Trees and vegetation can affect our mood and aid relieves stress. They provide crucial shelter in the hottest climates. Trees provide a diversity of aesthetic values and emphasize the architectural design of buildings, (Tarrant and Cordell, 2002).

There are various Problems that face Open Spaces in Egypt, Figure-2, such as deficiency of comprehensive thought for strategic planning for open spaces on the national, regional and local levels that triggers Transformation of cities to cement forests destructing to the natural environment, evading its green areas. Lack of comprehensive concept for green areas linkage, which lead to deprived distribution of choosing location and not correlated to one another that instigates poor distribution of green areas. Poor finance assets that stipulate accessibility and maintenance of green areas. Expansion of residential and building densities, excessive real estate value for lands, which lead to not employing as a proposed area. Nonexistence of human scale and dimension in designing of current proposed areas. Abandonment and deterioration of existing open spaces and not continually maintained. Redundancy of built elements over the natural manifestation for open spaces.



Shortage of environmental understanding among visitors and users of open spaces, non application of rules and regulations of its maintenance and preservation

parameters. Insignificant utilization of existing open areas. This research highlights the importance of pocket parks in urban design, Figure-3.



Figure-2. Spaces between residential units in some average income places (Mansheat Nasir)- Ain El Sera.

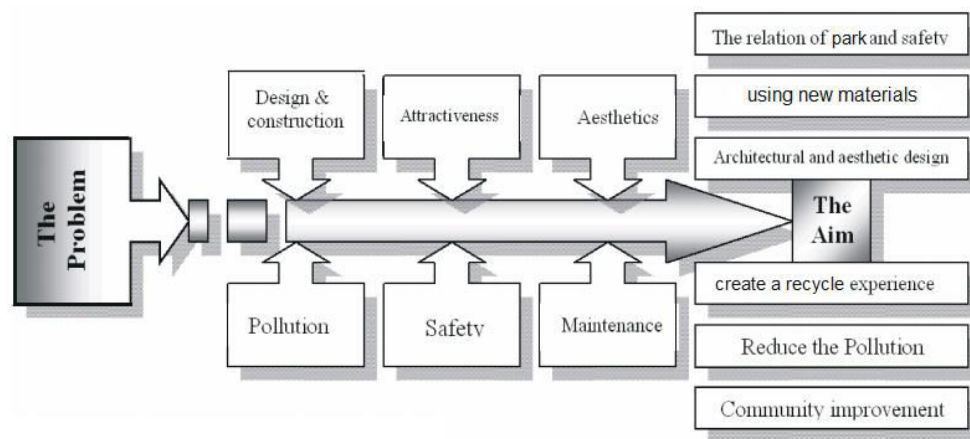


Figure-3. The problems and the aims of the research.

The concern of enhancing greenery and postulating the city with green lungs is of uprising importance. Additionally, the growing importance of how to alter green spaces, parks, streets and squares into appealing, vital and enjoyable places which contribute directly in creating sustainable areas.

Stipulating quality park and recreation space for city low –income residents is progressively challenged by

the reduced amount of existing park space in urban areas. As a consequence of the shrinking access to parks and open spaces, the physical and recreational requirements of urban youth often go unmet. Mini or pocket parks play a vital role to encounter these growing needs, Table-1. These distinctive parks are often formed out of unoccupied lots, rooftops and else disregarded and unemployed spaces.

Table-1. Influences of Pocket Parks to the community: (Noha Ahmed Abdel Aziz, 2017).

Social Life and Health Benefits	<ul style="list-style-type: none"> Improve mental health of users - Allow local residents to construct decisions that imitate their community - Create societies more friendly by involving people in the same neighborhood - Strengthen connections with local authorities and communities - Diminish crime percentages - Encourage exercising Lower rates of health complaints
Environmental Benefits	<ul style="list-style-type: none"> - Decrease pollution, traffic and exploitation of resources. - Re-generate neglected areas - Expansion of the amount of permeable surfaces across the city

Mini-Park (Pocket park) is open space in excessive density residential areas. It should not be smaller than 285 square meters (0.7 acres) and not larger than 3 acres. It affords a secure and inviting environment for

nearby community members. They also encounter a diversity of desires and functions. Effective “pocket parks” have four main qualities: they are reachable,



comfortable spaces, have a good appearance, and sociable places.

However pocket parks diverge according to exact purposes and locations, there are abundant characteristics that the mainstream has in common. For example:

- Users should not have to walk to reach their destination more than 5 to 10 minutes, (Clare Cooper Marcur, Carolyn Francis, 1998)
- Mini-parks should be reachable by both foot and bike, and should not need the use of a car. Since parking may or may not be offered
- Parks should assist a resident population of about 500-1000 persons.
- Parks should endeavor to adapt as many diverse users as possible, arranging the requirements of surrounding neighborhoods

The following are some guidelines to design the mini parks:

- **Considerations for siting and design of Mini-Parks**
- Flawless views across the entire site, Figure-4.
- The park must be open to the street preferable on 2 to 4 sides, Figure-5
- Buildings adjoining to or combined into the park must be front facing, with walkways linking into the park and vibrant rooms in adjacent buildings should face onto the park.
- Cafes or businesses interfacing should open onto the Mini-Park.
- Every square foot should be used to benefit. A low, appealing fence or a gate alongside the street frontage of the park might be deliberated.
- The design of the mini-park must reveal human scale, Figure-6
- Lighting may be integrated to spread perceptibility in the winter and to prevent undesirable usage during evening and nighttime hours.
- The local community will be involved in the design process, both for built form and for artistic

improvement, imitating the necessities of the City's public art guidelines.

- Clear sightlines across the entire site, Figure-4.
- The mini park must be open to the street on 2 to 4 sides, Figure-5
- Buildings adjacent to or integrated into the park must be front facing, with walkways joining into the park and active rooms in adjacent buildings should face onto the park.
- Cafes or businesses interfacing with the Mini-Park should open onto the Mini-Park.
- Every square foot should be used to advantage. A low, attractive fence or a gate along the street frontage of the park might be considered.
- The design of the mini-park must reflect human scale, Figure-6
- Lighting may be included to increase visibility in the winter and to deter negative use during evening and night time hours.
- The local community will be engaged in the design process, both for built form and for artistic enhancement, reflecting the requirements of the City's public art policies.

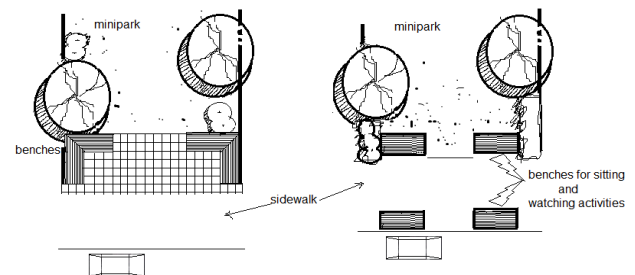


Figure-4. Entries to minipark should be carefully designed to allow passing pedestrians to watch the activity while not fully entering the park.

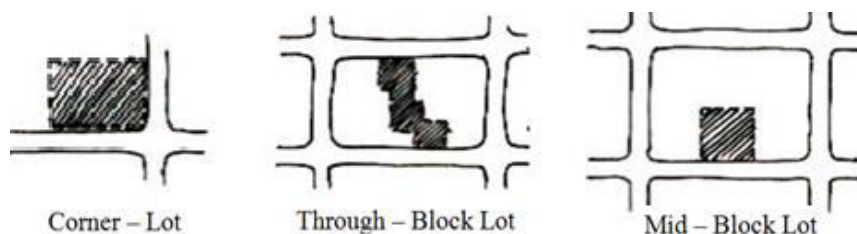


Figure-5. Three typical minipark locations.



Figure-6. If a minipark is large enough for two play areas, the one for younger children should be located nearer the entrance.

▪ **Considerations for Play areas**

- Scaled - down play equipment is important to young children.
- A play area for small children should provide sand for manipulative play and for jumping into; bench or lip edges to enable adults to sit close by; hard surface for

tricycles and wagons; and grass areas for running, rolling, or resting, Figure-7

- Conventional equipment may be a better than expensive pieces, Figure-8
- Prospective users should be able to see the facilities available in the park and how to reach them from the entrance, Figure-9

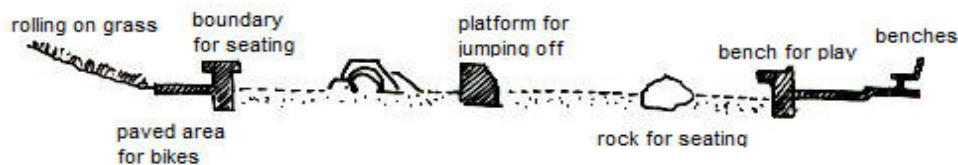


Figure-7. A play area.



Figure-8. Conventional equipment and the recycled materials installed bring a new visual language to the park without interrupting the continuity of the standard design.

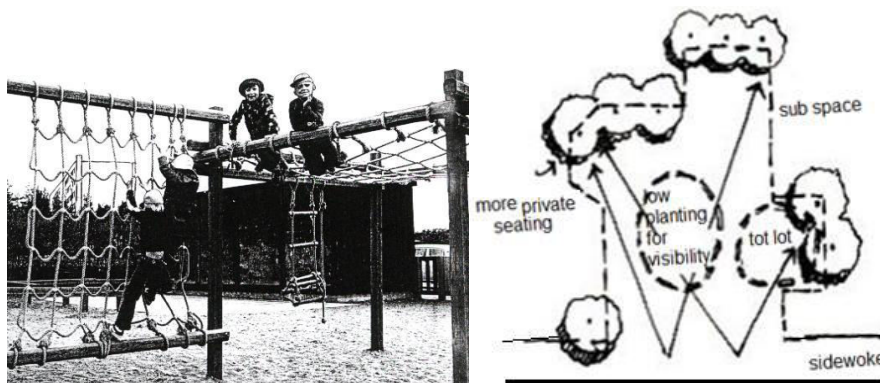


Figure-9. Visibility of activities and facilities from entrance.

- **Considerations for Plant materials**
- Trees should be carefully selected to announce the presence of a minipark at its entrance
- Trees must be located to provide shaded sitting areas on both benches and grass areas, Figure-10.

- Children will definitely climb low-branching trees, which are a good climbing alternative to play structures.



- All plant materials must be tough, impervious to trampling, fast growing, not poisonous, and do not require excessive maintenance.

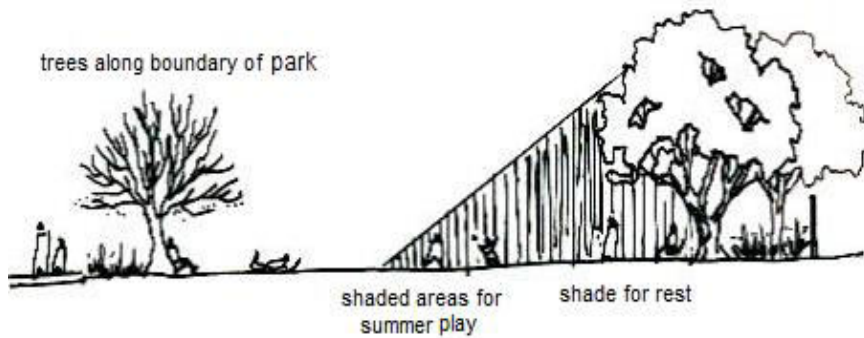


Figure-10. Plant materials for shadow and play.

- **Considerations** for Surfaces ,Site furniture ,water , and energy

Surfaces: Different surfacing materials should be used for different purposes.

- A pleasantly located and sloped grass area can form an attractive place for sitting, lounging, and sunbathing.
- Hard - surfaced areas should be included for children's play (riding tricycles and wagons), for older children (ball games, jump rope, and so on).
- Protective surfaces (sand, rubber mats) should be placed under all play equipment.

Site furniture

- A drinking fountain: Small children need to drink water more frequently than adults do. Child - sized drinking fountains are essential.
- Lighting: it would help the park to be used for longer periods of time, and it would become safer place.

- Litter cans: they should be placed throughout the site, especially near activity areas and at the entrance.
- Tables and benches: they must be located on accessible surfacing and reached by an accessible walk.
- Bicycle rack: it should be provided near the entrance to the minipark.
- The standard tree grate is manufactured from recycled scrap metal and is made from durable cast iron; they do not need for continual replacement or maintenance.

- Using new materials

- By using a photo catalytic self-cleaning covering, Figure-11, it was likely to select a light color for the membrane. Even in modest weather conditions, the UV light needed to inductee the photo catalytic reaction is adequate so that rain can wash off the dust residues lying loose on the membrane.



Figure-11. Self-cleaning: Photocatalysis - Children's playground in the Mannou National Government Park- Kagawa, Japan. source: (Leydecker, Sylvia, 2008)

Analytical study of some modals of foreign pocket Parks:

The main objectives in selecting the study models are to fit the Egyptian nature in terms of (size, location, environmental or social conditions), in order to use the suitable and good solutions which can benefit and aid from

in Egypt. The study contains different models and types to cover the lack and deficiencies in the planning of the vest pocket parks in Egypt.

A. Charlie Dorr Minipark , Berkeley, California, Figure-12



Figure-12. Charlie Dorr Minipark, Berkeley, California.

- Diversification of the surfaces, texture, materials and the levels of the garden, creating enjoyable space.
- Designer meets the requirements of the neighbors as well as able to save space include children's games

B. Totland Berkeley, Berkeley, California, Figure-13



Figure-13. Totland Berkeley, Berkeley, California.

- The exploitation of the site.
- Trees created a fun atmosphere in the park.
- The distribution of simple, clear and safe elements and activities.

C. Leslie Shaw Park renovation and a pocket park, Figure-14



Figure-14. Leslie Shaw Park renovation and a pocket park.

Covered playground equipment, further shade, grills and tables, and fitness equipment. Neighboring it are numerous schools, churches, the library, a senior

citizen building and a new residence building confirming that it will be well used.

(A) New York Paley Park, Figure-15

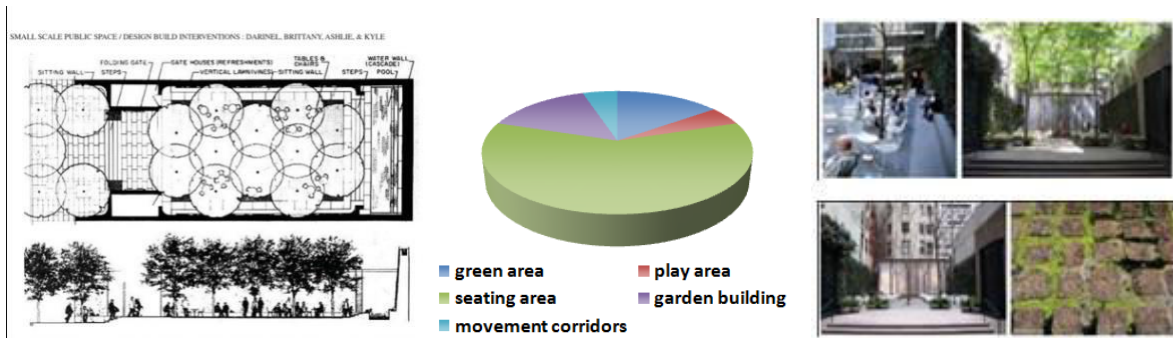


Figure-15. New York Paley Park. Source: (Louise Chipley Slavicek, 2009)

- Office workers, tourists and shoppers looking for a respite from the noise and crowds of busy midtown Manhattan.
- It has tables and chairs and a small concession stand but no playground equipment.
- It attracts at least 500,000 visits per year
- Far less than the 25 million people who visit central Park annually

Analytical study of some modals of local pocket parks

The study analyzed some of the local models of parks among the residential blocks in Egypt from different regions in the economic level to know their advantages and disadvantages as an attempt to improve and re-develop them to accommodate the requirements of the residents from activities and elements. In the end there are some conclusions and recommendations concerning the planner and designer in an attempt to get the best results.

a) Extension of Ramses Street minipark - Al Qubba Bridge

The park is located in an area with low economic income. It is bordered on the main entrance by a busy main street. It is considered the main breather for neighboring buildings, Figure-16.



Figure-16. Extension of Ramses Street minipark - Al Qubba Bridge. (source: the researchers).

- Provide play areas
- supply each area with seats and umbrellas
- Good distribution of elements and activities in layout.

b) Saqr Quraish housing minipark - Maadi

The park is located in an area of average economic income. It is surrounded by side streets. It is a poor area of green spaces, Figure-17.

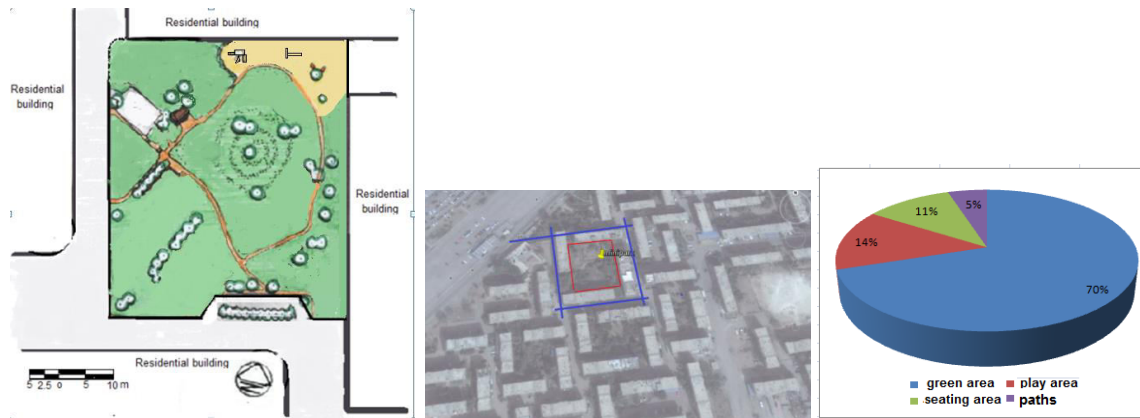


Figure-17. Saqr Quraish housing minipark - Maadi. (source: the researchers).

- Distribution of circulation corridors in the park with giving privacy of each activity
- using green grass in recreational area and sand in the kids playing area
- Considering the choice of seating places by which not to impede the movement within the park with the provision of shades.

- Choose playing area far away from the street and surrounded by a fence of plants to secure them

c) Hadaeq Al-Ahram Housing minipark

The park is located in an area of economic income above average. It is surrounded by side streets. It lacks green areas, Figure-18.



Figure-18. Hadaeq Al-Ahram Housing minipark. (source: the researchers).

- The paved area is large in proportion to the total area
- the lightening is not appropriate for the covered area of the yard
- not dividing the courtyard into spaces or areas for different ages of children

Some problems in designing open spaces between residential areas in Egypt

- There are areas of the green surface that are capable of increasing movement.
- The park entrances do not face the areas they serve, and it opens directly on the road.
- The entrance to the park is far from the public transport stations, and it does not have enough parking spaces.

- Lack of adequate sources of drinking water and Lack of W.C.
- Lack of sources for food.
- Children play football in street, and they play football between sitting people in the park
- Lack of clear paths for walking, shaded paths, shaded sitting areas, kids playing areas.
- Parents can't follow-up their kids playing.
- Park is not safe at night.
- Spread of garbage in the park.

Field study of minipark in Egypt

The field study depends on a case study of a Vest pocket park in Zahraa Al-Helmiya area, Figure-19. It was chosen according to the specifications of the pocket parks that are consistent with the previous theoretical study. A



design for the vest pocket park has been created and the distribution of the movement paths, seating areas and play areas, Figures (20 & 21 & 22) taking into consideration some of the methods to achieve sustainability and reduce the cost as usage of recycling of water from neighboring

houses , the use of photovoltaic cells in the pillars of lighting to provide electricity, and the use of some reusable materials in the floors, chairs ,and playing tools. The walls of nearby buildings have been used to increase the playing area.



Figure-19. Gardens between the blocks of Residential Blocks - Helmiyet- Elzatoun. (source :Google earth).

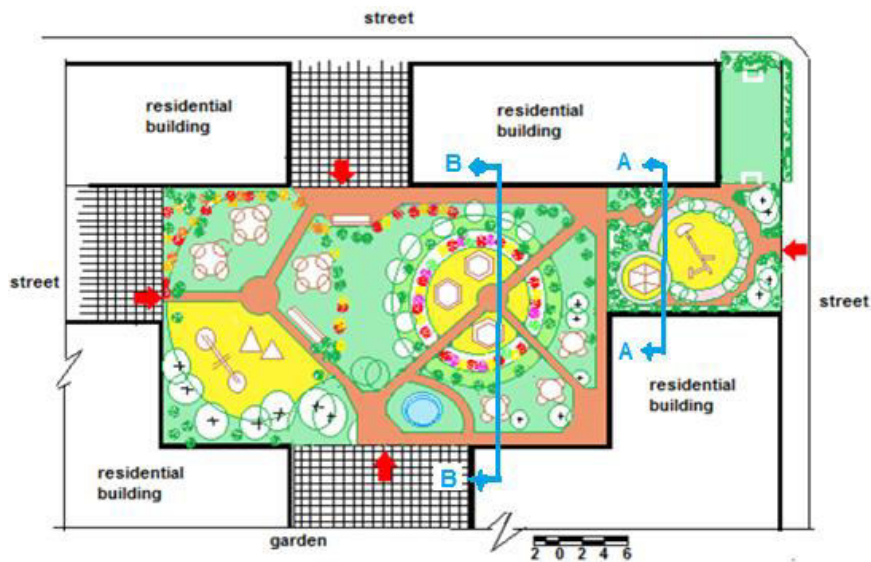


Figure-20. Design of the minipark between Residential Blocks. (source: the researchers).

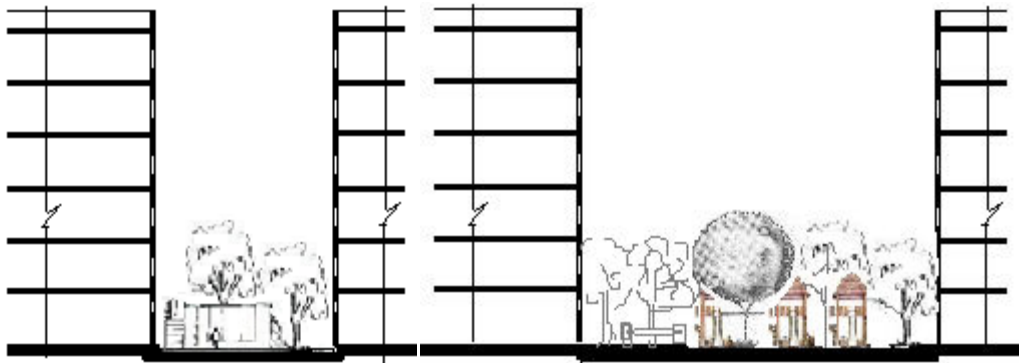


Figure-21. Two sections (A-A & B-B) in the park illustrate the utilization of spaces between residential buildings.(source: the researchers).

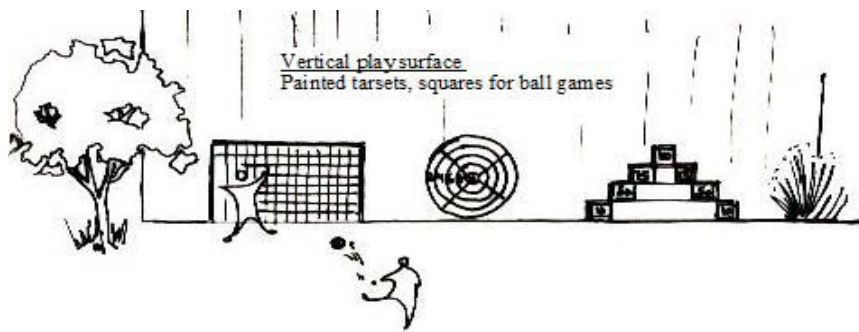


Figure-22. The boundaries (The vertical planes) of surrounding buildings should be capitalized on where possible.

Design consideration to achieve sustainability and reduce cost

Sustainable landscaping should comprise an attractive environment that is in equilibrium with the local climate and compels nominal resource inputs, such as fertilizer, pesticides, gasoline, time, and water. Sustainable landscaping initiates with an applicable design that includes useful, cost efficient, visually pleasing, environmentally welcoming and maintainable areas.

a) Conserving and Protecting Water Resources

- Identify native or climate adjusted drought tolerant plants for all landscape materials.
- Minimize Hard, Non-Porous Surfaces and Turf Areas.
- The resulting water (grey water treatment) from the nearest houses can be re-used in economic ways to replace the fresh water in irrigate crops. Figure-23

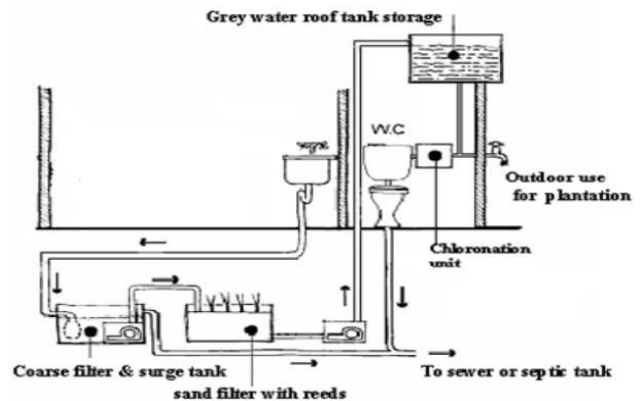


Figure-23. Some studies have shown no adverse effects on lawns or ornamental gardens where grey water has been used for irrigation. source (Nermin M. mohamed and Sahar S.Ali, 2012).

b) Sustainable lighting

Choosing to utilize sustainable lighting solutions demonstrates environmental leadership and reinforcing the creation of sustainable communities, Figure-24.

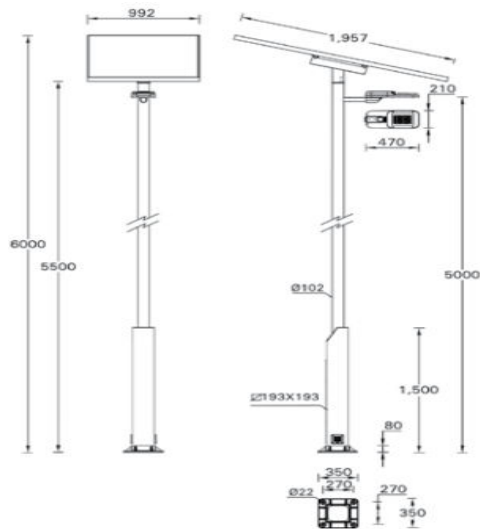


Figure-24. Sustainable lighting solutions. Solar Powered LED Street and Area Lighting. Source: http://www.mondoluce.com.au/_tentacle/files/documents/upload/print0022solarpolebrochurespread-fa.pdf

c) Sustainable landscape materials

A sustainable site encompasses renewable, local, and low-energy input landscape materials and evades materials, products, and performs that are destructive to the environment.

- Innovatively reuse hardscaping materials that endure on site. (old bricks, stones, or other pavers might be expended to line a planting bed)
- Avoid materials with toxic by-products or air-polluting permits, as their fabrication cannot continue indefinitely without unembellished consequences for environmental and public health.
- Privilege materials made from recycled products (e.g. plastic lumber, asphalt with rubber tires, concrete made from fly ash), Figure-25.
- Constraint use of high-maintenance turf grass and substitute with lower-maintenance groundcovers.
- Prevent materials that cannot be recycled and reused effortlessly (welded joints, plastic melded to metal)



Figure-25. Materials made from recycled products
Source: Sustainable Landscape Materials and Practices http://ag.udel.edu/udbg/sl/materials/sustainable_materials.pdf

**Statement of probable cost**

The research in this part is exposed to calculate the total cost for the establishment of the minipark and includes the cost of design, implementation and

construction, approximate prices of landscape elements: plants, finishes and lighting, and also the prices of the equipments used. Table-2

Table-2. The probable cost.

- professional services:	design fees		Mechanical Designs Allowance (Water features only)			consultant allowances		miscellaneous expenses		on-site supervision and project coordination	
	Preliminary Design	4250	5500			5000		5300		5375	
	Design Development	4250									
	Construction Documents	5600									
Total:											
- landscape materials and expenses	plant materials		freight charge s	soil	drainage	irrigation system	installatio n labor	equipment rentals	site furnishin gs allowanc e	accent lighting allowance	
	Specimen Trees	6000	3000	2000	7000	10000	7000	2000	24000	8500	
	Ground cover	6500									
	-Freestanding -Plants -Containers	5000									
Total:											
(subcontract ed services) paving, retainage, wall, etc. expenses:	guard rail and retainage systems				paving treatments		mechanical allowance		equipment rentals		
Total:	25000				15000		3500		2500		
- landscape maintenanc e	annual service cost 3500										
Total:											
Total:											

(source: the researchers)

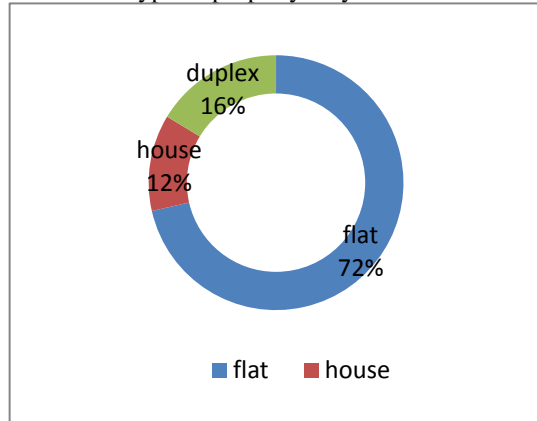
The above table shows the high cost of construction for minipark for the installation of materials and finishes, water connections and park lighting. The research seeks to find some solutions to reduce cost and achieve sustainability in design through the participation

and cooperation of the Residents. A questionnaire form (Appendix1) was designed to take into consideration the opinions of the residents and to know the percentage of participation in the implementation of the project. The results of the questionnaire were as follows:

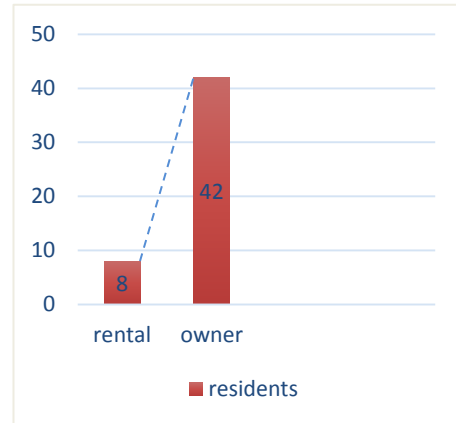


Vest Pocket Opinion Survey results

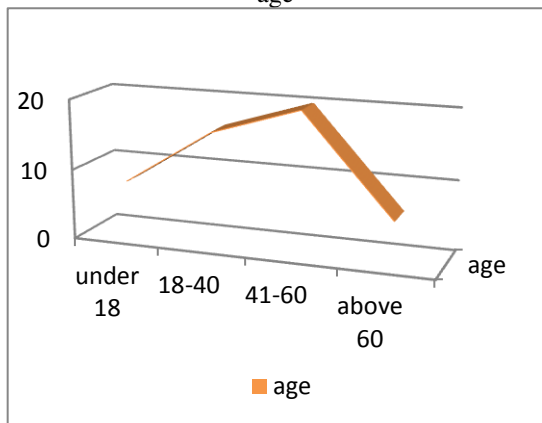
Type of property they live in



residents

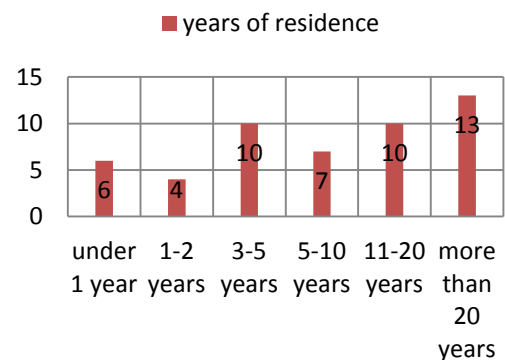


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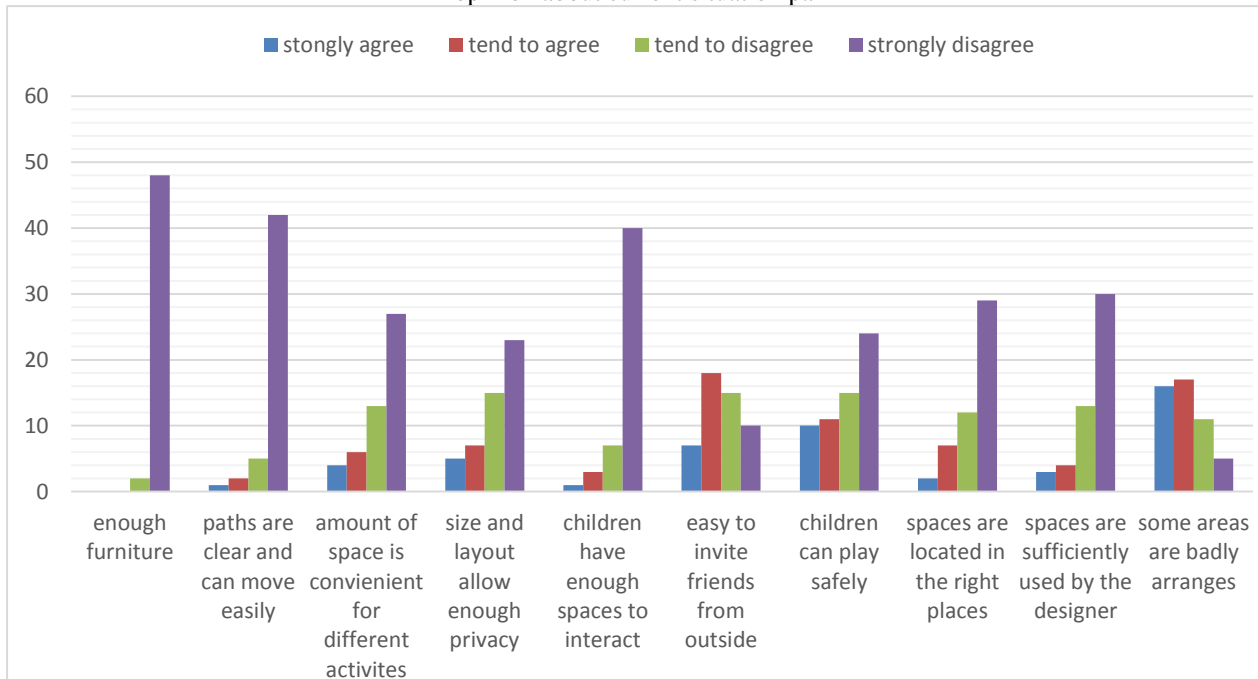


how long have you lived in this area?

years of residence

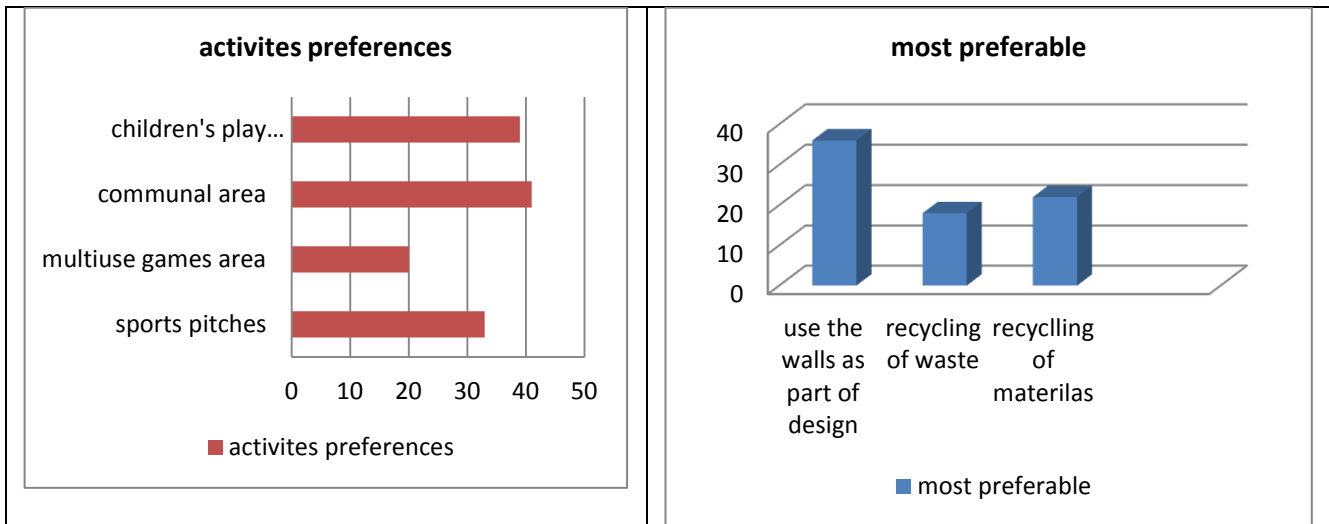


opinion about current situation park



preference of outdoor spaces activities

User Cooperation



CONCLUSIONS

- It is crucial to nurture the awareness of the public and policy makers about the diverse reimbursements of green spaces and their vibrant role making it extensively spread. Furthermore, the environmental developments, urban open spaces make a meaningful contribution towards the image of urban settings as well as the improvement of the quality of life for people living there.
- There are some considerations to eliminate park problems among the residential communities including:
 - Provide a suitable corridor for movement instead of movement on the greens, and closing the entrance of the destroyed corridor temporarily.
 - Laying disassembled tiles for movement
 - Providing adequate sources of drinking water, preferably cooled, Provide WC for both genders, Providing small kiosks or cafeteria
 - Provide clear signed paths, Increase lightning
 - Provide shaded sitting areas for parents around playing areas
 - Providing playgrounds for kids in sandy areas, where sand is renovated.
 - Provide private playing zones
 - Provide sufficient boxes for garbage, Periodic cleaning system.
- The use of some design considerations that contribute to achieve sustainability and reduce the cost of construction, including water recycling and the use of solar energy in the park lighting and reuse and recycling of materials in landscaping.
- Participation of the residents in decision-making in design and participation in the cost and carry out periodic regular maintenance to ensure the survival of the park remains good.

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Appendix1

Vest Pocket Opinion Survey

Part 1 - Vest Pocket Park Space Plan					
○ In which Neighborhood do you live?					
○ What type of property do you live in?		<input type="checkbox"/> Flat <input type="checkbox"/> House <input type="checkbox"/> Duplex			
○ Which of the following best describes you?		<input type="checkbox"/> Renter <input type="checkbox"/> Owner			
○ What is your age?		<input type="checkbox"/> Under 18 <input type="checkbox"/> 18-40 <input type="checkbox"/> 41-60 <input type="checkbox"/> above 60			
○ How long have you lived in this area?		<input type="checkbox"/> Under 1 year <input type="checkbox"/> 1- 2 years <input type="checkbox"/> 3-5 years <input type="checkbox"/> 5 -10 years <input type="checkbox"/> 11-20 years <input type="checkbox"/> more than 20 years			
○ How many members are in your family					
Part 2 - satisfaction of the current status					
1- What is the name of the park nearest you?					
2- How often do you and your family use this park? .. (days per year)					
3- To what extent do you agree or disagree to the space of this park		<input type="radio"/> Strongly Agree <input type="radio"/> Tend to agree <input type="radio"/> Tend to disagree <input type="radio"/> Strongly disagree			
4- What do you do in this park?		<input type="radio"/> Organized Sports <input type="radio"/> Individual Sports <input type="radio"/> Simple relaxation <input type="radio"/> Spend time with family/friends <input type="radio"/> Exercise/ fitness <input type="radio"/> Attend special events <input type="radio"/> Walk your dog <input type="radio"/> Enjoy nature Other:.....			
5- To how extent do you agree or disagree of your park?		Strongly agree	Tend to agree	Tend to disagree	Strongly disagree
	○ Enough furniture conveniently				
	○ Paths are clear and can move easily				
	○ Amount of space is convenient for different activities				
	○ Size and layout allow enough privacy				
	○ Your children have enough spaces to interact				
	○ easy to invite friends from outside your area				
	○ The children can play safely				
	○ Spaces are located in the right places				
	○ The spaces are sufficiently used by the designer				
	○ Some areas are badly arranged				
6- What facilities would you add to the park you use?					
7- In your neighborhood, what do you believe are the park, recreation and open space needs?					

**Part 3- What are your park needs?**

Parks, recreation facilities and open spaces are part of our city, part of our neighborhood. In this spirit, we are undertaking to look ahead at what our needs are, to set goals and objectives, and to recommend ways to achieve our open space vision.

We want to understand your orientation to parks, recreation facilities and open spaces. This will assist us to develop our city- wide open space.

8- The parks in my neighborhood are a very important reason why I chose to live there in the first place?	<input type="radio"/> Strongly Agree <input type="radio"/> Somewhat Agree <input type="radio"/> Somewhat Disagree <input type="radio"/> Strongly disagree
9- I knew nothing about the parks in my neighborhood when I moved there, but now they are a very important reason why I continue to live there	<input type="radio"/> Parks as Important Reason for residential Location <input type="radio"/> Parks as Important Neighborhood attraction <input type="radio"/> Perceived Need for street trees/ Access to Nature/ Community Park/ Youth Sports Fields/ Children's Play Lot <input type="radio"/> Park within Walking distance of Residence
10- What do you think about the importance of open space near your home?	
11- What is your opinion about the importance of trees in your neighborhood? Do they meet the place need for shade and beauty	
12- If a small area was provided in your neighborhood area what is your needs to be provided in this area	<input type="radio"/> Good access to nature <input type="radio"/> Community garden nearby <input type="radio"/> Child's sports league with the space needed to practice and play <input type="radio"/> Within easy walking distance of my home (10-15 min) <input type="radio"/> Contains children's play equipment for pre-school and pre-teen children <input type="radio"/> Easy access <input type="radio"/> Clear shaded paths for walking
13- To create better places, what you recommend for redevelopment of small spaces?	<input type="radio"/> Demolish and redevelop <input type="radio"/> Partial redevelopment <input type="radio"/> Invest in existing properties to bring them to minimum modern standards Others?.....
14- What type of activities the paces should provide?	<input type="radio"/> Mix of different activities to all family members <input type="radio"/> A wide range of activities <input type="radio"/> Flexible spaces to adapt diversity of activities
15- What type of outdoor space would you prefer to see within your residential area?	<input type="radio"/> Concentrate on providing communal space for flats <input type="radio"/> Provide a single public open space for everyone to enjoy
16- What types of play areas and open space would you prefer to see?	Select Max. two: <input type="radio"/> Sports pitches such as grasses areas <input type="radio"/> Multi- use games areas such as fenced, hard surface,... <input type="radio"/> Communal parks such as areas with planting and seating suitable <input type="radio"/> Children's play equipment Others?...
17- What do you think is important in deciding the	Select Max. two:



layout of buildings, spaces and streets on your residential place?	<ul style="list-style-type: none"> ○ Making easy connections within the estate and to the surrounding area ○ Creating a more vibrant feel and character to the area ○ Creating a mixture of types of buildings and spaces Others?...
18- Are there any other issues or options we should consider regarding the open spaces?	Please feel free to write your opinion...
Part 4 - Considerations for future design and process planning In this part, we are seeking to promote potential of vest pocket parks in the dense city know your opinion about design the space, the emerging approach to improve the planning process of the urban landscape. We will apply the users' special needs and preferences together with the aesthetic and standards experience to adapt a sustainable design	
19- Due to the small size, the activities possible will be limited	<input type="checkbox"/> agree <input type="checkbox"/> disagree
20- the vest pocket parks to have distinguishable boundaries, can we use the walls of the residential buildings	<ul style="list-style-type: none"> ○ to improve the appearance ○ the way they are used ○ kids plays and seating areas
21- in relation to location of the park	<ul style="list-style-type: none"> ○ improve view inside and outside the park ○ noise control ○ lightening
22- Features correlated to socializing	<ul style="list-style-type: none"> ○ Provide Lightening ○ Provide seats ○ Using of roofs for solar system lightening
23- Features correlated to rest	<ul style="list-style-type: none"> ○ Using landscape elements which provide shading and create enclosures and sense of security ○ Special trees and flowerbeds to create variation in the space and possibilities to sit in the sun as well as in shade ○ Sitting undisturbed, use lightening at night ○ Giving view to the surrounding can we paint on walls or use sustainable materials in acoustic insulation
24- Green Infra structure	<ul style="list-style-type: none"> ○ Green grounds for play ○ Urban water management ○ economic values
25- User Cooperation	<ul style="list-style-type: none"> ○ Can we use the walls/ rooftops as photovoltaic cell units to generate energy for garden lighting? ○ recycling of waste ○ recycling of materials to be used in furnishing the park/ playing area for kids
Comments:	
Thank you for completing this questionnaire!	