

Human scale and its effect on Public Open Spaces

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Abstract: The urban public open spaces expression has find its meaning with humans' activities and presence, and more than its physical role, the urban public open spaces are important to createa social interactions among citizens. The Cities' public open spaces are affected by social- and economic changes of their time with different appearances in the city. There are many types of urban spaces which provide good or poor spaces for people. These types of urban spaces may respect or ignored the human scale. These urban open spaces definitely have an impact on the person who passes through it or stay to make any activity in that space.

The problem is that some of these urban open spaces make people uncomfortable, so it should respect human scale by its properties to make them feel comfortable.

The main aim of this paper is to discuss the properties of the urban open spaces which make the people comfortable in the space by considering scale. Its properties, special enclosure and elements within enclosure.

The paper will discuss all those topics based on urban literature, some guidelines regarding the appropriate scale for urban open spaces will be deduced with a special emphasis on human scale and some proposals for several open spaces in Alexandria, Egypt.

Keywords: Human scale; open spaces; special enclosure; elements within enclosure.

Introduction

The public open urban space could be defined as the external spaces between buildings in towns such as; gardens, parks, zoo, squares, plazas... etc. (Mehdi Rakhshandehroo et al., 2017)[1]. In other words, the public open spaces are a multipurpose and accessible areas which is various from family and individual territory (Madanipour, 2008) [2].

The character of the open urban spaces is defined by, the special enclosure of the space and the enclosing elements in it. There are four characteristics that define the special enclosure of the space which are; the degree of enclosure, type of enclosure, form of enclosure and the scale of enclosure. Each one of them should have special properties which make them respect the human scale to make people comfortable in this urban open space. On the other hand, this urban open space could have many things which help it to consider human scale. They are the elements within enclosure, enclosing elements, pavement types and furniture in this space. All these characteristics help the open urban space to be human scale valued.

Dimension of Open Urban Space

From a descriptive perspective, public open spaces are considered multipurpose and accessible areas which are different from family and individual territory. According to that a dimension of open urban spaces (Figure 1) could be defined as; A) Sociability which is considered the most important dimension as it maximizes the opportunities of resident's social interaction as the interaction between the community residents leads to create a strong relationship between the residents' place and society. The sociability factor could be measured through determining the level of different social group's presence and how they deal with the space day and night.(Daneshpour & Charkhchian, 2007) [3] B) Usage and activity which are considered as one of the aspects that measured the success of the open urban space design as the different public events and activities which attract the community residents to interact

with the public space or not considered as the most important factor in the dynamics of public space and it could be measured by the number of people's reference and their participation in its different activities. (Daneshpour & Charkhchian, 2007) [3]. C) Accessibility and relations: the relations in open urban spaces are measured by the quality of circulation, different spaces connections, quality of visibility and accessibility of space which are referring to the visual access that affects the amenity, security and performance of the space. (Daneshpour & Charkhchian, 2007) [3]. And Finally D) Image and comfort: which are related to different features such as; the quality of space physical organization and mental comfort, the space sustainability (which means the space maintenance, reservation and protection), and finally the space's visual comfort and pleasure (which effect on attracting people to specific open space than others). (Daneshpour & Charkhchian, 2007) [3]. And all these features are directly effect on residents' decision to choose the open space or stop dealing with it, according to that the public open spaces should be attractive and interacting with its surrounding environmental in order to achieve its requested function and provide residents with comfort and relaxation. (Rafieyan & Sifaei, 2005) [4].

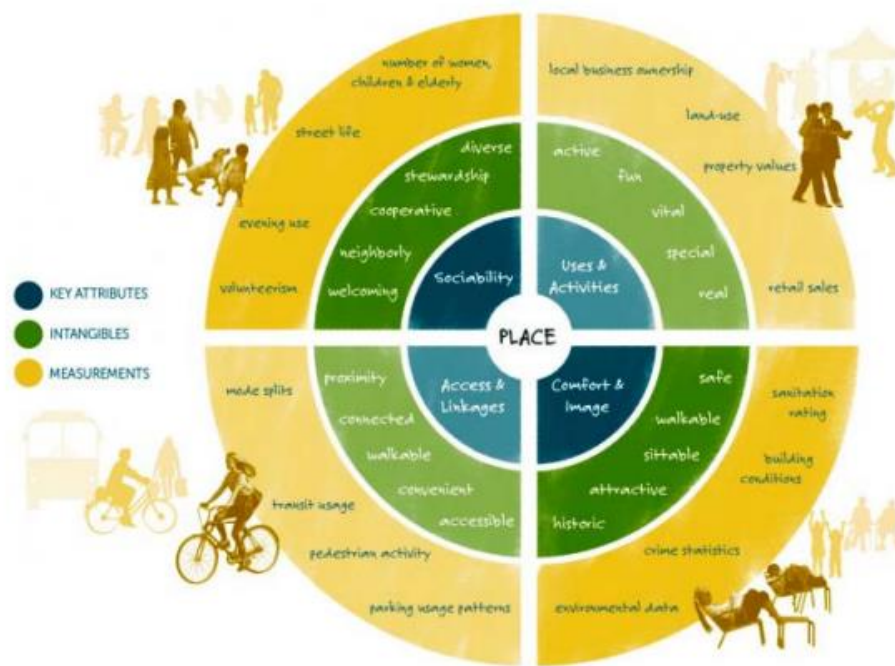


Figure 1: Dimension of Urban Space Diagram (WWW.PPS.ORG, 2015) [5]

Special enclosure

Researchers have agreed that the enclosure is provided by the buildings around this enclosure are they so close or far, are they too high or small, how they make the person feel in this space? It should make them feel comfortable and friendly with the space, they respect the human scale by its ratio. (Tibbalds F., 2001) [6].

Comfortable means the visual perception and the sense of space according to human scale and vision. On the other hand, it is the spaces which have visual pleasure, emotional security, a heightened potential depth and intensity of human experience. That is the degree of enclosure importance. (Atisha Varshney, 2011) [7].

3.1. Degree of enclosure

Scholars defined it as a ratio between the width and the height of the space borders elements. (Serge Salat, 2014). According to scholars the best ratio of the open urban space is one to one or one to two, this ratio can make people feel comfortable in the open urban space. On the other hand, it is the degree to which the spatial and visual continuity in maintained between a space and its surroundings depends on the scale to change. (Atisha Varshney, 2011) [7]. (Figure 2)



Figure 2: knit urban fabric and public realm, (Tibbalds F., 2001) [6]

On the other hand, the comfortable human scale is the one which is related to the scale of pedestrian, not to the cars. Another very important thing is that the skyline of the town or city should not appear randomly but it should be designed to respect the human scale. There could be exceptions to make positive part to the sky line as landmark. However, it is not just height that matters in consideration of human scale, there are other elements such as enclosing elements and the width of the urban open space. On the other hand, getting building close to eye level of people walking beside is important to respect human scale in the place. (Tibbalds F., 2001) [6]

3.2. Type of enclosure

Scholars classified the types on enclosure into two types it is either soft space, all borders are green elements and short (Figure 3) , or hard soft space as buildings over columns (Figure 4) , that types specialized by allowing visual extension outer the borders, at the same time it would not make people lost the scale which respect human scale. It just makes them can see the outer area with respect the scale by borders.

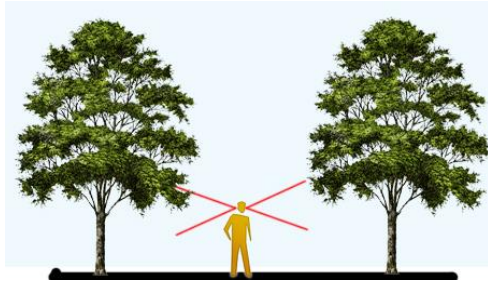


Figure 3: Soft Spaces (Researcher)

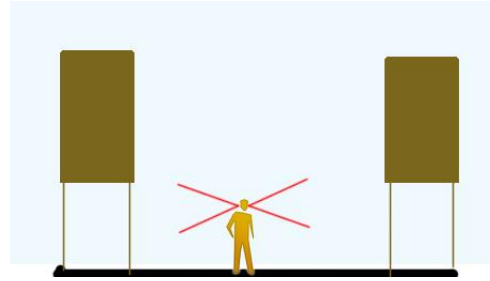


Figure 4: Hard Soft Spaces (Researcher)

The second type is if it is hard (Figure 5) or soft hard (Figure 6) it will not allow the visual extension. On the other hand, it will save the respected of the human scale of the space. (Spreiregen, 1981) [9].

Figure 5: Soft Hard Borders (Researcher)

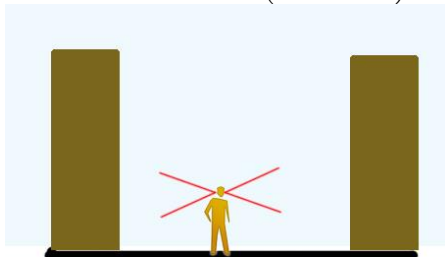
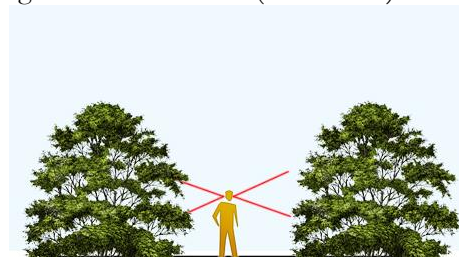


Figure 6: Soft Borders (Researcher)



3.3. Form of enclosure

As mentioned before in section (3) the enclosure is the relationship between length and width of the space when they are one to one or one to two it is called central space, and it is easy to design to respect human scale (Figure 7), when this ratio is one to three or one to four it called axial space in this case the designer should put in his consideration this axially and put elements in it to respect the human scale and not make them lost in the space (Figure 8), when people cannot see the space borders it called linear open space, there are two types of linear open spaces such as regular and irregular linear open spaces in this case the designer should also put in his consideration the human scale (Figure 9). (Carmona, M., 2018) [10]

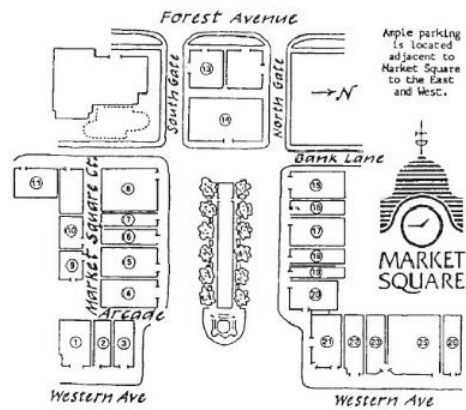


Figure 7: Plan view of Lake Forest’s Market Square (www.centersandedges.org)



Figure 8: St. Peter's Plaza, Vatican City (www.goodreads.com)

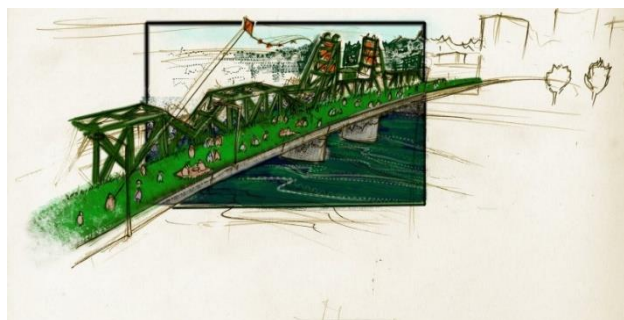


Figure 9: Portland bridge festival (www.landscapeandurbanism.blogspot.com)

3.4. Scale of enclosure

The scale of enclosure of open urban space is important not only to reaching human scale, but also to a general sense of safety and comfort. (Tibbalds F., 2001) [6] For example; square, it is outdoor room and with room it shares the quality of enclosure. The key of enclosure in the square is the treatment of its corners. The more open the corners of the square, the less the sense of enclosure and safety. The more built up or complete they are, the greater the feeling of being enclosed. (Atisha Varshney, 2011) [7] (Figure 10). However, there are different types of these enclosure such as, intimate scale, urban scale, monumental scale and universal scale (Figure 10). (Wu, Zhiwei et al., 2020) [11].

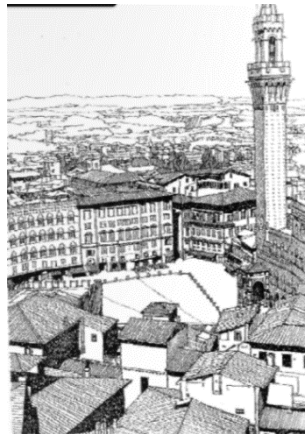


Figure 10: Christopher alexander: The city is not tree, making people friendly towns

A. Intimal Scale:

It is featured by its width that starts from three to fifteen meters long, all the time its borders are very close to the people who use the space. The person who uses the space is always busy with its details. The feeling of the sky at these scale of enclosure does not exist, this space all over the morning hours are shaded. Another thing is the transportation in this scale is nearly and usually it is private transportation. Finally this scale of open spaces encourages people to make good communication with each other's in it (kelvin lynch, 1959 [12]; Wu, Zhiwei et al., 2020 [11]). On the other hand kelvin lynch said that that dimension of 12m appear intimate in scale; up to 24m (Figure 11).

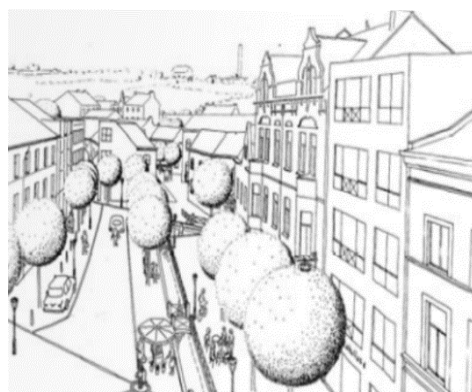


Figure 11: the Street - the corridor spaces surrounding of residential units by wohumfelf

B. Urban Scale:

These scale properties are that its width is from twelve to forty meters long. The feeling of the sky in this scale is poor. On the other hand, the person in this space can see the whole building elevation or a big part of it. The

activities in this scale of open urban spaces are different and there are many types of it, so people do not know each other in this space. In that space there are different types of transportation. The shading in this space at one side only of the space, finally the feeling in this space is general not specific (Figure 12). (Kelvin Lynch, 1959) [12].



Figure 12: Martius Campus, 2009 (www.circlethevsa.com)

C. Monumental Scale:

Its distance starts from thirty to sixty meters. The overlap between the urban scale and monumental scale is larger than the overlap between the urban space and the intimate space. In that space the feeling of the sky is very clear. On the other hand, the person feels that he is small in comparison with the space. The people can see numbers of elevations beside each other. Another thing is that this space usually be with two things; first one is urban monumental and the second one is historical era in this city. It is deep space and axial; it has different types of transportations and finally the shading at this space is rarely and need shelters to shade it (Figure 13). (Wu, Zhiwei et al., 2020) [11].

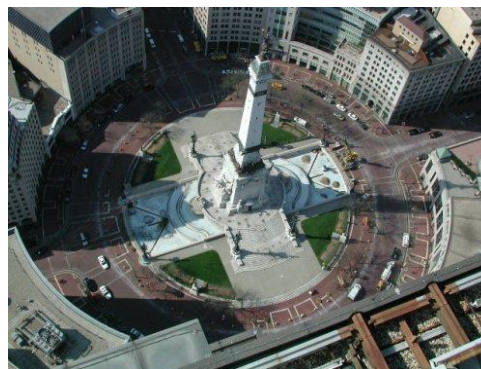


Figure 13: Indy's monument circle (www.urban-our.com)

D. Universal Scale:

Human scale may be difficult to conserve where large or wide streets or open spaces are pedestrian. (Tibbalds F., 2001) [6] This is connected with the type of open spaces or public gardens and parks. Its borders from one side buildings and the other side horizon line between the water and the sky, or borders are opened and the buildings are far like parks (Figure 14). The users can see the horizon line, at the same time all the borders are soft and maybe it is temporary. The designers place in this space some shading devices and elements. This space is an entertainment space having a clear cycle at clear time. Finally, it is a harmonic space that has few communications which most of them are in groups. (Wu, Zhiwei et al., 2020) [11].



Figure 14: Hudson river parkway/Miami New York (www.transirmiami.com)

Open Urban Spaces’ Elements – With analyzing on El- mursi abu el abbas square, Alexandria, Egypt

It is a very important element in the urban open spaces that should respect the human scale and the human needs in open urban spaces. Elements within enclosure means; landform, pavement, furniture, plants and water. (Von Richthofen, Aurel. 2018) [13] On the other hand, it is essential not to be daunted or panicked by the empty spaces. All too frequently the engineer or urban designer takes fright at the scale of the open space. There is a tendency to try and fill it up again as quickly as possible-not only with wall to wall red brick paving, but also all manner of open space furniture; bollards, planters, seats, kiosks and spindly trees. (Tibbalds F., 2001) [6]

4.1. Landform

It consist of many things such as, degree of slope if it is light or moderate or deep slope, form; if the land have ramps or steps, if its form regular or irregular. Its orientation if it is mono or multi directional slopes. All of these properties should respect human needs and scale (Figure 15).(Von Richthofen, Aurel. 2018 [13]; Spreiregen, 1981 [9])

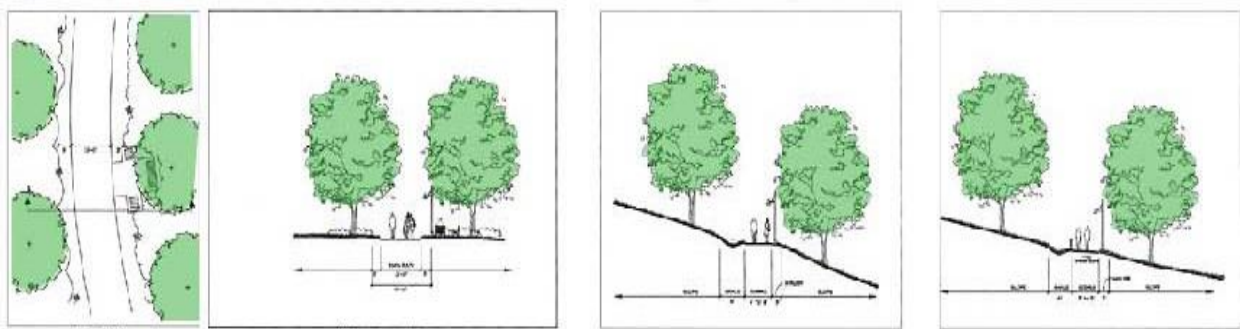


Figure 15: landform sketches (<http://www.brandeis.edu>)

4.2. Pavement

The pavement is another important thing such as, materials, color, texture, patterns and scale. Pavements must have design considerations such as, directions. If it emphasizes the depth of the space the blocks of the flooring will order vertically to the space. While if it emphasizes the width of the space the blocks of the flooring will ordered horizontally to the space. These will be by the indication of pavement in street and sidewalks. On the other hand, the scale of the pavement block, when the pavement block scale is big in comparison with the human scale, the people feel that their scale are small and the opposite is true (Figure 16). (Von Richthofen, Aurel. 2018) [13]

On the other hand, buildings must not block pedestrian movement or key views. Finally, pavement should draw the people path from building to another building; it should draw this path according to people needs. Using the directions, it should be as directly as possible. Simply the design of pedestrian public space will generally be more successful if it is kept simple and organized. The key is to maintain the scale integrity of the space as a whole.(Tibbalds F., 2001) [6]

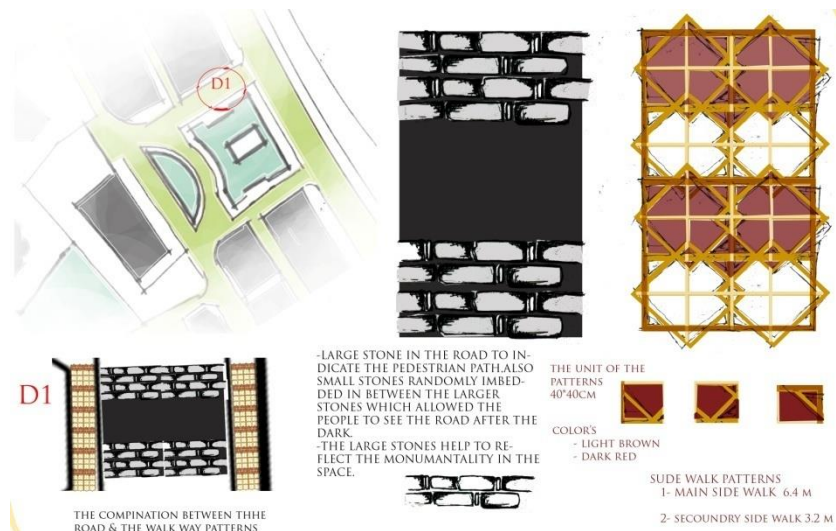


Figure 16: E1- mursi abu el abbas square pavement proposal (Researcher)

4.3. Furniture

Furniture should be comfortable to people, have simple form, have few details, be easy to maintain. Besides, its finishing must be durable and resist to vandalism. Furniture includes seating elements, lighting, shelters, information, convenience elements, traffic control, site utilities, seasonal elements and special features.

A. Seating elements:

Seating elements include benches, ledges, steps, seat walls and stoops. It should be sheltered from wind, take the advantages of site views, be situated back of circulation paths and provide a variety of options for pedestrian such as sunlight and shade. All this seating elements should respect the human scale and be designed to make people feel comfortable, because it is a very important element in open urban space. (Von Richthofen, Aurel. 2018 [13]; Spreiregen, 1981 [9])“People sit most where there are places to sit. Other things matter too, fountain, tables, sunlight, shade trees- but this simplest of amenities, a place to sit, is far and away the most important element in plaza use.”(Whyte W. H.1980) [14] Finally, the more articulated the edge of open spaces such as plazas the more edges sitters can sit on it. On the other hand, level change attracts people and design normal seats for them but these levels should respect people use. (Time-Saver Standards for Urban Design, 2003).

B. Lighting:

Lighting must be function and must respect the scale of both the pedestrian and the vehicle in the site. For pedestrian area lighting, the light source should be relatively low to the ground in order to respect the scale of the human body. There are different types of lighting such as decorative lighting, vehicular use lighting, general site lighting, pedestrian use lighting and feature lighting.

C. Shelter:

It should be readily visible, easily accessible, sited to take advantage of views, sited adjacent to major pedestrian route and it should respect human scale to protect them correctly against inclement weather. It may work as a protection from weather or a focal point for site activities serve as transitional areas between outdoors and indoors.

D. Information:

Information includes direction, location, identification and display. The information should be formatted and placed within easy view of either the pedestrian scale or cars scale. The information must respect the human scale to be readable and increase safety.

E. Convenience elements:

Which includes mail boxes, information stands, public telephones and newspaper vendors. It should be easily recognized, sited to reduce confusion or duality, placed to facilitate easy access, durable and easy to use by respect human body scale.

F. Traffic control:

There are two types of traffic control, and the first type is to preclude pedestrian entry such as railings, walls, kick rails and hedges. The second type is to preclude vehicular entry such as steep banks, planted areas, steps and guard railing it is used to define the jump between pedestrian and motorist in paving material changes, bollards and grade changes.

G. Site utilities:

Site utilities such as manholes and electricity boxes. It should be seen and respected to human scale to be easy to see and easy to maintain. It should be correctly designed in the space. (Figure 17)

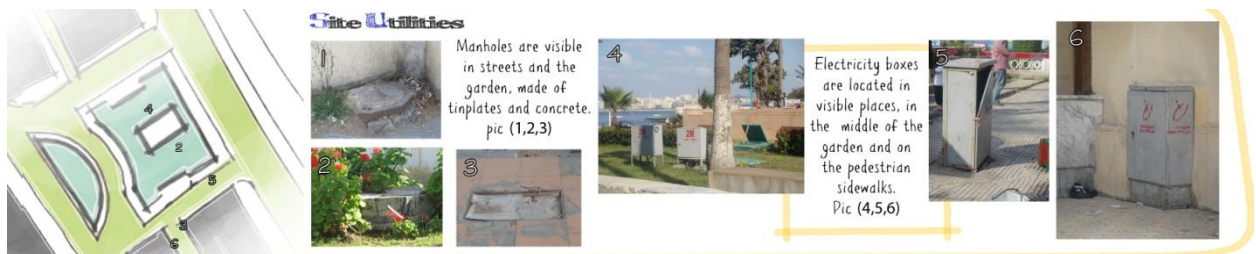


Figure 17: Utilities in El- mursi abu el abbas square (Researcher)

H. Seasonal elements:

Seasonal elements includes temporary structures, vending wagons, outdoor furniture and planting tubes. It is highly recommended to provide a flexible open space layout. That makes it work well when they augment established year-round facilities it should be readily visible, accessible and easy to use. The variety of the planting and its texture, color and massing can add great value to the open urban space use.

I. Special Features:

Special features such as fountains. There are special features that can be used to be landmarks and significant cultural. It should also respect the human scale and the open urban space scale to be harmonized with them. All those elements circled around human scale, how to respect it and how to make with it the people feel comfortable in the open urban space. (Figure 18)



Figure 18: Special features in El- mursi abu el abbas square (Researcher)

Conclusion

In the past periods the most important concern in designing an open urban space was developing places and spaces which are spatially integrated to insure the users' comfort as "Urban areas exist for human beings. They do not exist for cars or Lorries or big constructional projects. This would not, however, be immediately apparent when wandering around the majority of our towns and cities. We need to find ways to give our urban areas this human quality or scale." (Tibbalds F., 2001) [6] But nowadays most of designers and urban planners are dealing with the open spaces as a secondary interest and give the first interest to the design of surrounding building environment without any regarding to users' comfort, satisfaction and impressions.

According to that the designers and urban planner should go back to the standards of the spatially integrated urban designed to insure creating an open urban spaces that attracts the users' to deal with and be a part of , and at the same time, the government needs to pay attention to the built environmental issues through providing a designs of urban spaces that create a community social interacting with giving the users a possibility to be a part of its maintenance plan as if they found the relaxation and good design quality of urban space which taking into consideration the surrounding natural environments they will do their best to keep this open space always in a perfect shape as they will deal with it as it is their breathing space

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