

**Green Open Space Is Needed
For Better Health In
Residential Complex**

**Mahmood Abdul Mahmood
Engineering Union ID # 1490
November, 2011**

Table of Content

Abstract3

Introduction4

The Health Benefits of Natural Open Space and Green space.....5

Urban Design and Trees.....5

Public Space & Urban Plazas.....7

Water & Rock in Open Space.....8

Conclusion.....12

References.....13

Abstract:

Human destiny has connected with the environment and surrounding space from childhood. Kurt Lewin, German psychologist believes that research on every one's personality must begin based on environment and surrounding space. In other word, life space is a place for research and space of psychologist activity so behavior can be considered as a function of life space. The purpose is an active and effective space that has an important role in shaping individual personality guaranty and protects his or her freedom security and privacy. This research is an attempt to find the architectural principles bases and standards for the open spaces residential complex that could have positive effect on psychology health development of resident.

Different studies and researches have been used for analyzing and for supporting the importance of open and green spaces in residential complex. Results of this article can be summarized in the following four pints: 1- Using materials with high quality construction of open space complex. 2- Open space for linked with others natural environment in order to improve the landscape of open space. 3- Security opens space of the residential complex and done right urban furniture. 4- Use the green and tree space in open space of residential complex and its role in psychology health. 5- The water that important factor in clean and spirit Aramaic.

With interdisciplinary collaboration in various specializations quality creates and advancement necessary fields can build high quality construction of open space complex and gift the health for resident.



Washington Park Denver, USA

Introduction

Many studies since 1997 have produced these prediction in many ways. For individuals living in inner-city apartment buildings, well used urban green spaces have been linked to stronger ties to neighbors; a greater sense of safety and adjustment, fewer incidents of safety and adjustment, and fewer crimes. In the context of high-rise apartment buildings, both direct and indirect evidence suggests that trees and grass promotes resident's greater use of neighborhood outdoor common spaces. **Newman**, an investigator of urban settlement designers believes that design on the basis of users need is a kind of pragmatism that has been the main characteristics of modernist stream in architecture and city markers. **Jon Land** an environmental architecture emphasis that attention users need space will impose more psychological and damage, if there is ignorance user's need. But some psychological research about individual environment preference suggests the citizens especially children prefer green and natural environment from artificial one existence of trees and maintenance of grass region promote feeling of security and space in city districts. Additionally, levels of children's play double in arbor cultured and green regions.

To escape from the architectural extremist corner there must be differences between prospective environments (an environment that exist in the ideals) and actual environment that was built in reality and has utilities for people. A prospective environment will not have ability to turn into actual environment, unless it has been programmed and modified for socio cultural circumstance less half cenax.



The Health Benefits of Natural Open Space and Green space

There are many researches on the impacts of rural and urban environments on the physical, mental and spiritual health of local populations. Urban green spaces are now widely recognized as major contributors to the quality of the environment, and to human health and well-being in inner city and suburban areas. Although significant work has been undertaken in other disciplines, perhaps the most intensive research into the healing or restorative properties of the natural environment has been in the field of environmental psychology. These restoration perspectives have been dominated by Kaplan and Kaplan's psychological stress reduction framework.

Ulrich (1979, 1981, 1984, 1991b, 2002) uses a range of experiential evidence to argue that the benefits of viewing green space or other nature goes beyond visual enjoyment to include enhanced emotional well-being, reduced stress and, in certain situations, improved health. A much debated paper by Ulrich (1984) compared the medical records of gall bladder surgery patients who had shorter post operative stays, required fewer potent pain drugs, and received negative staff evaluations than those with the wall view. Studies by Moore (1981) and West (1986) support Ulrich's claims; both reported that prison inmates used healthcare facilities significantly less often if the view from their cells was toward natural areas.

Urban Design and Trees

Urban areas benefit in many ways from a large quantity of trees. In addition, to creating a best livable environment, urban trees and forests improve property values; make downtown shopping areas more enjoyable and corporate parks more comfortable and less stressful. Trees can enhance and improve the visual and aesthetic of the city. Trees buffer noise, fresh the air, screen visually discordant objects and provide shade and beauty to the neighborhood. Trees properly placed around a building can keep it cool in the summer and can block winds in the winter, as a result saving energy by reducing the costs of cooling and heating.

Collectively, the trees and urban area are referred to as "the urban forest." Urban forests require maintenance and care to ensure their durability. They also require proper planning in order to be maintained or expanded. Communities can be greatly improved and open spaces made more beautiful and enjoyable if a community forestry program is established. Actual spacing is dependent on the type of trees selected and mature size. A local forester, arborist, or

landscape architect can provide an appropriate tree- planting schedule that considers local climate and soil type.

Trees should also be planted in boulevard sections when possible. Besides the aesthetic value, it has been shown that properties on tree- lined streets have a higher value than those without. Because streets constitute such a large portion of the impervious cover in a typical urban area, planting trees along streets to provide a canopy becomes an important part of managing urban runoff. Trees can be planted in the terrace area between the street and sidewalk or in certain boulevard sections. Trees reduce the amount of runoff by intercepting rain in their canopies and allowing it to evaporate. The United States Forest Service reported in a study that tree canopies in Chicago reduced urban storm water runoff 4 to 8 percent.



Trees planted in boulevard sections



Public Space & Urban Plaza

“The measure of any great civilization is its cities and a measure of a city’s greatness is to be found in the quality of its public spaces, its parks and squares.” **John Ruskin**

According to observation studies of modern plaza use, sitting, standing, walking strolling, promenading and their combination with eating (outdoor cafes, having picnics, having fast lunches), reading, watching and listening account for more than 90% of all use. More people are getting into the habit of sitting in plazas and with each new plaza the clients grows. Also there is an increase in the street entertainment, people engaging in social interaction and passive activities, and unplanned sidewalk “conferences” among business persons.

People who live nearby are also using urban plazas more than those living far. The plazas are the backyard for those who live in higher density areas. Urban plazas also contribute to a greater sense of community by becoming evening and weekend parks for local or city resident, to be used either casually or for public events such as festivals, carnivals, art shows, exhibits, concerts, rallies and street markets.

Great public spaces are the living room of the city; the place where people come together to enjoy the city and each other. Public spaces make high quality life in the city possible; they form the stage and backdrop to the drama of life. Public spaces are range from grand central plazas and squares, to small, local neighborhood parks.



The combination of beautiful architecture with great public space creates the most beautiful places to live, places that express a life of richness and tradition, and act as a setting for life to happen. Naghsh-e Jahan Square officially known as Imam Square, formerly known as Shah Square, is a square situated at the center of Isfahan city, Iran. It is an important historical site and one of the UNESCO's World Heritage Sites. It is 160 meters long (an area of 89,600 m²). The square is surrounded by buildings from the Safavid era. The Shah Square is situated on the south side of this square. On the west side you can find Ali Qapu Palace. Sheikh Lotf Allah Mosque is situated on the eastern side of this square and the northern side opens into the Isfahan Grand Bazaar. Lately, Namaaz-e Jom'eh (Friday prayer) is held in this square in front of the Shah Mosque.



Naghsh-e Jahan Square (Imam Square)

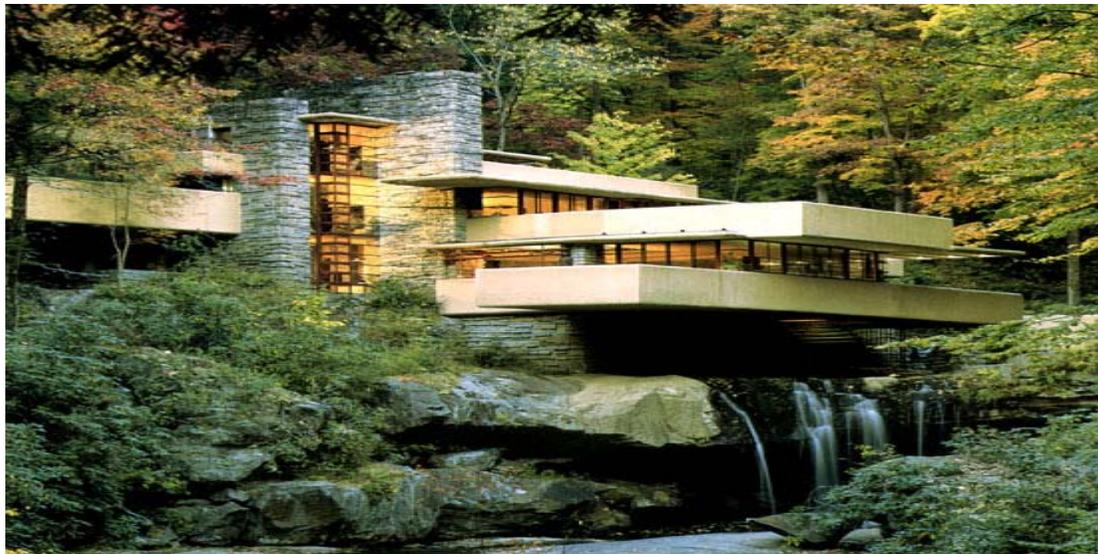
Water & Rock in Open Space

Although we could not survive from day to day without water, we are usually aware of it only superficially and at particular moments. Of course fountain and open waterways in town and cities are nothing new. There is impressive evidence of them even from ancient times, they give a sense of how closely urban design has always been linked with water and its use.

Water and rock are two of the most wonderful materials in any landscape. Working with natural stone and flowing water is an artistic process that does not lend itself to a quick fix, out of the box solution. An artist knows how important it is to select and work with materials, get his hands dirty or wet (as the case may be), and personally guiding the creation of a one of a kind piece of art.

When architect **Frank Lloyd Wright** built the famous “falling water” house in the hilly countryside of Pennsylvania, he had one thing above all in mind: he wanted to blend the building into the landscape of woodland, river and rock. He produced a masterpiece that overwhelms visitors mainly because of the way the torrent rushing under the building is handled. Here water does not just help to the basins in the natural stone; you can hear it when the shell of the building changes acts as a resonating chamber to changes the constant rushing into the natural music of a region. The waterfall home destroys algebra time in 1938. The waterfall House is a response to music that was runs into the house.

Factors such as music, good visibility, the use of natural elements like rocks and trees in the outdoor area is an important case that Wright’s work can be noted and study other projects can the same factors are repeat.



Falling water house In Pennsylvania

Baghe Fin which is a highlight of Kashan is located a few kilometers southwest of Kashan, Iran, in the small village of Fin. It is one of the most famous gardens in Iran. This garden is also known as Baghe Shah, the King’s Garden, creating the contrast between the Kavir (salt desert) and the greenery of the oasis below the adjoining Karkass Mountain.



Baghe Fin In Kashan, Iran

Current movement water against stagnation and stability architecture has a beautiful contrast. Light echo from the movement of water as if dancing on the ceiling. Shade trees a broken Created on the wall and the sun, silent and quiet shines inside Dark spaces. Sound of water infiltrated at all levels to the flow of water that changes in beat comes into existence. Architectural elements in the water scatters with your own voice message call them around the building and its inhabitants are called. The voice of falling water can be converted whisper and can capture with all Hyahvysh to space.

Waterfalls stairs, breast Kbky water streams, hunting and battalion are elements display of water. On site for this paradise, there are also tile shapes that the water flows through as gliding and deflecting slopes. At the edge of the step leading down to the so-called arena then flow on the face of the breast Kbky with production to the soul comforting and pleasing sound.

In building the open space of the residential complex we should use the water benefits:

1. Sound water
2. Reflect water
3. Aesthetic water
4. And flexibility of water

Sound of the water in the garden various can be heard, especially the movement of water in any Atmospheric, the fountain and waterfalls certain water whispered voice reaches your ear. May the water level is below surface or up surface water to be seen of course the reactions.

At the edge of the steps leading down to the so called arena, curved concrete channels are built in, and the water falls from in a phased rhythm, flowing on to the fountain sculpture in a straight line and returning from there to the source point. If there is a great deal of rainfall, surplus water passes from the fountain basin to tow ponds designed to be as close to nature as possible.

The site has cellars under most of the area, and gained its dynamic from a thoughtfully linked network of paths, a lively topography, from alternating open spaces and intimate niches, and the various opportunities to meet others or to hide, to enjoy the sun or seek out some shade. But without the slight effect of water in pools, channels, cascades of fountain the residents would find it very difficult to identify this country as something special, as their own particular habitat with lots of intriguing sub habitat . And it is not until the water in the fountain sculpture freezes into an icy artwork that the three columns seem to stand together properly for the first time, out there in the freezing cold.

For example, in open space for a residential development in Ittigen (Switzerland, Europe) a bronzed sculpture in the Berne park estate is an impressive confrontation of this. It stand at the center of a paved circle is a round pool 25 meters in diameter, and points up to the light with three columns about five meter streams and patters play- fully over the curved collar from one column to the next, them falls into the pool. When the wind makes the curtains of water into thin veils, the static columns seem to become figures dancing with each other.



Falling water is icy art work Ittigen Park, Bern, Switzerland



Dancing the water when wind makes the curtains of water

Conclusion

Different historical architecture has utilized based on natural elements like tree, water and stone. So that after passing centuries from building these constructions and placing in these spaces they are peaceful and relaxant.

In this study, referring to the rich resources of different gardens that can be received in the distant past to design open spaces in settlements particular has been attention and the issue emphasize health and spirit. Application and use of water as a fluid element in the open spaces of residential complexes and creating movement and displacement in it brought the cleanliness and purity possible for the residents. While the use of different species trees trying for flexible open space and attention in link between Human Construction Architecture with natural space. The results for this research are as follows:

1. Uses of tree species in open spaces to residential complexes in the summer of ghosting and obstruct the wind in the winter and try to use the trees for safety.
2. Using the element of water flowing in the residential complexes core and open spaces to play in the movement of water to produce soothing voice and creating the architecture reflected in the water and its proper perspective.

References

1. (kuo, sullivan, 1998)
2. (Brunson, kuo, sullivan,1998)
3. (kuo, sullivan, 2001)
4. [Sullivan, W.c, kuo f.e depooters. F” 2004 pp 678-700]
5. (Wilson, 1984; Freeman 1984; Olds,1989; Relf,1992; Ulrich and Parsons, 1992; Chivan et al,1993; Sooman and Macintyre, 1995; Lundberg, 1998; Honari and Boleyn,1999; Pacione,2003)
6. (Ulrich,1984; Grahn,1989; Kaplan,1989)
7. (Ulrich,1984; Grahn,1989; Kaplan,1989)
8. (Korpela and Hartig, 1996; Kaplan, 1973; Kaplan and Kaplan, 1987; Hartig et al, 1991).
9. (Moore, 1981; Verderber, 1986; Parsons, 1991; Ulrich and Parson, 1992; McAndrew, 1993; Heerwagen, 1998; On the viability of photographs as environmental stimulus see Vining and Orlando, 1989; Anderson et al, 1983; Ulrich et al, 1991; Ulrich, 1992; Honeyman, 1992, Hetherington et al, 1993)
10. (Ulrich and Parsons, 1992; White and Heerwagen, 1998)
11. (Kaplan,1992a)
12. (David A. Paterson, 2007)
13. (McPherson, Gregory; Simpson, James; Peper; Paula; Xiao, Quingu, “ Benefit-Cost Analysis of Modesto’s Municipal Urban Forest.” Journal of Arboriculture 25 (5), September 1999).
14. (“Better Site Design Fact Sheet: Open Space Design” Stormwater Center Fact Sheet).
15. (Marcus,1998)
16. (White,1974)
17. (New Waterscapes: Planning, Building and Designing with Water, Herbert Dreiseitl & Direter Grau, 2005)
18. (50 Favorite Houses by Frnak Lloyd Wright, Diane Madd ex2000)