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Research Article

GIVING NOTICE TO DESIGNING GREEN AREAS IN MEDICAL CLINICS, PRIORITY OF HUMANISTIC NEEDS, AND SUSTAINABLE ARCHITECTURE

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ABSTRACT
Among the variety of architectural areas, no areas such as remedial clinics are the commissure of medicine and art. Salient progress of medical science along the centuries and jump and spread of disease has caused more attention to remedial areas. Operationism in hospital architecture normally allocates a wide area of architects' plans to itself; in a way that noticing environmental qualities and its intense impacts on the progress of patients' treatments, personals' job environment health and so its economic efficiency is going to be forgotten. In designing remedial clinics such as other architectural buildings, quantitative aspect should not affect its qualitative nature, but also, the qualitative aspect should help the progress of treatment. The purpose of this study is to change the theory of remedial clinics designing, so that one can consider the hospital environment a medic. The point of designing a medical environment is to make a hospital supportive of both patients and their families in unfavorable mental situations along with their fears and stress by creating a desirable circumstance. Spending long hours in remedial environments is usually tense for patients, their visitors as well as the personals. Any little effort in reducing this tension has a positive result in process of treatment so pursuits higher qualities in these areas. This paper studies the green areas in hospitals and remedial clinics as an implement to reduce tension and stress in patients and meet their needs and also express its positive influence on them. Besides, it presents universal roots and patterns for designing green areas in hospitals so that could be effective in the flow of treatment by reviewing the related researches and studies done via descriptive-analytical methodology.

Keywords: *Sustainable Architect, Green Area, Humanistic Needs, Reformation and Improvement of Deep Structures, Facilities and Areas in Need*

INTRODUCTION
After a century experience of modern architecture, complex problems have occurred in the arena of eco-environment in spite of its worthless evolutions and consequences. Global situation in the early 21st represents an unstable development which population growth, high consumption and unbalanced distribution of resources are of its features. Population growth like western life style is a big force on natural environment which in our age leads to climate change, Ozone hole, natural habitats and types extinction that all cause a change in consumption culture as well as a change in human procedure towards nature (Gorji, 2011).
Following the aforementioned changes, a new concept is presented as stable development. Thus, sustainable architecture, considering the important role of built environment in the process of stable development, has caught the attention of experts. One the three important domains, stable development emphasize is environmental issues. As architects are, directly and indirectly, 75% responsible in climate change, their duty in this domain is so acute and serious (Rogers, 2005). Therefore, to interfere, they must have a new sight towards nature.
In last centuries, green nature, sun shine, and fresh weather were considered as effective needs in remedial environments; from Greece and Rom medical temples, a clinic in medieval monastery, to big urban hospitals in 17th and 18th centuries, and the 19th and 20th century's hospices. Almost in 1950-1990 in most countries, the value of natural environment as a medic not only decreased but also it almost

disregarded. Multi-floor hospitals built with "international styles" were like official buildings. Natural ventilation was replaced with air-conditioners. Balconies were disregarded and nature capitulated to cars and parking lots. However, in early 1990s, the procedure of designing remedial environments in west was countered as an answer to a movement called "Patient-centered treatment". Hospital principals found people's negative reactions towards the current official appearance of hospitals. Competition between hospitals led to more attention to patients' needs. Hospital designing gradually changed from international style to local environments and using of nature was once more important in remedial clinics. In our country either, to set important aims such as development of remedial areas and meeting patients' humanistic needs, one can point out the green area and its medic feature as a useful implement. However, being aware of researches done in this field and knowing its right effects and how to implement it is a strong need (Todays Doctor, 2012) decades pass from introducing sustainable architecture and lots of methods are proposed by architects to solve the crises; however, some problems are still left. It seems that it is not possible to strengthen sustainable architect, except eliminating its theoretical halves.

This paper aims to review and collect researches and studies done to present the positive effects of green areas and their general roots and patterns in remedial clinics by answering two questions of first, "what are the positive effects of nature and green areas in hospitals?" and second, "How would it be possible to use natural medic in remedial clinics as a useful factor in patients' treatments?" via descriptive-analytical methodology.

MATERIALS AND METHODS

Methodology

To explain the role of green area in creating sustainable architecture, the current study, first, considers architecture and stable roots, and then is concerned with its effect on patients' recoveries. To do so, descriptive-analytical methodology is implemented to present solutions via library studies and field observations to make use of sustainable architecture and design remedial areas. For this mean, main related definitions with the subject are estimated and defined. Then, the important standards in designing remedial areas along with their importance and position are presented and described. This study offers optimized methods in designing proper remedial areas with the help of done researches, proficient and experts, and thus, offers suggestions to improve facilities and making a complete use of remedial areas. We hope this study is a start to have more adverts of principals and people in charge towards optimizing remedial areas and more vulnerable people of a society.

Review of Literature

We will refer to studies and researches done to know the effect of green areas in remedial clinics. Important researches in 1980s and 1990s have been done verify that: Nature has positive effects in health. According to patients' surveys from several hospitals, it is indicated that patients different in age, the hospitalization bed, and the kind of disease, are quarter outside of the building. The first systematic estimation of the gardens around remedial clinics in the US (PEO) was done in 1994 which accordingly, four gardens in San Francisco were studied via observations, analyses, and interviews. People honored gardens with grass, flowers, trees, and fountains. 90 percent of people, after spending a time in the green environments, found a positive change in themselves. Other surveys done at the same time are from children's hospital in San Diego, mental disease clinics in Canada, and comparing green environments of two small hospitals in Wales. Although none of the studies proved health improvement in green areas, 95 percent answered a positive change in their feelings after asking "how do you feel after spending your time in the green environment?" It is logically concluded that being in green environment makes the mind relax in peaceful, reinforce the immune system, and so body has a better chance to improve. Green area medic does not mean treatment. It cannot cure a broken leg or a cancer, but, can have a positive effect.

The following outcomes are pointed out regarding the crucial roles of green areas in physical and mental-psychic health improvements:

1. Van der berg studies show that trees and jungle parks views reduce the stress, and its enjoyment, reduces anxiety and tender, and increases the concentration (Van, 2003).

2. According to Nakamuraand and Fuji, haws have significant effects on relaxation and human peace (Nakamuraand and Fuji, 1992).
3. Lumann indicates that parks with different herbal specise have dirrect recovery effects and cause refection in patients (Lumann, 2001).
4. Viewing trees and natural sources, like stress reduction, getting fresh, blood preasure reduction, anxiety and agression reduction are all of Hartig's findings (Hartig, 2003).
5. Ottoson and Grahn studies show that an old garden with fruit trees and variety of flowers causes higher concentration (Ottos and Grahn, 2005).

Theoretical Basis of the Study

Sustainable architecture, one of the most important movements in contemporary architecture, is a logical reaction against this era industrial issues.

However, in recent decades, in constancy, more emphasis has been on environmental and economic factors, but, sustainable social aspect has not met enough attention. Nevertheless, without a stable human sustainable development would not be met. The feedback of this issue is creating a responsible architecture in agreement with basic and top human needs, his behavioral patterns and developing area improvement in consistency for all types of people in a society. An architecture which includes culture, believes, and behavioral patterns. Meanwhile, supporting social and cultural life via developing public areas, increasing cultural values and creating structures with known identity to build dependency, make a harmonic life environment and flexible areas are kind of practical solutions in designing in order to achieve a stable society.

Although in past, hospitals were designed only for medical-surgery aims, today, change of direction towards humanism in hospital facilities is observable. Today hospitals are more like hotels. Having accommodative areas has caught more attention than the previous cold designs. Patients' hospitalization periods has decreased and there is higher tendency towards getting single or double bedrooms.

Indicating the current medical proficiencies in hospital designing cannot be the only factor. Having a complete look to users' culture, habits and society features of a certain hospital along with medical standards as well as the building itself with different units has a higher priority.

Even designing a similar childbirth unit for all provinces and districts of a country does not sound logical. Except continental and climate conditions, social rites, ethnical, racial, and sacrament manners, as well as factors such as the profit rate and their incomes are all effective in every detail of designing a hospital.

A hospital built by coping and tailoring a hospital design in another country, city, or district without considering the environmental factors and its users' demographic features would face problems in its acceptability, success, and services as well as its efficiency and economic turn over.

A medical environment with a suitable framework is directly and indirectly influential in decreasing the hospitalization period, decreasing the stress, and increasing the patient satisfaction. However, one of the most important aspects creating a medical environment by an architect is making correct use of green area.

So far, large amount of studies have been done on the effect of green area on patients' health which are often on the basis of empirical and field observations of patients which show how green environment is effective on the patients' health. It has an important role both on human activities and on the other hand, on their mental and physical health.

Now, let us consider the importance of green area in reducing depression and tiredness, and making peace and hope in patients and also making a link between this issue and patients' needs.

Sustainable Architecture

Sustainable Architecture is a kind that focuses on eco-environmental considerations and continental adaptability, and is designed and built to exploit effectively. It tries to minimize the negative effects of architecture on the environment. According to OECD, stable buildings are those with the least destructive effects on the built environments and their neighborhood, as well as their own areas. Keeping this aim in mind, making artificial environments must be accomplished with paying attention to natural resources, economizing unrecyclable resources such as fossil fuels, and also keeping it for our posterities.

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Basis of Sustainable Architecture

In the current study, basis of sustainable architecture in the view of Brando Robert Wallis the criteria which are as follows:

1. Saving energy:

Buildings should be designed in a way to minimize the need to use fossil fuels.

2. Adaptability to the continent:

Buildings should be adaptable with the continents and the existing energy sources

3. Reducing the use of new material resources:

Buildings must be designed in a way to decrease the use of new sources as possible in order to be considered a new resource itself for building new buildings until its constructive lifetime.

4. Meeting inhabitants needs:

Meeting mental and physical needs of inhabitants are of great importance.

5. Adaptability to its location:

Buildings must be set subtlety in their location lands and must also be homogenized with their neighborhood.

6. Generalization:

All of the bases of sustainable architecture must be imagined in a complete process that leads into making a healthy eco-environment (Vale and Vale, 1996).

Different Viewpoints on Sustainable Architecture

The sustainable architecture challenge is in relation with a comprehensive solution for environmental considerations and fulfilling a good quality in life, as well as cultural, economic, social, and welfare values (WGSC, 2004).

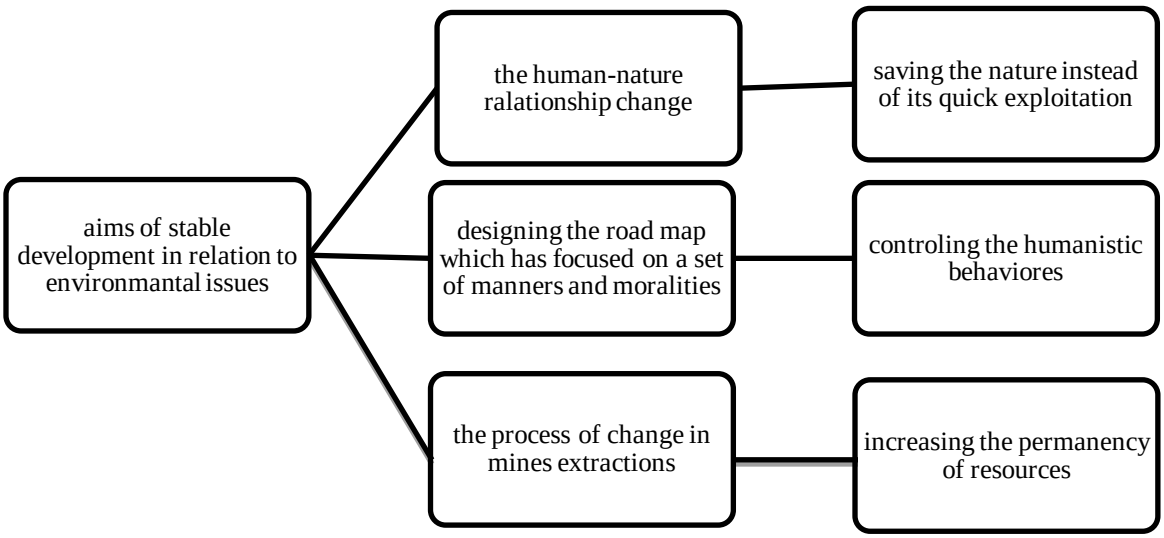

Figure 1: Stable development aims in relation to environmental issues

Economic, Environmental and Cultural-Social Constancy

Constancy of the three factors of economic, environmental, and cultural-social is on and off called triple foundation line which the success of development and designing is estimated through that (Williamson *et al.*, 2003).

Literally, sustainable architecture concentrates on constancy of architecture as a scientific branch as well as an output. In cases where the emphasis is on issues such as the future, it is designed with the best

approach and it is focused on public domain planning. In this regard issues such as: key arguments, urbanism-architectural concepts and sustainability which are strongly tied together, are interesting and striking. Ecological and cultural sustainability methods cannot be committed separately and distinctly. Responsibility of environmental guarantee to the means of cultural sensitivity is called cultural sustainability, which should include ecological awareness. There is no feasible viable future for cities without a consistent combination of the two (Cole *et al.,* 2006).

Recently, many methods of environmental technologies, due to the inability of designers who have failed in recognizing cultural-social content and continuity or who misunderstood the users' needs and expectations, fail before facing a complete success. In fact, here the problem is forgetting the culture and local values which must be preserved and not forgotten. This is indeed a big influence on the success or failure of a project. The globalization process in the field of information and communication technologies, leading to increased consumption, continuing urbanization and the growth of international investment and trade throughout the world, has caused new patterns of racial and cultural relationship change into the unexpected combined cultures. At the same time, the rapid growth of technology would have a great impact in increasing environmental problems on a global scale, which can be seen in ecological disasters, resulting in the rapid disappearance of the natural typical species and resources, high energy consumption and increasing amounts of energy waste. Thus, it is understood that the built environment is an outstanding cultural branch and a major consumer of energy and resources that is seriously implicated in both processes.

Knowledge has always been Indigenous, non-division from its tools and shield. Someone may hide the fact, but it cannot be destroyed or eliminated (Geertz, 1993).

It is proved that information and knowledge about new ideas and skills, and many of the new technologies, can hardly be transferred to other cultures and countries. Even after introducing into a new cultural context, it has either been partially implemented or not compatible or replaced or even ignored. It seems that the key to this problem is the inability of those involved in the design and promotion of new technologies, the expectations, aspirations and local and cultural needs. Before claiming the mentioned technologies are factually applicable and valuable, it should be first understood that they are complexly tied to the culture, and so, technologies accepted for a group of people, do not be accepted by others (Cole *et al.*, 2006).

Therefore, understanding the context and content of the local culture is a necessity to run a successful transfer of human knowledge and technologies. New technologies and practices, in order to be acceptable and work, require being in line with the expectations, needs and knowledge of the people and also the culture that may possibly employ it.

Of course, this is undeniable that people's consumer culture and their look towards nature has gradually changed; however, this modification in their approach is vital, because new technologies must be promoted with the right culture accompanied with it, and it seems that the correction should also be considered in addition to the indigenous culture.

From what was said about sustainable architecture, its eco-environmental objectives can often be sought in relation to energy: Creating buildings sensitive to local needs, minimizing energy consumption, and, etc. Of course, as mentioned above, taking into account the aboriginal cultural-social content is essential for the implementation of environmental technologies.

In all the above talks, no true definition has been given regarding nature. Nature, in sustainable architecture objectives, must be preserved due to the human needs. However, this relationship in the past had been in contrast with today's; not only did not people capture and use it, but also they enshrined the nature. This means it was holy (Nasr, 1379), which had led into a sense of respect for nature while using it and thus, all the problems modern man is looking to solve, would be solved by giving meaning to nature. The role of architecture in giving meaning to nature is an issue still remained unresponsive. In the follow, the reform of the relationship between man, nature, and architecture in sustainable architecture approach are discussed.

Correct Relationship between Man, Nature, and Architecture in Sustainable Architecture Approach

- ***The Role of Man***

Sustainability requires a continuous effort in progress. There is no possibility of improving and correcting the built environment without people participation. Sustainability is not something that people simply agree with its rules and regulations. As a result, it must be performed by participation of communities efficient in resource management with equal rights which is of the basic stability levels (Munier, 2005). The continental attitude is presented in many ways where sustainable architecture is offered. "Having a continental attitude, man will fall as an earthen creature needy of climate comfort. Considering the continental conditions is one of the important bases of Iranian architecture, but it does not end everything. Here, there is a collection of various factors, one of which is climate, hand in hand, have made the final shape of buildings. In a way that man feels being in a comfortable atmosphere and at the same time, being there receives many messages (Memarian, 2003).

Implementation of environmental methods with the needs and expectations of people who want to use it is also important which was discussed in the "economic, environmental, and socio-cultural sustainability".

- ***Man and Nature***

In most of the sustainable architecture approaches, it seems that a modern look still exists. In the other word, managing the operation and exploitation of nature must be in a way not to be destroyed so that it can be remained usable for human.

Stability in lexicons is defined in terms of resources durability and maintenance. For example, stable (as an adjective):

- The ability to be stable, a method for obtaining or using a resource so that the resource is not depleted or permanently damaged.
- Related to the type of lifestyle that involves the use of sustainable methods: (Merriam-Webster, 1994).

Green Area and Its Role in Sustainable Development

Human environment is a set of relationships between humans and their environment which can cause biological balance and how to build this relationship and also the influence of ecosystem properties in humans' life quality and their mental health has a great impact. The discussion of urban green area and the impact of its influence on city stability make this part of the urban area important, especially in today unstable and unbalanced cities.

The following figure shows a conceptual model of how to influence the sustainability of urban green areas in cities and in sustainable development. It also shows that the distribution of urban green areas shall be optimum so that have ecological returns (environmental, economic, social, mental, and psychological) for citizens and to provide favorable ecological conditions for cities.

Table 1: Urban green area performance

Sustainable Development	Sustainable urban development	High quality of life	Water and air filtering City beautification Mitigating the effects of wind Stable micro-climate Sound pollution reduction Erosion prevention	Environmental	The efficiency ofurban green area
			Reducing energy consumption in buildings Reducing the costs of air pollution and dust removal Reducing cost of manufacturing navigation systems flow	Economic	
			Strengthening social ties Increasing the participation of citizens Stress reduction	Social, mental andpsychological	

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Factors Influencing the Location of the Hospital

Various factors are involved in finding an accurate and appropriate hospital location which some can be introduced in the form of quantitative factors and others in the form of qualitative ones. In the following they are classified into two categories: qualitative and quantitative.

Quantitative factors: a review of the geographical area conditions, the physical characteristics of regions and sites, densities, distribution of medical centers, infrastructures, neighborhoods, and, etc.

Qualitative factors: considering appropriate lightening, sound and air pollution, perspective and view

Geographical Location of the Area under Study

Alborz is the thirty-first province of Iran.

This city is located in the 20 km of West of Tehran, in the jurisdiction of Tehran province which is the fifth most populous city of Iran after Tehran, Mashhad, Isfahan and Tabriz. Alborz mountain ranges have long been the temporary and permanent settlement of various ethnic groups due to their good weather, running rivers and safe resorts which are by themselves an excuse to Karaj city expansion. Alborz Province with an area of 5,800 square kilometers is located in the north of Iran in the foothills of central Alborz mountain ranges. The population is about 2.5 million, of which the center is the city of Karaj. Other cities in the province are Savojbolagh, Hashtgerd, Nazarabad and Taleqan. Climate of the region is influenced by Alborz mountain ranges, with cold winters and mild summers.

Figure 2: Geographic allocation of Alborz Province and the region under investigation

Introducing the Political Geography of the Site (Spatial Organization of the Province and City)

Iran is among the countries of the Asian region and is located in its southwest. It is located in a semi tropic and dry region in half the area above the equator. That is why it experiences four seasons throughout a year. Karaj, one of the most crowded cities, is located in the west of Tehran on the foot of the Alborz mountain ranges. The location of this city due to having industrial towns around and being close to the capital city has a high value in case of industrial, commercial, economic and road transport systems.

Karaj City Introduction, Zoning and Access

Karaj city is composed of 19 regions in which the 2nd, 3rd and 4th regions are in south and the rest are in north of Tehran - Qazvin Highway (the 3rd region is Fardis town, and the 4th is Mehrshahr). Accessibily of Karaj city is done from Iran's northern regions such as Chalus and Noshahr, as well as Northern Highways and from western cities via Tehran–Qazvin Highway and also from eastern cities via Tehran-Karaj Highway.

Studying the Climatic Factors

Temperature

Karaj city has various climates throughout the year. January is the coldest month of the year with -5/7 ° C and the hottest month of the year is July, with a maximum temperature of 37/9 ° C. Due to high levels of humidity (44 to 78%) in this city, Low degree of mechanical devices for heating buildings, especially the non-wet types are recommended. Maximum rainfall in karaj is 44/6 mm in April and 44/1 mm in March

and the minimum is in summer from June to September. Just in these months (June-September) the weather is relatively warm and dry. The average annual sunshine hours obtained is 2899 hours. About 43% of the annual rainfall is in the winter, 28% in autumn, 28% in spring, and only 1 percent in summer. March and April are the rainiest months, and August and September are the most arid. July is the hottest and the driest, in contrast, January is the coldest and the most humid of all months.

The Path of the Sun

The sun is one of the most important factors affecting the orientation of a design. Important parameters in recognizing sun shine include sunrise and sunset times in different seasons- angle of sunrise and sunset in different seasons- angle of radiation (including the angular position of the sun relative to the horizon). Sun path diagrams are different for different latitudes. The diagram provided here is for 35 degrees latitude of Karaj city.

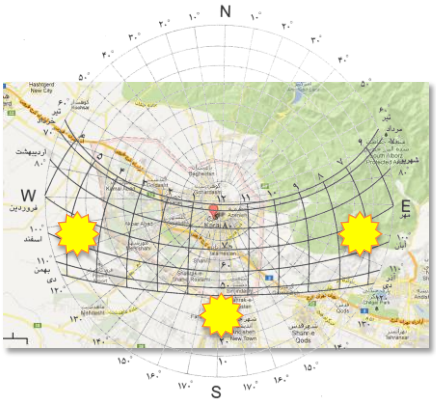

Figure 3: The path of the sun

Designing Green Areas in Hospitals

Now the questions arise here are whether any green areas have all the advantages mentioned above? Are there any guidelines for designing green areas having the most positive impacts in medical clinics? To respond there questions, let us refer to the current article of "healthy garden design theory" written by Professor "Roger Ulrich" which is the result of years of research and study in this field. In summary, accordingly to this theory, green areas can reduce stress. Good quality and the general principles of designing green areas in medical centers for having a maximum performance are as follows:

Making an Opportunity for Doing Physical Exercises

Doing exercises have lots of physical and mental benefits including cardiovascular health, and stress and depression reduction. Green areas should be designed in a way that provides long and short hiking trails. They also should consider suitable spaces for therapists to work with patients with physical disabilities and the strokes. Areas for kids to run and discharge their energies are also needed.

Making an Opportunity to Opt, Having a Privacy and Experience having Control on Environment

Entering the hospital, patients feel no control over their affairs. The patient's medical staffs decide for patients what to wear, what to eat, when to see the doctor and, etc.

Stress, resulting of loss of control, causes a negative effect on the immune system and the patient’s physical balance.

Interviews indicate that recovery of sense of control over the affairs is one of the main motivations of designing green areas in medical centers. Going to nature is a kind of liberation.

Gardens must be available for patients and they should benefit from them as they wish in order to reduce their stress with creating a sense of control over the environment.

Garden designing should give a choice to people; a choice of being alone or with others, sitting in the sun or shade, broad perspective or closed, fixed or movable benches and various hiking trails; all of these reinforce the feeling of independency.

Building an Environment to Get Together and Having Social Interactions

Research shows that people with high social relationships are healthier and more relaxed than dissociable ones. Because, strong social relationships facilitate healing and freedom from disease. Thus, there is a high tendency towards long hour meetings, chatting and interactions and also, attractive waiting places in medical environments. That is better to have green areas near patients' rooms and the entrance of the hospital's waiting halls so that small groups can come together. Outdoor portable tables and chairs should be designed for families or staffs.

Having Access to Nature

Without reducing energy from human, nature draws attentions. Green areas calm the mind, stimulate the senses, reduce stress, and help people to guide their inner therapeutic resources.

In order to have gardens and green areas with greater therapeutic benefit, they should be filled with flowers and plants; plants that change with the seasons.

Species diversity is particularly effective where weak and slow people walk or sit on the benches for a long time. Green areas should have the vision of the sky and changes of cloud shapes, pools that reflect the image of the sky and the trees in themselves to remind patients that life is going on.

Water voices should be heard and if possible, have a perspective on the horizon. Sit builders and architects need to work together to make sure those patients' rooms, waiting halls, corridors and staff work areas have a landscape perspective, at least.

In addition to these four basic design guidelines, Professor Roger Ulrich's observations of more than a hundred of green areas in four countries of the US, the UK, Canada and Australia indicate that following factors are necessary to have the best and the most effective green areas:

Being Exposed to Views

Results of a hundred of medical centers indicate that green areas are in people's sight only in three centers. People should know that there is a garden!

Green areas should be visible from the entrance hall of the building or the main entrance, so there is no need to install the boards.

Availability

Patients of any ages and abilities must be able to enter the green area and take advantage. The hiking trails must be flat and smooth so that even patients on beds or wheelchairs can be carried out easily.

Familiarity

Feeling fearful and anxious, people prefer a familiar and comforting environment. A depressed patient may be reluctant to leave his bed or a worried patient may prefer familiar surroundings of home.

Having familiar plants and landscape equipment are the principles of aesthetics, which have roots in the culture of the people. These recommendations, especially in the dormitories, and for patients who suffer from Alzheimer's are very important and useful.

Silence

If the green space in medical treatment is really worthy, silence is also necessary to be established.

People who use a garden should feel peace and be able to hear the birds singing, the wind blowing and the water fountain falling down.

In the designing phase, it is essential to consider green areas away from traffic, parking, and a helicopter landing site.

Comfort and Convenience

Patients are often sensitive. Visitors and staff must feel secure mentally, psychologically, and physical. Green areas have to be in a way that the patients do not feel constrained.

Going to landscapes, patients or staff should be able to relax in total comfort and close their eyes or lie under the sun.

Using Positive and Unambiguous Arts

Often when people are stressed, they tend to project part of their anxiety and worry to objects and people around them. Nidental and others, offer the concept of "emotional adjustment" which means that when a person is faced with a number of external stimuli, that part which is more in harmony with his emotional

state is at the center of his attention. So, while an abstract art may seem interesting and challenging to a normal human being, it may seem scary or threatening to someone who is stressed. Accordingly, in a health center which aims to reduce stress, sculptures and other works should necessary have a clear and positive message for patients.

Green Areas Designing Ideas in Health Centers

One of the following ideas could be apply in the process of designing green areas in a health center and within it, in compliance with the above principles, create desired space qualities.

Spaces Taken from the Archetype

In designing green areas in health centers, an approach inspired by archetypes like hills, caves, forests, rivers, bridges, and etc. can be used. Patients project their fears and pleasures to the elements in gardens and thus, leave the treatment period behind.

Use of Metaphor

In designing green areas of health centers, a metaphor could be patterned. For example, green areas in Goodsamarytan Hospital (Arizona, the U.S.), the metaphor of "life cycle" has been used as the main subject. Flow of water starts from down of spring, which marks the beginning of the birth, the flow then goes through the stony path which is a symbol of the passing of time, and ends to a quiet pond, which marks the end of life. Although there may be few people who find the metaphorical design, the fact that a variety of static and flowing waters is seen, heard and touched, and also the plant diversity and variety of places to sit, lead to therapeutic environment which could be used.

Use of Historical Patterns

Site and building designers get help from historical examples. Some of the gardens of health plans are better than others and some are tailored to particular environments. The "Kurt Yard" (central courtyard) is a good model. The advantage of this model is that it has a closed and protected space and it is a limited part of a hospital.

As a result, patients can wear comfortably to shuttle in the area. The medieval monastery garden is one of the oldest examples of historical gardens which are not used as a model today. However, this model may be appropriate for elderly care centers or centers for chronic diseases.

Use of Home Patterns

Two examples of this model have been applied in the design of green area for the elderly. Porch designing or gardens with home patterns in front of a building may be appropriate in centers where residents are not physically or mentally ill but they are only weak or disable.

Replication of Local Context

It sounds normal for a building designer to build a new structure with inspiration from the surrounding contexts. It is not clear whether regional contexts can be helpful in the design of the gardens of hospitals or not. Researchers are still under investigation, in this regard.

Innovations and Artistic Expressions

Designers are often keen on creating new and innovative forms different from the previous examples. But innovation in the design of green area environments in health centers may fail due to lack of guidelines mentioned. When the word "healing" is used about the green areas in hospitals, it makes the designer to function off his aesthetic taste for implying a “user-centered” designing end.

Use of Medical Diagnosis and Treatment

In remedial landscape designing, there is a certain trend in creating an open space to meet the treatment needs of patients. In fact, garden is a place and a kind of tool for their treatments.For example:

Green area for rehabilitation

Green area for people with Alzheimer and other diseases of confusion

Green area for people with HIV / AIDS

Green area for cancerous patients

Discussion and Conclusion

However, Designing and implementing green areas in hospitals does not cost more than building and mobilizing, it has great advantages, instead.

- Probable benefits:

Stress reduction for patients, staff and visitors
Patients' pain reduction
Depression reduction (especially with doing exercises and sports in green areas)
Creating a higher quality of life for permanent patients (especially with doing exercises and sports in green areas)
Improving routing capability and...

- Potential benefits:

Cost reduction, shorter hospitalization duration and less use of strong pain killers
Increasing physical activity and strengthening feeling of independency in them
Patients satisfaction
Increasing staff job satisfaction and...

Thus, today, designing and implementing green areas with healing properties in health centers seem necessary in our country. The reasons for this neglect are that the internal process of medical profession has sound more important than physical environmental effects. The information and studies about the benefits, impacts and designing principles of these areas is not enough in our country. Green area as a living urban environment is supplementary to the inanimate part, i.e., the physical structure of the city. Today, sociologists, psychologists and doctors believe that they have a greater role in human health rather than just provide environment and residential places healthy. They point that making patients to spend daily hours for leisure time in these areas would be more important and have more positive impacts on their progress. Given the points above, the importance of the role of green areas in the urban quality of life and mental and psychological health are realized. Patients' health, urban sustainability, quantity, quality, and psycho-social and ecological efficiency of urban landscape is one of the sustainable urban designing and planning that the municipal authorities and the authorities should make every effort to estimate it, especially in the planning for the construction of new health centers which should meet the needs of each patient with having an appropriate designing and positioning.

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