RECOGNITION OF MEDICAL ENVIRONMENTS DESIGN INDEXES
BASED ON ISLAMIC CONCEPTS

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ABSTRACT
The principle of treatment is based on the modern science and chemical medicine. Still, a significant number of diseases fall out of the territory of modern science and are thus non-treatable. Assuming that the environment affects patients and as a result can create feelings in them, including the sense of ease and peace of mind, reduction in anxiety levels and increase in the level of hope and optimism, could be concluded that mental status is a critical factor in the treatment process. What connects these two factors, mental status and medical treatment, is the medical environment and spaces. In this research, the focus will be on influential factors on the design of medical environment extracted from the Islamic versus and literature. The methodology of this research is analytical-descriptive and is based on bibliographical studies.

Keywords: Medical Environment, Islamic Architecture, Design Framework, Treatment, Quran

INTRODUCTION
To less defines Psychology of Religion as: "Psychological study of religion is an effort to understand the religious behavior through application of psychological principles, which is resulted from the study of behavior in its general form. In other words, religious psychology is a branch of psychology that its mission is to review the role of religion in human life and mental health (Sheikhi, 2002).

Faith is undoubtedly the most effective treatment for anxiety. Faith is a force that must be present to aid human being in life (Nejati, 2006).

According to emphasized principles in Islamic texts and literature, some appropriate and practical measures for mental and physical treatment of patient can be extracted, and compared with the modern medical facilities standards, a contemporary made interpretation proportional to the time circumstances may be addressed. This would be possible with psychological understanding of religion, foundations expressed in the Qur'an and the Hadith.

MATERIALS AND METHODS
Research Methodology
The approach used in this study was an analytical – descriptive study based on documentary -library studies.

Topic Basics and Literature
Psychological Approach to Religion
Psychology of Religion examines and studies the religion from the psychological point of view. In this practice, the religious behavior is studied based on the general mechanisms of behavior. Nevertheless, religion is one of the most profound personal aspects of the human that encompasses some of the most mysterious and the most indescribable issues of human experiences. Thus, we can predict that the measurement and study of religious behavior would seem so difficult (Vaezi, 2010).

Mental Health
Mental health is one of the important and central areas of health and well-being that has drawn the attention of experts and elites in medical and health fields in recent years so that the World Health Organization (WHO) has mentioned it as one of the three pillars of health in a definition. Public health is
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a complex issue that is affected by many factors, including heredity, upbringing, psychological traumas, nutrition, diseases, culture and religious beliefs (Marashi, 2000).

William James, a pioneer in introducing the fact in psychology believes that:

In Islam perspective, the fundamental treatment method of mental disorders, including anxiety and worry is remembering the God, and it is believed that man can achieve peace of mind by creating a spiritual connection with the source of existence. Several studies have shown that spirituality and religiosity have an undeniable impact on mental health. Even being religious due to intrinsic and extrinsic factors makes a clear difference in people's mental health. Allport was the first person who studied the issue scientifically. Associated with Ross, he designed a scale to determine the intrinsic and extrinsic religious orientation.

**Quran Treatment and Medicine**

The medicine of Quran is based on Quran ayahs (verses), which is however scientific and in accordance with modern day. There are more than 160 verses of the Quran in this regard. The most important and most fundamental goal of Quran medicine is to prevent physical and mental diseases. In medicine of the Quran, the human main stated in the Quran is promoted. The drugs in this medicine are the same food in everyday life, and hence, the position of nutrition is very important in Quran medicine (Khodadai, 2013: 73).

The world medical community has found the importance of natural healing methods and schools of traditional and complementary medicines, and many research schools and centers in the West and East of the world are working on employing different medical approaches with scientific and historical reputation and records. Extraordinary spread of traditional Chinese medicine, Tibetan medicine, Chiropractics, Ayurveda, Homeopathy and hundreds of various schools and methods indicates this global movement. This movement has caused the tendency in doctors and researchers in Iran and in the rest of the world to get familiar with the basics of traditional medicine (Ghaafari, 2011).

**The Relationship between Therapeutic Architecture and Quran Principles**

The medicine of Quran is developed based on human nature and character, while modern medicine is formed based on experience and experimentation. The combination of these two approaches and principled development for designing the architecture of relevant treatment centers can make a revolution in religious and medical sciences.

Study of architecture in the Quran does not lead to a cohesive whole, and ultimately leads to a sparse set of observations that fall in two categories: Direct references to artifacts and buildings and indirect references for making artifacts and designing sites and buildings (Malcolm, 1992). Among Quranic references to discussions of architecture, the following can be mentioned as an example:

The word that is usually translated to a "palace" or "sumptuous building" has been mentioned in verse 44 of Surah AL-NAML (THE ANT), verse 38 of Surah AL-QASAS (THE STORY) and verse 36 of Surah AL-MUMENOON (THE BELIEVERS), and the root of the word implies some kind of purity and clarity. Thus, the term most likely refers to the internal transparency within a building rather than its appearance. Religious anthropology: From the viewpoint of Imam Ali (AS)

According to the anthropological vision of Imam Ali (AS), the impacts of environment on the human can be evaluated from four perspectives.

<table>
<thead>
<tr>
<th>Dual affiliated properties</th>
<th>Five Forces</th>
<th>NAFS stages (soul)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Happiness and sadness of self</td>
<td>Maintaining, Nurturing, Excreting, Digesting, Absorbing</td>
<td>Plant growing, Animal sensing, Sacred planner</td>
</tr>
<tr>
<td>Happiness and reduced growth</td>
<td>Touching, Tasting, Smelling, Seeing, Hearing</td>
<td></td>
</tr>
<tr>
<td>Wisdom and Punishment</td>
<td>Patience, Knowledge, Rosary, Planning</td>
<td></td>
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</tbody>
</table>

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According to the table provided on this basis, the human being can be recognized from the lowest to the highest stages of being and creation. Here, we first outlined the factors affecting human comfort and peace according to the Imams (AS) sayings and the revelations of Quran. Then, after identifying these factors, the researchers' theories about the mentioned factors in verses were discussed. According to Table 1, at the first two degrees, man is at the lowest of his being position. In both of these stages, the human has been mentioned as a passive and stimulating being in front of environmental events; therefore, his cognition tool would be generally considered as his five senses. In the higher level of self, the human can be considered a being with wisdom and prudence that always has the ability to compare and analyze the factors. In this dignity, as a researcher, he performs a variety of tests and experiments, and thus suggests the ideas that can be fully verified scientifically. At the highest level of soul, with respect to the anthropology of Imam Ali (AS), the man is mentioned as the Queen of God. At this stage, referring to the revelations of Quran, the man has found a divine position. Infallible Imams (AS) can be considered at such a position. All statements and sayings of infallible Imams (AS) are accepted for every Muslim as strong evidence, and therefore, there would be no doubt about their accuracy and validity for every Muslim.

RESULTS AND DISCUSSION

Results

Therapeutic Indicators in Islamic Texts

Study the healing and curative agents according to the great texts of Islam to identify factors influencing the human health, and thereby, creating health at time of diseases, we searched for exhilarating and relaxing elements. The conclusion is that if as destined in the existences system, one can utilizes the nature with exact rational observing (without any carelessness), he would never become sick, and non-compliance of an enjoyment of nature will cause illness and abnormalities in the body.

Relaxation and Lack of Anxiety

According to the verses of the Qur'an, peace has been always spoken about. Also, peace has been mentioned as the ultimate level of happiness and as the greatest blessing, as far the reward of the believers has been considered as peace and confidence. Among them, we can mention the following verses:

- Those who believe, and whose hearts find comfort in the remembrance of Allah that hearts are satisfied (Surah AL-RAD, verse 28).
- It was he who sent down tranquility into the believers so that they might add belief upon belief. To Allah belong the armies of the heavens and the earth. Allah is the knower, the wise (Surah AL-FATH, verse 4).
- Those who believe and have not confounded their belief with harm security belongs to them; and they are guided (Surah AL-ANAAM, verse 82).
- To demonstrate the importance of peace, we can mention the following Hadith and sayings:
  - Imam Bagher (AS) said: "Relaxation and peace is as the same as faith".
  - Prophet Muhammad (pbuh) said: "The best ornament of a man is calmness associated with faith".

Considering these verses, the necessity and importance of peace in humans can be found. Also, hoping and trusting in God are as considered as factors addressed in disease healing and patience in difficult situations.

Happiness causing factors are recognized in this category due to playing role in providing peace and comfort and reducing anxiety in humans. To demonstrate the importance of joy and harmfulness of sorrow and grief, and thereby anxiety, it is sufficient to mention a Hadith quoted from Imam Ali (AS):

- Imam Ali (AS) said: "He who has much sorrow and regret, his body gets sick.
- Therefore, the lack of relaxation and peace, anxiety, sorrow and grief are as pathogenic agents, which reduction will significantly influences the healing of patients. Thus, in the next section, all joy creating factors in humans were addressed due to the great texts of Islam.
Joyful Elements in Islamic Texts

In the search for joyful factors, the points expressed in traditions and Hadith can be mentioned, and by interpretation of the factors mentioned above in hadiths and verses, the happiness causing factors can be extracted. The following traditions and hadiths are stated as sources of creating happiness according to Islamic texts in this category. In another hadith of Imam Reza (AS), among factors that contribute to the health and happiness of man, the presence of running water and looking at greens have been noted:

- Imam Reza (AS) said: "There are three things that clarify the eye: Looking at the greens, running water and beautiful figure.

In interpret this hadith, in addition to the presence of greens and nature, the positive effects of water presence can be found; thus, the Hadith of running water is considered as causes of health. According to Imam Ali (AS) sayings, the importance of greens presence and other factors in creating happiness and elimination of sorrow can be realized. Among them we can mention the following hadith:

- Imam Ali (AS) said: "Perfume, honey, horseback riding and looking at greens lead to joy and happiness and kills grief and sorrow.

- What is derived the said hadith, is the presence of a sweet fragrance in addition to nature and the elements resulting from. According to the sayings, the following elements can be named in order to improve the disease condition and create peace, and thus leading to the patient healing.

Nature

- A hadith from Prophet Mohammad (PBUH): "Happiness occurs by looking at the greens".

According to the hadith, the greens mentioned in this hadith can be evaluated from two perspectives. Firstly, the presence of garden and greens can cause man's happiness and vitality. Secondly, the green, given its color, makes positive impact on humans, and thus, the effects of colors on humans can be addressed.

The Quran has also stated that nature will relieve distress. God introduces nature and green plants as embodiment of joy and happiness; "Is he who created the heavens and the earth, and sent water from the sky for you and caused gardens to grow full of beauty of which its tree you could never grow, is there a god with Allah? No, but they are a nation who set up equals with him! (AL-NAML (THE ANT), verse 60).

The joy and happiness of plants and trees creates an incentive for human and leads him toward development and prosperity of the land and hoping to life. As Allama Sharani (RA) writes in this regard: "Flourishing of green plants, trees, flowers and blooms that are mentioned in these verses, gives the man zest and vitality to develop the land, leading to increased cultivation and planting and increased the people income" (EslamPour, 2007, 41).

In Islamic doctrine, the impact of nature on human has been discussed in a variety of ways. In Quran, many descriptions of heaven and paradise gardens have been made, which suggest the man desires and the nature impact on him. In these verses, the paradise gardens have been cited as the exalted status of human in hereafter that symbolizes his image of ultimate peace and joy.

The one who created man, created this flourishing, beautiful and pleasing nature for him. There is the ultimate continuity, connection and order within the whole collection and harmony can be seen between all individual components of this complex, which imply the existence of a unique, resourceful and wise creator. In addition to the soothing effects on human leading to comforting and reduced effects of the disease, the nature, by reminding an image of man of heaven, and because of his innate tendencies to nature and green space, will strengthen a sense of faith and hope in him, and accordingly accelerates his physical recovery.

Color

The Holy Quran is a miracle of various aspects, and scientific miracle is one of such dimensions. The miracle of colors is an issue that has less been addressed and discussed; while proving it, another aspect of scientific miracles of Quran would become clear. In a hadith from Imam Sadiq (AS), it was said: "If there were the eyes, but no color existed, there would be no benefit for the eyes." The holiness also spoke
of the effects of colors like green and blue separately and accordingly pointed out to different properties and characteristics of colors and their influence on humans. He said:
"Think about the color of sky and the friendliness within it, since this color is the most compatible color with the eyes and strengthen the color for them. Thus, the physicians recommended those who experienced illnesses resulting in injuries and damage to their eyes to look at continuously at green color and blackish green. The mastering physicians used to recommend this for those with tired eyes to look at a green colored dish full of water."

Sweet Fragrance
In sayings and hadiths, the healing properties and effects of nice odor and sweet fragrance are directly mentioned:

- Imam Ali (AS) said: Sweet fragrance has healing effects (Nahj al-Balagha, Alhekmah 400).
- Prophet Muhammad (PBUH) said: "The sweet odor strengthens the heart" (Mizan Alhkmh).

Some traditions and narratives have mentioned the positive and dramatic effects of smelling flowers or special trees on the human psyche; as it is ordered to smell the Roses and Amaryllis, etc., and the perfume scent of angels has been resembled to the sweet fragrance of flowers.

- Imam Reza (AS): "Smell amaryllis, since it protects you from the cold".

Elsewhere quoted the Prophet (PBUH) regarding the impact of smells in the prevention of skin diseases, it was said:

- Smell Narcissus, once a day, once every few weeks, once every few month, once every few years, and once every few lifetimes. According to the traditions set forth, the sweet fragrances and perfume of plants are classified among therapeutic agents; however, with respect to some specific pharmacological effects of various plants, occurring effects opposite the process of improving may also happen.

Consequently, the use of plants perfume should be done with full attention to the conditions of the patient and with the physician's observation.

Running Water
Everything arises from water. Water as the origin source of creation is the lifeblood and has a significant impact on the human body and soul; The Holy Quran addresses water in many verses:
"Have the unbelievers not seen that the heavens and the earth were sewn up as one (solid) mass, then we unstitched them, and that we made every living thing of water? Will they not believe!" (Surah AL-ANBIYA (THE PROPHETS), verse 30).

Muslims see the water with a look full of purity, holiness and majesty. Water is a means that provides the context of communication with their Idol (God). In Islam, nobody can intones to the God and stands in prayer in his holy shrine, unless he washes himself with water.

Water is always mentioned as a natural element found in gardens. Describing Heaven Gardens and the human eternal habitation, the streams flowing under the trees are used to describe the paradise:
"And there we made gardens of palms and vines, and in it we caused fountains to gush forth," (Surah YA-SEEN (YA-SEEN), Verse 34).

Water can causes joy and comfort for man in reminding him of heaven and in conformity with match the sublime nature of man, and also can create in him a sense of happiness because of making soothing sounds.

Watching the water requires thanking the God. In addition, looking at running water is recommended in traditions, which is considered to be the cause eye luster and increasing its light.

It is quoted from Imam Sadiq (AS): Four things make the face clear and bright that one of them is looking at running water.
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According to these traditions and narratives, looking at the running water flowing plays a significant role in developing spiritual happiness and expansion, and further to clarifying the heart eye and enhancing human vision, it has a considerable impact in strengthening the light of physical eye. In addition, some waters, such as rain water, boiled water, Zamzam water, the water of the Euphrates, etc. have been exalted more, and the wondrous works of them of human flesh and spirit have been mentioned.

Light

The importance of light has been extremely emphasized of Islamic texts. Light is one of the Well Names of God is Well:

"Allah is the lighter of the heavens and the earth" (Surah AL-NOOR (THE LIGHT), 35).

Quran does not know light and darkness equal and considers the light superior to the darkness (Surah AL-RAD (THE THUNDER), verse 16; Surah FATIR (THE ANGELS), verse 20).

Given the emphasis on light in the Holy Quran and according to the light that always the infallible Imams, the importance of light can be realized, and since the light source in the nature is Sun, it can be concluded that the sun also has unique features. Since in Islam, the light has only good features, the effects of the sun's natural light should be useful. Thus, in this topic, the sunlight was named as a useful element on human health.

Treatment Indicators in the Modern Scientific Theories

Nature

It has proven in studies that with an opened up window with a scene of nature, the patients have had a faster recovery with less pain after surgeries. In these experiments, examining the numbers of days admitted after surgery, dosage of drugs used per day, drug side effects, dosage of anti-anxiety drugs used and pain between the two groups of patients, a group resting in rooms with windows facing the green space and the other group in rooms with a window facing the wall, it was proven that the green space (natural or synthetic) had a positive impact on patients' improvement process (Ulrich, 1984).

In studies on domestic environments, it was reported that living in environments with natural vision and perspective in comparison with urban landscape has been associated with more satisfaction. To prove the effectiveness of nature, other studies have been done by videotape on patients. These experiments demonstrated that the group in which some images without sound of nature has been displayed has shown a higher pain threshold (Kaplan, 2001).

Color

Color as the main factor of causing variation in healing gardens is the excitation factor of the sense of sight, and influences the mind and thoughts, performance, health and even the human relationships (Ulrich, 1984). The colors have different properties and can induce healing effects. For example, blue is the color of healing and therapeutic environment, since it creates a sense of ease and leisure and comfort. Therefore, in the therapeutic spaces, the combination of soothing colors can be used in different spaces. In a survey conducted on staff of Khalili Hospital, Shiraz, after creating images and paintings with happy colors on the walls, the employees' and client satisfaction increased (Hayede, 2007). The evaluations made in Louisiana and Purdue Universities in America showed that the yellow color relates the joy and cheerfulness, and that is what the Quran has said fifteen centuries before (Paknejad, 1985). Yellow is thought provocative. It is effective on psychological and intellectual shortage and can calm some nervous states. Yellow is a warm color, and psychology experiments have proved that a lot of yellow color makes happiness (The same: 1).

In color therapy, quoted from the Persian physician, Avicenna, in the "Book of Law", the yellow color reduces inflammation and pain (Pauline Wales, 1: 2007).

In psychiatric hospitals, the isolated and immobile patients are treated by placing them in yellow light and color (Ayatollahi, 2000). The golden color is used to treat depression. Anglo-pacific medicine claims that the golden color makes the circulation more fluid and increases body temperature and activates the nervous system (Pauline, 2007).

The color green is the most relaxing color, a sign of life, growth and immortality according to the psychologists (Nassaji, 2011).
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Water
In a study conducted on patients, clients and the staff in Healing Gardens of Children's Cancer Hospital in California, the observations gathered about the rate use of different places. In the garden indicated that the highest welcomed profile and view in the garden was the pond and its fountain (Ulrich, 2005).

Water, using the senses of sight and hearing, directly, and the sense of touching by creating a cooling and breeze, indirectly, strengthens the sense of being present at the moment in an individual (Shahcheraghi, 2007). This leads to the loss of focusing on the disease, and thus, increases the pain threshold (Ulrich, 1983; Ulrich et al., 1991).

Light
Sunlight is the most complete and the best and most favorable light. Natural light and visual communication with the outside world in the environment of human life, in addition to increasing the efficiency leads to reduced anxiety, improved behavior and also increased person's health and comfort (Nikbakht, 2005).

Also, the use of daylight, due to creating a sense of continuity and familiarity with natural environment, provides better and more pleasant conditions for individuals (Miller, 1994). Basically, lighting affects humans in two direct and indirect ways; its direct impact results from changes in the quality of vision, and its indirect effect is a result of light ability change the motivation, states and modes and correcting and modifying hormonal balance of the body (Ayatollahi, 2000).

Studies on recent seals research indicates that the special therapeutic effect of light on some physical and mental diseases and it can largely effective in the treatment of these diseases. Studies of an Optical Research Center suggested increased activities and higher precision in doing tasks of night shift nurses after exposure to daylight (Malcolm, 1992).

Other health benefits of accessing to natural light in hospital admission rooms include shorter hospital stay in patients after surgeries and lower use of analgesics. The nurses' complaints of patients were also less (Ulrich, 2005). In therapeutic environment, in addition to embedding windows, building appropriate skylights in different places such as waiting areas, corridors and entries into various sections, the required natural light in the environment can be provided.

Interaction with the Environment through the Five Senses
In this section with separating the recognition of the natural environment by human five senses, some views expressed on these senses were discussed.

Vision or Sight Sense (Visual Perception)
The first considered sense in these gardens was the visual perception or sense of sight. Different spaces in the garden create landscape diversity and motivate a sense of discovery and exploration of the environment in people. Tens of years of research has shown that different colors seen in the gardens can influence the thoughts, health performance and even the communications and relationships of humans with each other (Malcolm, 1992). It has been also mentioned that diverse spaces develop desire and motivation in a person to explore the environment by stimulating his/her sense of sight (Ulrich, 2005).

Smell and Taste
There are about five million receptor cells in our nose that are linked and related to a part of the brain called as limbic system. This part of the brain affects controlling the emotions, behaviors and long-term memory. When an odor or smell is detected, this sense stimulates the deepest parts of the brain, followed by an emotional reaction or response. Recent studies show that essentially there is a connection between mood and the foods smell. All studies of the current century indicate the impact of smell on emotions, memory, stress and pain (Paknejad, 1985).

In the gardens, a variety of different perfumes and odors are created with different effects on people, which make the sense of presence and mindfulness at the moment. This in its turn can improve the patient's condition by removing the patient's focus on pain and disease issues. However, taking into
account the patients' conditions, the planting process should be treated under the supervision of medical experts to prevent negative impacts on patient treatment trend (Nikbakht, 2005).

The aroma of herbs can also be helpful in reducing stress. For example, linalool is a type of aromatic compounds in plants that exist in many foods and flowers, and its stress reduction effects have been proven (Taban Specialized Community of Physicians). In addition to plants aromas, other elements such as creating the smell of moisture at different points in the garden can be used to stimulate these senses.

**Touch**

Tactile or touch is a sensation that has been less addressed in these gardens. By planting a variety of trees and creating a direct relationship with the passage of patients, this sense can be developed. Also, using different figures in the garden, with stimulation of curiosity and tactile senses, can cause the willing to explore the environment by the patient (Ulrich, 2005). Constructing different paving (due to the ease of movement of the patients) and the presence of cool weather and breeze due to presence of water and plants can create the sense of diversity by the sense of touch. This feeling can be also created in human by thermal receptors (Shahcheraghi, 2010). This sense can be stimulated by embedding canopies in different places or sense of direct sunlight. Given the favorable effects of natural light and considering its rate, the positive results can be used for physical improvement.

**Hearing**

Sounds, like the other senses, can reduce the patient's feeling of pain and anxiety. The invitation rate of environment to attract a variety of birds, and also the sounds of wind passing through the trees turn causes the excitation of hearing sense (Shahcheraghi, 2010). However, water as the main source of natural using of this sense feeling has long been addressed in these gardens. The sound of flowing water and the use of variety of fountains can have an extremely favorable effect on individuals. It should be noted that for more impact of this sense, the placement of the garden in the medical area should be considered to be far away from noise pollution in urban areas in order to increase the healing effects.

### Table 2: Type of stimulus affecting the five senses

<table>
<thead>
<tr>
<th>Touch</th>
<th>Smell-Hearing</th>
<th>Hearing</th>
<th>Sight</th>
<th>Senses</th>
</tr>
</thead>
<tbody>
<tr>
<td>water plants</td>
<td>plants</td>
<td>sound, water</td>
<td>water</td>
<td></td>
</tr>
</tbody>
</table>

**Conclusion**

Given the mentioned factors and with identifying and understanding their type of influencing, general guidelines can be provided to improve the designing of therapeutic environments in order to influence the patient, reduce anxiety and increase joy and hope, and ultimately to improve the patients' conditions. These indices have been extracted from religious texts and adapting them to the needs of today's society:

<table>
<thead>
<tr>
<th>Elements</th>
<th>Interior design</th>
<th>Exterior design</th>
<th>Type of effect on senses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nature</td>
<td>Creating patio</td>
<td>Healing gardens</td>
<td>All five senses</td>
</tr>
<tr>
<td>Color</td>
<td>Right combination of colors</td>
<td>Combinations of vision plants</td>
<td>Sight</td>
</tr>
<tr>
<td>Good smell</td>
<td>Using medicinal plants ordered by a physician</td>
<td>Using medicinal plants ordered by a physician</td>
<td>Smell – Taste</td>
</tr>
<tr>
<td>Flowing water</td>
<td>Creating fountains in the corridors</td>
<td>Creating flowing water, lakes</td>
<td>Sight, Hearing, Touch</td>
</tr>
<tr>
<td>Light</td>
<td>Creating skylight and contact with the external environment</td>
<td>Creating canopy</td>
<td>Sight, Touch</td>
</tr>
</tbody>
</table>
REFERENCES


