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Visual therapy through the application of plants and design elements in landscape

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Abstract. This paper will explore how visual therapy can help to reduce stress through the use of plants and appropriate design elements. Urban residents in general are experiencing mental stress due to life pressure. With limited usage of the green spaces, the visual landscape has become more significant in how parks can be enjoyed by users while maintaining safe social distancing. One of the functions of using plants in landscape design is as visual therapy to tackle the mental stress problems. Other than plants, applications of basic design elements may help to contribute to the positive properties of the visual landscape. Literature review was used to cover the subject of visual therapy in the landscape. The results have shown that: i-'visual natural element' gives a positive impression of the soul and creates a feeling of calmness, ii-visual characteristics of the plant such as form, colour and texture contributed to the effect of therapy in the landscape. The results from this study may help to highlight the importance of landscape as a form of visual therapy after Covid-19 and the highlighted characteristics of the plants and design elements may present opportunities for landscape architects to help build more usable green spaces and cities.

1. Introduction

Landscape can be defined in many ways. A general definition of landscape, is the outdoor environment, natural or built, which can directly be perceived by a person visiting and using that environment [1]. A scene (visual), is the subset of a landscape, which is viewed from one location (vantage point) looking in one direction". added that the integrated image can produce a subjective impression [2].

People living in large cities in general have stress on because life pressure and city congestion. some Previous studies have addressed the issue such as; therapy Park is usually referred to as a garden that has a diversity of natural elements such as greenery, flowers and water and karekter [3]. High green space levels and lower stress of many minor but nonetheless significant episodes of contact with the natural environment [4]. Natural environments with vegetation and water induce relaxed and less stressful states in observers compared with urban scenes, with no vegetation [5]. The intuitive belief that viewing vegetation, water, and other nature can ameliorate stress dates as far back as the earliest large cities in Persia, China, and Greece [3]. Study results showed that plants as a landscape element have several functions for daily life. One of the functions of a landscape plant is as a visual



therapy to tackle stress problems. Visual landscape element such as plant, water, building, topography. Visual plays a good contributor to the stimulation of stress recovery and gives users a positive impression. Thus, visual therapy in the landscape is emphasized to reduce stress and increase the comfort of emotions and physical experiences. To further understand how the environment can provide therapy to users especially with regards to emotions. This Paper will explain how visual therapy can reduce stress based on the summary of the research results that have been done by previous researchers and theories related to visual landscape as therapy in the landscape.

2. Research methodology

This study used literature review on the summary of the research results that have been done by previous researchers and theories related to visual landscape. The review followed a two-step process, including existing literature and study empirical.

3. Results and discussion

3.1. Visual characteristics of the plant

Plant is one of the most elaborate elements of its use in the landscape because it is alive, growing and developing. Each plant has different characters based on several aspects such as shape, branch, texture and color [6].

3.1.1. Form. There is no one plant on the face of the Earth is said to have a similar form of one hundred percent. Surely every plant has its own unique shape. This is because each plant has different growth and development rates and it can also be distinguished in terms of shape characters such as round, dome, cylinder, cube, fan, umbrella bells, deform, Flatlow, parse in a close and free.

3.1.2. Branching. A branch system that will determine the character, nature and appearance of the plant. Among the examples of the existing branch systems are such as regular, irregular, circular branches, oval, bent, curved and so on.

3.1.3. Color. There is no denying that color plays a very important role in daily life. Colors are often associated with emotional values and can affect a person's character or personal. Plants also have a variety of colors and will be more interesting if combined by forming compositions in a landscape. There are many opinions which say that color can replace or at least close the shortcomings that exist on the shape, nature and system of the fork of something that plant. The color of the plant is derived from the texture of the leaves and flowers and gives a variation of different appearance. There are two spectrum colors which are primary colors and secondary colors where the primary color is like red, orange and yellow that will make a warm or hot tone while the secondary color is like blue, purple and green which gives cool and shady impression. Colour influences are said to affect the environment. For example, to realize a joyful atmosphere it can be obtained by using silver color or soil color like brown from the plant as the base. To give a silent impact is to use a series of yellow, reddish brown and gray color. The use of white color can also make the atmosphere bright and fresh.

3.1.4. Texture. The tree texture is divided into three types, which are smooth, simple and coarse. Each of these textures will give a different impact or effect on something of the landscape. Coarse textured plants will give the impression to the space to become stronger and more stable while the fine-textured plants give the impression of tranquility and tenderness. The texture of something plant is determined by the amount of the leaf that closes the plant as well as the influence of form and size planting. The texture of a plant will also change depending on the density of the leaf as well as the reflection of the exposed light on the leaves. Trees that have a rare leaf density will give a more dramatic impression because of the empty spaces between and the light is penetrated. A stronger light from the back of the tree than the front, Silhouette impression will be formed.

3.2. *Elements of visual design*

Visual landscaping should be emphasized in every landscape design especially in post-pandemic situations. Studies show that 87 percent of the perception of the human mind is through sight [7]. This factor further adds to the importance of the visual landscape in playing an important role when physical distancing is required for various activities in green outdoor areas.

Landscape image does not only comprise its spatial and structural parts but also the formal visual and cultural aesthetic expression of the landscape. In accordance with this holistic image of the landscape the manifestation of these special elements and visual functions is reflective of the natural and cultural coherence and beauty of long functioning natural and cultivated landscape systems [8]. The expert approach has dominated in environmental management practice and the perception-based approach has dominated in research. Both approaches generally accept that landscape quality derives from an interaction between biophysical features of the landscape and perceptual/judgmental processes of the human viewer [9].

What type of elements can make the landscape more visually appealing? One step is to get to know the basic principles for visual landscape design. There are several basic elements that can be applied to visual landscape design. It has listed among others the elements of points, lines, planes and volume. [7].

A point can be defined as a position marker in a space. It needs dimensions or space as an attraction. For example, a small or distant object can be considered as a point that attracts to the surrounding landscape. Landscape objects such as a tree in a strategic position, focal point or vertical structure can act as a contrast to the environment and serve to attract attention. Such positioning of the plants can create curiosity and hence encourage the viewer to further explore and provide relief to the troubled mind.

A line is a projection of a point. This element is important for visual landscape because lines are one of the way in which the brain processes the information obtained visually. There are studies that say there are special cells in the brain that function to identify an object just by observing the lines. This information shows how the brain is very easy to see and process environments that have elements with line quality. Starting from the line, the eye will continue to follow the projections in the resulting landscape design. Natural lines can be created through the use of vegetation patterns, tree trunks and field boundaries [7] Viewing such formation can lead to soft fascination which do not require the brain to process complicated information and thus leads to a restorative state.

Another basic element that can be applied in visual landscape design is the use of planes. In a built environment, the role of a plane can be found in the form of a wall, roof or floor. The plane in the visual landscape is more organic and not rigid. The best example of a natural plane in a visual landscape that provide restoration is a view towards the surface of the lake water without interference with any movement. In the use of plants, a closely spaced row of trees can form a vertical plane and their branches formed the roof plane.

Volume is the three-dimensional extension of a two dimensional plane. The use of plants such as bigger trees species can create spaces and open volumes between them. Climbing plants attached to pergolas are another example of how volume can be created to give a sense of security for those seeking solace in the outdoor areas.

3.3. *The role of plants in visual therapy*

The role of plants in visual therapy can be through the use of color, and the form of plants in realizing the effect of therapy in the landscape. Color therapy has been adopted centuries ago especially to communities in Greece, Egypt, China and Indiana. Color also greatly affects human health and influences emotional response [10]. Based on the readings, here will be described some color characters that can be applied in realizing visual as a therapy:

3.3.1. Purity (*pure, innocent*). In Western countries, white is often associated with all its pure nature while in the eastern state, white is often associated with death ceremonies. In the days of Egypt, the

white color symbolizes the excitement that will result in success. The white color can also be translated inside the landscape garden and will produce an aura that adopts comfort and dignity. White color can be obtained through the use of flower color such as flower Gardenia (*Gardenia yasmoides*) flower Melur (*Yasminum sambac*).

3.3.2. Calm and serene. The blue color is often associated with tranquility. Thus, the existence of lakes, rivers or seas in the area will create a comfortable and calming atmosphere. Blue color is also said to reduce blood pressure and indirectly help us to reduce stress, stabilize the respiratory system and pulse. Light blue color is suitable to be applied in the hospital area because it will help the healing process of the disease. Blue color can be obtained through the use of flower colors such as the tree *Jakaranda filisifolia*, *Langerstromia sp.*

3.3.3. Emotion and attractiveness. Red is always associated with a color full of emotion and a traction. The nature of red is different from the blue color because the red color is depicted can raise blood pressure, increase the system of saturation as well as adding the pulse rate. Red color can be obtained through the use of flower colors such as *Hibiscus rosasinensis*, *Rosa hybrida*.

3.3.4. Cheerful and optimistic. Yellow is the color that is most suitable for creating an atmosphere of joy, intellect, hope and productive. This color is said to be most liked by the children. Yellow color can be obtained through the use of flower colors such as sunflower (*Helianthus annuus*).

3.3.5. Cool and soothing. Green is the most suitable color if we want to change the environment to be quieter and look cool. Green color is also synonymous with growth, fertility and freshness. Green color can be obtained through the use of plant leaves such as the type of trees plants (*Mimusops elengi*) Shrub (*Chrysalidocarpus lutescens*) and ground cover (*Axonopus compressus*).

3.3.6. Peace (serene). A park that has a wide open background will give the observer more space to look at and give a very calming impression on emotions.

3.3.7. Softness (softness). Softness can be made through the design of an informal garden that combines a pedestrian path with a collection of plants such as herbaceous, perennials, annual, bulbs, and a staple, the atmosphere is full of softness and nature-friendly will be created. This form of park is said to be very helpful in realizing the therapy page. In contrast to the garden design that has a uniform design, with a regular arrangement of trees and geometric shapes will certainly produce a whole form of unity.

3.4. Visual therapy park

The garden that uses a soft plant color through daily discoloration and throughout the year will contribute to the stimulation of stress recovery and gives the user a positive impression. Despite this, the perception of any color change is to change over the intensity of the light. For example, light colors such as white and yellow will not seem to affect quickly in the shrinkage of light as dark as purple and black. On the contrary, in the morning it gets brighter sooner than dark. The selection of soft/light colored plants for certain areas within the park is important. Its mis-positions, the position of 'silver-leafed' and 'shrubby perennials' crops at the top and bottom along the rows of stairs, help to make its position fully lit when the lack of evening light. However, the use of one color plant in the park can also contribute to the stimulation of stress recovery and give a positive impression to the user as an example of the use of white flowering plants produce an aura that adopts comfort and dignity. While the color green can turn the environment quieter and look cool. While the use of red flowering plants can increase emotions and traction, the yellow flowering plants create a joyful, intellectual, hope and productive atmosphere. The park that has a wide open background will give the observer the space to look further and to give the emotion a very calming impression (Figure 1).

The Unformal garden design with a collection of plants such as herbaceous, parnnials, annual, bulbs, and renown trees create a gentle and environmentally friendly nature. This form of park is said to be very helpful in realizing the therapy page. In contrast to the garden design that has a uniform design, with a regular structure and geometric shape will certainly produce a whole form of unity.

The garden that uses water element in the form of lake, river or sea in the area will create a comfortable atmosphere, reconciling and tranquility because the water has a special quality in the gardens, although in any way it displays a variety of therapeutic sounds and moods (feelings of heart). The feeling of calm, still encourages passive water and it reflects the mood, as the sound of the splashing noise from the water ejaculate is more comfortable in its condition.

The quality of therapy in water parks has long been known from the beginning of Egypt, Greek/Greek and Roman, and subsequently Parsi, which later introduced ' water features ' when it came to the invasion of the Arab armies. Arab residents have found that the beauty of the Parsi Gardens is as if it were a paradise that has been buried in the Qur'an and with the spread of Islam at the same. With the quality of water that can provide this tranquility, it has been developed into other countries from Spain to India. Nowadays, there are a handful of people who do not describe this therapy and the comfort of the water park in this nature.

Ornamental ponds and fountains are often used in the garden design, especially modern design, beside the 'outdoor features' to be seen and as the front of the reception area. Although without sounding the flow of water, the visual produced itself gives a feeling of calm and comfortable atmosphere.

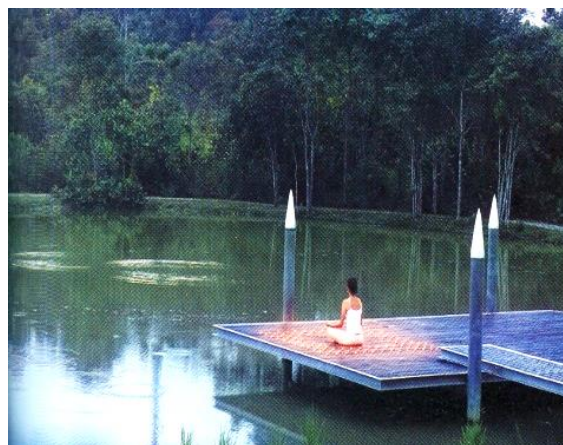


Figure 1. Visual therapi park: kayu manis orchard (landscape architecture year book, 2007).

4. Conclusion

The combination of plant characteristics and basic elements mentioned can help shape the visual landscape with aesthetic features that can be enjoyed either by occupants from multi-storey residences or those who are physically using the public green areas. The design of the green outdoor spaces in the new millennium should take into account how it can be enjoyed not only physically, but also visually. Enjoying the green outdoor spaces should continue to support the improvement of mental health after the pandemic that struck all over the world. Landscapes with attractive visuals as well as facilities will help to increase the use of the external environment by the community of all levels.

References

- [1] Hull B R and Revell G R B 1989 *Issue in Sampling Landscapes for Visual Quality Assessments. Landscape and Urban Planning* **17**
- [2] Arriaza M *et al.*, 2004 assessing the visualourna quality of rural landscapes. *Landscape and Urban Planning* **69** 1

- [3] R S Ulrich 1999 Effects of gardens on health outcomes: theory and research *Healing Gardens* Clare Cooper Marcus
- [4] W Catharine, J Roe, P Aspinall, Mitchell, Angela Clow and David Miller 2012 More green space is linked to less stress in deprived communities: evidence from salivary cortisol *Patterns, Landscape and Urban Planning* **105** 221-229
- [5] Schroeder and Herbert W 1991 Preference and meaning of arboretum landscape combining quantitative and qualitative data *Journal of Psychology* **11** 231- 248
- [6] Robinson N 2004 *The Planting Design Handbook* 2nd Edition (Ashgate Publishing Company)
- [7] Bell S 2020 *Elements of Visual Design in Landscape* 3rd Edition (Routhledge, New York)
- [8] Krause C L 2001 Our visual landscape: managing the landscape under special consideration of visual aspects *Landscape and Urban Planning* **54** 1-4 239-254
- [9] Daniel T C 2001 Whither scenic beauty? visual landscape quality assessment in the 21st century *Landscape and Urban Planning* **54** 1-4 267-281
- [10] Squire 2002 *The Healing Garden: Natural Healing for the Mind, Body and Soul*