

Landscape Design Considerations of a Healing Garden at an Orphanage Centre: Eco-Therapy and Health Wellness

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Abstract: This research paper is based on the different aspects and design concepts of a healing garden for rehabilitation and education centres. The healing garden is not only an open space with lots of landscaping but a healing garden that is a part of nature that is defined as a safe area for users for different activities. The paper is based upon a hypothetical design proposal that is proposed for orphans as a rehabilitation and education centre in Ayodhya, in the state of Uttar Pradesh in India. There are different stakeholders in the centre for catering to the centre with different activities of education, learning, mentorship, and physical development of orphans. The healing garden is provided as a main landscape part in the centre as a relaxing space that includes fun, peace, climate control, and for performing various activities such as an open learning space. The proposed healing garden can satisfy the need for mental trauma and prevent loneliness comfortably. It is a known fact that green spaces reduce the negativity from nature and the environment. A healing garden designed and implemented for this purpose will contribute to the human welfare process. A healing garden designed for children with a feeling of loneliness can be defined as a natural area where children can play in a controlled manner. It will relieve children's physical symptoms, reduce stress and thus make them feel healthier. Orphans who can use this kind of garden will constantly explore different environments and become more cheerful and share. Within the scope of this type of garden, design principles of rehabilitation centre like open learning; public engagement, etc. can be put forward. The overall scheme will improve the quality of life of children with disabilities and provide healing properties such as self-esteem, and a positive effect on personality and personality development.

Keywords: healing garden, landscape design, orphan, health wellness, eco-therapy, rehabilitation

1. Introduction

Landscaping plays an important role in the design of creating a barrier-free environment for building a cultural centre: a combination of hard materials like paving, fountains, furniture, street lighting, etc., and soft landscaping elements as trees, shrubs, and grasses areas used for creating a serene and humane environment with lots of greenery all around. Landscaping is one of the best therapies to overcome loneliness and different mental trauma. It also includes beauty on-site and enhances the value of the building and its surroundings. Water conservation and different SuDS features of landscaping also increase the sustainability of the project and act as livable landscape designs on site (Kreitzer, 2022).

Following are the living elements in landscape design, such as flora, fauna, or what is commonly referred to as gardening efforts in gestalt, the art, and craft of creating beauty within the landscape.

- Natural elements, such as landforms, terrain shape, and elevation or bodies of water.
- Human elements such as structures, buildings, fences, or other material objects created and installed by a human.
- Abstract elements such as the weather and lighting conditions.

For the project like Rehabilitation and Education Centre for Orphans that can be an independent exclusive living space for special children, the different elements of the landscape may lead toward the healing of children who are going through the mental trauma of loneliness and solitude from society. The project type is institutional cum residential so required more green space such as a lawn, healing garden, and also some livable landscapes in the interior like a corridor and courtyard. The proper landscape will deal with the climate and respond positively to micro and climate (Kristo, 2022).

2. Vision of Landscape Design

Landscape designers work on a canvas that is distinctly different from other art forms. The "art" is always changing

as the plants grow, environmental conditions change, and people use the space. For this reason, landscape designers use a design process that systematically considers all aspects of the land, the environment, the growing plants, and the needs of the user to ensure a visually pleasing, functional, and ecologically healthy design (Singh et al., 2021).

2.1 Classification of Landscape Design

2.1.1 Soft Landscaping

It alludes to the landscaping element that involves plants. It involves utilising all types of plants, including those that are found naturally in a landscape, such as trees, bushes, grasses, herbs, etc. Among many other applications of plants in our surrounds, the planting of indigenous plant species promotes the integration of structures into the natural environment, making them appear natural. To create a stunning and useful landscape, both soft and hard elements are used.

2.1.2 Hard Landscaping

Hard landscaping is the construction of a landscape using any non-plant materials. Walkways, roads, decks, walls, ponds, fences, pergolas, etc. are a few examples. Outdoor living spaces are defined by these elements, which collectively and individually make up the ground, vertical, and overhead planes of a landscape. To satisfy a client's needs, hardscape should be employed to complement the plant elements.

2.2 Principle of Landscape Design

Identifying the user's requirements and the site's conditions is the first step in the design process. With this knowledge, the designer arranges the hardscape components—collectively referred to as the features—and plants. The visual attributes of "line, form, color, texture, and visual weight"—the components of design—can be used to physically characterize the aspects. "Proportion, order, repetition, and unity" are the principles, which act as recommendations for arranging or organizing the characteristics to create an aesthetically attractive or beautiful landscape.

3. Landscape Design and Healing Garden

A healing garden is a fun garden setting that offers children a therapeutic or healing setting. By stimulating the body and mind, a garden can serve as a healing tool. Additionally, it might bring comfort through recreation and contact with nature. Healing gardens provide as a platform for learning new talents and honing existing ones.

3.1 Landscape Design Considerations of Healing Garden

a) Site Planning

In order to obtain year-round sun and protection from prevailing winds, garden spaces should be positioned on flat ground (if at all possible). Natural elements like mature trees, rock outcroppings, and watercourses should be preserved whenever possible since they provide the location a distinct natural identity.

b) Indoor – Outdoor Connection

The window view into the garden is essential for kids who cannot go outside. Care must be taken with the size and placement of the windows, the window coverings, and the distance from the beds to the nearest window in order to create this strong visual connection between interior and outside. Wheelchair-bound children must have easy access to the window sill.

c) Garden Spaces Located Next to Play Rooms

For kids and their careers, having gardens close to play areas will save time and energy while also making the gardens more appealing.

d) Garden Spaces Located near Public Areas (Entrances, Waiting Areas, Cafeterias etc.)

Patients and visitors are reinforced with a nice, welcome message when garden spaces are visible from public areas. The outdoor spaces can only be beneficial if visitors are aware of their presence because visiting a hospital is typically a stressful experience.

e) Security

The garden spaces of any site should only be accessible through the security controlled entrance.

f) Micro-Climate

It is important to provide shelter from sun, wind and rain, as the natural elements should not prevent people from visiting the garden.

g) Accessibility to Garden Spaces

The threshold and type of door leading to the garden should be easily managed by children with moving difficulties. On a practical level, doorways should be wide enough to allow wheelchairs, gurneys etc. to pass through without difficulty.

h) Usability of Garden Spaces for Children with Movement Impairments

Designing garden areas so that children using wheelchairs, walkers, cots, and gurneys may use them is important. It is important to pay attention to the width of walkways, the choice of paving materials, and the steepness of ramps. Children in wheelchairs can comfortably navigate the garden without an adult's assistance because of the raised path margins. The garden will be made accessible to a child in a wheelchair with the use of raised planters, water features, and sandboxes. Interesting objects, such as wind chimes or bird feeders, can be positioned in the lower branches of trees for children lying on gurneys.

i) Usability of Garden Spaces for Children with Sensory Impairments

Care should be given to safety, orientation, and way finding for sight-impaired children. Signage is important for hearing-impaired children who need visual clues for orientation and way finding.

j) Art

The inclusion of artists on the design team and the integration of temporary and permanent works of art into the landscape will add aesthetic richness and symbolic meaning to the garden experience.

k) Volunteers

Most therapeutic/healing gardens rely on volunteers to help maintain them and to work with the children. The provision of high quality garden spaces is a major incentive to attract and retain committed volunteers.

l) Storage

Richness and diversity will be added to the garden spaces and the therapy programmers, if many movable items can be stored next to or in the garden space.

m) Maintenance

The landscape design should consider the future maintenance requirements and budget.

4. Basic Concepts of Healing Design

Although understanding the aspects and concepts of design is helpful, it can be challenging to know how to apply them to your ideas everywhere. Every site has different requirements for the elements and concepts and offers different opportunity for creative design and expression. An excellent way to start is by looking at how the features and concepts have been used in a current design that you like. The greatest technique to make a good design is to adapt concepts from appealing designs to your unique site characteristics in order to achieve healing.

4.1 Fundamental of Healing Design

The fundamental concept healing through landscape design is problem solving through the use of horticultural science, artful composition, and spatial organization to create attractive and functional outdoor "rooms or spaces" for different uses. The elements (visual qualities)—line, form, texture, color, and visual weight, and principles (guidelines)—proportion, order, repetition, and unity of design are used to create spaces, connect them, and make them visually pleasing to the eye (Madden, 2022).

4.2 Style and Sense of Healing Design

Consider different yards or landscapes that people appreciate and pay attention to the landscapes to discover and define the personal style. The authors also examine the usage of line in the landscape as well as other design components including color, texture, and form. Analyze the scene and try to figure out how rhythm and balance are produced. To integrate effectively with the internal spaces and places, the spaces are positioned in the healing garden. Additionally, keep an eye out for dominance and consider how unity is created. There is often a strong social desire to feel like part of the community and contribute to the neighborhood fabric. The concept of fitting in is referred to as "genus loci," or having a sense of place. Sense of place also refers to the regional context—the surrounding landscapes, both natural and planned, that have an influence on the design and plant materials to be used. Other sources of inspiration include fruit garden, local environmental garden, and displays of water body as rain garden. Avoid buying plants from major national chain store nurseries since they may not be as ideal for your area and their plants may not be grown locally. In environmental gardens or plazas, search for captivating plant clusters. Each group's microclimate type will decide whether or not it will be successful in the endeavor. Because the growth of the entire community is the goal of this garden. So long as it complies with the requirements for light and shade, I used the exact combination of plant material. Several potted or miniature plants, including champa, were also arranged by the author. They are little plants that smell well and provide a fantastic sense of texture and color composition.

4.3 Locating Features and Defining Outdoor for Healing Design

The architectural style, the shape of the spaces, and the site layout and plan are all determined before the strategy is put into action with logical placement based on the function or type of feature and the site opportunities. Play or recreation

spaces are frequently placed in full view of the building so that administration may monitor kids at play. Other features, like as dog runs and harbor sittings, are sometimes placed on the side of the garden to hide them from view.

4.4 Types of Plants for Healing Design

In addition to helping with landscape design, plants are essential for healing. Plants provide beauty to the landscape and may raise home value, from imposing trees to delicate floral vines. The majority of trees used in gardens have regular growth patterns, such as Gulmohar (*Delonix regia*) and Neem (*Azadirachta indica*). The perimeter of the garden is enhanced by borders delineating a road or a walkway with harbour seating and various SuDS features. Low-growing grasses that spread easily and are local to the area are called ground coverings. Examples include manila and fescue. The permeable stone and coverings are utilized as a long-term ground cover in the landscape.

5. Landscape Design Principles of a Healing Garden

It's crucial to understand the user groups before beginning the design process. The individuals who will use the garden should be the primary consideration when creating it, while the theories should serve as a general framework. Depending on the user groups, there should be a balance between active pursuits and passive enjoyment of the garden (Stigsdotter & Grahn, 2002). It is necessary to identify the group who will be using the garden. They, who? How do they behave? (Grahn & Stigsdotter, 2003)

5.1 Feeling of Security

Since not all gardens offer therapeutic effects, they must possess unique qualities in order to be referred to as healing gardens. Healing gardens ought to engender a sense of safety and security. They could provide psychological serenity and a place for relaxation by being protected and enclosed (Tenngart, 2011). A garden that is alive with vibrant elements like trees, flowers, and bushes can give visitors a sense of security and hope (Stigsdotter & Grahn 2002). Since user groups are more vulnerable, the building's architecture should evoke a sense of security because these groups are more likely to interpret depressing or dangerous messages from their surroundings. The surroundings in therapeutic settings must be unmistakably supportive of the healing process, which calls for the environment to actively encourage healing. Utilizing artwork in the form of sculptures, garden designs, or building facades should be carefully evaluated as the likelihood of creating ambiguous or abstract designs may increase (Cooper Marcus & Barnes 1999).

Predominance of hardscape or constructed material, which may enhance or decrease insecurity and unsafeness, congestion, confusing design features, and urban noise are examples of environmental factors that can aid in stress reduction and recovery. Another crucial element of healing gardens is attachment to the garden. "A garden is a carefully chosen setting that serves as a pristine haven, rich with ecological symbols of safety. They foster a feeling of rootedness and connection to the environment (Tenngart, 2011)

5.2 Understanding User Groups and Their Needs

Participants should find healing and support in healing gardens to enhance their wellbeing. Understanding the target user groups and the garden's purpose is crucial when building healing gardens. What the garden can provide for that particular user group is the next stage (Stigsdotter & Grahn, 2003). One of the most important aspects of therapeutic design, or more specifically, what people perceive and how they interpret it, is according to Cooper Marcus and Barnes an awareness of how people see their surroundings and how they respond to them. The environment's sounds, sights, and smells are examples of external stimuli that the conscious mind can instantly recognise (Cooper Marcus & Barnes, 1999).

5.3 Offering Different Types of Activities

It's important to pay attention to the various forms of communication that are required in healing gardens. A particular kind may connect to a challenging setting. Ponds or other bodies of water, for example, might be the least taxing element of a garden, whereas horticulture might be. Additionally, depending on the visitor's mental level, there are several sections between these that one of them will fit. Ottsson claims that one's life circumstances have an impact on one's encounters in nature. Therefore, the garden ought to provide participants with a range of demand levels (Ottosson, 2001).

5.4 Different Rooms

The garden needs to include a variety of rooms with various personalities. According to research, gardens or parks need to have certain characteristics in order to draw visitors. The ability to communicate with visitors through sight, scent, hearing, etc. is essential for a healing garden. One of the key components of both the Instorative or Cognitive School and the therapeutic Garden School is sensory stimulation. Designers should provide a variety of items to stimulate participants'

senses. They can include various things including feeling stones, smelling flowers, eating berries, and hearing running water (Stigsdotter & Grahn, 2003).

5.5 Basic Characteristics for Rest and Activity

It is believed that there are some basic features in our environment which give quality to it and this quality affects the environment which makes it more attractive or unattractive. These are eight characteristics, which have been claimed by Patrik Grahn in 1991, that are connected to the idea of how environment can have a restorative effect on visitors (Stigsdotter, 2003).

- a) Serene: The place is characterized by peace and silence. There is no rubbish, weeds or disturbing people. Sounds derived from wind, water, birds or insects.
- b) Wild: The place is fascinated by wild nature. Plants seem to be self-sown, rocks are lichen and mossed.
- c) Rich in species: In this environment, you can experience a variety of different species, both plants and animals.
- d) Space: There is a feeling of entering to another world, which is associated with a whole, like a beech forest.
- e) The common: It is an open green field that invites you to stay and provides vistas and views.
- f) The pleasure garden: The place is a refuge, which is enclosed, safe and secluded. There are opportunities to be with yourself and experience or play as well.
- g) Festive: It is a meeting place for social activities and festivity.
- h) Culture: A historical place which offers fascination with course of time.

5.6 Privacy and Social Interaction

Exercise reduces stress plus physical exercise improves psychological well-being. It lessens depression as well. There should be a balance between gardening tasks and simply enjoying the garden passively (Stigsdotter & Grahn, 2003). According to research, those who are socially supported typically experience less stress and have better health than those who are more socially isolated. Additionally, studies reveal that while patients and staff prefer natural, spatially enclosed environments for active socialising, they favour natural, spatially open settings for more passive activities like resting and taking in the surroundings or observing others. For some activities, settings with vegetation are preferable over built environments (Cooper Marcus & Barnes, 1999). Designers must consider how to strike a balance between privacy and social considerations.

5.7 Surrounding and Views

The geographical setting of the garden affects both the garden itself and the garden experience. Understanding the garden's surroundings is crucial. Knowing the location's history is crucial since it demonstrates how the area changed to become what it is today (Stigsdotter & Grahn, 2003).

6. Application and Implementation of Healing Garden

A beautiful environment benefits people's health. This common and basic statement about landscape raises a number of issues regarding the more intricate relationships between outdoor surroundings and health from the standpoint of health promotion. What role does landscape play in fostering physical, mental, and social well-being in relation to health? What kind of landscaping should be used to improve people's health? And who might gain from an environment that promotes health? The environment should be viewed as a multifaceted resource for physical, mental, and social health and wellbeing in the field of health promotion (Meyers, 2021).

6.1 Health Benefits

The Landscape might function as a spatial framework for health-promoting activities in physical, mental, and social realms. These activities are linked to health outcomes and improvements such as:

- Attention restoration,
- Stress recovery,
- Evocation of positive emotions,
- Physical outdoor activities
- Social integration,
- The Collective experience of nature.

To promote health, landscapes need to have certain characteristics that influence human well-being directly or indirectly, and which turn them into "good places" for health. Most important among these are easy access to natural landscapes and the availability of nearby (green) public open spaces. All of our senses must be able to enjoy and find beauty in a landscape.

Everybody should have access to healthy landscapes at home, at work, and during free time, according to the idea that landscape should enhance everyone's health in daily life. However, the following problems to this seem to exist: The preferences, requirements, and uses of individuals for their landscapes vary socially and culturally. Landscapes that promote health are a group-specific issue since different social groupings have varied perceptions of and uses for them. Additionally, not everyone has access to landscapes that are conducive to good health. Inequalities in the distribution of resources may therefore lead to the (re)production of health inequalities through unequal access.

6.2 Relationship Between Healing Design and Health

It is widespread knowledge that exposure to nature, in all of its varied forms, benefits human health. Each of these environmental elements, physiological and psychological states, actions, or circumstances has been scientifically linked to nature and has repercussions for particular outcomes in terms of physical and mental health. In reality, a substantial body of research supports the idea that the landscape has an important impact on how people are treated, recover, and maintain their health. The concept of therapeutic landscapes, a term used in environmental psychology and health geography to denote those restorative places/spaces that provide treatment or healing or that, more generally, restore, improve and maintain health and well-being, is one of the first pieces of evidence attesting to the landscape-health relationship. National parks, neighborhood urban landscapes, social forestry, and woods all fall under this category. Other symbolic phrases pertaining to place attachment have been added to the therapeutic landscape notion. However, despite its different meanings and applications, the notion of therapeutic landscapes allows us to question the idea that physical and mental health problems are merely personal issues that should be addressed solely through individual-based interventions. It also adds a chapter to the nature/nurture debate and fosters an awareness of the fact that environment and health are necessarily interconnected or, more radically, that nature/nurture is a false dichotomy, since “we hold that environmental and cultural components of health care are inseparable”.

7. Eco-Therapies Through Healing Design

The application of Theodore Roszak's field of eco psychology is called ecotherapy, sometimes known as nature therapy or green therapy. Ecotherapy frequently starts with the premise that people are a part of the web of life and that our psyches are neither unique from nor separate from our surroundings. Eco psychology, which offers people the option to consider their relationship with nature—a subject that is typically ignored in other forms of psychotherapy—is built on systems theory.

7.1 Eco Therapy Activities and Techniques

In a park or other natural location, this kind of meditation is occasionally practised in groups for therapeutic purposes. People in the group may point out a characteristic of nature that they find appealing and then pause to reflect on how this characteristic of nature connects to them and what lessons it can impart. Considering how the older trees in a forest provide a sanctuary for birds and shade for younger plants, for instance, may help a senior suffering feelings of worthlessness earn greater regard for themselves. As the session draws to a close, group members frequently present what they have learnt.

7.2 Horticultural Therapy

The use of plants and garden-related activities can be used to promote well-being. Activities may include digging soil, planting seedlings, weeding garden beds, and trimming leaves.

7.3 Gardening or Farming

A therapeutic garden is an area with a strong plant emphasis that aims to promote connection with nature's healing elements. Interactions might be passive or active, depending on the needs of the users and the design of the garden. There are many different subtypes of therapeutic gardens, including healing gardens, enabling gardens, rehabilitation gardens, and restorative gardens. Some of the essential elements of a therapeutic garden include wide, gently graded accessible entrances and paths, elevated planting beds and containers, and a sensory-focused plant selection with an emphasis on colour, texture, and aroma.

7.4 Physical Exercise in a Natural Environment

This can include activities such as walking, jogging, cycling, or doing yoga in a park. These types of activities foster increased awareness of the natural world and are sometimes recommended for reducing stress, anxiety, depression, and anger.

7.5 Forest Bathing

Slightly more than a walk in the park, this practice encourages the mindful use of five senses as one ramble through forests or similarly tree-heavy settings.

8. Design Details of Healing Garden at Rehabilitation and Education Centre

Below is the graphical representation of the landscape design of the healing garden at rehabilitation and education centre at Ayodhya, India (Figure 1).

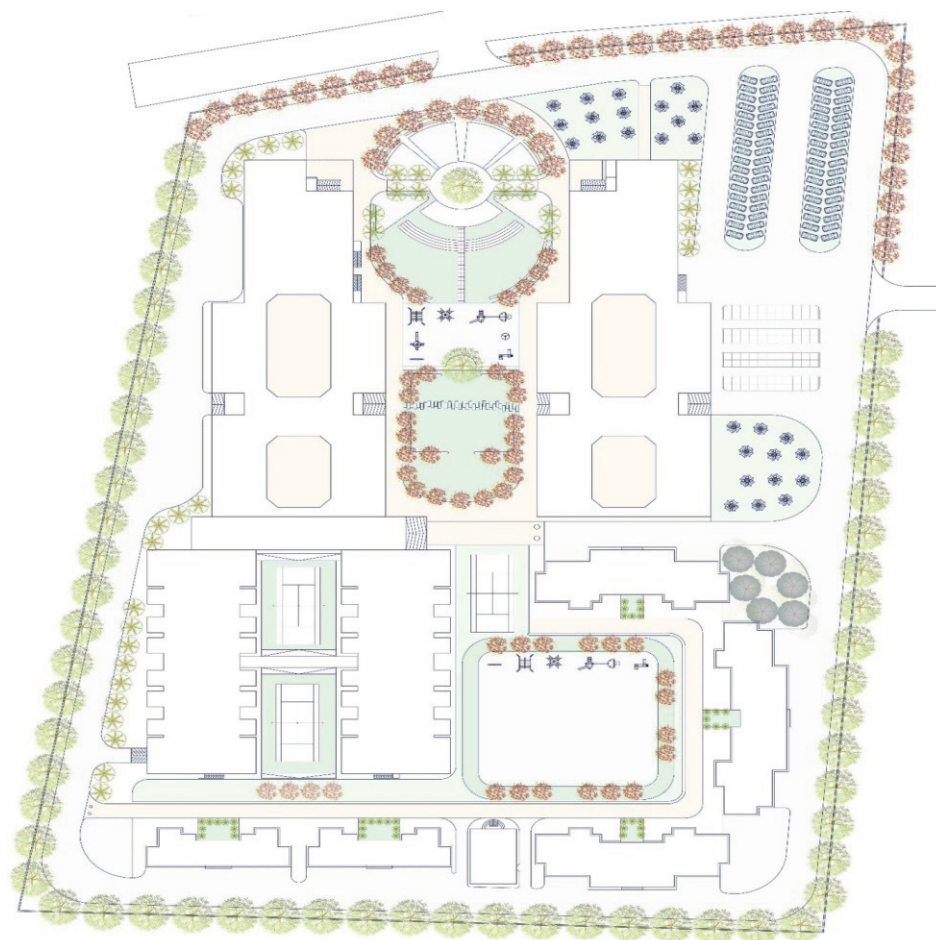


Figure 1. Landscape Plan of a Healing Garden

The plaza will impact environment positively and with provided suds features and public space at entry level. Below are the design details of the proposed landscape design of an environmental plaza of the Rehabilitation and Education Centre.

The vocational lawn is designed in a way that helps to arrange open classes under the tree and different therapeutic activities as per need. It is also attached with children hammock area. Below are the design details of the proposed landscape design of the vocational lawn of the Rehabilitation and Education Centre. See Figure 2-3.

9. Conclusions

This study looked into the design concepts of therapeutic gardens created for those suffering from stress-related illnesses. Geographic context, society, economy, and design are the four main areas into which the design concepts of a healing garden can be separated. The design concepts are applicable to any garden or natural setting, but in the case of healing gardens, it is crucial that the users or participants are a specific group of patients who are dealing with temporary mental and/or physical problems that may lead to the latter. After a certain period of time, we want to feel healthy, and the environment should support the healing process. This is what we want from a healing garden. The weather has a big impact on both indoor and outdoor activities. In order to create a cosy and comfortable space in the garden, the wind, sunlight, and soil all depend on the temperature and location of the garden. The impacts of climate on various vegetation types make it necessary to learn about climate and various plant varieties in order to use them appropriately. The connection between indoor and outdoor is another aspect in terms of design, which provides different views through openings such as windows, doors, roofs or glass house. Some regions need to be prepared for this connection during cold weather or in some places with tough climates. Even the planned forms of vegetation should be placed so as not to obstruct the view. Another form of connection that supports a sense of safety and security is the entrance to the building, which should be obvious and uncomplicated. Another thing to

consider is how to set up various events, including where to place the entrance and how to show attendees the garden for the first time. It is significant since the patient's first impression determines whether or not they will feel secure and safe. In order to determine how the design of the garden should be planned in a multicultural society, it is also important to go deeper into the topic of society and culture. Last but not least, it would be intriguing to apply the concept of healing gardens in the city to more public gardens for citizens as well as those who suffer from stress-related disorders.



Figure 2. Proposed Design of an Environmental Plaza



Figure 3. Proposed Design of the Vocational Lawn of the Orphanage

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