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<https://doi.org/10.5109/4739239>

出版情報 : Proceedings of International Exchange and Innovation Conference on Engineering & Sciences (IEICES). 7, pp.309-314, 2021-10-21. Interdisciplinary Graduate School of Engineering Sciences, Kyushu University

バージョン :

権利関係 :



Design Guidelines for Therapeutic Gardens

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Abstract: *The gardens evolved into areas specifically built for people to find health after it was discovered that the natural or designed environments play an essential part in expediting the healing time. Many studies conducted today show that gardens specially designed for therapy have significant results on user groups. Therapy gardens are gardens that are created to relieve stress and pain while also mentally, physically, and spiritually strengthening individuals who are suffering from psychological or physical issues. Since the Middle Ages, these gardens have been used as therapeutic spaces, and they have now become an important feature of hospitals, nursing homes, and rehabilitation facilities. Within the scope of the study, therapy gardens were examined in detail in all aspects. The principles to be considered in therapy gardens for children and the elderly people were revealed. Also some plant species that can be used in therapy gardens were given. As a result, it was emphasized that therapy gardens should be created within the scope of general design principles in order to reveal the expected benefits from them.*

Keywords: Therapeutic gardens, Design principles, Children, Elderly people

1. INTRODUCTION

Throughout history, nature has been the most obvious organizer of human life. People have resorted to nature to treat the mental and physical diseases they are exposed to. People have used nature as a guide to help them get rid of their problems and discover inner peace. As a part of nature, gardens are perceived as places that strengthen the spiritual state of people on earth. For example, in most eastern religions, the garden was considered a sacred place [1].

Gardens have become places specially designed by people for the purpose of finding health over time. A factor in this regard has been the judgment that the natural or designed environments play an essential part in expediting the healing time. In the Middle Ages, monastic hospices and infirmaries served the sick as part of the Christian obligation to offer help and show mercy to the poor. In this context, the gardens of the monasteries were the first instances where a garden was seen as part of a healing environment (Fig. 1) [2].

Hospitals continued to use the gardens for health purposes in the 17th and 18th centuries. Information on hospital garden design was discussed by the German horticultural theorist Christian Cay Lorenz at the end of the 18th century. Lorenz's suggestions regarding the design are given below [2];

- The hospital garden should be designed to encourage the perception of nature and healthy life.
- Seeing the blooming plants in the garden from the window will encourage the patients to walk. The garden should be easily accessible.
- Planting should be done along walkways where benches will also be found.
- In addition to grass areas and colorful flower groups, water surfaces should also be included in the garden.



Fig. 1. The garden of the Monte Casino Abbey [3]

Therapy gardens were first established in the modern sense in 1798 in the United States, with a focus on the healing effects of horticultural activities on people with mental illnesses. Later, in 1879, the Philadelphia friends hospital was the first to use a greenhouse for this purpose. The national council for therapy and rehabilitation through horticulture (now known as the American horticultural therapy association) was founded in 1973 as the field's first professional organization. Therapy gardens are gardens that are created to relieve stress and pain while also mentally, physically, and spiritually strengthening individuals who are suffering from psychological or physical issues. Since the Middle Ages, these gardens have been used as therapeutic spaces, and they have now become an important feature of hospitals, nursing homes, and rehabilitation facilities [5].

This study was carried out to investigate the positive effects of therapy gardens, which have an important place in the physical and mental treatment of people with health problems, and the general design principles of these gardens. In addition, determining the criteria to be

considered in therapy gardens designed for children and elderly people is also within the scope of the study.

2. MATERIAL AND METHOD

The main material of the research is therapy gardens. The origins of the therapy garden concept, as well as its historical development, philosophy, and application areas, are principally examined. Then, besides the general design principles of therapy gardens, the principles to be considered in therapy gardens for children and the elderly people were examined. At the same time, the literature on therapy gardens, which is the main subject of the research, was also evaluated as research material.

3. RESULTS

It is aimed that mentally and physically disabled children and adults, patients, and elderly people regain their health or prevent their health condition from getting worse in therapy gardens. It also contributes to their social development. The use of the term “therapy” enables the designer to put personal tastes in the background and approach the subject with a user-centered design philosophy. The therapy garden designer can achieve success using research input from patients and staff, design rules, and creativity [2, 6].

Studies have proven the impact of environmental design on patients. These effects are not only directly curative, such as reducing the patient's discomfort and distress, lowering blood pressure, and reducing pain, but also shortens the hospital stay in some cases and encourages cooperation with other treatment methods [7, 8, 9]. Similarly, the opposite is also true. It has been observed that poorly designed or poor quality environments increase restlessness and anxiety, the need for medication, blood pressure, and insomnia. In this context, therapy gardens should be designed in accordance with general design principles in order to disclose the anticipated advantages. The general design principles of therapy gardens are as follows [2, 10, 11, 12, 13];

- While designing therapy gardens, the needs of other users (employee in charge, patient relatives, etc.) who will benefit from the garden should be taken into account, as well as the age and disease group it addresses (Fig.2).



Fig 2. An example of an area created for socialization in the therapy garden [14]

- The designer should prefer a space design suitable for user requirements rather than aesthetic concerns. The width of the walkways should be suitable for wheelchair use (Fig. 3).

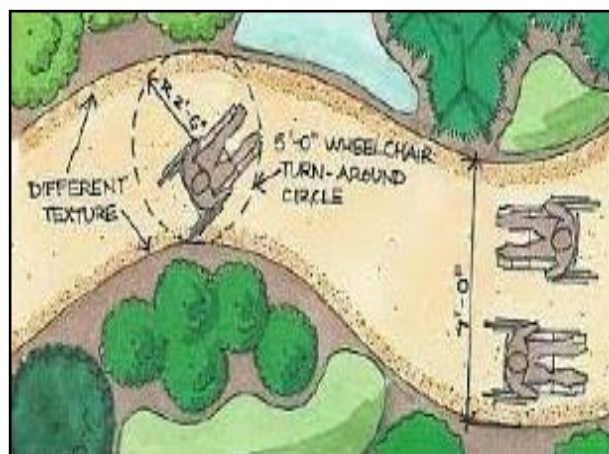


Fig. 3. An example of a road created for wheelchair use [13]

- Simplicity in design is important so that the areas in the therapy garden can be easily understood. A sense of peace and security should be created with easily perceptible paths and clear definitions.
- External stimuli that will distract attention (noise pollution, etc.) should be minimized.
- Transitions between intended uses should be comfortable and convenient.
- Garden boundaries should be defined with plants to create a safe garden.
- Symmetrical and asymmetrical elements should be used in a balance.
- Planting and structural material should be suitable for the human scale.
- Considering the seasonal characteristics of the plants, the garden should be aimed to be attractive throughout the year. In addition, warm-colored and fragrant species with

different textures and forms should be included in the selection of plants.

- In addition to low-maintenance plants in the garden, durable plants should be preferred.
- Natural plant species should be used to ensure the garden's long-term viability and to reduce the danger of failure.
- The use of raised plant beds is important to ensure accessibility for wheelchair users (Fig. 4).



Fig. 4. An example of a raised plant bed [15]

- Plants to be used in the garden should be selected from non-poisonous species.

In addition to the general design principles, there may be differences in design according to the age group addressed in the therapy gardens and the disease status of the people [10]. Within the scope of the study, the principles to be considered in the design of therapy gardens for children and the elderly people were investigated. In this direction, the following points should be considered in the therapy gardens organized for children [6, 16, 17].

- Freedom to explore and play should be essential.
- Garden entrances should be in a way that attracts the attention of children.
- The garden should be close to the children's playroom and the relationship between these two areas should be well established.
- Since children have sensitive skin, it is necessary to create shaded areas in the garden where they can spend time, especially in summer.
- The garden should have suitable conditions so that every child can use it equally and share their experiences, and therefore it should be designed universally.
- Children need to be provided with options to interact with nature (Fig. 5).



Fig. 5. An example of horticultural therapy for children [18]

- For children, both separate areas of use and common areas for socializing should be designed in the garden.

The points to be considered in the design of therapy gardens for the elderly people are as follows [10, 13, 16, 19, 20];

- The garden should be designed in accordance with the physical and other needs of the elderly people.
- Warm colors (red, orange, yellow) that are easier to see and perceive for the elderly people should be used.
- Plants with different leaf textures, forms, and scents should be used to stimulate the senses and memory.
- Studies show that older people prefer gardens containing plants that were popular in their youth and may enjoy growing these plants.
- An easy-to-perceive layout should be created with well-defined walkways. It is important to provide necessary guidance for elderly people (Fig. 6).



Fig 6. Guidance example in the therapy garden [21]

- Elderly people need some structure to feel safe because of their physical ailments. For example, handrails and walkways with no pavement make them feel safe.
- The use of seating units with back and armrests in the garden is very important for elderly people. In addition, the fact that the colors of the chairs and tables are different from the floor material will enable them to be perceived more easily by the elderly people (Fig. 7).



Fig 7. An example of a sitting area created in the therapy garden [22]

Medicinal and aromatic plants are often used in therapy gardens. The planting design phase to be made with these plants is one of the most important phases in the creation of these gardens. To summarize the characteristics of the plant species to be used in the garden within the scope of the general design principles, these plants should have distinctive color, form, texture and stimulate the senses, be easy to care for, encourage creativity and enable various activities. It is also important that these species are not poisonous and allergic. In this direction, some plant species that can be used in therapy gardens were given in Table 1.

Table 1. Some plant species that can be used in therapy gardens [23, 24, 25, 26]

Family	Scientific Name	Common Name
Asteraceae	<i>Santolina chamaecyparissus</i> L.	Cotton levander
Caryophyllaceae	<i>Cerastium tomentosum</i> L.	Snow-in-summer
Lamiaceae	<i>Lavandula angustifolia</i> Miller	Lavender
Lamiaceae	<i>Rosmarinus officinalis</i> L.	Rosemary
Lamiaceae	<i>Mentha spicata</i> L.	Spearmint
Lamiaceae	<i>Ocimum basilicum</i> L.	Basil
Lamiaceae	<i>Salvia officinalis</i> L.	Common sage
Lamiaceae	<i>Thymus vulgaris</i> L.	Common thyme
Lamiaceae	<i>Lepechinia fragrans</i> (Greene) Epling	Fragrant pitchersage
Lamiaceae	<i>Melissa officinalis</i> L.	Lemon balm
Lauraceae	<i>Laurus nobilis</i> L.	Bay tree
Nyctaginaceae	<i>Mirabilis jalapa</i> L.	Marvel of Peru
Rosaceae	<i>Fragaria vesca</i> L.	Wild strawberry
Rubiaceae	<i>Gardenia jasminoides</i> J.Ellis	Gardenia
Verbenaceae	<i>Aloysia citriodora</i> Palau	Lemon verbena
Verbenaceae	<i>Lantana camara</i> L.	Common lantana
Violaceae	<i>Viola tricolor</i> L.	Wild pansy

4. DISCUSSION

Due to rapid urbanization, the interaction of people with nature is decreasing day by day. Correspondingly, the idea of living a healthy life by getting rid of the stress of daily life gains importance. Therefore, people escape from the dense gray texture of cities and flock to green areas that give them happiness. Green areas not only

meet people's active and passive recreation needs, but they also have a good impact on their health.

Therapy gardens, which are specifically designed to help people find health, have a positive impact on people's mental and physical well-being. Therapy gardens empower people physically, mentally, and spiritually and enable people to cope with their losses and sorrows. In

addition, it helps elderly people to regain lost physical skills and cope with the negative effects of aging.

In the design of therapy gardens, not only the needs of the patients but also the needs of their relatives, visitors, healthcare personnel, and volunteer workers should be taken into consideration. When considered in this context, it is very important that different professional disciplines (psychologists, physiotherapists, physicians, architects, landscape architects, and engineers) work together in therapy garden designs in order to ensure the desired effect and be sustainable.

While the landscape designer can sometimes cooperate with experts and make arrangements for their expectations, he/she often tries to influence the user group with the symbols, light, color, material, and plant species he/she chooses. What is important here is to provide the necessary environment and experiences for them based on the definition of the user group and their problems.

Today, therapy gardens have become an important research topic in many countries. They have also been integrated into health systems as a result of the garden being recognized as a healing factor. As a result, considering all the benefits it provides, it is very important to popularize the applications of therapy gardens. Also, therapy gardens should be created within the scope of general design principles in order to reveal the expected benefits from them.

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