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## Therapy Gardens Healing Environments for Children

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**THERAPY GARDENS  
HEALING ENVIRONMENTS FOR CHILDREN**

by

**SUZANNE L. KOHLMAYER**

**Thesis submitted in partial fulfillment  
of the requirements for the degree**

of

**DEPARTMENT HONORS**

in

**LANDSCAPE ARCHITECTURE AND ENVIRONMENTAL PLANNING**

**Approved:**

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**Director of Honors Program**

**(Print Director's name here)**

**UTAH STATE UNIVERSITY  
Logan, UT**

**2006**



# Therapy Gardens

• Healing Environments for Children •

Suzanne L. Kohlmeier

# Therapy Gardens

• Healing Environments for Children •

Utah State University

Written By: Suzanne Kohlmeier

Advising Faculty: Margie Borecki

# Introduction:

Valley Mental Health is located in Salt Lake City, UT and is a metropolitan Community Mental Health Center serving Salt Lake, Summit, and Tooele counties. They serve about 6,000 children with mental health problems per year, most of whom are at or below poverty level. Ann Foster the Director of the Children's Services at Valley Mental Health, approached the Department of Landscape Architecture and Environmental Planning at Utah State University for the aid in developing an inner courtyard into a therapeutic garden for their Children's Outpatient Clinic. The inner courtyard would be available to children who are receiving therapy at the clinic. In order to design a proper therapeutic environment, research must first be done to examine the various aspects of therapeutic garden design including its history, research and theory and the health effects of gardens in healthcare settings.

As therapeutic gardens are becoming more acknowledged in modern healthcare design, more research is necessary to determine how effective they are and how they can improve to meet patient and staff needs.

In this thesis I will begin to explore the therapeutic garden and the significance in which they have on children's healing process in healthcare environments. For many children, therapeutic gardens offer healing potential and help them to restore their health. By compiling several different resources I will then create a list of guidelines to benefit those who are designing therapeutic gardens for children. By following these guidelines I will then proceed to create several design responses to Valley Mental Health Center's inner courtyard.

Landscape Architects are becoming more and more involved in the designing of therapeutic gardens, and offering the benefits of these spaces to the users and to the facilities that create them. Over the past two decades, therapeutic gardens have begun to reveal the benefits that nature has to offer and how it relates to a better quality of life for those who experience them.

# Research :

A healing landscape has many different associations as to its purpose, form and location. Whether it is a “healing garden” a “therapeutic garden” or a “restorative garden,” a healing landscape concentrates on physical and psychological relief, and spiritual and emotional renewal. A healing landscape makes people feel comfortable, less stressed and even rejuvenated (Shrosbree). The healing environment is based on the belief that healing is a result of the body, mind, and spirit working together. With this reasoning a child’s optimal well-being can be improved through the physical and relational environment surrounding them.

The major part of the restoration benefit often starts with simply viewing nature. As Shrosbree pointed out in his article, “Green Spaces are Good Medicine,” that even short-term visual contacts with nature can produce significant restoration by lowering stress levels in patients. It is, therefore, reasonable to say that a longer duration of exposure to nature in healthcare facilities could have a larger healing effect on emotional, psychological, and behavioral components of stress.

Within the last two decades there has been renewed interest in the role of designing natural environments and health. For thousands of years we have relied on nature to relax us, deepen our spirituality, and to benefit our health. Studies are now proving that contact with nature is vital to our health and happiness regardless of our age (Carmen, 2005). The benefits that nature can be measured in three ways: physical, mental and social. Physically, a connection with nature can lower anxiety and promote physical healing. Mentally, enjoying nature can reduce stress and combat depression. The smells, sights and sounds that surround us have an immense impact on our emotions. According to Nancy Carmen, 2005, a study at the University of Michigan pointed out that office workers who had a view of nature from their windows at work had a higher job satisfaction and reported both physical and mental benefits with fewer headaches and less frustration than those who had no view of nature.

Socially, the natural environment offers many social opportunities to meet and interact with family, friends and strangers. Researchers have noted improved relations with neighbors, community and an improved sense of connectedness among people in the presence of a natural environment (Carmen, 2005).

Therapeutic gardens in the 20<sup>th</sup> century America have become invisible and often become a lost benefit in the world of technical advancements and the ever increasing cost of drugs and medical specialization. Land costs and pressure from insurance companies have worked against gardens in hospitals, and are often seen as a cosmetic extra. They are rarely viewed as a significant part of a patients healing. However, in the late 20<sup>th</sup> century the forgotten garden has begun to be reexamined and provide the correlation of the mind-body connection (Barnes & Marcus 1995).

There is growing evidence that natural environments can play a role in improving patient health outcomes. There have been several scientific studies that have shown that environmental design can reduce anxiety, lower blood pressure, lessen pain, and also shorten recovery time. The best-documented study to date was conducted by Roger Ulrich, a professor and director of the Center for Health Systems and Design at Texas A&M University in 1984. This study found that viewing natural scenes fosters stress recovery by evoking positive feelings, reducing negative emotions, effectively holding interest, and blocking or reducing stressful thoughts. It successfully demonstrated the relationship between the length of hospitalization, pain medication usage and the ability to view the natural environment. Based on Ulrich's findings, surgical patients with views of nature had shorter post-operative stays, fewer negative remarks from nurses, and used less pain medication than those with a view of a brick wall.

On the other hand, research has also linked poor garden design, with detrimental effects such as higher anxiety, increased need for pain medication and sleeplessness. Therefore, the capability of gardens to have a healing influence stems from its efficiency in facilitating stress management and restoration. Gardens in healthcare environments mitigate stress for patients and staff to the degree that they foster, sense of control, social support, physical exercise, and access to nature. A key factor in garden's ability to support these four stress reducing resources is the ability of the garden to suggest a sense of security. If a space fosters feelings of insecurity, the results are negative rather than those of restorative, and people avoid the space.

Despite an increase in research to support healing environments, few healthcare facilities include therapeutic gardens or any other access to nature in their remodeling or new construction design. In 2002 only 20% of hospitals and healthcare environments included nature healing in their construction plans. There is evidence showing that therapeutic environments decrease health care costs, thus actually saving the hospital money. Also, in 1998 John Hopkins University reviewed 84 studies on the impact of the health care environment. Results suggested that patients who were happier with their environment used fewer medications, were easier to care for, were released sooner, and recommended the hospital to others. However, most information regarding effects nature has on healthcare environments is subjective, and therefore it remains difficult to make firm recommendations for a defined design of landscapes to promote health and healing (Larsen & Kreitzer).

# Case Study:

The following case study conducted by Barnes and Marcus (1995) shows supportive information for the benefits of therapeutic gardens.

If designed correctly each therapeutic garden has the possibility of providing therapeutic benefits for the staff, patients and visitors. Barnes and Marcus (1995) conducted an analysis of four case studies that were visited in California and came up with rather supportive information for the benefits of therapeutic gardens located in healthcare facilities. One-hundred and forty-three users were interviewed, of which nearly half of them visited the gardens everyday or several times a day. All but 8 of the 143 users reported they came to the gardens for relaxation and more than half said they came for “outdoor therapy.” Activities in the garden included: relaxation, eating, talking, walking, strolling, outdoor therapy, visiting with patients and children playing. Ninety-five percent of users reported mood changes after spending time in the gardens and over three-quarters of respondents described feeling more relaxed and calmer. Somewhat less of one-quarter also reported that they felt refreshed, rejuvenated or stronger after visiting the spaces. Qualities that were reported as significant to the success of the space are: plants, sensory stimulation, opportunities for social interaction, and psychological experience of peacefulness. This research documents that people in medical settings use outdoor gardens for therapy and emotional healing. Positive perspectives and attitudes are known to increase recovery rates and support better health. Healthcare facilities are high stress for staff and patients; a therapeutic garden contrasts with the controlled internal environment, and offers a welcome retreat.

# Children's Garden Research:

Healing gardens for children are a very recent development in the medical field. The topic of healing gardens has only recently been received by mainstream landscape architecture. A January, 1995 issue of *Landscape Architecture* states that out of six built gardens reviewed for the article, only one was specifically built for children. Children's therapeutic gardens are designed as places where the inner child can be integrated with the external world, and where children can find both stimuli and solace. The child, through play, can work through their internal conflicts, express fears, and communicate desires nonverbally. This idea supports that a playful landscape can serve as a therapeutic environments for children, their parents, and staff (Barnes & Marcus, 1999).

Because, children relate to the world through play, play is the child's way of initiating relationships within the social and physical world. Their attraction to nature and play is why gardens have such a special significance in the healing of children. Through play children learn boundless ways to stimulate the development of the mind, body and spirit. A rich environment for outdoor play offers children the opportunities of venturing into the mysteries of nature while testing and practicing physical skills. Garden settings are especially satisfying to children, because they are diverse, ever changing, multisensory and alive. The child's senses operate by being in contact with stimuli that are in the natural environment. Gardens offer a full range of sensory action in the movement of the earth, air and water.

Landscaping is critical to the success of an outdoor play area. By providing an intriguing contrast of trees, flowers, paths and water they can inspire children to engage in all sorts of creative activities. Also, landscapes that offers acoustic and visual variety between activities assist the interaction with the natural environment, creates private spaces and adds aesthetic interest.

# Case Studies:

The following case studies show successful therapeutic gardens at two different institutions in Berkeley, California and Boston Massachusetts.

A healing garden was created for an urban elementary school, in Berkeley, California. The asphalt was replaced with running water, woodland, and meadows. Wildlife filled the garden, and as a result the children's social behavior changed and their levels of self-confidence sky rocketed (Barnes & Marcus, 1999). As a result, the garden was a place where children could control their environment instead them being controlled by it. The garden became special to many of the children and gave them a sense of identity and belonging.

The Children's Hospital in Boston is one of the premier hospitals for children in the United States. It is located in the Longwood medical and academic section of Boston. A therapeutic garden was opened in 1956 and completed in 1987, and four years later was awarded a gold medal from the Massachusetts Horticultural Society. The garden is accessed from a corridor on the first floor of the hospital. The half-acre rectangular garden is enclosed by hospital buildings ranging from three to six stories. There is a strong sense of enclosure with the presence of several large trees that screen the buildings, ensuring that the garden feels like an urban oasis. There are many attractive features that make this space enjoyable, such as: several small sculptures, water features, variety of places to sit, diversity of plantings, and brilliant colors and plant textures. The garden is meant to serve children at the hospital, their siblings, parents, relations, and hospital staff. Throughout the seasons the grounds are populated not only with children, and visitors. For parents and patients alike, the garden is a wonderful refuge to let children explore and let off steam (Marcus & Barnes 1999).

# Therapy Programs:

There are different types of garden therapies pointed out by Robin Moore (1999) in the book *Healing Gardens*, these include: play therapy, horticultural therapy, wildlife therapy, and nature as therapy. In Sweden Ivonny Lindquist pioneered the concept of the natural environment as a therapeutic setting. In 1956 she founded a play therapy program in the University Hospital in Umea. For children in the hospital who were not able to leave, she found ways of bringing nature into them and there were remarkable therapeutic benefits. An important asset for of play therapy outdoor, is allowing children to have a sense of control. Healing gardens should create situations where the child can control their environment and therefore seek restoration. In contrast, the typical hospital setting is one where they have no control over things that are done to them. In a sense, healing gardens reverse the work of the caregiver; the child gains control as he cares for the land. They get a rest from the sterile hospital environment, experience greater freedom, and playfully explore the “unprepared” open-ended world of nature.

Ivonny Lindquist, also paved the way for the connection between play therapy and horticultural therapy. Horticultural therapy has been developed widely over the recent years, and covers a wide range of clients, including children who may have special needs. It enhances self-esteem and an enhanced sense of accomplishment, by working with children to improve their social skills. It also and provides feelings of nurture (Barnes & Marcus. 1999)

Wildlife therapy has been well documented to have a therapeutic impact on children. By providing habitat for wildlife, gardens can facilitate contact with animals. Butterfly gardens and planting to attract birds are common examples.

Therapeutic gardens express the idea that human growth and development is rooted in childhood and the connection with the landscape. By forming relationships with plants, rocks, and water, the child gains a deeper sense of self within the universe.

By providing nature as therapy, it provides nutrition to the human sensory system, and assists us to perceive and understand the physical world around us. Nature settings are important for children because they depend on their senses. As they play they explore their surroundings, and engage in developing processes that can be extended and enhanced by professional adults. The sensorial impact of the gardening program should be especially emphasized, as healthcare settings can be dominated by negative sensorial experiences.

# Design Process:

When designing outdoor spaces for restorative purposes, it is critical to realize that often little things make a big difference. What makes a healing garden different from any other garden? It is the design process. The process is what gives the gardens meaning and form and we begin to understand the people who will be using the design. Each project is different. Each therapeutic program must determine specific design elements based on needs of patients and therapist. Architectural style, plant material, climate, as well as, the social and physical aspects of the patients also have an impact on the final design solution. The final design must suit the user's needs. By understanding the context and users, one can begin to design a space that functions as both a place for healing. These spaces must be dynamic and come alive with people, movement, growth and change. Composing such spaces takes much thought and inquiry.

According to Martha Tyson (1998) there are four steps to this process. The first step is to investigate and establish therapeutic goals for the users. The second step is to develop concepts and compose a final plan. The third step is to successfully involve people into the building process. The fourth and final step requires evaluation of the design and making changes.

*Investigate and Establish Therapeutic Goals:* The first step of the process suggests methods of gathering information and evaluating the site to fit the users needs. Designs are often completed with little knowledge of the actual people who will be using the site, therefore it is important to first investigate and conduct behavioral research on the gardens users. The primary goal of the design should be to meet the needs of the users, while developing the full potential of the garden. By identifying the primary users one will develop a design that responds to the activities and life of the people who will be using the therapeutic garden. By establishing the patients therapeutic goals the designer will: support users abilities, install a sense of belonging, provide work opportunities, establish sense of pride, sense of security, heightened appreciation for nature, and a maximum sense of freedom.

2. *Develop Design:* A design concept for a healing garden, begins by gaining an overview of activities that take place both indoors and out. Upon understanding the daily routine, a program for the outdoor use can be prepared. Following this design path, the staff and patients are involved in choosing activities that are proper for the site. This often brings life to the garden design. According to Martha Tyson, “the landscape that will be a place for healing is like the process of healing itself, a gradual progression over time, and often occurs more rapidly with the help and caring of other people along the way,” (Tyson, 1998).
3. *Involve People:* Invite people to participate in the process of building the design, this will bring life to the project. Provide an opportunity for the open involvement between the community, staff and patients to help bring the garden to reality. By doing this, this will invest people in the building of their garden space and will connect them to the success of the design.
4. *Evaluate the Design:* Evaluating the garden and program brings the process full circle. Arriving at the final phase of the process allows for suggestions to be made for future designs and research. It also involves taking a look at the built project in terms of how it is actually being used. This evaluation can be used to play an important role in the construction and renovation of future garden areas. Evaluating the design can show the evolution of the design and improvements necessary to best meet the individuals of the healing environments.

This process by Martha Tyson’s (1998) is not meant to be a prescriptive method, but as a start for creating designs and conducting research better suited to the needs and intentions of the design. This process can provide a solid foundation for planning, designing, building and using gardens that are designed to bring restorative qualities for those who need healing.

# Guidelines:

By compiling several different resources I was able to create a list of guidelines that will be beneficial to those who are designing therapeutic gardens for children. These guidelines are merely recommendations and are not to be considered as rules. Before attempting to create therapeutic gardens for children it is important to identify the mission of the healthcare center to determine its purpose and goals.

The following guidelines are based on data from several sources for creating outdoor environments for children: *Healing Gardens* by Clare Cooper Marcus and Marni Barnes (1999), *The Healing Landscape* by Martha Tyson (1998), and *Play for All Guidelines* by Robin Moore (1992). Each of these sources is filled with information regarding the creation of therapeutic gardens or spaces for children.

**Safety & Supervision:** When designing a therapeutic garden one should design for a sense of security, serenity and safety with defined seating areas, easily readable pathways and clear destinations. Elements of the outdoor environment should offer differing degrees of challenge for the child, such as balancing on a curb or climbing a tree builds accomplishment and self-esteem. However, it is important that the outdoor environment not include hazardous conditions for the child. Good planning and regular maintenance can eliminate many such conditions before they occur. Also provide a comfortable environment with plenty of places for parents and staff to sit and share the space with children.

**Entrance:** Entrances should be welcoming and child-friendly. Children should feel comfortable and welcomed into the garden. This can be achieved by incorporating sculpture, benches, archways, or colorful accents. A great idea to incorporate into the entrance is a “fragrance greeting.” Children can arrive to the invigorating smells of roses, wisteria and jasmine. Finally, the garden must be kept open and accessible to all those who should wish to enter. Appealing gardens behind locked doors are as bad as no garden at all.

**Variety of Spaces:** To accommodate a wide variety of therapeutic activities and the needs of a variety of users, a variety of spaces should be integrated into the therapeutic garden. A variety of spaces should be offered to children to allow for a sense of enclosure and to get a feeling of tranquility. Generous amounts of seating should be provided, scattered throughout the play area for adult supervision and general observations. Also, spaces should be designed to allow staff a break from the daily routine and escape from work stresses. It is fundamental to the role of the outdoor environment that each child has freedom and the choice of different settings.

**Sensory Stimulation:** The design should include a variety of form, texture, seasonal interest, and color to provide sensory stimulation. Vegetation has a variety of textures, colors, shapes, and smells that could be used in sensory activities. Other items that might be found in a garden and used for sensory activities or impromptu play are: sticks, pebbles, boulders, dried leaves and flowers, nuts, and seeds. Sand tables, water tables, water features, wind socks, wind chimes all offer opportunities to engage the senses. Try to keep intrusive noises to a minimum. Where undesirable noises can't be avoided, incorporate elements to mask the sound such as a water feature or wind chimes.

**Range of Challenge:** A successful garden accommodates need for challenge and rest. Individuals should be able to explore and discover at their own level. There are many ways to challenge children besides the stereotypical idea of gross motor skills. One child will be challenged by simply going outside, another by planting a flower and a third by remembering a plant's name.

**Orientation:** Design spaces that flow easily and logically from one to another. Design elements should send the child visual messages so that they can easily determine where to go, how to get there, and what to do. Paving patterns, water, vegetation, furniture (materials and style), structures, spatial characteristics are all used to convey the designer's intent for a particular space. Use key, specimen, group, and mass plantings to create emphasis within the garden. This will provide focal points to help orient people throughout the space. A small enclosed space surrounded by vegetation might suggest a quiet space meant for alone time or private conversation. A wide-open grassy field also encourages group interaction. Use Kevin Lynch's five elements (paths, places, landmarks, edges, and nodes) to make a visual map of the child's world.

**Layout:** The layout of the garden should be easy to read to minimize confusion for those are not feeling well. Paths should be clearly laid out and be designed to provide a variety of circulation; curved and straight; wide and narrow and in a variety of textures and colors. Provide meandering paths when possible to encourage strolling and reflection of the garden. Abstract environments can have negative effects on people who are ill or stresses. Path surfaces should also compliment the beauty of the surrounding setting. Concrete and asphalt, can be inexpensive materials, but can distract away from the softer textures of the space.

**Signage:** Provide indications throughout the garden of features that the garden has to offer. For example a listening map would show what can be heard in different spaces; carrying messages such as "Listening to the bird song" or "Find the spider web". Cue-signs can make it easier for staff to come up with stimulating ideas to engage the children's interest. Include signs that invite kids to touch or smell such as: "Touch Me, I am soft" or "Smell me, I am lavender." Also, allow children to help make the informative signs, this will give the children a connection to the garden. Informative labeling for the vegetation is also helpful if there is a large variety of plant species.

**Furnishings:** Basic site furnishings make the site useable; unusual items make it memorable. Things such as water fountains, views and artwork can lead to spontaneous conversation between people.

By providing one or more unique features this will allow people to identify and make memories in the garden and the healing achieved there. The sights and sounds of water elements can be very soothing to people who are stressed or upset. The therapeutic value of water is enhanced if it engages our sight or our hearing, thus using a fountain that has a very delicate sound should not be used in a healing environment. By providing an element of whimsy the hospital garden can be an ideal setting for introducing art elements that may evoke smiles, a giggles, or be a basis of conversation. Site furniture should facilitate a space to be used by as many people as possible throughout the seasons. Seating should be offered as many types and forms as possible. Furniture should be chosen for durability, ease of maintenance, function, safety, and design intent. It should be lightweight, moveable, and multi-purpose. Consider using materials that would be familiar in the locality.

**Indoor/Outdoor Connection:** By allowing an easy transition between indoors and outdoors, this can affect the impact that nature has on the patient's quality of life. To encourage use of the therapeutic garden by the staff and therapists, it should be located close to the children's indoor environment. Windows with a view to the outdoor environment are usually encouraged in the design of most healing gardens.

**Diversity of Natural Settings:** Provide a wide range of natural settings. There are many methods of bringing vegetation in to natural setting – groundcovers, planters, trellises, vine-covered walls, shrubs, trees and many other techniques. Other criteria for plant selection are sensory variety, play value, shade qualities, screening, and wildlife habitat. Habitat conditions for insect life and birds should also be considered. Water is a traditional garden element. The play value of water is incredible because of its multisensory character and provides endless fascination for children. Water features add substantial aesthetic dimension to any recreational setting. It is a popular play material and a strongly remembered childhood experience.

**Child-Nature Interaction:** Provide options for children to interact through their senses through hand-on activities. The essence of a healing garden is for the experience the sensory richness and the active quality of nature. The garden should contain the greatest diversity of plants possible that provides seasonal variety such as: leaf color and flower, fruit and nut production and for their ability to attract wildlife. Provide places to experience the sun, shade, wind, and rain. Also, select plants that can be harvested and used by the children directly as play objects. Provide opportunities to harvest vegetation. Children achieve enjoyment from any type of harvesting activity. For example, children can cut flowers daily to decorate the interior or gathering seed heads or grasses in the fall are equally beautiful.

**Stimulating Plants:** Planting is one of the most important tools specific to the creation of an outdoor environment. Plants stimulate exploration and discovery, dramatic play and they encourage imagination. Vegetation offers enormous play potential. There is no substitute for vegetation as a major source of play props: leaves, flowers, fruits, nuts, seeds, and sticks. Choose plants for the therapeutic garden carefully and place them strategically.

**Plant Selection:** Choose plants that stimulate all of the senses. Plants can teach about texture, fragrance, and auditory stimulation with the rustling of their leaves. Choose plants whose foliage moves easily; this creates shadows, patterns of color and light that can have an enchanting effect, and helps to reduce stress. Avoid poisonous plants, plants with thorns, sticky sap, and plants that trigger asthma or allergies. By choosing user friendly plants the garden will be planted mostly with bird-or insect-pollinated plants rather than wind-pollinated plants. By not using insecticides butterflies and spiders will become prolific in the garden. Provide edible landscaping such as: berry bushes, herb gardens and vegetables. Save existing mature trees because they provide visual interest and create a sense of space and install lawns area. Grass is a very powerful image and studies show that patients respond very well to the sight of lush green grass.

**Landform:** Varied elevation is important to children's play spaces. Small berms covered in grass encourage children to use gross motor skills while climbing, sliding and rolling. Landform is often underutilized as a play opportunity in site design. A mix of landforms and vertical elements can provide a variety of experiences within the space. It is also an idea in northern climates to provide for winter activities within the garden.

**Microclimate:** Plenty of shaded areas need to be provided. Filtered light works best in many site conditions. Trees, large shrubs, pergolas and arbors create a wide variety of shade conditions. Also, provide comfortable spaces for sunlight throughout the year.

**Spatial Flexibility:** Since the needs of the children change as they learn and grow and because the needs of the therapist change as new therapies are discovered, the therapeutic garden should allow for flexibility. The space should permit for some change without expensive or lengthy renovations. Physical elements that can be changed and moved around should be included in the garden. By accommodating movable equipment this could make the space flexible for more than one activity. Modular systems and lightweight mobile equipment (water tables, sand tables, collapsible tables, lawn furniture, and garden accessories) are all methods of supporting flexibility.

**Simplicity:** Simplicity is essential in design healing gardens to keep the space easy to understand. Many people using healing gardens are dealing with stress; therefore it is important not to have too much going on to add any additional stress. Abstract environments can have negative effects on people who are ill, so clearly identifiable features should be incorporated into the design.

**Accessibility:** Therapeutic gardens must be accessible for all children, including those who might be temporarily physically or mentally. Other children who are also able to benefit from the gardens are those with permanent physical and mental impairments. The therapeutic gardens become a place for children to discover new skills or practice and enhance old ones. Gardens should be universally designed to provide a stimulating experience to children of all abilities. Healing gardens can be specifically designed for disabled individuals as well. It's a great way to encourage them to get outside and enjoy all of which nature has to offer. Even people who are visually impaired can enjoy and benefit from the relaxing atmosphere of a garden. By shaping the garden with straight edges and right angles, this will help familiarize them with the garden's layout. Adjust the textures along pathways to help indicate a change in direction. For example, transition from shredded bark mulch to brick or gravel. Locating scented plants, running water features, wind chimes, and solid ornamental structures in various areas will also serve as reference points to aid in their getting around. Gardens can also make people with psychiatric disorders feel better. For people with more severe conditions, try keeping the layout simple with easily identifiable paths to prevent disorientation.

**Maintenance:** Quality maintenance contributes to the health of the plants, which in turn provides the maximum therapeutic benefits. The therapeutic garden should be designed so that it is a low maintenance, easy care environment. The following is a list of ways to ease long term maintenance: install sprinkler systems during the build phase. Specify native and water-wise plants, since they require a minimum amount of attention. Choose materials, paving pattern, structures, and furnishings for durability and ease of care. A budget should be created (an account or trust fund) for maintenance at the onset of the project. Decide who will do the maintenance (volunteers, community members, local garden club, paid gardener, horticultural therapist, or other), and how often. Maintenance is crucial to long term garden success.

**Avoid Negative Distractions:** In contrast with the many benefits that natural settings have to offer, negative distractions in gardens can also be considered a subset of stressors that can include unpleasant elements or stimuli. Negative distractions are often intrusive and diminish the designer's intention. Negative distractions include: urban noise, smoke, unfiltered sunlight, and ambiguous garden features. Smoking is an aversive negative distraction for many users of healthcare gardens. The fact that smoking is increasingly banned from healthcare facilities, smokers are under pressure to seek out gardens or other nearby spaces to smoke. This has led to the importance for designers to provide separate outdoor areas for smokers and nonsmokers. Also, keep the garden child friendly by avoiding poisonous plants and those having briars or sharp points.

# Valley Mental Health:

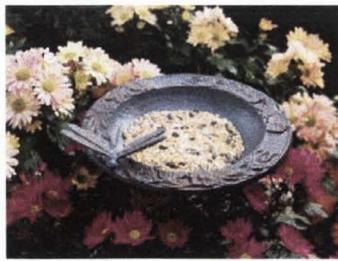
This list of programs elements should be integrated into each design to create interesting and beautiful spaces for the patients and staff of Valley Mental Health to enjoy. Each of the Design Concepts can accommodate all if not most of these design elements.

## **Program Elements**

- Wayfinding - i.e. Paving Patterns
- Overhead Structures for protection against elements.
- Herb Gardens should be integrated into the flower beds.
- Statues located throughout garden to provide interest.
- Variety of paving materials - i.e. Stepping stones, Pavers, and Concrete
- Water Feature - i.e. fountain located on wall of courtyard.
- Bird Feeders to provide interaction with wildlife.
- Whimsical elements - i.e. Frog bench and Wildlife Statues
- Variety of Plant Materials
- Explore with Textures and Colors of vegetation.
- Provide Variety of Seating - i.e. Wooden Benches, Granite Blocks, Tree Stumps and Stools.
- Plaque at entrance of courtyard. Should provide information and what kinds of activities are provided in the garden.
- Climbing Plants along walls. This provides color to windowless facades.
- Colorful and highly scented plants will create fond memories of space.
- Butterfly and Hummingbird Garden
- Signage - i.e. Plant and Sensory signage
- Grade variations between spaces, to provide interest to space.



Butterfly Garden



Bird Feeder surrounded by Vegetation.



Sensory Signage



Brick Paving Creates Interest



Children Statue



Plant Identification



Water Feature



Interactive Element



Playful Statue



Frog Bench



Enjoyable seating



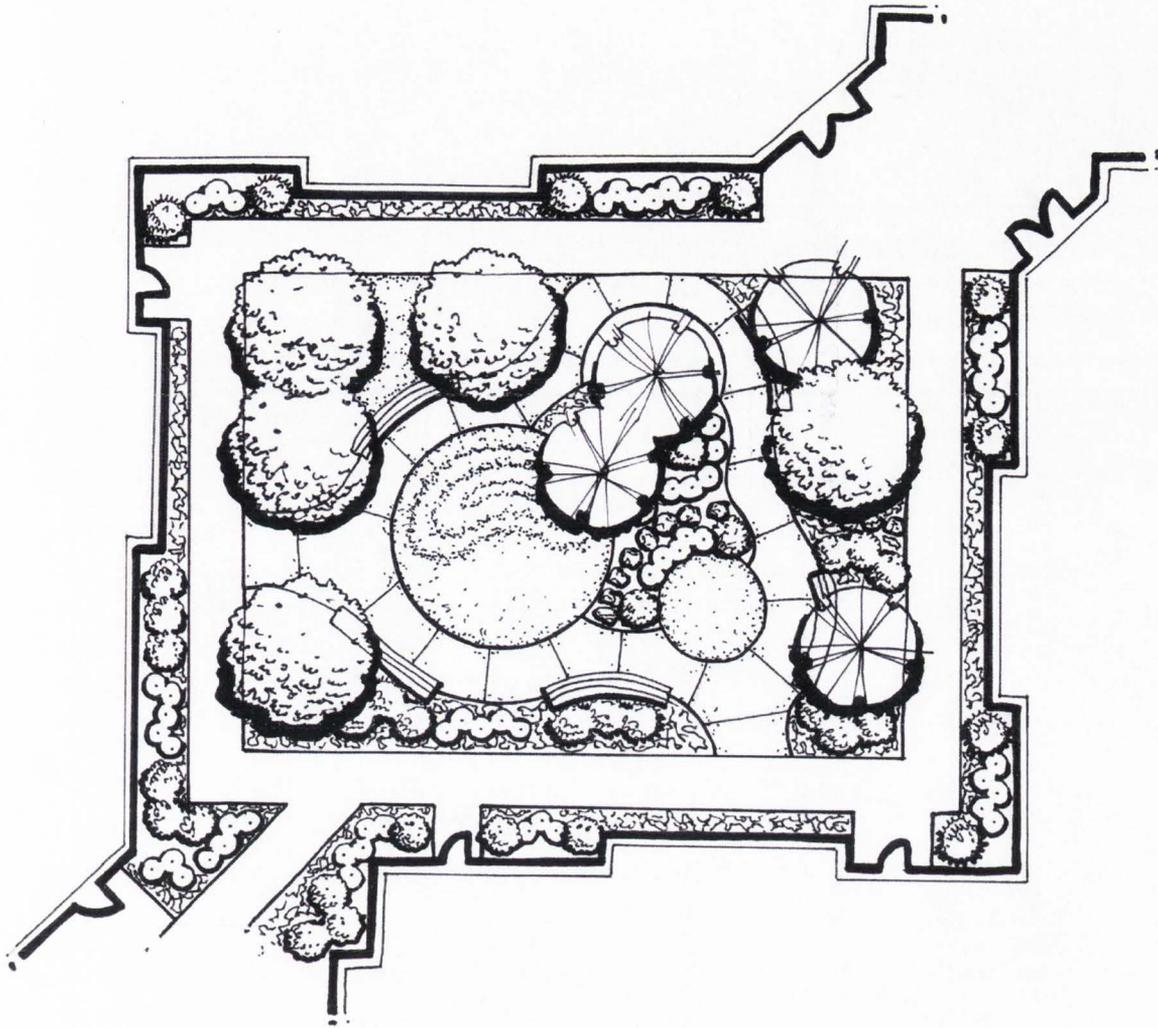
Whimsical Element



Path and Plant Variety

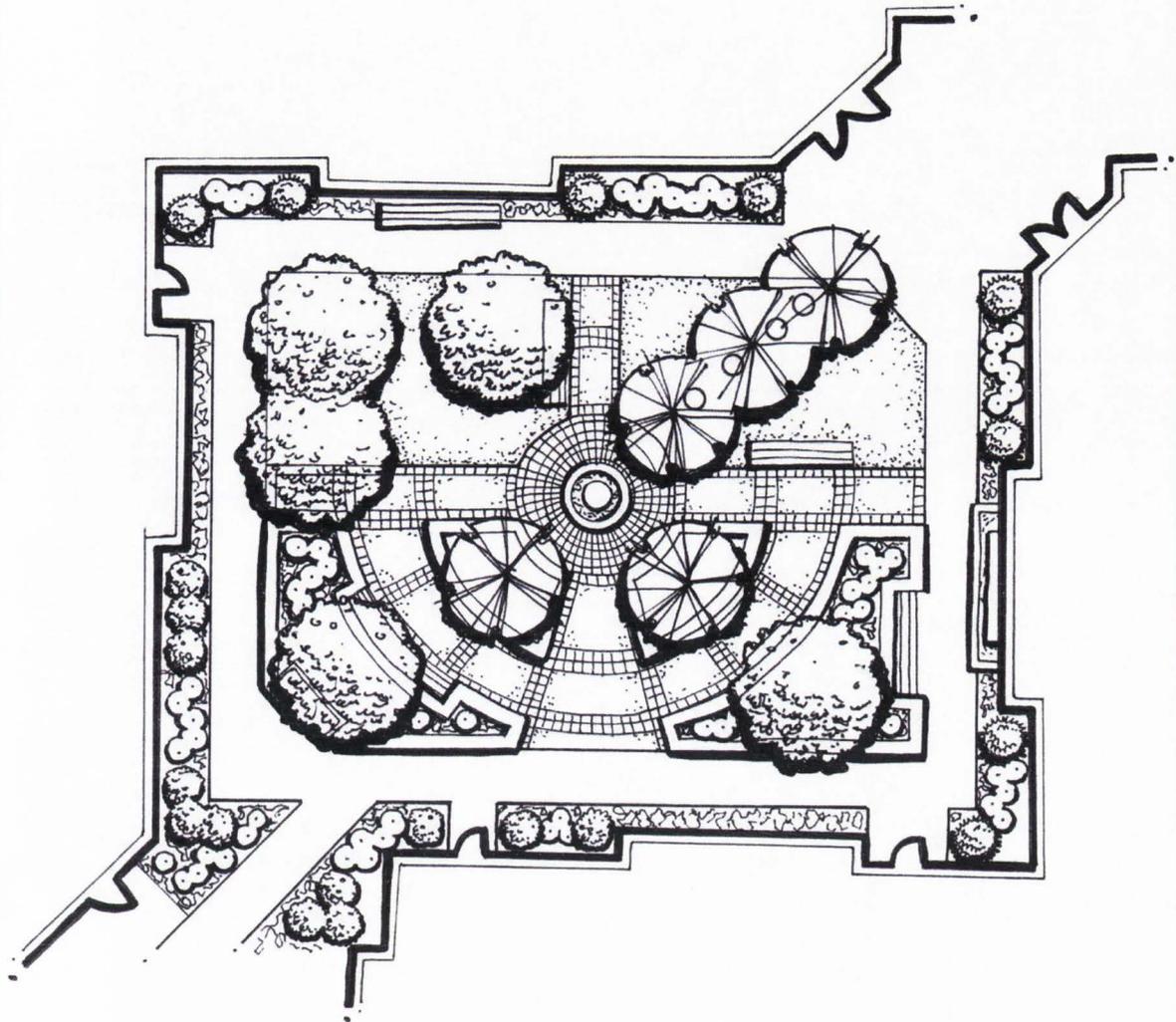


Statue Element



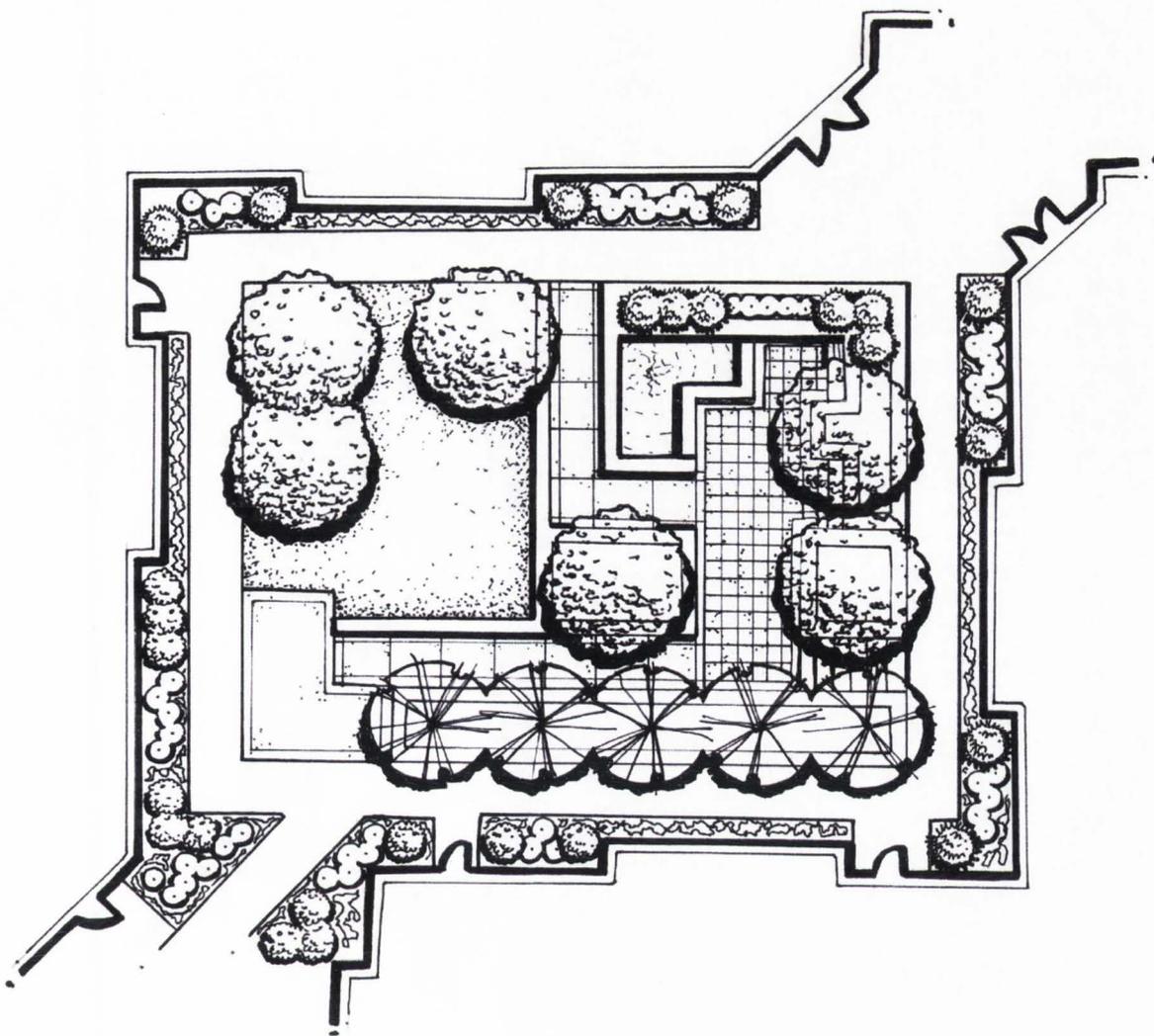
### Valley Mental Health Courtyard Design 1

This design offers a curvilinear design which allows for the user to move in and out of the space freely. This design is rather open which can facilitate both larger and smaller groups. This design also creates a variety of spaces which encourages strolling and reflection in the garden. Design inspired by Grant W. Reid (2002 0).



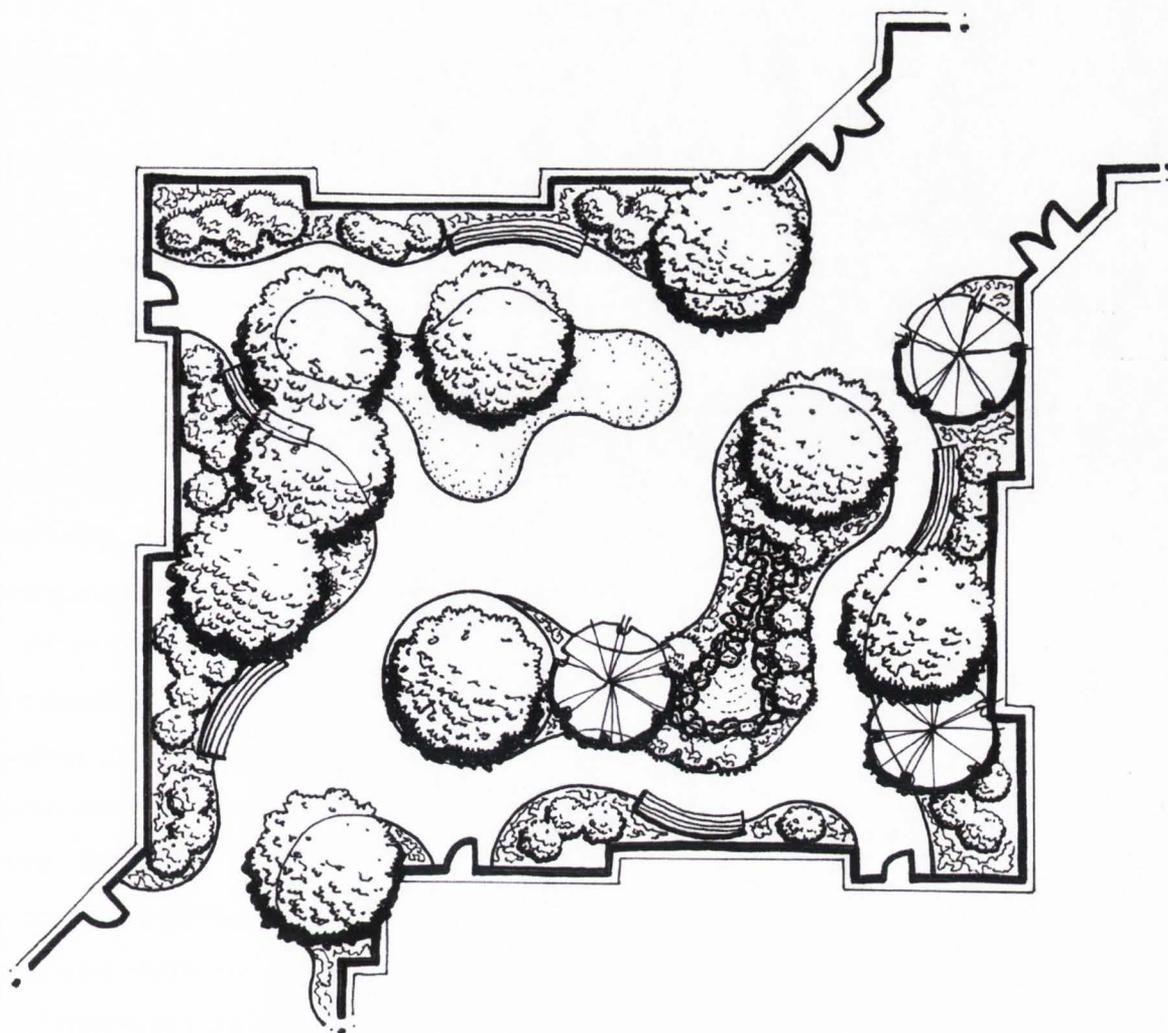
### Valley Mental Health Courtyard Design 2

This design is based on a radial design, which provides several different places for seating and viewing of the garden. Along with providing spaces for contemplation it also features a large amount of turf for the children to play on. This design also keeps the visual site line through the courtyard.



### Valley Mental Health Courtyard Design 3

This design is based on a rectilinear and provides the opportunity for a sunken patio in the courtyard. With this grade change and the overhead canopy of the trees it provides more of a secluded feeling, perfect for contemplation and reflection of the garden. Although there are spaces for contemplation, there are also plenty of spaces for active recreation. This design is also different by the incorporation of the water feature inside the sunken plaza. This provides for plenty of activity during the summer months.



### Valley Mental Health Courtyard Design 4

By using a natural curvilinear design, the plan for this courtyard becomes integrated with its landscape. Strategically placed trees for shade and screening have shrubbery and perennial beds surrounding and connecting them. The curved beds create various sized spaces within the yard; some larger for a more open feeling and others smaller for more private areas. This plan differs from the last three options by removing the existing sidewalk and allowing for the design to take on the entire courtyard. This frees up the interior space allowing for an increase of active space for the patients to use.

# Conclusion:

The potential for collaboration within professional roles in designing and creating new types of nature based environments is gaining in popularity. To do this successfully, play professionals must have extensive knowledge of plants, wildlife and gardening; horticultural therapists need to be knowledgeable in the role of child play and development; and landscape architects need to be well versed how to design spaces to support the creativity of play professionals and horticultural therapists. A landscape architect can be a valuable resource in helping lay out the garden and in selecting the right elements to make the garden a special place.

When designing healing gardens, the considerations used in designing other spaces take on different meanings in healing environments. It is imperative that the garden be functional and accommodates the limitations of the users in the space. It is also important that the garden be easily maintained, both for safety and therapeutic benefits. The garden must also be cost effective, since often times the funding for healing gardens is raised through donations and other contributions. Finally, the healing garden must be visually pleasing and provide pleasant surroundings to produce the restorative effects for its users.

Throughout history we have depended upon nature to relax us, deepen our spirituality , and to benefit our health. This thesis has demonstrated the importance of therapeutic gardens in healthcare facilities and how studies are now proving that contact with nature is very important to our health and happiness regardless of age.

Gardens are places where children are able to forget their worries and become restored. This is why, for many children, therapeutic gardens offer healing potential and help them to restore their health they may have lost. By following the guidelines set out in this paper, one will begin to have a better understanding and foundation to design outdoor healing gardens and begin the restoration process for these children.

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