

SULIS: Sustainable Urban Landscape Information Series

Healing gardens

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Background

Throughout history gardens have been used to aid in the healing process — from the Japanese Zen Garden to the Monastic Cloister garden. However, with the advances in medical technology in the 20th century, the use of gardens as healing elements began to diminish. Fortunately with the recent interest in complementary and alternative therapies, which emphasizes healing the whole person — mind, body, and spirit — rather than simply alleviating symptoms, the interest in garden as healer has been revived.

Research has shown the therapeutic benefits of gardens. Roger Ulrich, a professor and director of the Center for Health Systems and Design at Texas A & M University, found that viewing natural scenes or elements fosters stress recovery by evoking positive feelings, reducing negative emotions, effectively holding attention / interest, and blocking or reducing stressful thoughts. When viewing vegetation as opposed to urban scenes, test subjects exhibited lower alpha rates, which are associated with being wakefully relaxed. Further research by Ulrich showed surgical patients with views of nature had shorter post-operative stays, fewer negative comments from nurses, took less pain medication and experienced fewer minor post-operative complications than those with a view of a brick wall. Although more research is necessary, results based on research thus far indicate the healing effects of natural elements such as gardens.



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Ryoanji Meditation Gardens.

What is a healing garden?

Based on research by Ulrich and others, it could be argued that any garden is a healing garden. However, for the purposes of this article, we refer to Eckerling's definition of a healing garden: "a garden in a healing setting designed to make people feel better" (Eckerling, 1996). The goal of a healing garden is to make people feel safe, less stressed, more comfortable and even invigorated.

Designing healing gardens

When designing healing gardens, the same considerations are used as in designing any other garden.

However, these considerations take on special meaning in healing environments.

- **Functionality** is imperative because the garden needs to accommodate the limitations of the users of the space.
- It is also important that the garden design be **maintainable** both for physical safety and therapeutic benefits. At institutions such as hospitals, it is especially important that the garden be easy to maintain because a poorly maintained garden could make patients lose confidence that they are being well taken care of by hospital staff.
- If the garden isn't **environmentally sound**, it could be detrimental to the users of the space, especially those who are physically unwell.
- Often times the funding for healing gardens is raised through donations and other contributions. Therefore is it important that the garden design be **cost effective**.
- Finally, healing gardens are meant to provide pleasant surroundings to produce restorative effects for its users. The garden will not be successful if it isn't **visually pleasing**.

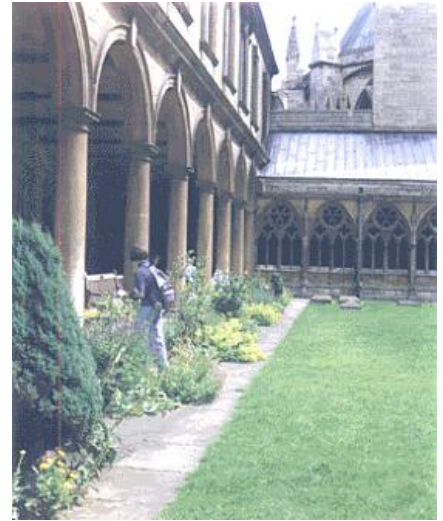


Photo courtesy of Mary's Gardens
Cloister Garden of Lincoln Cathedral.

It is important to use the **principles** of design to create **unity** within the healing garden design.

- **Simplicity** is essential in designing healing gardens to keep the space easy to understand. Many of the people using healing gardens are dealing with stress, therefore it is important that the space not have too much "going on" to add any additional stress.
- At the same time, the design should include a **variety** of form, texture, seasonal interest, and color to provide sensory stimulation. Not having enough interest can also be stressful to the users of the space.
- It is important to create **balance**, whether symmetrical or asymmetrical, so the space feels stable as a whole.
- Use key, specimen, group, and mass plantings to create **emphasis** within the space. This provides focal points to help people orient themselves in the garden.
- Create **sequence** or smooth transitions from one area of the landscape to another. This is especially important to create good flow when going from public gathering areas to more private areas for solitude.
- It is also important to use the appropriate **scale**. If the healing garden is located by a high-rise building such as a hospital, use elements such as trees to bring the space down to a human scale.



Photo courtesy of the UMN
Landscape Arboretum
Paved walkways of the Sensory
Garden located at the University of
Minnesota Landscape Arboretum.

In addition to the design principals, the following is a list of design suggestions for creating healing gardens. These are simply guidelines. Each site and application is unique and some of the suggestions

may not be appropriate.

Paths and Surfaces

- Provide five-foot minimum width at paths for one-way traffic to accommodate the turning radius of a wheelchair. For two-way wheelchair traffic, provide seven-foot minimum width. See illustration below.
- Create a change in texture at the edge of a path to help people with low vision to recognize when they are off the path. Raised edges on a path can create a tripping hazard.
- Path surfaces must be firm, smooth, and provide traction to allow for easy movement of wheelchairs, gurneys and IV poles. Paving with deep grooves can be an obstacle. Concrete is a good choice, but can be expensive. Asphalt absorbs and radiates heat which can be hot in the summer. Decomposed granite is good for people in wheelchairs, but not for those on crutches. Newer rubberized paving materials are firm enough for wheelchairs and also cushion falls.

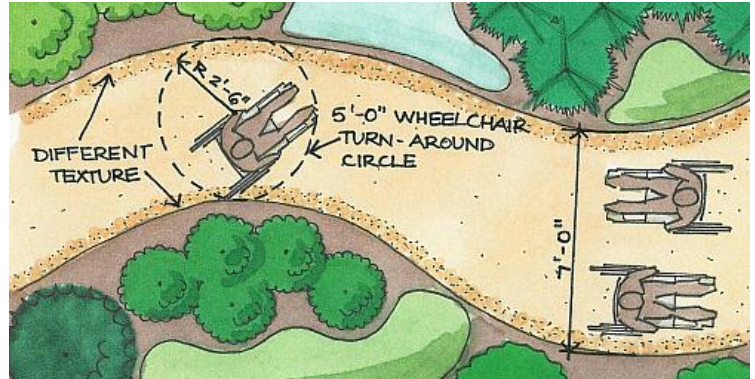


Illustration by M. Furgeson

Figure 1: Example of path width and design.

- Avoid materials that produce glare. Light concrete can be especially troubling to older people. Use tinted concrete if possible.
- Limit grade changes in most highly used outdoor areas. The slope of a walk must not exceed 5% or 1 foot of rise for 20 feet length. Cross slope must not exceed 2% or 1 foot of rise for 50 feet of length. See illustration below.
- Where slope does exceed 1:20, provide a support railing for those with unsure footing. Consult your local building codes for exact accessibility requirements. When dealing with healing gardens, building codes are just a start in terms of clearances. They are often the bare minimum that should be allowed.

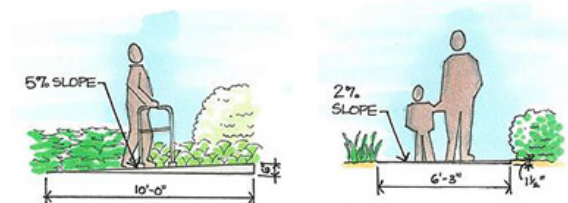


Illustration by M. Furgeson

Figure 2: Maximum slope and cross slope.

Spatial Layout

- Provides a variety of spaces to accommodate different activities and levels of privacy from spaces to allow group activities to spaces that allow solitary contemplation.
- Creates a planting buffer between people in the garden and any windows looking out onto the garden to avoid a "fish bowl" affect.
- Provides transition areas between public and private garden spaces as shown in figure 3.
- Provides users of the garden options for control of privacy.

- Keeps intrusive noises to a minimum. When possible, locate the garden away from noisy streets or mechanical elements such as air conditioners. Where undesirable noises can't be avoided, incorporate features to mask the sound such as a water feature or wind chimes.
- The layout of the garden should be easily "readable" to minimize confusion for those who are not functioning well. Paths should be clearly laid out.
- Landmarks should be provided to help orient the users of the space. This can be done with elements such as sculpture, a profusion of flowers, or a water feature as shown in the picture above.
- Offer a variety of sunny and shady areas for people with varying tolerances to light exposure.
- Offer seating of as many types and forms as possible to provide a choice to those using the garden. Lightweight chairs are desirable in allowing users to move the seating wherever they wish. Plenty of sturdy seating with backs and arms should be provided for those that need support for sitting for long periods of time.
- Where possible, provide a water feature. Water provides a calming effect on people.

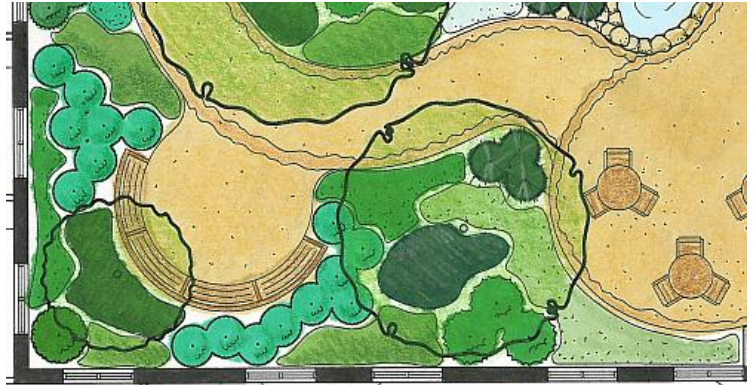


Illustration by M. Furgeson

Figure 3: Planting bed provides transition between public gathering area at right and more intimate seating area at left.



Photo courtesy of UMN Landscape Arboretum

Incorporate plants that attract wildlife.

Plant Selection

- When selecting plants materials, research which particular species might have special sacred or evocative meanings for the cultural and age groups being served.
- If possible, use plants that have some medicinal value. For an example of a garden design using medicinal plants, visit [Southern Cross University – Medicinal Plant Garden](#).
- Choose plants that engage all the senses. Use a variety of textures, scents, colors, as well as plants that make pleasant sounds as wind rustles their leaves. Providing seasonal interest allows people to connect with the cycle of nature.
- Avoid thorny or toxic plants, especially in gardens used by children or people with certain psychological disorders. For more information on poisonous plants, see the [Cornell University Poisonous Plants Informational Database](#).
- Incorporate elements that will attract wildlife including berry-producing shrubs, birdbaths and bird feeders. Avoid plants that attract large numbers of bees or undesirable insects.
- Choose insect- and disease-resistant varieties to eliminate pesticide use.
- Plant higher maintenance plants such as vegetables, herbs and cut flowers in easy-to reach or

raised beds.

Designing healing gardens for specific uses

The following is a list of design suggestions for incorporating a healing garden into a landscape for specific applications. Some suggestions may be repeated from the earlier section. Again, these are simply guidelines. Each site and application is unique and some of the suggestions may not be appropriate.



Photo courtesy of the UMN Landscape Arboretum

Flowers and vegetables are planted in raised beds to create ease of maintenance and easier access by visitors with limited mobility.

Psychiatric hospital gardens

- If safety is an issue, use materials that are impossible to use in harming anyone.
- Avoid poisonous plants.
- Avoid plants that are irritating to the touch.
- The layout of the garden should be easily "readable" to minimize confusion for those who are not functioning well. Paths should be clearly laid out.
- Create a planting buffer between people in the garden and any windows looking out onto the garden to avoid a "fish bowl" affect.

For an example of the process that South West Yorkshire Mental Health NHS Trust went through to develop a healing garden space, visit [Developing a Therapeutic Garden: Ward 17 Courtyard Improvement Team](#) and click through the PowerPoint presentation.

Children's Gardens

- Make all entrances welcoming and child-friendly.
- Provide differentiation of spaces for preadolescent / adolescent groups, if appropriate.
- Provide a comfortable social environment with plenty of places for parents and staff to sit and share the space with children.
- Provide as many options as possible for children to interact with nature through their senses and/or hands-on activities.
- Provide opportunities for planting and harvesting.
- Provide a range of appropriately scaled, accessible multi-purpose settings for hands-on activity as well as for social gatherings of different types.

The following are examples of children's gardens:

- [Chicago Botanic Garden - Children's Garden](#)
- [Leichtag Family Healing Garden at Children's Hospital and Health Center San Diego.](#)

- [Carley's Magical Gardens at Children's Hospital and Health Center in San Diego](#)
 - [Brooklyn Botanic Garden - Children's Garden](#)
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Nursing Home Gardens

- Use warm, highly saturated hues (red, orange, yellow) that are easier for the elderly to see than cooler hues (blue, purple, green).
- Use plants with different leaf textures, forms, and smells to stimulate the senses and memory.
- Provide different lengths and difficulty of walking routes that will provide choice to residents with different needs.
- Providing handrails will encourage less able residents to participate in outside activities.
- Provide transition areas between indoor and outdoor spaces, such as screen porches or overhangs, to provide protection from the elements, allow eyes to adjust to bright outdoor light, and provide a place to sit and view the activities without being involved in them.
- Provide sunscreens, trellises, fences, walls, baffles, and plant materials to alleviate the harsh effects of the sun and wind in outdoor spaces.
- Carefully place and select trees with dense canopies to reduce glare and control light penetration.
- Provide a clear organizational pattern with well-identified paths, a clear hierarchy of spaces and features or focal points to help orient residents.
- Pathways should contrast with planting areas to help define the boundary between path and plantings for residents with reduced depth perception.
- The color of chairs and tables should contrast with floor material so they are distinguishable by people with sight impairments.
- Choose seating with back support and arm rests.
- Situate plantings to provide views from windows looking out onto the garden for people who are unable to go outside.

The following is an example of a nursing home garden:

- [Inchmarlo House Nursing Home and Retirement Community](#)

For more information on gardening for older adults, visit [Gardening for Good](#).

Alzheimer's Treatment Gardens

- Paths should be a continuous level loop without dead ends which may frustrate dementia residents.
- Provide nonpoisonous plants.
- Utilize plants and other elements that stimulate memory, conversation, and activity.
- Use subdued colors, textures and forms to create a calming environment.
- Choose seating with back support and arm rests.

- Provide landmarks such as sculpture, a profusion of flowers, or a water feature to help orient the users of the space.

The following is an example of an Alzheimer's / memory garden:

- [The Portland Memory Garden.](#)
-

Hospice Gardens

- Provide transition spaces between indoor and outdoor spaces to allow adjustment to bright outdoor light.
- Provide soothing natural sounds in the garden — hearing is often the last of the senses to leave a dying person.
- Provide quiet places to sit and contemplate.
- To encourage people to touch things in the garden, use plants and structures with a variety of textures.
- Provide a view from the window for patients who can't go outside.
- Design with materials that improve, rather than wear out, with age.
- Provide a water feature. Water is a soothing agent. Still water can provide a setting for meditation or prayer while the sound and view of moving water is undeniably restorative.

The following is an example of a hospice garden:

- [Brattleboro Area Hospice Memorial Garden](#)
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Gardens for the Visually Impaired

- To aid orientation, the garden can be laid out with straight edges and right angles. Avoid curves and intricate patterns.
- Provide landmarks or reference points to assist in orientation. Examples of landmarks are: scented or tactile plants, ornaments and furniture, sound elements such as wind chimes or running water, or path materials such as gravel or bark.
- Use vivid colors and bold materials as reference points for people with partial sight.
- Color contrast can be used for containers, pathways, fences, gate latches, steps, and other things the gardener might have trouble finding or noticing.
- Distribute scent in the garden to various locations and at different times of year. Too many scents in one place can confuse and hinder orientation.
- Ornaments and seating should be recessed from pathways.
- Use texture changes in paths to indicate changes in direction.

The following are some examples of gardens designed for the visually impaired:

- [Touch and Smell Garden for the Visually Impaired](#)

- [Brooklyn Botanic Garden — Fragrance Garden](#)
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Meditation Gardens

The aim of these gardens is to aid relaxation and provide a focus for concentration, which will enhance the healing experience.

- Garden layout should be as simple and uncluttered as possible.
- Some possible layouts are a circle which represents the cycle of life, a square representing universal order, or symbols such as a Celtic knot which represents a journey.
- Provide an area of lawn or some type of seating suitable for sitting for long periods of time.
- Provide a focal point within view of the seating area.
- Include a water feature where possible. It is the perfect focal point for contemplation.
- Avoid using clashing colors.
- Choose cool colors (violet, blue, green) in the plantings.

An example of a garden for meditation is the [Cleveland Botanical Garden](#)

The following are some other types of meditative gardens:

- To get a background on labyrinth gardens, visit [Myth and History of Garden Labyrinths](#)
 - [Zen and the Art of the Ancient Tea Garden at the Cleveland Botanical Garden](#)
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Enabling Gardens

These are gardens designed especially for people of all ages and abilities. For more information on enabling gardens, see the University of Illinois Extension. The following are examples of enabling gardens:

- [The Miriam H. Davies Enabling Garden](#)
 - [Enabling Garden at Chicago Botanic Garden](#)
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Sensory Gardens

These are designed to appeal to all five of the senses. The following are examples of sensory gardens:

- [Clotilde Irvine Sensory Garden](#) at the Minnesota Landscape Arboretum
 - [Denver Botanic Gardens — Sensory Gardens](#)
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Gardens for Horticultural Therapy

For information on designing gardens for horticulture therapy, visit [Accessible Gardening for Therapeutic Horticulture](#). The following are more Horticulture Therapy links:

- [The American Horticultural Therapy Association.](#)

- [Therapeutic Horticulture Services at the Minnesota Landscape Arboretum.](#)
- [The Holden Arboretum Horticulture Therapy Program](#)
- [Horticultural Therapy at the Chicago Botanic Garden](#)

More helpful links on Healing Gardens:

- [Therapeutic Landscapes Database](#)
- [Human Issues in Horticulture](#)

Recommended reading

Gerlach-Spriggs, Nancy, Richard Enoch Kaufman and Sam Bass Warner, Jr. (1998). *Restorative Gardens: The Healing Landscape*. New Haven, CT: Yale University Press.

McDowell, Christopher Forrest and McDowell, Tricia Clark. (1998). *The Sanctuary Garden: Creating a Place of Refuge in Your Yard or Garden*. Fireside.

Murray, Elizabeth. (1997). *Cultivating Sacred Space: Gardening for the Soul*. San Francisco: Pomegranate.

Rawlings, Romy. (1998). *Healing Gardens*. Minocqua, WI: Willow Creek Press.

References

The American Horticultural Therapy Association. (2003.) <http://www.ahta.org/>

Bennett, Paul. (March 1998). Golden Opportunities. *Landscape Architecture*. 50-55.

Brattleboro Area Hospice. (2003). "Brattleboro Hospice Memorial Garden Page."
<http://brattleborohospice.org/services/memorial-garden-2>

Brooklyn Botanic Garden. "Garden Stroll: Children's Garden." <http://www.bbg.org/exp/stroll/children.html>

Brooklyn Botanic Garden. "Garden Stroll: Fragrance Garden."
<http://www.bbg.org/exp/stroll/fragrance.html>

Brown, Dan. (2003). "Cornell University Poisonous Plants Informational Database."
<http://www.ansci.cornell.edu/plants/index.html>.

Champaign County Forest Preserve District. (2001). "Nomination for IPRA's Outstanding Facility Award: The Miriam H. Davies Enabling Garden."
<http://www.ccfpd.org/Preserves/Attractions/BotanicalGarden.html>

Chicago Botanic Garden: Garden for Life. (2000). *Paving Alternatives fir the Accessible Garden* [Brochure].

Chicago Botanic Garden. (September 2002). "Explore the Gardens: Children's Garden."
http://www.chicagobotanic.org/calendar/event/grunsfeld_growing_garden_family_drop_in_activities

Chicago Botanic Gardens. (September 2002). "Explore the Gardens: Enabling Garden."
<http://www.chicagobotanic.org/explore/enabling.php>

Chicago Botanic Gardens. (September 2002). "Horticultural Therapy."

<http://www.chicagobotanic.org/therapy>

Children's Hospital and Health Center San Diego. "Special Family Places." <http://www.rchsd.org/about-us/who-we-are/healing-environment/healing-gardens/>

Cleveland Botanical Garden. "Living Exhibit Gardens: A Quiet Retreat." <http://www.cb garden.org>

Cleveland Botanical Garden. "Living Exhibit Gardens: Zen and the Art of the Ancient Tea Garden." <http://www.cb garden.org>

Cooper Marcus, Clare, and Barnes, Marni. (1999). *Healing Gardens: Therapeutic Benefits and Design Recommendations*. New York: John Wiley & Sons.

Denver Botanic Gardens. "Sensory Gardens." <http://www.botanicgardens.org>

Eckerling, Mara. (1996). Guidelines for Designing Healing Gardens. *Journal of Therapeutic Horticulture*, 8, 21-25.

"Gardening for Good." <http://www.gardening4good.org/>

GoneGardening.com. (2003). "Garden Design for Visually Impaired Gardeners." http://www.gonegardening.com/xq/ASP/group_id.22/article_id.109/referer./qx/gg_shop/article.htm

High Iron Illustrations. (2003). "Children's Hospital." <http://www.highironillustrations.com>

The Holden Arboretum. "The Holden Arboretum Horticulture Therapy Program." <http://www.holdenarb.org/education/wellness.asp>

Inchmarlo House Nursing Home and Retirement Community. "Inchmarlo: Garden Paradise." <http://www.inchmarlo-retirement.co.uk/the-estate/oriental-garden.html>

Larson, Jean, Anne Hanchek and Paula Vollmar. (2003). "[Accessible Gardening for Therapeutic Horticulture](#)." University of Minnesota Extension.

Mary's Gardens. (1995). "Flowers of Our Lady and Mary Gardens in the U.K." http://campus.udayton.edu/mary/resources/m_garden/NATFOLMG-UK.html

Martin, Frank Edgerton. (September 1985). Home Truths. *Landscape Architecture*, 60-61.

Meisler, Meryl and Francine LaPorte. "Buddhist Temple Architecture and Zen Gardens." Enter Through the Form: Explore Japan.

Minnesota Landscape Arboretum. (1998). "Therapeutic Horticulture Services." http://www.arboretum.umn.edu/ht_engage.aspx

M. S. Swaminathan Research Foundation. (April 2003). "Touch and Smell Garden (for the Visually Impaired)." <http://www.bgci.org/worldwide/article/203/>

Portland Memory Garden. "About Us: What is a Memory Garden?" http://www.portlandmemorygarden.org/PMG/About_Us.html

Quigley, Martin. (2000). "Myth and History of Garden Labyrinths." Chadwick Arboretum and Learning Garden. <http://www.chadwickarboretum.osu.edu>

Rawlings, Romy. (2003). "Meditation in the Garden." <http://www.baseball.ca>

Relf, Diane. "Human Issues in Horticulture." Virginia Tech Department of Horticulture. <http://www.hort.vt.edu/HUMAN/hihart.htm>

Rothert, Gene. (1994). *The Enabling Garden: Creating Barrier-Free Gardens*. Dallas, TX: Taylor Publishing Company.

Royal Schools for the Deaf Manchester. (2003.) "School Facilities: Sensory Garden."

<http://www.rsdmanchester.org/facilities/garden.html>

Sachs, Naomi. (2002). "Therapeutic Landscapes Database." www.healinglandscapes.org

Scarfone, Scott C. (1996). Design of Outdoor Environments for Wellness and the Role of Landscape Architecture. *Journal of Therapeutic Horticulture*, 8, 68-71.

South West Yorkshire Mental Health NHS Trust. (2003). "Developing a Therapeutic Garden: Ward 17 Courtyard Improvement Team."

Southern Cross University. (December 2001). "Natural and Complementary Medicine: Medicinal Plant Garden." Southern Cross University: Schools and Colleges. <http://www.scu.edu.au/schools/ncm/garden/>

Tampa Bay Regional Planning Council. "Dunedin Garden for the Visually Impaired."

Ulrich, Roger S. (1991). Effects of interior design on wellness: Theory and recent scientific research. *Journal of Healthcare Interior Design: Proceedings from the third symposium on healthcare interior design* (pp. 97-110). California: National Symposium on Healthcare Design, Inc.

Ulrich, Roger S. (1981). Natural Versus Urban Scenes: Some Psychophysiological Effects. *Environment and Behavior*, 13 (5), 523-553.

Ulrich, Roger S. (2000). Evidence-Based Garden Design for Improving Health Outcomes. *Investigating the Relationship between Health and the Landscape: Therapeutic Conference Report*. University of Minnesota Landscape Arboretum.

University of Illinois Extension. "Between Gardeners: Enabling Gardens."

<http://www.urbanext.uiuc.edu/macon/garden/0203b.html>

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