Evidence Based Design of Houston Methodist Healing Garden

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HEALING BY NATURE ENGAGEMENT

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# Evidence Base: Benefits of Design Strategies

## Healing Benefits of Nature Therapy

<table>
<thead>
<tr>
<th>Nature Therapy</th>
<th>Benefits</th>
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| **A. Horticulture Therapy** | Reduce the risk factors for dementia  
                             Reduce depression and promote emotional growth  
                             Improve brain activity such as memory and cognition  |
| **B. Water Feature**     | Stimulate auditory sense from natural sound of moving water  
                             Lower blood temperature and stabilize the pulse  
                             Reduce eye fatigue and body pressure through water color  
                             Relieve intensity of muscle, lower blood pressure  |
| **C. Open Lawn**         | Reduce sense of fear through soft open green space  
                             Lower blood pressure and calm patients down  
                             Reduce the muscle tension related to stress-related diseases  |
| **D. Forest Therapy**    | Phytoncide from plants reduce stress-related diseases  
                             Increase anti-cancer proteins from phytoncide and wood oil  
                             Reduce bone marrow biopsy pain by natural sound  
                             Reduce cancer risk from wood essential oils from tree trunks  
                             Control blood sugar and pressure  |

## Healing Benefits of Interactive Therapy

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| **E. Green Wall**     | Provide arm exercise opportunity with elevated living walls  
                             Physical recovery improve bone mineral density  
                             Increase visual comfortable of tedious concrete wall  
                             Provide an enclosure and private space for users  |
| **F. Social Plaza**   | Improve appetite by being outdoor in nature  
                             Increase communication skill for Alzheimer patients  
                             Reduce depressed emotion and elevated mood  |
| **G. Sensory Garden** | Stimulate patients’ sense of texture  
                             Relieve stress and pain through pleasant natural aromas  
                             Reduce eye fatigue and provide visual comfort  
                             Enhance brain activity by soft sound or music  
                             Increase motivation to engage in treatment  |
| **H. Art Therapy**    | Reduce stress-related diseases and negative emotion  
                             Improve physical rehabilitation by interacting with art pieces  
                             Provide positive emotional support and stimulate enthusiasm  |
Forest Therapy Area & Proposed Plants

Growing in full sun or part sun
- Oriental Arborvitae / Picea glauca
- Rosemary / Rosmarinus officinalis
- Purple Coneflower / Echinacea purpurea

Growing in shade or part shade
- Boston Fern / Nephrolepis exaltata
- Jasmine / Jasminum spp.
- American Beautyberry / Callicarpa americana
- Japanese Aralia / Fatsia japonica
- Iron Plant / Aspidistra elatior
- Azalea Flower / Rhododendron
- Japanese aucuba / Aucuba japonica
- Japanese Viburnum / Viburnum japonicum
- Blue Lily Turf / Liriope muscari
- Columbine Flower / Aquilegia coerulea
- Yaupon / Taxus vomitoria
- Japanese maple / Acer palmatum
- Fringe Tree / Chionanthus virginicus
- Creeping Fig / Ficus pumila
- Virginia Creeper / Parthenocissus quinquefolia

Phytancide is the most important element in forest therapy. It’s a substance emitted by plants known as aroma of the forest. Not only phytancide, The green scenery, soothing sounds of water and natural aromas are all necessary part of forest therapy.

Seasonal Color Change of Plants

| Species Name                      | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|-----------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Cherry Laurel (Prunus laurocerasus)|     |     |     |     |     |     |     |     |     |     |     |     |
| Yaupon (Ilex vomitoria)          |     |     |     |     |     |     |     |     |     |     |     |     |
| Fringe Tree (Chionanthus virginicus) |     |     |     |     |     |     |     |     |     |     |     |     |
| Japanese Maple (Acer palmatum)   |     |     |     |     |     |     |     |     |     |     |     |     |
| Rosemary (Rosmarinus officinalis)|     |     |     |     |     |     |     |     |     |     |     |     |
| Purple Coneflower (Echinacea purpurea) |     |     |     |     |     |     |     |     |     |     |     |     |
| Jasmine (Lasionium lautomum)     |     |     |     |     |     |     |     |     |     |     |     |     |
| Azaleas (Rhododendron tsutsu)    |     |     |     |     |     |     |     |     |     |     |     |     |
| Japanese Viburnum (Viburnum plicatum) |     |     |     |     |     |     |     |     |     |     |     |     |
| Beautyberry (Callicarpa americana) |     |     |     |     |     |     |     |     |     |     |     |     |
| Columbine Flower (Aquilegia spp.) |     |     |     |     |     |     |     |     |     |     |     |     |
| Blue Lily Turf (Liriope muscari) |     |     |     |     |     |     |     |     |     |     |     |     |
| Coleus (Plectranthus scutellarioides) |     |     |     |     |     |     |     |     |     |     |     |     |
| Japanese Aucuba (Aucuba japonica) |     |     |     |     |     |     |     |     |     |     |     |     |
Horticulture Therapy Area

Horticulture therapy is considered as the engagement of a person in gardening and plant-based activities. The visual aesthetics of plants are known to elicit feelings of inner peace, which generates positive emotions toward a meaningful appreciation of life.

Did you know that horticulture therapy can improve your mental health?

Wow, this touch screen is very nice and easy to find out what this garden offers!

We can plant some flowers by ourselves in this horticulture therapy zone.

Sort of, let me see...

Really? Sounds cool!

Love the smell of these trees!
Art Therapy Area

Art therapy uses the creative process of art pieces to improve a person’s physical, mental, and emotional well-being.

Oh, these flowers are so beautiful and smell really nice too!

This green wall looks so cool. Can we get closer so that I can see what plants are actually growing there?

I love this video so much to learn about the healing benefits of nature!

Typically, I like this video wall.

I cannot believe that someone in this hospital made this!
Outdoor Dining Area

This outdoor dining plaza is mainly designed for staffs in Houston Methodist hospital to take a quick lunch with their colleagues or just relax themselves. This outdoor dining area is surrounded by lawns slightly fragrant flowers, which could relieve people's stress and pressure.

It's a nice place for a nurse to take a short break. I should bring my lunch here tomorrow.

Dad, what are those colored pillows?

They are art pieces for some healing purposes. Let's touch it to feel its special texture.

Let me check how to use garden's app to send my feedback from my phone.