

Therapeutic Garden @ HortPark: Enhancing Nature for Mental Well-Being

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Images by Chelsea Sia

Project Credits
Location 33 Hyderabad Rd,
Singapore 119578 Client/Owner
National Parks Board Completion Date
14 May 2016 Landscape Architect
Andrew Foke (National Parks Board)
Hardscape Contractor Landscape
Engineering Pte Ltd Landscape
Contractor Tropic Planners &
Landscape Pte Ltd Site Area 850sqm
Sponsors Gerontology exercise
equipment from CT-Art Creation
Pte Ltd and Sculpture from
Soroptimist International of
Singapore (Garden City)





What sets a healing garden apart from standard gardens or public parks is its landscape quality and design functionality. Healing gardens are often considered seedbeds of social, emotional and psychological growth – and in the case of the Therapeutic Garden @ HortPark, it is especially meaningful for the elderly.

Nature Brings about Positive Moods

All through history, humans have had an intimate relationship with nature. This relationship has grown from a dependence on nature solely for subsistence and production in ancient times, to interactions with nature for recreation and enjoyment in modern times. There is increasing empirical evidence that interacting with nature delivers a range of measurable benefits, including positive effects on physical health, psychological well-being, cognitive ability and social cohesion. Published in the *Psychology of Sport and Exercise*, 2003¹ by Swedish researchers is a scientific research paper outlining how urban joggers prefer to exercise in the city's parks rather than concrete jungle, simply due to the psychological respite that the greenery offers.

There are three main types of interaction with nature: indirect, incidental and intentional². Indirect interaction does not require a person to be physically present in nature; it includes activities such as viewing a photograph of nature, or having a view of nature through a window. Incidental interactions occur when a person is physically present in nature, but the interaction is an unintended result of another activity, like encountering greenery while cycling to work. Intentional interactions, on the other hand, are activities in which the participant has a predetermined purpose to interact with nature, such as viewing wildlife, gardening, or hiking in a forest. An example of intentional interaction that is gaining traction is horticultural therapy, defined as the long-standing practice of using natural environments like gardens, parks, and forests to promote well-being among patients.

Horticulture Therapy

Early forms of therapeutic gardening originated from the United States, where the rehabilitative care of war veterans in the 1940s to 1950s featured horticultural elements. This benefited the participants greatly in terms of regaining their skills of language, confidence, and cognitive abilities. More recent studies across the globe bear witness to the efficacy of horticultural therapy in promoting the wellness of people living in the modern world.

The beneficial aspect of gardening has been proven and used in the realm of medical treatment. To cite an example, a study published in the *American Journal of Alzheimer's Disease and Other Dementias*, conducted in 2010, has compared the effects of incorporating horticultural therapy into dementia programmes, against traditional activities typically associated with dementia programmes. Results have shown that patients who participated in horticultural activities were significantly more involved in the programme and more actively engaged with their surroundings and the community.

In March 2016, a research team from the National Parks Board (NParks) and the National University Health System (NUHS) completed a study on the effects of horticultural therapy on the mental health of the Asian elderly. This is the first clinical study in the region to evaluate the efficacy of horticultural therapy in promoting the mental health and cognitive functioning of the Asian elderly. Taking place over six months, the study rigorously assessed 69 participants between the ages of 60 and 85. The participants' mental health was measured using validated psychometric tests and tests on immunological markers on three occasions: before, during (a three-month period), and after the study. Using a separate group of participants as a control, the study revealed that besides offering an enjoyable experience to the elderly, horticultural therapy intervention enhances their psychological well-being and results in a positive change in the relevant biomarkers. The community element of the therapy also resulted in a significant improvement in the participants' relationships with others.

1. The Therapeutic Garden @ HortPark, Singapore's first therapeutic garden in a public park.



In its design, special attention is taken to ensure that every fragment of infrastructure is functional and purposed towards spurring growth.

Therapeutic Gardens

In complementing the array of benefits gained from horticultural therapy, a tangible, safe space must also come into play. The healing garden was therefore conceptualised as a space where therapeutic gardening could be localised and concentrated. Beneficiaries and other like-minded enthusiasts can gather, socialise, and tend to the garden as if it were their own, caring for the plants in their cyclical seasons of growth, maturity, and harvest – offering up a glimpse of their own lives, a hint at nostalgia in the garden. It is through these activities that a sense of personal responsibility and ownership over the land is formed. These effects reap benefits for the participants, at the same time ensuring that the upkeep of the garden is strongly sustained, fuelled by passion and genuine love of its custodians.

The importance of a healing garden is further emphasised in various environmental psychology theories: the Biophilia Hypothesis, the Attention Restoration Theory, and the Stress Reduction Theory.

The Biophilia Hypothesis, coined by social psychologist Erich Fromm in his 1973 publication, *The Anatomy of Human Destructiveness*, is defined as “the passionate love of life and all that is alive; it is the wish to further growth, whether in a person, a plant, an idea, or a social group. The biophilous person prefers to construct rather than to retain. He wants to be more rather than to have more. He is capable of wondering, and he prefers to see something new rather than to find confirmation of the old. He loves the adventure of living more than he does certainty. He sees the whole rather than only the parts, structures rather than summations. He wants to mould and to influence by love, reason, and example.” It further suggests that humans are linked to nature and other living beings by an inherent emotional affiliation, thereby reaping a wealth of benefits and enhancement in quality of living from being in contact with nature.

In the second theory, Rachel and Stephen Kaplan explain that a person has two main states of attention, directed attention – requiring effort and concentration on the tasks at hand – and effortless attention. Prolonged exertion of directed attention would result in fatigue, giving rise to ineffectiveness and human errors. Their Attention Restoration Theory postulates that a person can be restored from fatigue caused by prolonged directed attention, through evoking effortless attention in a natural environment. Gardens are good spaces and provide ample opportunities for rest from directed attention, as garden appreciators need not actively exert effort to pay attention to the natural surroundings.

Roger Ulrich’s Stress Reduction Theory states that stress can be reduced through being in contact with nature. Patients and carers often experience stress, and therefore green spaces like gardens and parks serve as environments in which they can spend time feeling more relaxed.

2. Developed by NParks in consultation with Professor Kua Ee Heok from the Department of Psychological Medicine, National University Health System (NUHS), it is designed to contribute to the well-being of all visitors, including those with conditions such as dementia.







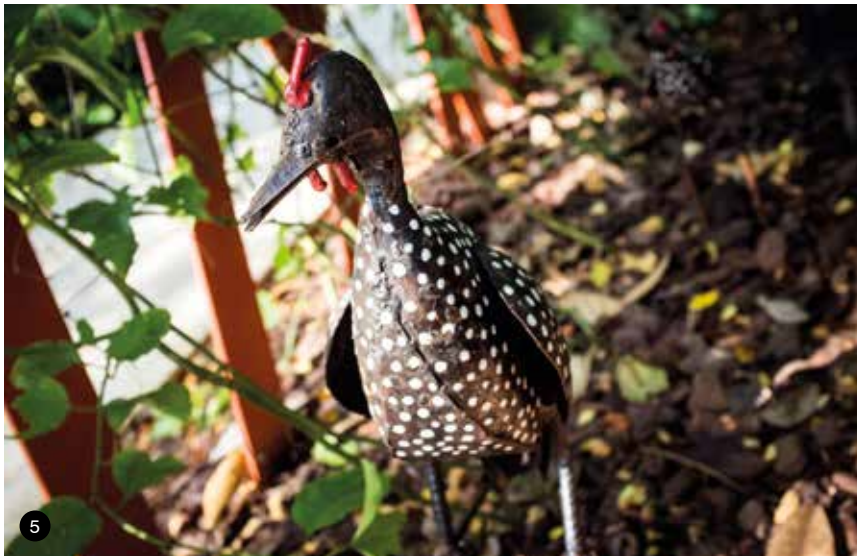
The First Therapeutic Garden in Singapore

What sets a healing garden apart from standard gardens or public parks is its landscape quality and design functionality. Healing gardens are often considered seedbeds of social, emotional and psychological growth—and in the case of the Therapeutic Garden @ HortPark, it is especially meaningful for the elderly. In its design, special attention is taken to ensure that every fragment of infrastructure is functional and purposed towards spurring growth. Evidence-based, elderly-friendly features are interwoven into the fabric of the Therapeutic Garden @ HortPark. In its Activities Zone, where horticultural activities take place, elements like trees with ample shade, moveable and raised planter beds, shaded areas, wide walkways, and easily accessible water points help to enhance the gardening experience. These features allow users with different physical abilities to carry out typical gardening tasks like watering, weeding and harvesting without straining or overexerting themselves.

A Restorative Zone complements the Activities Zone: it is a space designed with appropriate rest points like pavilions and benches scattered across the garden, serving as varied vantage points to its intensive and fascinating landscape. This encourages social interactions among users, as they experience the calming, restorative effects that arise when observing nature. Apart from infrastructure, the selection of plants and flowers is central in providing an environment conducive for therapy. Flowers and foliage with warm, saturated colours—shades of red, yellow and orange—were largely incorporated into the garden. In addition, the garden features many plants that give off strong, pleasant scents. Colours and smells are useful tools in evoking emotions, and can be powerful in stimulating memory and thinking. The inclusion of plants that attract wildlife and the placing of elements of animal habitats like bird feeders and fishponds create opportunities for the elderly to interact with both flora and fauna.

3. The garden has several destination points, such as a gazebo with ample seats.

4. The Restorative Zone provides respite and a holistic rehabilitative environment, with the profusion of plants with colour, texture and scents to stimulate senses.



5. Ornaments are selected carefully to add structure and personality to a garden.

6. An area specifically designed for gardening with ample shade and moveable raised beds.

7. Besides soothing sounds from leaves rustling in the breeze, the music of chimes adds another sound element in the healing garden.

A Multi-disciplinary Approach


The implementation of horticulture therapy programmes and therapeutic gardens involves a multi-disciplinary approach. In Singapore, a critical factor in the success of this initiative is the collaboration between medical and greenery professionals.

An instrumental figure in both the research study on the effects of horticultural therapy on mental health of the Asian elderly, as well as the development of Singapore's first Therapeutic Garden @ HortPark, is the revered Professor Kua Ee Heok, the appointed Tan Geok Yin Professor of Psychiatry and Neuroscience at the NUHS. A medical graduate from the University of Malaya, Professor Kua received further training in Psychiatry and Geriatric Psychiatry with the Oxford University and Harvard University respectively. Besides being active in clinical practice and social programmes to help the elderly in Singapore, he has published numerous papers in well-known journals, including *The Lancet*. His interest in developing horticulture therapy for dementia prevention stems from his belief that treatments need not be expensive or medication-based all the time. In his opinion, time spent in a park is well invested as it brings about multiple benefits, like enjoyment or even improved mental and physical health.

NParks and the NUHS team, led by Professor Kua, will be developing more studies to understand the effects of horticulture therapy on different population groups in Singapore. These projects will be carried out at the Therapeutic Garden @ HortPark.



Expanding the Benefits of Therapeutic Gardens in Singapore

Building on the positive effects of horticultural therapy, NParks is planning to develop a network of therapeutic gardens across parks in Singapore, so that the benefits are accessible and can be easily experienced by more people. This move for parkland to double up as health-promoting infrastructure is logical, as all land plots should be optimised in our land-scarce city-state. NParks is not alone in its journey to tap into nature to build healthy communities. In sharing its experience with external partners, NParks anticipates that the initiative will gain traction and be further advanced in the near future. 



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References

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- Keniger, L.E.; Gaston, K.J.; Irvine, K.N.; Fuller, R.A. "What are the Benefits of Interacting with Nature?" *Int. J. Environ. Res. Public Health* 2013, 10, 913-935.