

DESIGN CONSIDERATIONS AND RECOMMENDATIONS FOR THE DEVELOPMENT OF CHILDREN THERAPEUTIC GARDEN IN MALAYSIAN HOSPITALS

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EPILOGUE

The planning and designing of outdoor spaces in assisting the healing process of children in the hospital environment is new but full of prospect in health service sector in Malaysia. Experiencing with biotic, physical and climatic factors in the natural environment would nurture ill children through provision of space to play and get fascinated. Through passive and /or active participations with the garden elements, the children are able to get away from the confinement of ward conditions and routines of medical treatments. With proper design and implementation, the hospital outdoor spaces can be made into therapeutic platforms for the children to play, rest and socialise. The design must turn the place into a respite where the children's body and mind are engaged into a structured setting. Here they can experience diversity of forms, colours, shapes of landscape elements and dynamism of climatic factors, namely, light, wind and rain. All their senses can be stimulated by the garden environment that would lead to fascination and reduction of stress. Stress reduction is a crucial step in recuperation process that would result in several positive physiological outcomes including lower blood pressure, reduced muscle tension, and lower skin conductance. Furthermore, patients experiencing reduction of stress level would also display some psychological responses. In children, the responses are known as psychological peacefulness and adjustments that include less crying, more cooperation and more obedient toward clinical treatments given by caregivers of the hospitals. The effects of garden towards ill children treated in hospitals is described in depth in a research RMC 72338 Universiti Teknologi Malaysia report, "Study on the Effectiveness of Therapeutic Garden as a Platform to Recuperate Ill Children in the Nucleus Hospital Environment" and later summarised in an article, "Garden as an Environmental Intervention in Healing Process of Hospitalised Children".

Therefore, these design considerations and recommendations for the development of children therapeutic gardens are derived from the research done by Research Management Centre, Universiti Teknologi Malaysia from December 2000 to November 2002. The objectives of submission of these texts are (1) to share the research findings with Jabatan Landskap Negara for the development of therapy gardens in healthcare facilities, and (2) to call upon Jabatan Landskap Negara to finance Universiti Teknologi Malaysia to conduct more studies on therapeutic landscapes, including healing gardens for orthopaedics, Alzheimer, and terminally-ill (chronic) patients in hospital environment. Currently, UTM is making a link with the Department of Pediatrics, Universiti Sains Malaysia to jointly conduct this type of research.

DESIGN CONSIDERATIONS AND RECOMMENDATIONS

The considerations and recommendations involved in designing the children therapeutic garden are categorised in six aspects including site planning and zoning, security, microclimate, accessibility and circulation, planting composition, and garden structures and accessories.

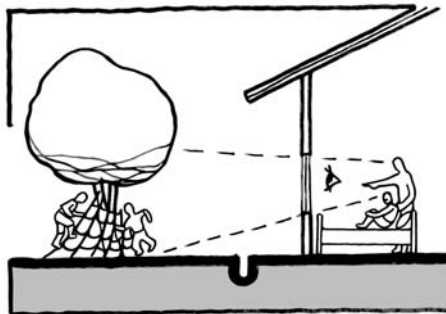
1. Site Planning and Zoning

- a. Site the garden on a level terrain. Any change of level in the garden will cause difficulty of access (Moore, 1999).
- b. Conserve natural features of the site. Natural features, such as matured trees, rock outcroppings, and watercourses, should be conserved as they provide natural identity to the site and potentially useful amenities. A large, canopied tree such as *Tabebuia rosea* provides shade for a play space. Play equipment such as a tree house or a slide on sand base is appropriate to be installed for the active play.



Conserving a shade tree provides a play space for the children underneath it.

- c. Locate the garden so it can be viewed by patients from their beds. Hence, caregivers can draw the curtains and windowpanes or louvers for them to view the outdoors.



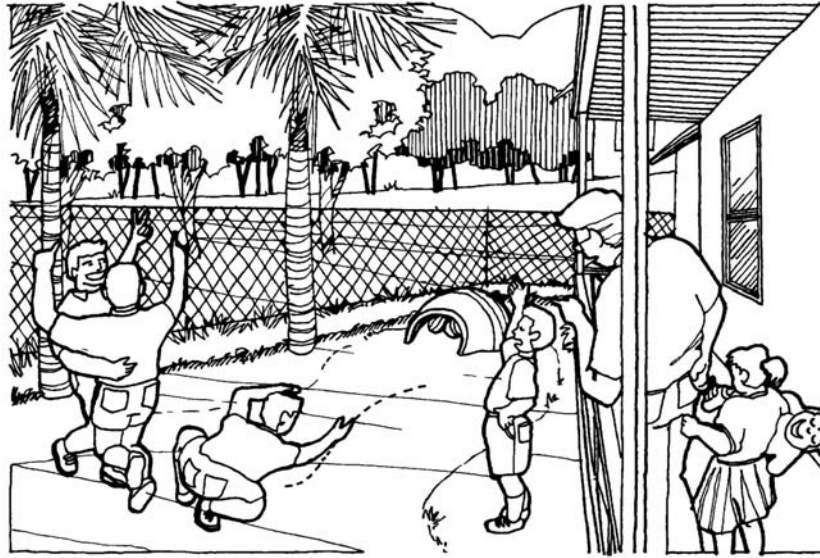
The garden should be located beside the paediatric ward for easy visual and physical access.

- d. Whenever possible, locate the garden beside the playroom to link both play spaces for the children. In addition, incorporate any transition space such as patio or wide corridor with the garden. This will add to the diversity of playing or resting zones for the patients and their caregivers.

2. Security

- a. Locate the garden so that it is enclosed on all sides and inaccessible from the public surroundings of the hospital facility except through the security-controlled entrance of the hospital. Patients and caregivers must be protected from intrusive, unwanted social interactions. The enclosure can be in the form of hedges, fence with climbers, mural or textured walls of surrounding buildings. They should be durable to stop people from

entering the garden as well as pleasant to be viewed by the patients and caregivers. Furthermore, bright and fragrant flowers and mural would become interactive features for the children to use them as tools for play. Nectar-laden flowers such as Thundbergia, Ixoras, Cuphea, and Osbekia would attract insects such as honey bees, bumblebees and butterflies and thus add to the diversity of natural features in the garden.



Wall and fence are important to ensure the security of the children while playing in the garden

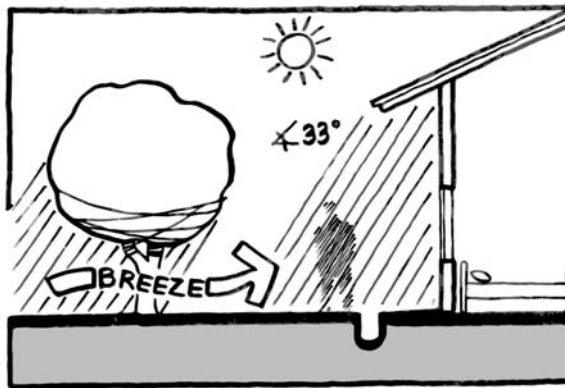
3. Microclimate

- a. Provide sufficient number of shelters for patients and caregivers from the afternoon sun and rain. Garden pavilion and dense-to-moderate canopy trees are appropriate means to shelter the users from the intense sunlight that occurs between 10:30 a.m. to 5:00 p.m. The intensity of light adds to the warm equatorial temperature reaching 33°C around 2:00 p.m. The pavilion is the resting space for caregivers to supervise the children playing in the garden. The patients should not be allowed to be in the garden in heavy rain as it may cause detrimental effect on them. Hence, the use the patio or covered corridor for outdoor play should be maximised during rainy and hot afternoon.



Pavilion provides a shelter for the children from sun and rain.

- b. Locate the tree at an appropriate distance that would not cast deep shade to the ward, possibly 5 to 6 meters from the building, to allow sunlight to be diffused into the building.



Shades from buildings and trees, and the effect of wind would create a conducive thermal comfort for gardens' users.

- c. Sunlight provides motion, differences within sameness, variety, information, and orientation. By allowing the children into the garden, they will be able to experience the natural light that would stimulate their senses to understand the passage of time, to estimate the time of day, and to enjoy an implicit form of plant varieties and garden accessories (Olds, 1987).
- d. Provide one or two timber seats under the shade trees for caregivers to take rest.

- e. Make the children notice the pattern of shadows and use of light that provide opportunities for motion, variety, consistence, orientation, and discovery.

4. *Accessibility and Circulation*

- a. Provide accessibility to children of all abilities including the ones using wheelchairs and walkers. Accessibility obviously plays a big role in effective functioning, both in getting to and from the space, as well as in facilitating movements within the space. An environment that fosters effective functioning also often provides a sense of safety and competence: people like to feel comfortable within a space. Thus, the garden spaces should be linked by a continuous route system without any level change. All open drains along building aprons should be covered with UPVC grating to facilitate crossing and avoid patients from falling into the drain.
- b. Provide a clear hierarchy of pathways. Primary paths should provide a relatively direct route to the garden. Place a portal on the primary path to indicate sense of entrance into the garden.

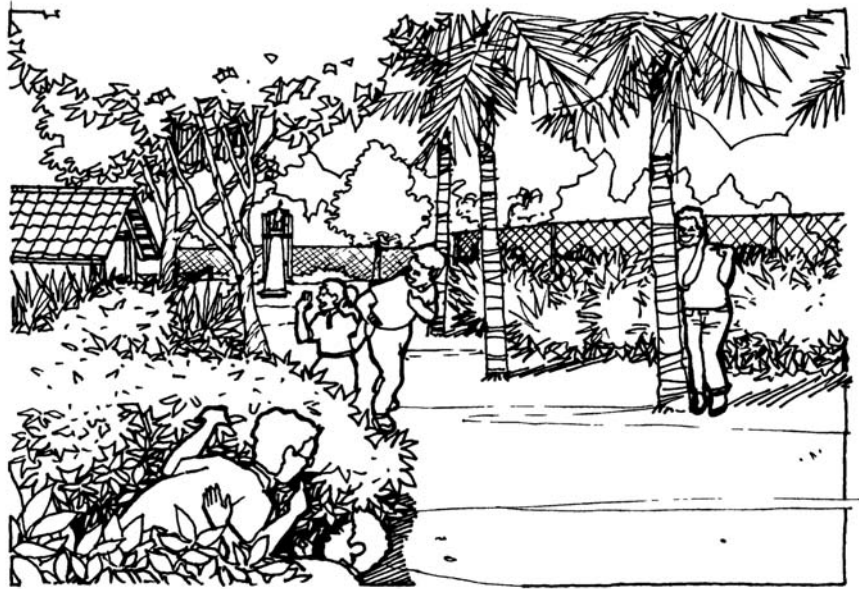


A clear hierarchy of pathways will ease way finding for the children and their caregivers

- c. Provide even, tactile surfaces to all circulation. Texture of paved materials should vary to stimulate the tactile sense when children walk on them barefooted.
- d. In a small garden, where the size ranges from 300 to 700m² as can be found in nucleus hospitals, definite pathways are not necessary. Let the children walk freely on lawn that acts as base for all play zones. This planning method allows the children to make their own selection of play space and equipment, and permits them to make their own decision. Hence, they will feel fascinated by being in the garden.

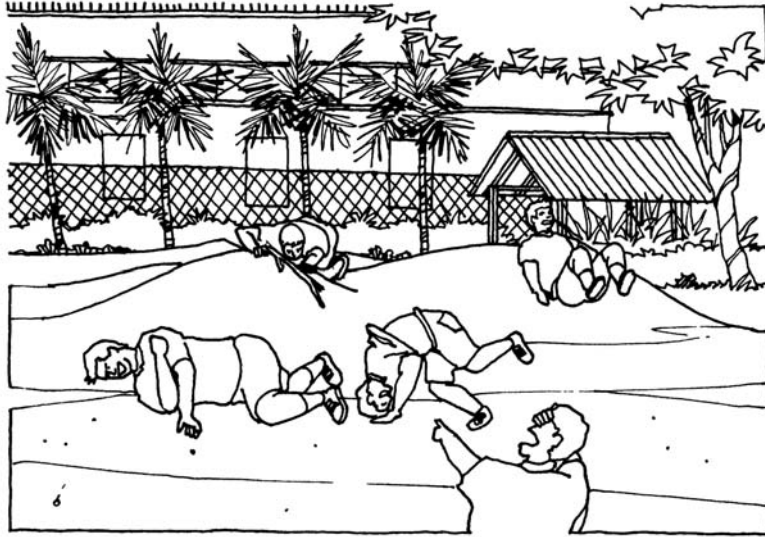
5. *Planting and Composition*

- a. Compose a coherent and a balanced planting scheme in the garden consisting of flowering and foliage plants, fruiting and shading plants. A coherent character helps to provide a sense of order in the garden and to direct attention. Repetitive planting of shrubs and groundcovers may attain this character. A fruit tree can be set in a mass of foliage shrubs, the tree become the main feature, as accent element, surrounded by shrubs as base or backdrop.



Coherent and balanced planting composition provides sense of order and variety for the garden

- b. When space is available, compose mysterious setting using plant mass. A seating space with timber seat over lawn secluded by compact planting of low and tall shrubs are a mysterious setting that invites intrigue and exploration.
- c. Plants and flowers should depict the variety of colour, texture, fragrance, and fruits. Fragrances often trigger memories of particular times, events, places, or feelings.
- d. Set a large lawn area that would become the base for other planting compositions to be laid in the garden. We recommend a minimum length of 10m lawn that allows the children to run or to chase their peers, and even to roll. The lawn should become the central space for spatial organisation of resting and play spaces in the garden. It is the favourable space for running and walking for the children.



Lawn is a base (denominator) for the children to perform various activities

- e. Introduce plants that attract wildlife especially insects and birds. Thus, nectar producing flowers and small-to-medium-sized fruit trees are appropriate for the purpose.
- f. Conserve existing matured trees that later on can be used as a manipulative play structure.
- g. Introduce fruit trees such as banana that are commonly found in house gardens to create a home-like environment.



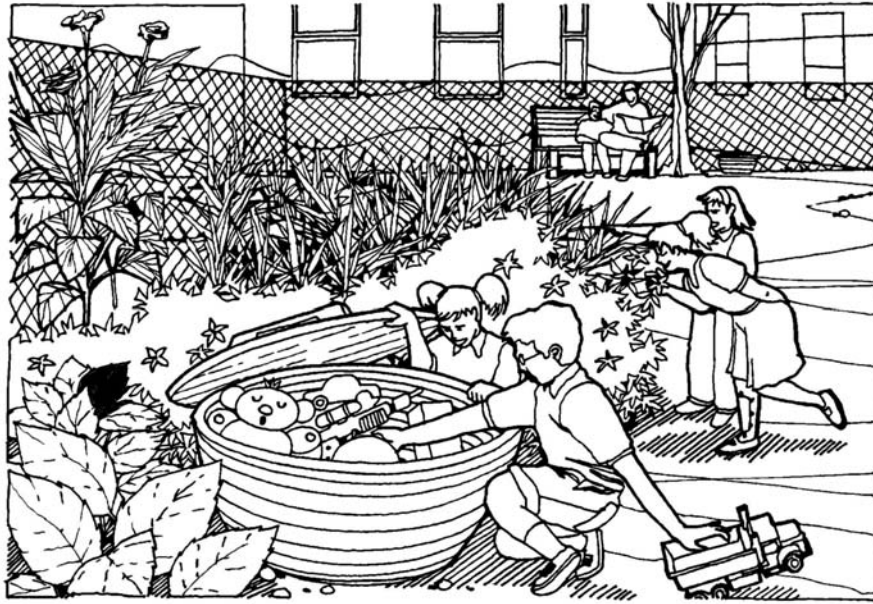
Introducing common plants such as banana trees creates a home-like environment for the children to familiarise the garden setting

- h. Provide planting boxes or beds for sowing seeds and tending the seedlings. Growing plant is an interactive relationship that result in improvement of

self-esteem and confidence. Gardening is an active play for children that helps in rehabilitating their gross-motor movement.

6. *Garden Structures and Accessories*

- a. Provide different forms of play equipment and garden structures that will generate variety modes of play that the features can offer. Similar to planting composition, forms and colours of the features will directly stimulate the children's senses. For example, a large but low, natural-coloured clay urn is appropriate for treasure chest for storing toys in the garden. Its colour will be in contrast to surrounding planting mass, allowing children to recognise the urn as storage for toys.



A clay urn could become an interesting storage for toys in the garden setting

- b. Provide sufficient number of pavilions and seats for parents and hospital staff to supervise the children while experiencing the garden.
- c. Provide opportunity for children to touch and feel with water. A simple feature such as a low urn with fish and water plants would create curiosity in children.
- d. Draw cartoon-like mural on the ward's wall to enliven the ambience of the garden. Left some portions of the drawings for the patients to complete them by colouring with emulsion (water-soluble) paints. By completing a drawing, the patients' esteem would increase and the praise from caregivers would strengthen their emotion.
- e. Allow the children to bring their own toys into the garden. If they insist to bring home the toys that are stored in the treasure chest of the garden, permit them to take home. This action would make them feel the garden is part of them.

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