

# **RESTORATIVE ENVIRONMENT: IMPACT OF GARDEN TO PSYCHOLOGICAL WELL-BEING OF HOSPITALISED CHILDREN**



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## INTRODUCTION

- The restorative power of nature including the healing benefits of plants had been recognized by several ancient civilisations including Mesopotamia, Persia, Greece, China, and India.
- In modern hospitals, child psychologists and landscape architects have recognized the healing power of garden to children as early as 1970 (Cooper-Marcus & Barnes, 1999).
- Restorative effects and emotional reliefs of viewing nature are supported by Attention Restoration Theory (Kaplan and Kaplan, 1989) and Stress Coping and Restoration Theory (Ulrich, 1992). The theories suggest that the garden as outdoor space bring restoration to people when it has four properties: being away, extent, fascination, and compatibility.
- These properties can be experienced in the garden through play activities: sensorimotor play, pretend play, and games-with-rules play (Piaget, 1962; Olds, 1987).

## INTRODUCTION

- The garden is a platform for the children to apply five types of playing and learning styles, namely, deductive, inductive, visual and auditory, impulsive, and reflective.
- The clinical outcomes when patients experience the garden, either by viewing or physically interacting, would include (1) decreased length of stay, (2) *increased psychological and physical peacefulness*, and (3) increased psychological adjustment (Rubin et al., 1998).



## EFFECTS OF HOSPITALISATION TO CHILDREN

- Hospitalisation often erodes patient's feelings of controls due to the aspects of loss of privacy, loss of control over eating and sleeping times, loss of information, and wayfinding difficulties in complex and unfamiliar hospital buildings.
- The effects of hospitalisation have been seen to cause regressive behaviours among toddlers and young children. Some of the behaviours include excessive night time fears, increased clinging to and dependence on parents, loss of bowel and bladder control, or intensified thumb-sucking (Lindheim et al., 1972; Spriggs et al, 1998 ).
- To achieve the *positive distraction*, Lindheim et al. (1972) suggested that a hospital should provide the children with challenging and stimulating environment where they can develop and test their skills, develop physical coordination and strength, and engage in dramatic and imaginative ideas.

## EFFECTS OF HOSPITALISATION TO CHILDREN

- Conditions in ward



Confinement



Strange setting

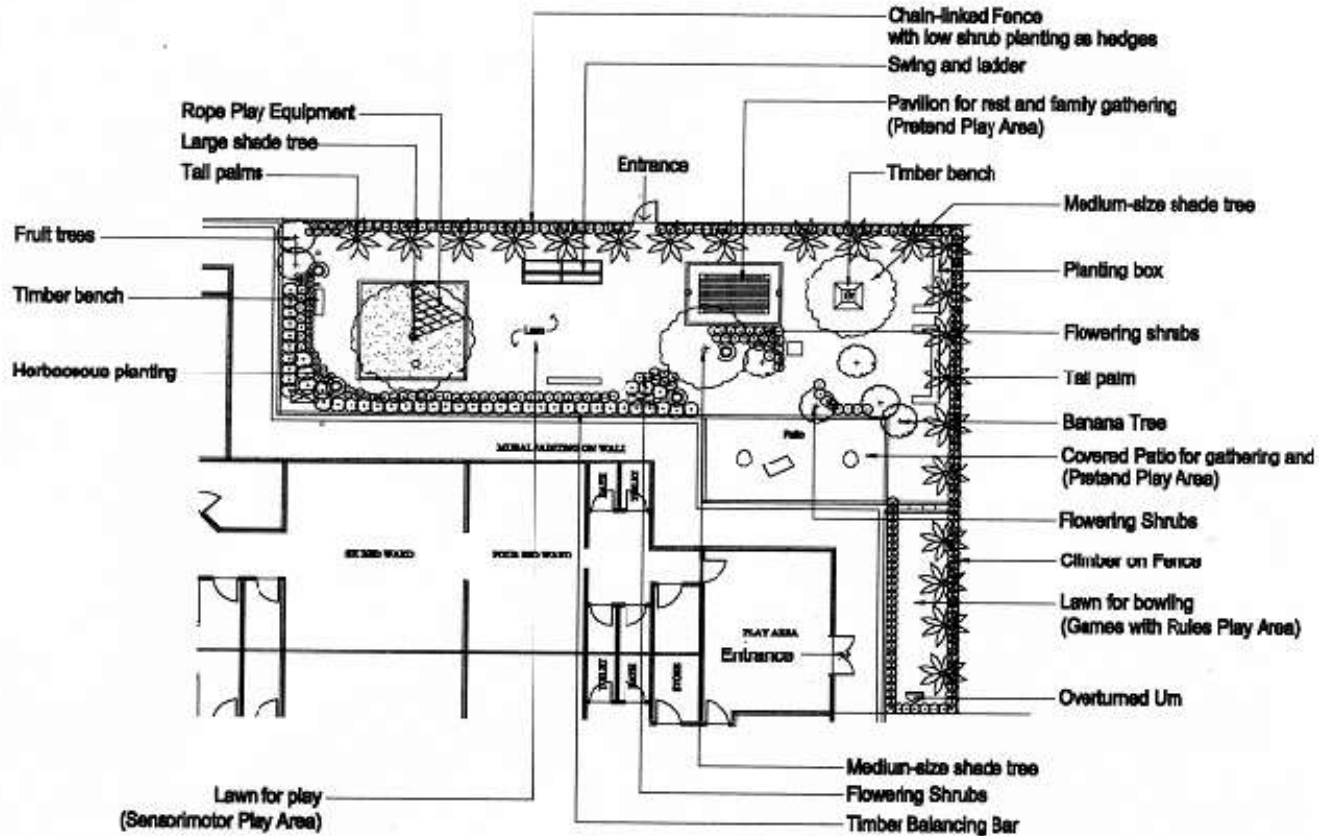


## THERAPEUTIC GARDENS OF NUCLEUS HOSPITALS



Garden at paediatric ward of Batu Pahat Hospital

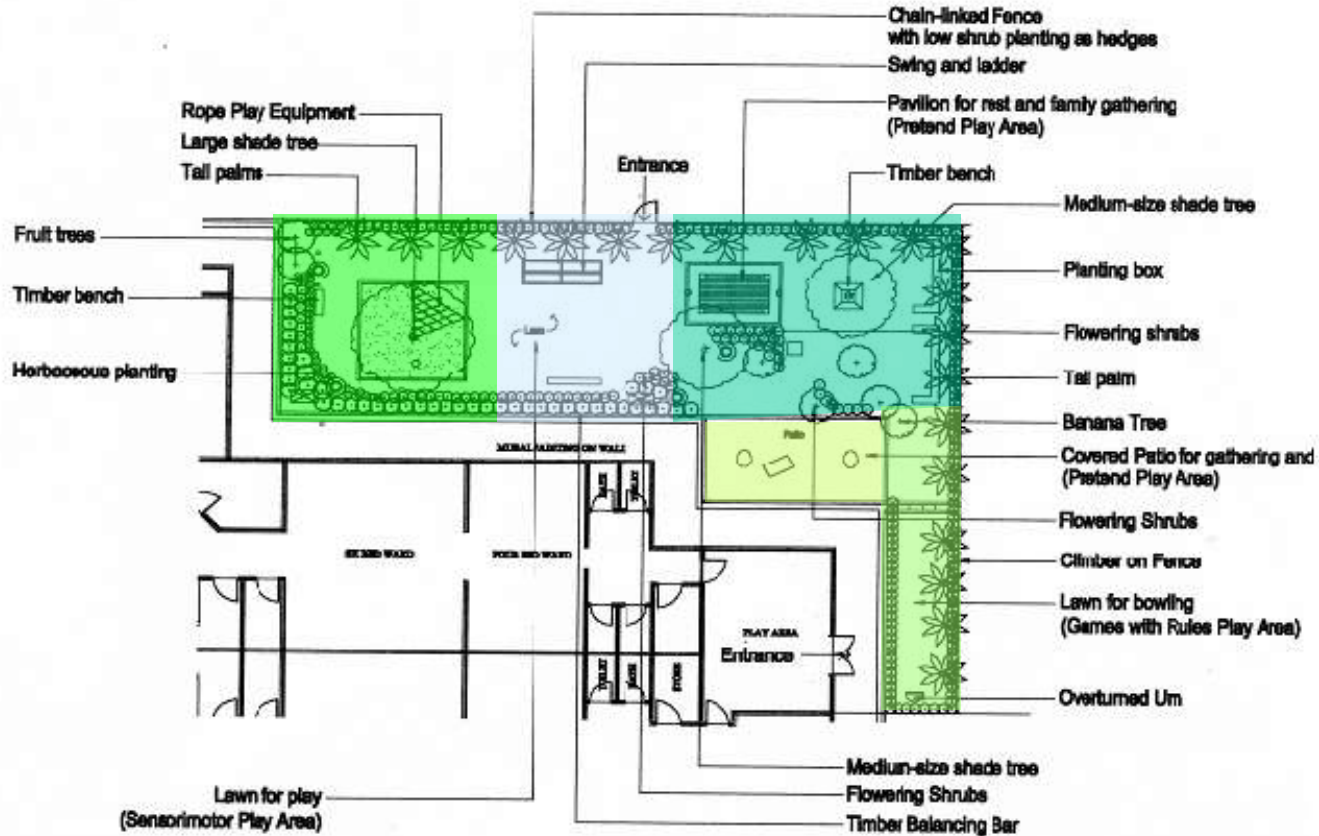
# GARDEN PLAN



**SITE PLAN OF  
CHILDREN THERAPEUTIC GARDEN AT  
BATU PAHAT HOSPITAL  
SCALE 1:500  
SIZE : 273m<sup>2</sup>**

**DRAWING NO: HNBPI/PLAN/1**

# GARDEN PLAY ZONES



**SITE PLAN OF  
CHILDREN THERAPEUTIC GARDEN AT  
BATU PAHAT HOSPITAL  
SCALE 1:500  
SIZE : 273m<sup>2</sup>**

**DRAWING NO: HNBPI/PLAN/1**



## THERAPEUTIC GARDENS OF NUCLEUS HOSPITALS

- The gardens are capable of:
  1. Providing greenery located beside the ward of an area 308 to 740m<sup>2</sup> for play and rest
  2. Providing multipurpose lawn area, play structure area, sand play area, gardening area, and resting area with timber pavilion
  3. Providing an open space for the patients and their caregivers to experience the effects of temperature, sunlight, wind and rain
  4. Stimulating all senses that would engage and fascinate the patients to play and even socialize with the caregivers or other patients

## QUALITIES OF GARDEN ON PATIENTS' PSYCHOLOGY AND PHYSIOLOGY

1. Stimulate a positive awareness/distraction
2. *Provide meaningful, variable stimuli and beauty*
3. Enhance patient connection to nature, culture and people
4. Allow for privacy within more open setting
5. Encourage play and relaxation
6. Maintain a balance between familiarity and change

## RESPONSES OF PATIENTS

- 94% of the patients (n=360) preferred to be and play in the garden
- 95% of the patients (n=349) like going to the hospital or do not mind going to the hospital after the inception of the garden
- Responses of ward staff on patients' behaviours (n=43)

Types of Behaviour	Strongly Disagree	Disagree	Somewhat Agree	Agree	Strongly Agree	Percentage Agree
<b>a. Cooperative</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>27</b>	<b>10</b>	<b>100</b>
<b>b. Happy</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>27</b>	<b>10</b>	<b>100</b>
<b>c. Less Crying</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>19</b>	<b>21</b>	<b>100</b>
<b>d. Physically Active</b>	<b>0</b>	<b>0</b>	<b>12</b>	<b>13</b>	<b>17</b>	<b>100</b>
<b>e. Independent</b>	<b>0</b>	<b>1</b>	<b>15</b>	<b>19</b>	<b>7</b>	<b>98</b>
<b>f. Obedient</b>	<b>0</b>	<b>1</b>	<b>17</b>	<b>16</b>	<b>9</b>	<b>98</b>

## CORRELATION ON ATTRIBUTES OF THE GARDEN AND WARD

<i>Attributes</i>	<i>Mean Score of Garden</i>	<i>Mean Score of Ward</i>	<i>Number of Respondents</i>	<i>p-value</i>	<i>Conclusion</i>
Refreshing smell	4.23 (0.68)	3.91 (0.90)	350	0.000	Garden is better
Fresh Air	4.35 (0.52)	4.08 (0.71)	350	0.000	Garden is better
<b>Full with light</b>	4.37 (0.48)	4.24 (0.47)	353	0.000	<b>Garden is better</b>
Cheerful environment	4.34 (0.59)	4.04 (0.83)	351	0.000	Garden is better
Pleasant sound	4.07 (0.88)	3.75 (1.03)	349	0.000	Garden is better
Interesting scenic view	4.34 (0.56)	4.15 (0.62)	352	0.000	Garden is better
Open space	4.34 (0.54)	4.16 (0.67)	352	0.000	Garden is better
Free to Play	4.33 (0.58)	4.07 (0.77)	350	0.000	Garden is better
Not Crowded	4.26 (0.67)	4.25 (0.59)	350	0.825	No difference
<b>Home Feeling</b>	4.18 (0.81)	3.93 (0.90)	347	0.000	<b>Garden is better</b>
Not Confined	4.28 (0.68)	4.17 (0.62)	349	0.001	Garden is better
Various activities	4.32 (0.58)	4.14 (0.68)	351	0.000	Garden is better

## RESPONSES OF PATIENTS



Patient participating in sensorimotor play, pretend play and game-with- rule play at Batu Pahat Hospital's garden



## DISCUSSION

- The success of the garden as an environmental intervention is influenced by three aspects, (1) proper site planning of the garden that ensures hierarchy of spaces, and sense of security and safety, (2) diversified composition of natural and man-made elements that provides variety of play activities, either familiar or innovative types, and (3) interaction with microclimatic factors including light, temperature, rain and wind.

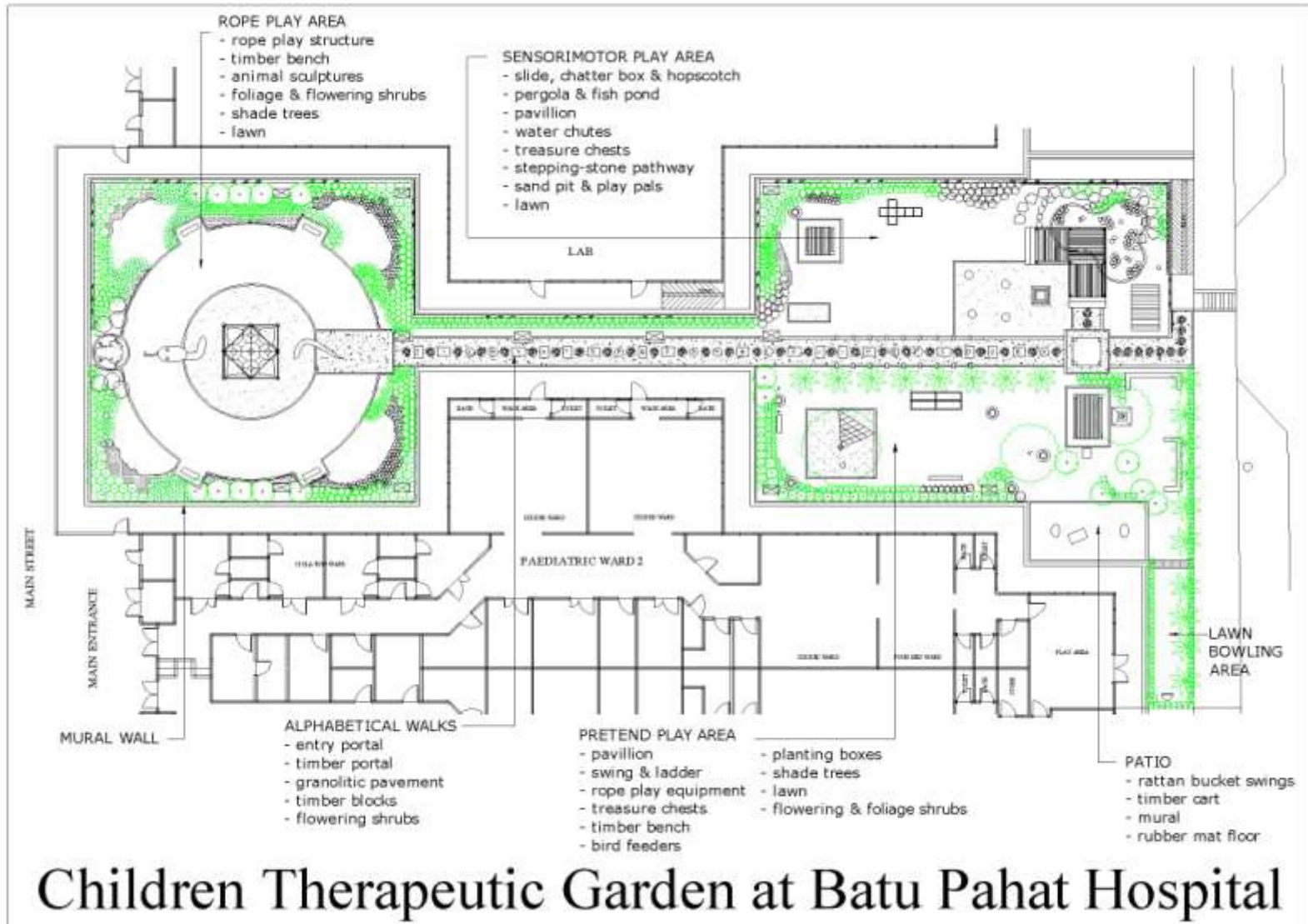


## CONCLUSION and IMPLICATION

- Garden has the potential to become environmental intervention platform for ill children that would foster the healing process of the hospitalised children. Through passive and active participations, the garden serves positive outcomes including increased psychological and physical peacefulness, and increased psychological adjustment.
- Through proper design and management, the garden has the potential to increase the recovery rate of acutely ill children and thus reduce the length of stay in the hospital.



# EXPANSION



Children Therapeutic Garden at Batu Pahat Hospital



## GARDEN FEATURES AT BATU PAHAT HOSPITAL 2003

