

Bridging the gap: Enhancing outdoor play environments for young children in Singapore

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ABSTRACT

Playground provision in public areas has been part of the administration of National Parks Board (formerly known as Parks and Recreation Department) since the 1960s. However, the choices of play equipment were based largely on ease of maintenance or aesthetics, with less emphasis in determining the play value or suitability of the equipment for specific age groups of children. As for the outdoor play environment, it has always been incorporated into areas of greenery rather than be isolated for play experience optimisation. Over the years, some improvements have been done to cater to the needs of children in Singapore. However, there are possibilities for improvement with increasing awareness of the need to align design and provision with the developmental needs of children.

This paper seeks to provide:

- A comprehensive review of three parks with playgrounds, each designed with a different purpose serving in common, children aged 2 to 12 years.
- The significance of how play environments can be enhanced with coordination of expertise in playground design and early childhood education.
- A platform to share our experiences in enhancing outdoor play environments for young children.

We hope that this paper will provide the preliminary steps towards greater collaboration of appropriate expertise and concerted efforts of providing enriching play environments for children.

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Background

National Parks Board (formerly known as Parks and Recreation Department) is one of the government agencies that provides playgrounds in public areas. Back from the 1960s, the choices of play equipment were based largely on ease of maintenance or aesthetics. Over the years, improvements have been made to cater to the needs of children in Singapore.

However, there are possibilities for improvement, with increasing awareness of the need to align design, spaces, and play provision to the developmental needs of children, so as to provide enriching play experiences for them.

As there is an ongoing process of upgrading and developing playgrounds and parks for children and families in Singapore, there is a need to explore collaborative efforts of the relevant expertise with the aim to meet the needs of children in outdoor play. The process of

bridging the gap started on the premise that collaborative input of expertise in the development of playground and park facilities if appropriately explored, can work towards the actualisation of enhanced play spaces for children.

This paper denotes the beginning attempts in bridging the gap between the technical experts and early childhood professionals in the development and upgrading of parks and playgrounds for children through an initial dialogue with the National Parks Board, and the subsequent follow up review and evaluation of three parks. Two Certified Playground Safety Inspectors, who are also park managers, and an early childhood professional, formed a team to examine how play environments can be enhanced with coordination of expertise in design and early childhood. This was done by evaluating play spaces in three public parks: an outdoor park (Park W), a neighbourhood park (Park N), and a children's park (Park J). Park W comprises eight designated play areas within the natural setting of an outdoor public park. The play spaces cater for users of different age groups from toddlers to young adults. Park N, situated at a corner of a residential estate, comprises a play space for 2 to 12 year olds. Park J comprises play spaces for 2 to 12 year olds, within a nature theme park.

The process

The process involved the review of the design and play spaces of the three playgrounds/play areas in these three parks with a set of predetermined criteria established by the team. Visits with observations were made to three parks. Evaluations based on the criteria were made by the team.

Park W is located in area 3 of a large public park which was developed on a piece of reclaimed land. The play spaces in area 3 were developed and completed in July 2000. The entire play area consists of eight play spaces which add up to approximately 7684m². These play spaces cater for users of different age groups which range from: 2 to 5, 2 to 8, 6 to 12, 7 to 14, 10 to 15 years, and teenagers to adults. A range of play equipment is provided for each play space. The key play spaces that were evaluated for this paper cater for the following age groups: 2 to 5, 2 to 8, 6 to 12, 7 to 14, 10 to 15, as they are within the range of 2 to 12 years.

Neighbourhood parks can be identified as small pockets of green areas within private housing estates. These parks focus on the provision of public spaces to facilitate informal gatherings and community bonding within a neighbourhood. This is achieved through the provision of facilities catering for the recreational, health, fitness and interest needs of the community within the neighbourhood. The facilities in Park N include play equipment for children within the age groups of 2 to 5, and 6 to 12 years, exercise and fitness stations for youths, adults and elderly, and an open concrete space for community activities. This Neighbourhood Park of 0.12 hectare is one of many currently managed by NParks.

Park J is within a children's nature park of 2 hectares that was opened in 2007. It was an initiative to introduce young children aged 12 and below to develop a sense of wonder for the living environment of life sciences and plants, and earth's eco-system. This park provides a

variety of ‘natural’ play environments for children, with different plants and trees, sensory areas, a ‘DYE-ing plants section, and a floating platform which extends out into the pond, allowing children to observe and appreciate nature within a closer range. Apart from the provision of sensory areas, there are interactive boards and activities for children to learn about photosynthesis and the various forms of plant life. In addition, there are play areas for children that comprise a tree house with slides, a maze made of plants, a sand play area with some play equipment, and a water play area. The areas that are evaluated comprise the tree house with slides, the maze made of plants, the play space with play equipment on sand, and a water play area with ground sprays on a concrete surface.

Review and Evaluation

Key domains evaluated were based on a set of criteria that were identified and used for the purpose of this review. The four main domains comprise design, play spaces, play value, and the provision of inclusive play.

The first domain on design encompasses equipment which takes into consideration the following factors:

- i) Cost/budget as a factor determining the extensiveness of play equipment provision
- ii) Maintenance as a determining factor of the design and provision of play equipment
- iii) Aesthetics as a determining factor of design and provision of play equipment
- iv) Age groups as a determining factor of design and provision of play equipment for 2-5 and 5-12, in accordance to the American Standards of Tests and Materials (ASTM). The suitability of play provision, which includes spaces and equipment in relation to the developmental abilities of the users, was also taken into consideration.

The second domain focuses on play spaces such as composite play, sand play, and water play, which comprise:

- i) The provision of equipment as determined by the size of the park
- ii) Natural settings/ Natural elements – within such settings or the provision of natural elements
- iii) Flow – Entry/exit points

The third domain is on play value which is determined by:

- i) The quantity and/or variety of play components
- ii) The complexity of play and or challenges provided by the play components
- iii) The provision for children’s development in physical, social, emotional, cognitive, and creative areas through the play components

The fourth domain is on the provision of play spaces and equipment for inclusive play.

The following is the assessment format used to review the three parks.

Park (): Playground/ Play Provisions	Not provided	Minimally Provided	Adequately provided	Well provided
I. Design: Equipment				
with the consideration of the following factors:				
i) Cost/budget as a factor determining the extensiveness of play equipment provision				
ii) Maintenance as a determining factor of design and provision of play equipment				
iii) Aesthetics as a determining factor of design and provision of play equipment				
iv) Age Groups: 2-5, 5-12 (according to ASTM safety standards) as a determining factor of design and provision of play equipment				
II. Play Spaces				
i) The provision of equipment is determined by the size of the park				
ii) Natural Settings/Natural Elements within setting or the provision of natural elements				
iii) Flow (Entry/Exit points)				
III. Play Value				
i) Determined by the quantity and/or variety of play components				
ii) Complexity of play/challenges provided by play components				
iii) Provision for children’s development of physical, social, emotional, cognitive and creative areas through the play components				
IV. Inclusive play				
Provision/ Accessibility of play spaces/ equipment for inclusive play				

Each factor of the respective domains was evaluated according to the extent that provisions were made which ranged from not currently provided, some (minimally) provided, adequately provided, and well- provided. Visits to the selected sites and observations of children at play were made to evaluate the play areas and equipment in relation to their suitability and the range of provision for users of the respective areas.

The team met regularly to discuss the areas to be reviewed, to visit the designated play spaces, to observe children using the play provisions, and to evaluate the areas using the established criteria. Examination of the equipment and observations of their usage by users were taken into consideration in the evaluations of the respective sites. Considerations for possible changes to further enhance children’s play experiences were also discussed.

Design

It is important that outdoor design and layout with regards to resources and space take into consideration the needs of the users, the children (Bilton, 2010).

In the evaluations, the overall design of the play equipment was found to be adequately provided to well-provided in the three parks, as play spaces were planned and built within proposed budgets. Cost within each budget was a main factor in determining the extensiveness of the play provision. However, cost may not guarantee good play value, as play equipment with natural play elements can provide greater play values in comparison to expensive composite play equipment.

It has been a common and acceptable practice to assign plans for playgrounds and their constructions to the services of contractors according to the available budget. Aesthetics was not a major determining factor in the provision of play spaces with a range of customised play equipment, except for Park J, which was a project with a special focus on nature theme. Aesthetics is one of the key components of this Park J as its natural setting is in tandem with the nature theme that aimed to provide exploratory learning experiences for children.

Age groups for the play equipment were very broad in the parks evaluated. These ranged from 2 to 5 or 8 years, 6 to 12 years, 7 to 14 years, 10 to 15 years, and teenagers to adults for Park W. The range of the play equipment in Park J is mainly from 5 to 12 years. As for Park N, it is from 2 to 5 years and 6 to 12 years. The common age groups are mainly based on the American Standards for Test and Materials (ASTM) for safety, which are for 2 to 5 years and 5 to 12 years.

Through the review and evaluations of the play provisions and observations of the users, it was noted that, if the determination of age groups could take the developmental abilities of the children into consideration and provide for appropriate challenges and complexity in play, without compromising safety standards, the play value and outcomes can be enhanced. This could result in enhancing play experiences, greater enjoyment of the play provisions, and the development physical, social, cognitive and creative abilities of children.

The current age group requirements set by ASTM and other related standards provide a safe environment for outdoor play. However, there are limitations in adopting the two broad age groups of 2 to 5 years and 5 to 12 years in constructing play spaces. A comment from a participant in a discussion forum on 'Playground safety: Balancing play value and injury prevention' was that, mandating additional user age groups in a standard to cater to the developmental needs of narrower age groups such as 18 months to 3 years, 3 to 5 years, 5 to 8 years, and 8 to 12 years, could become cost prohibitive, resulting in having fewer playgrounds installed.

However, Greenman (2007) noted that, "In the United States, it is now standard practice to differentiate outdoor areas rather narrowly by age – usually separate play areas for children

under two (sometimes one), preschool children, and school-aged children. Depending on the jurisdiction, there may be some possibility for age mixing with supervision, or the opposite – even more age differentiation”.

Ultimately, the purpose of constructing playgrounds and/or play spaces for children should not be based just on quantity and the usual standards. Greater consideration should be given to providing quality play experiences for children with minimum hazards, which would result in optimal usage of play provisions, as opposed to having quantity within set standards that do not provide appropriate challenges and enriching play experiences. As safety standards are based primarily on the physical characteristics of the user, it may be appropriate that these be reviewed relative to the respective cultural differences, and in doing so, perhaps, the possibility of redefining the age groups and the provision of a wider range of play experiences can be explored by the experts in this field.

Play Space

A key stage in developing play space is the understanding of children’s needs and the proposed site, which would provide the necessary foundation to base plans and designs according to the play needs of children (Casey, 2009).

Play space was evaluated to be adequately provided for the Park W with 8 play areas, as well as for the neighbourhood Park N, as the provisions of play equipment were determined by the respective sizes of the parks. The flow of the entry and exit points for the both parks was found to be adequately provided. There was a good variety of play provisions interspersed within Park J, such as a tree house with two slides, a plant maze, a play space set in a sand area with play equipment, and a water play area with sprays within a concrete zone. However, the provision of equipment as determined by the size of the park could be further enhanced for Park J. Although there were many sections created for plant-life related activities, the flow of the entry and exit points of these areas can be further defined to enhance their presentations. However, its natural setting was very well provided, as the environment is aesthetically presented with greater emphasis on the natural elements than Park W and Park N.

Play Value

In the domain of play value, the quantity, variety, and challenges/complexity of play were some factors that were evaluated. In addition, play value was also evaluated in relation to the contribution of play spaces and equipment to children’s physical, social, cognitive and creative development. The play areas in Park W were deemed to be well provided as there is a wide and varied range of play equipment in the 8 play areas, catering for users from 2 years to young adults. The composite ‘play ships’ equipment in play area 5 of Park W, provides a variety of physical activities for children, and there are provisions for imaginative/ dramatic play. As for Park J, the variety and quantity of play components are adequately provided and contribute to children’s physical, social, cognitive and creative development. The ‘see-saw’ and ‘sand scoop’ in the sand playground, stipulated for users aged 5 to 12 years, are difficult

for younger children to manage and may not be challenging for the older children. As for Park N, although the play equipment are indicated for users aged 2 to 5 years, and 6 to 12 years, from our observations most of the play components seem to be more suitable for children aged 2 to 4 years of age, as the majority of the components do not provide for challenges and complexity in play.

Inclusive Play

An environment that provides for a wide variety of play that supports children with a wide range of abilities and needs, is more inclusive (Casey, 2009).

Play spaces and equipment providing for inclusive play are currently not explicitly provided for in the playgrounds of the three parks. This may be due to the concept of inclusive play, especially outdoor play being relatively new in Singapore. Increasing awareness and promotion of the need for inclusive play would require cooperative efforts of parents, educators, and providers of play. However, we understand that some community parks have begun the process of making some provisions for inclusive play. We hope that the process will extend towards providing play spaces in the larger parks for inclusive play.

Conclusion: Moving Forward

In view of the results of our evaluation, bridging the gap would certainly entail ongoing dialogue and follow up actions to the process of engaging both expertises in designing enhanced playgrounds that would support the development of children's physical, social, cognitive and creative abilities.

The pooling of resources of the respective expertise can contribute towards better understanding of the needs of children and their development, in relation to providing play environments, spaces and equipment which would support an enriching range of play experiences in physical, social, emotional and creative areas. These would also take into consideration the provision of aesthetic environments within natural settings. In addition, as the right to play is for every child, the provision of outdoor play spaces and equipment should reach out to make inclusive play a possibility for all children.

In view of collaborative efforts in the construction or upgrading of play spaces, a team comprising the following would be recommended:

- (i) Landscape Architect
- (ii) Park Manager
- (iii) Trained personnel in Early Childhood Education
- (iv) Playground/Play set designers
- (v) Certified Playground Safety Inspector (CPSI)
- (vi) Various stakeholders of the park: leaders, residents, parents, children, and users.

The use of new media to engage the various stakeholders of the parks could be further explored as a platform for discussion and garnering feedback, to review and analyse the choice of equipment placed in the parks pre and post completion of the construction of play spaces. The identification of specific environmental components associated with increased physical activity may provide guidance for environmental interventions that could create appropriate and active preschool outdoor areas (Cosco, Moore, & Islam, 2010).

As a good number of childcare centres and kindergartens use the common neighbourhood playgrounds, opportunities for dialogue and their participation in the upgrading and design of playgrounds would certainly be beneficial in promoting enjoyable, safe, and developmentally appropriate play experiences for children.

As the process of upgrading of parks and playgrounds are positively ongoing, hence, the possibility of engaging early childhood educators in the process can be explored. This would provide opportunities for input and exchange of the respective expertise in the upgrading of play spaces.

The process of 'bridging the gap' has certainly begun with the preliminary steps in this collaborative review with the aim of working towards greater concerted efforts in enhancing outdoor play environments for children.

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