

2



# Theoretical Investigation





*Illus. 2.2: The architectural language of the First National Bank in Church street, Pretoria, could to be perceived as a stronghold of power, strength and safety, but can also be imposing. (Author, January 2006)*



*Illus. 2.3: The Magic Fountain in Barcelona by Jujol could inspire a feeling of power and awe. (www.flickr.com)*



*Illus. 2.4 The perception of scale and space in the landscape have the potential to unlock emotions.(Hess, March 2011)*

*Man only plays when he is human in the full sense of the word, and he is only completely human when he is playing. (Friedrich Schiller in Dattner, 1969: 7)*

(see Illus. 2.2). It follows that the landscape can also display values such as friendliness, safety, strength, happiness, order or wildness (De Botton, 2006: 98-100) (see Illus. 2.2 to 2.4).

recreational and leisure activity” (UN, 1989: 9 and OAU, 1990: 6).

## 2.1 Theoretical investigation

This chapter will investigate the importance of nature for children’s development, as well as how playgrounds can encourage a sense of community.

Keeping this and children’s psychological needs in mind, designers should help to create spaces where children can play freely and safely, in an area that displays values which would make for a pleasant environment. In a society where there has been a loss of community due to building typologies (Newman, 1996: 9-12), landscapes should encourage interaction between people, providing for intentional and unintentional meetings.

### 2.1.2 Biodiversity in the city

#### 2.1.1 The social role of landscape

Landscape architecture as a discipline constructs the outdoor experiences of the user. Having the potential to encourage relaxation, reflection, discovery and rest in an often unhealthy urban environment ( Herzog & Stevey, 2008: 749-750), urban open spaces play an important role in the physical and mental health of man.

Play and pleasure are legitimate pursuits in themselves, as play is one of the fundamental rights of a child as set out in Article 31 of the United Nations Convention on the Rights of the child, and in Article 12 of the African Charter on the Rights and Welfare of the Child. As a signatory of both documents, the South African government agrees to “encourage the provision of appropriate and equal opportunities for cultural, artistic,

In the 1950’s and 60’s, Joane Pim, a pioneer of landscape architecture in South Africa, was involved in beautifying mining towns in the Free State and the West Rand. Her usual strategy was to plant up areas with as many different plants as possible, re-establishing biodiversity and creating complexity in the landscape (Illus. 2.5). Due to her work, mines had less absenteeism, less staff turnover, and generally more content staff. Her motto, which is also the title of her book, is “Beauty is Necessary” (Pim, 1971).

It is poignant to find that very little of her approach has been manifested in parks in Pretoria today. The current standard park typology is a very sterile environment of flat lawn with a few species of trees, for example Kruger Square in Pretoria West (Illus. 2.6 & 2.7). By using a multitude of indigenous trees, shrubs, groundcovers and grasses, bio-diversity is re-established in the city, providing habitat for organisms, fulfilling ecological

The author Alain de Botton postulates that objects in the environment represent certain values, such as a fortress-like financial institution representing the appreciated qualities of safety, strength and power



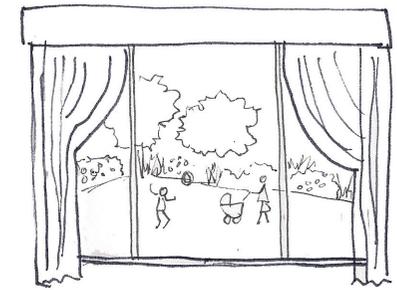
*Illus. 2.5: Complexity creates interest. Jan Cilliers Park, Groenkloof (Author, September 2010)*



*Illus. 2.6: Simplicity and monoculture at Nirox, Krugersdorp (Author, May 2009)*



*Illus. 2.7: Sterile, monotonous environment in Kruger Square, Pretoria West (Author, March 2011)*



*Illus. 2.8: Having a view of greenery draws people out of their apartments (Author, May 2011)*

functions and allowing city-dwellers contact with nature.

## 2.2 Why play is important

Much research has been done about why play is important for children. However, the focus of this dissertation is rather on why play with natural elements is important and how this kind of play can be manifested in urban areas. Play is important because children learn, out of the classroom, primarily by playing (Weaver, 2000: 12) and practise for adult life in this way. Through playing, children learn what no one can teach them, exploring and orientating themselves in relation to space, people, structures, and time.

## 2.3 The benefits of play in natural areas for children's development

A large body of literature exists on the importance of play in natural areas for children's development, as well as the general positive and restorative effects of greenery on people's physical and mental health. Playgrounds consisting of standardised equipment

(such as a seesaw, climbing frame, slide and swings) on an expanse of lawn are not sufficient. "Natural" playgrounds, such as forests, woodlands, and ponds, provide much more opportunities for quality play than standard playgrounds. In the context of this dissertation, the word "natural" does not mean a state where the environment has not been touched by man. It rather denotes a design that incorporates and emphasises the use of natural elements such as plants, water, stone, sand and earth in an organic design as opposed to man-made elements such as concrete, steel and plastic in a geometric design.

### 2.3.1 Human interaction and green areas

According to the American psychologist Harry Harlows, children are likely to suffer from psychosis and neurosis in later years if they do not have sufficient contact and play with other children during their first five years of life, as proven by his studies on social deprivation in monkeys. He asserts that children need at least five friends or more during early childhood, in order to be able to function normally in later life (Harlows

in Alexander, Ishikawa & Silverstein, 1977: [68]). Educational researcher Karyn Wellhousen (2002: 114) laments the increase of solitary play (video games or watching television). Children spend more time behind screens and less time together with their peers. This poses a threat both to their health and social competence in later life.

Adding to this problem, crowding in high-density residential areas may result in social withdrawal, which can lead to social maladjustment. Views of greenery draw people out of their apartments into the outdoor areas as found by environmental psychologists Coley, Kuo and Sullivan (1997: 468), allowing more social interaction (see Illus. 2.8). Another study by Taylor, Wiley, Kuo and Sullivan (1998: 468) showed that children have more access to adults and more play opportunities in spaces with many trees. Access to adults other than one's parents is fundamental for healthy social development (Alexander et al, 1977: [26,68,86]).

Due to restricted financial resources and thus mobility,



*Illus. 2.9: Play therapy: re-enacting traumatic experiences (such as a funeral) helps children to process their emotions (Author, May 2011)*



deep sand breaks falls

*Illus. 2.10: Risk-taking is necessary (Author, March 2011)*

residents (especially the children and elderly) of lower socio-economic status (SES) neighbourhoods such as Sunnyside, spend more time in and around their homes than people of a higher economic status (Coley et al, 1997: 469). Children in low SES areas also move around less in their urban environment (and rather stay at home) due to the lack of amenities and fear of harassment and other social problems such as un-removed garbage and filth (Morrow, 2000: 144-147). Children are thus restricted to their home environment, yet do not want to move about too much in the immediate vicinity of their homes. When living on higher floors, parents cannot monitor their children's outdoor play from the apartment. This increases reluctance of parents to let their children wander outside (Coley et al, 1997: 469). This makes the need for safe open spaces for these residents even more pertinent.

The factors mentioned above reduce the amount of other children and adults that children living in high-rises can come into contact with. Green spaces encourage interaction between humans, which is vital for the development of social and emotional skills in children.

### 2.3.2 Physically demanding play and motor skills

Preschool children engaged in more physically demanding play and developed better motor skills when they played in more natural areas (with large trees and rocks, an orchard, woodland and pastures) compared to with children playing in traditional playgrounds or indoors, as found by architect and psychologist Nancy Wells (2000: 781).

Rough-and-tumble play has various positive effects on children, amongst others their increased ability to correctly read emotional expressions (such as happy, sad and angry), as discussed by researchers Pellegrini and Smith (1998: 588). Playgrounds with hard or flat surfaces are not ideal for this kind of play. Natural playgrounds with grass, sand and mounds are encouraging for safe rough-and-tumble play.

### 2.3.3 Creative play

Stimulation of the imagination is important for children's cognitive, social and emotional development, as it

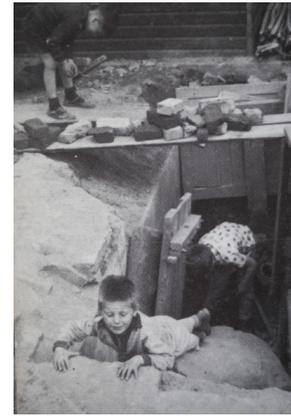
increases their creativity, ability to take another's perspective, to reason out alternatives, to develop resourcefulness and to reduce stress (Harvard Graduate School of Education, 2002; Wang, 2002). Children play more creatively and in more complex ways in green spaces than in built spaces (Spencer & Blades, 2005: 128). Using a large variety of natural features (shrubbery, mounds, water features, long grasses or heaps of boulders) creates a multifaceted environment which could aid in stimulating the imagination.

### 2.3.4 Attentional capabilities

Proofreading capability and attentional capacity after a time of relaxation is improved when children have spent the relaxation time in nature as opposed to having spent it indoors or in an urban area (Wells, 2000: 780,783). Nature could thus help to improve achievement at school, which is important for the children's future.

Play in natural areas also benefits children with attention deficit-hyperactivity disorder (ADHD), and

Illus. 2.11-2.14: Building and breaking in adventure playgrounds. (Hurtwood, 1969)



greatly reduces the symptoms. (Kuo & Taylor, 2004: 1580-1586). This is mostly due to the loose parts available (pebbles, leaves, twigs, sticks, seedpods) which allow for manipulation on the environment.

### 2.3.5 Violence, play therapy and self-esteem

Natural spaces enhance positive feelings about oneself, as well as towards and about others. Environmental researchers Strife and Downey (2009: 108-109) found that after an asphalt playground at a school in California was changed to an area with gardens, woodland, and ponds, the children's relationships with each other improved. It was also found that violence and bullying were reduced (and in some instances eliminated) when children played in more natural settings. Architect Roy Kozlovsky (2006: 6) stresses the importance of play as therapy, where a child can re-enact a traumatic experience in a situation where he is in control, for example a funeral as shown in Illustration 2.9. Play acts as catharsis. For this, moveable props might be needed. Kozlovsky also believes that allowing children to

change their environments helps to alleviate teenage delinquency (*ibid.*: 1). Children are creatively engaged and allowed to express themselves in a constructive manner, without interference from adults. This is an important factor to consider in a low income area such as Sunnyside (compared to neighbourhoods such as Waverley, Hatfield and Brooklyn), which, although it is on a downward trend, still has extremely high crime rates (SAPS: 2010).

### 2.3.6 Risk taking and playground safety

Risk-taking, especially in North America, is often designed out of playgrounds to prevent injuries and lawsuits (Frost, 2006: 12). However, the opportunity to take risks within safe limits is essential for children's development (Illus. 2.10). They gain self-esteem and competence by being able to test their abilities. Risk enables children to learn to take responsibility for themselves and for their actions (*ibid.*: 8). Playgrounds that provide challenges thus help children to develop appropriate behaviour in terms of risk.

## 2.4 Adventure Playgrounds

In 1931, the Danish landscape architect Carl Sørensen came up with the idea of adventure playgrounds, after observing that children preferred to play everywhere except in the adult-made designated playgrounds. Adventure playgrounds consisted of empty lots of land on which children could do as they please, especially build. Building materials such as planks, nail, hammers, and cement are available on site, mostly donated instead of bought (see Illus. 2.11 - 2.14). A "playleader" is appointed to run the playground. His/her job consists of helping the children realise their building ideals, and to keep a watchful eye without intervening. Sovereignty of the children is of utmost importance and the playleader is only to interfere in times of danger or extreme conflict (Lambert & Pearson, 1974).

Quality play<sup>1</sup> experiences provide opportunities for posing and solving real-world problems, and as such encourages flexible and exploratory thought processes (Staempfli, 2009: 272). Due to the variety of creative situations arising in an adventure playground, children

1. In this instance quality play refers to play as can be experienced in adventure playgrounds.

interact and converse much more than in conventional playgrounds. By being able to build their own structures, independence and self-esteem are fostered (*ibid.*: 277). Building also often requires enlisting the help of others. These relationships develop social and emotional skills such as negotiation, conflict-resolving and clear communication.

Such playgrounds are usually very noisy and an eyesore as well. In Denmark and Britain, the playgrounds often had embankments or overgrown fencing around them to reduce noise, to prevent complaints from the neighbours and to encourage safety.

In the South African context, it is almost unimaginable to give a large group of children hammers, nails and crowbars, together with large amounts of wood, to build their own structures. In the current South African city, building materials and housing are in short supply. As a result, the materials provided for the children's use would possibly be carted away soon unless security is enforced on site. Also, the current economic situation

does not encourage companies to donate building materials on a regular basis for a cause which has not yet taken root in South Africa.

Therefore it is suggested that an adventure playground in the true sense of the word might not work in South Africa, or on the proposed site. From the success of such playgrounds in Europe it is clear that the ideas driving them contain very valid principles for children's play. However, the concept will have to be adapted to fit the South African situation.

## 2.5 Ownership

In adventure playgrounds, children are allowed to express themselves constructively, to build and break as they please. The wide range of options available for play and the high degree of freedom are two of the main reasons why these playgrounds are so successful (Frost, 2007: 9). Because the children are able to influence the playground, they also take ownership of the space, resulting in a much higher quality of play experience. Also, the children are much less likely to

*The more someone is able to personally influence his surroundings, the more involved and attentive he becomes, and also the more likely he will be to give them his love and care.*

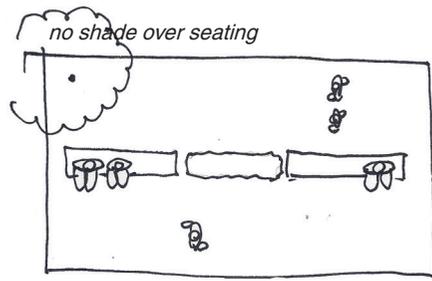
*Herman Hertzberger (Attoe & Logan, 1992: 17)*

vandalise the playground or jeopardise activities offered (Staempfli, 2009: 269, 273).

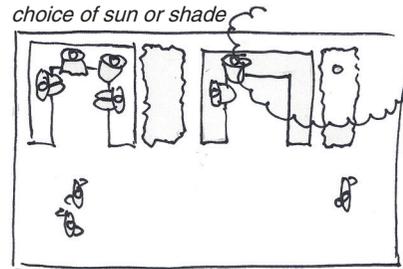
The playleader or adult presence ensures a sense of consistency and belonging to the children. Such a safe place which could become home away from home is important for children who might suffer from social ills such as poverty, domestic violence or broken families (ALL-SA, [*s.a.*]: 2-3).

## 2.6 Sense of community, safety and defensible space

McLoyd (1990: 333) has shown that having support from other family or community members increases the effectiveness of parenting, and also improves the mother-child relationship. Mothers who perceive their neighbourhoods to be safe, use less physical punishment on their children than mothers who perceive their neighbourhoods to be dangerous. It is thus important for families to have an external support system. Children should not grow up in a world where all strangers are perceived as dangerous.



seats facing one way in an exposed area make group conversation difficult



seats facing each other with the backs against a wall allows for group conversation

Illus. 2.15: According to Dee (2001) and Cooper Marcus (1998), seating arrangement can influence interaction between people. (Author, May 2011)

Various studies (Kim & Kaplan, 2004; Kuo *et al*, 1998; Bixler & Floyd, 1997) have shown that natural green open spaces play a large role in residents' sense of community<sup>1</sup> and interaction with other residents. MacMillan and Chavis (1986:9) assert that a sense of community is formed when residents experience membership, influence, sharing of values and shared emotional connections. A sense of community is important because it creates defensible space and a friendlier, more supportive and pleasant living environment (Brown, Brown & Perkins, 2004; Nasar & Julian, 1995; Unger & Wandersman, 1985). Neighbours can often form support systems for other residents, providing emotional and material help. Having good neighbouring relations give a sense of identification, and combat feelings of isolation which could easily be experienced in large blocks of flats (Unger & Wandersman, 1985:141).

Increased social interaction increases the social trust between neighbours and perceptions of community safety (Jacobs, 1961; Newman, 1996). Simply having trees and other greenery in the vicinity of housing

blocks also increases perceptions of safety (Kuo, Bacaicoa & Sullivan: 1998).

Facilitating social interaction in a pleasant environment is thus the first step towards creating a sense of community. Green open spaces that cater for the needs of the users (sitting, meeting friends, waiting) offer a platform for the creation and sharing of memories. As previously discussed (refer to section 2.3.1 on p. 9), green open spaces have the potential to attract people. A playground which children would want to visit will be visited by their parents or caretakers as well. Simple design guidelines can offer opportunities for interaction between these individuals, for example seating arrangements as shown in Illus. 2.15. Amenities such as ablutions, a kiosk, sufficient seating and shade would serve to create a pleasant outdoor experience, creating opportunities for lingering and further enhancing interaction between individuals.

When a sense of community has been established, and there are enough familiar adults and elderly people in a green space to watch over the children playing

there, parents would as a result be more willing to let their children play there, with or without their direct supervision. The space would have become defensible and appropriated.

## 2.7 All ages welcome

Public landscapes in the city are generic. Due to the scarcity of developed green spaces, parks have to cater for all age groups, and all types of users. The needs of pedestrians on their way to work, elderly or handicapped people, teenagers, families and individuals should be taken into account. The proposed park will therefore be open to the general public and not only to children.

The playscape itself should be designed in such a way as to encourage children of certain age groups to appropriate a space. Areas could be graded according to complexity and challenges afforded, as well as size. Certain areas should cater for lively group activities, others for quieter play in smaller groups (see also Chapter 7 and 8).

1. See Terminology on page xi.

## 2.8 Conclusion

Landscapes play a large role in the physical and psychological health of society, as well as ensuring the ecological health of a city. From the above the following research questions can be answered:

1. What is the role of nature in a child's physical, social, emotional and cognitive development?
2. How can play areas increase social interaction and establish a sense of community?
3. What is the role of natural play environments in social interaction and a sense of community?

### 2.8.1 Findings

- Children need to be exposed to nature (with all the textures, smells and materials it provides)
- Children of all ages need to be able to manipulate their environment.
- Loose parts in the environment serves for creative, sustained play.
- Risk-taking opportunities should be provided.

- Being exposed to nature, being able to manipulate their environment and having loose parts in playgrounds assist not only in the physical but also social, emotional and cognitive development of children.
- Stimulation of the imagination by means of natural areas is important in the cognitive, social and emotional development of children.
- Different types of spaces catering for different types of play and age groups need to be provided.
- Natural play areas can facilitate increased interaction between children, between their parents or caretakers, as well as between the children and adults, which in turn lead to an enhanced sense of community.

In the following chapter, playgrounds in Gauteng will be assessed according to the findings above, as well as other criteria necessary for pleasant environments, such as safety, seating and shade. The second research question (how natural elements can be incorporated in playgrounds to facilitate well-rounded development) will also be answered and explored further in the design resolution.