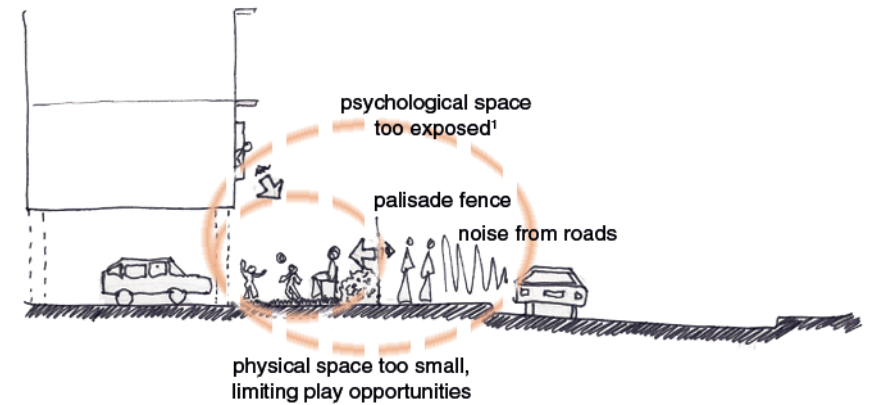


1



# Introduction

Illus. 1.2: Typical apartment block in Sunnyside. Note the lack of a garden area, with only the hard surface in front of the garages for outdoor play (Author, December 2010)



Illus. 1.3: Typical apartment block typology in Sunnyside (Author, April 2011)

*When they chopped them down  
something unravelled  
like the catcher's mitt  
of a ten year old's heart.  
Didn't they see the stone circles  
I'd built around the trees?  
Then I kept so many secrets  
with the earth, names of plants  
and African countries, clay castles  
in crawfish holes, continents  
in live oak roots.*

*By the time  
I got home they had chain-sawed  
the trees, flat-topped the yard  
with cement: "better for basketball,"  
this was the moment it  
dawned: the world outside  
exists more than I do.*

James Nolan  
(Goodenough, 2003:128)

Apart from a few fenced, fee-charging nature reserves, nature in the South African city is to a great extent disappearing. There are few public spaces left where children can still build tree-houses or dens in shrubs, play in streams and roam about safely. This has a profound effect on children, despite not always being recognised as the consequence of a lack of contact with nature. The deprivation of contact with nature during childhood has led to physical, emotional and social ills such as increasing obesity, an increase in medication used for attention deficit hyperactivity disorder (ADHD), and social incompetence in society (Freuder, 2006: 2).

## 1.1 The Problem in Context

### 1.1.1 The City

South African cities have few high-rise residential neighbourhoods. Those that do exist, such as Sunnyside in Pretoria and Hillbrow in Johannesburg, suffer from a lack of accessible, developed, green open space (see Illus. 1.4). The Tshwane Open Space

Framework (TOSF) prescribes the internationally accepted ratio of 2.4ha/1000 people open space, yet currently only 0.5ha/1000 people is provided in Tshwane (TOSF, 2006: 24)

Gauteng is the most densely populated province in South Africa with 615.7 people/km<sup>2</sup> (Stats SA, 2010: 4, 10). It is also the most urbanised province, comprising the municipal areas of Johannesburg, Ekurhuleni and Tshwane. According to the mid-year population estimates, Gauteng has 2 986 900 children under the age of 14 (Stats SA, 2010: 10), who all need space to play.

Green open spaces in urban areas (such as Pretoria) are essential for the psychological and social development of children (Freuder, 2006; Hart, 1982; Kozlovsky, 2006; Kuo & Taylor, 2004; Strife & Downey, 2009). However, existing building typologies employed in Sunnyside leave little open space for play (see Illus. 1.2 & 1.3). The space under and around the building is devoted to parking or a narrow strip garden. It is unattractive for social interaction and play due to

1. Refer to Appleton's (1975) prospect-refuge theory on page 20.

2. Refer to section 2.6, page 12 for explanation of defensible space.

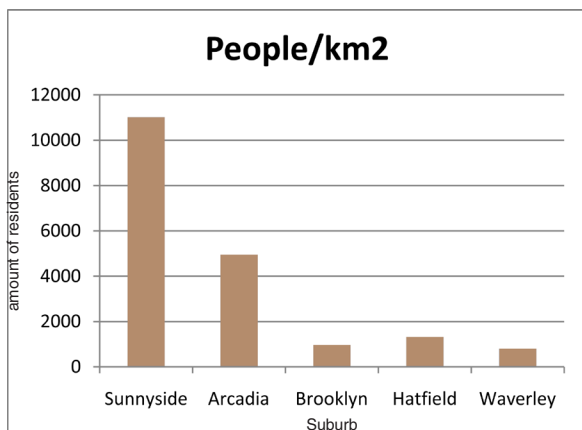


Figure 1.1: Comparative housing densities in Pretoria (Author, April 2011, compiled from personal communication, Stats SA, 19 April 2011)

limited size, feelings of exposure<sup>1</sup>, few places to sit, and proximity to the noise of streets. No appropriated defensible space<sup>2</sup> is created.

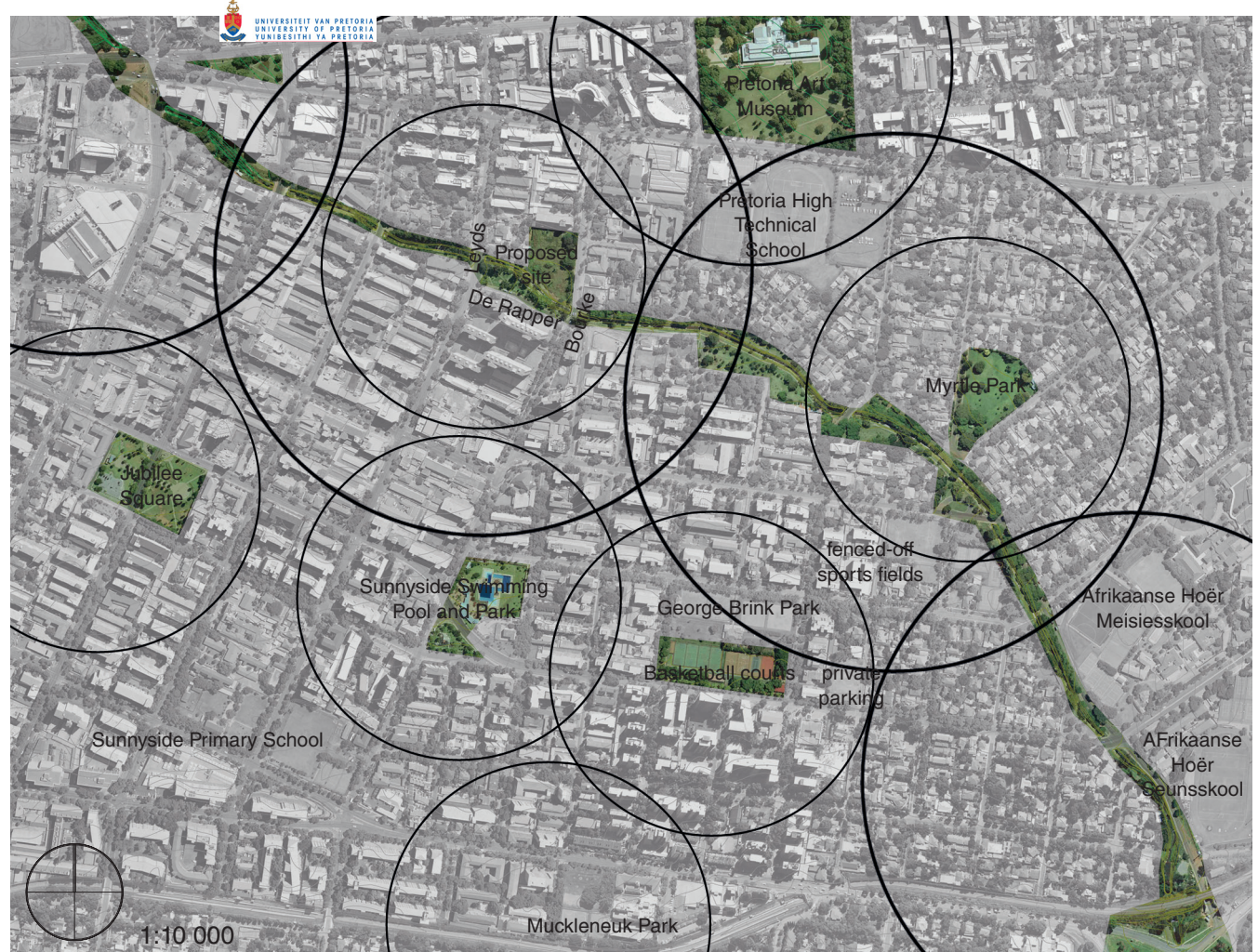
The open urban spaces that do exist are mostly vacant lots with very few amenities such as benches or litterbins. They are not used often by the public, but are rather appropriated by homeless people (see Illus. 1.5-1.7, 2.7, 3.3, 3.9, 3.10 & 5.5). These spaces are usually flat monocultures of grass, with a few scattered trees and pieces of playground equipment (see Illus. 1.5, 1.6, 3.9 & 3.10).

### 1.1.2 Playground equipment

Playgrounds in Pretoria do not cater for the needs of children, as will be discussed in Chapter 3.

Equipment typically provided in parks, such as climbing frames, merry-go-rounds, see-saws, swings and slides, are made from steel or wood and fixed to the ground. They dictate the activity by not allowing any changes to be made, and only give physical pleasure resulting

3. Refer to section 2.3.1, 2.4, 2.5-2.7 for an elaboration on why social interaction should be encouraged in children.



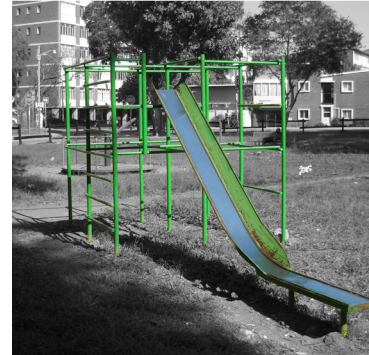
Illus. 1.4: Accessible open space and proposed site in Sunnyside. The smaller circles denote a 3 minute walking distance, which is comfortable for children. The larger circles denote a 5 minute walking distance, comfortable for adults. (Author, April 2011)

from movement. According to play researcher Eva Noren-Bjorn, children of all ages are initially interested in climbing and kinetic equipment, but quickly lose interest after the initial thrill has worn off (1982: 208-224). Isolated pieces of equipment, a lack of space definition and seats that are few and far in-between are not conducive to social interaction<sup>3</sup>.

In natural or junk playgrounds<sup>4</sup>, there are many loose parts such as tyres, planks, ropes, pebbles, pods and

flowers which can be moved, used in constructions or used to represent other objects. The child decides how each object should be used and what it should mean, giving pleasure from manipulation of the environment. Such play stimulates the child on cognitive, emotional and social level much more than play on fixed equipment. Logical, problem-solving thought processes are required, as well as interaction and teamwork with other children whilst discussing the imaginative game or building project (Frost, 2006: 5-7).

4. See Terminology on page x.



*Illus. 1.5 & 1.6: Existing play equipment on proposed site (Author, March 2011)*

## 1.2 What can be done about the problem?

There is a considerable body of literature on child development, as well as the beneficial effects of green landscapes on children. An application of this research in the South African context is however lacking.

As a result of this lack of proper playgrounds and limited exposure to nature, children in high-density residential areas grow up deprived of necessary experiences. Consequently, such children are more aggressive, with lower concentration spans and less motor and social skills, along with a host of other developmental problems which will be discussed in more detail in Chapter 2 (Kellert: 2005).

Adults, teenagers and the elderly also suffer from this lack of well-designed urban green space, albeit less noticeably. This dissertation will attempt to address the need for natural playgrounds in high-density residential areas, in a setting which can be used by all age groups.

## 1.3 Problem Statement

This dissertation aims to investigate how a playground in the high-density residential area of Sunnyside can be designed to create improved opportunities for the physical, emotional, social and cognitive development of children, as well as improved opportunities for social interaction.

## 1.4 Hypothesis

The hypothesis states that:

- Play in natural playgrounds<sup>1</sup> can encourage well-rounded physical, social, emotional and cognitive development of children.
- Such natural playgrounds can also encourage and foster social interaction and a sense of community.

## 1.5 Research questions

1. What is the role of nature in a child's physical, social, emotional and cognitive development?
2. How can natural elements be incorporated in

children's playgrounds in such a way as to facilitate their well-rounded development?

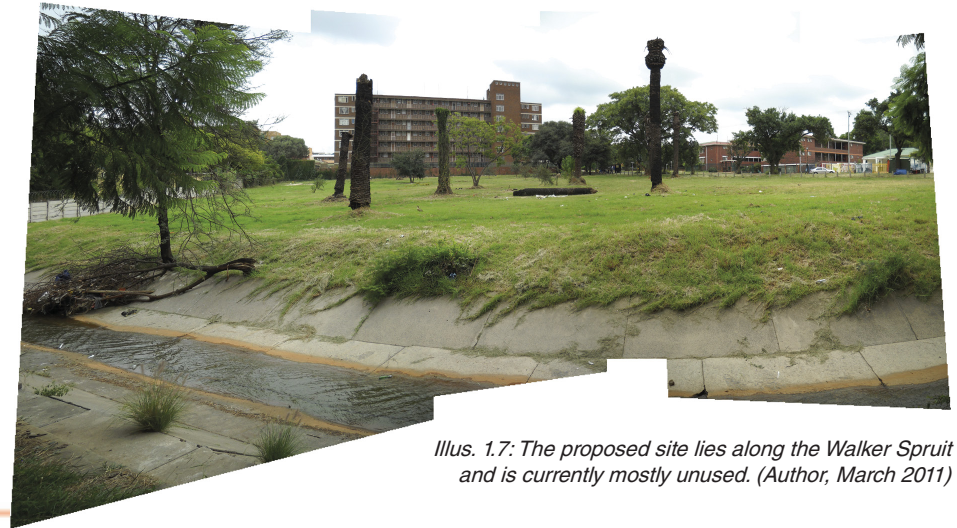
3. How can natural play areas increase social interaction and establish a sense of community?

## 1.6 Introduction to site

The open piece of land consisting of land-parcels 708, R/709, R/1/709, R/2/709, R/3/709 and R/6/1201, bordered by Leyds, Bourke and de Rapper streets in Sunnyside, will be used as a model to test the hypothesis (see Illus. 1.4, 1.7 & 5.6 and also refer to Illus. 5.2 - 5.5 for more information on the location of the site). Sunnyside is the most densely populated suburb in Pretoria City (Fig. 1.1). This site is ideal for constructing a playscape<sup>2</sup> as it is bordered by two pre-primary schools and high-rise apartment blocks. Two other day-care centres and the economic vein of Esselen street are also in close proximity. The streets bordering the site carry low traffic volumes which would enable easier access to the site, especially for children. The Walker Spruit runs through the site, connecting it to other green spaces along the Spruit (See Illus. 5.6 and 6.3).

4 <sup>1</sup> consisting of mostly natural elements such as woodland, forest, boulders, streams, mounds and other natural elements, without excluding man-made materials (e.g. concrete/steel/plastic) completely.

<sup>2</sup> See Terminology on page x.



Illus. 1.7: The proposed site lies along the Walker Spruit and is currently mostly unused. (Author, March 2011)

## 1.7 Assumptions and delimitations

As a landscape architect, it is difficult to have a complete knowledge of all the factors that influence child development, the various social stages of growing up, and how different age groups interact. This is an area in itself that merits years of study to gain a complete understanding. Literature research, own observations and interviews were used to gain sufficient knowledge for design guidelines to be established.

However, the focus remains on nature and the role of design for child development as pertaining to Landscape Architecture.

The site has a severe problem with homeless people, possibly due to the undeveloped nature of the site at present. This issue will be addressed but only to an extent which would not distract from the main focus of the dissertation, namely that of designing a playground.

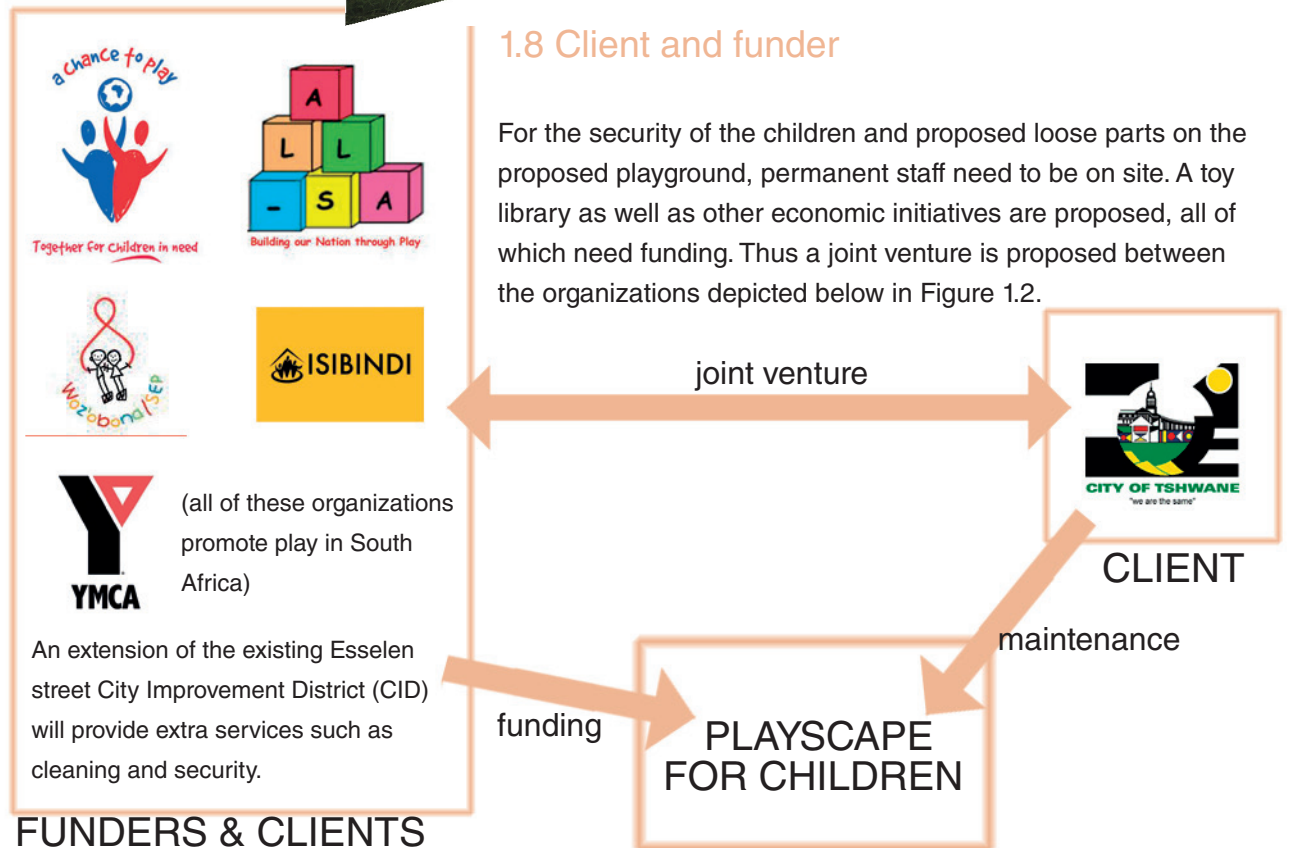


Figure 1.2: Relationship between client and funder. (Author, May 2011)

## 1.9 Research methodology

The following research methodologies were used to gain an understanding of how children play and develop, and how nature influences play. From this, design guidelines were established to inform the final design proposal.

- Observation of existing parks and children's play
  1. Images drawn by pupils of playspaces
  2. Analysis of existing parks
  3. Informal interviews with residents
- Investigation of precedents (real-life and in literature)
- Literature research
  1. Environmental psychology
  2. Child development literature
  3. Landscape architectural theory

## 1.10 Overview of dissertation

The following three chapters will investigate theoretical discourses and review existing parks, inferring design guidelines from the research. Chapter 4 studies successful projects as precedents. An analysis in Chapter 5 explains the context of the site, while Chapter 6 proposes an urban framework for the larger Walker Spruit area. This serves to inform the design resolution as discussed in Chapters 7 to 9. Chapter 7 discusses the design development process leading up to the design resolution in Chapter 8 and the technical resolution in Chapter 9.