



7

Design
development

In order for the reader to fully understand the design, this chapter starts off with the programme and an image of the final design proposal, and then proceeds to describe the process followed to produce it.

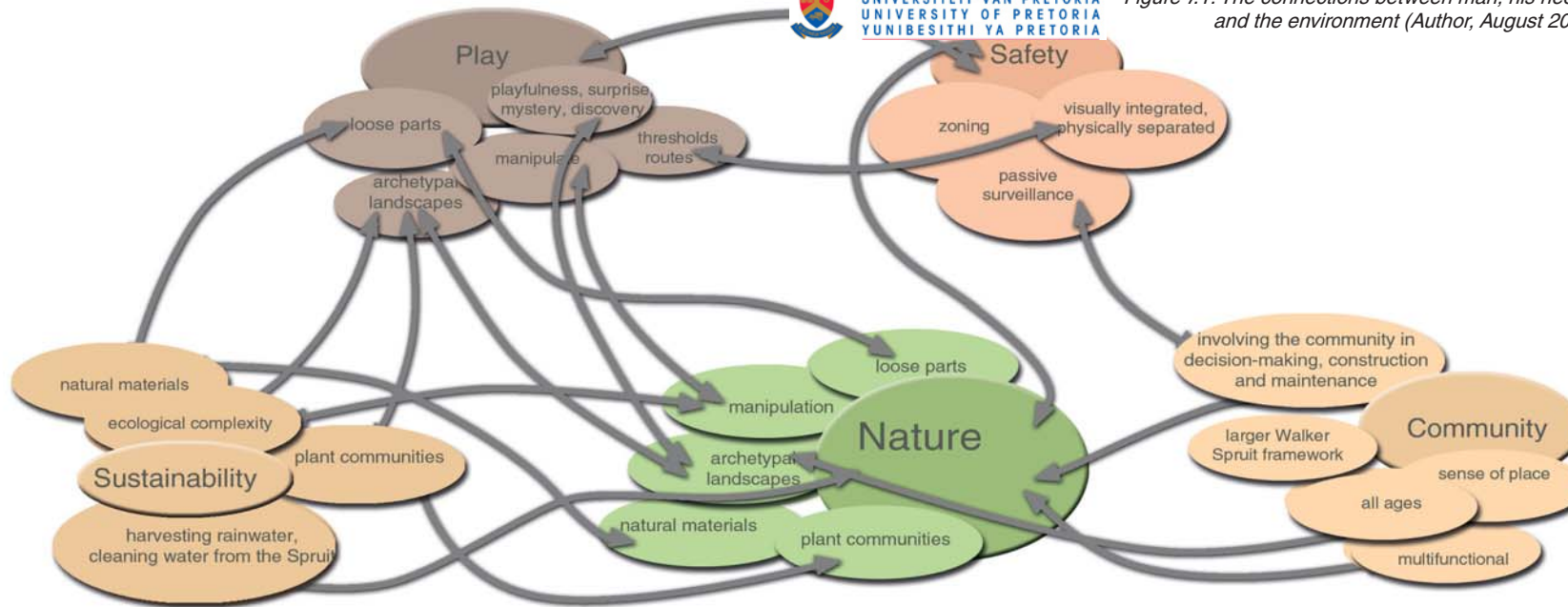
7.1 Programme

- A natural playground which would be divided into different areas for the three different age groups and their age-appropriate activities. This would consist of interlinking archetypal landscapes.
 - A toy library run by the Active Learning Libraries of South Africa
 - A kick about, which could double as performance space
- General park facilities such as gathering spaces, seating and drinking fountains which would cater for the needs of the public (children as well as adults, teenagers and the elderly)
 - Alteration of the Walker Spruit to beautify the current concrete channel
- A wetland for cleaning water from the Spruit before using it in an interactive water feature
 - Ablution facilities



Illus. 7.2: Proposed design masterplan (Author, October 2011)

Figure 7.1: The connections between man, his needs and the environment (Author, August 2011)



7.2 Site specific design guidelines

From the preceding research on children’s developmental and play needs, as well as the urban context of Sunnyside, five key appropriate design drivers were established as shown in Figure 7.1.

1. Nature is essential for children’s development and will form the core design driver of the park.
2. Children and their play needs are the main focus of the park.
3. Safety is paramount in a dense urban area such as Sunnyside.
4. Creating a sense of community will make the park safer and more popular with children and their parents.
5. Sustainability is necessary for the long-term success of the park and is an ethical prerequisite for any development today.

7.3 Nature

Using natural elements to create play spaces is the main focus of this dissertation. As little as possible man-made elements will therefore be used. Boulders, water, sand, lawn and plants will constitute the bulk of the playground. Plants with edible fruit, and interesting flowers or seeds will be used. They will also be chosen to provide interest throughout the year.

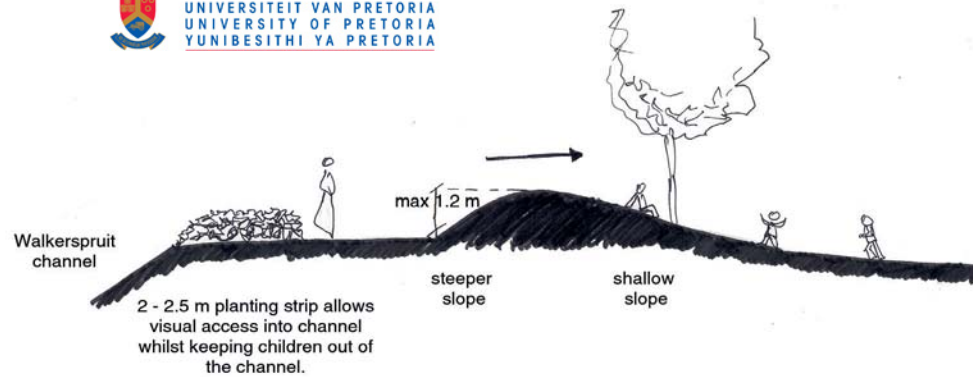
7.4 Play

To stimulate healthy cognitive and socio-emotional development of children, activities that capture the imagination should be facilitated (Pearson & Wilson, 2001; Wilson, 2008). This can be done by providing for manipulation of the environment and for loose parts (build a “house” or a sandcastle). Continuous play

opportunities, such as steps leading to a “den,” or a tunnel leading to or over a water feature, lead children from one play activity to the next, and facilitate much more complex play than when activities are disjointed. Routes leading somewhere enable surprise, mystery and discovery, important elements in an often bland urban environment. Thresholds such as crossing over a bridge or mounds serve to enhance the feeling of having passed from one area to the next and of being in a different area. Having passed a challenge, such as jumping over a wide stretch of water successfully, creates a feeling of accomplishment.

7.5 Safety

As safety is of paramount importance in a children’s playground, particular attention was paid to safety measures. The park will be open to all users, however,



Illus. 7.3: Berm provides psychological separation but visual integration (Author, July 2011)

in some areas physical access will be hampered by wide planting strips (about 2-4 m wide). Berms will provide psychological separation in some areas (see Illus. 7.3), but all areas of the park will be visually integrated. Therefore no planting will be higher than 800 mm, unless the planting is sparse enough to see through (such as through the “walls” of the Tunnel area which are created by planting) (see pages 96 and 97). The park should be divided into different areas with specific design elements which would encourage specific age groups to appropriate that space (a boisterous eight year old would rather play on the rock climbing wall with a group of friends than walk on low balancing logs meant for three year olds). These measures and passive surveillance from activity nodes increases safety.

It was decided that the park should not have an excessively wild and natural look (exactly as it would look in nature) as it is inappropriate and unfavourable to recreate nature in the city (see also next paragraph). Marc Treib asserts that misinterpretations between the designer and user can arise when nature is recreated in the city: “Like the caged animal in the zoo, however,

an urban prairie is hardly a prairie at all; it is an urban garden planted with unmown grass and little else.... Still, passersby wonder quietly to themselves: “When are they going to cut that lawn? I’m sure there are rats...living in it. And they should water it; it looks dead.” (Treib, 1995: 93)

The Broken Window Theory developed by social scientists George Kelling and James Wilson states that when nobody seems to care about a space (such as when weeds take over, plants are not watered and litter lies about everywhere) even more crime and unkemptness result (Kelling & Wilson, 1982). It is highly probable that more litter will appear, the space will be appropriated by homeless people, and crimes might increase in the area.

If the park thus had a completely natural look with plants dying off and looking unkempt in winter, for example, people might receive wrong impressions of the park and even start to feel unsafe. The park will therefore use indigenous plants and natural materials as far as possible, but through maintenance¹ it will be clear that the park is taken care of.

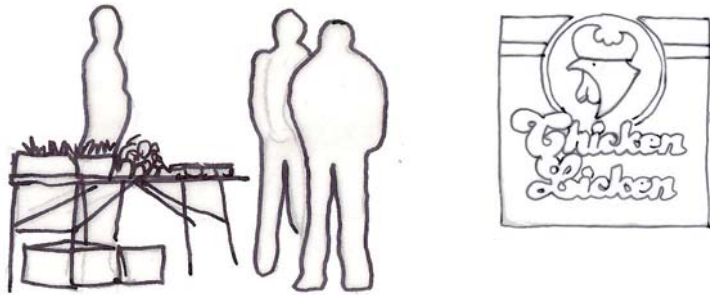
Passive surveillance will be gathered from the entrances of the park where people gather, the central street vendor at the tower, toy library and the shops at the northern building.

7.6 Community

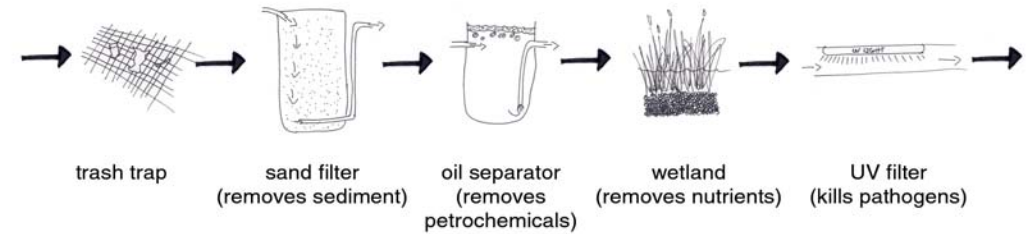
Illus 7.7 on the next page shows an interpretation of the urban context of Sunnyside. In summary, it can be said that Sunnyside is rich in textures such as brick patterns, giving character to otherwise bland housing blocks. The layout of the neighbourhood is almost forceful in its rigidity and grid pattern, with no conspicuous natural lines or softness in the landscape. Despite having a busy street life, Sunnyside seems to be locked up behind palisades.

It is envisioned that the park will become a soft landscape in an otherwise hard environment which could be used by all age groups, such as pedestrians on their way to work, young adults, teenagers, and the elderly. It will serve as an activity node along the Walker Spruit generating energy along the linear urban

1. Refer to page 5 for a detailed explanation of who will be responsible for the park's maintenance.



Illus. 7.4 & 7.5: Different income groups will be catered for. (Author, August 2011)



Illus. 7.6: Water purification strategy (Author, September 2011)

Below: Illus. 7.7: Moodboard collage of the urban context of Sunnyside (Author, April 2011)



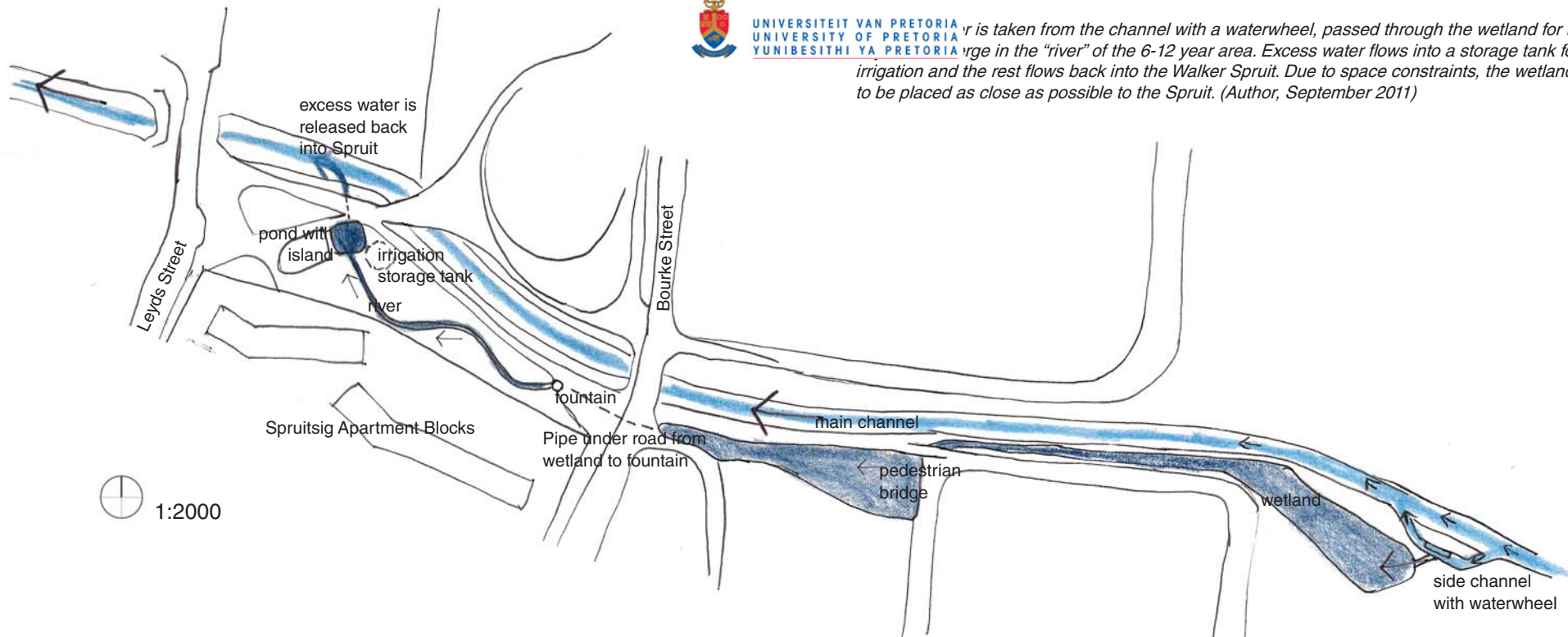
park proposed in the urban framework for the Walker Spruit as discussed in the previous chapter. The park will give a sense of place and identity to this area of Sunnyside by incorporating the local community in the construction and maintenance process.

Public ablution facilities will be available at the Costando building at the northern edge of the site.

7.6.1 Inclusive design

The park allow wheelchair access to all areas and no slope is steeper than 1:15, with the exception of the bridge which is 1:12. Loose sand could present a difficult surface to traverse and therefore firm pathways cross the various areas. In the 0-3 year old area, sufficient space to park prams have been allowed at seating areas. Different income groups are also catered for (see Illus. 7.4 & 7.5). The street vendors will cater for low-income users, while the fast-food restaurant at the Costando building (a Chicken Licken) will cater for middle-income users. The internet café and green grocer will cater for all income groups.

Water is taken from the channel with a waterwheel, passed through the wetland for two days, and then used for irrigation in the "river" of the 6-12 year area. Excess water flows into a storage tank for irrigation and the rest flows back into the Walker Spruit. Due to space constraints, the wetland has to be placed as close as possible to the Spruit. (Author, September 2011)



7.7 Sustainability

7.7.1 Water and stormwater

Rainwater will be harvested from the northern building's roof to supply water for a water feature in the toy library and 3-6 year old area, as well as for irrigation needs.

Stormwater will be directed into planting beds. Excess stormwater on the northern side of the Spruit will be directed into a storage tank for later use. After initial watering during the establishment phase, it is envisioned that the plants will need the minimum watering (manually controlled) because they are indigenous and receive rainwater.

Water will be taken from the Spruit with a waterwheel, cleaned by means of a wetland and other filters (see Illus. 7.6 and 7.8), and used for a shallow water feature running through the park before being released back into the Spruit. Some of the water will be stored in a tank for irrigation use on the south side of the Spruit.

Children will be discouraged to enter the channel for safety considerations by a wide planting strip which still allows visual access into the channel.

7.7.2 Planting strategy

It was initially decided to use only plant species found naturally in the greater Pretoria area, and to plant them in specific communities as they would occur in nature.

The site is classified as mountain bushveld (see page 42). Rocky ridges and grassland communities were however not excluded, as they are representative of the greater Pretoria area and including them would increase the complexity of the site. Plants were chosen according to Acocks in Veld Types of South Africa (Acocks, 1988:29, 112-114), Mucina and Rutherford in Vegetation of South Africa, Lesotho and Swaziland (2006:466-467), and communities found in the Faerie Glen Nature Reserve in Pretoria East, as documented by Eco Assessments (the Reserve is representative of major vegetation types found in Pretoria).

Five main communities were identified:

1. Riverine and wetland



Illus 7.9: Site plan revision 1 (Author, April 2011)



Illus 7.10: Site plan revision 2 (Author, May 2011)



Illus 7.11: Site plan revision 3 (Author, June 2011)

2. Mixed bushveld
3. Grassland
4. Forest
5. Rocky ridge

Plants that have similar habitat needs will therefore be grouped together, ensuring optimum growth opportunities. Plants were chosen for length of flowering time, conspicuous flowers and seedpods, fragrance, robustness and edibility (to provide loose parts for playing with as well as stimulate the senses). However, using plants only found in the Pretoria area proved to be too restricting, and it was subsequently decided to include plants from other parts of the country as well if they would still thrive in the Pretoria climate. This enabled the author to use a greater variety of plants with desired qualities such as fragrance or shade-tolerance.

7.7.3 General

Local labour will be employed in the construction of the park. This will ensure skills acquisition and create employment opportunities. The gabion seating walls, for example, will be handpacked to ensure a neat finish. The beautification of the Walker Spruit Channel will allow specific skills to be learnt, and will create a sense of ownership due to community involvement.

For material choice philosophy, refer to Chapter 9.

7.8 Main site plan revisions

Circulation routes, the need to activate certain areas of the park as well as safety issues influenced the functional layout of the design (refer to Illus. 7.27). On a detail scale, complexity and child-size spaces were

important.

The following site plans were drawn at various stages of the design.

7.8.1 Site plan revision 1

A large undulating pergola with climbing plants that extend into the streets next to the site draws people into the site and along the proposed circulation routes. This was revisited as it makes a strong visual statement, but detracts from the actual playing areas, which should be the focus of the park. Besides providing shade and having an interesting shape it did not serve any function. A mini-soccer pitch was incorporated, but this created space constraints and awkward spaces on site.



Illus. 7.12-7.17: Archetypal landscapes (Author, August 2011)

7.8.2 Site plan revision 2

It was envisioned to have strips of natural elements running through the site, to create routes linking the various parts of the site in this way. This was further developed in revision three, as the routes alone did not provide the complexity needed to make a children's playground function as well as it possibly could. This revision still has an area for kinetic equipment such as is commonly found in playgrounds.

7.8.3 Site plan revision 3

In this revision, the kinetic area was removed. It was decided that the equipment detracts from the focus of the dissertation, namely a natural playground.

Only at this stage did the idea of archetypal landscapes (representing a range of landscapes typically found in children's stories, films or seen on television) surface. This was investigated and further developed into the final concept.

7.9 Concept (See also 3.2.4 on page 23)

Archetypal landscapes form a non-prescriptive platform for children's play, offering an environment which stimulates the imagination and which can be used for various games, or even re-enactment of stories or films that the children have seen (see Figure 3.12 on page 24). These landscapes can largely be constructed with natural materials and are found in both African and Western stories for children.

Examples of such landscapes in African stories are: ant bear holes, hollow cliffs, valleys, ditches, rivers, reeds, fountains, wells, hills, mountains, waterfalls, grasslands, kraals, and the bush.

Examples in Western stories are: woods, ponds, towers, castles, meadows, valleys, mountains, forests, caves, oceans, gorges, waterfalls, bridges, and islands.

The main archetypal landscapes (which are also suitable to reproduction on a smaller scale and do not present a safety hazard) are:

- The forest
- The grassland or open plain
- The hill or mountain
- The river
- The island
- The fountain
- The tower, castle or kraal (symbol of safety, having a view)
- The tunnel

On their own and when interlinked, archetypes are able to encourage playfulness, mystery, discovery and surprise.

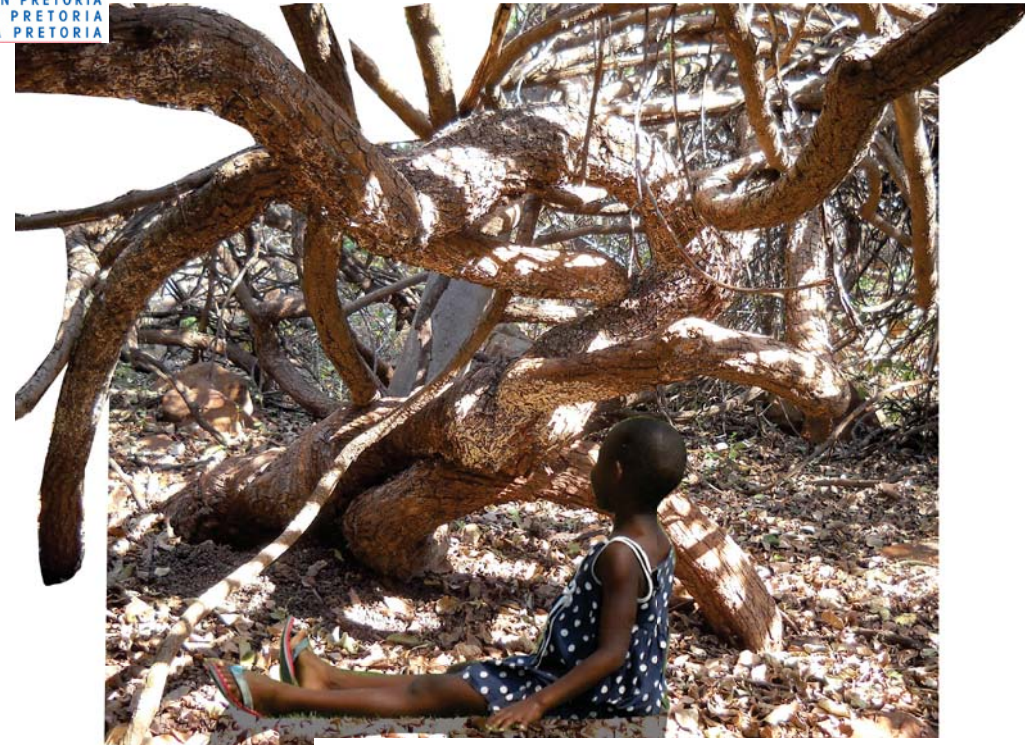
7.9.1 Site plan revision 4

The concept of the monomyth (see Illus 7.18) was investigated to see if a universal story could be acted out in the landscape. It was consequently decided to not let the arrangements of archetypes be guided by a single children's story, but rather to allow open interpretation of the landscape and multiple routes to be followed.



Illus. 7.23: Threshold investigation (Author, May 2011)

Illustrations 7.19 to 7.27 investigate basecamps, routes, and thresholds as it was explored during the design process.



Illus. 7.24: The twining branches of a Combretum microphyllum can create imaginative spaces. (Author, June 2011)



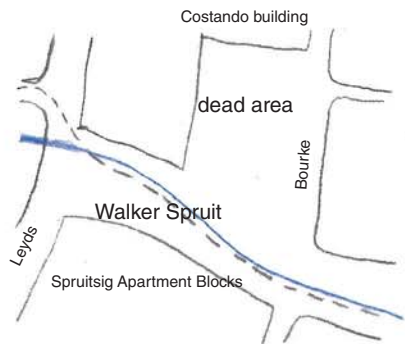
Illus. 7.25: A safe hiding place (Photo collage, Author, June 2011)



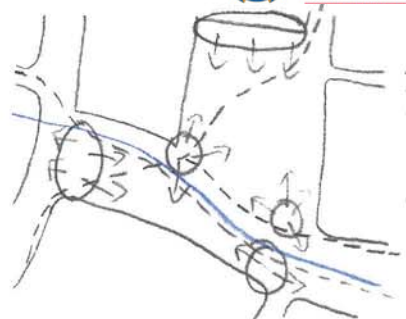
Illus. 7.26: Tall grasses may seem like a forest to a three year old. (Author, June 2011)



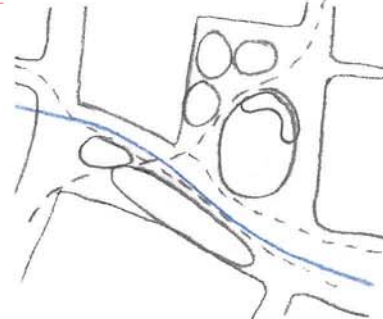
Illus. 7.27: Crossing water safely in Jan Cilliers Park, Pretoria (Author, June 2011)



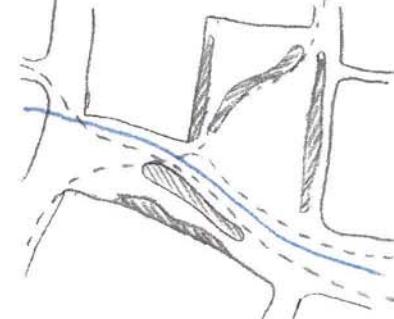
current circulation



Need to activate dead areas at edges and in middle, with new circulation routes over Spruit.



Activities and age groups are zoned

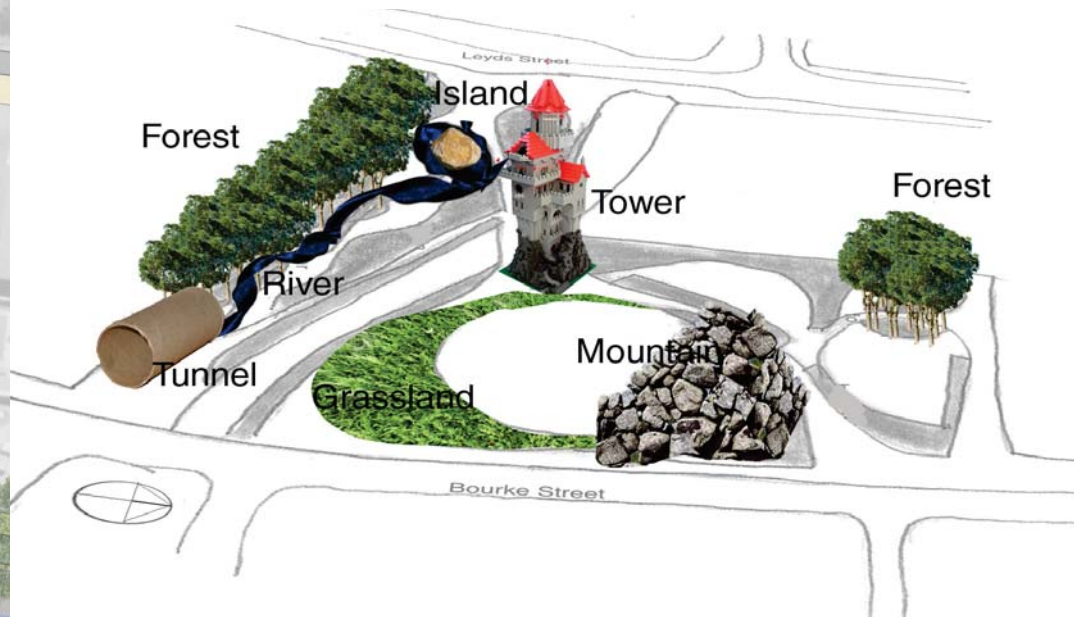


Berms and planting strips are added for psychological or physical separation.

Illus 7.28: How basic layout was generated (Author, August 2011)



Illus. 7.29: Final plan (Author, September 2011)



Illus. 7.30: Parti diagram showing where archetypal landscapes are located (Author, September 2011)



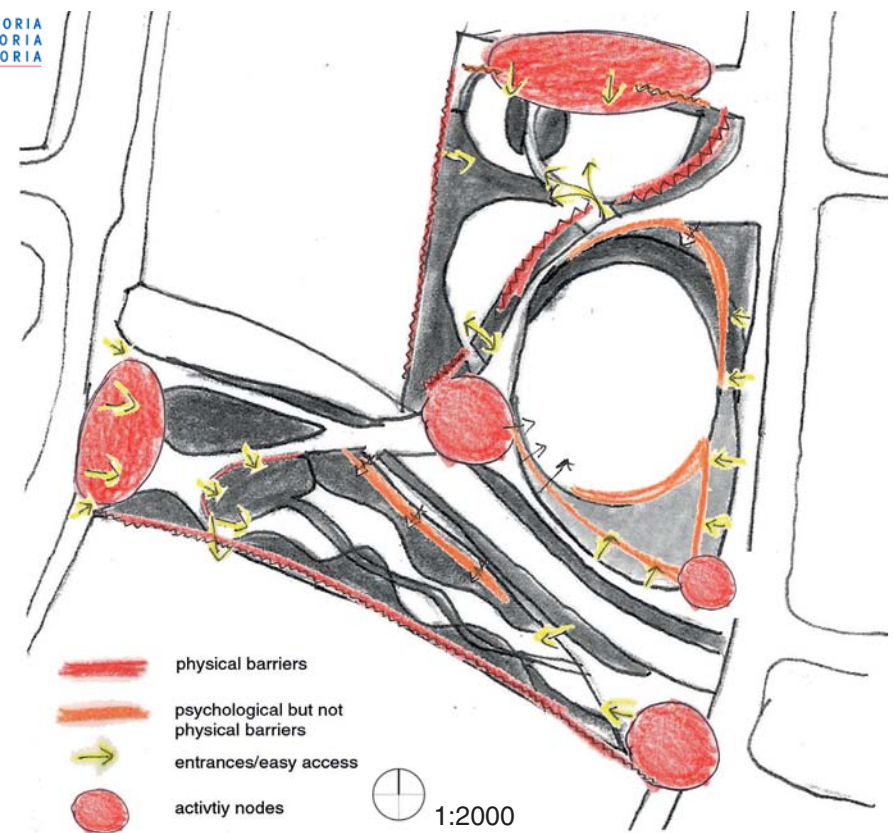
Illus. 7.31: Possible basecamps and routes which could be followed through the park (Author, September 2011)

7.10 Conclusion

Site plan revision 4 forms the basis of the final design resolution as discussed in chapter 8.

Illustrations 7.27 to 7.31 summarise the design in terms of the most important aspects, namely archetypal landscapes, bases and routes, and functional aspects such as safety, nodes and access.

In the next chapter the final design will be discussed in depth.



Illus. 7.32: Activity nodes, entrances and barriers (Author, September 2011)