04
PROGRAMME

Navigating born-free South Africa

The programme looks to encourage children to remain curious, and provide a platform for them to gather and meet. Establishing a place where they can explore, play and collaborate with other children from the Tshwane region.

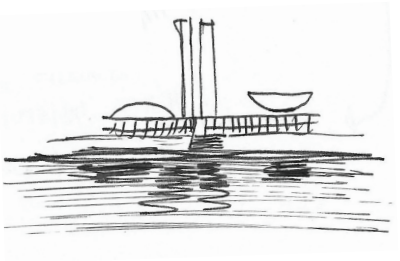

Fig.60. Brasilia National Museum, from a distance. Oscar Niemeyer. Imagine the excitement of a five year old child approaching this building... "What is it?"

INVITATION TO WONDER

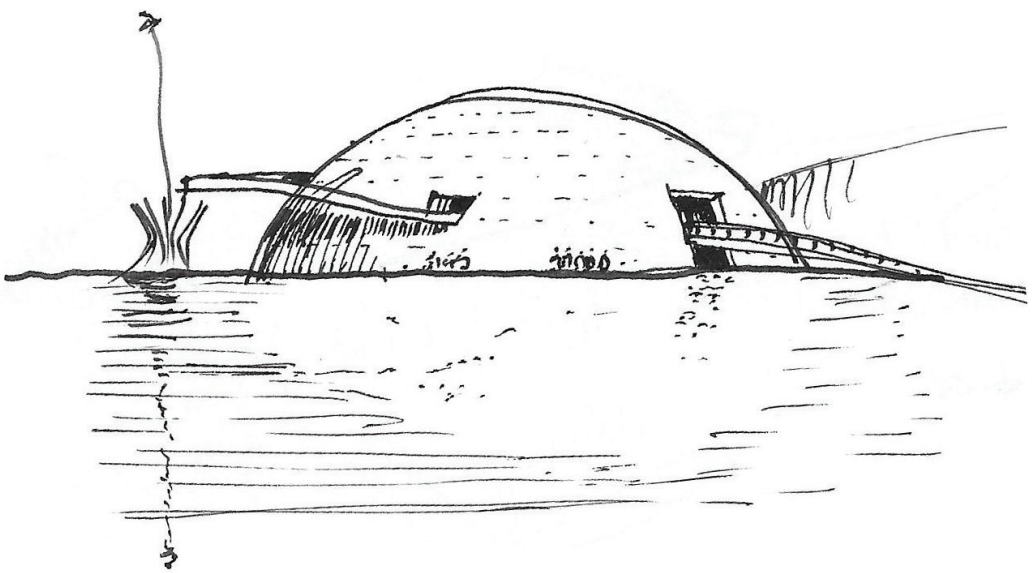

Fig.61. Brasilia National Museum, close up. Oscar Niemeyer.

4.1
AFRICAN SPACE

Collective expression, individual experiences.

Supporting Jonathan Noble's discussion on African space, Dr. Emmanuel Nkambule (2016), argues that the theory of the South African Collective Space is anchored in landscape and activity. He elaborates on this by explaining that the success of African collective space can be attributed to understanding two fundamental concepts. First, the notion of the boundary in traditional terms, and second, the significance of events and rituals.

He describes the boundary as a demarcated space to contain livestock. This underlying definition suggests that boundaries are functional in nature, and limited to domesticated animals. Their purpose is to contain as opposed to the suburban notion of the boundary fence: to keep out.
Furthermore, the significance of event stems from its ability to strengthen relationships and establish new ties. When these practices are conducted in collective spaces, they help to introduce children to the community's value systems and embraces them as a part of the collective.

The quantitative analysis identifies children as the predominant user of the *3rd place* in Atteridgeville, hence the research explores how children interact and communicate to provide a place for them to gather. The study does not limit itself to the children of Atteridgeville. In stead the site should function as a *honey-pot* drawing visitors from grater Tshwane. Utilising African space making ideals to create a new learning landscape.

"...Collective identity can only be defined upon respecting the rights of the individual."
Dr. Nkambule (2016).

4.1.1
"THE CAVE GAME"

Lively and animated character

The fascination with space making is intrinsic to human nature. Rasmussen's (1964) book *Experiencing Architecture* describes the awakening of spatial awareness in a child's development-process as the progression in the tradition of building. He calls this the "cave game", the time when children begin to enclose spaces for their own use.

Their imaginations feed a narrative which is reflected in their personalised enclosures. Material choice, positioning of the enclosure in relation to its surroundings and entrances are all considered and manipulated by the young builders.

Public spaces have a fundamental influence on a child's imagination, It is a break from the ordinary or mundane, and provides an opportunity *to learn* (Marmor,2009). A child can be found exploring patterns on the floor, textures on walls, flex in balustrades and friction on tiles, all providing hours of experiential learning.

Marmor (2009) describes how a trip to the zoo might have a completely different educational outcome to a child. Her lecture on the *Insights into the Mind of a Child* reveals that children will continue to explore their environments empirically until the age of 11-12, at which point all their experiences will be explored through reason, including play.

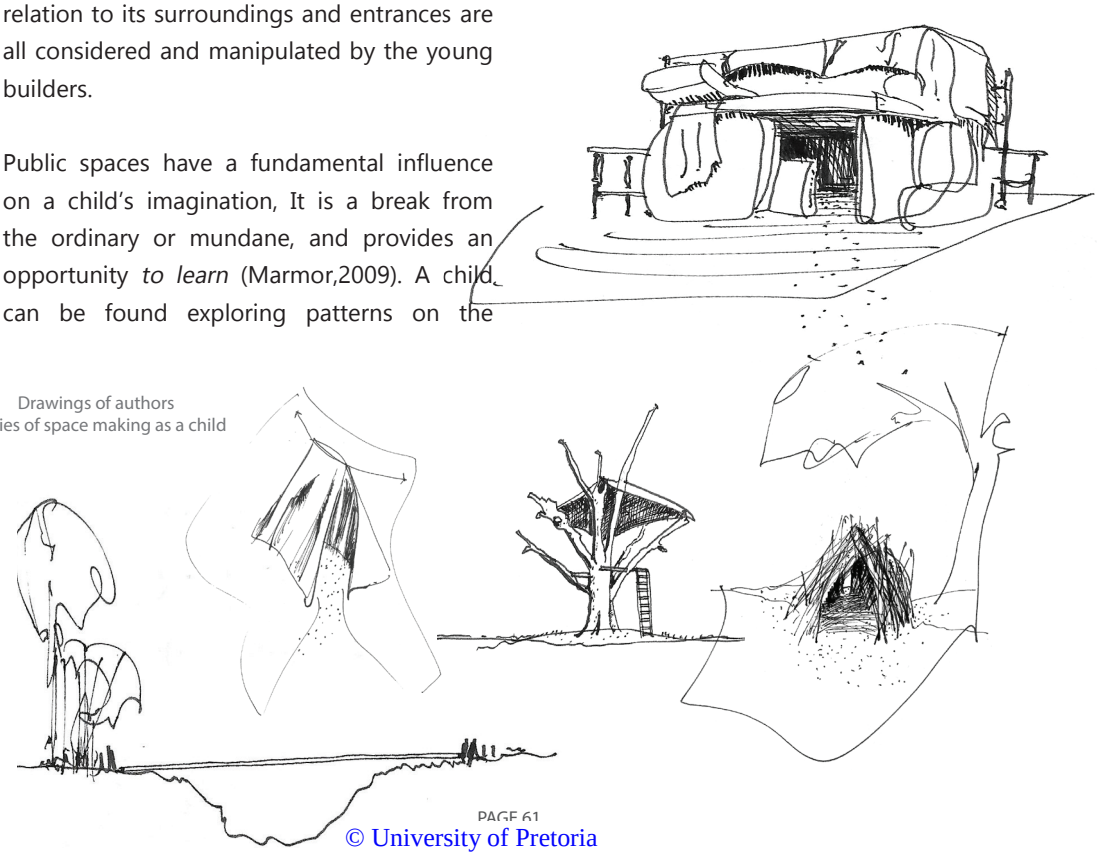

Fig.62. Drawings of authors memories of space making as a child

4.2
PARTITIONING

Quality of place

The site analysis recommends that the site is partitioned into three segments, each to highlighting the quality of activity supported by the terrain. Shown in Figure 63, the site displays a clear north, south and a lateral segment. These segments culminate where the decommissioned tank is located.

The north portion is identified as the neighbourhood park. A place supporting larger gathering due to the forgiving nature of the slope. Here passive surveillance is achieved through considered placement of the proposed architecture.

The southern portion is reserved and quiet. The deteriorated landscape and escarpment is the result of levelling the site for the construction of the reservoirs. To rehabilitate this eroded segment of the ridge the proposed architecture shall respond to this deteriorated topography to remedy the natural features of the ridge.

Finally, the lateral segment provides a movement axis opportunity which connects the site to Khoza St. & Atlyn Mall, Figure 31.

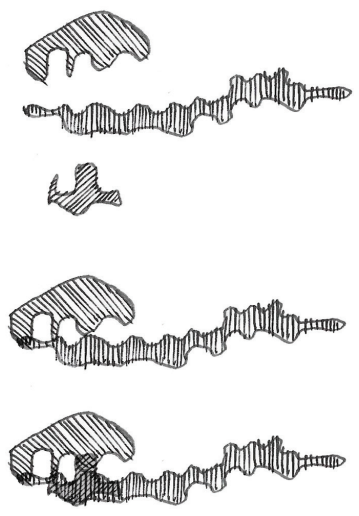

Fig.63. Spatial zoning. April, 2016.

There is value in making use of the intrinsic qualities of natural features to synthesise programme and site.

Overcoming apartheid planning strategies, natural features such as prominent hills are no longer used as racial separating elements (buffers) rather they have the potential to become places of recollection.

4.3
PROGRAMME

Children and the 3rd place

Adapted from Jean Piaget's (1972) stages of cognitive development, the programme unfolds to highlight the evolution of children's understanding of their environment. Relative to the spaces created, Piaget describes the four stages of cognitive development to occur in succession of one another. He also describes that although children can and often wander between stages of cognitive development, they can only show full comprehension of a stage once the previous stage is exhausted (Marmor, 2009). The architectural programme seeks inspiration from the theory of Cognitive Development to derive the following sequencing of spaces for children to wander through.

A. Perception
B. Exploration
C. Incubation
D. Imagination

The first two phases act as spatial anchors relating to the outdoor functions, the latter are encapsulated in the built forms.

The programme requires a sequence of spaces that would entice the children to remain curious. Children are encouraged to explore and interpret the site as they please. The wandering process is dictated by the child's attention span.

The architectural response to the requirements of the programme manifest in a series of storytelling enclosures, linear organisation of movement, outdoor rooms and regroup spaces.

Fig.64. Third Place 03 Play. (Nel & Sadiq, 2016)

4.4
PATRON

Thebe Medupe

Dr. Thebe Medupe highlights the importance of education in the life of young South Africans. Recognising Medupe as a positive contemporary role model, his work can be used to entice young scholars to pursue career choices relative to their line of interest.

Dedicated to the same cause of encouraging children to see their world beyond the current day township circumstance, it is proposed that the planetarium will commemorate the dedication of Dr. Medupe in exposing young South Africans to fields of study beyond what they are accustomed to.

Thebe grew up and completed his education during the apartheid regime. With as little as a cardboard roll and two lenses, he built his first telescope and took to the African sky in his home town outside Mafikeng. Mentioning that if it was not for his crude telescope he would have never imagined the mountains on the Moon (Foster, 2002).

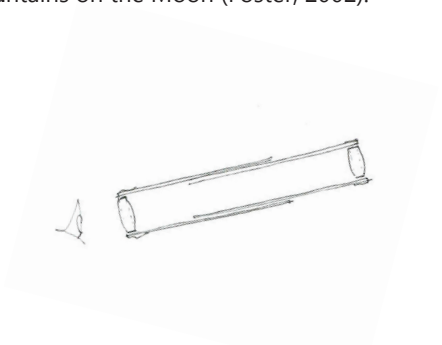

Fig.65. Crude telescope. A sketch of the telescope which ignited Thebe Medupe's curiosity. October, 2016.

4.4.1
CLIENT

Urban receptors

As discussed by Oldenburg (1989) in his book *The great good place*, the theory of the *3rd place* is defined as the place in the city that we like to spend time in. *1st* and *2nd* place are defined as home and work respectively.

In order to create an environment of 3rd place qualities the study identified the main user of existing 3rd places in Atteridgeville. This is done to develop an appropriate response, while considering the planetarium.

Children are described as receptors due to their ability to absorb and engage with external stimulus. The provision of a programme which would harness and encourage children's ability to freely engage and interact with other children from the Tshwane region, is subsequently interrogated. This programme's ability to draw external energy means that it is not confined to children of Atteridgeville, thus providing a 3rd place for the *Urban Receptors.*

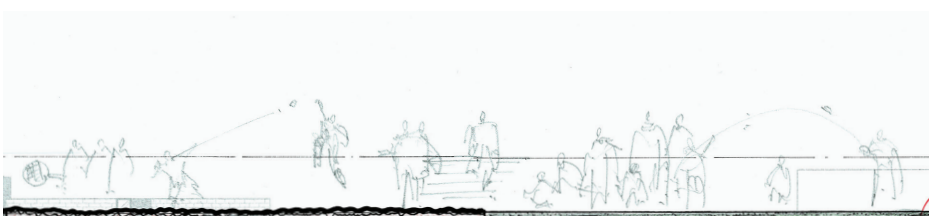

Fig.66. Urban Receptors. The children of Tshwane envisioned playing and engaging in the outdoor rooms. July,2016.

4.5
THE PLANETARIUM

Invitation to wonder

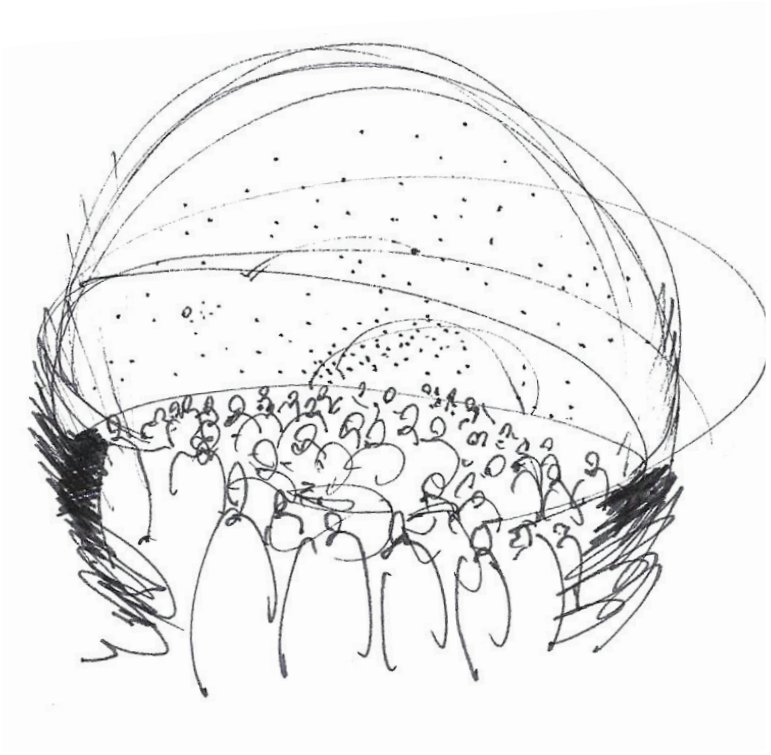

Fig.67. The Thebe Medupe Planetarium. Dedicated to the South African astrophysicist, the planetarium takes inspiration from his work Cosmic Africa which attempts to reconcile Myth and Science (Foster, 2003).

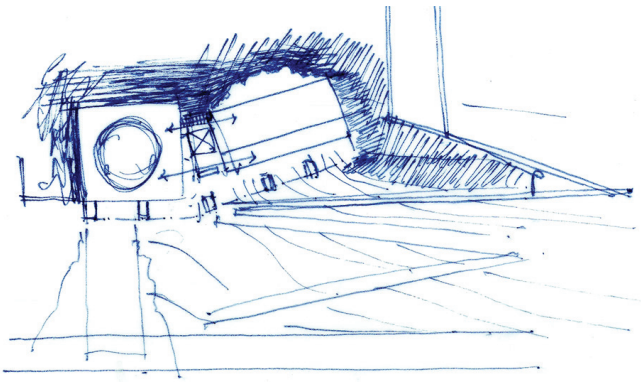

Fig.68. Configuring the planetarium. August exploration.

The combination of duty and entertainment into a single space has led to the success of shopping malls and gymnasiums in the last decade in South Africa. The notion of an affordable, collective-public-destination (such as a museum) has no apparent value in contemporary South Africa. Museums are often affiliated with the elite or society's minority. Such destinations are therefore regarded as educational formalities, and rely on a network of schools to include them in their list of excursions for interested students (refer to Figure 72).

However, the success in merging the of spirit of place and function can create an environment that attracts repeat visitors. Civic anchors can help to settle such public destinations by generating and containing energy. To reinforce the duality of myth and reason, and provide a curiosity bank for children throughout Tshwane, a planetarium is proposed as the civic anchor for the site. In addition to changing the perception of these inaccessible programmes, the planetarium will encourage a vast amount of external energy to penetrate into the once overlooked township. This is in response to the problem statement stipulated about the RDP in the introduction chapter of the dissertation.

4.5.1 THE FIRST MODERN PLANETARIUM

The Zeiss Planetarium - 1921

The first opto-mechanical projector was housed in a 16m concrete dome and opened to the public in 1924 on the roof of the Carl Zeiss Factory in Jena, Germany (Zeiss Group, 2010).

The success of this rooftop prototype inspired the first modern planetarium, as we know it today. Named after the Zeiss factory, the Zeiss Planetarium was built in 1928 in Jena, Germany.

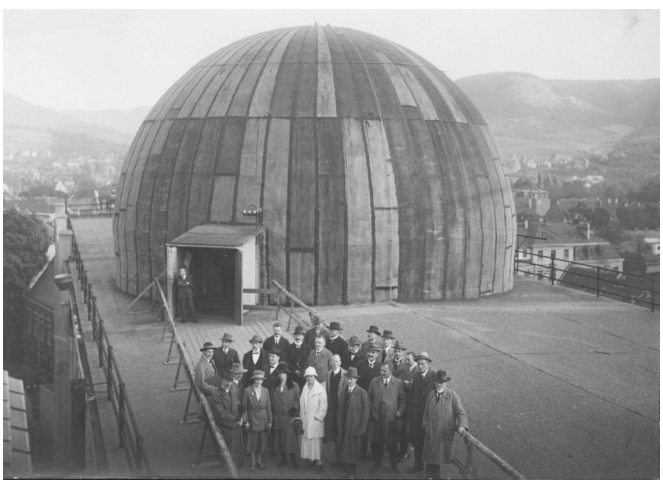

Fig.69. The Zeiss Planetarium. Located on the roof of the Zeiss factory, Jena, Germany, 1924. The 16m diameter planetarium was the first to utilise projection technology to represent the night sky. Carl Zeiss Archive, 2010.

4.5.2
THE ADLER PLANETARIUM

An invitation to wonder - 1930

The success of the planetarium was unexpected. Planetariums crept up in Europe as quickly as the Zeiss factory could supply the intricate projectors (Zeiss Group, 2010). The first planetarium in the west was commissioned by American businessman Max Adler. Completed in 1930 the planetarium quickly evolved into a civic destination. Seen below, the Adler Planetarium attracted more adults than children, seen queuing in anticipation to gain access.

Fig.70. The Adler Planetarium. Opening day, 12 May 1930. (Unknown, 1930)

Fig.71. The Johannesburg Planetarium. East Elevation captured from parking on Yale street. Author,2016.

PARKER, PARKER & FINSEN, 1960

THE JOHANNESBURG PLANETARIUM
UNIVERSITY OF WITWATERSRAND, JOHANNESBURG, SOUTH AFRICA.

The Johannesburg Planetarium opened its doors to the public on the 12th of October 1960. Today the Planetarium at the University of Witwatersrand hosts up to 77 000 visitors annually. (City of Johannesburg, 2009). The show is divided into three parts, focusing the content on the age groups of the visitors. Young children are taught about constellations and star signs. More mature age groups are exposed to the movements of the constituents of the solar systems whilst the advanced shows explore the field of astronomy in detail.

In the opinion of the Nationalist Party, it was decided that the planetarium would be erected in the campus of the Witswatersrand University. Although the planetarium would remain accessible to the public, the decision to place it within the campus made the building exclusive. Despite its location, the planetarium receives children from schools as far as KwaZulu-Natal (City of Johannesburg, 2009) but remains disconnected from the city dweller.

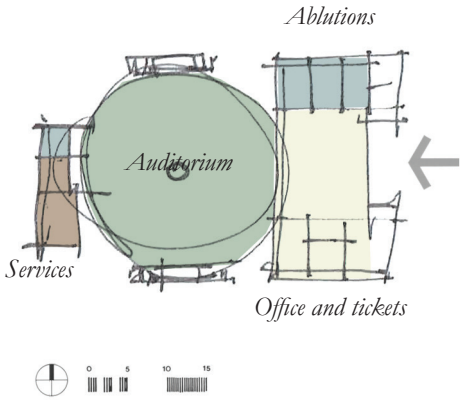

Fig.73. The Johannesburg Planetarium plan. The 400 seater is situated within the borders of the University.

The Johannesburg Planetarium also known as the Wits Planetarium draws a lot of external energy to the University of Witwatersrand campus. National facilities like the Johannesburg Planetarium have an outstanding reach, drawing visitors from all parts of the country. This foreign energy creates opportunities for engagement and collaboration. Unfortunately, the Planetarium is disconnected from the public realm as it sits within the campus boundary.

With recent student protests and university shut-downs, the Wits Planetarium has been non-operational. With up to 1200 visitors during school holidays (City of Johannesburg, 2009) the planetarium has potential to invite visitors to a new context. Photographed on a public holiday, the Wits Planetarium stands empty and fenced off from the neighbouring sports field. There is a missed opportunity to cross pollinate the planetarium with another function in order to maintain interest in these national monuments.

Fig.72. Panorama, Johannesburg Planetarium. North elevation, photographed on a public holiday. June, 2016.

4.6
KGALE HILL
GABORONE, BOTSWANA

The Pattern Language

On the horizon, the swells of the distant green hills divide the sky and earth. Looking below, the city's sparse fabric meanders as if spreading perpendicular to the vehicular artery:

The Western bypass.

The journey to the top requires one to climb over the rocks and through the bushes; with a few encounters with the wildlife, perhaps a puff adder or a troop of baboons:

There were rumours of a leopard living here? No?

With nature at our doorstep, we are cleansed by our ascension. We are now disconnected from the city. From here we observe the *patterns* of Gaborone: the traffic, the shopping mall parking-lots, the bus rank:

You can hear it all the way up here if the wind blows right.

From the peak of the hill, we discuss the location of our homes and our schools:

Who will spot it first?

I didn't know the Western bypass was crescent shaped

My understanding of Gaborone was shaped by my interaction with the only hill available. It provides the opportunity to ascend, and disconnect, in order to reflect.

In Pretoria, at every chance, I revisit my *'Kgale Hill'* experience on Johann Rissik Drive. Overlooking the inner city bowl, UNISA, the Union Buildings, the greenery stretching to the new east, and all the rooftops dispersed in between, I reflect.

In Atteridgeville I found *Kgale Hill* again at the site of the water reservoirs. By reclaiming a leftover site, a place can be provided for children to engage and be curious about their locales:

> a platform to appreciate the intricacies of daily life, from within.

4.6.1
THE MODERN PARK

Choice in movement

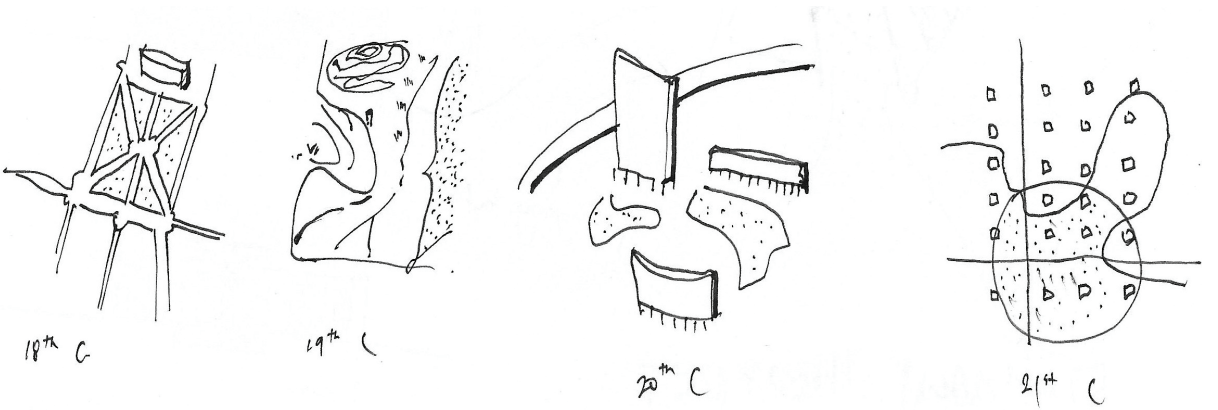

Fig.74. Bernard Tschumi. An urban park for the twenty first century? (1982).

During the 1980s Bernard Tschumi attempted to logically explain the nature of parks in the 21st century. His conclusion reveals that unlike previous centuries where nature was, at first dominated, then imitated and later represented. His approach spoke of allowing nature to remain *natural*, while an arbitrary axes and ordering devices were necessary for the human user (Tschumi, 1987).

The diagram above on the far right reveals how approach, speed of journey and sequencing of event is determined by the user. Nature is allowed to remain natural and the man-made follies aid to accentuate the beauty of what is left untouched.

Tschumi's theory is used to create a programme that is fit for the site, producing an institution on the hilltop that aims to inspire and teach people about themselves and their environment - through interaction and exploration. The user is given the liberation to explore the site at will, to wander and observe, finally by choice of the user participation will be encouraged through the functions of the building.

4.6.2
THE NEIGHBOURHOOD PARK

Approach to left-over space

The design aims to integrate the left over site back into its context. In the same light, the programme aims to integrate the peripheral township of Atteridgeville back into Tshwane. Creating a place of wonder for children of all ages.

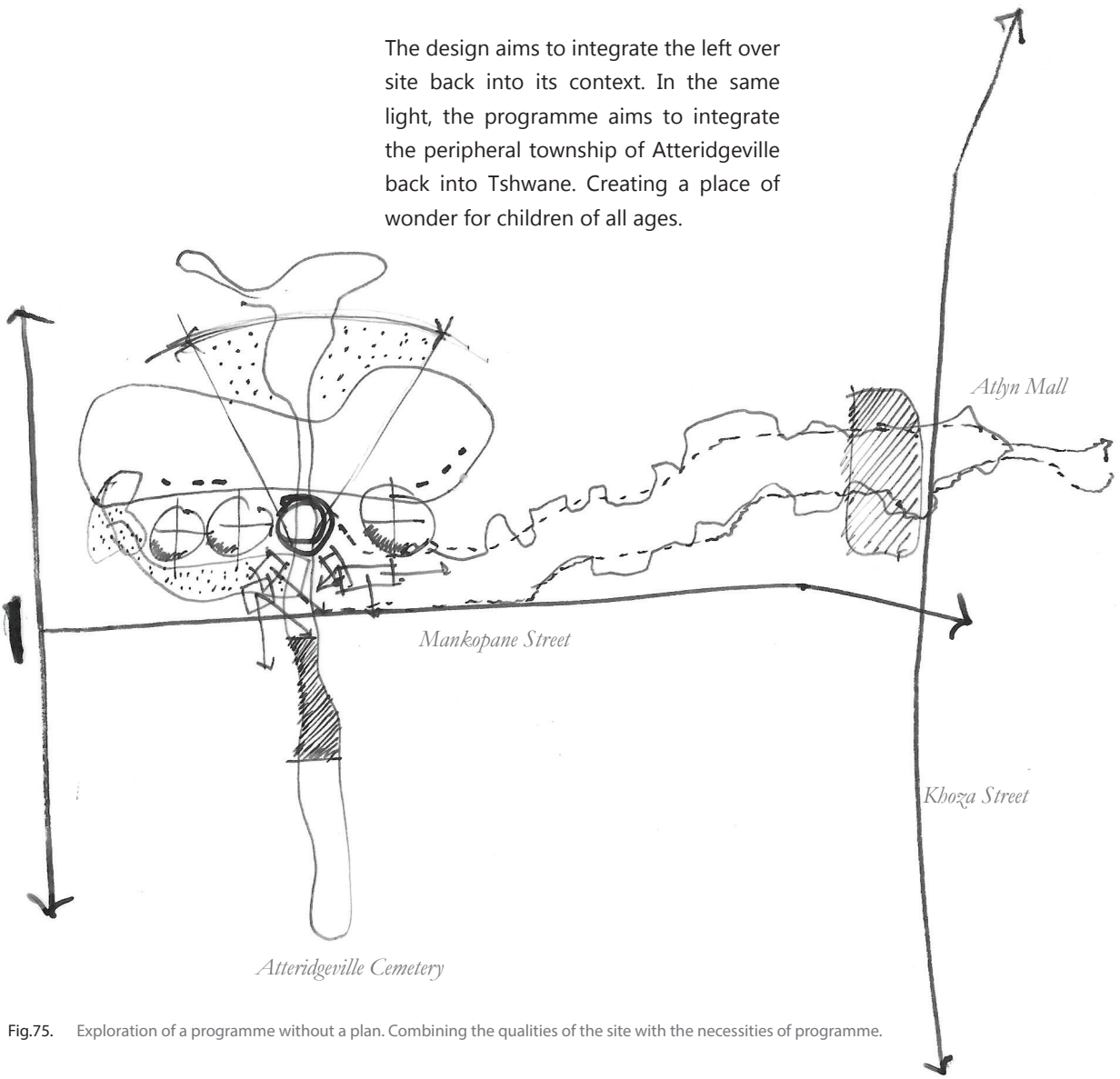

Fig.75. Exploration of a programme without a plan. Combining the qualities of the site with the necessities of programme.

4.7
MYTH

The value of storytelling

Kumkummi - Bushman oral traditions: myth and history which provide an understanding of the cosmological framework in which the Bushman existed (Herman,2013). These traditions helped children negotiate the landscape, become vigilant and remain curious.

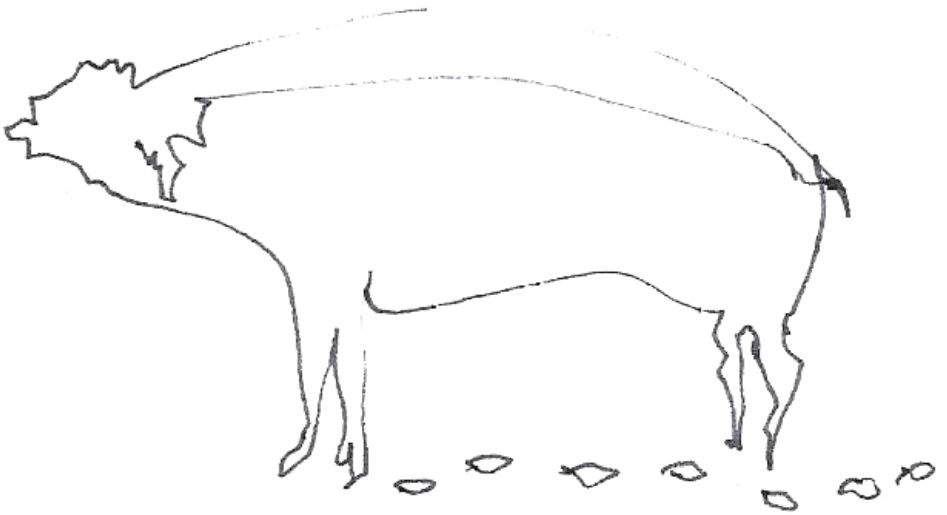

Fig.76. The Rain-Animal. Based on the description of the Rain-Animal given below.

"...next time you observe a typical late afternoon thunderstorm realise that you are indeed seeing the Rain-Animal as the Bushmen saw it. The bank of clouds is its body and the columns of rain are its legs, as it walked across the land, renewing the plants, attracting the game and enabling people to have a time of plenty. The Rain-Animal's passage is further ground-truthed in the round impressions raindrops make in the sand and which Bushman believed to be its spoor." (Ouzman, 2002:11)