As stated previously, there are three different types of spaces that will encourage empowerment. These spaces become places where people can escape from everyday life, where they are encouraged to dream. These are:

Reflective spaces where one can be calm, collect one’s thoughts and be at one with oneself. In places like Manenboli, many people live very over-crowded, hectic, hard lives that leave little or no space for peace and reflection. Time is a precious commodity, so these reflective spaces need to be easily accessible and well known.

Spaces where people feel connected to others in similar situations, where they feel like they are part of a larger community, as well as part of the larger natural system. This is important in a place like Manenboli where people face hardships on a daily basis, and need to feel that they are not alone.

Fun, stimulatory, inspirational spaces where one can relax, play, be free and leave all worries behind. A place where the imagination comes alive...

Some of the ‘tools’ that can be used to create these spaces are:

Elements with an ephemeral nature
Art especially that which involves the community
Sensory stimulation
Specific spatial arrangements
Gesture, hardening and flattening of surface and texture

The following design will attempt to empower the residents of Manenboli by creating the spaces mentioned above on a more detailed level.

Part 1: Introduction

Why detail this section - opportunities, advantages, needs and constraints?

All circulation patterns in and around the University start or terminate in this square. It therefore becomes an important node within the University precinct.

It is public, and therefore cannot be closed at night and become dead space.

The public library acts as the intermediary link between the University and the public. It will be used by young and old alike - it is the perfect interface.

The space is located in the middle of three significant zones, namely, institutional, busy retail and everyday life (food gardens, residencies, apprenticeships, and so forth.) it needs to interact with all of these facets and therefore provides an exciting challenge.

The square can become an exhibition space for the types of skills being taught in the apprenticeship workshops adjacent to it.
Section 6: Final Design

Part 2: Plan development and process

- Informal market area
- Density - people - pedestrian surveillance
- Environmental education - appreciation
- Play spaces
- Sensory planting
- Reduce, Reuse & Recycle
- Sustainable water use
- Specified circulation routes

- Figure 205: Attempt to reconcile grid systems present on site (Author, 2008)
- Figure 206: Incorporation of food gardens and apprenticeship workshops (Author, 2008)
- Figure 207: Incorporation of water, aqueduct and raised spaces (Author, 2008)
- Figure 208: Model showing progression of green, water and raised areas (Author, 2008)
- Figure 209: All walls are - central section around figs still too rigid and static (Author, 2008)
Part 3: Design Principles

There are eight design principles that, in the author’s opinion, must be adhered to in order to successfully create the previously mentioned spaces, and thereby, empower the people of Mamaliö. These principles are:

1. **The creation of multi-functional, simple, robust elements and spaces.**

   - **Figure 211:** Basketball court (Author, 2008)

2. **Community involvement and participation. This will be achieved with the large female sculptures, concrete walkway narratives, the mural on the basketball wall, locally made shading structures, mosaic work, and so on.**

3. **Greenery and natural elements increase towards the food gardens, and decrease towards the busier, more dense areas, i.e., Hans Strydom Road. The movement of water over the site also achieves this. It begins in a very rigid, hard container and subsequently moves into a pebble-lined, organic planted swale...**

   - **Figure 213:** Vegetative and other elements increase towards the residential and food garden areas (Author, 2008)

4. **The above landscape space, for example, is able to be used as a sports ‘field’ (basketball / basketball) with seating provided on steps all the way around the court, as well as providing a perfect surface on which to unpack chairs for a concert to be held on the multi-functional ramp / stage adjacent to the courts.**

5. **The use of vertical elements to define main circulation routes. This is accomplished through the positioning of aquatic supports and tall trees.**

6. **Make use of ephemeral elements, like vegetation, wind mobiles, musical sculptures, rust patterns on paving, and so on.**

   - **Figure 214:** Wind mobiles throw changing patterns on the ground and frame changing skies (Author, 2008)

   - **Figure 215:** Changes in levels - space creation (Author, 2008)

7. **Multifunctional spaces - Parterre-type elements: Manipulation of the landscape to create level changes in an attempt to reconcile the different grids and geometries on the site, as well as to break the monotony of a flat site. This brings elements closer to eye level thereby allowing people a different experience of that element and inviting them in to touch it, sit under it, and so on.**

   - **Figure 216:** Plaza del Salón, Spain (Mangado, 1996)
The stimulation of the senses through the use of tactile and textured materials, aromatic vegetation, shadow play, musical sculpture, and so on.

Stick to the colour scheme

Figure 217: Sensory stimulation - Vodacom advert (Wallpaper Magazine, 2008)

Figure 218: Sensory walkway at different levels (Author, 2008)

Figure 219: Examples of tactile, visual and aromatic elements found in planters along sensory walkway (Author, 2008)

Figure 220: Colour scheme (Author, 2008)

Figure 221: Platforms for play (Cople, 1994-95)

Figure 222: Build forts, create secret spaces, stimulate the imagination (Copeland, 2003)

Figure 223: Looking out from the library (Author, 2008)

Chapter 6: Detail Design

Create play areas, especially for children, places where the imagination can run wild...

"Playgrounds that dory the child; that offer no chance of involvement, participation or manipulation; that are void of choice, complexity and interaction will be empty of children" (Friedberg, 1970:29).

What we need are places of imaginative play and learning. We need to broaden the definition of a playground. They should be places where children can make up their own games and create new patterns of play.

"Children thrive in play situations where they can be architects and builders and are given materials (rocks, logs, pipes, sand, water to do so). Children fed a steady diet of static equipment for muscle exercise don't get to exercise their imaginations and creative powers" (Blakes, Bones, Water and Leaves by Danneman, 2006:81).

Columns create a colourful focal point, as well as providing the structure upon which to build forts and construct magical lands.
### Key to trees used

<table>
<thead>
<tr>
<th>Tree Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Ficus sycomorus</em> subsp. <em>sycomorus</em> (Sycomore fig)</td>
<td>Large fanned tree with planks roots upon which to sit and play</td>
</tr>
<tr>
<td><em>Cella africana</em> (White stinkwood) / <em>Combretum apiculatum</em> subsp. <em>apiculatum</em> (Red bush-willow)</td>
<td>Street trees with non-aggressive root systems. Do not produce large messy fruits.</td>
</tr>
<tr>
<td><em>Bauzafractus spectabile</em> (Tree violet) / <em>Dombeya rotundifolia</em> (Wheel pear) / <em>Erythrina lysistemon</em> (Common coral tree) / <em>Schotia brachypetala</em> (Veering boer-bean)</td>
<td>Plant along the sensory walkway - flowers and pronounced seasonal change.</td>
</tr>
<tr>
<td><em>Acacia sieberiana</em> var. <em>woodii</em> (Paper-barked thorn)</td>
<td>Focal tree - flat top and peeling, papery bark</td>
</tr>
<tr>
<td><em>Harpethum cataphium</em> (Walt plum)</td>
<td>Shade tree - reddish, spiny type leaves</td>
</tr>
<tr>
<td><em>Combretum erythrophyllum</em> (River bush-willow) / <em>Acacia xanthophloea</em> (Fever tree) / <em>Syzygium coriaceum</em> (Winter-berry)</td>
<td>Trees to be planted in and around water points - like wet feet. Appropriate colours.</td>
</tr>
<tr>
<td><em>Heteroplatyris rotundifolia</em> (Lavender tree)</td>
<td>Attractive bark and red &amp; purple autumn colours</td>
</tr>
<tr>
<td><em>Catha adusta</em> (Bushmans tea)</td>
<td>Slender, upright canopy, non-aggressive root system</td>
</tr>
</tbody>
</table>

*Figure 204: Examples of trees to be used (Author, 2007) (Venter, 2005)*
1. Interaction between water and a hard, dead surface

2. Release / Freedom

3. Interaction between water and natural vegetation

4. Water in surface dams - organic, natural, growth, texture and able to be interacted with

Water in aqueduct - rigid, static, contained and untouchable

Figure 225: The journey of water through the site (Author, 2008).
Figure 226: Sections through paving edges (Author, 2005)

- **Figure**
- **Sections**
- **Through**
- **Paving**
- **Edges**
- **Sections through paving edges**
- **Author, 2005**

- **Description**
  - **Figure**: Illustration showing sections through paving edges.
  - **Sections**: Different perspectives of the edges of paving slabs.
  - **Through**: The focus is on the transitions between different paving materials and their edges.
  - **Paving**: Various types of paving materials are illustrated, including concrete and brick edges.
  - **Edges**: Details of the edges of the paving slabs, showing the transition from one material to another.

- **Textual Information**
  - **Figure 226**: Sections through paving edges
  - **Author, 2005**: Reference to the author of the section.

- **Visual Elements**
  - **Illustrations**: Diagrams showing the cross-sectional views of paving edges.
  - **Details**: Close-up views of the edges, highlighting the materials and their placement.

- **Context**
  - **Illustrations**: Useful for understanding the design and construction of paving edges in architectural projects.
  - **Reference**: Essential for students and professionals to study the technical aspects of paving design.
Galvanised mild steel lock bolt with washer to prevent the bolt from slipping into oversized hole which allows for expansion.

150 x 150 x 10 equal leg mild steel angle spanning approximately 5000.

Galvanised mild steel round hollow section, 3 thick forming sandfill.

91.50 diameter galvanised mild steel round hollow section forming post steel

50 thick cast in-situ concrete screw core containing mesh to prevent cracking.

120 thick prestressed enrobed with hole drilled into it to provide space for bolt.

120 x 10 galvanised mild steel bearing plate with graphite grease between it and angle to allow for expansion.

Galvanised mild steel threaded j-beam cast into foundation wall.

CarŞ i-situ concrete foundation wall.

Figure 227
Longitudinal section through pedestrian bridge (Author, 2008).

Figure 228
Cross section through pedestrian bridge (Author, 2008).

Focal uplighting of the female sculptures.

Restaurant - night time activity.
community participation

- learn new skills and teach one another things, thus empowering oneself and others, and creating a sense of ownership at the same time.
- reawakens a spirit of community and encourages bonds between different people, between people and their environment, and between people and themselves.
- liberates feelings of self-worth, self-fulfillment and pride, in both the place, and in the people themselves and their achievements.

Principles of community participation strive to build a community that holds the capacity to initiate its own changes, and to continue developing and transforming itself.
Community participation and interaction with the landscape through elements that can be altered and built by the community, thus creating not only a space but also a place.

Figure 331: Narrative strip in concrete leads one towards the library (Author, 2008)

Figure 332: Section through walkway narrative (Author, 2008)

Figure 333: Wind mobile - ephemeral shadows (Author, 2008)

Figure 334: Surface decoration skills (Author, 2008)

Figure 335 & 336: Swings, wind mobiles and shading structures are supported by the aqueduct

Figure 337: Tyre swing, made from recycled tyres by members of the community - skill development

Cast in-situ rough aggregate concrete slab
Walkway narrative - 100 thick concrete slab precast in Emmanuel's workshop. Concrete class 25/9
30 bedding layer
50 cast in-situ concrete slab with wire mesh
Imported crusher run, 150mm paving base

Hard landscaped area used for basketball / netball / informal games or as an area in which to pack out chairs. Robust, multi-functional space

Fashion ramp / stage / seating area

Raised planters containing tactile and sensory elements - seating edges
Generating music through play...

As the wind moves through the strings it causes them to vibrate producing an enchanting, ethereal, atmospheric haunting sound. All strings are tuned to the same pitch but have different tensions, lengths, densities and diameters. The wind will therefore play one harmonic on one string and a different harmonic on another, depending on the intensity of the wind. This produces an unpredictable, volatile composition of sound that changes with every gust of wind.

Figure 237: Aasleah design (Nuismer Kunstpalast, 2000)

Figure 238: Section through road edge (Author, 2000)

Figure 239: Connection of cable to column (Author, 2000)

Gravel-lined swale

Musical sculpture supported by aqueduct

Sunken green area / detention pond

Re-use mattress-lined storm water channel supplying water to food gardens

Hans Strydom Road with island in the middle to allow for easier pedestrian movement

Cables spun between aqueduct columns support creepers, etc.

Internal meadow area - shaded by cable structure supporting community-made sculpting elements

Stainless steel base plate bolted into 450 x 400 concrete column

Stainless steel ring that cables fix to, welded to base plate

Stainless steel turn buckle which can be tightened to reduce slack of stretching structure

Stainless steel cable, 6mm in diameter

Internal concrete channel, class C12/25

Pre-stressed wire mesh layer 25mm after compaction

Concrete back cap

Cable attachment device - stainless steel leg welded to base plate and bolted to concrete column

Insulated Crush-R-Arm, 150mm paving base

Sub-base from 150mm crushed, stabilised and compacted in-situ material - 95% modified asphalt

cobbled stone pavers on 25mm over sand bed
Shading structures comprise squares of woven material (recycled plastic bags, reused PVC vinyl, woven rope, a patchwork quilt of old clothes, and so on). Made by community members, they provide local identity and encourage pride and ownership. A changeable community artwork that builds local spirit and teaches new skills.
Community-made shading structure creates a shady, robust space where an informal market could take place.

Cables span between columns supporting aqueduct. Fixed to stainless steel eyebolts cast into the concrete columns. These cables support the vegetative awnings growing in the 520 high raised planter between the 2 columns.

Two 450 high seating platforms made of cast in situ concrete upon which sit a steel-frame female figure clad in a dress woven from recycled and reused materials. Made by community members as an exhibition of community art and skill creation.

520 high cast in situ concrete planter containing lush material and sensory vegetation.

Cast in situ concrete stairs with expansion joint where it meets the paving.

Concrete pipe transfers excess stormwater to lowered grass detention area.

100 cast in situ exposed aggregate concrete slab.

150 crasher run paving base.

Sub-base from 150 stabilised, stabilised and compacted in situ materials.

Wire ties cast into concrete and wound around rebar to secure it.

160 x 3000 x 330mm mattress packed with rocks that have at least one flat side, and sit on an A200 geotextile.

Wetland plants, i.e., emergents.
Stimulate senses, interactive elements & community participation such as changing female outfits and mobile shadow play elements... Both encouraging a relationship with the space through community involvement.

PVC Vinyl (used billboard material) is stuck onto the mild steel frame using nylon rope - forms part of the decorative element on the dress. The Vinyl has holes cut into it which are then protected by steel eyelets. This allows wind movement through the sculpture, as well as forming part of the aesthetics. The Vinyl dress is also bolted onto the steel frame at intervals.

Figure 230: Plastic bag dress
(mygraffiti.chicago.com, 2007)

Wind mobile provides changing shadows at night due to down lighter on underside of aqueduct.
Focal Lighting

Figure 241: Sculptures visible at night (Author, 2009)

Figure 242: Illuminated seating (Author, 2009)

Figure 243: Luminaire security (Author, 2009)

50mm Ø hollow steel section
25mm Ø hollow steel section
Drip joint
Mild steel grating
Globe
75mm cast in-situ concrete slab
150mm paving base, imported crushed run
Compacted soil
PVC conduit
butt hinge
Mild steel grating
Safety lock
Luminaire

Downlight on the underside of the aqueduct casts shadows on the ground at night
Spotlight above shading structure throws shadows at night
Focal lighting of female sculptures
Street lighting
Chapter 6: Detail Design

Figure 244
Conceptual exploration of textile sculptures—materials, construction, etc. (Author 2008)

exhibition
community art
identity, and character
The spaces created by the three Ficus sycamorus trees, specifically chosen for their plant root systems, can be used for relaxation and reflection as well as a playground. Concrete blocks are placed in the detention dams, and are displaced by the tree roots as they grow and move. This is symbolic of the delicate balance between nature and man-made elements. The constantly shifting patterns are not rigid and ordered, but change as nature wills them to.

Figure 245: Children can play, climb and hide in their garden of imagination (Author: 2000)
Figure 246: A place of relaxation and reflection where one can commune with nature (Author: 2000)
Figure 247: Aqueduct particulars (Author, 2008)

Figure 248: Multi-functional fig (Author, 2008)

Figure 249: Conceptual model of space around trees (Author, 2008)

35 MPa concrete with waterproofing admixture, finished in mid-blue exterior paint. Interior painted with 3 coats of ABE Super Latex.

Sit and reflect
Commune with nature
Play, climb, hide

Aqueduct terminates in hard square. Water flows from three different chutes into a gravel-lined swale on ground level.

Swale broadens into a gravel-lined detention area containing three Fiji sycamore trees.

Main student entrance into university.

View over square from uncovered second floor of library - extends all the way into the university.
Part 4: Conclusion

“Learn2 live, live 2 learn” is an empowering landscape at the heart of Pretoria University’s educational division in Mphandla. This landscape attempts to integrate the surrounding community with the campus through the shifting and rethinking of fences, and the creation of a community park as the interface between the two. This open green space provides areas in which members of the community can gather, play and reflect. It is also equipped to handle the hosting of workshops and short courses.

“Learn2 live, live 2 learn” embeds itself well within the vibrant atmosphere of the Township through the incorporation of robust, multi-functional spaces that are accessible to all. It also makes use of sensory and ephemeral elements to create places of interest; places people will identify with, remember and come back to. Landmark elements, like the aqueduct and the female sculptures are employed not only as focal elements, but also as community art works and exhibitions of skill. These ‘announcements’ in the landscape speak of the culture and identity of the surrounding people and become a testament to their pride, hope, diversity and sense of self - true and symbolic symbols.

The strong sense of place created, and the resultant empowerment will, in time, bring about the rejuvenation of the campus in such a way that it can be of benefit to all. No longer an island, the University will function as a stitch – bringing together people, connecting minds and interlinking thoughts. The University thus becomes an example of a new type of education - one that starts in the landscape.