Chapter 7: Technical Resolution

7.1 Final Master Plan 1:2000

This chapter investigates the technical resolution of the proposed design. The final master plan and sketch plan are presented followed by sections. The sections reference the details, which explain how the design would be implemented and constructed.

The master plan indicates how the design is connected to surrounding functions and how it links to the greater context of Marabastad.
Chapter 7: Technical Resolution

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7.1 Final Master Plan 1:2000

...ow the design is connected to surrounding functions and how it links to the greater context of Marabastad.
7.2 Sketch Plan 1:500

The sketch plan indicates the site where the landscape intervention is illustrated on a detail level and the various components of the design are indicated.
Social Space in front of Community Hall

Looking across 7th Street towards steel light columns

“I want to join this dance group”

“We watched a play at the Community Hall!”
The planting plan indicates the position and type of tree species specified for the design.
### 7.3.1 Plant Palette:
Trees were selected according to colour, texture and the atmosphere that they would create. All trees species are indigenous not only for the ecological benefits but also because indigenous trees require less water and maintenance.

<table>
<thead>
<tr>
<th>Plant Name</th>
<th>Colour Features</th>
<th>Texture Features</th>
<th>Atmosphere Features</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Celtis africana</em> (White Stinkwood)</td>
<td>Dark green foliage with pale grey bark</td>
<td>Bark is smooth, leaves simple and alternate.</td>
<td>Good shade tree creating cool and comfortable experience. Deciduous and therefore induces change to the site when seasons change. Focal element when it has no leaves.</td>
</tr>
<tr>
<td><em>Combretum erythrophyllum</em> (River Bush-willow)</td>
<td>Green leaves yellowish on undersurface that turn brilliantly yellow and red autumn colours. Fruit light brown when dry.</td>
<td>Bark dark grey, flaking in sections to reveal biscuit coloured patches.</td>
<td>The yellow and red autumn foliage creates a unique quality. Deciduous tree and will therefore emphasize seasonal changes.</td>
</tr>
<tr>
<td><em>Erythrina lysistemon</em> (Common Coral Tree)</td>
<td>Green heart shaped leaves with pale grey-brown bark. Bright red flowers when no other trees are in flower.</td>
<td>Scattered hook thorns on bark. Flower has long narrow petals.</td>
<td>Focal tree with bright red flowers to reference blood. Crushed leaves are applied to festering sores and open wounds are treated with powdered burnt bark.</td>
</tr>
<tr>
<td><em>Harpephyllum caffrum</em> (Wild Plum)</td>
<td>Dark grey bark, dark green leaves. Leaves colour to a beautiful red in autumn but stay on tree for up to two years. Red edible fruit.</td>
<td>Smooth bark. Leaves are glossy and unevenly compound creating a rich texture of foliage.</td>
<td>Excellent shade tree. Evergreen, therefore provides shade and colour all year round.</td>
</tr>
<tr>
<td><em>Senegalia sieberiana var woodii</em> (Paper-barked Thorn)</td>
<td>Dark green foliage with light brown to yellowish bark.</td>
<td>Bark is corky and peels off in large sections.</td>
<td>Deciduous tree and will therefore emphasize changing of seasons. Good shade tree as well as focal tree and creates a typically African experience. Large and spacious.</td>
</tr>
</tbody>
</table>

Venter (2005:30,98,104,154,190)
7.4 Paving Plan 1:500

Paving materials were chosen to create a pedestrian friendly environment. Mosaic and cobbles result in a richly textured surface. Red brick and concrete are already present in Marabastad and therefore these materials were carried through in this design.
7.4.1 Material Palette
This indicates the textures and colours of the materials used in this landscape design.

<table>
<thead>
<tr>
<th>Paving</th>
<th>Walls</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mosaic</td>
<td>Concrete with optical fibres</td>
<td>Shadecloth &amp; Plastic</td>
</tr>
<tr>
<td>Red Brick</td>
<td>Fairface Concrete</td>
<td>Trees</td>
</tr>
<tr>
<td>Pavers</td>
<td>Concrete Column with objects</td>
<td></td>
</tr>
<tr>
<td>Cobbles</td>
<td>Textured Concrete</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Exposed Aggregate Concrete</td>
<td></td>
</tr>
</tbody>
</table>

Figure 117. Collage of material textures present in design (Author, 2009)
7.5 Stormwater Plan 1:500

Stormwater is directed through a network of cobble swales which allows the water to infiltrate into the ground and is directed towards trees for irrigation. Excess water is channelled to catch pits which lead to the existing stormwater pipe system on site.
Safety is an important concern and therefore a hierarchy of lighting—vehicular, pedestrian and focal—ensures that the site is well lit. The plan also indicates the field of red light produced by the steel light columns.
7.8 Section A-A 1:100

People walking along Bloed Street Boulevard

Concrete Light Platform

Platforms as opportunities for performances and events
Section B-B is parallel to 5th Street pedestrian spine and the avenue of *Senegalia siberiana* var. *woodii* (Paperbarked-Thorn) trees can be seen. Part of the Community Hall’s facade is used as an expression wall. Seating and counters under the pergolas allow for outdoor social functions in the plaza in front of the Community Hall.
Section C-C clearly shows the Memorial Space with the concrete walls with optical fibres radiating from the three trees. The cafe area at the edge of the Memorial Space can be seen.
Fairface concrete seating wall

Memorial space with three *Erythrina lysistemon* (Coral) trees

Light emitting concrete walls radiating from three trees

Light Walls

Bloed Street Boulevard

Light Post

Cafe
Section D-D reveals the concrete columns and steel columns increasing in height from the Memorial Space.
Section E-E shows the space that contains the steel light columns with shade cloth attached to it. A typical section through Bloed Street Boulevard can be seen.
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Shadows cast onto the ground from the shade cloth canopy consist of games and interesting shapes for children to interact with.

Planter as part of Jazz Park design, therefore existing.
Concrete Bollard Plan 1:20

Concrete Bollard Section 1:20

Concrete Bollard Plan 1:20

Detail of Paving in front of Community Hall 1:20

7.13 Details

Detail of Concrete Bollard

Concrete Bollard Section 1:20

Concrete Bollard Plan 1:20

Detail of Paving in front of Community Hall 1:20
174 x 158 x 65 LED Module in aluminium frame bolted to concrete light post

Plan of Concrete Lamp Post 1:20

Precast reinforced concrete light post

1000 x 1000 x 400 concrete foundation

Pre cast concrete light post bolted to foundation with M10 galvanised steel bolts

10 galvanised steel reinforcing bolt cage cast into foundation

1000 x 1000 x 400 concrete foundation

32 diam uPVC duct with long bent radius for electrical cables

Section through Concrete Lamp Post 1:20

Technical Investigation
Detail of Typical Tree Planter

Root ball of tree- tree height between 3-4m

1800 diam. 1200 length precast concrete pipe

25 mulch layer

110 x 110 x 50 charcoal concrete cobblestone on mortar bed on concrete edge beam

Plan of planter 1:20
Stake tree above lowest branch

75 x 50 x 2500 stakes with preservative at lower end, two per tree at 180 degrees apart and driven into soil

Rootball crown level with top of finished level

25 mulch layer

110 x 110 x 50 custom made charcoal concrete cobblestone on mortar bed on concrete edge beam

75mm cast in situ concrete paving sloping towards planting pit on compacted layer works

(2000 or 2500)x 250 x 150 cast in situ concrete edge beam

2400, 1800 diam. precast concrete pipe to prevent horizontal growth of roots

Excavated earth used as backfill and compacted

Undisturbed Soil

Scarily planting pit bottom to a depth of 150
Cross Section B-B through Light Wall 1:20

100 concrete cast in situ frame for the translucent concrete blocks to be fixed to

600 x 100 x 400 precast white concrete blocks with optical fibres in layered distribution (translucent concrete- L/TraCon as an example), blocks glued together with an epoxy resin

LED tube light inside cavity, free standing on concrete frame

75 cast in situ concrete slab on compacted layer works

32 diam uPVC duct with long bent radius for electrical cables

Masonry foundation wall

Light wall elevation 1:20

300 x 800 x 3 galvanised steel access door bolted to concrete frame with allen key bolt, fixed tight to prevent vandalism

Detail of Concrete Stelae

150 x 150 x 1340 precast concrete column with embedded objects made at the Marabastad Traders Centre for Arts

Mosaic paving around concrete stelae, made by community through Marabastad Traders Centre for Arts

150 x 75 x 10 galvanised steel unequal leg angle bolted to foundation and concrete column with M10 bolts

450 x 450 x 300 concrete foundation with 10 galvanised steel reinforcing

Section through Concrete Stelae 1:20

450 x 450 x 300 concrete foundation

150 x 150 x (430, 560, 690, 950 and 1340) concrete stelae with embedded objects

Plan of Concrete Stelae 1:20
100 concrete cast in situ frame with mild steel reinforcing for the translucent concrete blocks to be fixed to

600 x 100 x 400 precast white concrete blocks with optical fibres in layered distribution (translucent concrete L/TraCon as an example), blocks glued together with an epoxy resin

Masonry foundation wall

270 x 500 x 3 galvanised steel access door bolted to concrete frame with allen key bolt, fixed tight to prevent vandalism
Detail of Concrete Bench

1800 x 450 x 450 precast concrete bench placed on completed paving.

Plan of Concrete Bench 1:20

Concrete Bench Elevation 1:20

Section A-A through Concrete Bench 1:20

Detail of Concrete Refuse Bin

800 x 800 x 200 concrete foundation

Plan of Concrete Refuse Bin 1:20

Section A-A through Concrete Refuse Bin 1:20

480 x 480 x 1070 precast concrete refuse bin with chamfered edges

480 x 480 x 1070 precast concrete refuse bin with chamfered edges

ceramic mosaic tiles epoxy glued to precast concrete refuse bin at the Marabastad Traders Centre for Arts

20 drainage holes

100 cast in situ concrete slab on compacted layer works

75 x 50 x 6 galvanised steel unequal leg angle bolted with M10 bolts

800 x 800 x 200 concrete foundation cast with 10 galvanised steel J-bolt reinforcing
Detail of Steel Light Column

Galvanised steel cap placed on steel column and bolted with Allen key bolts

8 nut welded to inside of steel tube

3 alternating colour 20 Degree LED string light, 9 LEDs/m. tied to dowel and fed into transparent polyethylene sleeve

Shade cloth with patterns sewn into it at the Marabastad Traders Centre for Arts, with edges sewn over nylon rope

Section A-A: Fixing of Shade Cloth to Steel Light Column 1:10

Plan of Steel Light Column 1:10

Cross Section through Steel Light Column 1:10

150 x 150 x 6 x (190, 3030 or 4720) cold formed square hollow steel tube, hot dipped galvanised after holes have been drilled into it

10 polyethylene Dowel glued to inside of sleeve with 3 strands of LED lights tied to it

130 x 130 x 5 x (1690, 2730 or 4420) transparent polyethylene tube to contain LED strands

5mm holes drilled into steel tube with 5mm steel drill bit, thereafter steel tube is galvanised
150 x 150 x 6 x (1990, 3030 or 4720) cold formed square hollow steel tube with holes drilled in with 5mm steel drill bit, and then galvanised

130 x 130 x 5 x (1690, 2730 or 4420) transparent polyethylene tube to contain LED strands

75 cast in situ concrete slab, brushed finish on compacted layer works

10 steel reinforcing cast into 450 x 450 x 200 concrete foundation

250 x 250 x 5 galvanised steel baseplate welded to steel section and bolted to foundation with M10 bolts

32 diam uPVC duct with long bent radius for electrical cables