Chapter five illustrates an integrated approach towards design and construction.
5.1 Plans

Fig. 5.1.1

LOCALITY PLAN

design focus area
Fig. 5.1.3
THOROUGHFARE
urban lounge
interactive colour
sound
admin office
office storage / processing room
locker room
room storage
unisex ladies
ladies
gents
coffee shop
storage
orientation signage
lobby
reception
signage
3-D garden in inner courtyard

GROUND FLOOR PLAN

Fig. 5.1.4

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Fig. 5.1.5

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Fig. 5.2.1
SECTION AA
Fig. 5.2.2

SECTION BB

 Pretorius Street  
  
 Church Street  
  
 Fountain Lane  

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5.3 Urban texture_ material strategy

Texture helps us to recognise and identify certain places. Mathews (2003, p.11) states; “Our existence plays off in towns and cities, and the urban grain helps us to make this world our own”. In accordance with the dissertation’s main themes, materials were selected according to their ability to be functional and, at the same time, to enhance sensory associations.

Concrete_ is a cold, hard, liquid stone. It has the ability to transcend the purely visual realm to form mouldable tactile surfaces that intersect, define and respond to the city environment.

Wood_ is a natural, warm material with a spectrum of textures and musky odours. It can be both smooth and grainy.

Polymers_ are synthetic materials with the capacity to be moulded into complex shapes. The materials’ colour can range from being transparent to translucent to opaque.

Concrete casted with texture.
Fly-ash reinforced concrete with crushed concrete aggregate
LiTraCon (light transmitting concrete)
Granite cobblestones and concrete strips with decorative embedded steel utensils.
sensibility
imagination
sound space
sensory circulation
hapticity sensation of touch
sensory experience
sense of rhythm
soft spaces
tangible
heat
smell
sound
sensuous
sensibility
ecoSENSE

Fig. 5.3.3 Material and sense palette.

Laminated pine wood

Engineered bamboo flooring

Plexiglas Satinice

Plexiglas Satinice (colour)

Fig. 5.3.4 Illustration of the tactile sense.
Every city has its spectrum of tastes and odors. (Pallasmaa 2005, p. 55)

3Form
(Cast Polymethyl Methacrylate [PMMA] resin.)

Surinno Solid Surfacing

Polished screed floor

Jasmine
Jasminum multipartitum

Fig. 5.3.5 Material and sense palette.

Fig. 5.3.6 Image illustrating the way smell is perceived in a city.
5.4 Details

Fig. 5.4.1 Additional vertical circulation core introduced within the TPA building.

Fig. 5.4.2 Additional vertical circulation core structure.
Ramp system formed by lightweight steel structure suspended with tensile rods.

Cast in situ reinforced concrete structure.

Lightweight steel pause hubs connected to concrete structure.

Fig. 5.4.3 Axonometric diagram of the additional vertical circulation core.
4000 x 1500 x 30mm reinforced concrete cast with optical fibres, mechanically fastened to 154 x 154 x 12mm H beam with M10 bolt.

40 x 40 x 5mm galvanised mild steel angle bolted to H beam and 102 x 203 tapered galvanised mild steel angle.

1220 neutral white T9 100° LED Tube (MARKtech LED Lighting Products)

20mm tensile rod with threaded ends.

102 x 203 tapered galvanised mild steel angle.

40 x 40 x 5mm galvanised mild steel angle bolted to H beam and 102 x 203 tapered galvanised mild steel angle.

200 x 75 galvanised mild steel channel.

200 x 75 galvanised mild steel channel mechanically fastened to 10mm galvanised mild steel hinge connection.
10mm Plexiglas Satinice handle bent to specific form fastened with 5mm countersunk square bolt.

102 x 203 tapered galvanised mild steel angle

4000 x 1500 x 30mm reinforced concrete cast with optical fibres, mechanically fastened to 154 x 154 x12mm H beam with M10 bolt.

9mm 3Form panels bolted to 40 x 40 x 3mm galvanised mild steel angle with M10 countersunk square bolt.

1220 neutral white T9 100° LED Tube (MARKtech LED Lighting Products)

200 x 75 galvanised mild steel channel mechanically fastened to 10mm galvanised mild steel hinge connection.
10mm Plexiglas Satinice handle bent to specific form fastened with 5mm countersunk square bolt.

102 x 203mm tapered galvanised mild steel tee handrail.

9mm 3Form panels bolted to 40 x 40 x 3mm galvanised mild steel angle with M10 countersunk square bolt.

200 x 75 galvanised mild steel channel mechanically fastened to 10mm galvanised mild steel hinge connection.
Textured concrete
LiTraCon
Reinforced concrete
Plexiglas Satinice
Smartglass [frosted]
Surinno Solid Surfacing

Fig. 5.4.10
PAUSE HUB
Smartglass Coolvue Clear glass
5.8 (W/m²)k U-value b35 ISO.

10mm Plexiglas Satinice (White WH02 SC).

Surinno Solid Surface (Glacier S 201) custom shaped seat mechanically fastened to 65 x 65 x 5mm galvanised mild steel angle.

60 x 40 x 2.5mm galvanised mild steel rectangular hollow section frame.

200 x 75mm galvanised mild steel channel mechanically fastened with 10mm galvanised mild steel hinge connection to concrete.

Fig. 5.4.11
SECTION _ PAUSE HUB
Scale 1 : 50
Cast in situ reinforced concrete structure.

1220 neutral white T9 100° LED Tube (MARKtech LED Lighting Products).

154 x 154 x 12mm H beam

50mm Smartglass Opaque glass resting on neoprene block on 154 x 12mm H beam.

40 x 40 x 5mm galvanised mild steel angle epoxy fixed and sealed with silicon.

102 x 203 tapered galvanised mild steel angle frame with base plate mechanically fastened to concrete with expansion bolt (as per engineer specification.)

330 x 70 x 5mm galvanised mild steel angle with suspended T9 100° LED Tube.

10mm Plexiglas Satinice (White WH02 SC) fastened to galvanised mild steel angle with M10 countersunk square bolt.

203 x 140 x 20kg/m tapered galvanised mild steel tee handrail.

Chemical anchor (as per engineer specification).

200 x 75mm galvanised mild steel channel mechanically fastened to 10mm galvanised mild steel hinge connection.

9mm 3Form panels bolted to 40 x 40 x 3mm galvanised mild steel angle with M10 countersunk square bolt.
Fig. 5.4.13 Illustration of staircase.

- Polished screed floor
- Engineered bamboo flooring
- LiTraCon
- Surinno Solid Surfacing
- Plexiglas Satinice
- 3Form (Cast Polymethyl Methacrylate [PMMA] resin.)
300 x 50mm eucalyptus slats resting in 50 x 50 x 3mm MS angle frames supported by H-sections.

154 x 154 x 12mm H-sections.

102 x 203 tapered galvanised mild steel angle.

10mm Plexiglas Satinice handle bent to specific form fastened with 5mm countersunk square bolt.

200 x 100 x 4mm rectangular tube supporting staircase bolted to concrete floor and 154 x 154 x 12mm H-sections.

200 x 40 x 150 x 5mm mild steel angle

M10 bolts mechanically fastened angle to 200 x 100 x 4mm rectangular tubing.

5mm mild steel plate mechanically fastened to polished screed floor with M10 expansion bolts.
280 x 2mm bent mild steel plate.

200 x 100 x 4mm rectangular tube.

2500 x 290 concrete tread cast in 290 x 50 x 20 x 5mm cold-formed lipped channel.

300 x 50mm eucalyptus slats resting in 50 x 50 x 3mm MS angle frames supported by H-section.

154 x 154 x 12mm H-sections.

9mm 3Form panels bolted to 40 x 40 x 3mm galvanised mild steel angle with M10 countersunk square bolt.

102 x 203 tapered galvanised mild steel angle
102 x 203mm tapered galvanised mild steel angle.

10mm Plexiglas Satinice handle bent to specific form fastened with 5mm countersunk square bolt.

200 x 100 x 4mm rectangular tube supporting staircase bolted to concrete floor and 154 x 154 x 12mm H-sections.

2500 x 290 concrete tread cast in 290 x 50 x 20 x 5mm cold-formed lipped channel.

8mm mild steel plate mechanically fastened to polished screed floor with M10 bolts.

1220 neutral white T9 100° LED Tube (MARKtech LED Lighting Products).

M10 bolts mechanically fastened angle to 200 x 100 x 4mm rectangular tubing.

200 x 40 x 150 x 8mm mild steel angle.

200 x 100 x 4mm rectangular tubing.
Fig. 5.4.18 Illustration of public toilets signage wall with incorporated street furniture.

1. Reinforced concrete
2. Textured concrete
3. Granite cobblestones and concrete strips with decorative embedded steel utensils.
4. Laminated wood
BILLRING SHOPPING CENTRE’S PUBLIC TOILETS, Birmingham.
Fig. 5.4.22 Urban lounge street furniture.

1. Reinforced concrete
2. Textured concrete
3. Laminated wood
65 x 50 x 5mm galvanised mild steel angle fastened to laminated wood with 4.8 mm countersunk self tapping screw.

Custom made laminated wood seat.

65 x 50 x 5mm galvanised mild steel channel fastened to laminated wood with 4.8 mm countersunk self tapping screw.

In situ cast concrete block.

65 x 50 x 5mm galvanised mild steel angle fastened to laminated wood with 4.8 mm countersunk self tapping screw, welded to a similar angle mechanically fastened to concrete with M10 bolt.

J-bolt cast in concrete.