New windows
10 mm tempered glass fixed with structural double-sided tape to 65 x 50 x 6 mm galvanised steel angles (see detail 1)

New roof
90 mm cast in situ reinforced concrete slab, with min. 25 mm concrete screed at min. 1:30 fall, bitumin waterproofing layer, 90 x 90 mm upstand edges and a 25 mm thick small stone layer, on 203 x 203 x 46 galvanised steel H-beams fixed to existing concrete slab and existing concrete beam (see detail 7)

Detail 6
Concrete slab with 50 mm 203 x 203 x 71 galvanised 14 x 12 galvanised existing concrete columns

Detail 7
New windows
10 mm tempered glass fixed with structural double-sided tape to 65 x 50 x 6 mm galvanised steel angles (see detail 1)
New roof
90 mm cast in situ reinforced concrete slab, with min.
25 mm concrete screed at min. 1:60 fall, bitumin
waterproofing layer, 90 x 90 mm upstand edges and a
25 mm thick ground stone layer, on 203 x 203 x 46
galvanised steel H-beams fixed to existing concrete
slab and existing concrete beam
(see detail 7)

New rotatable and stackable exhibition
Heavy cotton canvas fixed to galvanised
steel frame in sliding channel
(see detail 9)
New sliding glass doors
by Hilalamin
(see detail 4)

New stereotomic ‘box’
925 x 352 x 355 mm precast lightweight concrete panels fixed to galvanized steel frame
(see detail 3 and 4)

New tectonic ‘skin’
(see detail 5)

Existing floor
255 mm reinforced concrete slab

Upper floor FFL +103 115

Main floor A FFL +100 000
Main floor B FFL +99 150

Lower floor FFL +96 885

Existing floor
255 mm reinforced concrete slab with reinforced concrete beams
Figure 8.67

Window section

Detail 1 (new windows and balustrades)

Scale as shown

Window plan

Scale 1:6

- 10 mm laminated glass (b)
  - Fixed to galvanized steel angle with structural adhesive tape and to glass window pane with structural silicone

- 6.76 mm clear CoolVue glass window panel
  - Fixed to galvanized steel angle with structural adhesive tape

- M10 chemical bolt

- 65 x 50 x 6 mm galvanized steel angle

- 25.4 x 25.4 x 2 mm galvanized square steel spacer

- Polished concrete screw

Balustrade section

- 10 mm laminated glass panel
  - Fixed to galvanized steel angle with structural adhesive tape

- 25.4 x 12.7 x 2 mm galvanized rectangular steel spacer

Figure 8.68

Detail 2 (section through new primary entrances)

Scale as shown

Excluding floor (200 mm increases only)

Galvanized steel frame

- 400 x 150 x 8 mm angles
  - Fixed to concrete wall

- 3090 x 120 x 60 mm precast reinforced concrete panel

- Stackaway 3550, sliding glass door system to elevation

- 100 x 50 x 4 mm galvanized steel rectangular column

- 12 mm tempered glass

- New polished concrete screw

Excluding floor (200 mm increases only)
Figure 8.73

Detail 6 (new bridge connection)
Scale as shown

Figure 8.74

Detail 8 (tectonic 'skin')
Scale as shown
Figure 8.75

Detail plan (of corner)
Scale as shown

ø 5 mm galvanised steel cable
hooked with clip

M8 bolt, nut and washer
through hole arrest
end point

Canvas folded over
and stitched

Detail elevation (of corner)
Scale as shown

mm 50 100 150 200 250 500

Primary frame

Secondary frame

Plan
Scale as shown

mm 200 400 600 800 1000 2000

Detail 9 (rotatable and stackable exhibition panels)
Scale as indicated

Elevation (section through primary frame)
Scale as shown

mm 200 400 600 800 1000 2000

Straightway 1000S
top sliding hardware
by Hititron

100 x 100 x 8
galvanised steel angle
primary frame

100 x 85 x 8
galvanised steel angle
secondary frame
Rod is inserted galvanised steel
frame with M10 bolts and nuts

White heavy
cotton canvas
folded into pocket case
rounded spliced as shown
and fixed to secondary
juncture with M6 x 20
bolts and nuts

Straightway 1000S
bottom guide hardware
by Hititron
8.4.1. Gallery function/programme

The function/programme is determined by the existing structure, thus the division of the large exhibition space was laid out according to the existing column spacing (fig.8.60). Spaces were extended according to the module discussed previously. These spaces are primarily defined by clear CoolVue glass planes, fixed as to create the illusion that they are floating above the floor (figs.8.4, 8.67 and 8.76). This product, supplied by SmartGlass, transmits “more than 70% of visible light while blocking more than 50% of solar heat” and “also reduces sound transmission, increases safety and security, and filters up to 99.5% of damaging short-wave UV radiation” (www.smartglass.co.za).

8.4.2. Gallery form/beauty

The stereotomic ‘box’, one of the form/beauty components, is composed of precast Ductal concrete blocks, to emphasise mass, and which are then bolted to each other with a steel plate spacer in-between (figs.8.69 and 8.77). These blocks are used structurally, to support the ‘box’ cantilevering over the display platform. Their interior is completely different from their exterior, enhancing the difference between being outside the ‘box’ and being inside.

Plexiglas GS white (10 mm thick, translucent) panels are implemented for the tectonic ‘skin’, the other form or beauty component. These lightweight units, used in the standard size of 3050 x 2030 mm (www.plexiglas.net), are bolted to galvanized steel top-hat-sections, which in turn are fixed to the existing structure via galvanized steel angles.
Cross-bracing steel cables strengthen the steel frame. This element is lit from within at night, its glowing appearance promoting the gallery to pedestrians and vehicular traffic below (fig.8.78).

### 8.4.3. Gallery tectonics/structure

Existing columns are treated as the tectonics/structure components of this phase of the project. None of the new elements ever quite touch these supports, except where necessary and then only lightly (fig.8.60).

### 8.4.4. Environmental control

Electrical duct work is fixed to the underside of the existing overhead concrete floor slabs (fig.8.79). All these services are exposed, and galvanized steel conduits are used.

The ventilation system designed for the previous phase of the project is implemented for the spaces in the City Centre building. For the gallery spaces in Die Meent building copper pipes are fixed to the underside of the overhead concrete structure (fig.8.81). Water is cooled by means of a chiller unit and then sent through these pipes. This causes the air at the top of the interior spaces to cool down and gradually fall, providing comfortable levels of air temperature. Large glass doors are provided for natural ventilation of these spaces.

### 8.4.5. Other components

The new bridge connecting the spaces of the two existing buildings is composed of a steel beam and girder frame on which a reinforced concrete slab is...
cast (figs.8.71 and 8.73). The roof over this has a similar construction method (fig.8.72).

All new walls are made of galvanized steel rectangular studs clad with fibre cement boards and painted white. The cladding material was chosen for its durability and its ability to be used on interior and exterior surfaces. These walls are fixed to galvanized steel top-hat-sections on the top and bottom, emphasising the connection between new and old. A lightweight construction method was chosen for two reasons:
- these components are easily removed, thus allowing for future change;
- services, especially waste water pipes, can be hidden within the walls.

Steel frame windows are used in walls, with custom sizes based on the chosen module. Standard sections are used and the frames are finished with dark grey enamel paint.

There are three types of exhibition panels, all based on a design by Pasanella + Klein Stolzman + Berg Architects (fig.8.80): the first can be rotated and stacked away according to the curator’s needs (fig.8.75); the second can only be rotated; the third is fixed. All consist of white heavy cotton canvas, with white painted brass grommets for hanging art, stretched in an unequal angle galvanized steel frame. The difference is that in the first, the frame can be rotated within a primary equal angle galvanized steel frame, which is fixed to Hillaldam Straightaway 1000S sliding hardware.

Main entrances through the glass panels are highlighted by means of a precast Ductal concrete panel ‘floating’ over the Hillaldam Stackaway 355GL doors (fig.8.68).

The components for the coffee shop and the...
store are all designed using the same materials as above, making reference to the gallery design and therefore creating a harmonious whole. These elements include the sales counter, merchandise display units and the bar-counter.

8.5. Conclusion

The technical resolution of both phases of the dissertation project is grounded in the theory of deconstruction and consequent parti-diagrams. New and conventional construction methods are applied to create dynamic spaces.