06_DESIGN DEVELOPMENT:
6.1 INTRODUCTION

The following will be discussed as part of the design process:

- Initial parti diagrams and concepts
- Quick volumetric exploration
- Planning for the new programme
- Exploring the old: Block A
- Exploring the new: Block E
- Exploring the courtyard
- Application of layering

Figure 6.1 indicates the location of the different focus areas.

- Blocks A, B, C and D is the focus of adaptive reuse interventions.
- Blocks E and F are new additions to the building.
DESIGN DEVELOPMENT_117
block_A
phase 1
adaptive re-use
block_C1
phase 3
adaptive re-use
block_C2
phase 3
adaptive re-use
B
phase 2
re-use
block_E
new
phase 5
1645 sqm
F4
new
phase 6
130 sqm
phase 4
adaptive re-use
315 sqm
block_D
phase 4
adaptive re-use
735 sqm
F5
new
phase 6
16 sqm
phase 3
adaptive re-use
735 sqm
F3
new
phase 6
7 sqm
BOSMAN STREET
MINNAAR STREET
F2
new
phase 6
28 sqm
F1
new
phase 6
28 sqm
phase 1
adaptive re-use
1800 sqm
block_A
1645 sqm
30 sqm
1800 sqm
315 sqm
130 sqm
735 sqm
28 sqm
7 sqm
315 sqm
16 sqm

Figure 6.1: Locality plan indicating the different buildings. (Author)
6.2 INITIAL CONCEPTS + PARTI DIAGRAMS

Figure 6.2: Parti diagrams for approaching the intervention within the existing fabric

Figure 6.3: Sectional diagram showing thresholds creating layered spaces

Figure 6.4: Concept of the envelope or facade being the mediator between public and private / context and site.
Figure 6.5: Plan diagram showing areas of threshold or mediators between public and private spaces.

Figure 6.6: Initial diagram showing entrances, thresholds, connections, links and possible functions according to site and building conditions.

Figure 6.7: Diagram illustrating the concept of opening up.
Figure 6.8: Parti diagrams illustrating the succession of public to private space and its possible location, together with appropriate functions to illustrate. In the diagram 1 represents the most public, while 3 represents the most private.
Figure 6.9: Diagram showing the concept of layered spaces in a cross section through the building.

Figure 6.10: Diagram illustrating site opportunities.
In determining the location for inserting the new addition a quick volumetric exploration was done. It was decided to respect the existing building and context. The new addition will complete the layers of transformation as illustrated in Figure 4.17 on page 98, as well as complete the courtyard.

Figure 6.13 illustrates the location of the new addition. Transitional layering will be introduced through inserting thresholds in-between the different phases of transformation over time (figure 6.14). This will elucidate the transformation phases, whilst at the same time unify the building.
Figure 6.13: Exploration 3: Completing the courtyard. (Author)
6.4 PROGRAMME AND PLANNING

Figure 6.15 illustrates the proposed grouping of functions as indicated in Chapter 5.

The possible location of the new programme was explored in terms of the original groupings of functions, the existing building and the new addition (figures 6.16-6.19).

The transitional layering as introduced previously in figure 6.14 links the functional groups (figure 6.20).
Figure 6.19: Exploring possible planning for ground floor.

Figure 6.20: Exploring possible planning for first floor.

Figure 6.21: Transitional layering through inserting links between the different additions. (Author)
Figures 6.21-6.23 illustrate parti diagrams introducing movement routes and entrances together with the new programme groups.

Four quadrants are formed for four programme groups: information (library, collections, archives, and access thereof), exhibition, public interface (restaurant and bookshop), and offices (including conference facilities). Four movement axes are introduced together with four entrances.

The tower becomes a landmark and acts as an orientation device for the building (figure 6.24.)

Figure 6.25 is the amalgamation of figures 6.20-6.24; the parti diagram for ordering the programme and movement for the site and building.
Figure 6.25: Tower introduced as orientation, becomes centre point of building and landmark.

Figure 6.26: Parti diagram indicating circulation axes, entrances and links.
6.5 EXPLORING THE OLD

The new is introduced within the existing through the concept of box-in-box (figure 6.26). The new is set back in the existing with a gap or void in-between (figure 6.27).

Figures 6.28-6.29 illustrates the incorporation of new circulation as a threshold between the existing and the new. By removing the first floor slab a double volume space is created taking advantage of the spatial qualities of the existing building. The existing arched ceiling is accentuating as part of the new double volume entrance foyer. The new double volume lends itself to new exhibition opportunities. (Figure 6.31)

New vertical circulation is inserted for universal access as well as the movement of installations and exhibitions (figure 6.31).
Figure 6.30: Section diagram illustrating how circulation is introduced between the new and the existing - an additional threshold.

Figure 6.31: Sectional diagram illustrating the new inside the existing.

Figure 6.32: The new is freestanding inside the existing.
The componential layering of the balustrade at the new mezzanine floor is explored in figure 6.33. The balustrade is layered in the following elements: safety, fixing, vertical structure, fixing, floor line and handrail.

New glazing is introduced by setting it back from the existing (figure 6.34).

The layers of the new mezzanine steel floor is explored in figure 6.35. Track lighting will be introduced for flexibility in the exhibition areas.
Figure 6.36: Exploring the layers of the new mezzanine floor.
6.5.1 DESIGN INSPIRATIONS: REUSE

(a) Selexyz Dominican Church, Maastricht, by Merkx + Girod

reuse: new inside old

(b) Church and library, Munchenberg, by Klaus Block Architekt

reuse: new inside old

(c) Church and library, Munchenberg, by Klaus Block Architekt

reuse: new circulation inside old

(d) Church and library, Munchenberg, by Klaus Block Architekt

reuse: new freestanding inside old

(e) Auditorium of Kunstahl, Rotterdam by Rem Koolhaas

auditorium

new layer - acoustics

(f) Auditorium of Banca Popolare, Lido Italy by Renzo Piano

(g) Towers at Constitution Hill, Jhb by omm design workshop

reuse + addition: tower

(h) Museum of Fine Arts with skylights, Houston USA by JR Moneo

skylights

(i) Sky lanterns at Museum of Fine Arts, Houston USA by JR Moneo

sky lanterns

Figure 6.37: Colleague with reuse inspirations.
(j) Bridge at Constitution Hill, Jhb by omm design workshop

(k) Walkway at Arts On Main, Jhb by Enrico Dalfonchio

(l) Ballustrade at Arts On Main, Jhb by Enrico Dalfonchio

(m) New ramp and stairs at Women’s Jail, Jhb by Kate Otten

(n) New threshold detail at Women’s Jail, Jhb by Kate Otten

(o) New walkway at Cultural Centre, Toledo Spain by Ignacio M. Corsini Arquitecto

(p) Traces of removed walls at Constitution Hill, Jhb by omm design workshop

(q) Traces of removed walls at Constitution Hill, Jhb by omm design workshop

(r) Layered and robust signage at Arts On Main, Jhb by Enrico Dalfonchio
The new facade is designed through componential layering (figure 6.37). The concept of block-in-block is also introduced in the new addition (figure 6.38). A walkway is introduced as threshold between the exterior and the interior.

Figures 6.39-6.40 illustrates the exploration of layering of the new facade.
Figure 6.41: Exploring the facade layers.
The location of the new addition was decided as illustrated in figures 6.12-6.14.

The new addition is to be an anonymous block as not to compete with the existing.

Figure 6.41 illustrates how the purity of the anonymous block is lost with the introduction of glazing. In figure 6.42 a screen is introduced for anonymity.

A water feature is introduced, creating the impression of a moat protecting the collections archived in the new building (figure 6.43).

The form of the new addition, Block E, is the culmination of site conditions, the existing building (courtyard typology), the programme as well as the concept of an anonymous block.
Figure 6.44: A View of the new addition.
Figure 6.44b: View of the new addition - southwest corner.
Figure 6.44: View of the new addition - new link to Minnaar street.
6.6.1 DESIGN INSPIRATIONS: NEW

- **new:** contrasting materials
- **link:**
  - (a) Glass circulation towers, Reina Sofia by Ian Richie
  - (b) Glass and steel links between old and new at Women’s Jail, Jhb by Kate Otten
  - (c) Glass and steel links between old and new at Women’s Jail, Jhb by Kate Otten
  - (d) Glass infill between old and new at Women’s Jail, Jhb by Kate Otten
  - (e) Void between old and new at Women’s Jail, Jhb by Kate Otten
  - (f) Glass and steel link with terracotta screen
- **joint:**
  - (g) Liangzhu Cultural Museum, China by David Chipperfield
  - (h) Arts Centre, Wurzburg by Bruckner & Bruckner
  - (i) Ninetree Village, China by David Chipperfield

Figure 6.45: Colleague with design inspirations for the new additions.
(j) Ninetree Village, China by David Chipperfield

new: block inside block
david chipperfield

(k) Arts Centre, Wurzburg by Bruckner & Bruckner

new: layered facade

(l) Ninetree Village, China by David Chipperfield

new: layered threshold
david chipperfield


new: screen
renzo piano

(n) Banca Popolare di Lodi, Italy by Renzo Piano. Screen manufactured by Palagio Engineering.

new: screen
renzo piano

(o) Commercial building, Torino Italy by BUFFI Associates. Screen by Palagio Engineering

new: screen

(p) National Graduate Institute for Policy, Tokyo by Richard Rogers. Screen by Palagio Engineering.

new: screen

(q) Terracotta Screen manufactured by Shildan

new: screen

(r) Terracotta Screen manufactured by Shildan

new: screen
The layout for the courtyard was generated through the circulation axes and the location of the entrances to the four quadrants. Green areas and a water feature were also introduced.
6.2.3 DESIGN INSPIRATIONS: COURTYARD

(a) Simple courtyard design at Castelvecchio by Scarpa
(b) Hard space, with social activities, height difference and material define edge
(c) Raised areas with lawn and trees, hard vs soft, by Guillermo V. Consuerga
(d) Water feature in Vigo by Guillermo V. Consuerga
(e) Water feature by Carlo Scarpa
(f) Green courtyard with berms, trees and circulation layered over lawn
(g) Edges and transition defined by layering of material and texture
(h) Exterior installations at Topography of Terror Museum, Berlin by Ursula Wilms
(i) Exterior installations at Topography of Terror Museum, Berlin by Ursula Wilms

Figure 6.49 Colleague with design inspirations for the landscaping.
6.8 CONCLUSION: THE APPLICATION OF LAYERING

Opening the building was achieved through; a public programme, accessibility through movement, views into and through the building connecting private and public spaces, and a programme that informs. The new tectonic is that of layered architecture. Application of the layered tectonic in the project can be found as follows;

Spatial layering through views at two main entrances, at secondary entrances, as well as through the transparent links into the courtyard.

Component layering - the new facade is broken down into its simplest elements, and then assembled back together as a whole, but still within their individual layers. In this way one is made aware of the composition of the facade, being able to see each layer separately, but still functioning as a whole. This facade creates a more noticeable transition between inside and outside that gains depth through vertical differentiation. As one moves from inside to outside one experiences the transition space that is created through the layered glazing, walkway, balustrade, metal frame and screen, all forming the facade.

Spatial layering through views at two main entrances. Figure 6.50: Spatial layering through visual axes. Figure 6.51: Spatial layering through circulation axes. Figure 6.52: Componential layering of the new facade.
Material layering - the new is introduced within and juxtaposed against the old through a void; block-in-block, the new is set back inside the existing, freestanding or touching lightly.

Transitional layering: Thresholds - links as thresholds between phases allowing the building to express the passage of time and change.

Transitional layering: Joints - Connection between new building and existing is glazing.

Figure 6.53 Material layering juxtaposed through the introduction of a void between the new and the old.

Figure 6.54: Transitional layering through thresholds.

Figure 6.55: Transitional layering through the joint between the existing and the new.