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.

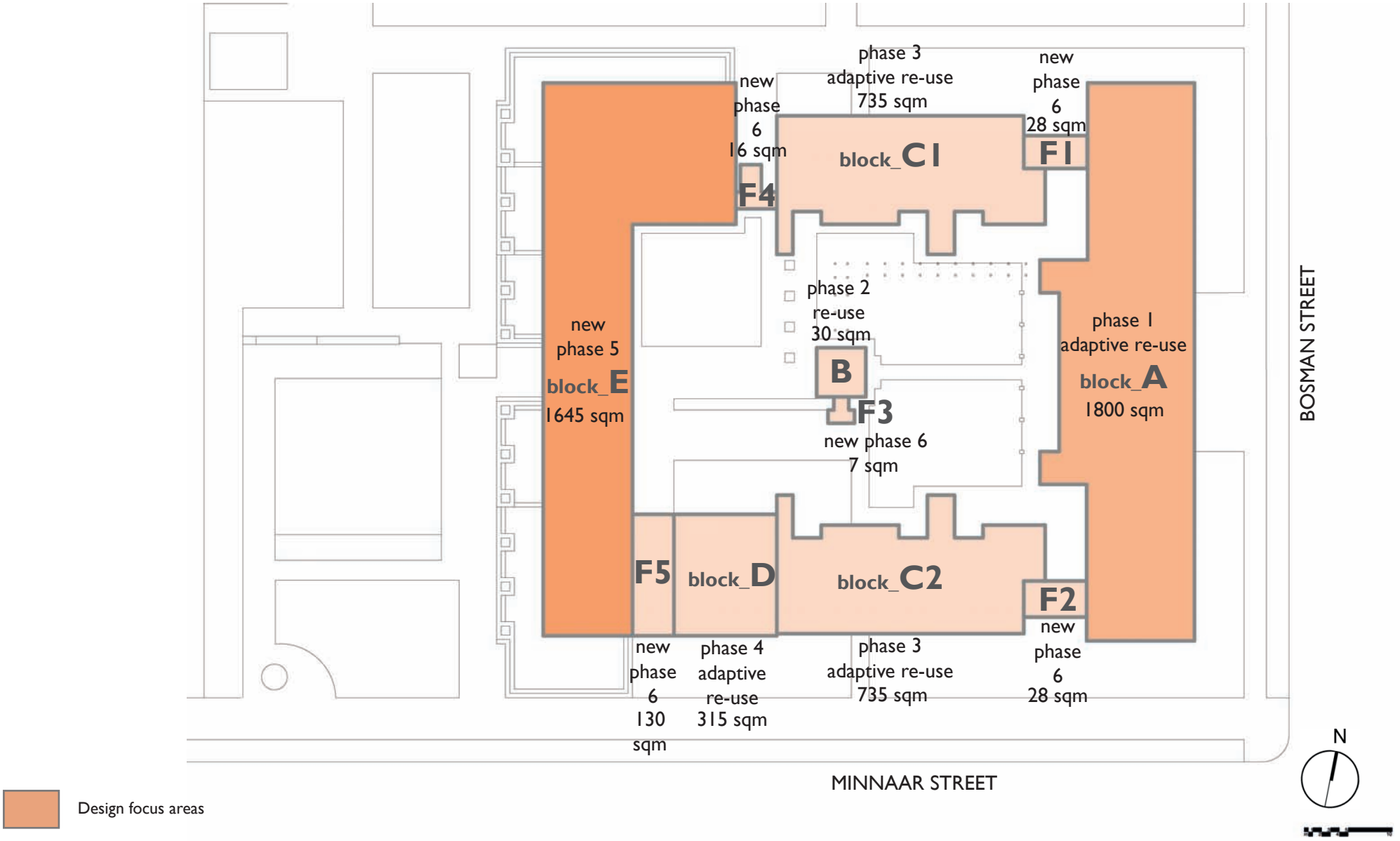


Figure 6.1: Locality plan indicating the different buildings. (Author)

6.2 INITIAL CONCEPTS + PARTI DIAGRAMS

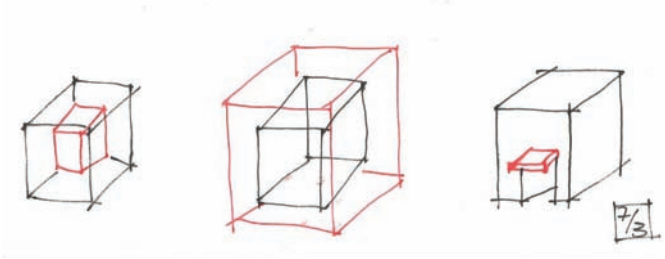


Figure 6.2: Parti diagrams for approaching the intervention within the existing fabric

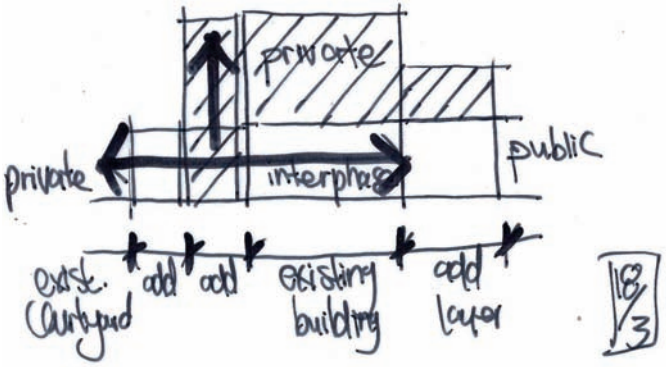


Figure 6.3: Sectional diagram showing thresholds creating layered spaces

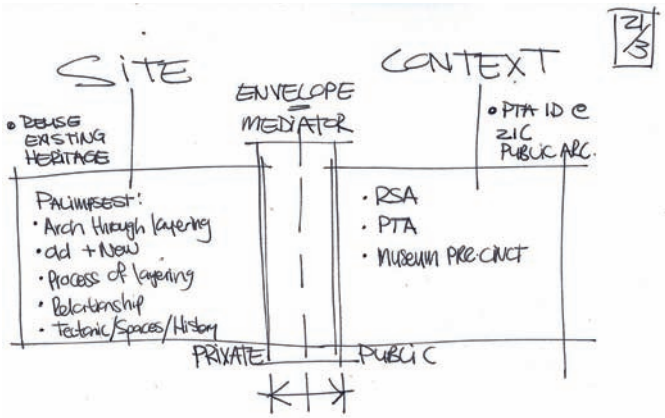


Figure 6.4: Concept of the envelope or facade being the mediator between public and private / context and site.

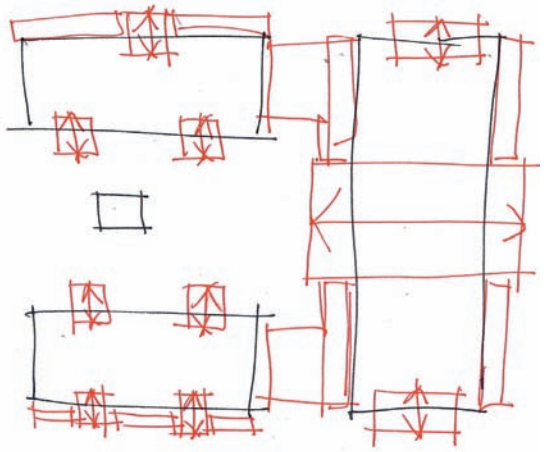


Figure 6.5: Plan diagram showing areas of threshold or mediators between public and private spaces.

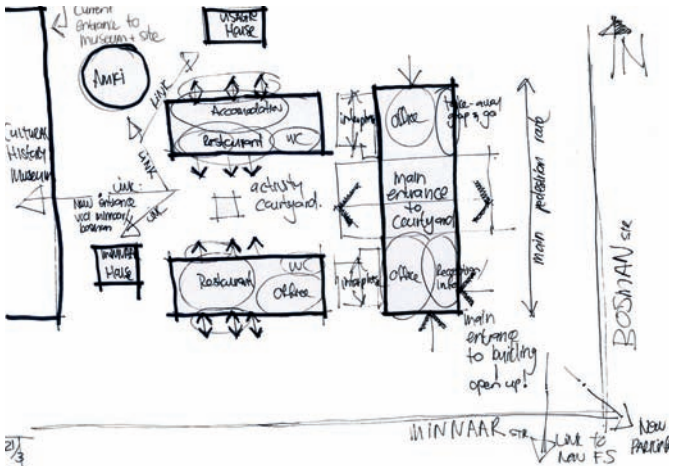


Figure 6.6: Initial diagram showing entrances, thresholds, connections, links and possible functions according to site and building conditions.

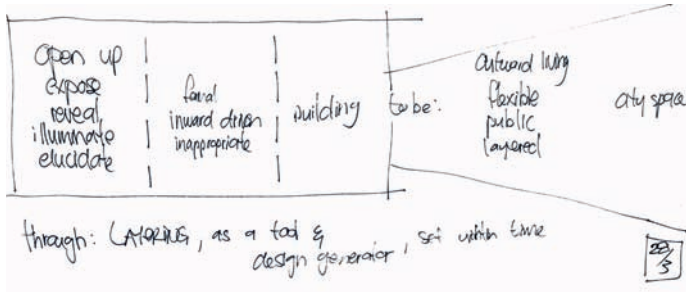


Figure 6.7: Diagram illustrating the concept of opening up.

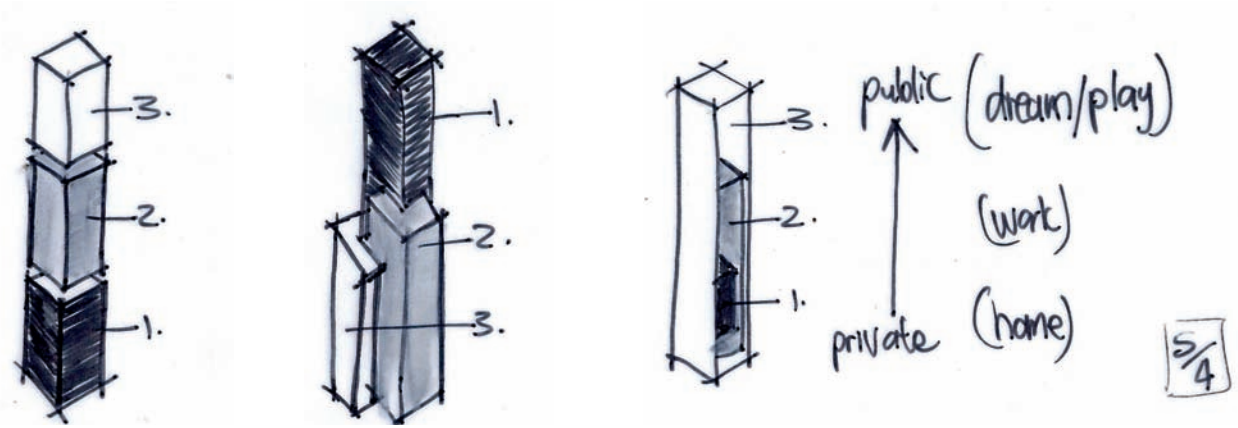


Figure 6.8: Parti diagrams illustrating the succession of public to private space and its possible location, together with appropriate functions to illustrate. In the diagram 1 represents the most public, while 3 represents the most private.

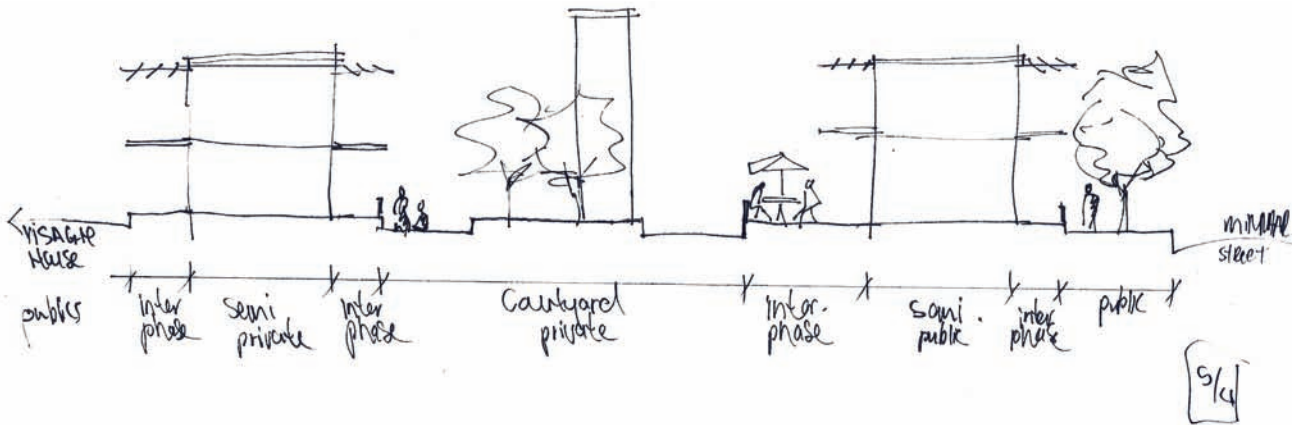


Figure 6.9: Diagram showing the concept of layered spaces in a cross section through the building.

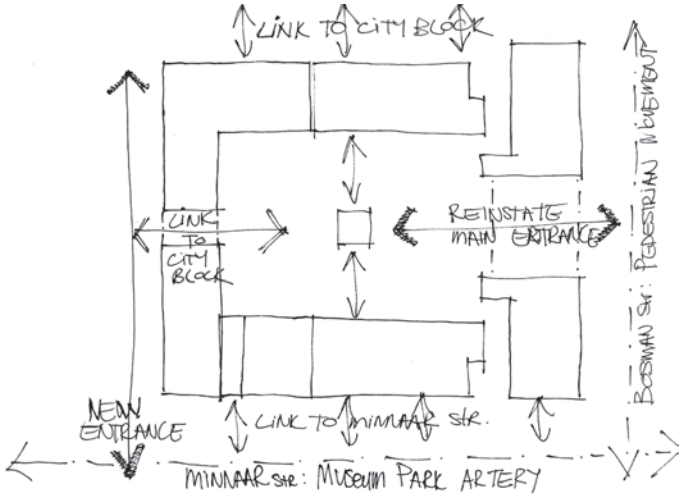


Figure 6.10: Diagram illustrating site opportunities.

6.3 VOLUMETRIC EXPLORATION

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 elucidates the transformation phases, whilst at the same time unify the building.

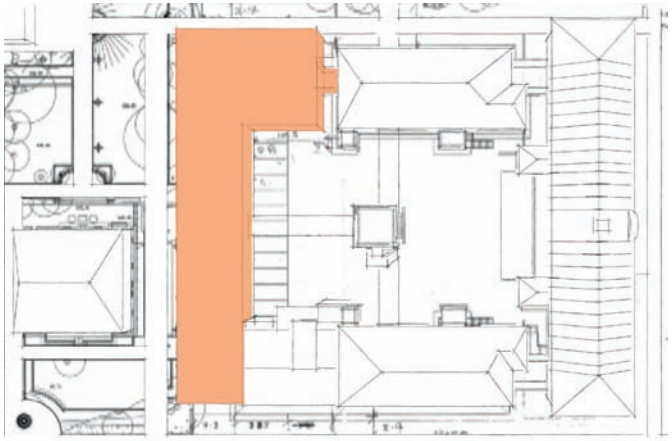


Figure 6.14: Exploration 3. Completing the addition of layers of transformation over time. (Author)

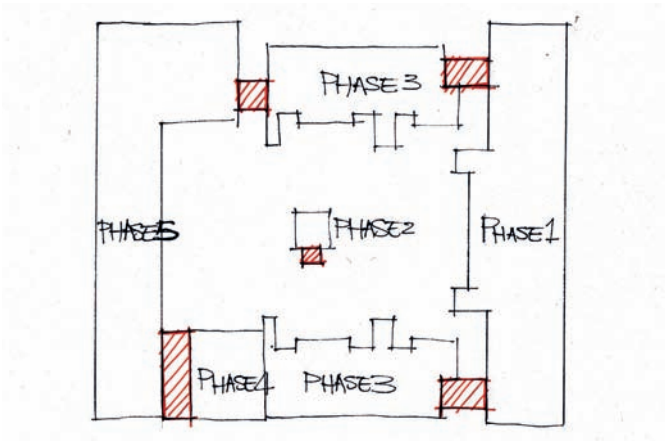


Figure 6.15: Transitional layering through inserting links between the different additions. (Author)

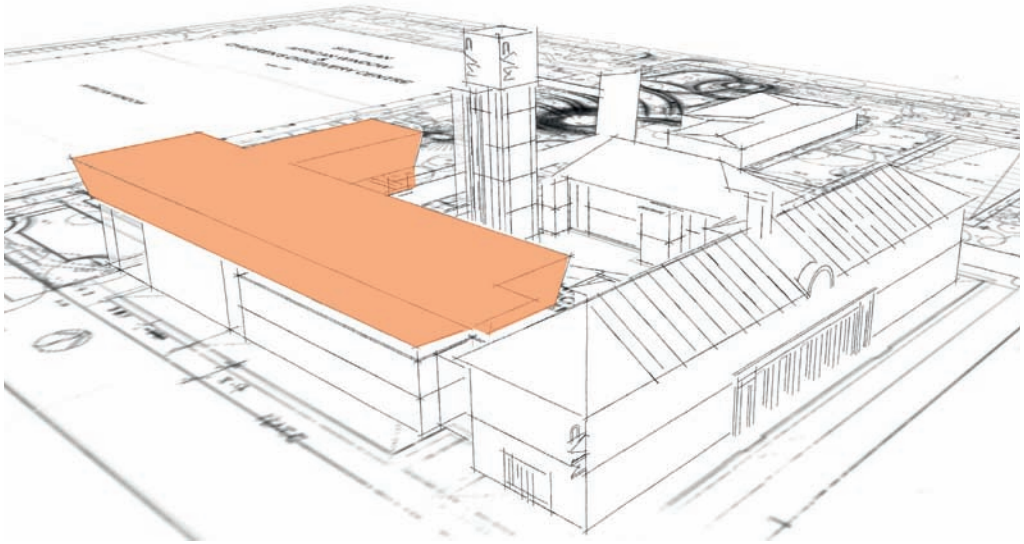


Figure 6.11: Exploration 1. (Author)

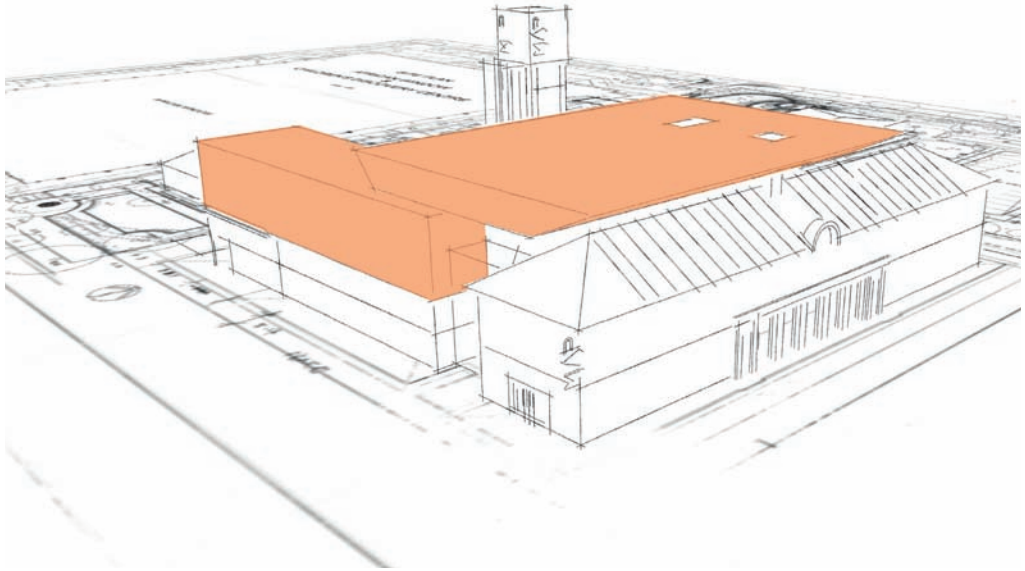


Figure 6.12: Exploration 2. (Author)

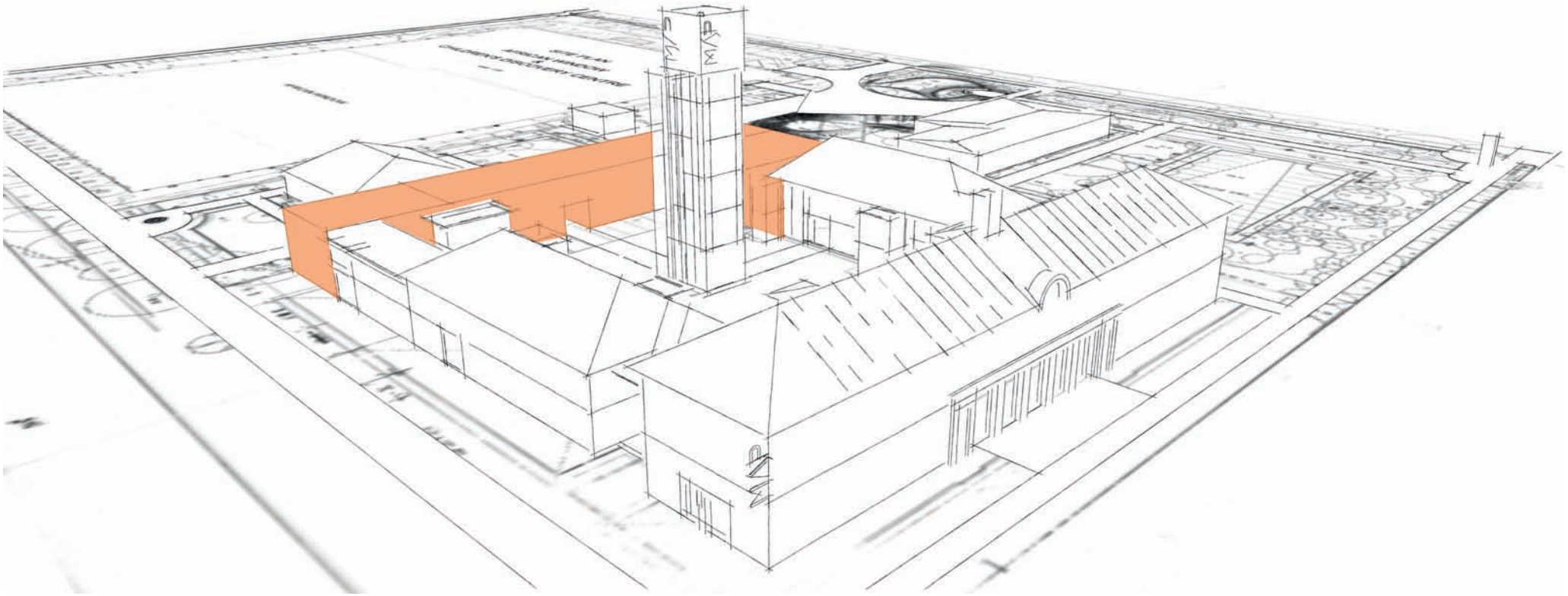


Figure 6.13: Exploration 3: Completing the courtyard. (Author)

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).

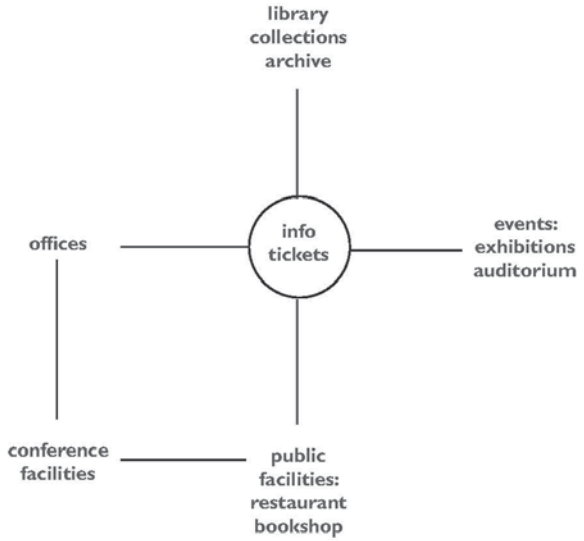


Figure 616: Proposed grouping of functions.

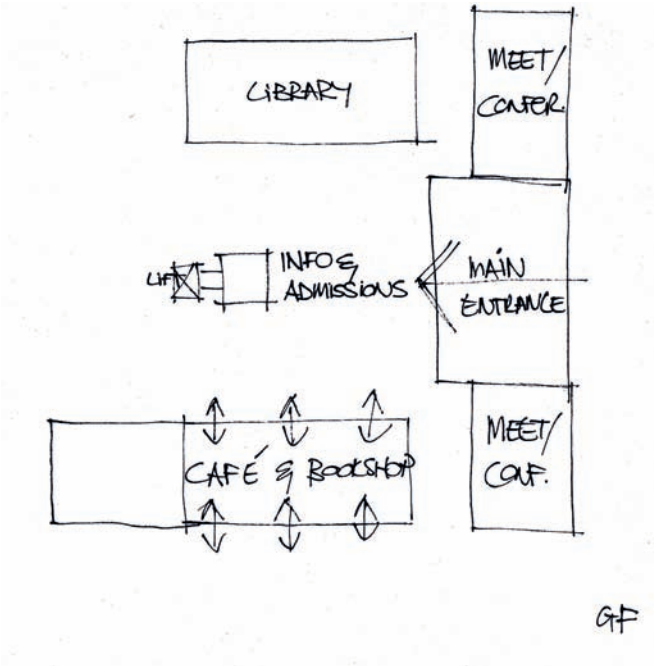


Figure 6.17: Exploring possible planning for ground floor.

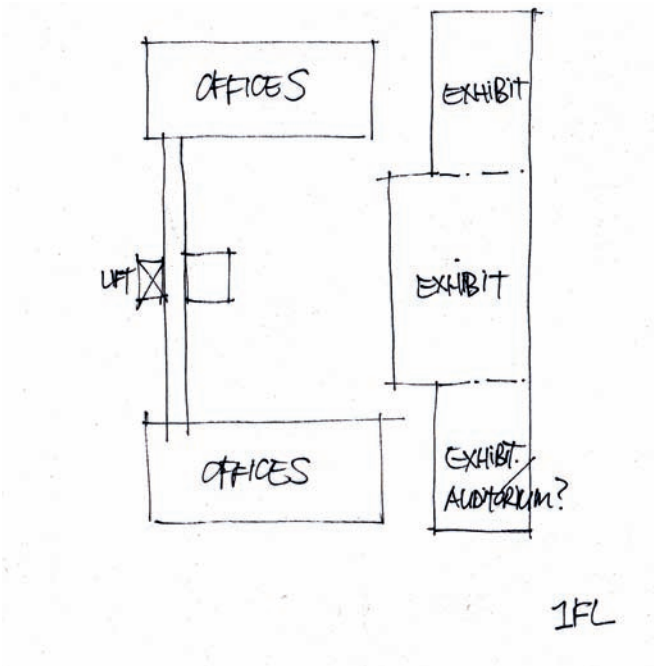


Figure 6.18: Exploring possible planning for first floor.

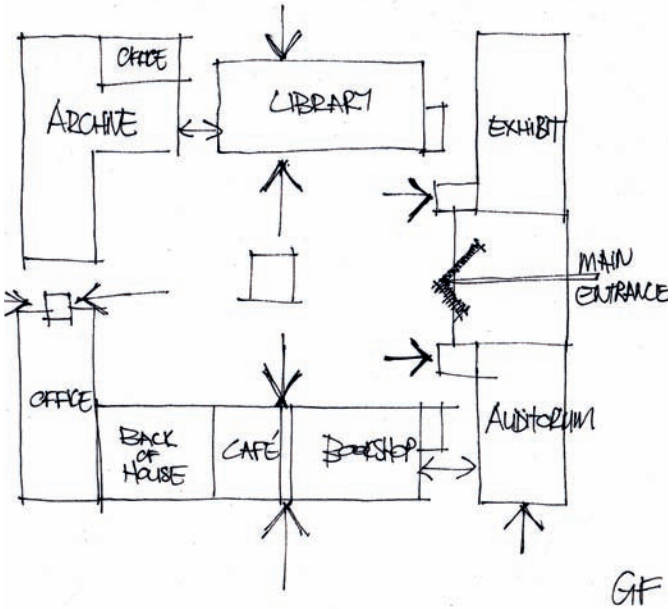


Figure 6.19: Exploring possible planning for ground floor.

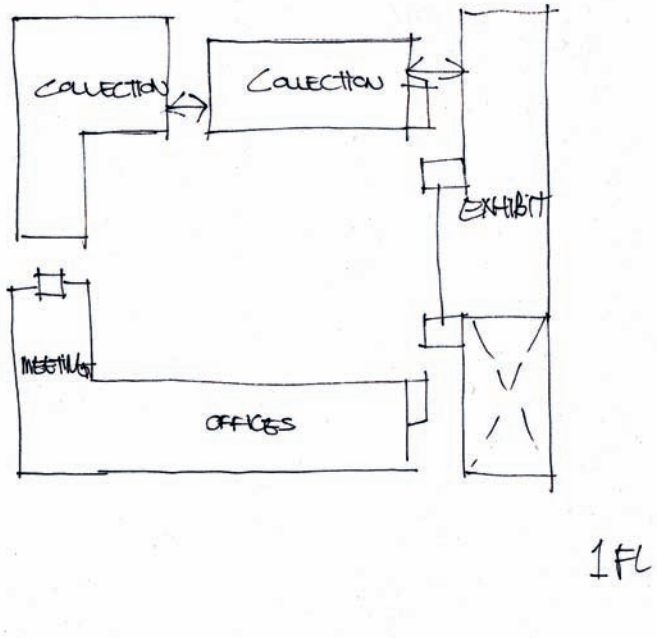


Figure 6.20: Exploring possible planning for first floor.

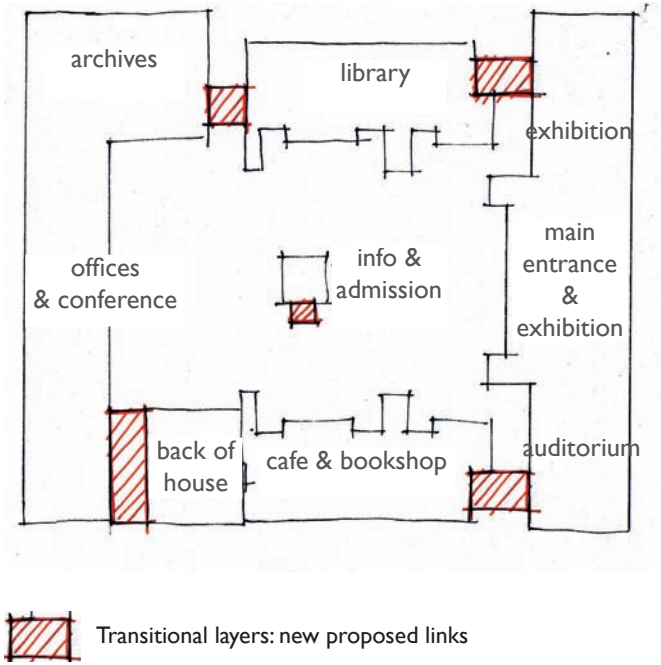


Figure 6.21: Transitional layering through inserting links between the different additions. (Author)

Figures 6.21-6.23 illustrates 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.

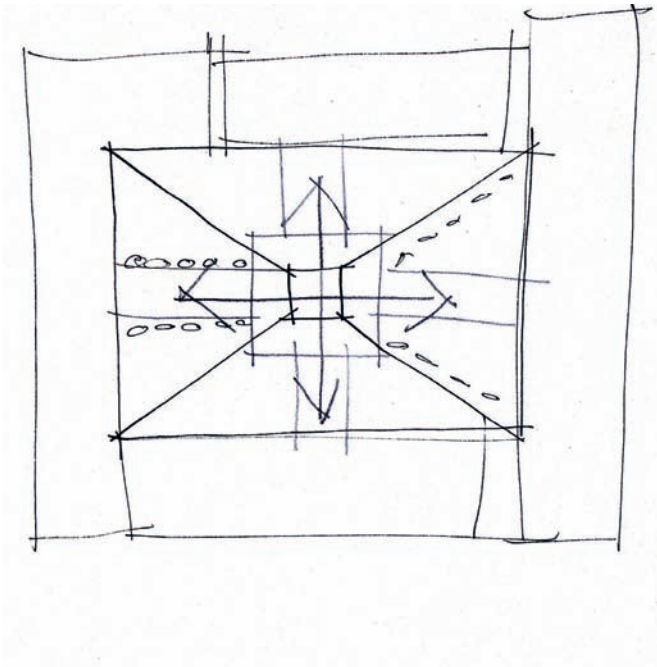


Figure 6.22: Parti diagram illustrating circulation.

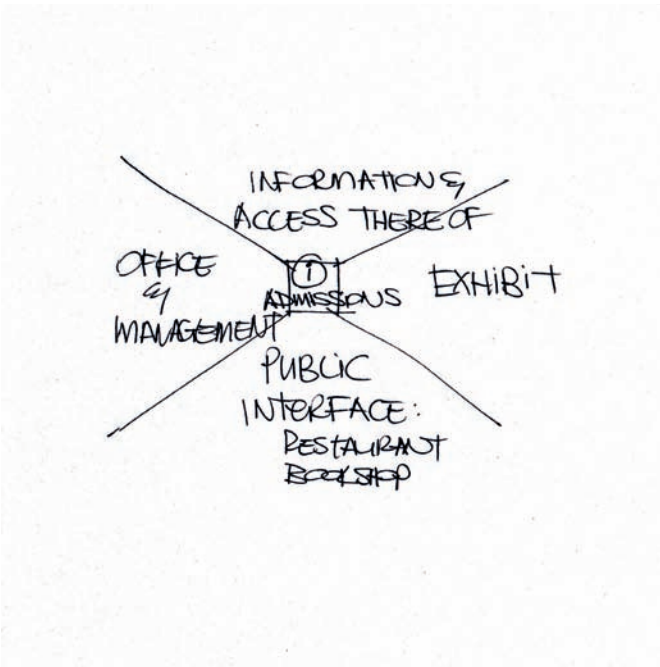


Figure 6.23: Parti diagram illustrating location of programme groupings.

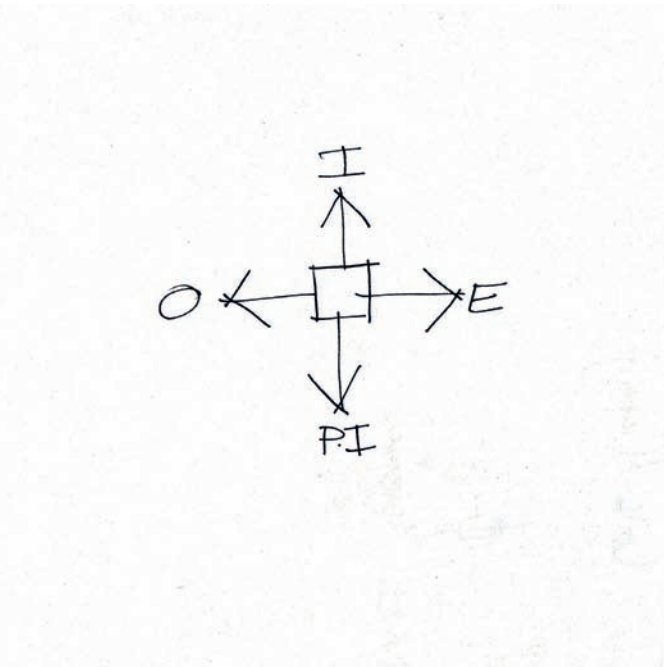


Figure 6.24: Parti diagram illustrating circulation axes to different programme groups.

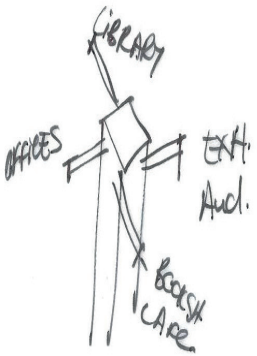


Figure 6.25: Tower introduced as orientation, becomes centre point of building and landmark.

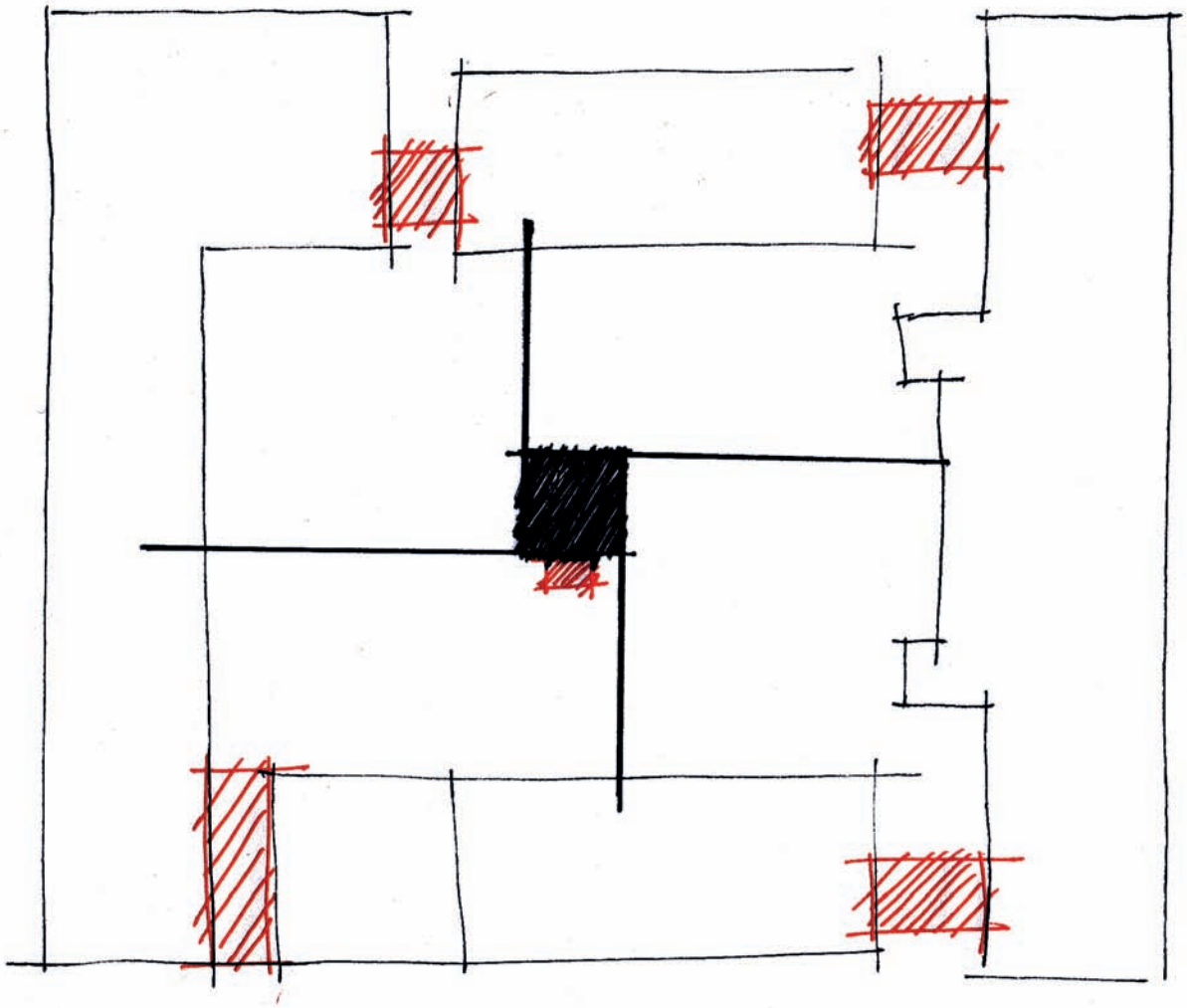


Figure 6.26: Parti diagram indicating circulation axes, entrances and links.

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).

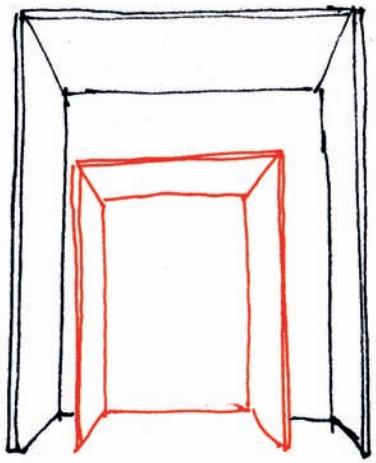


Figure 6.27: Parti diagram illustrating the concept of box in box.

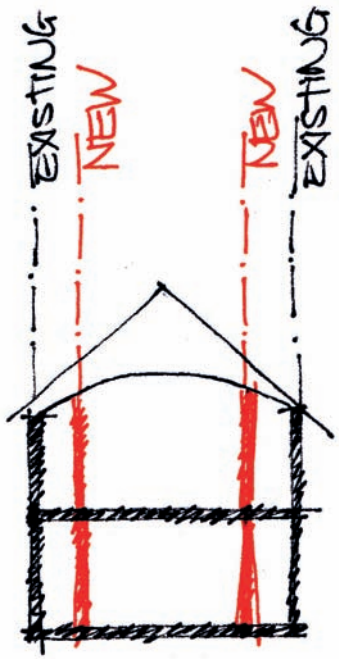


Figure 6.28: The new will be located within the existing, but set back.

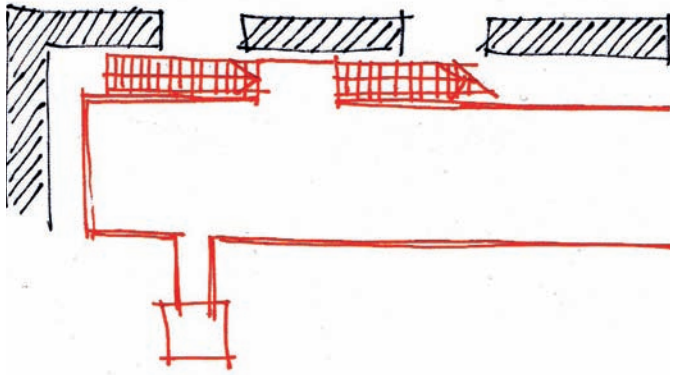


Figure 6.29: Plan diagram illustrating how circulation is introduced between the new and the existing - an additional threshold.

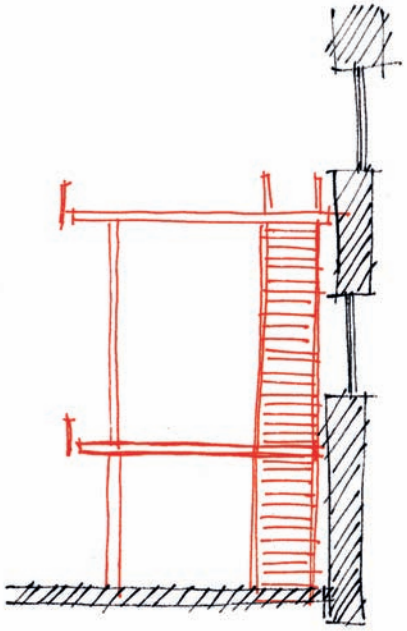


Figure 6.30: Section diagram illustrating how circulation is introduced between the new and the existing - an additional threshold.

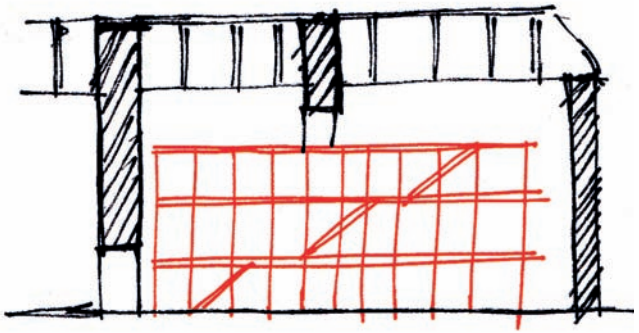


Figure 6.31: Sectional diagram illustrating the new inside the existing.

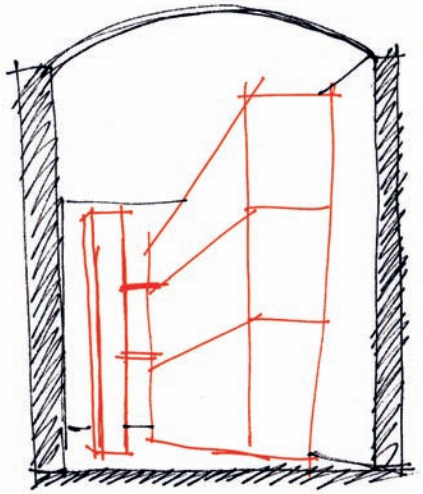


Figure 6.32: The new is freestanding inside the existing.

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.

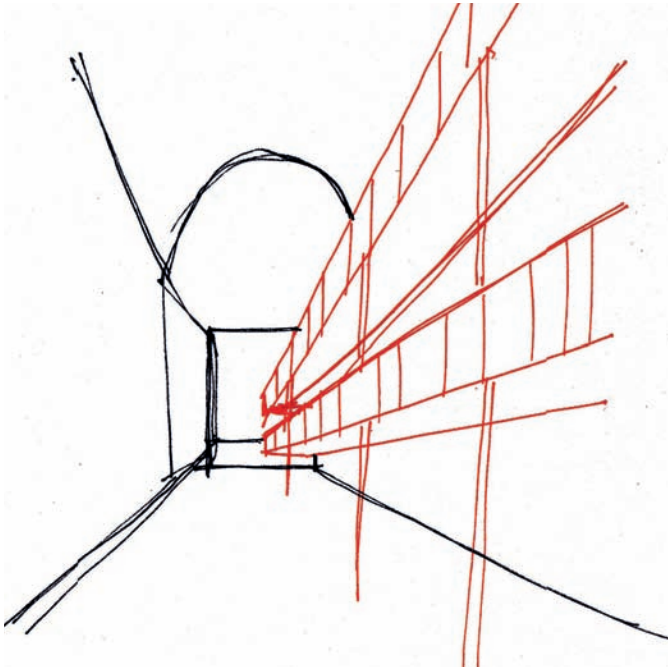


Figure 6.33: A new steel mezzanine structure inside the existing with new double volume space for exhibition opportunities.

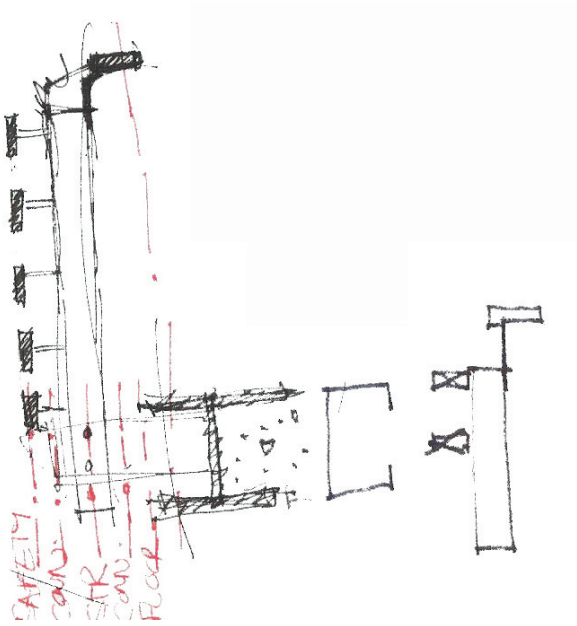


Figure 6.34: Componential layering of the balustrade.

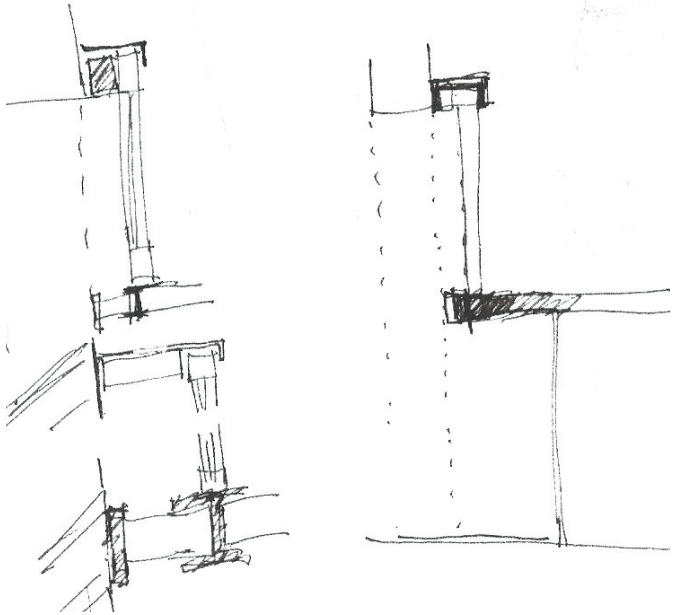


Figure 6.35: Exploring the set back of the new away from the existing.

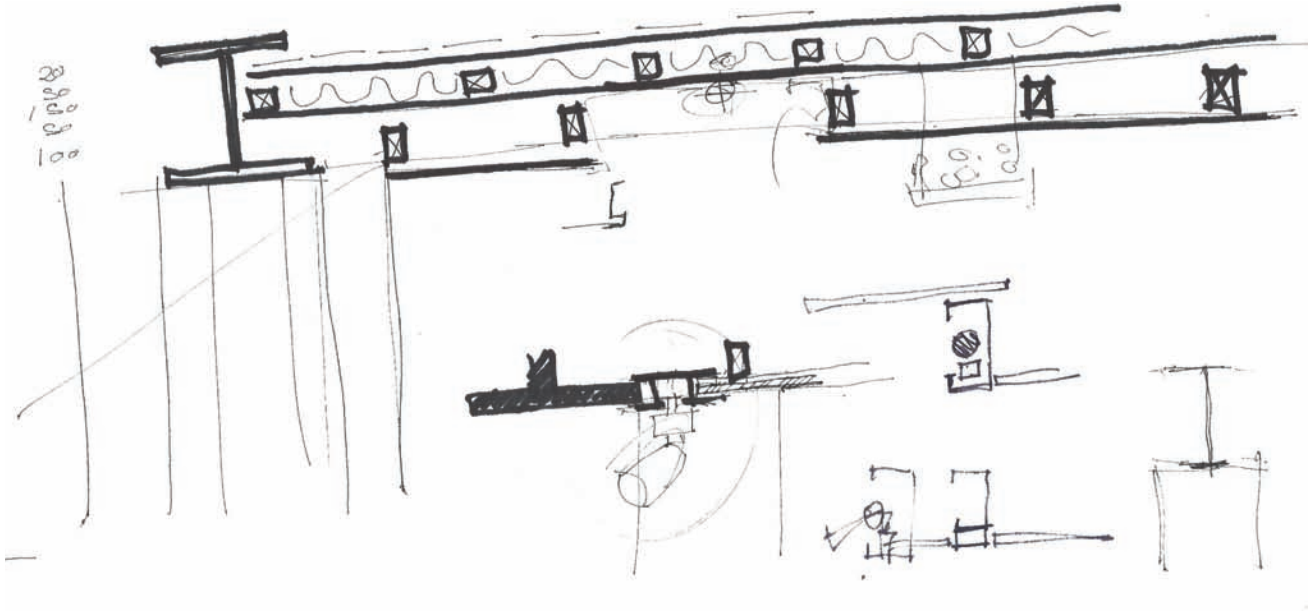


Figure 6.36: Exploring the layers of the new mezzanine floor.

6.5.1 DESIGN INSPIRATIONS: REUSE

reuse:
new inside old

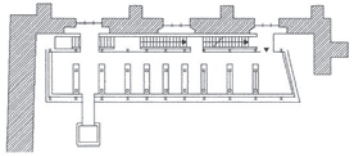
(a) Selexyz Dominican Church, Maastricht, by Merkx + Girod

reuse:
new inside old

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

reuse: new circulation
inside old

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



reuse:
new freestanding
inside old

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

auditorium

(e) Auditorium of Kunstahl, Rotterdam by Rem Koolhaas

new layer - acoustics

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

reuse + addition:
tower

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

skylights

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

sky lanterns

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

Figure 6.37: Colleague with reuse inspirations.

bridge

(j) Bridge at Constitution Hill, Jhb by omm design workshop

bridge

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

ballustrade

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

walkway - new over old

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

new over old - accentuating threshold

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

walkway - new over old

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

traces of old kept

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

traces of old kept

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

signage

(r) Layered and robust signage at Arts On Main, Jhb by Enrico Dalfonchio

6.6 EXPLORING THE NEW

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.

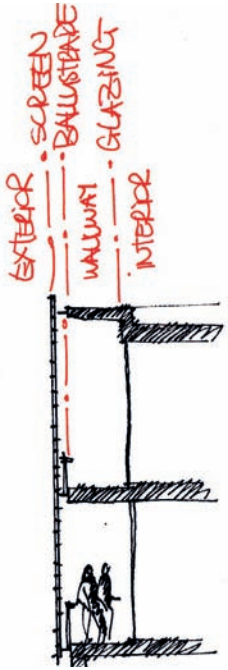


Figure 6.38: Componential layering of the new facade.

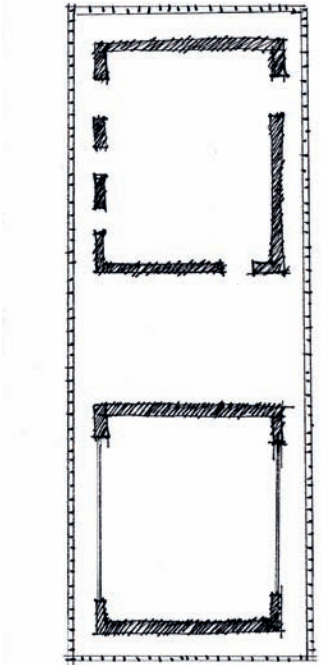


Figure 6.39: Plan diagram illustrating the block inside block concept.

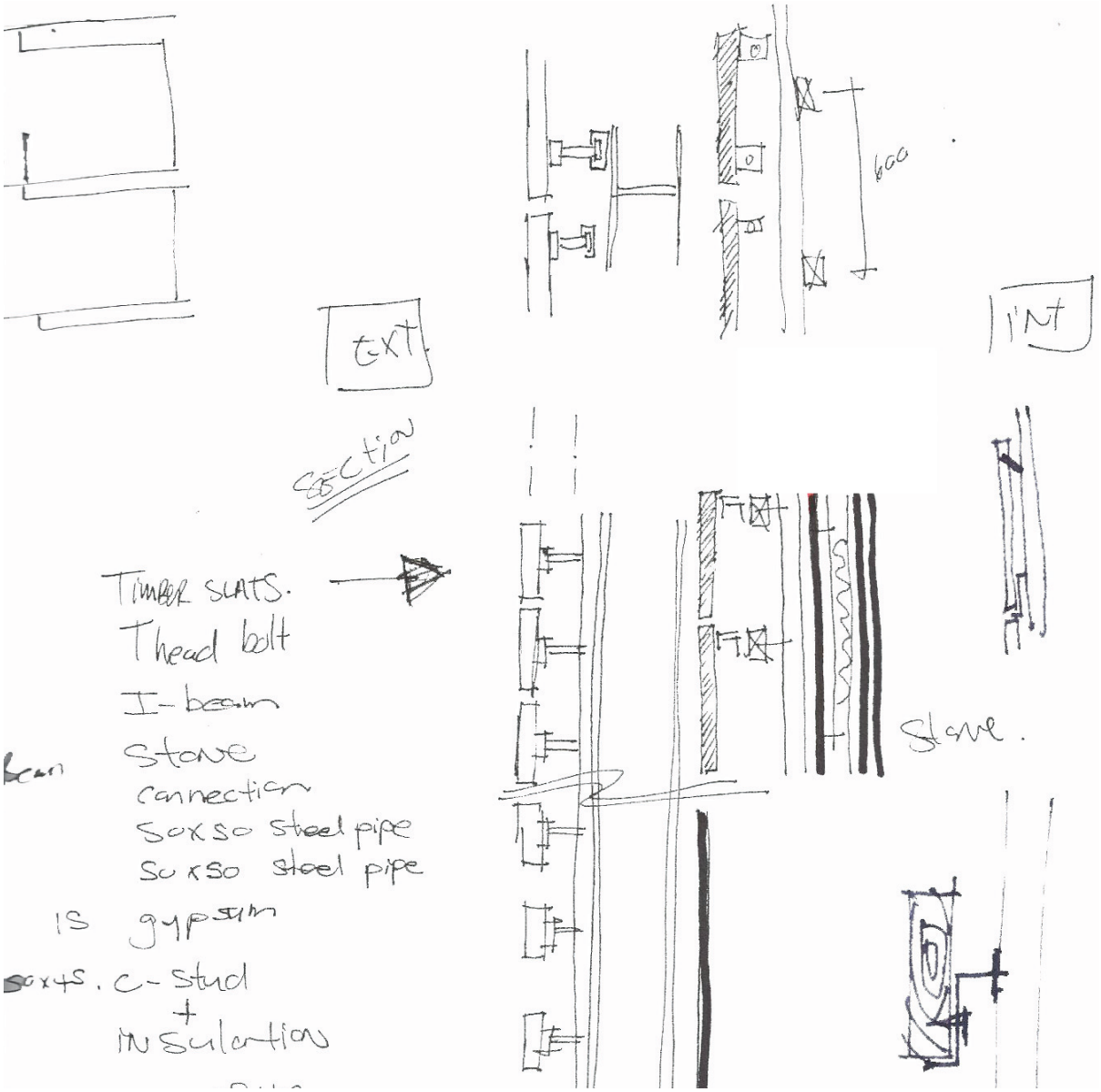


Figure 6.40: Exploring the facade layers.

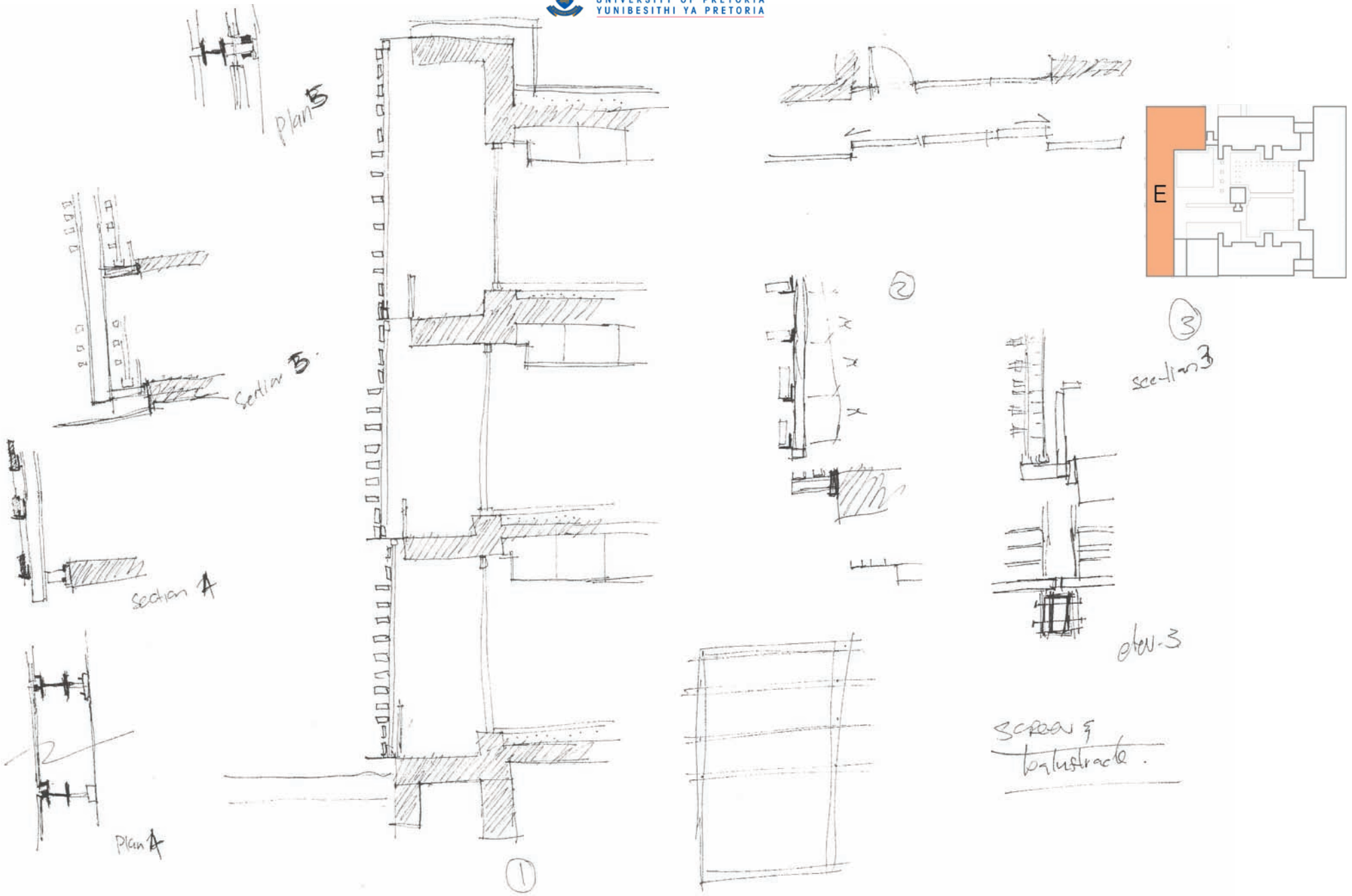


Figure 6.41: Exploring the facade layers.

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.

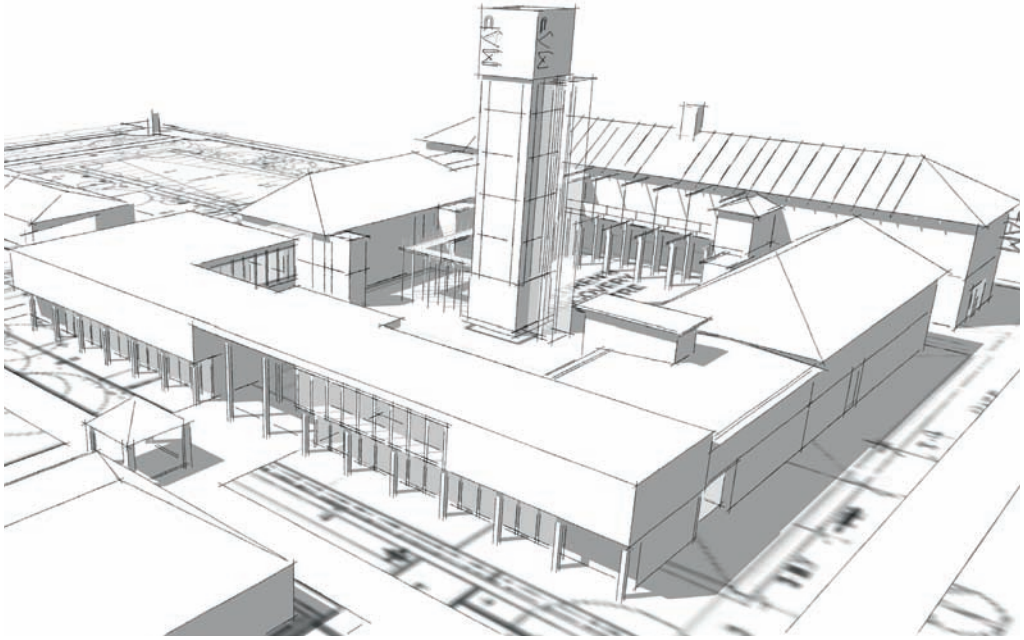


Figure 6.42: Purity of the anonymous block lost with the introduction of glazing. (Author)

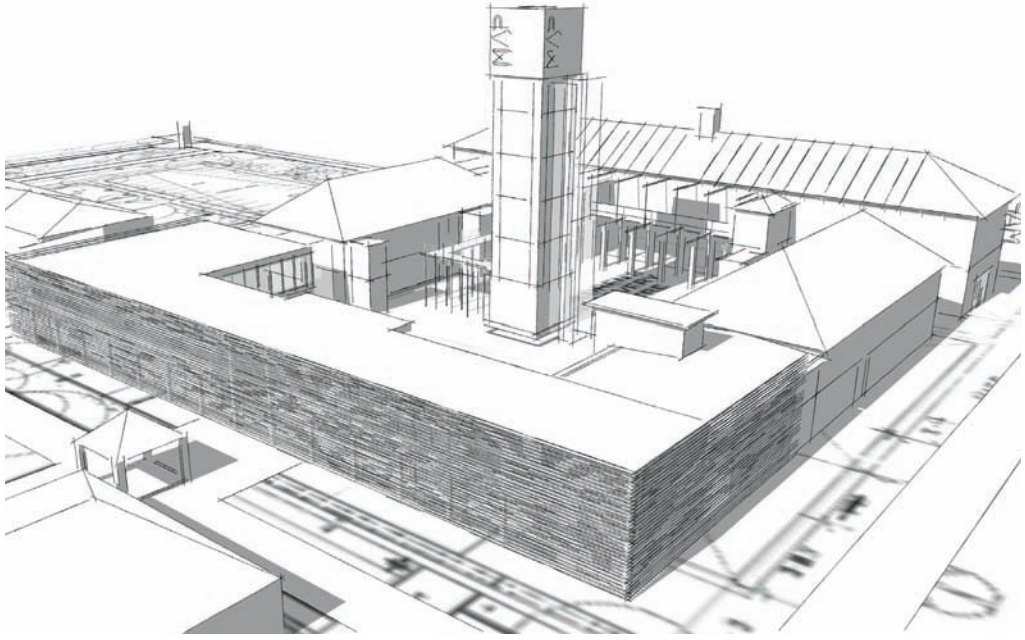


Figure 6.43: Anonymous block with a screen introduced. (Author)

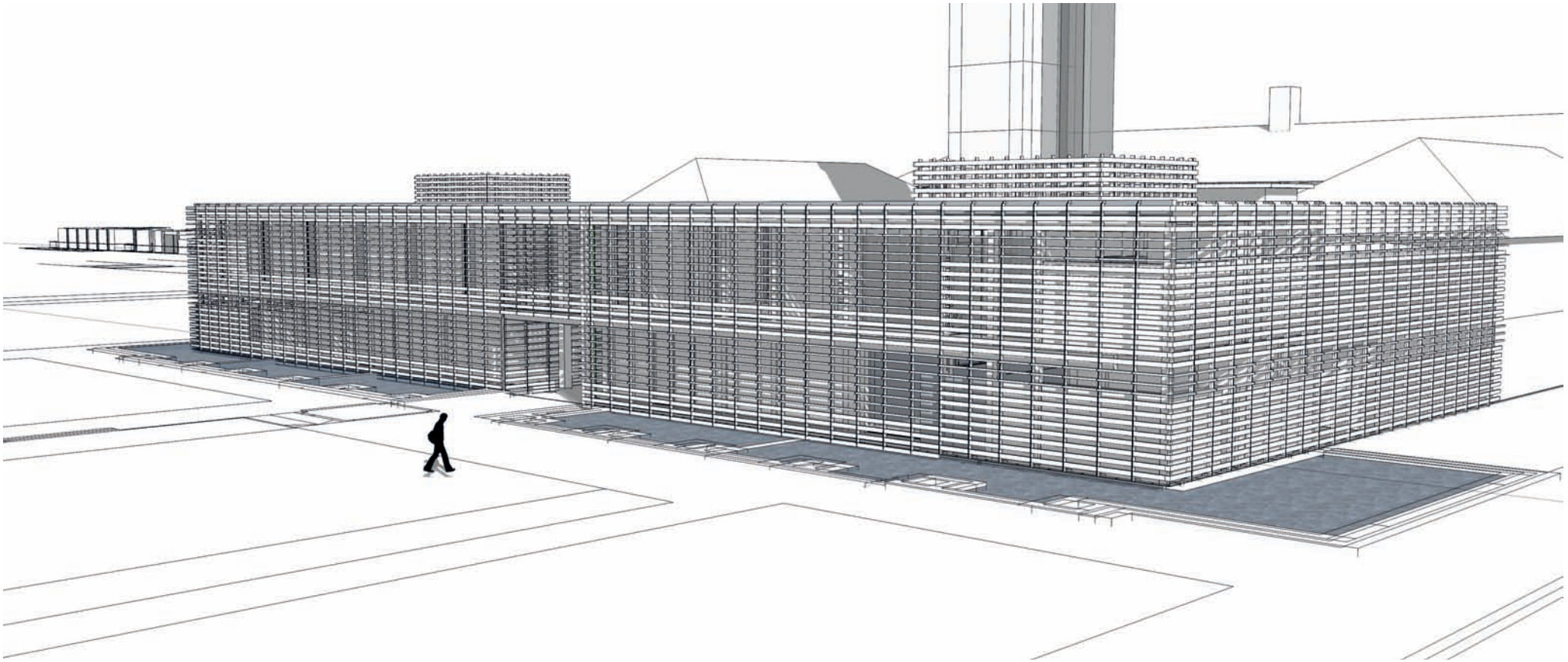


Figure 6.44:a View of the new addition.

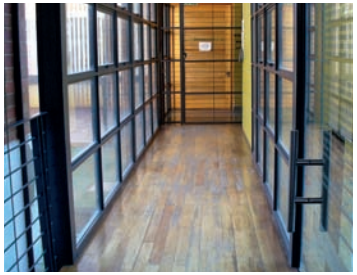
Figure 6.44b: View of the new addition - southwest corner.

Figure 6.44:c View of the new addition - new link to Minnaar street.

6.6.1 DESIGN INSPIRATIONS: NEW

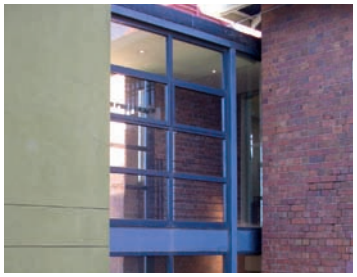
new:
contrasting materials

(a) Glass circulation towers, Reina Sofia by Ian Richie



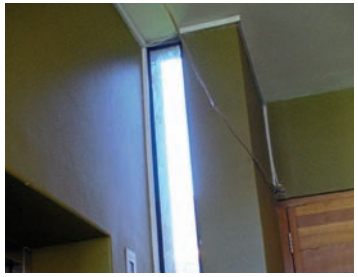
link:
glass and steel

(b) Glass and steel links between old and new at Women's Jail, Jhb by Kate Otten



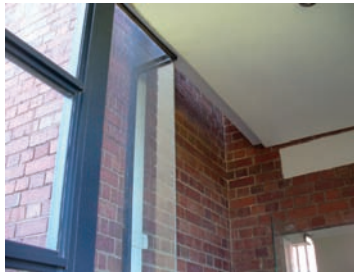
link:
glass and steel

(c) Glass and steel links between old and new at Women's Jail, Jhb by Kate Otten



joint:
glass between old and new

(d) Glass infill between old and new at Women's Jail, Jhb by Kate Otten



joint:
new pulled away from old

(e) Void between old and new at Women's Jail, Jhb by Kate Otten

link:
glass and screen

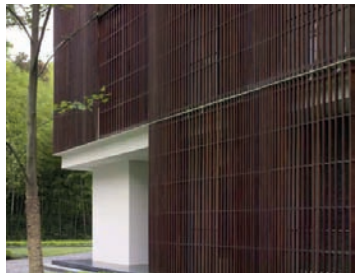
(f) Glass and steel link with terracotta screen

new:
anonymous block
david chipperfield

(g) Liangzhu Cultural Museum, China by David Chipperfield

new:
block with screen

(h) Arts Centre, Wurzburg by Bruckner & Bruckner



new: screen
david chipperfield

(i) Ninetree Village, China by David Chipperfield

Figure 6.45: Colleague with design inspirations for the new additions.

new:
block inside block
david chipperfield

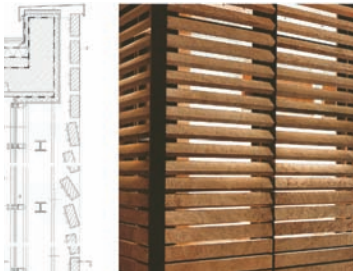
(j) Ninetree Village, China by David Chipperfield

new: screen
renzo piano

(m) New York Times Building, New York USA by Renzo Piano. Screen manufactured by Shildan.

new:
screen

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



new:
layered facade

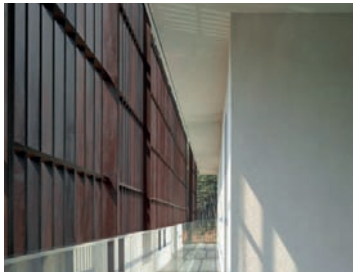
(k) Arts Centre, Wurzburg by Bruckner & Bruckner

new: screen
renzo piano

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

new:
screen

(q) Terracotta Screen manufactured by Shildan



new:
layered threshold
david chipperfield

(l) Ninetree Village, China by David Chipperfield

new:
screen

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

new:
screen

(r) Terracotta Screen manufactured by Shildan

6.7 EXPLORING THE COURTYARD

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.

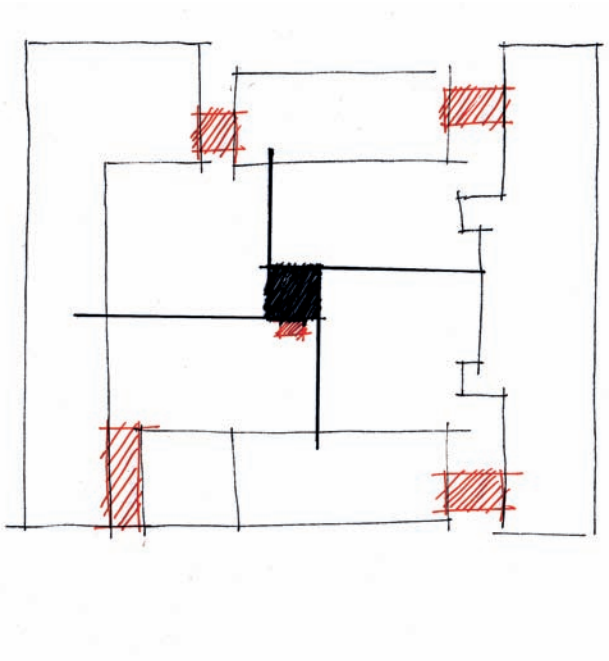


Figure 6.46: The parti diagram for circulation.

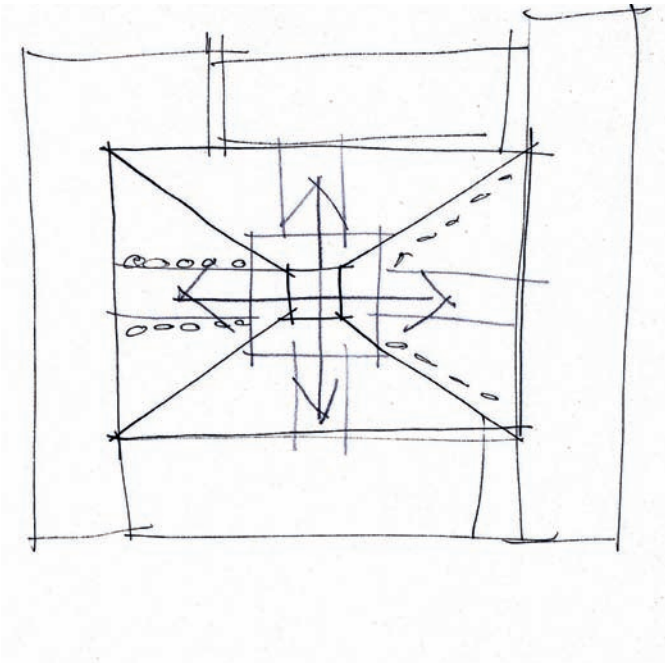


Figure 6.47: Diagram showing the quadrants and movement axes in courtyard.

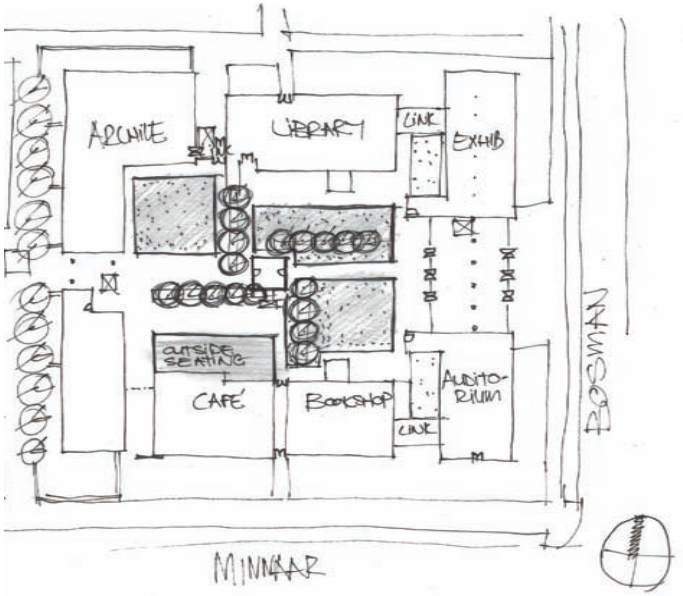
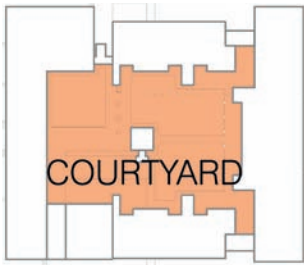


Figure 6.48: New courtyard layout based on parti diagram for circulation.



6.2.3 DESIGN INSPIRATIONS: COURTYARD

courtyard
soft

(a) Simple courtyard design at Castelvecchio by Scarpa

courtyard
hard

(b) Hard space, with social activities, height difference and material define edge

courtyard
hard vs soft

(c) Raised areas with lawn and trees, hard vs soft, by Guillermo V. Consuerga

water

(d) Water feature in Vigo by Guillermo V. Consuerga

water

(e) Water feature by Carlo Scarpa

courtyard
soft

(f) Green courtyard with berms, trees and circulation layered over lawn

material + texture +
edges + layers

(g) Edges and transition defined by layering of material and texture

installation

(h) Exterior installations at Topography of Terror Museum, Berlin by Ursula Wilms

installation

(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.

SPATIAL LAYERING: VIEWS

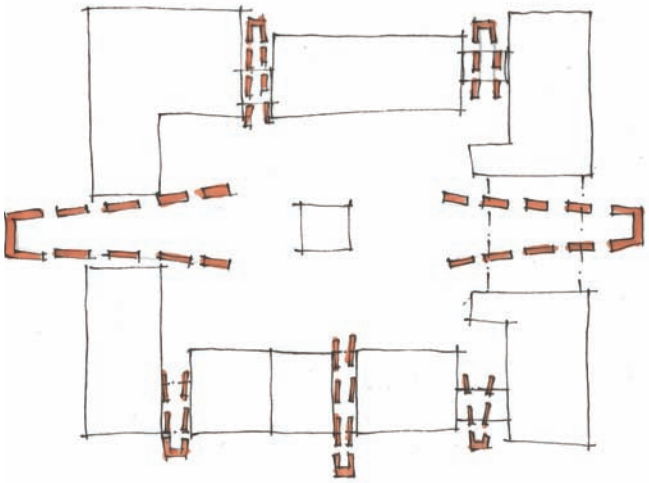


Figure 6.50: Spatial layering through visual axes.

Spatial layering through circulation.

SPATIAL LAYERING: MOVEMENT

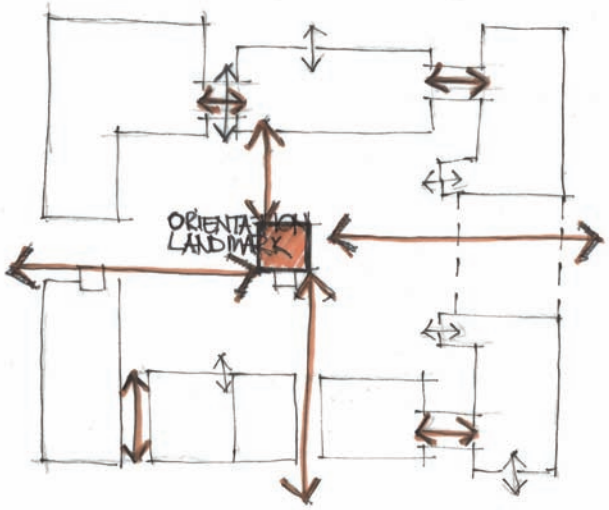


Figure 6.51: Spatial layering through circulation axes.

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.

COMPONENTIAL LAYERING

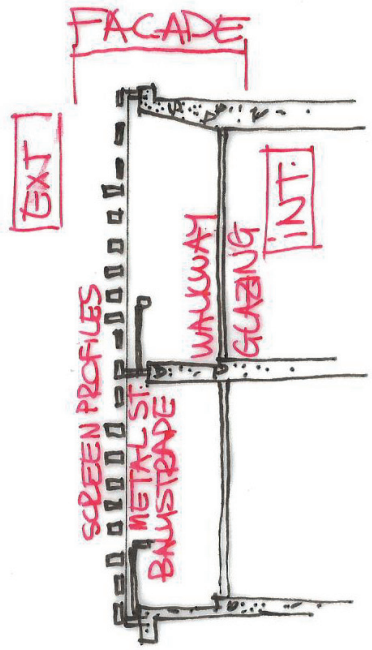


Figure 6.52: Componential layering of the new facade.

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.

MATERIAL LAYERING

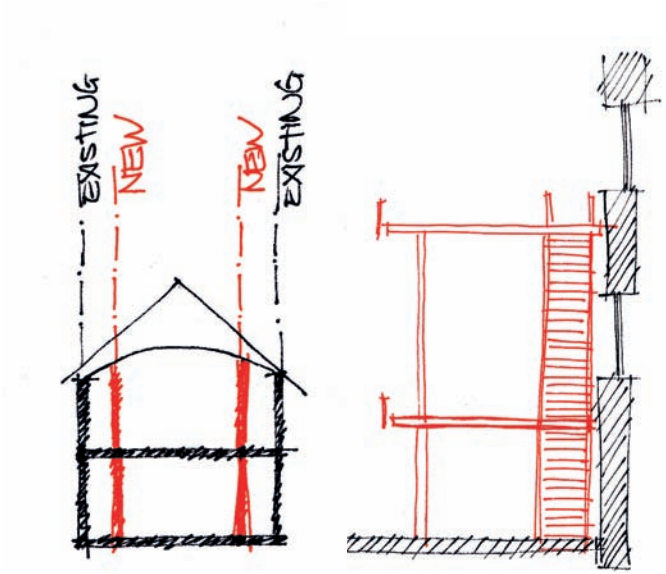


Figure 6.53 Material layering juxtaposed through the introduction of a void between the new and the old.

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

TRANSITIONAL LAYERING: THRESHOLDS

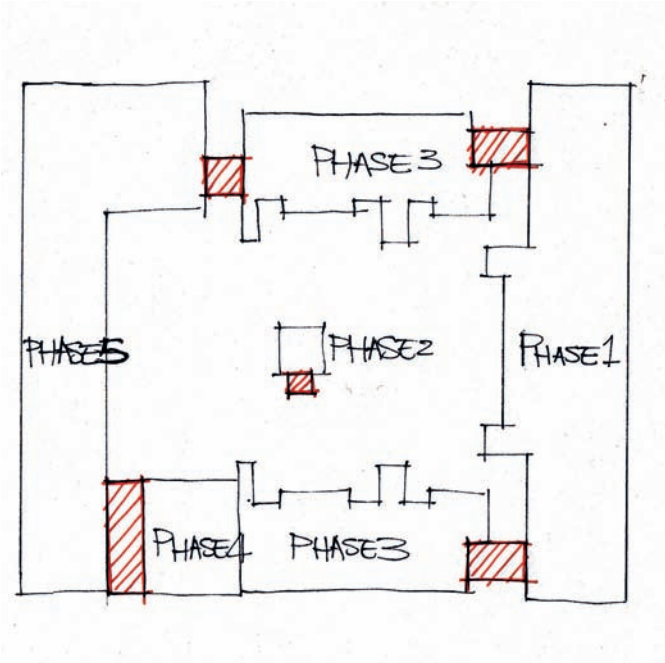


Figure 6.54: Transitional layering through thresholds.

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

TRANSITIONAL LAYERING: THE JOINT

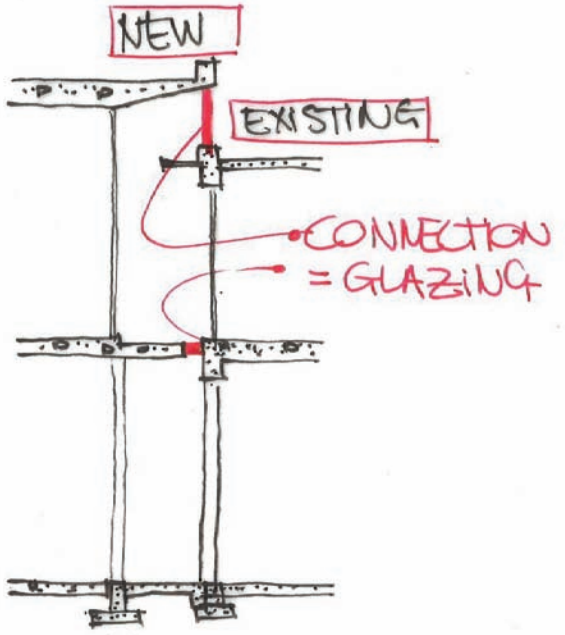


Figure 6.55: Transitional layering through the joint between the existing and the new.