

Design Development

Surrounded by valuable heritage buildings, the objective of the design proposal is to allow the city inhabitants, as well as visitors to the city, to experience the historical value of the surrounding context. Thus, the surrounding context determines the proposed building's boundaries, its orientation and its footprint. In an attempt to create a greater appreciation for our local heritage, this project creates the opportunity for a richer experience of our historic built environment.

The following chapter explores the design process and the various design generators.

Initial Block Model Development

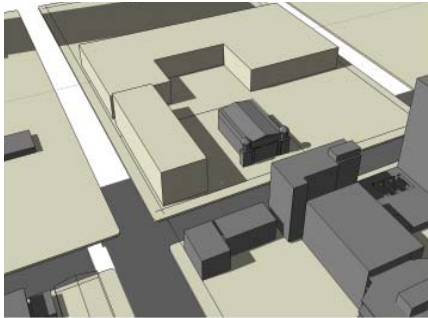


Figure 10.01

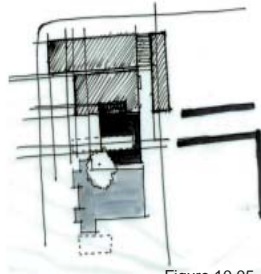


Figure 10.05

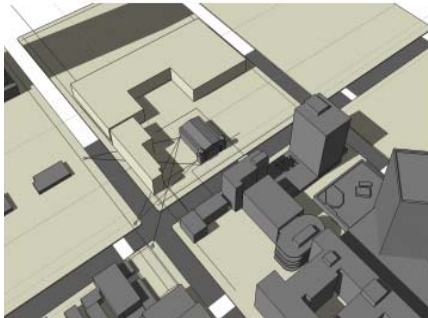


Figure 10.02

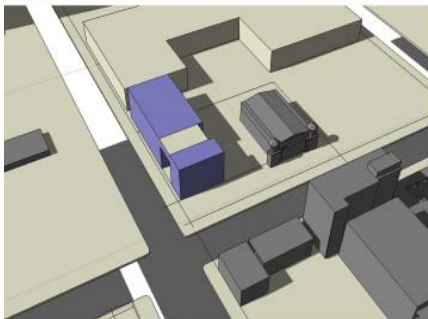


Figure 10.03

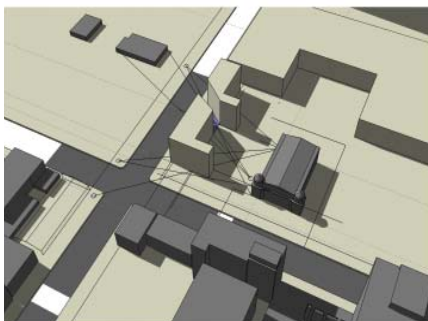


Figure 10.04

Figure 10.01- 10.04
Initial block model (March 2007) exploration to determine building height and form in relation to the Old Synagogue and other surrounding buildings

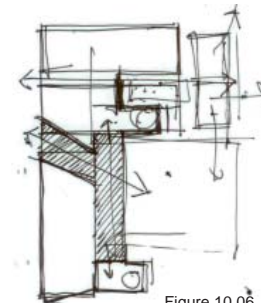


Figure 10.06

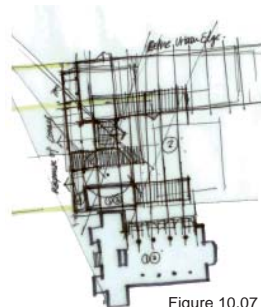


Figure 10.07

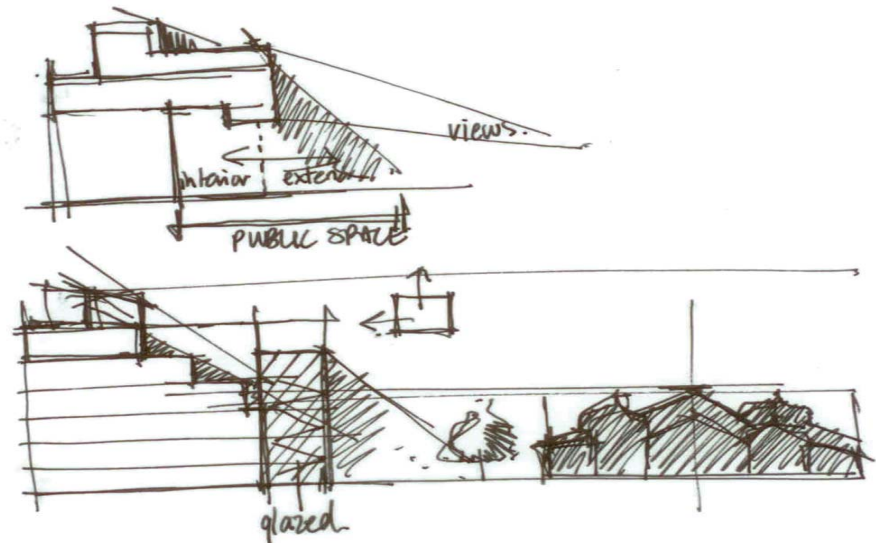


Figure 10.08 Determining a height for the proposed building

The initial block model was used to determine an appropriate position and size of the proposed building on the selected site. The primary objective was to allow for the user to experience the surrounding historical context by means of strategically placed openings in the building. In the same way this process helped determine where the scale of the building needed to be reduced to respond to the height of the Old Synagogue.

The process was one of carving away at an initial block to determine the above mentioned parameters. In addition, this method helped establish the sun pattern on the southern courtyard and determine a height for the building which was not to shade the synagogue at any point of the day.

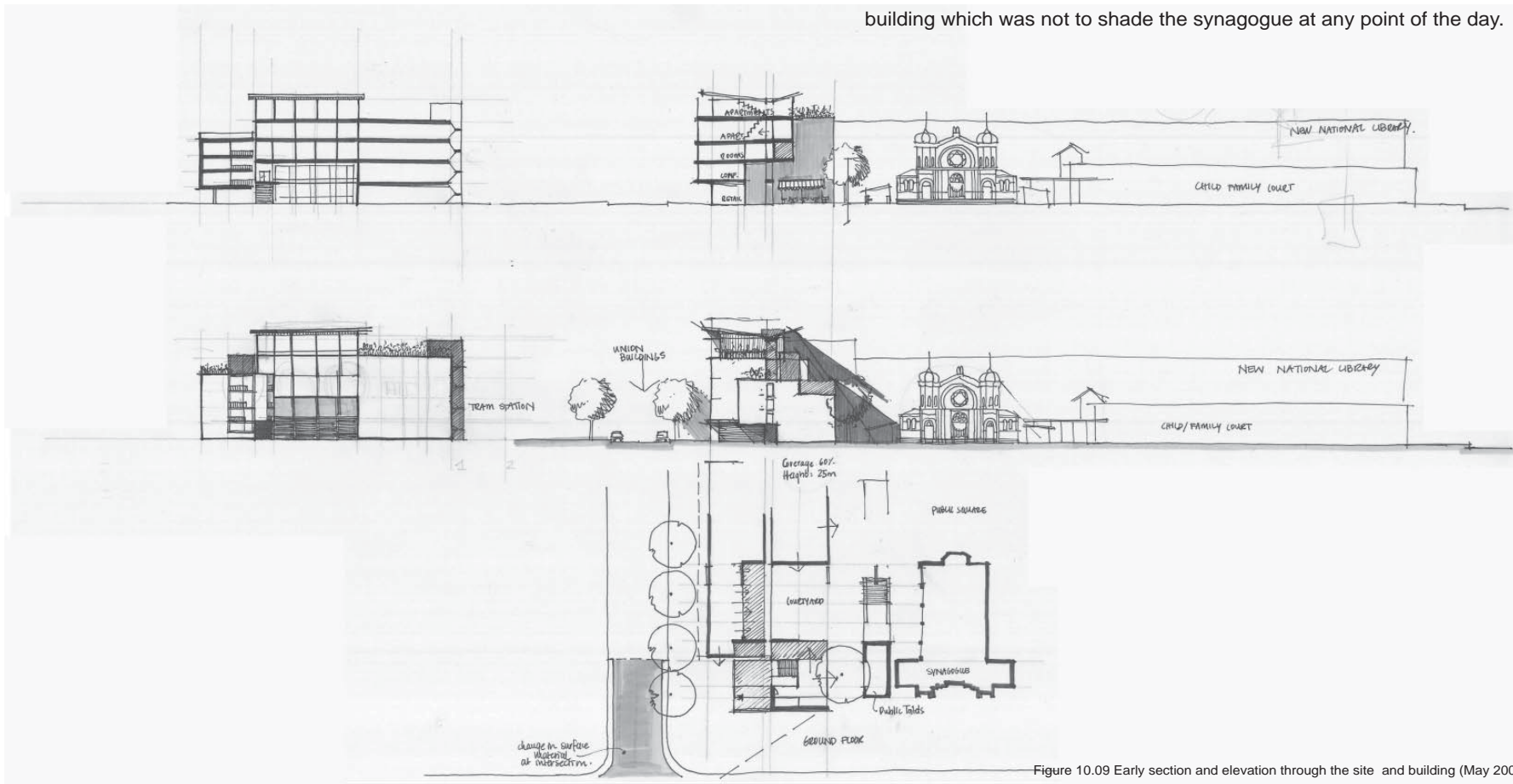


Figure 10.09 Early section and elevation through the site and building (May 2007)

Design Generators

Design generator one: The minister's house

The minister's house,¹ originally located on the selected site, faced south. The building was orientated toward the Synagogue with its stoep on the southern side and the serviced areas on the northern side of the building. The disregard of climatic orientation suggests the significance of the synagogue at the time. The proposed building is similarly orientated and partially encloses the public space, which forms the connection between old and new.

Design generator two: Other existing buildings

Jansen House, situated on the northern edge of Struben Street, determines the eastern border of the proposed building in order to allow for a visual link from the proposed public space situated directly behind the synagogue through to Jansen House. The Panagos Building, situated on the south-western corner of the intersection, determined the position of the atrium as well as the circulation spine located within the building. The position of the main facade of the synagogue determined the position of entrances and movement routes through the building. The initial shape of the building was, therefore, determined by a process of carving away at an initial block of solid mass.

Design generator three: The Old Synagogue

The 3,8m structural grid of the synagogue generated the grid of the proposed building, which runs in a north-south direction. This rhythm is to be emphasised by paving materials and patterns at a later stage in the process.

Design Generator four: Natural light as a generator

In addition to responding to the existing built environment, the building height was determined by the shadow the building will cast on its surroundings. Therefore, the height of the building and the pitch of the roof were determined by their impact on the surrounding spaces and buildings, and were designed in such a way as to not cast a shadow on the Old Synagogue at any point in time during the day. The impact of natural and additional electrical lighting is dealt with in greater detail in the technical investigation.

1. refer to p34 for more information on the minister's house

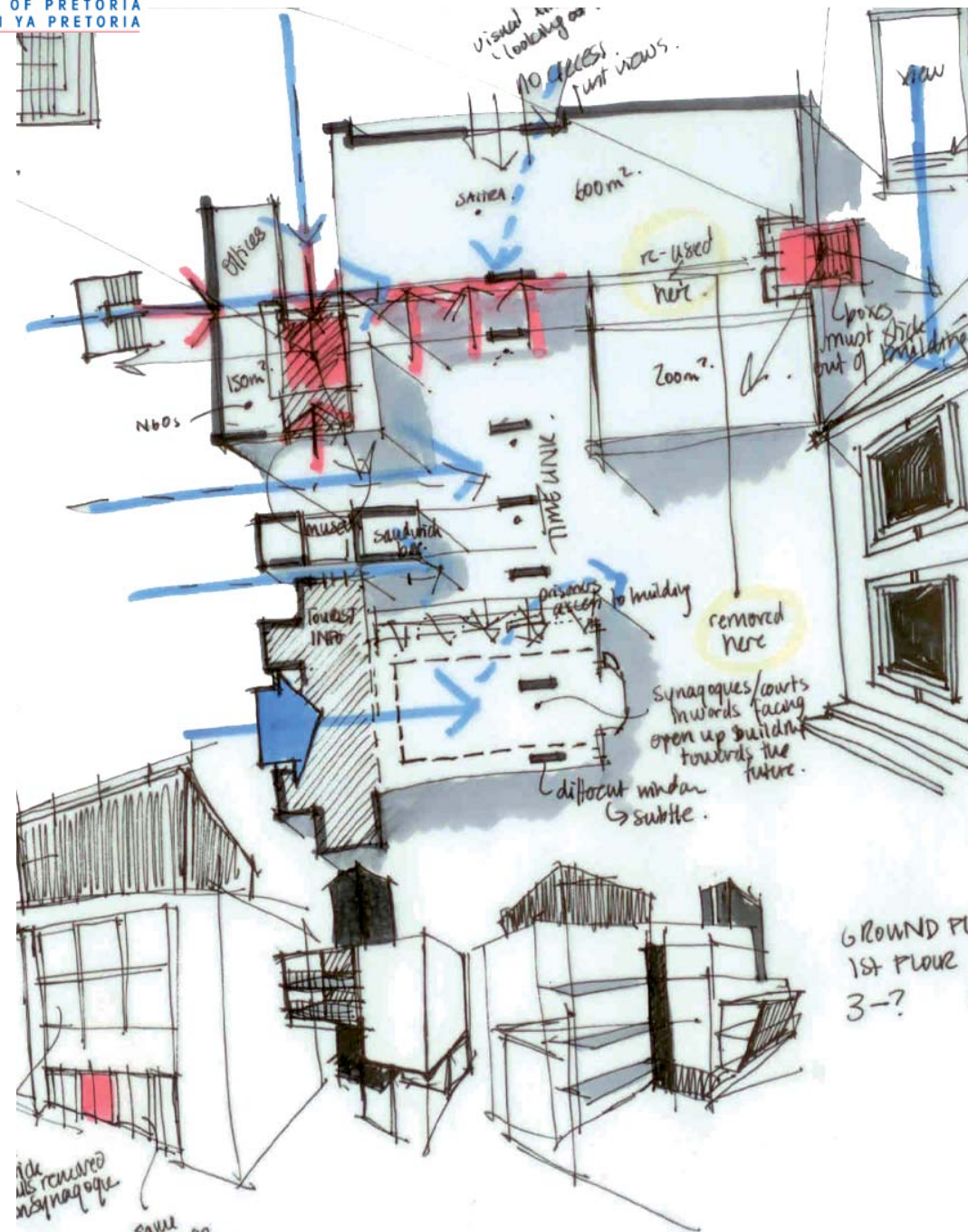


Figure 10.10 Initial concept sketch indicating access point and orientation (March 2007)

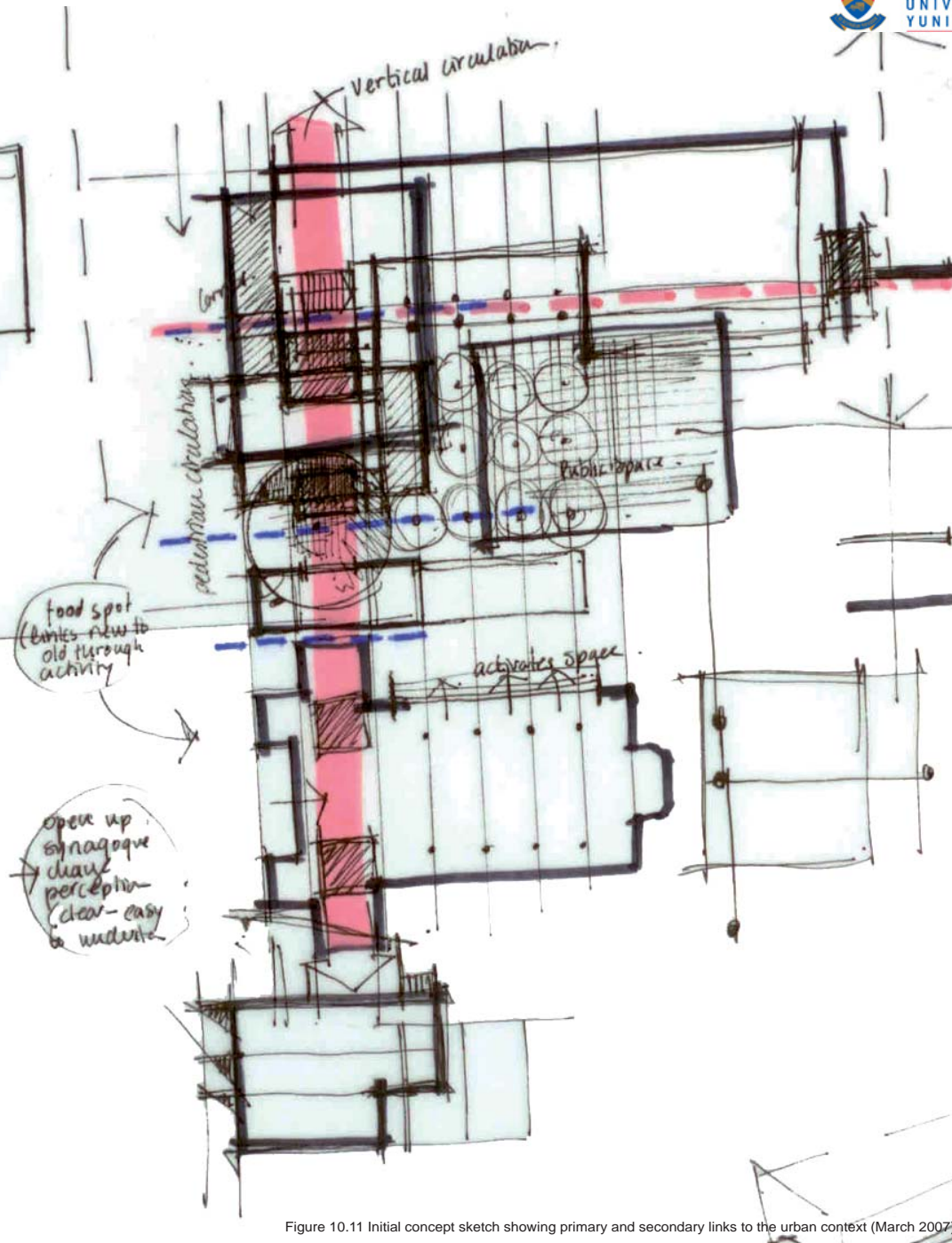
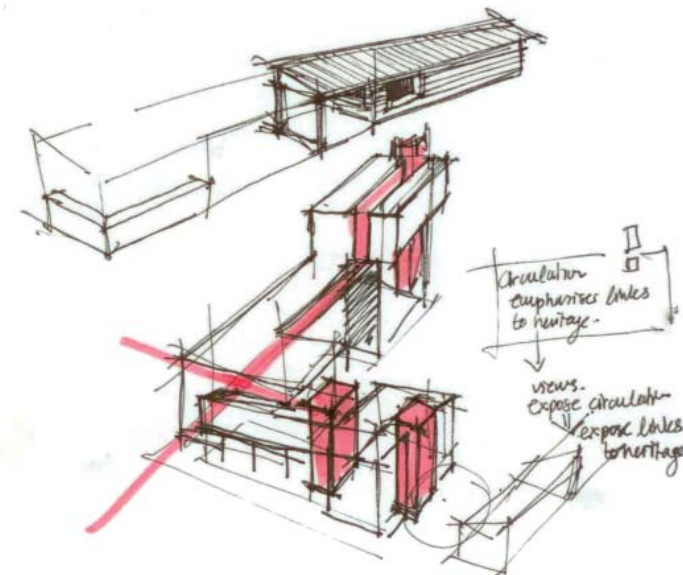


Figure 10.11 Initial concept sketch showing primary and secondary links to the urban context (March 2007)



circulation = rigid
movement = active
⇒ contradiction

circulation ⇒ movement
= activation of
space.

Figure 10.12 3D sketch of primary link to historical context (March 2007)

Concept Model Development

Concept Model ONE

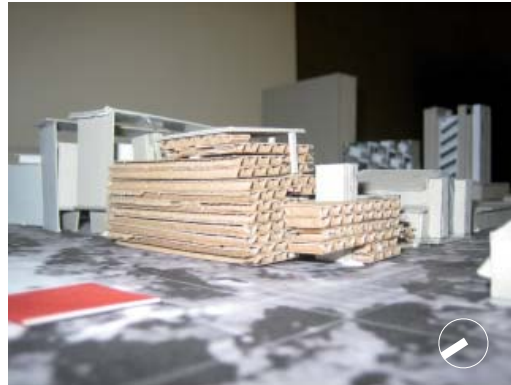


Figure 10.13



Figure 10.14

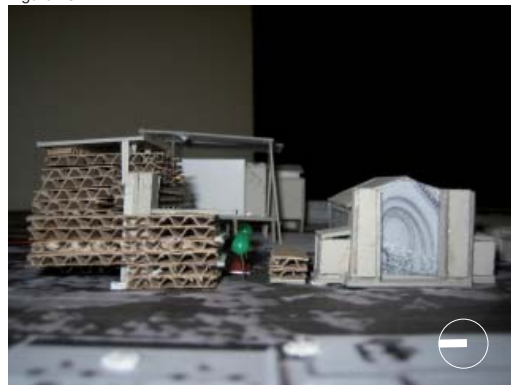


Figure 10.15

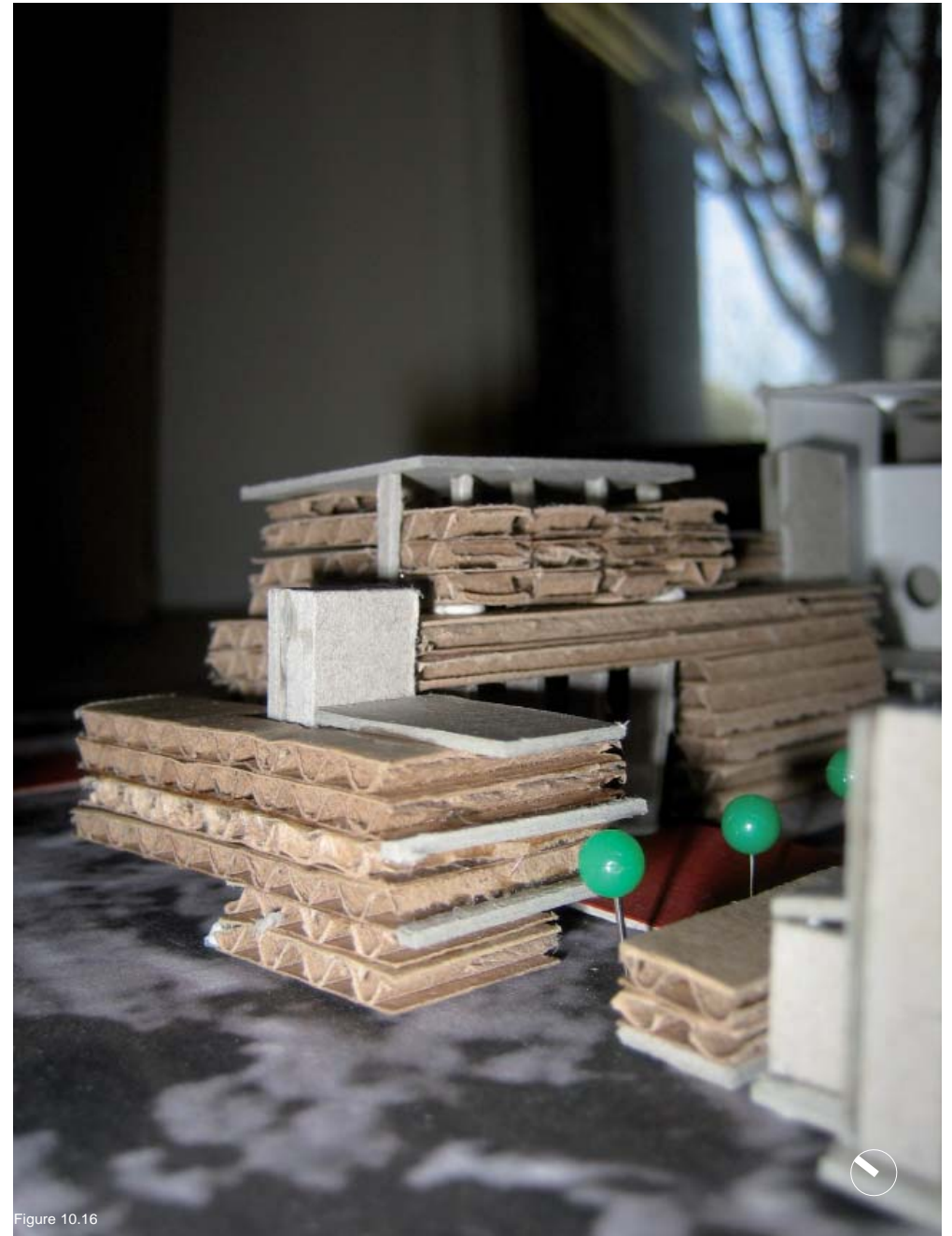


Figure 10.16



Figure 10.17

This first model was built intuitively at a scale 1:500. It responds to the surrounding historical buildings with a decrease in scale as the building approaches the Old Synagogue and the double-storey Panagos Building. In response to the group framework, the Jansen House and the proposed public space surrounding it determine the eastern boundary of the site. The building faces both Paul Kruger and Struben Streets in an attempt to define the urban edge and emphasise the vista towards to Union Buildings and Church Square.

The building maximises northern light in order to benefit from seasonal changes. Similarly, the building steps back not only to define a public courtyard but also to allow sunlight to enter this public space on the southern side of the building.

The additional admin building (dating from the 1950s) north of the synagogue is partially removed.

Circulation towers are located on the two major pedestrian movement routes around the building: The first is aligning with the tower of the synagogue and the second is located on the eastern facade of the building, in line with the pedestrian access route to the Jansen House. In keeping with the group's framework, the objective is to accommodate pedestrian movement as freely as possible.

The luxury apartment on the top floor of the building allude to the position of the Synagogue south of the building.

Concept Model Criticism

- The conceptual approach is not clear
- Response to surrounding context is not strong enough

Sketches

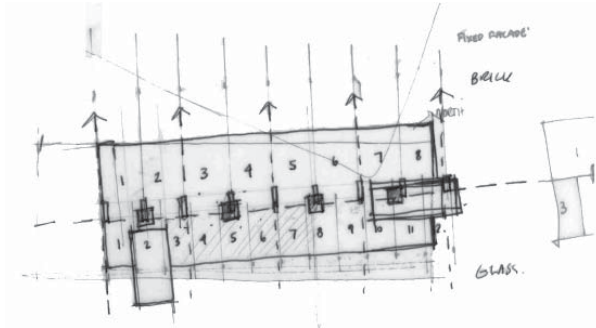


Figure 10.18

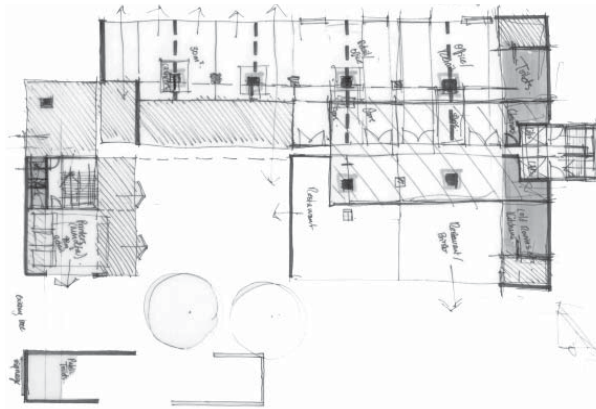


Figure 10.19

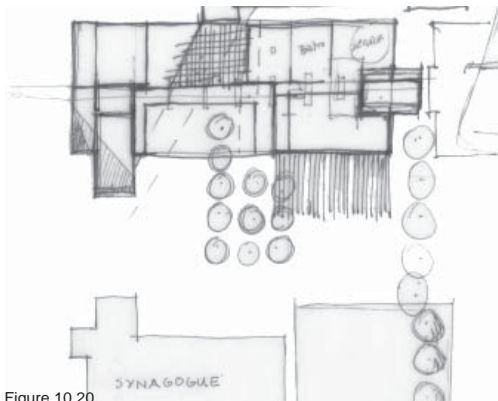


Figure 10.20

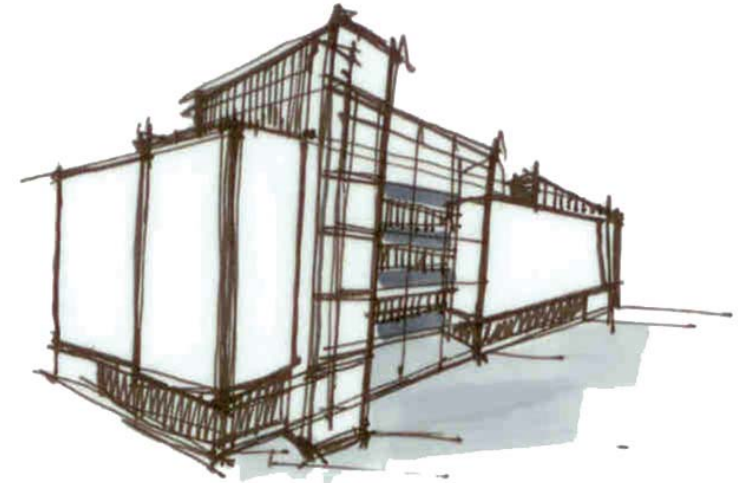


Figure 10.21



Figure 10.22

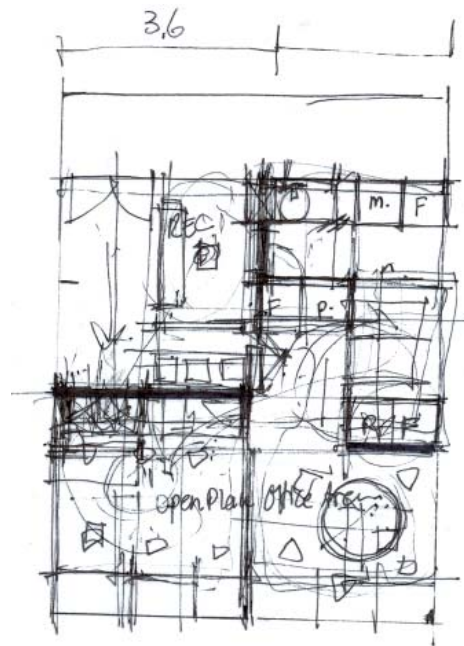


Figure 10.23 Initial office layout plans

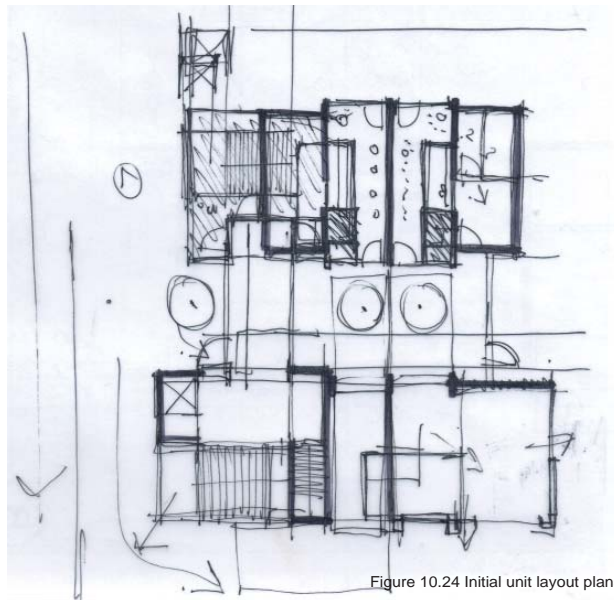


Figure 10.24 Initial unit layout plans

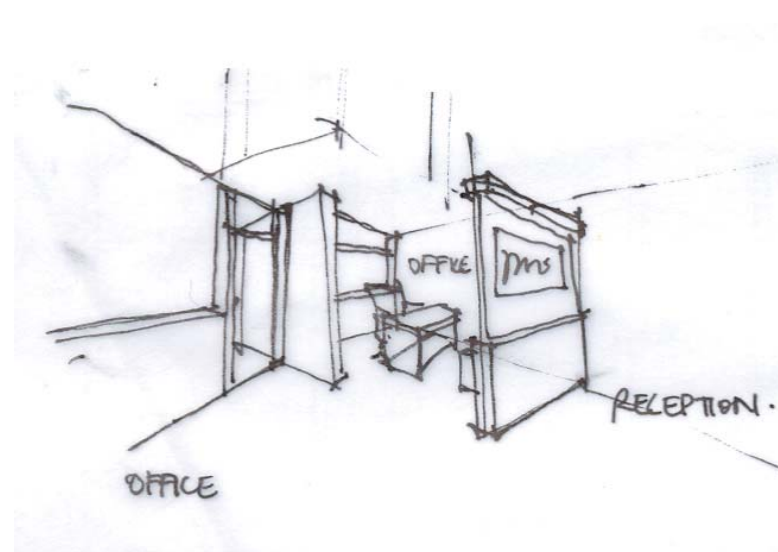


Figure 10.25 Interior View of office and reception

Concept Model Development

Concept Model TWO



Figure 10.26



Figure 10.27

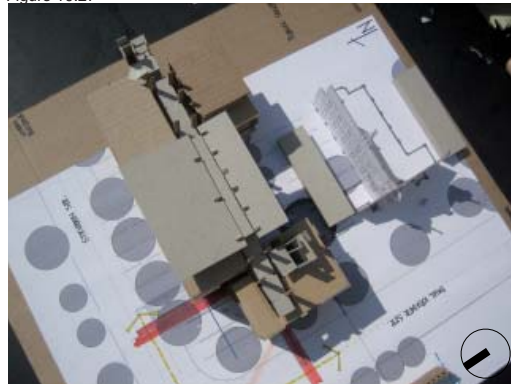


Figure 10.28



Figure 10.29



The second concept model was the first built at a scale of 1:200. In this model the axes of the intersection are mirrored within the building in an attempt to strengthen the orthogonal movement routes- both vehicular and pedestrian. Circulation towers remain directly on these axes with the western circulation tower still in line with the circulation towers of the synagogue. From a regeneration point of view the circulation routes are the most active part of the building and are exposed to activate the space.

The mass of the building continues to be shaped in such a manner as to not cast a shadow on the Old Synagogue at any point in time. The double lean-to roof¹ alludes to the position of the synagogue from the northern side of the proposed building. The large gutter positioned above the circulation bridge emphasises its position.

A generous overhang covers a portion of the pavement which is typical for Pretoria's buildings.

Already at this stage the structural grid of the synagogue informs the rhythm and structure of the proposed building. Openings hint at secondary visual links to the surrounding context.

The floor to floor height is 4m to blur the transition from the exterior to interior spaces while allowing for maximum flexibility of the interior space.

Concept Model Criticism

- The point of intersection of the two axes is weak
- Circulation routes are still not strong enough as this is a central to the design
- The public courtyard is shaded throughout the day in winter
- The southern facade which faces the synagogue loses the human scale
- spaces in the atrium seem dark and threatening
- threshold of where to old and the new meet is unresolved

1. Peters (1998:177-180)

Sketches

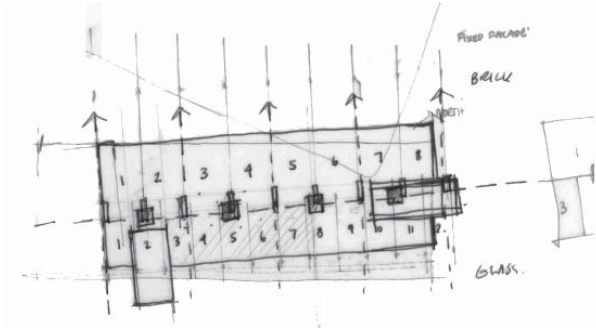


Figure 10.30

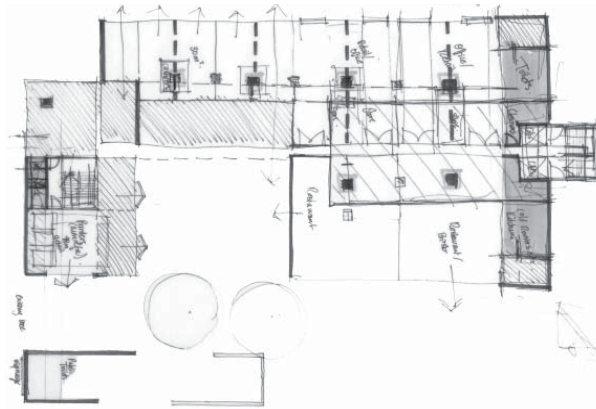


Figure 10.31

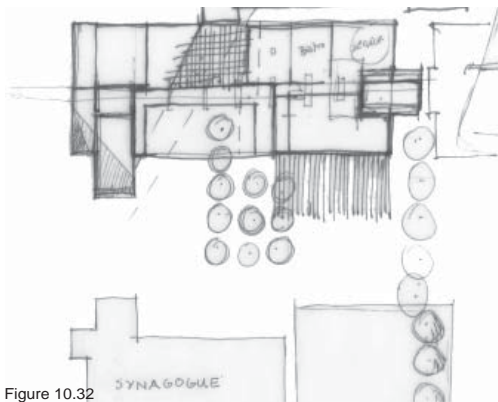


Figure 10.32

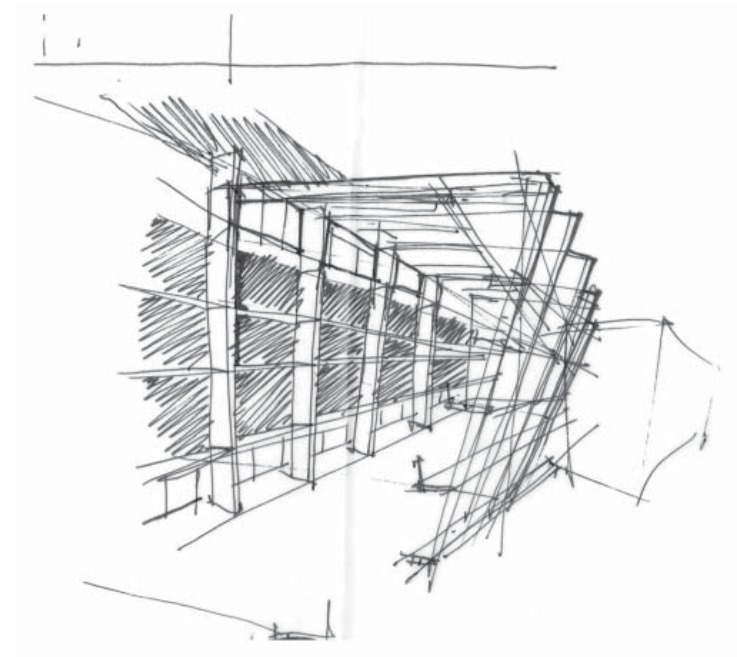


Figure 10.33 Sketch of atrium

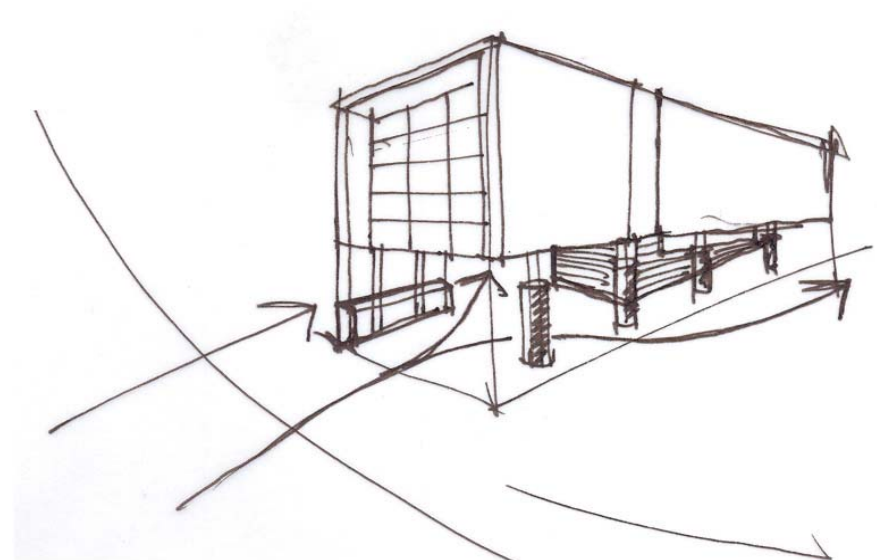


Figure 10.34 Sketch of atrium

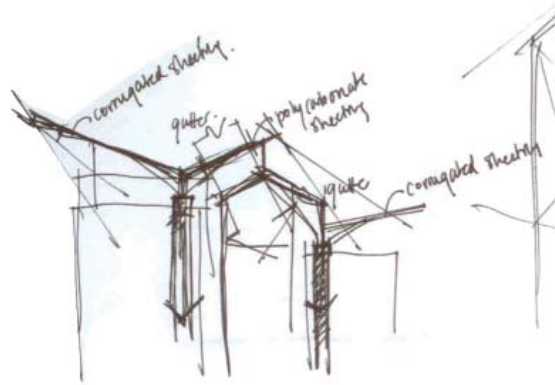


Figure 10.35



Figure 10.36

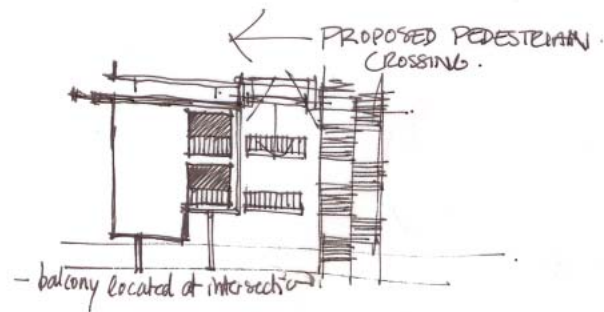


Figure 10.37

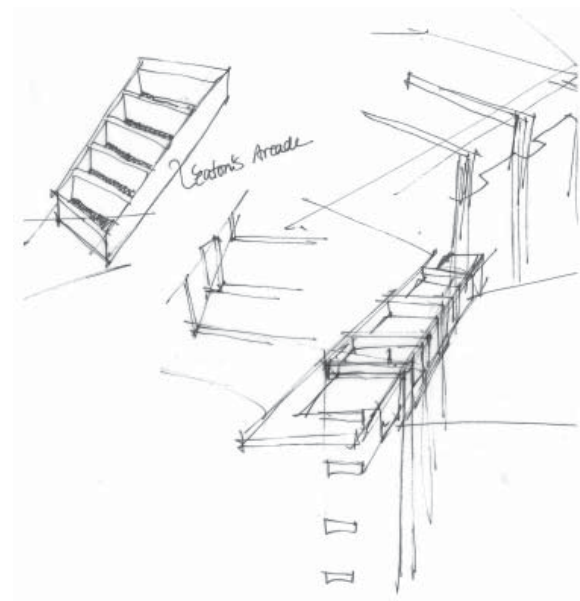


Figure 10.38

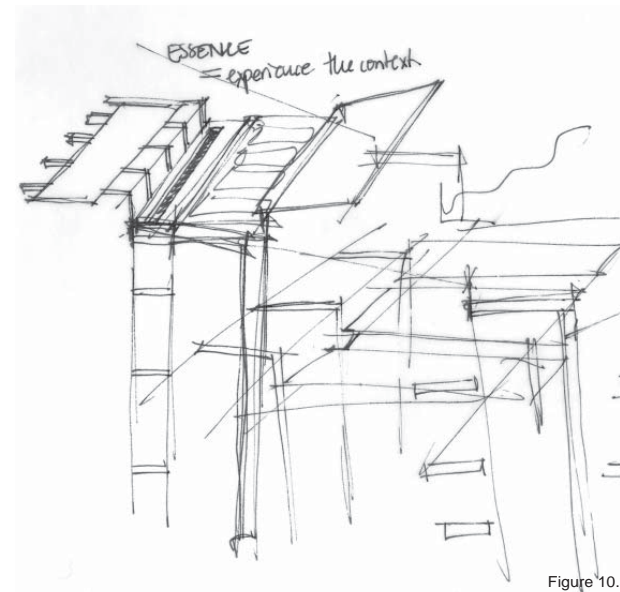


Figure 10.39

Concept Model Development

Concept Model THREE



Figure 10.40

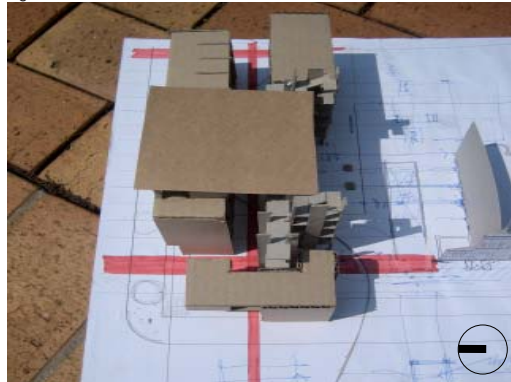


Figure 10.41



Figure 10.42



Figure 10.43



In an attempt to strengthen the concept of exposing the most active part of the building, the building was pulled apart creating a large internal atrium in which the circulation bridges are located. These bridges form the spine and core of the building that link the three buildings.

The circulation towers are moved off the axes and are positioned on either side of the public courtyard that faces the synagogue- emphasising its enclosure. The structural grid of the building is emphasised through-out.

Concept Model Criticism

- the staircases become a barrier between the building and the courtyard
- indoor and outdoor spaces are unclear
- the transition from public to private spaces remains undefined
- the roof is unresolved
- threshold where the old and the new meet remains unresolved
- southern courtyard remains shaded throughout most of the day in winter
- no defined or secure access point to the building

Sketches

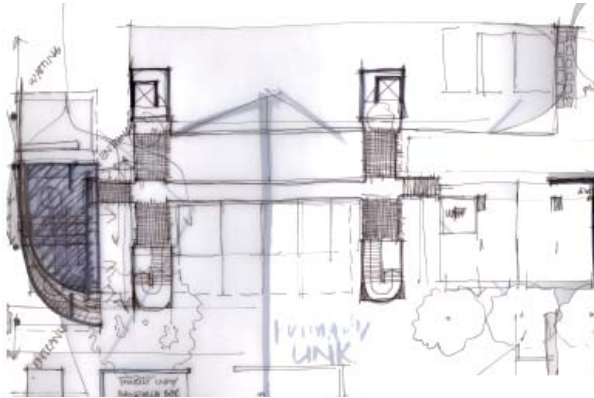


Figure 10.44

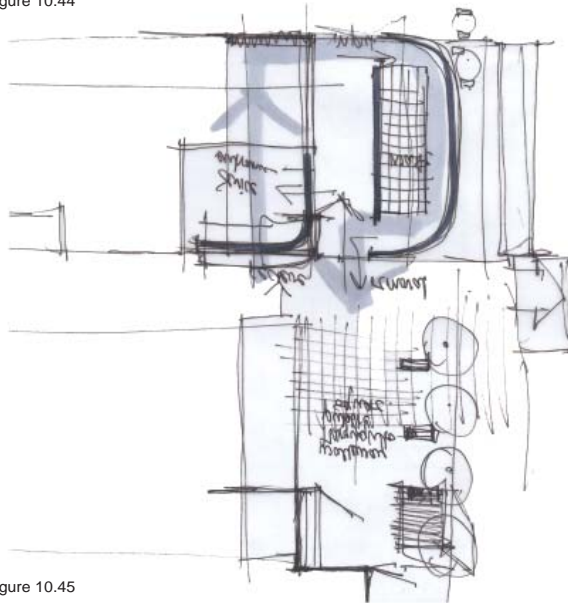


Figure 10.45

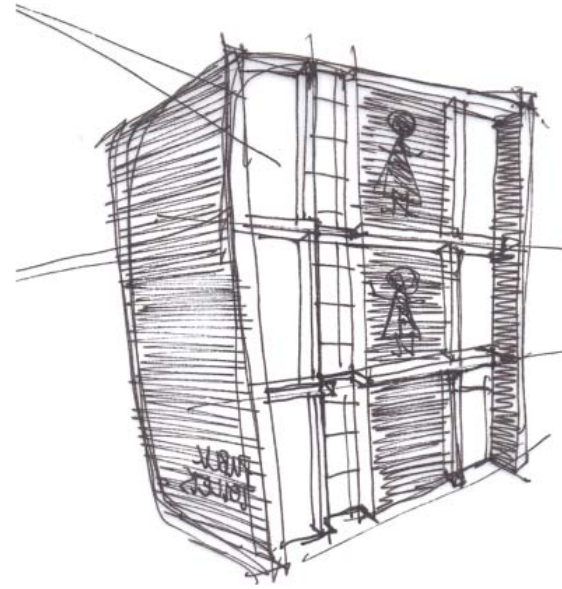


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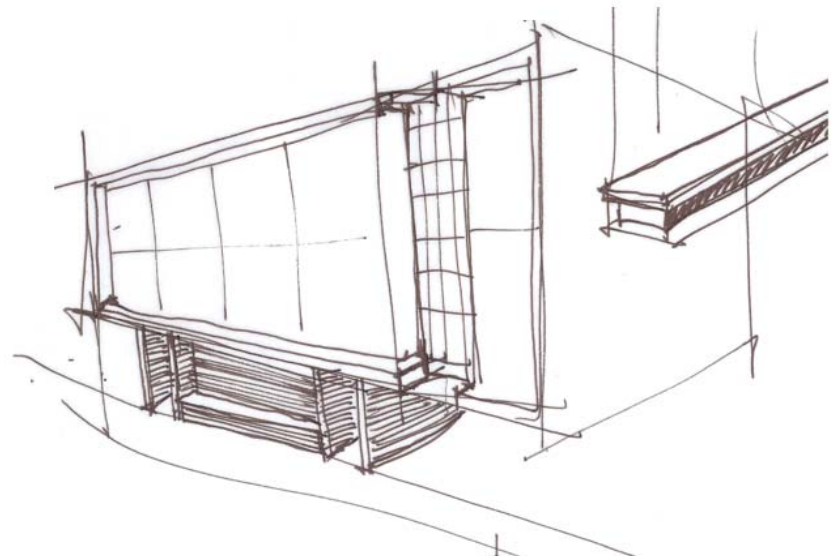


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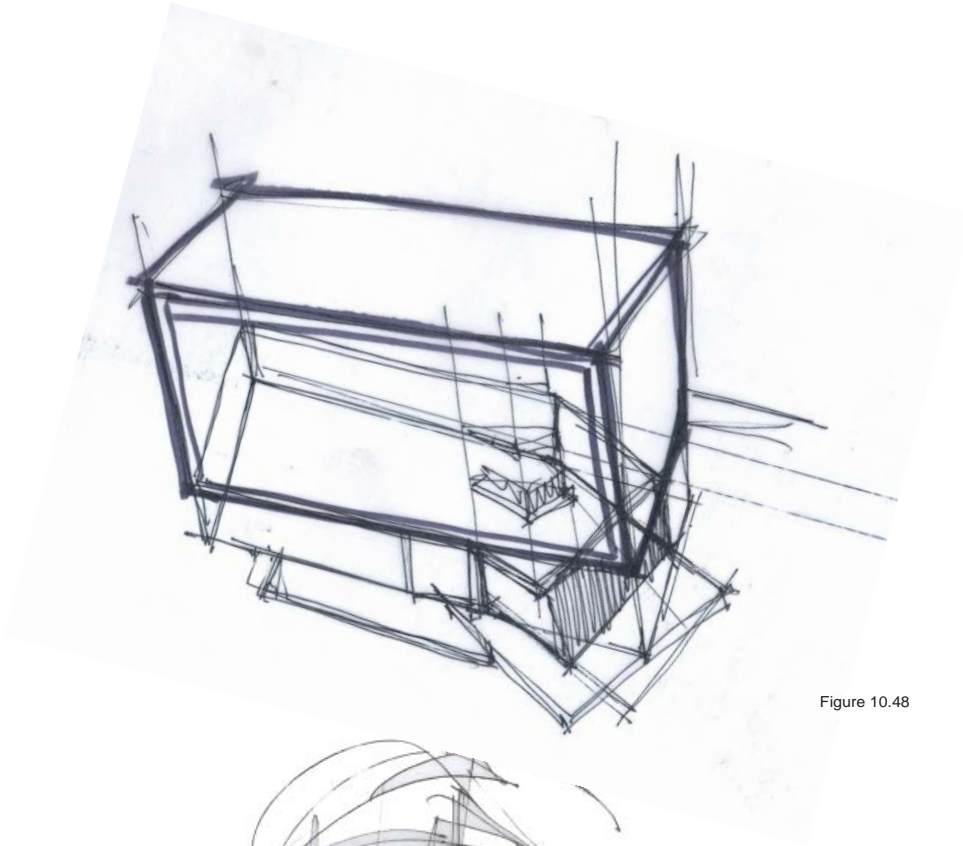


Figure 10.48

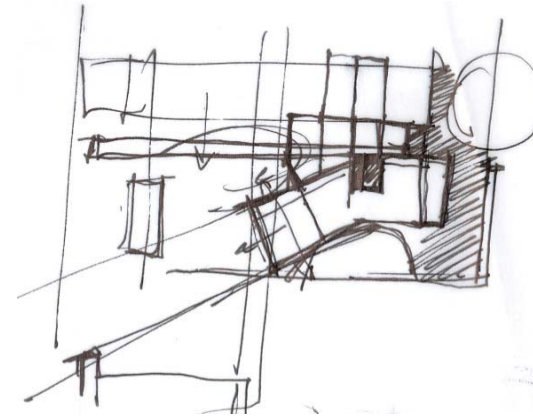


Figure 10.50

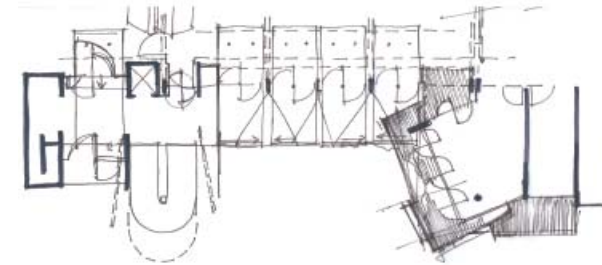


Figure 10.51

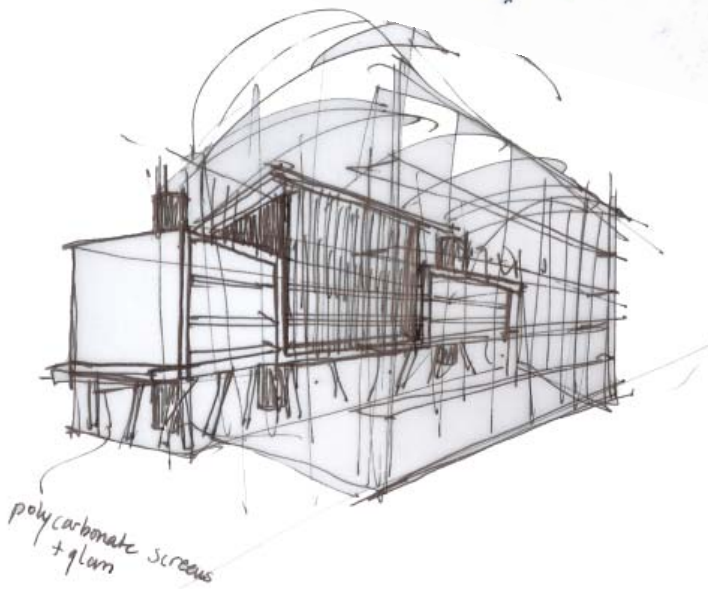


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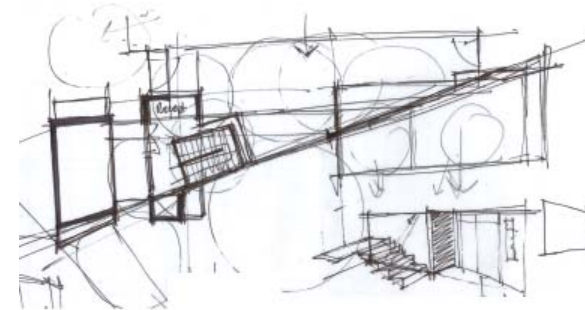


Figure 10.52

Concept Model Development

Concept Model FOUR

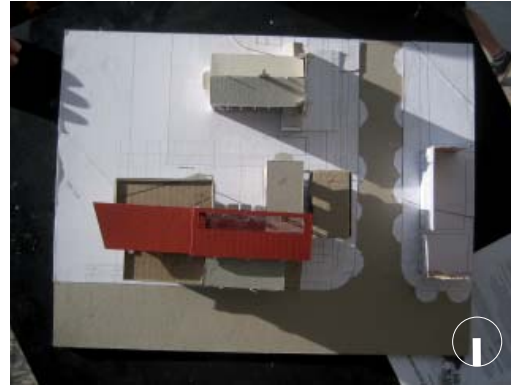


Figure 10.53



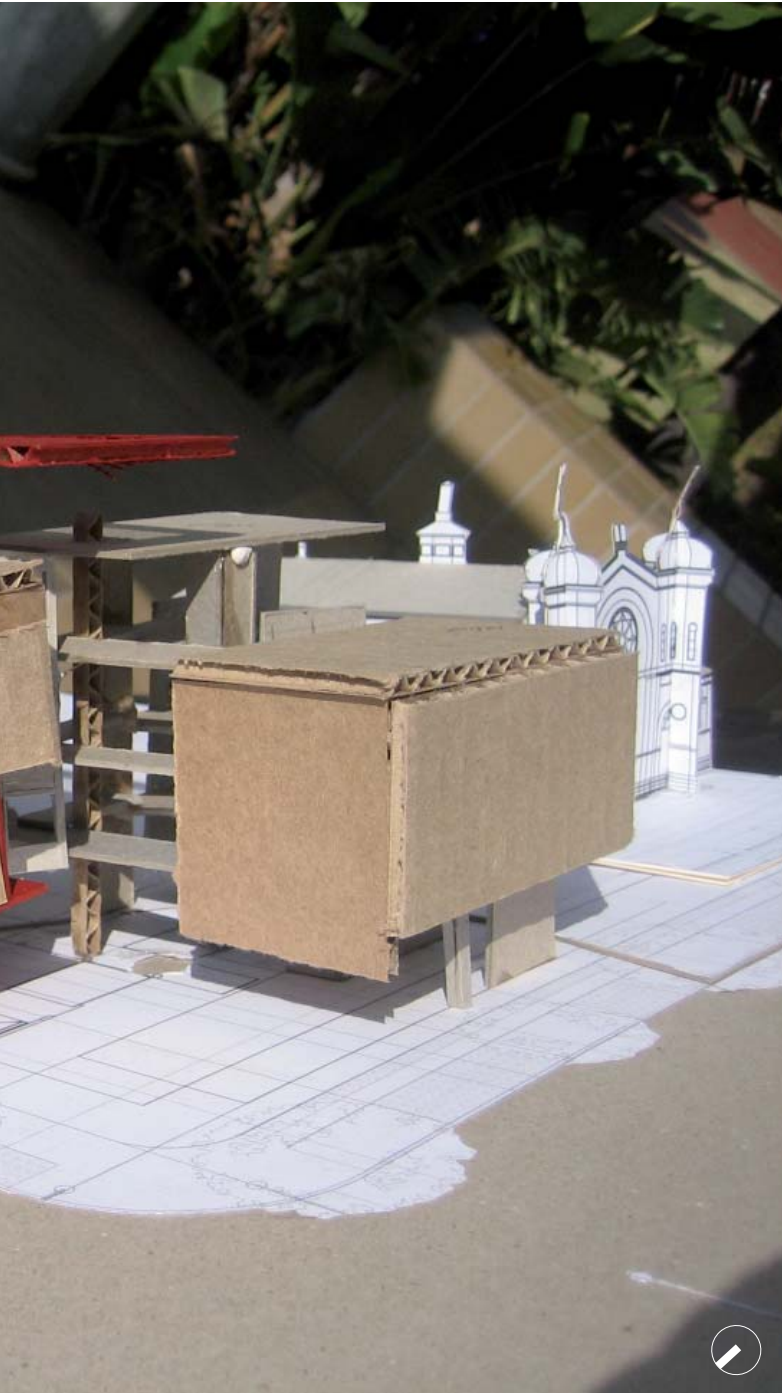
Figure 10.54



Figure 10.55



Figure 10.56



The final concept model was built as part of the technical investigation to determine the position of openings in the northern facade in order to allow northern light to penetrate through to the southern courtyard. The investigation also examined the position and height of the roof. Several options (coloured in red on the model) were considered and explored by placing the model on the solarscope and documenting the results. Ultimately none of the original options proved to give the desired result.

The circulation bridges remain exposed while the western circulation tower is in its previous position but has become a design element itself. The eastern tower has been internalised. Services are located on the eastern and semi-private edge of the building.

Access to the building is controlled and entrances are defined. The protruding staircase begins to address the threshold between the synagogue and the proposed building.

Concept Model Criticism

- The roofs are still partially unresolved
- facade detailing is still unresolved

Sketches

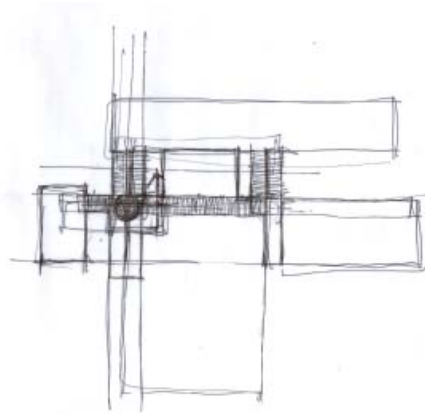


Figure 10.57

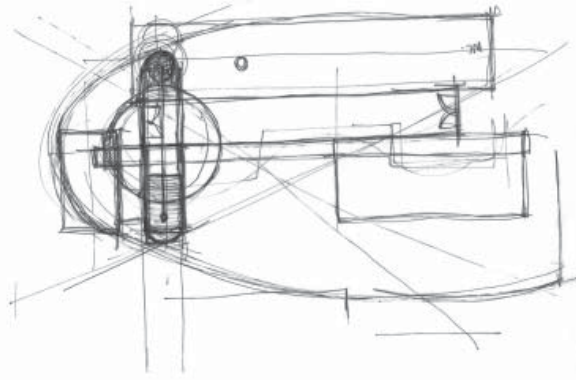


Figure 10.58

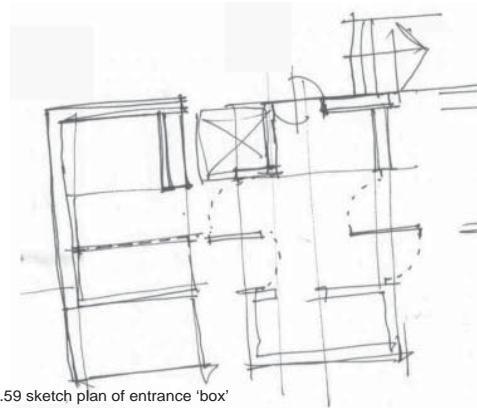


Figure 10.59 sketch plan of entrance 'box'

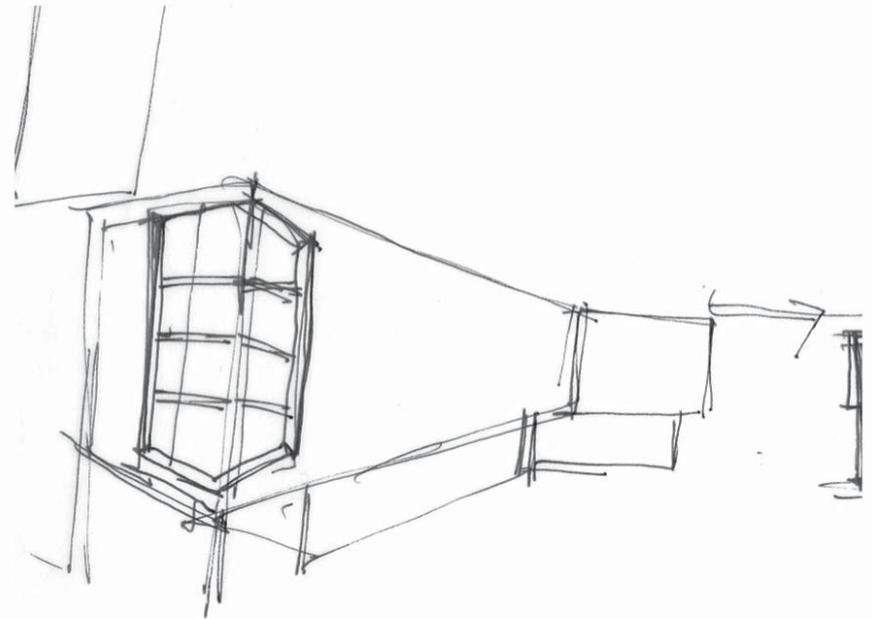


Figure 10.60

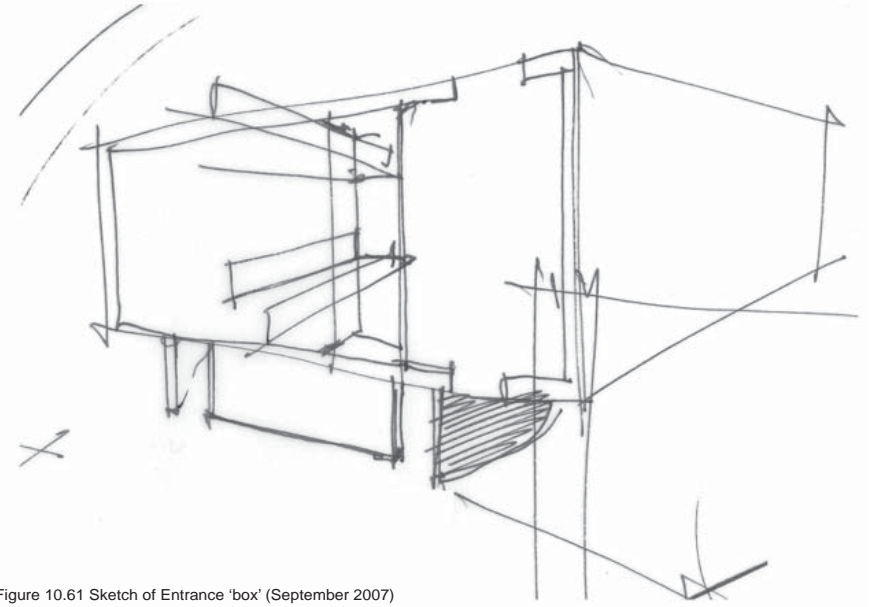


Figure 10.61 Sketch of Entrance 'box' (September 2007)

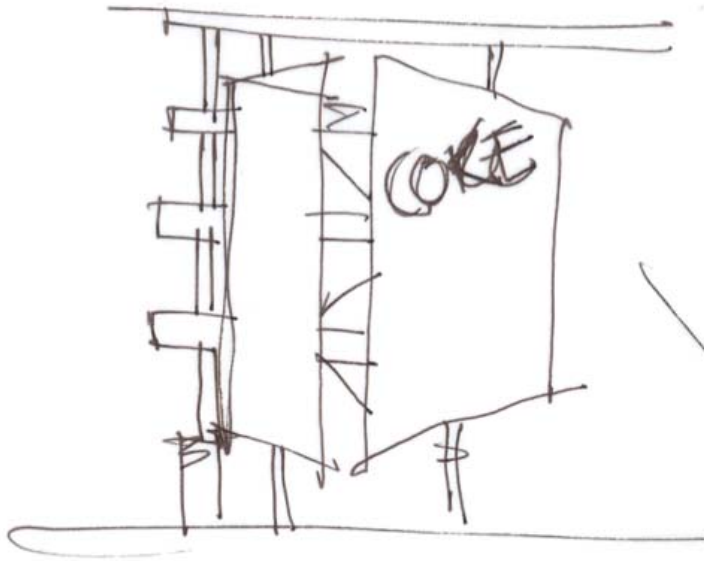


Figure 10.62

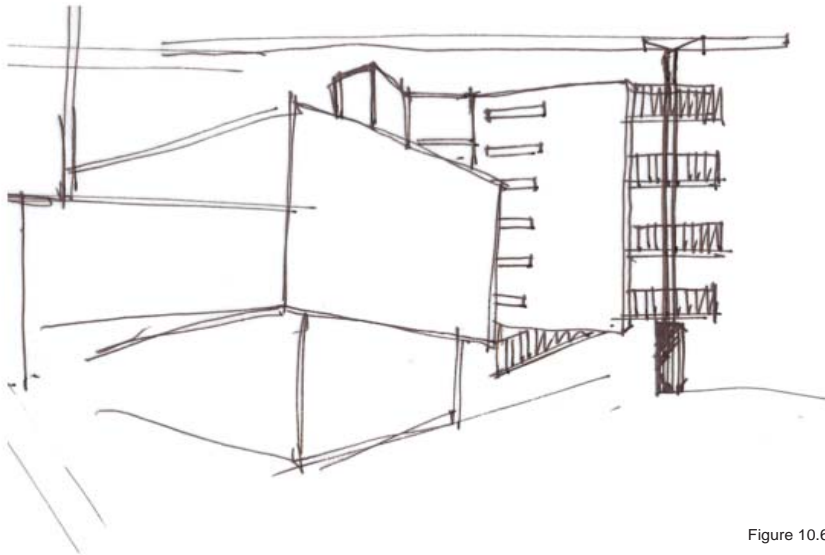


Figure 10.63

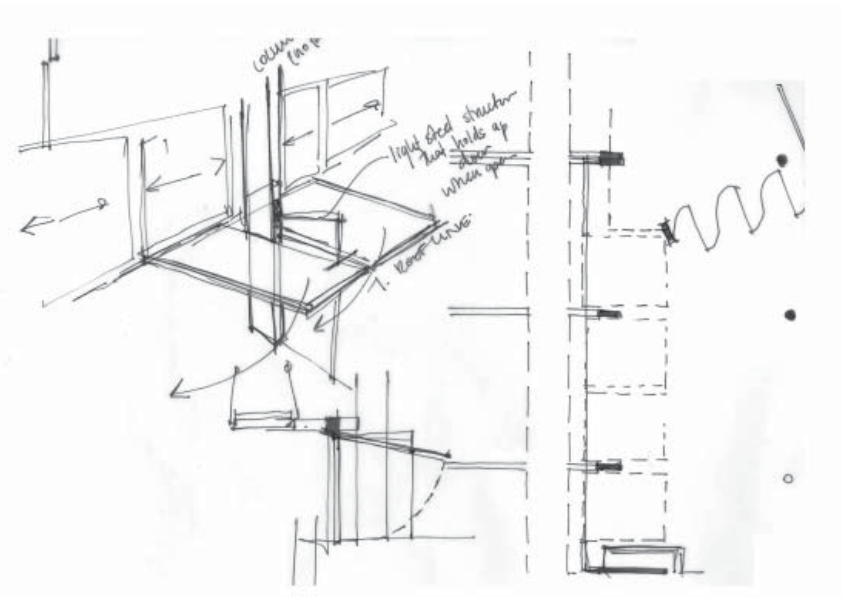


Figure 10.65 Sketch of threshold between indoor and outdoor space

