CHAPTER 08
DESIGN DEVELOPMENT

Design a thing by considering it in its next larger context - a chair in a room, a room in a house, a house in a community, a community in a city.

- Eliel Saarinen -

08 | DESIGN DEVELOPMENT

THE CITY OF MARABASTAD

The design developed from the response to the current housing situation in South Africa, the contextual understanding of Marabastad and the characteristics of the site.

The current housing situation and approaches highlighted the opportunity and necessity for developing an alternative housing model. This led the research into a theoretical investigation of the *Open Building* theory discussed in Chapter 5. This theory seemed to be appropriate in the setting of Marabastad, where adaptability and flexibility allow inhabitants to change and add to the existing fabric to accommodate the highly dynamic environment.

The project concept draws from the historical analysis of the series of thresholds that existed and still exists when moving from the public to the private realm and from the street to the bedroom. This element of Marabastad has remained constant over time. The *Springfield terrace* precedent analysis supports and illustrates the significance of thresholds defining spaces.

The building edges to the streets have public interfaces that contribute to the activity on the street. These interfaces are still considered part of the public realm. The shops are still relevant and used today, however, the spaces to the back of the houses are used for other purposes than the original bedrooms. These spaces can accommodate a variety of uses, such as shebeens, workshops and stores. The shop houses are mostly constructed of masonry and create the impression of permanence. To the middle part of the block, which used to be the backyard of the houses, but today is no longer relevant as backyards, have shed-like additions that can change and alter as user needs change.
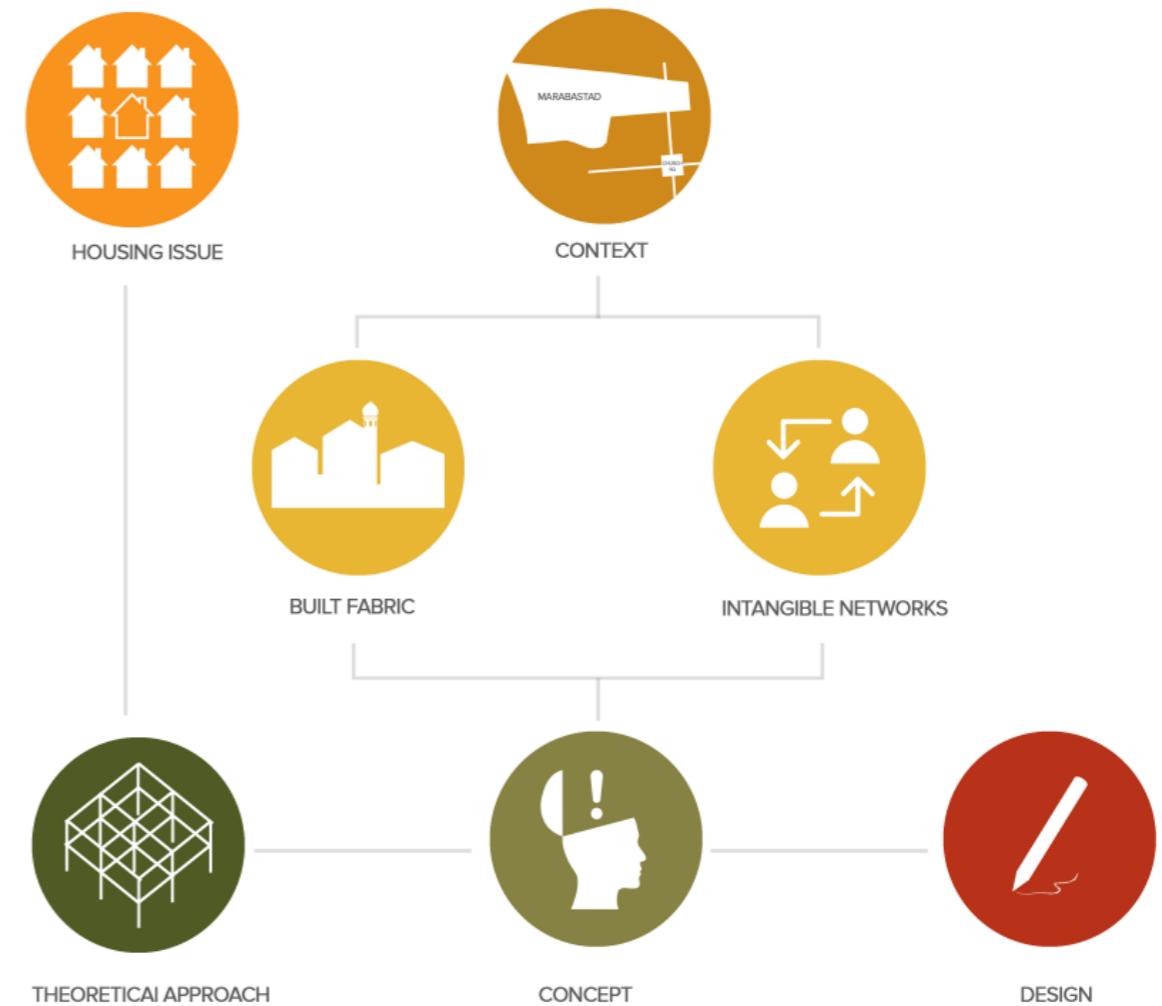

DESIGN INFORMANTS

HOUSING ISSUE   CONTEXT

BUILT FABRIC   INTANGIBLE NETWORKS

THEORETICAl APPROACH   CONCEPT   DESIGN

Figure 8.1 *Design development process from research to design*

SITE PLAN

Figure 8.2 is an arial photo with the mapping layer illustrating site features discussed in previous chapters. The first design developed from this site analysis, highlighting significant heritage structures, re-appropriating the abandoned market square in the middle of the block and recognising the highly active street edges filled with formal and informal trade.

Figure 8.2 *Arial Photo of selected site. 2015.*
Edited by Author.

DESIGN EXPLORATION 01

The first design set out to increasing the density of the site through an urban *infill* project which relates to context scale and architecture. This led the design to sit at the mirror end of the heritage response scale (discussed in Chapter 7 *On Site*) and have little architectural innovation. In maintaining access and movement throught the site, significant heritage strucutres identified on site were isolated and integration of these structures should be reconsidered. Resultant spaces framed by buildings have good spatial qualities and comfortable scale relationships but it lacks hierarchy of the different public and semi-private spaces.
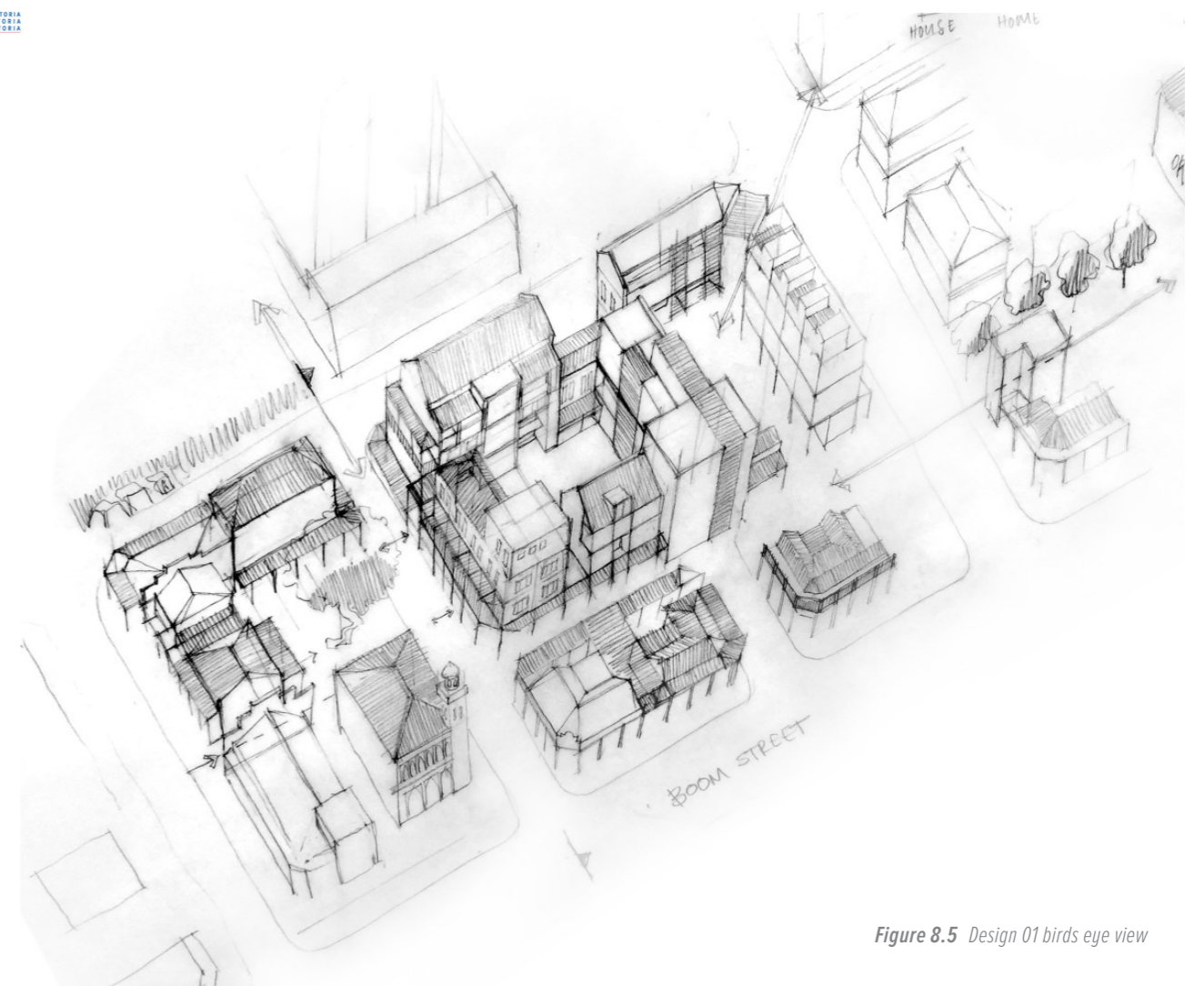

Figure 8.5 Design 01 birds eye view

Figure 8.3 Design 01 section

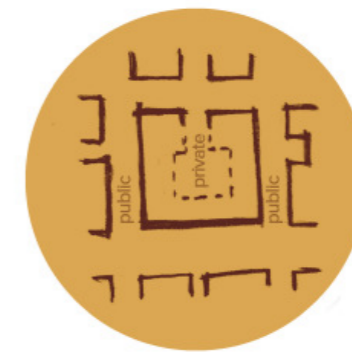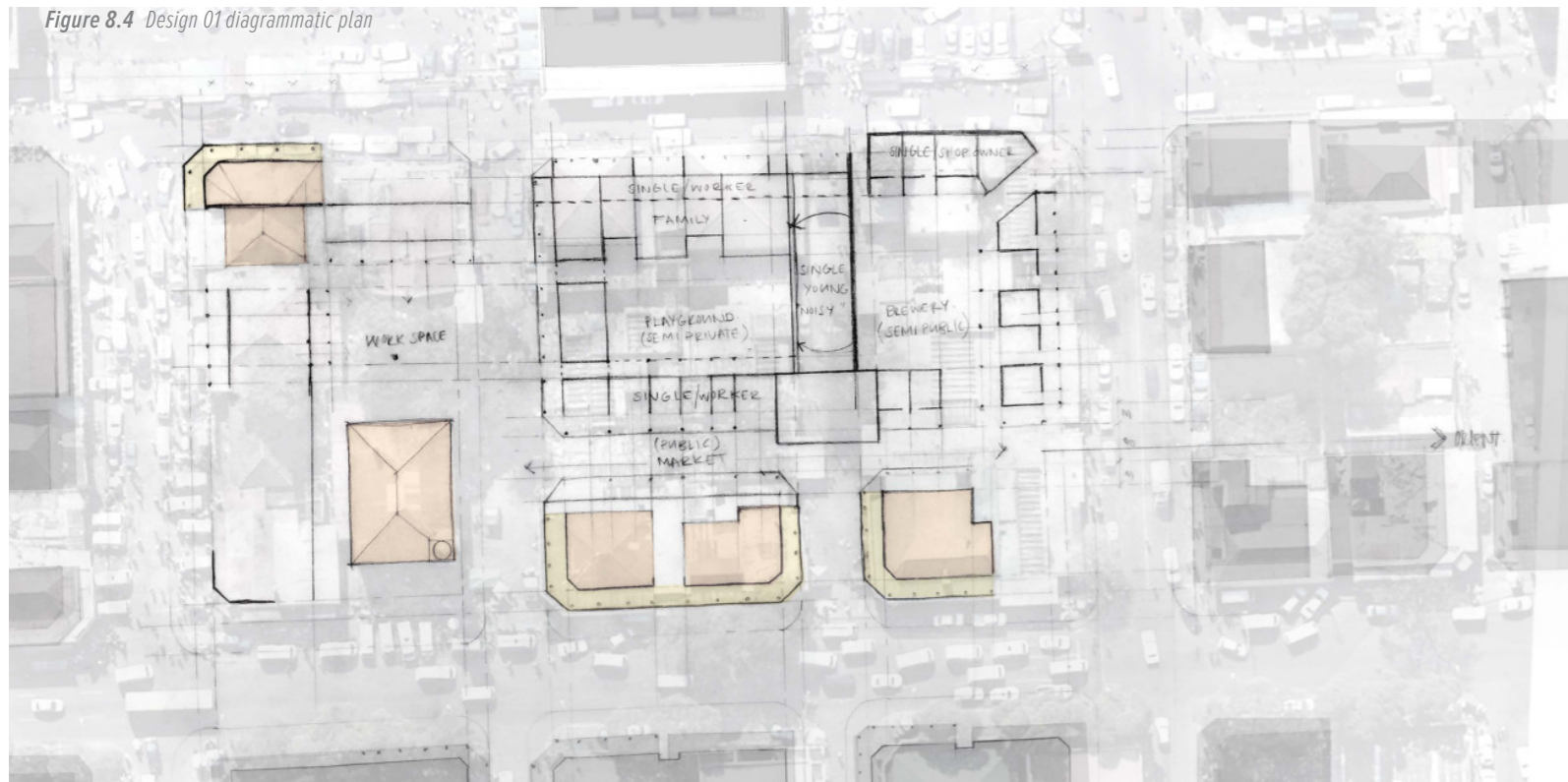*Figure 8.4* Design 01 diagrammatic plan

Figure 8.6 The edge concept

RESPECTING THE EXISTING

To ensure that the proposal is in harmony with the strong heritage character of Marabastad, an edge condition is created that becomes the external enclosure to create an overall building that relates to the existing conditions and architecture.

DESIGN EXPLORATION 02

The second design focussed on creating diversity in housing opportunities. In response to the high activity levels on the street, edge units were populated by formal shops with their housing units on top. The active north-east part of the city block was developed as the food court in response to existing activities. In order to create a semi-public space for the family units to the center of the block, the student housing was situated to seperate the active public edge from the semi-private couryard space. The west part of the block was allocated to the Homeless centre and Womans skills development centre. The site was devided into three parts; learning/ working, living and eating.

From the sectional development the design had lost the comfortable public space relation to scale of buidlings achieved in the first design. The concept of grouping services, circulation and shared space were explored but needs further development. Roof structures need attention and development.
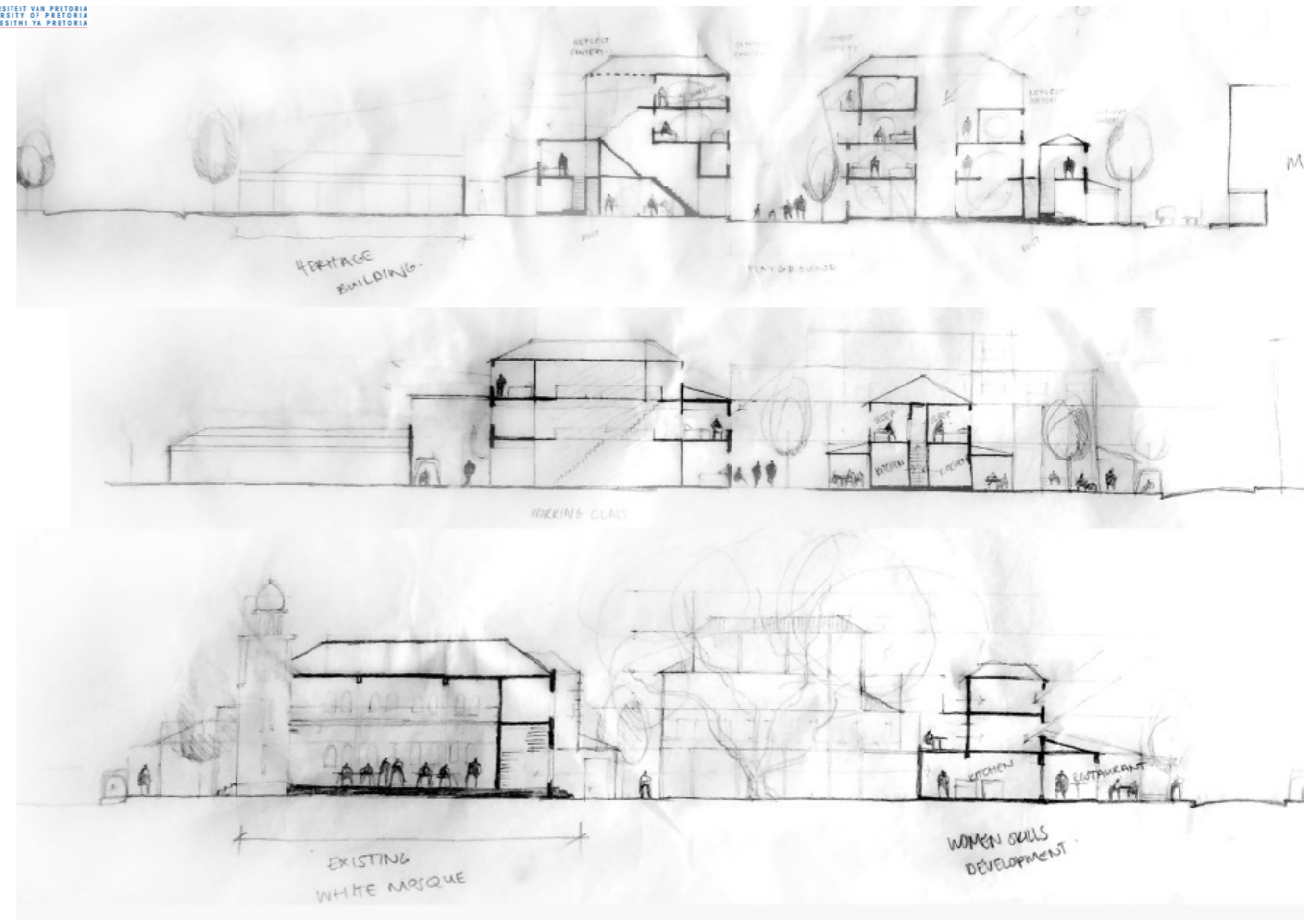

Figure 8.8 Design 02 sections
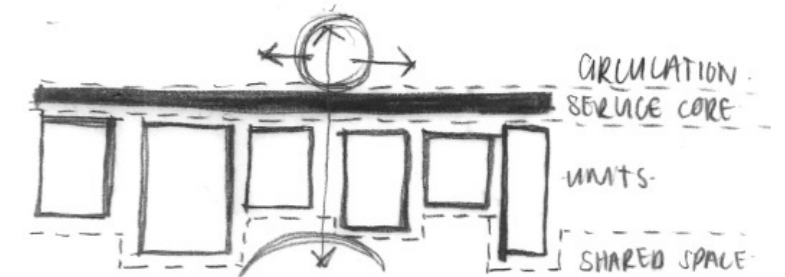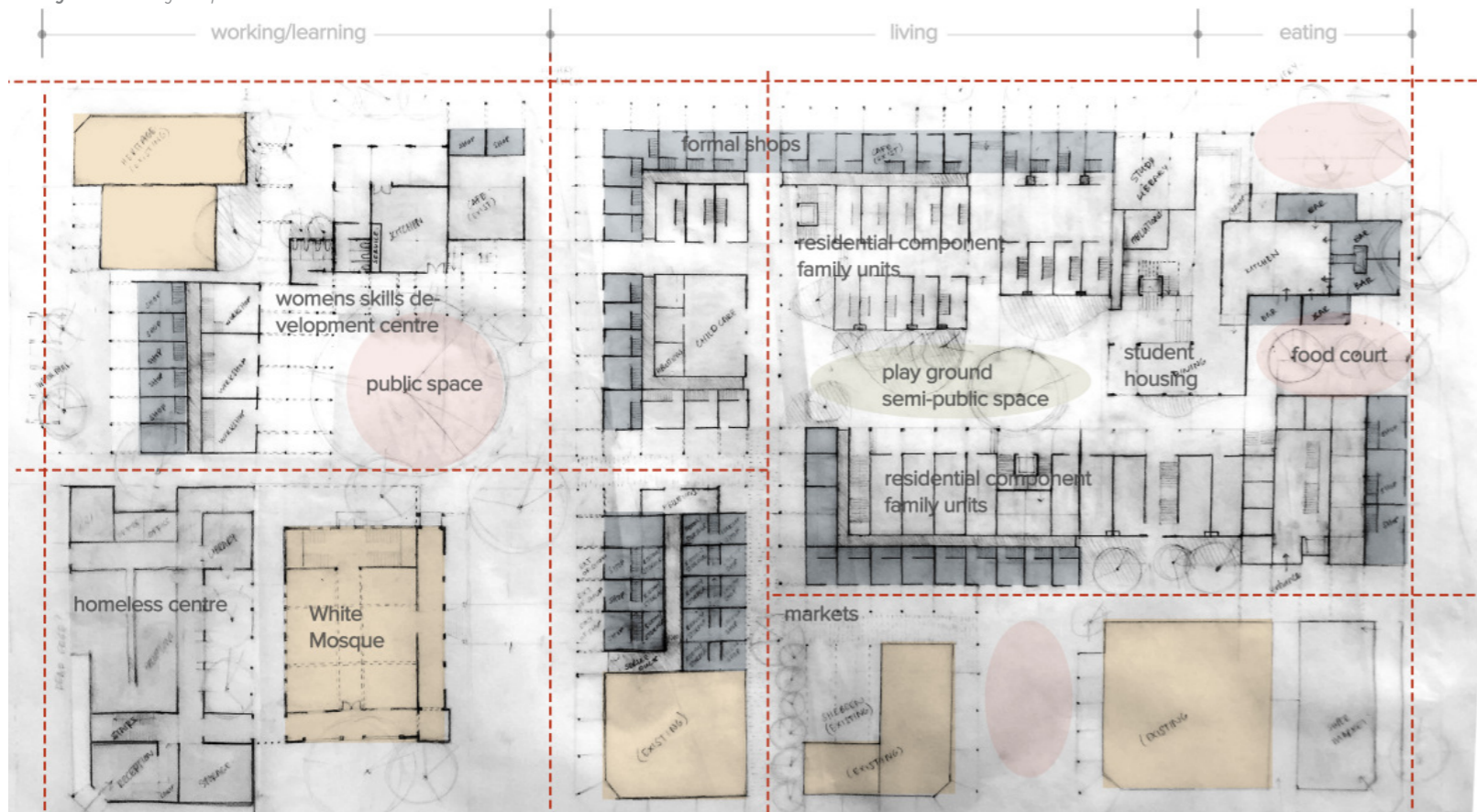
Figure 8.7 Design 02 plan

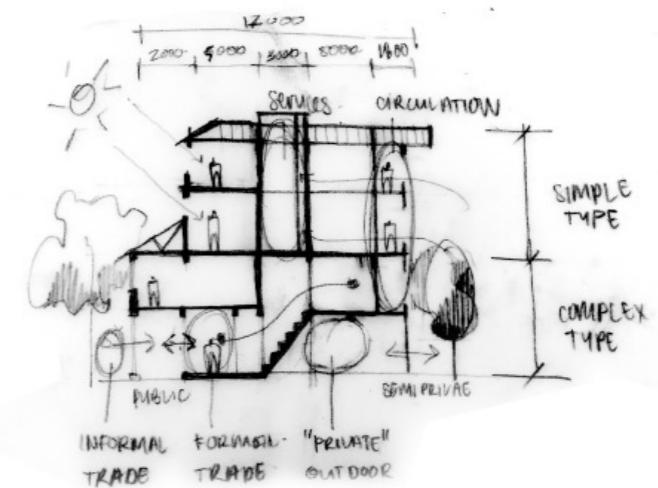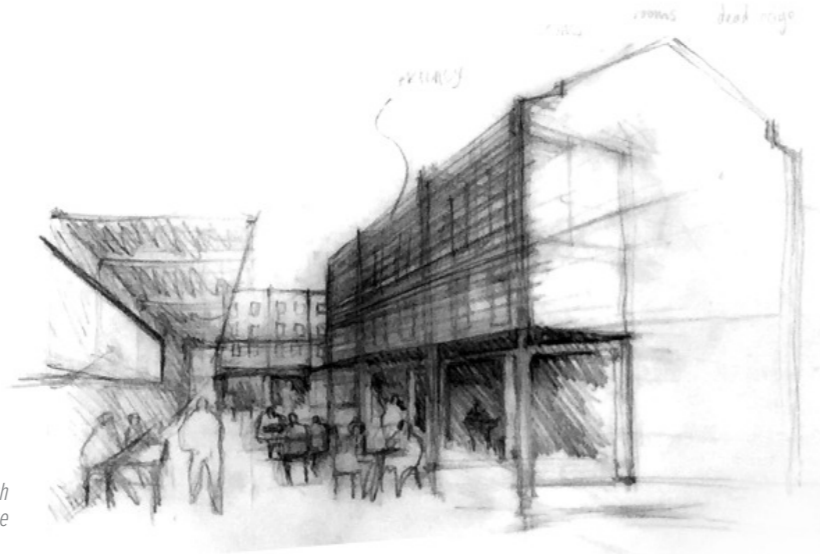*Figure 8.9* Grouping of circulation, services, units and shared space

Figure 8.10 Threshold series from street (public) to the variety of unit types (private)

Figure 8.11 *Public space - food court with restaurants/ bars framing a the public space*

Figure 8.14 *Re-appropriated Market stalls, low intimate covered walkway.*
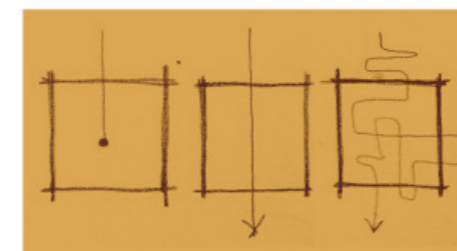
In response to the diversity of users and activities in Marabastad, this desing iteration explored the different opportunities of programme and public space. These sketches illustrate the spatial qualities of each.

Figure 8.12 *Semi - public space - student housing spilling out onto outdoor seating*

Figure 8.15 *New public space concept*

CREATING NEW PUBLIC SPACE

Because the public realm (street) is dominated by formal, informal retail and fast-moving traffic, there is little space to repose and escape the rush. With the reintroduction of the residential component, this type of public space becomes necessary. The building edge is used to frame a variety of inner block public spaces dedicated to the pedestrian.

Figure 8.13 *Semi- public space - inner courtyard space that becomes the shared space and playground for the family units.*

DESIGN EXPLORATION 03

The third design exploration illustrates the layers of iterations before the final design. The process started in reaction to design two that was sterile in its plan development. The approach was to simplify the number of individual buildings and to create an overall block design. The relationship between the formal and the informal was explored and had a significant impact on the approach in the final design.

Model building assisted in the spatial understanding of the proposal and illustrated the uncomfortable massing of the proposed scale of the buildings in relation to the existing buildings, one another and resultant open spaces.
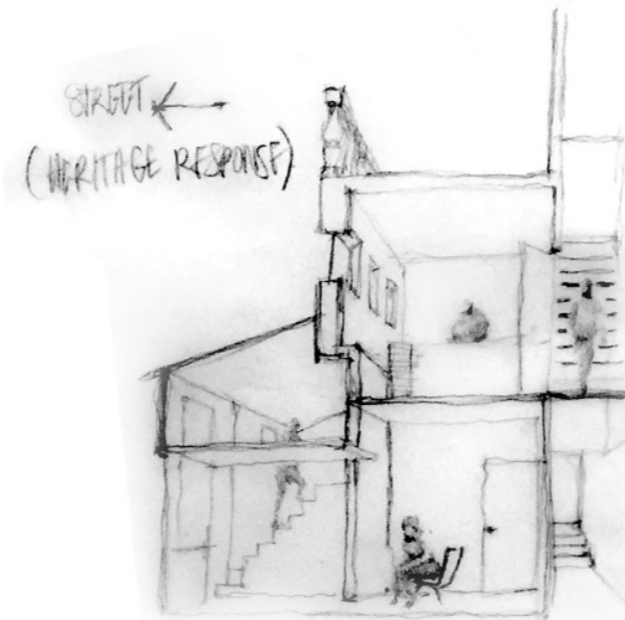

Figure 8.18 Progress work layers of plan iterations and model

Figure 8.17 Shophouses on street edge should respond to heritage character of the site

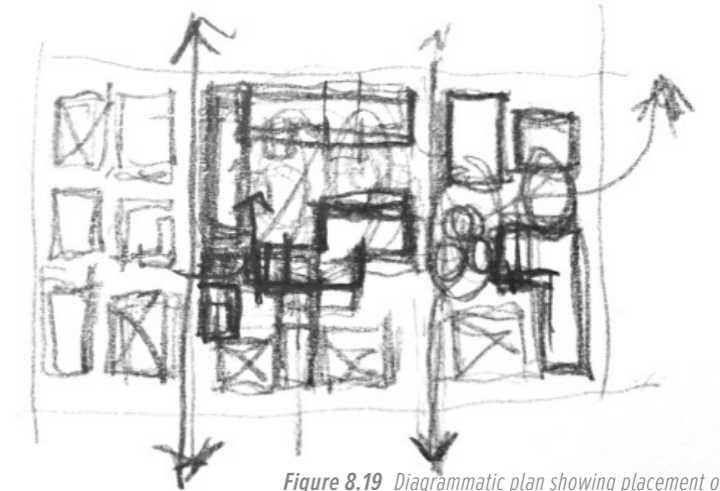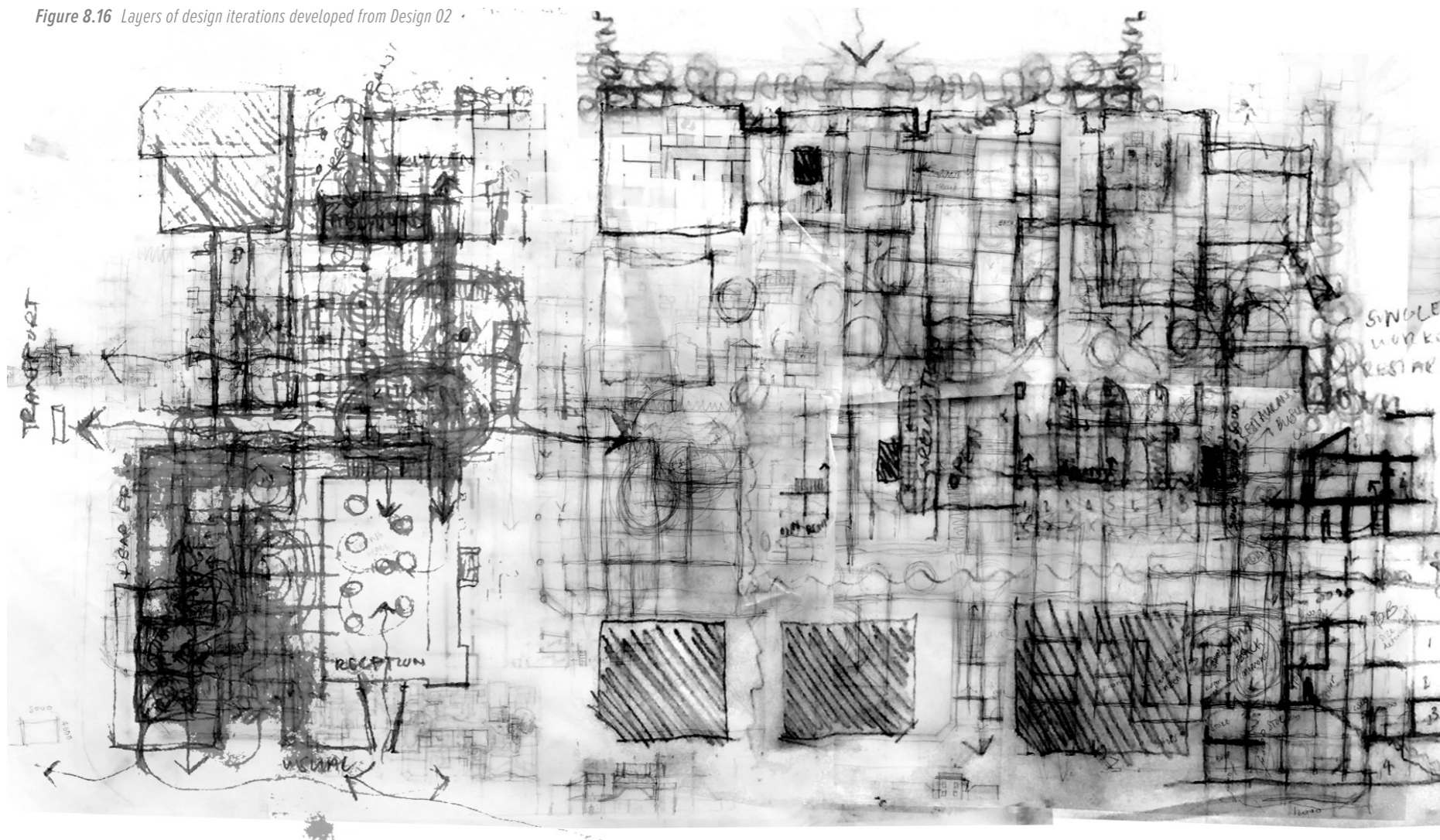*Figure 8.16* Layers of design iterations developed from Design 02

Figure 8.19 Diagrammatic plan showing placement of buildings and movement through site

Figure 8.20 Diagramme illustrating exploration of the formal and informal trade
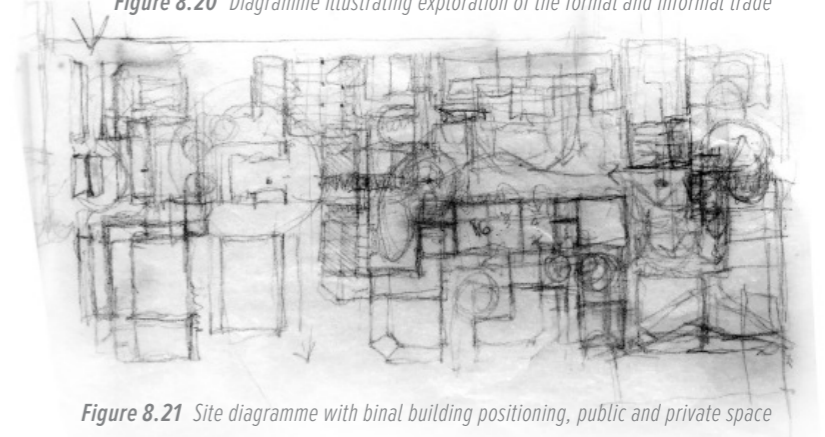

Figure 8.21 Site diagramme with binal building positioning, public and private space
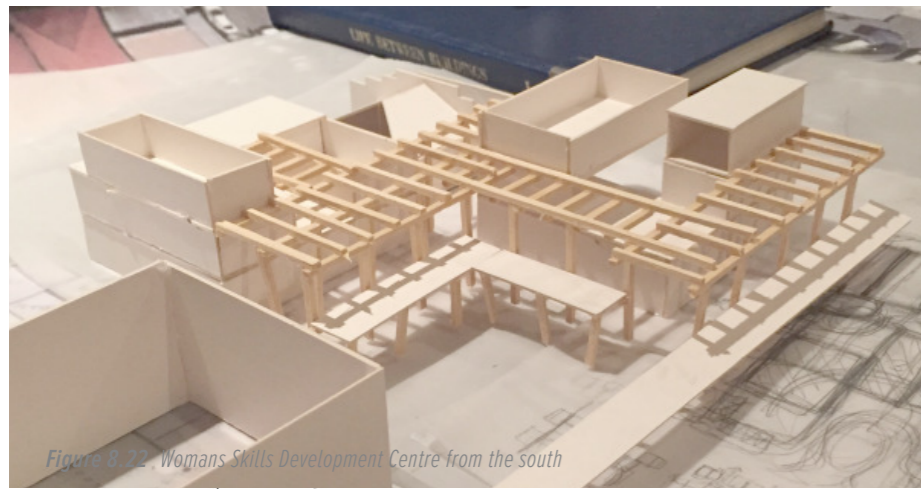
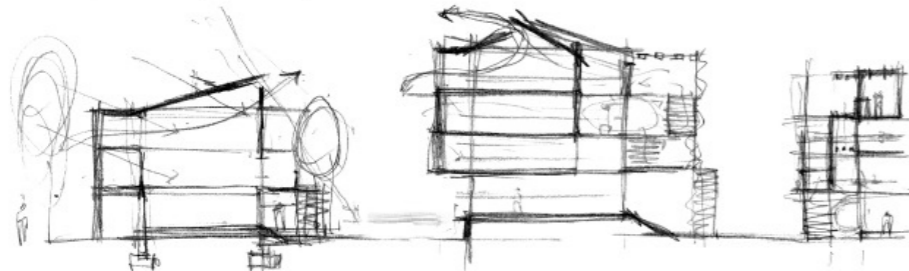Figure 8.22 Womans Skills Development Centre from the south

Figure 8.23 Roof exploration and resultant space relationship to building scale

Figure 8.25 Model of entire site showing massing of the proposal from nothern side

Figure 8.26 Perspective from courtyard space

Figure 8.24 Model of entire site showing massing of the proposal
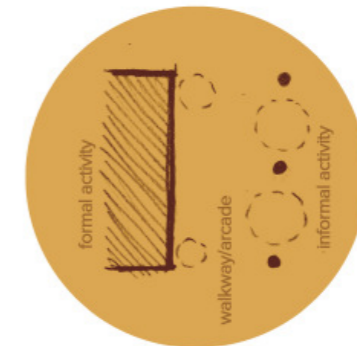

Figure 8.27 Negotiated Space Concept

SPACE FOR EVERYONE

Spatially, the proposal emanates from the existing activities and interactions in the public realm. The proposal strives to preserve the diversity and vibrancy of the streets in Marabastad. The covered arcade is crowded with pedestrians making their way through formal and informal vendors occupying the walkway. This relationship between formal and informal vendors is mutually beneficial and encouraged. The project acknowledges this social contract between the two and strives to integrate the informal vendors in the spatial design in an attempt to create better public space, i.e. walkways.
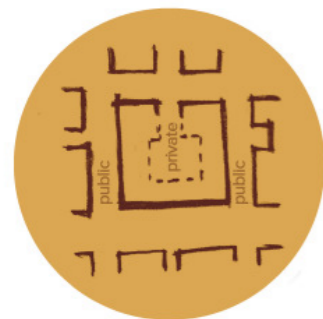
CONCEPT

The conceptual approach developed from the idea of active street edges, which are evident throughout Marabastad, and the adaptable, more private spaces moving to the inner part of the block.

The edges of the project will represent the strong heritage character of the context; the existing architectural and spatial language. This fixed architecture creates an overall building envelope.

The project embraces the idea of users being able to adapt spaces to accommodate their needs. The inner part of the block is spatially intended to create controlled semi-private and private spaces, which allow inhabitants to take ownership of and change the spaces.

The terms used in the *Open Building* theory, namely *support* and *infill*, relate to Marabastad's existing heritage character and the additional structures constructed by the users. This theoretical approach is therefore highly relevant to Marabastad. Consequently, the concept allows the project to express and safeguard the heritage character of Marabastad and embraces how people currently change and inhabit Marabastad's space at the same time.

Figure 8.29 *Existing condition*
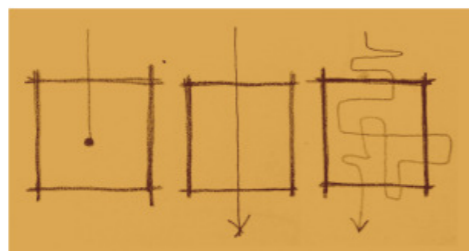
The edge concept   New public space concept   Negotiated Space concept
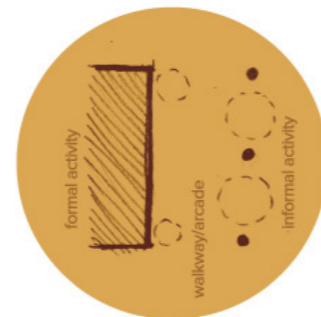
Figure 8.28 *Three design issues*

Figure 8.30 *Concept*

DESIGN (BEFORE TECHNICAL INVESTIGATION)

The design before the technical investigation aims to address the issues highlighted in the previous iterations.
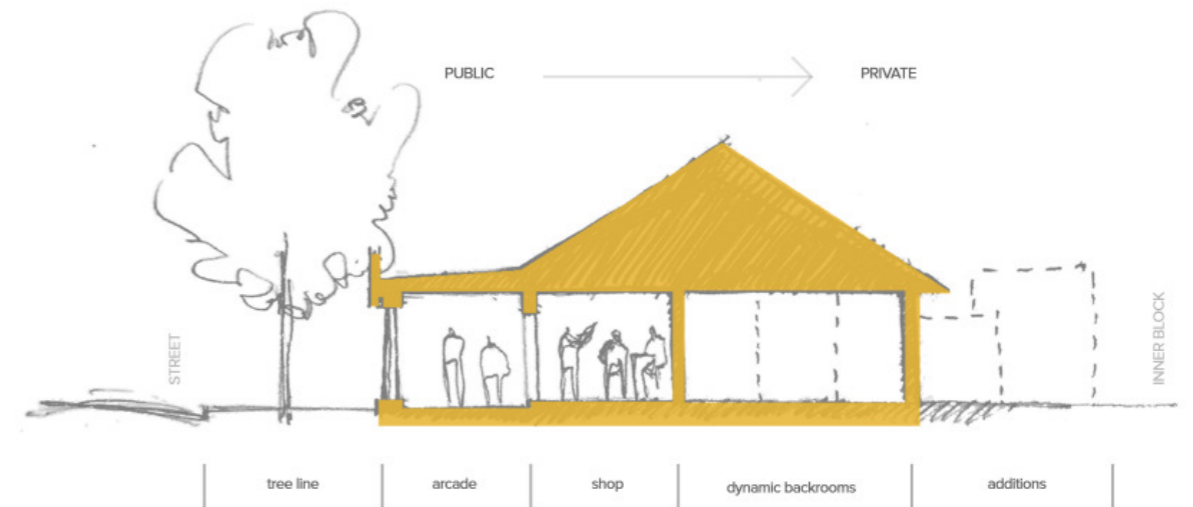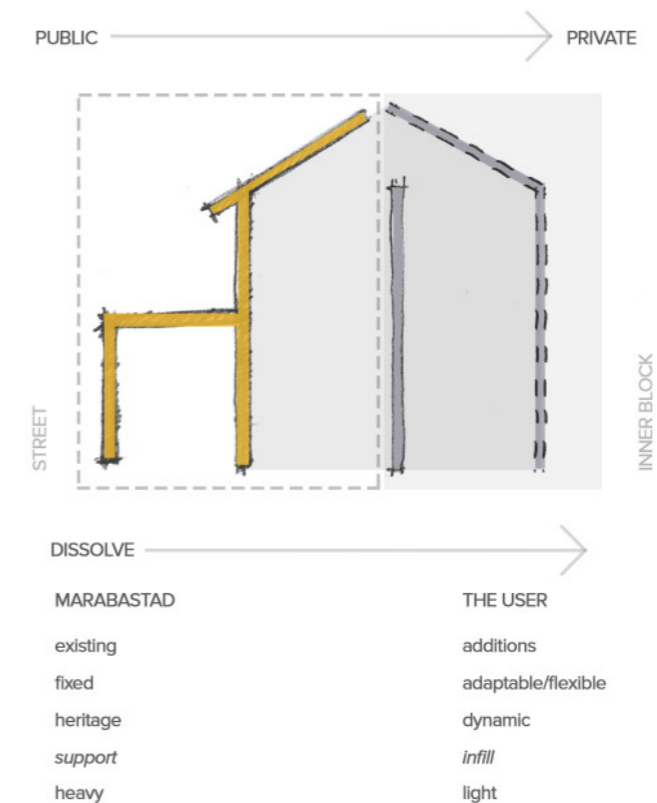
The design responds to the highly active edges and integrates the formal and informal activities on the street edge. New public spaces are created at the edges of the site and space created at the centre of the block becomes more private.

The model and sections illustrates the comfortable scale, massing and reslutant open spaces created by the buildings. However, the roofs are not well resolved and instead of creating a building as a whole, it breaks the desing in different sets of buildings.

The concept of *open building* is explored at this point and illustrated in the unit design development. At this point is clear that the edges are fixed, forming the *support* that allows the design to respond to the heritage character of the site.

Figure 8.31 Final design plan

working/learning

living

eating

MOGUL STREET

formal shops

womens skills
development centre

markets

residential component
family units

student
housing

A

workshops

play ground
semi-private space

food court

public space

residential component
family units

semi public
space

homeless centre

White
Mosque

North
Scale 1:100
GROUND FLOOR PLAN
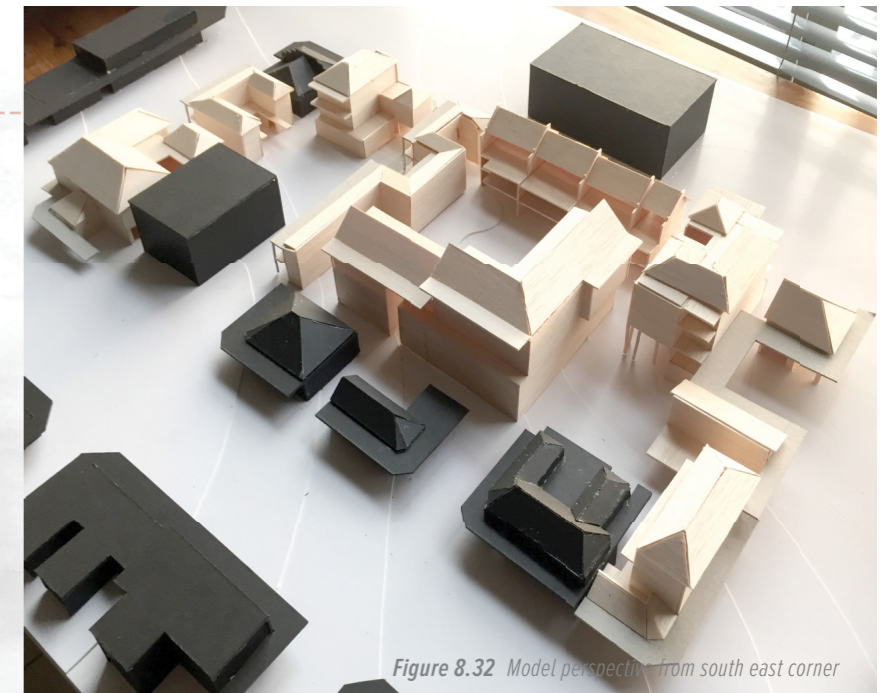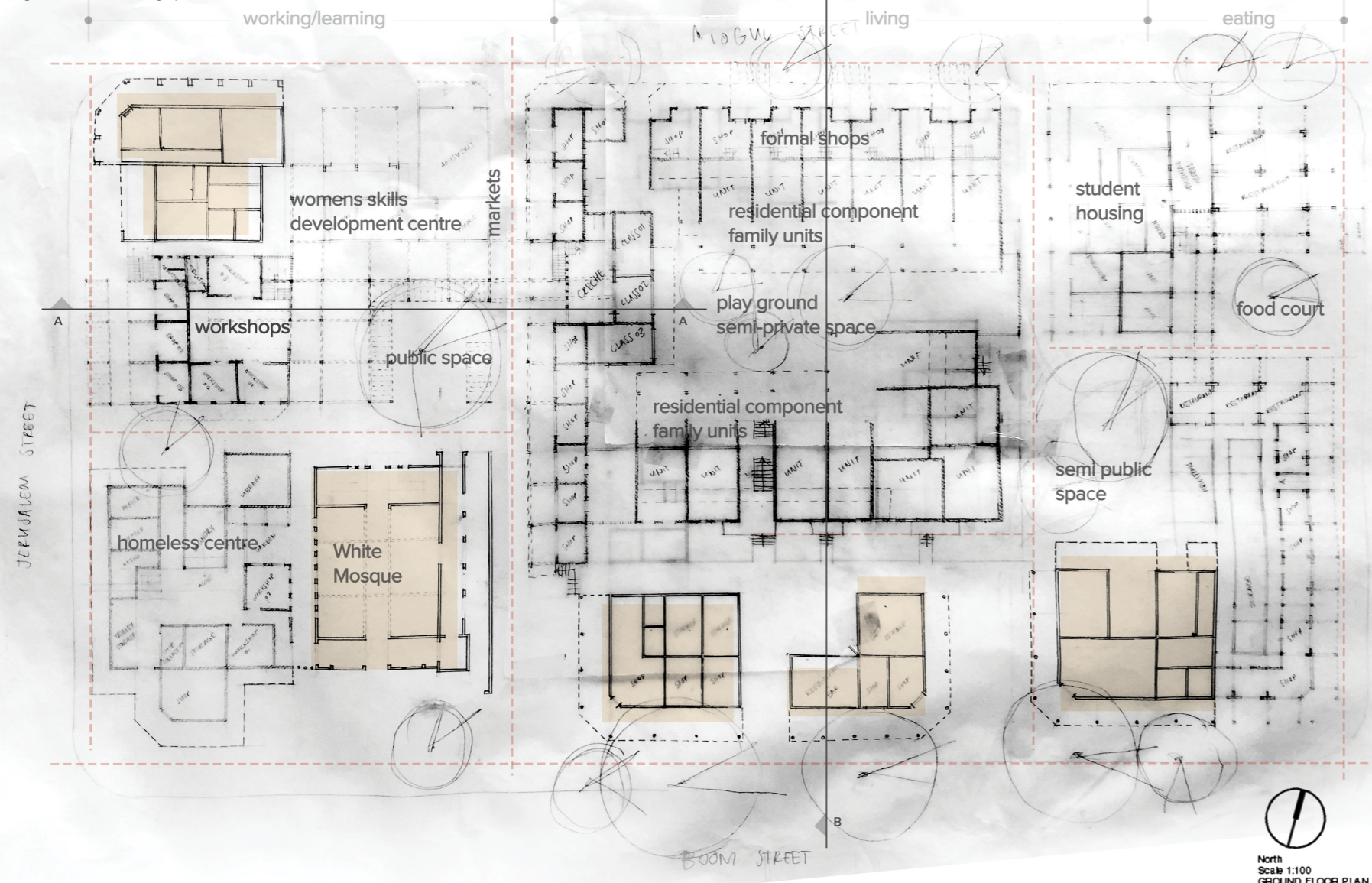
JERUSALEM STREET

BOOM STREET

Figure 8.32 Model perspective from south east corner
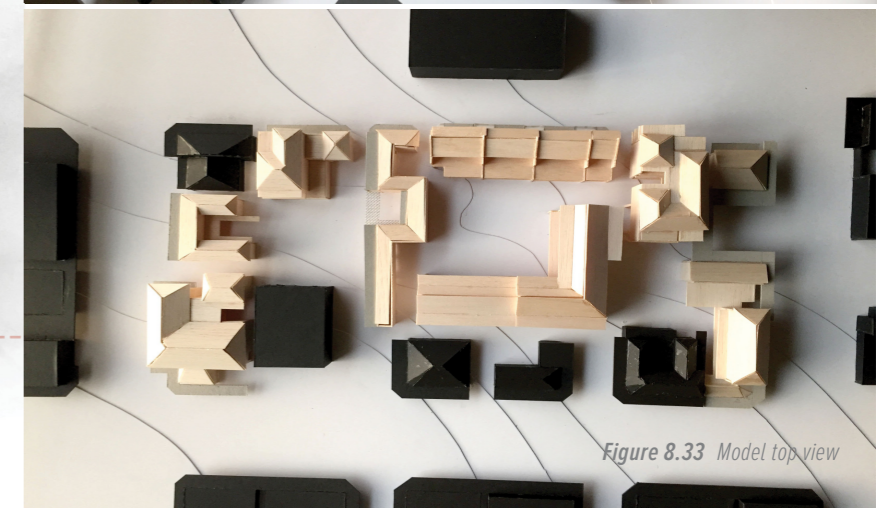
Figure 8.33 Model top view

road | walk-way | informal trade | walkway | formal shop living unit above | workshop | walkway | informal trade | walkway | creché playground | creché classroom | playground

public square | womens skills development centre | markets square | creché | residential component family units

Figure 8.36 Section AA

road | walkway | existing building | shebeen outdoor seating | walkway | housing unit | stoep | stoep | housing unit | 4000 formal shops | 2500 walkway | 1500 informal trade | road

existing building with shebeen at the back | residential component family units | play ground semi-private space | residential component family units

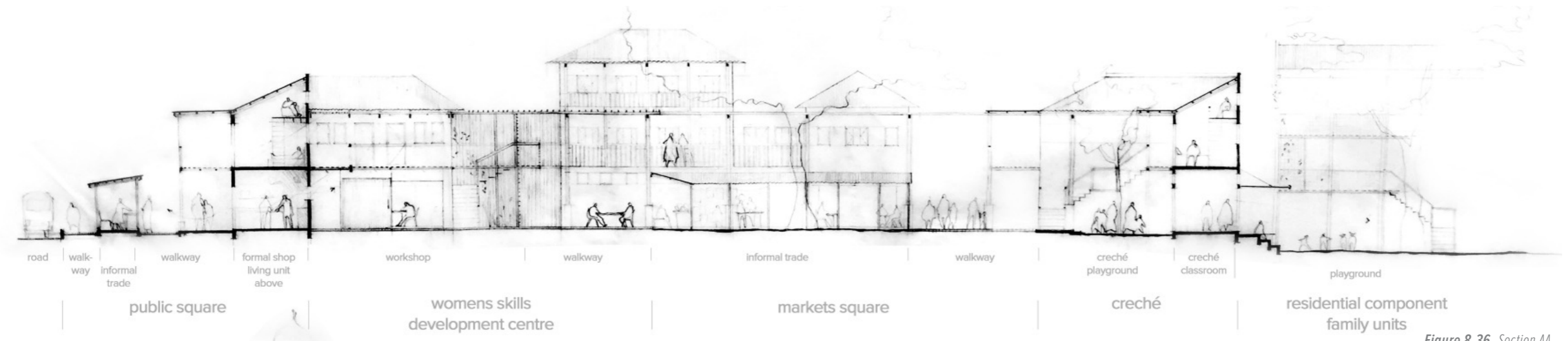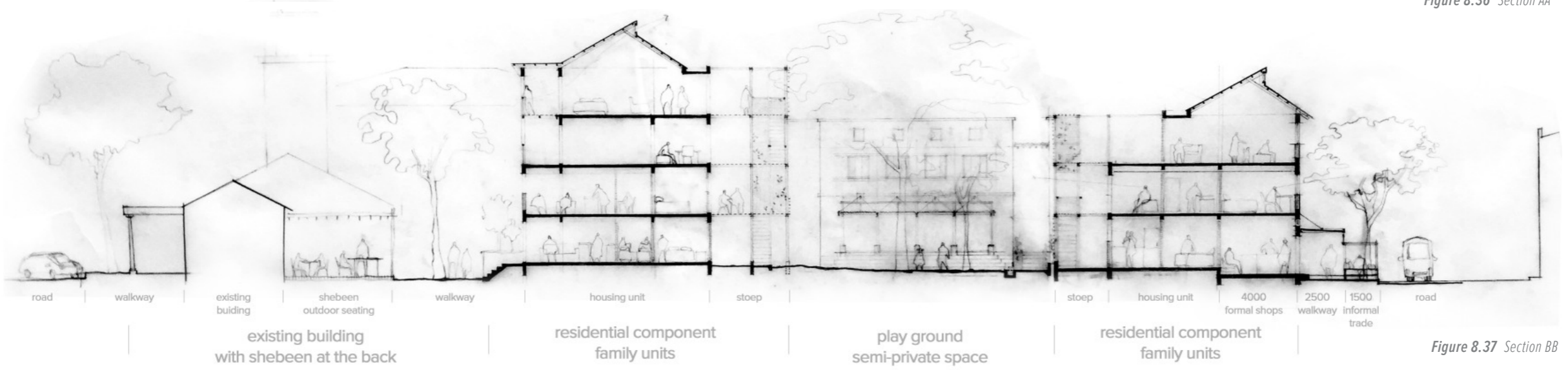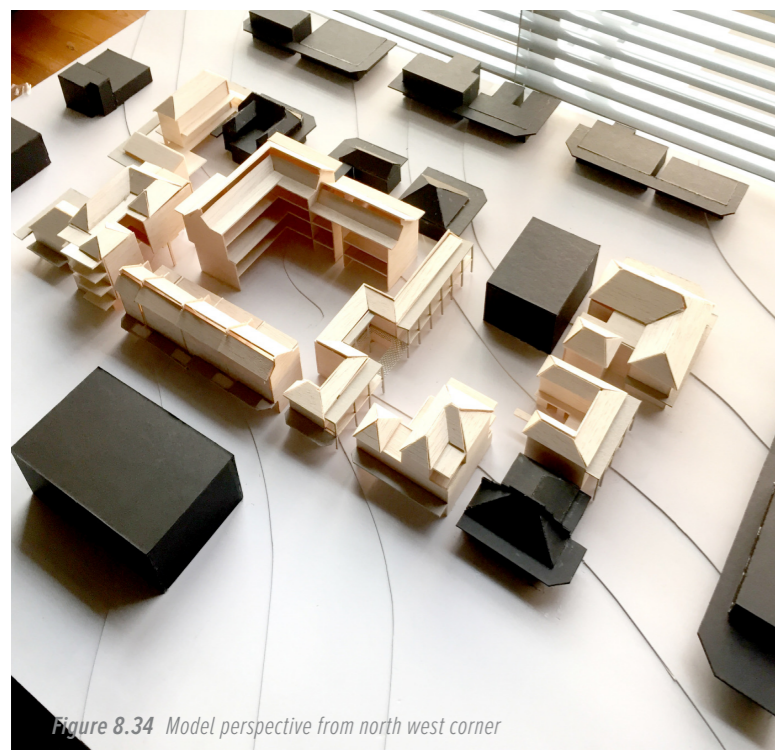*Figure 8.37* Section BB

Figure 8.34 Model perspective from north west corner

Figure 8.35 Model perspective from semi-rpivate courtyard space

Figure 8.38 Model perspective of markets next to Womens Centre
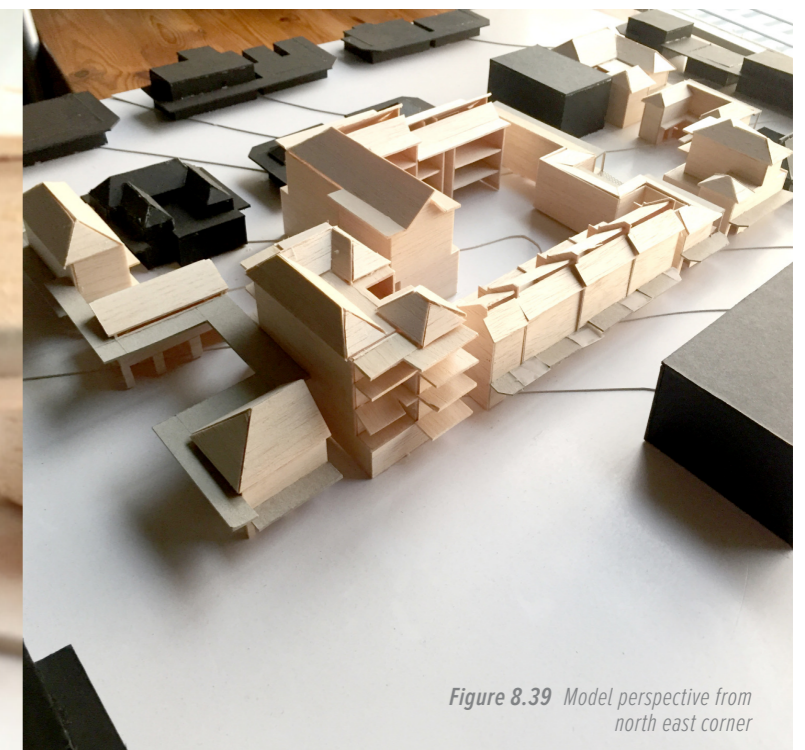
Figure 8.39 Model perspective from north east corner

Figure 8.40 Process work of unt design

THE FLEXIBLE - THE USER

A USER ORIENTATED HOUSING TYPOLOGY
Allowing users to adapt and add to their units can result in a collage- and shack-like architecture. This is embraced on the inner part of the block to create a heterogeneous architecture that results from the diversity and identity of users.

Figure 8.42 Open Building unit design with base unit and open space for user infill.

THE *OPEN BUILDING* (OB) THEORY

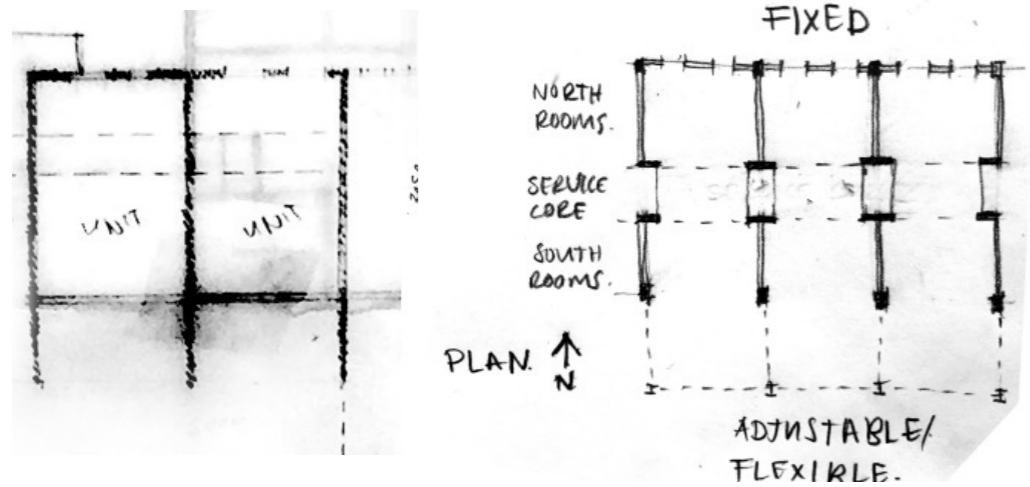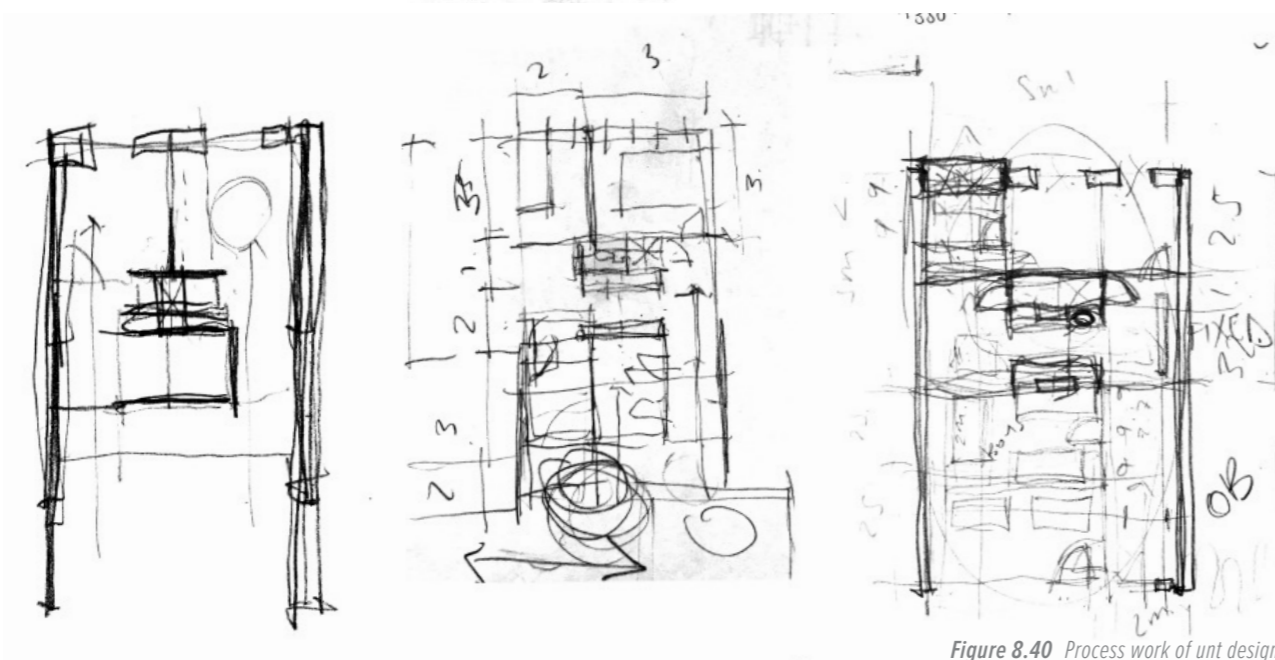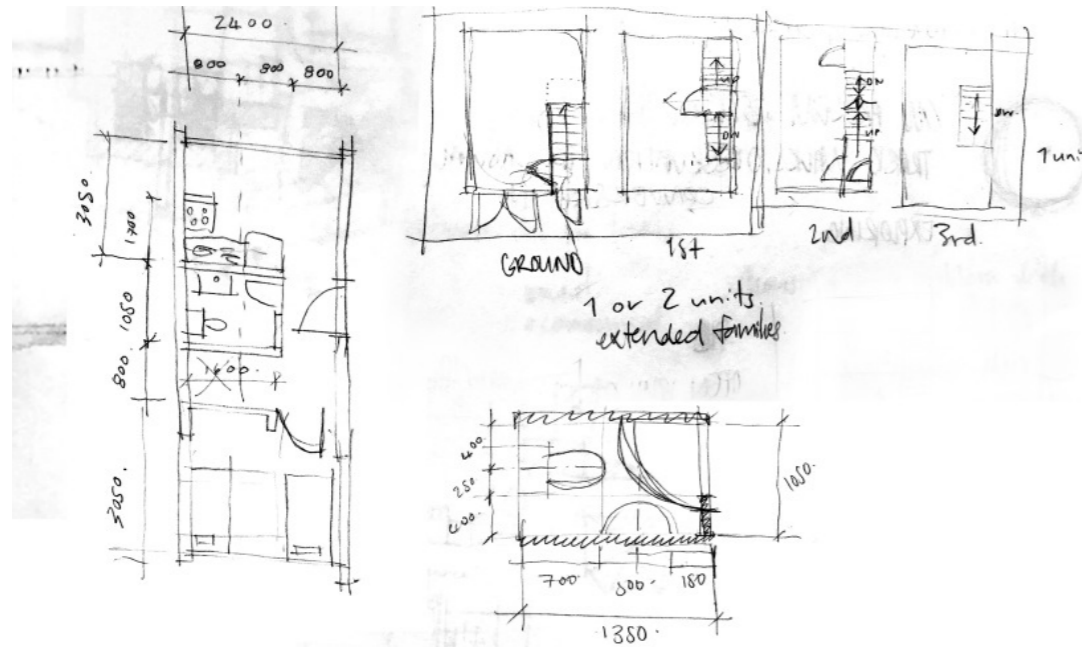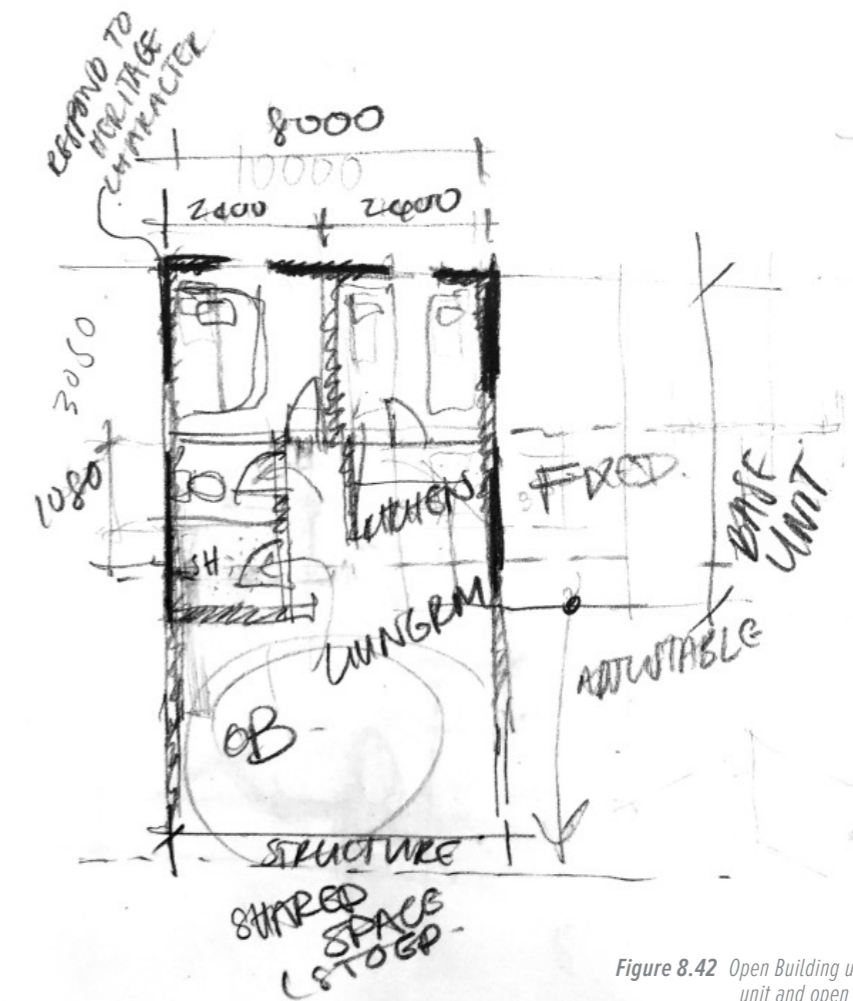The *Open Building* theory acts as theoretical support of the design concept. The terms defined by Habraken (1972), which were discussed in Chapter 5, namely *support* and *infill*, will be used to label that which is fixed and that which is flexible. The *support* consists of that which is completed before the occupant moves in. Habraken (1972) pointed out that *support* does not just refer to the structural elements. Rather, it is defined as that part of the building of which the architect has full authorship and control.

From the diversity of occupants identified in Marabastad (Chapter 4), the project intends to create a mixed-use, mixed-tenure and housing variety. The different levels of *Open Building*, regarding levels of control (Chapter 5), are applicable and applied based on the programme and housing opportunity.
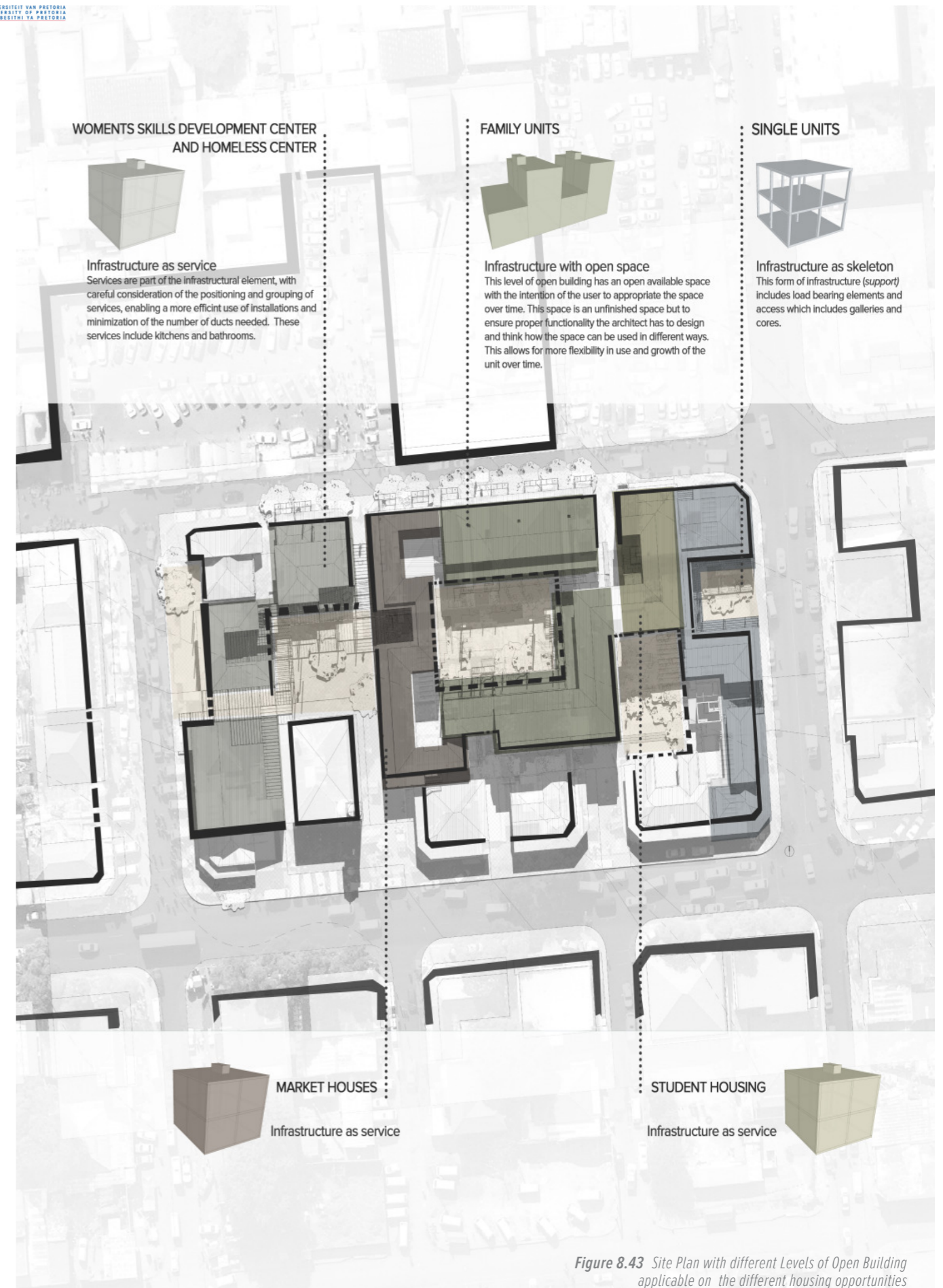

WOMENTS SKILLS DEVELOPMENT CENTER AND HOMELESS CENTER

Infrastructure as service
Services are part of the infrastructural element, with careful consideration of the positioning and grouping of services, enabling a more efficint use of installations and minimization of the number of ducts needed. These services include kitchens and bathrooms.

FAMILY UNITS

Infrastructure with open space
This level of open building has an open available space with the intention of the user to appropriate the space over time. This space is an unfinished space but to ensure proper functionality the architect has to design and think how the space can be used in different ways. This allows for more flexibility in use and growth of the unit over time.

SINGLE UNITS

Infrastructure as skeleton
This form of infrastructure (*support*) includes load bearing elements and access which includes galleries and cores.

MARKET HOUSES

Infrastructure as service

STUDENT HOUSING

Infrastructure as service

Figure 8.43 Site Plan with different Levels of Open Building applicable on the different housing opportunities

THE FIXED (MARABASTAD) AS *SUPPORT*

Because the project intervention acknowledges its responsibility towards the heritage character of Marabastad, the edge condition, including the street elevation and walkway, forms part of the *support*.

From the housing context of South Africa, discussed in Chapter 4, the standard governmental subsidy house was identified and used as the base model in an attempt to provide an alternative housing model. The 40 m² house with basic electrical services and plumbing is provided as the base unit and forms part of the structure. Therefore, the unit is habitable without additional *infill*. This project argues that, through the implementation of infrastructure with open space, the user can get more from what is currently provided using the same subsidy.
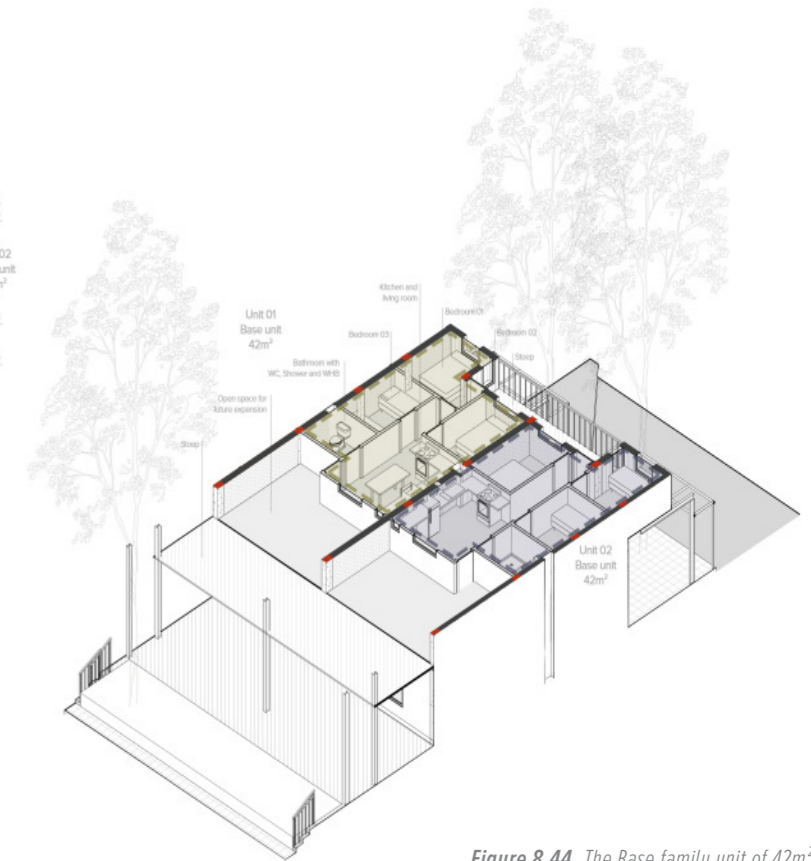
THE FLEXIBLE (THE USER) AS *INFILL*

Open Building affords different occupants with a variety of needs and mix of uses, and the opportunity to adapt their housing units. Because the additions and adaptations happen after the user moves into the unit, they form part of the *infill*. The *infill* is controlled by the occupant. As their financial situations and needs change, they can adapt the unit to better suit their immediate needs. This creates an opportunity for the user to take ownership of the unit, even though it might be a rental unit. Because the use of materials and construction of the *infill* are defined by the occupants, the result will be collage of materials. As Habraken intended, this will create an architecture that represents the diversity and individual identity of the occupants of such a diverse community.
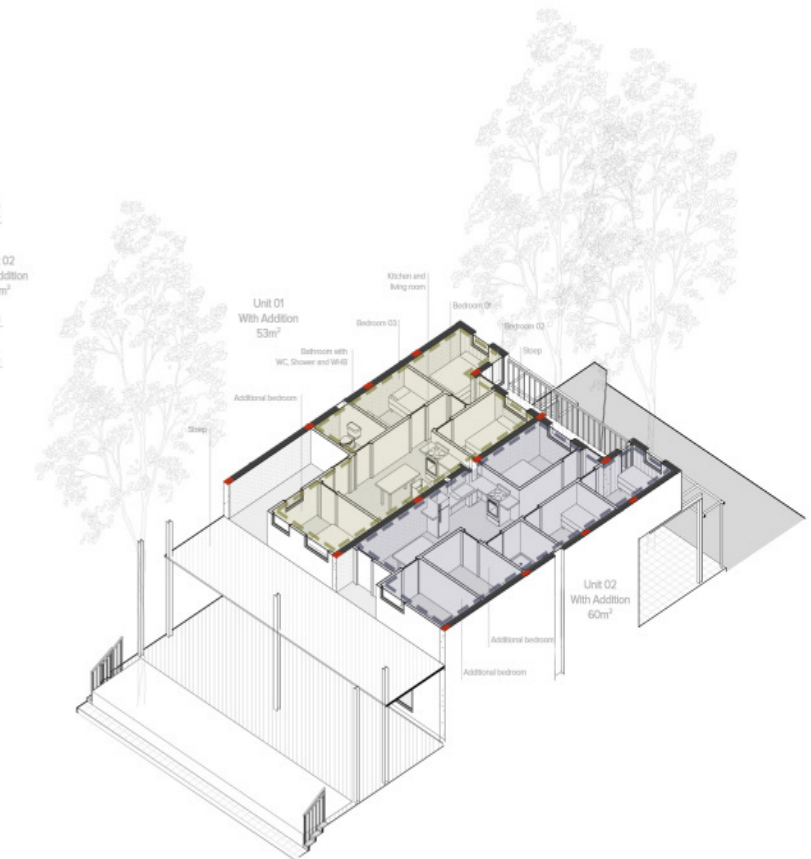

Figure 8.44 *The Base family unit of 42m²
(controlled by the architect)*

Figure 8.45 *TheFamily unit with additions
(additions made by the occupant)*