

# 06

## DESIGN DEVELOPMENT

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PLAN & GRID DEVELOPMENT  
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TECHNÉ  
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SBAT ANALYSIS

*The difference between an “architecture of the everyday” and everyday buildings lies precisely in the consciousness of the act of making architecture.*

(Berke, 1997: 226)

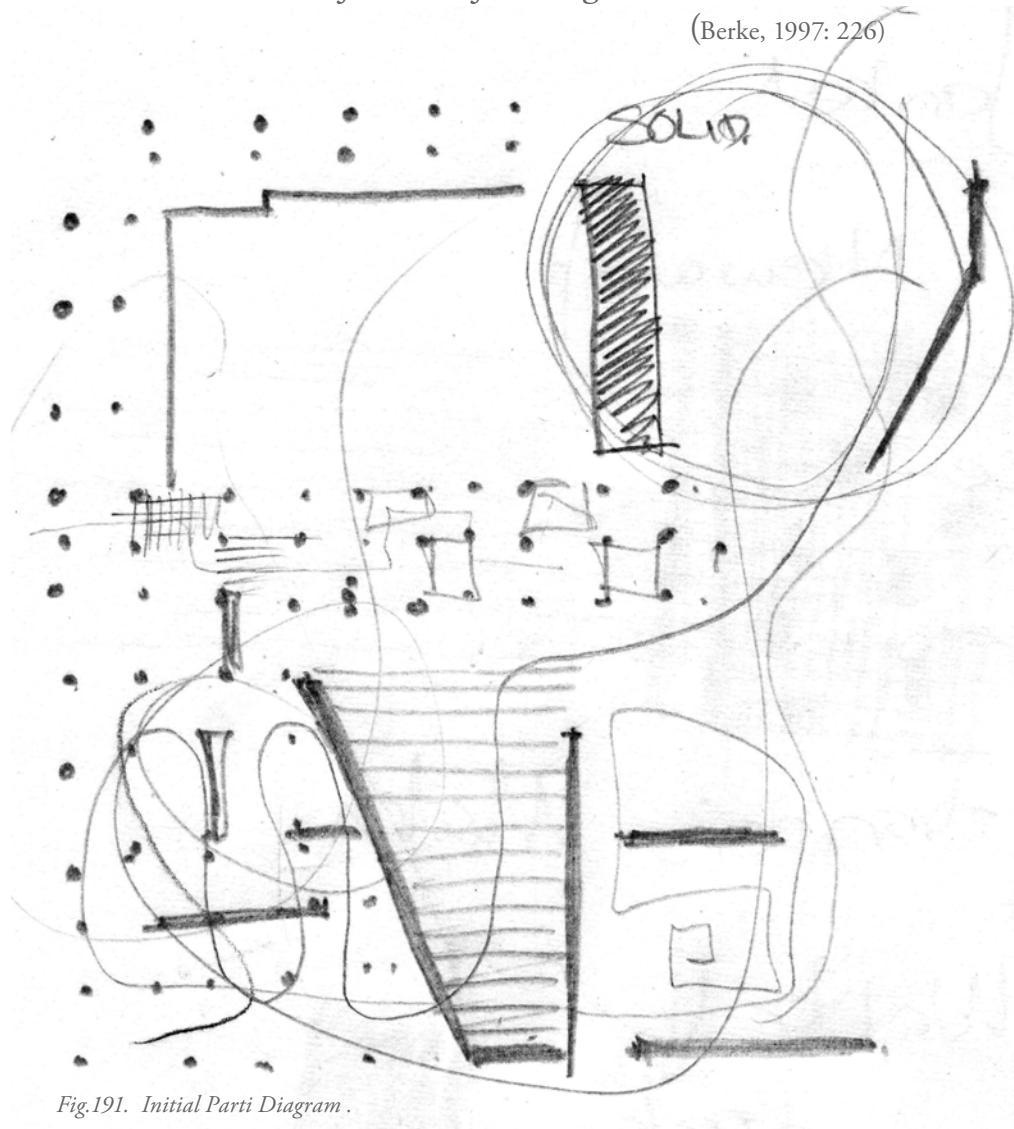


Fig.191. Initial Parti Diagram .

## An Occupation of Space.

Studying the occupation of space and how users interact with their surroundings, the interactions that occur on the most basic level starts to create a narrative of place.

The way traders occupy street corners and pavements, the way pedestrians walk along the pavements, which directions they move, where they stop to gather and where they stop to chat, these are the informants that start to define the identity of place.

How does the essay *The Everyday and Everydayness* by Henri Lefebvre (1997:32-37), as discussed in chapter two translate into understanding and decoding the *everyday* activities in Marabastad?

The way public spaces are designed allow certain forms, functions and structures to manifest. The everyday user may interpret these functions correctly if these spaces are designed according to their daily rituals. Marabastad is a place of commerce and transport. The structures speak that architectural language.

The common denominator sets the stage of the place. What are the common characteristics of the place? In Marabastad, the common denominator that defines space making is that Marabastad is a transport interchange and a gateway from outer lying informal settlements and townships into the CBD. This creates an atmosphere suitable for

commerce and trade. This is the common denominator that governs the space making and decision making of the *everyday*.

Linear time influences the movement of users in and out of Marabastad whilst natural time dictates indoor or outdoor activities such as shopping or outdoor restaurants. These are just an example of how repetition and change occurs in Marabastad.

The passivity of the users and of place is determined by whether or not certain things could be acquired in Marabastad and whether or not other influences determine the feasibility of the place.

Lastly, on the idea of modernity. Marabastad has a rich history, from cultural to political and the destruction of its urban fabric, this story still lives on in the last few remnants along Boom Street. These narratives ground the idea of the “**now**” and inform the future potential of place making.

## Design Informants

Through the identity mapping done in chapter three, it became clear that there are certain elements that start defining the way the users occupy space.

The streets are where all the activities occur. A street, such as Boom Street, is a transportation avenue for public and private vehicles, cars, busses, taxis, trucks and bicycles to the sidewalks and pavements used by pedestrians and traders alike.

What defines and articulates the space along these pavement avenues. The column, the veranda and the edge. These three elements are part of Marabastad built identity. The way that these horizontal and vertical planes have been constructed over time have lead to a certain occupation of space.

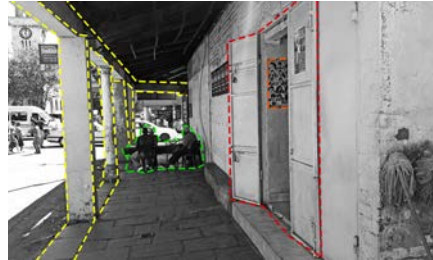


Fig.192. The columns



Fig.193. The overhang.



Fig.194. The edge.

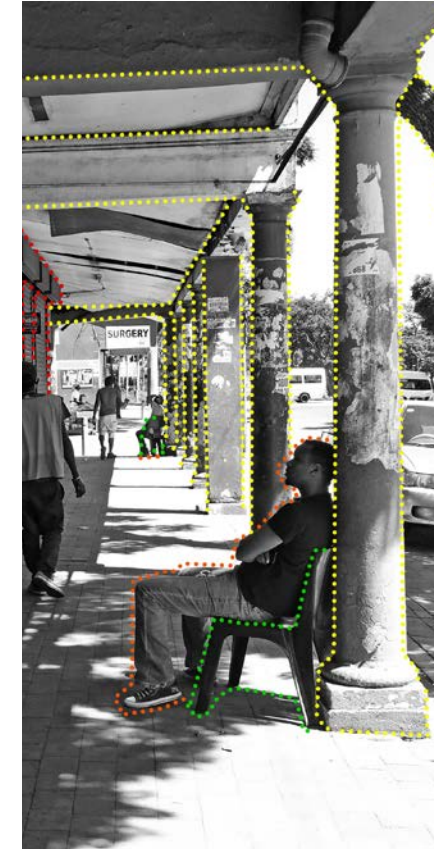


Fig.195. The column defining space.

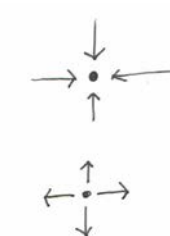


Fig.197. The column allowing for activities to occur.

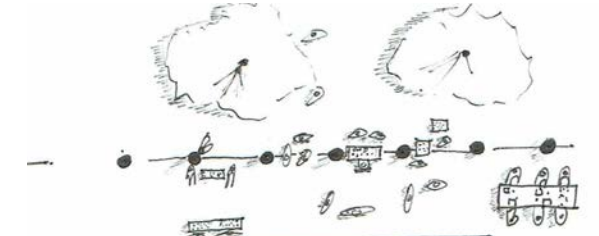


Fig.196. Column as a space maker

## The Column

The column as a vertical element when repeated starts defining and creating space. Along the pavements of Boom Street, the column becomes a vital *space maker*. The rows of columns create a walkway between the building edge and the line of trees. This space allows for vendors to set up shop and trade to passing pedestrians and motorists.

The column not only defines space it also becomes part of the urban furniture. People stand up against the column, lean against it, gather around them or set up plastic chairs around them to keep an eye on their stalls.

The column does not play a single role in space making. The spaces created by the column are dynamic and interchangeable yet the column is fixed in place.



## The Overhang

The rows of columns defining the pavements along Boom street are also structural supports for the overhangs that protect and define the walkways.

The buildings that occupy Boom Street range between a single storey height to a maximum of a three storey structure however, the veranda space created by the overhang always brings the scale down to roughly a single storey height.

The horizontal plane allows for a sense of enclosure between the pavement and Boom Street for the pedestrian to occupy.

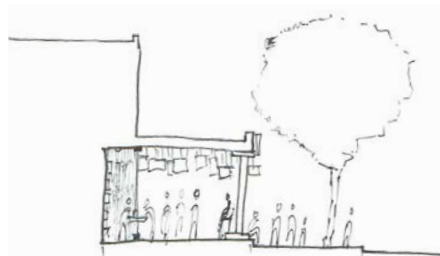


Fig.198. Creating retail opportunity.

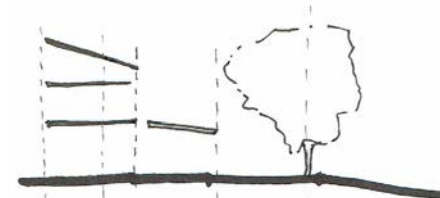


Fig.199. Various planes of the edge.

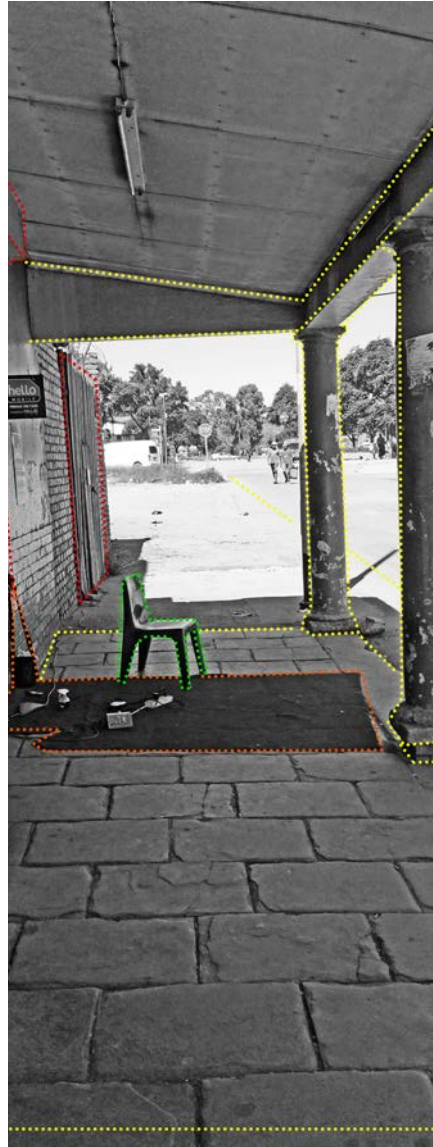


Fig.200. The overhang.

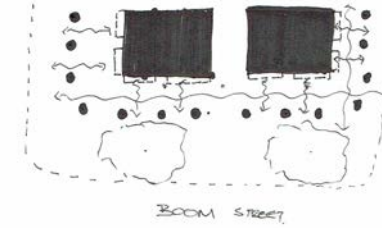


Fig.201. Diagram of the edge

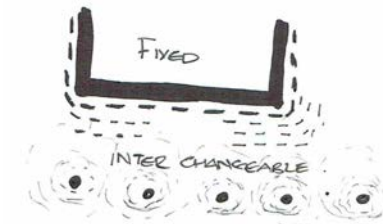


Fig.202. Fixed and interchangeable conditions.



Fig.203. The overhang.

## The Edge

The buildings edges accommodates different form of retail compares to what happens on the interior of each building. Each building located along Boom Street houses a specific and set functions. Certain businesses have been in operation for over 40 years and are still continuing that specific trade or practice whilst the pavement remains a dynamic space of trading. As seen in the mapping exercise in chapter 3, vendors convert existing shop fronts into trading stalls which spill out onto the pavement.

The edge of these buildings create various opportunities for social and retail exchanges to occur.



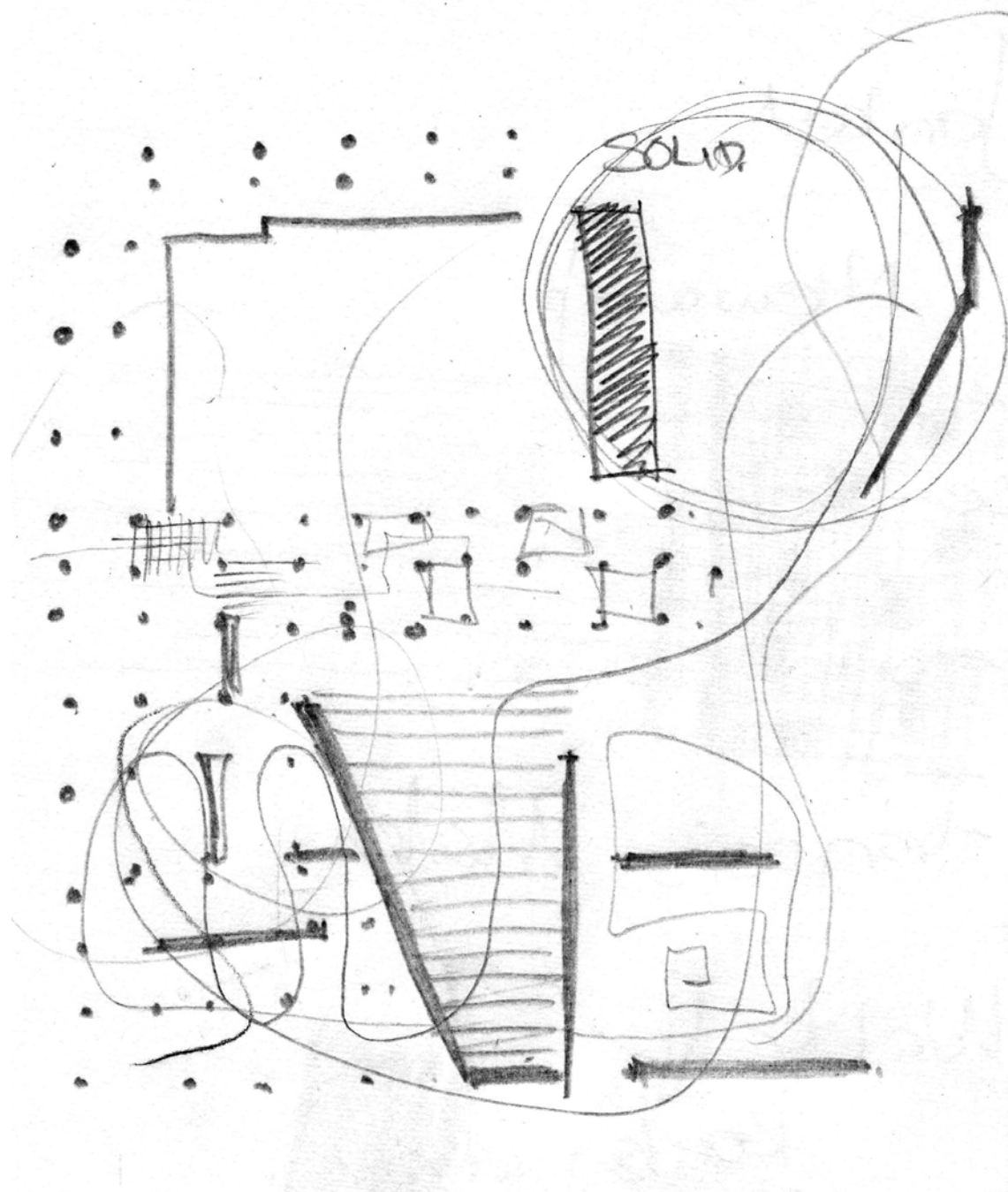


Fig.204. Parti diagram.

## Concept Development

The colonnade, which is a result of the column, the overhang and the edge is used as a design generator for the programme. As seen in the mapping exercises, the colonnade allows for the occupation of the various activities that happen in Marabastad.

There is a unique occupation of space along the city block edge. The threshold between public and private space is defined by the colonnade structure.

The objective is to use architecture to facilitate the current identity through the occupation of space in Marabastad. This is done by providing a platform for the growth and evolution of the trading and commerce identity throughout the precinct.

The notion of weaving does not stop at the production of the garments but would be carried through into the conception of space making and layering. The layering from vague to definite thresholds will be the main focus of design principles.

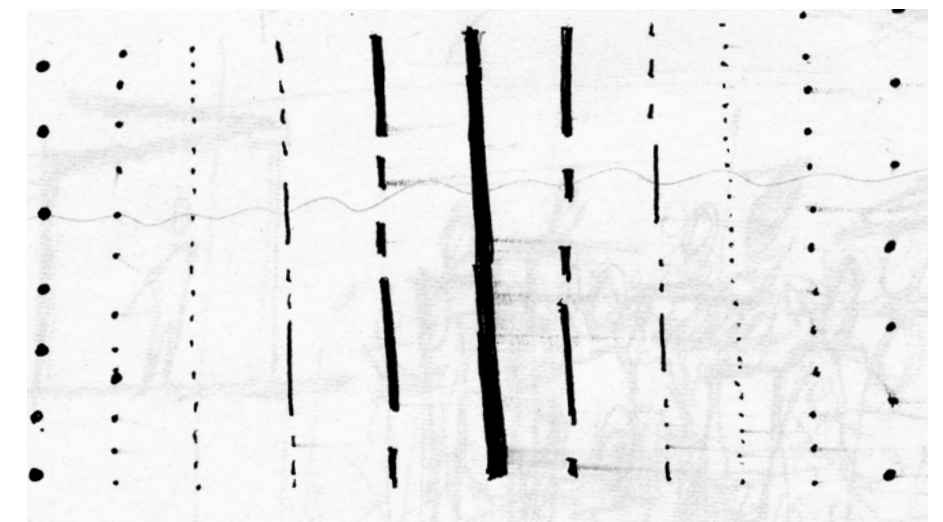


Fig.205. Concept Diagram of the various thresholds.

## Initial exploration

Taking into consideration the three main design influences of the edge, column and overhang the initial *maquette* exploration was to see how each of the elements could come together to start creating and informing space.

In order to create place existing functions and attributes have been taken into consideration. The function of Lallies shabeen that sits on the site will remain unchanged as well as, the programme of the existing informal restaurants found on site. Both the shabeen and the restaurants bring energy and activity to the site. The informal restaurants trade and operate under a make shift structure but they still

offer seating, hand wash areas, washing up stations as well as they share the ablution facilities with the shabeen. The intention of the design exploration is to allow for these functions to occur in this dynamic manner without constricting and over formalising the nature of these functions.

The initial *maquette* exploration used a 2.5m x 2.5m column grid. Columns were placed as supports and space making elements. Edges were treated differently in response to the various existing urban conditions and those set by the urban framework.

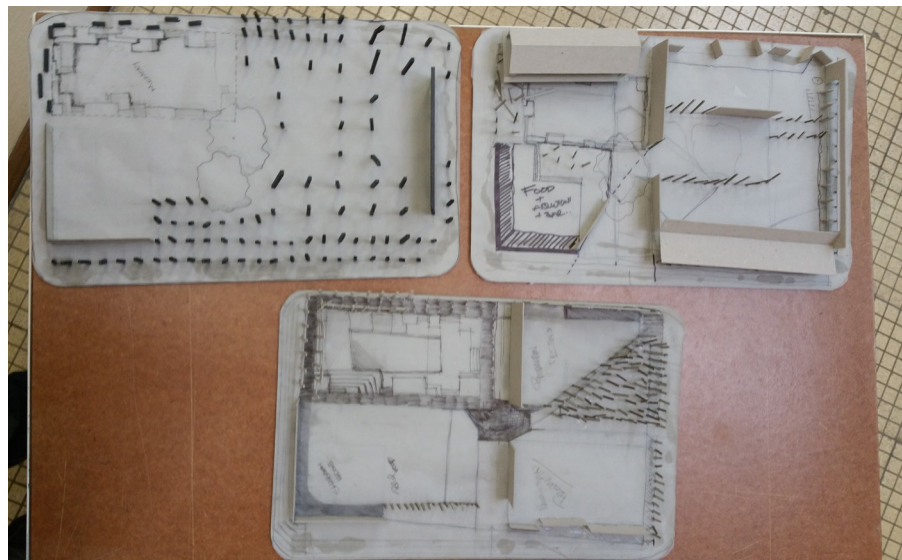


Fig.206. Initial *maquette* exploration of the various edge conditions through the articulation of the edge.

## Maquette exploration

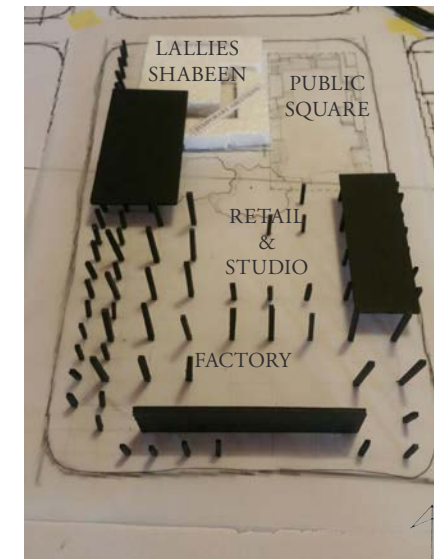


Fig.207. Column, grid, and function

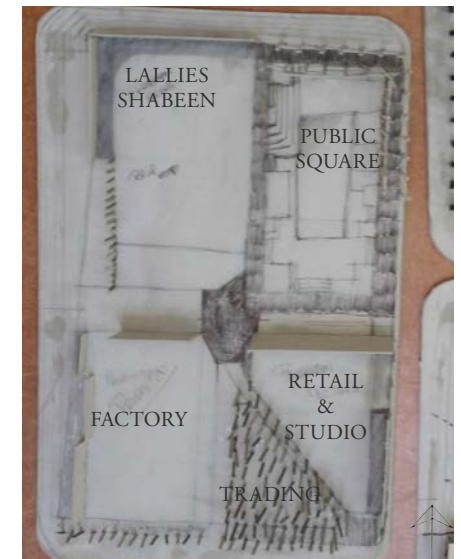


Fig.208. Various functions around the edges

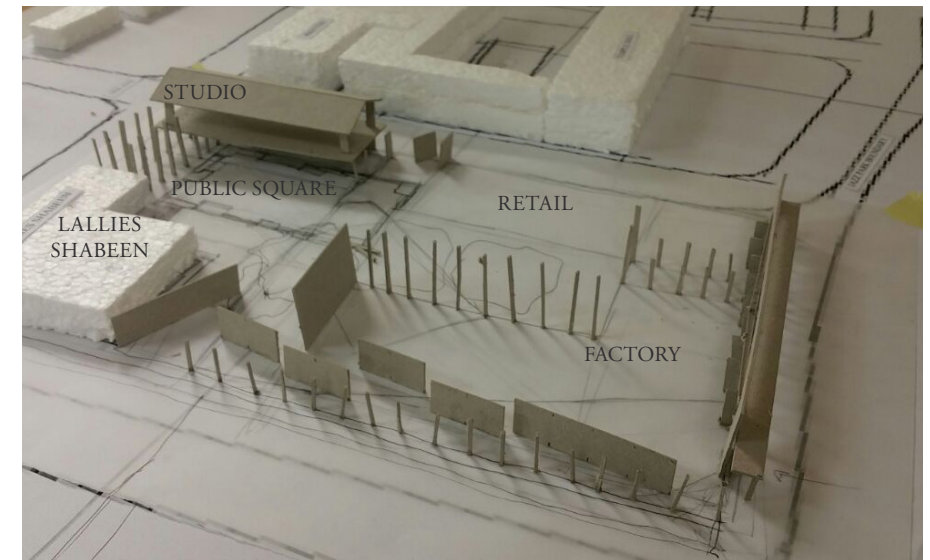


Fig.209. The wall and column as various thresholds.



## Maquette One

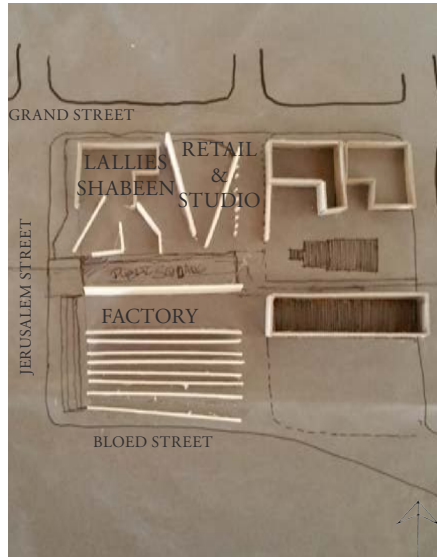


Fig.210. Plan view of iteration one.

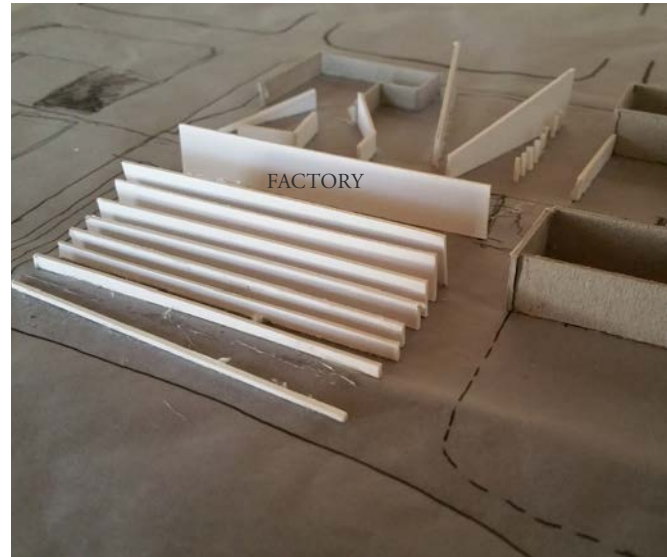


Fig.211. Factory space trying to address the conditions of Bloed Street.



Fig.212. Retail and Studio space as a funnel into the public square.

The scale of the first few iterations was 1:200. To figure out the basic space planning a 1:500 scale was used thereafter.

The first iteration explores the idea of the 'specific' and 'general'. The idea is based on the fact that the existing built fabric falls under these two categories. 'General' means it conforms to the existing characteristics of Marabastad, the column, veranda, the edge whilst 'specific' does not such as the Miriammen temple and Jamat Khanna Mosque.

A proposed design studio will form as 'specific' whilst the factory space is 'general'. The existing shabeen and restaurants will be used to create a new public space in the middle of the site while the function of the factory and design studio define the edges.

## Maquette Two

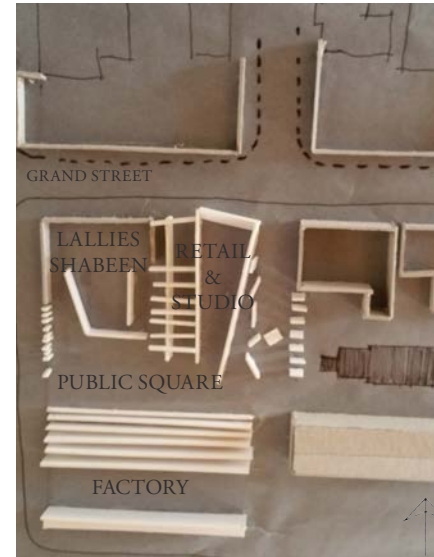


Fig.213. Plan view of iteration two.

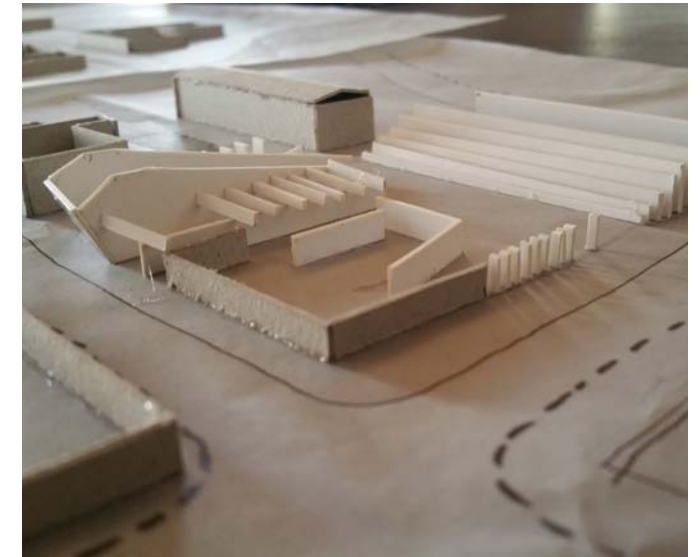


Fig.214. Plugging into the shabeen with a kitchen & roof structure.

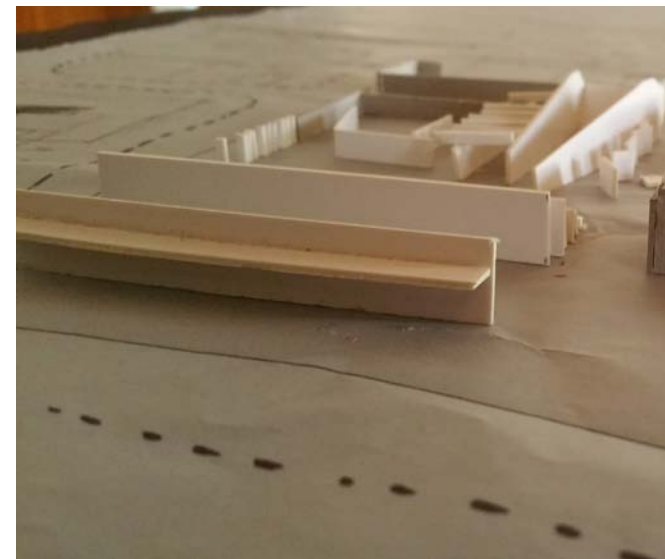


Fig.215. Using the layering of the factory internally and trading space as an edge to Bloed Street.

Iteration two is a development of the previous maquette. Key changes were made to the factory space. Instead of layering the edge the street, the proposed factory scales down towards the public square.

Screens and columns are used to define the edges of the studio and retail block. The two sections of the buildings creates views towards the Temple. A screened fence would allow views towards the Temple courtyard without disrupting the rituals and functions is proposed.



## Maquette Three



Fig.216. Plan of iteration three.

Iteration three explored similar principles of 'generic' and 'specific' and creating a public square defined by the factory, the shabeen and studio spaces.

The aim of the exploration was to bring visibility into the factory space by means of a public avenue cutting diagonally through the space. This idea of visibility in factory space is taken from the precedent Proud Heritage Clothing Campus, where the architects used the factory floor to showcase the skills and process of manufacturing.

This maquette explored the idea to tie the function of the existing shabeen and proposed studio with a roof structure that creates an arcade from Grand Street into the public square.



Fig.217. Jerusalem Street edge as trading edge against factory space



Fig.218. Retaining Bloed street as a trading edge from iteration two.



Fig.219. Studio space taking over the street condition.



Fig.220. Imposing identity on the street.

## Maquette Four

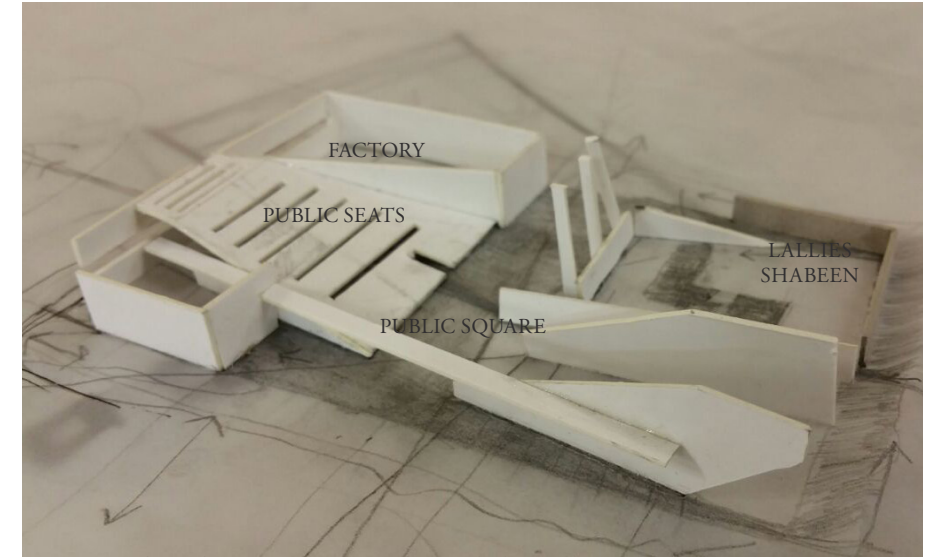


Fig.221. Bridging the two components and using the layering as steps on the facade.



Fig.222. Plan view of iteration four.

Iteration four resulted into a public space becoming part the factory facade as stepped seating. The public square would become public seating space which, in turn became the facade for the factory space.

A horizontal plane was added to join the function of studio and factory space. Minimal intervention for the edge of the shabeen and the informal restaurants. This iteration fell short when it comes to the columns and the fact that it becomes a space defining element.

## Maquette Five



Fig.224. View of iteration five.

What was lost in iteration four was the idea of the column as a space maker. The building seemed to become monolithic.

In iteration five the programme starts to influence the design. The columns create a building that represents the loom machine. The way users occupy the space would be an indication of “weaving” through the space as one would navigate around the columns.

The columns start defining entrances to the square as well as movement routes through the site.

The lightness that was created in this model formed a base for exploration when it came to developing the plans and sections of the building.

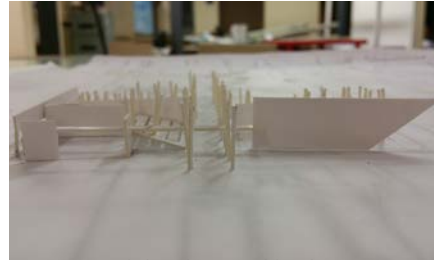


Fig.223. Solid and permeable edges.

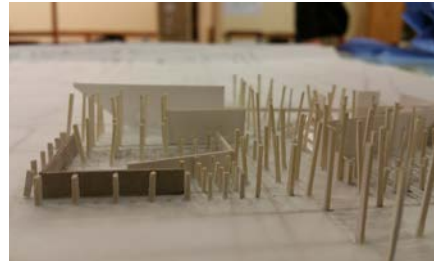


Fig.225. Columns and edges.

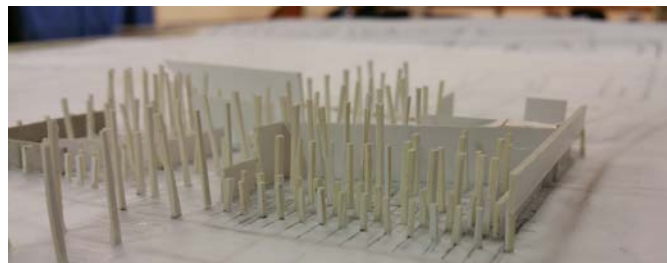


Fig.226. Trading stalls between the columns.



Fig.227. Views into the factory.



Fig.228. Entrance to the public square.

## Maquette Six



Fig.229. Plan view of iteration six.



Fig.230. Studio and retail elevation.



Fig.233. Jerusalem Street view.



Fig.231. Roof manipulation.



Fig.234. 5th Street view.

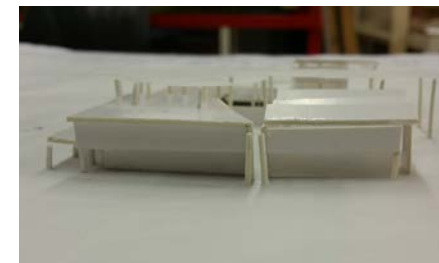


Fig.232. Bleed street retail overhang.

Iteration six tried to use the ideas developed in iteration five about columns, weaving and space making as well as developing a roof for the various proposed building.

Enclosing the building with a roof took away what was achieved on a 1:500 model. It was challenging to carry through the soft vague space created in iteration five with an enclosed maquette.



## June Maquette



Fig.235. Plan view of June model.



Fig.236. Shabeen, kitchen and outdoor cooking area.



Fig.237. Retail and shabeen edge.

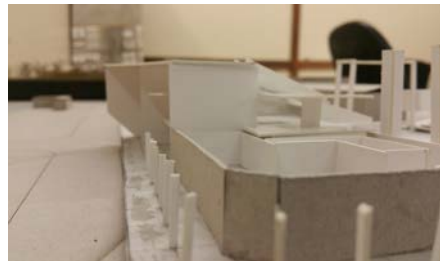


Fig.238. Grand Street view.



Fig.239. Roof of the studio.

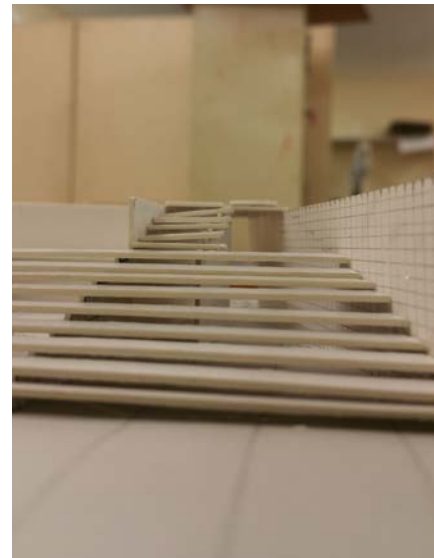


Fig.240. Public steps on the factory facade.

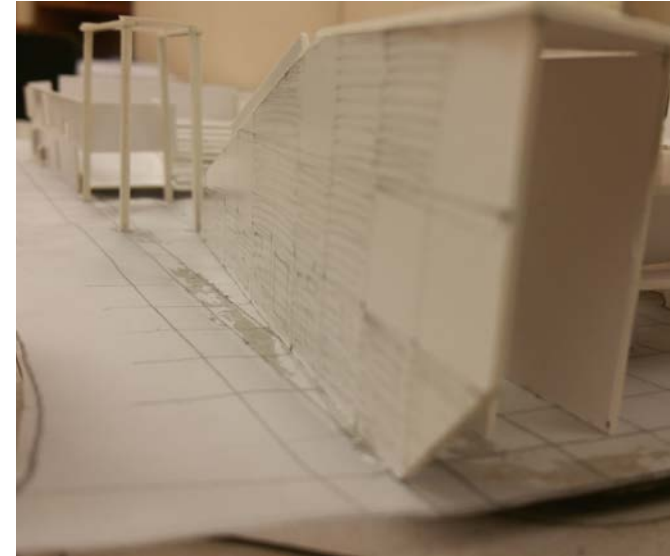


Fig.241. 5th street walk way and edge conditions.



Fig.242. Interactive elevation.



Fig.243. Overhang as trading space.

The June exam maquette tried to embody all the lessons learnt from the previous iterations. The roof proved once again to be quite challenging, the idea of enclosing the space yet retaining the essence of the columns and soft thresholds. This model allowed for an opportunity to play around with the facade and screening of the building. The mass of the studio seemed quite unintentional and contradictory to the existing urban fabric. Plans evoked the ideas of movement and layering but the 3D model seemed to contradict the ideas of place. What was taken further to the next iteration were the plans. The plans and sections used these plans as a base to further develop the scheme.





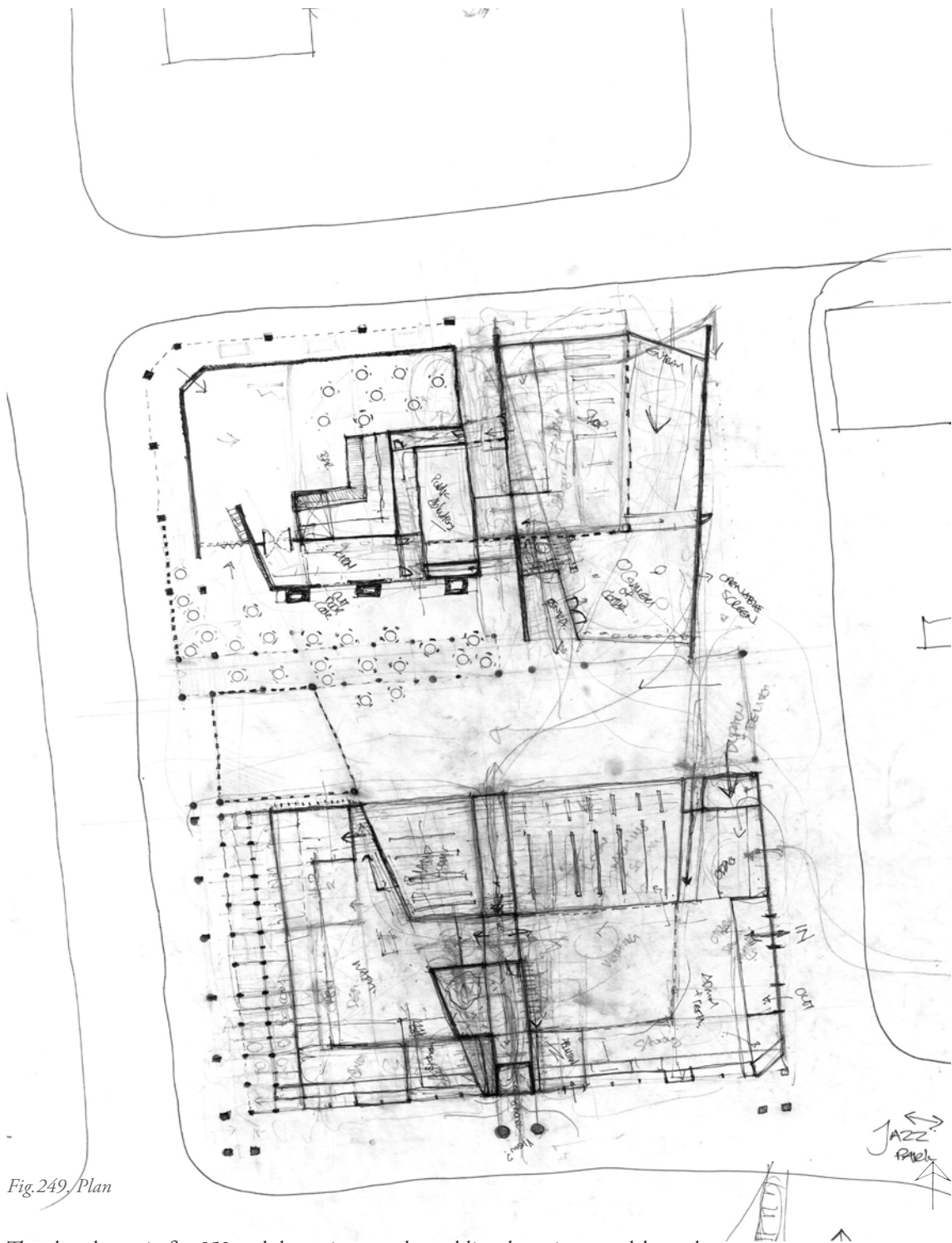


Fig.249, Plan

The plan shown in fig. 252 and the various sections (fig. 253 to fig. 257) shown are iterations of the various spaces such as the factory space, design and retail, shabbeen and out door kitchen and how these functions interact with the public square in the middle. The sections (fig. 253 to fig. 257) show the boundaries between

the public, the private and how the two spaces intersect. Various roof conditions were tested but neither acknowledged Marabastad and its existing built identity.

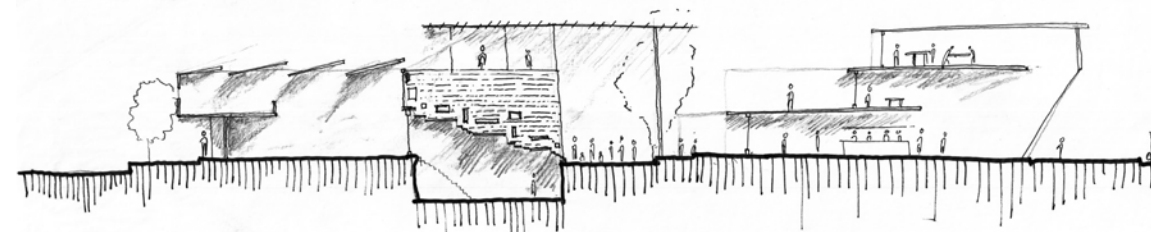


Fig.250. Section through the factory, loom room, public square and studio space.

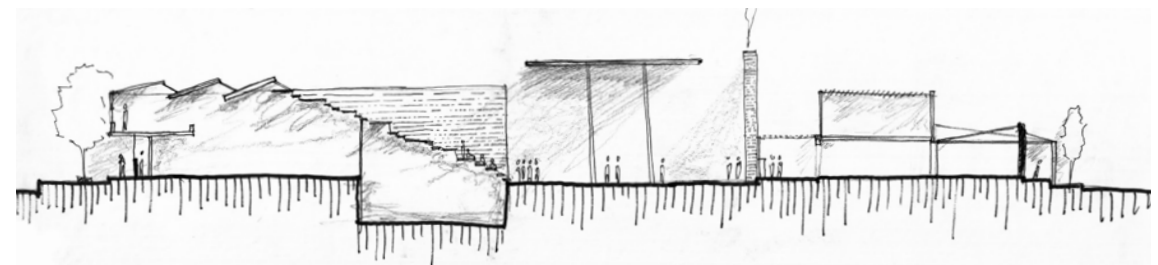


Fig.251. Section through the factory, public steps, public square and restaurant and shabbeen

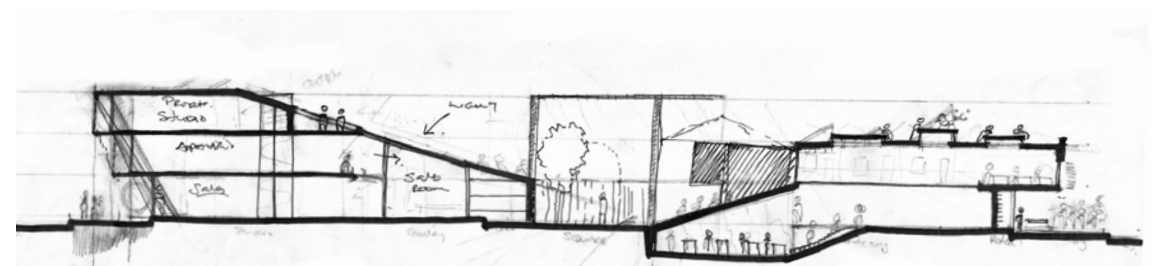


Fig.252. Section exploring the plans through the factory, retail and studio space and square

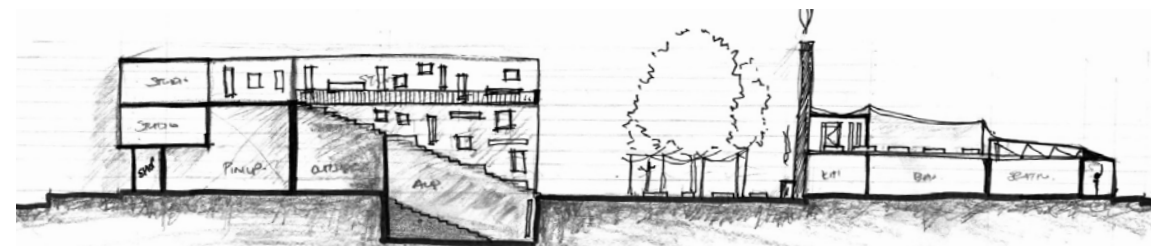


Fig.253. Section exploring the volumes through the factory, studio and square

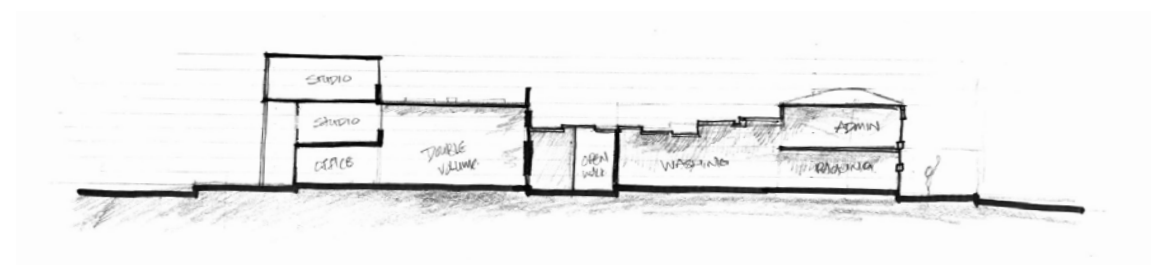


Fig.254. Section through the factory and the edge conditions



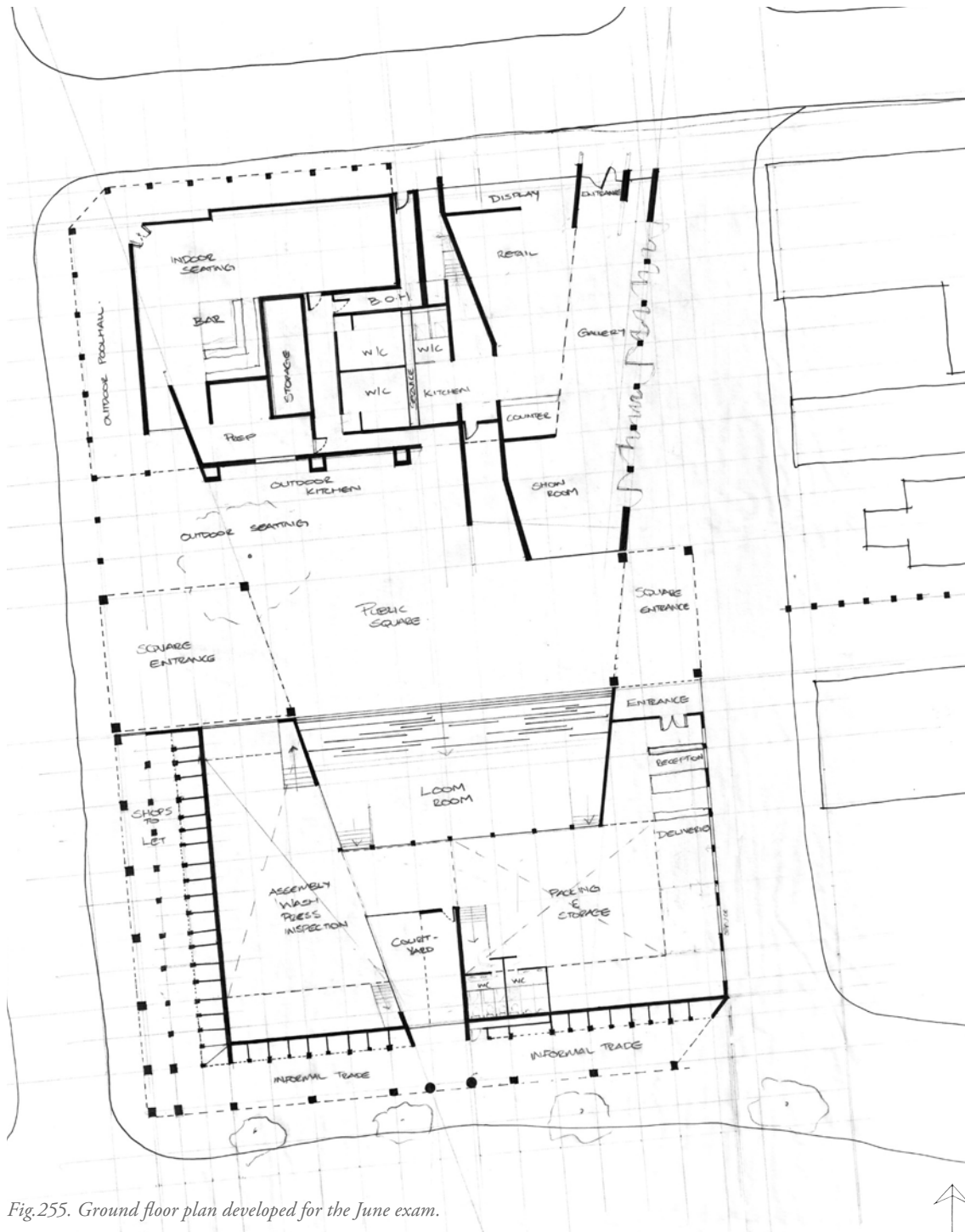


Fig.255. Ground floor plan developed for the June exam.

The ground floor plan in fig. 258 was result of the June model. The two worked in tandem to start developing the concepts of edge, the column and the veranda. The initial issues faced was that with solid edges the ideas of various thresholds seemed to be lost. Certain programmatic function such as the production and

retail needed more solid boundaries and the development of the section needed to explore various possibilities of layering of space.

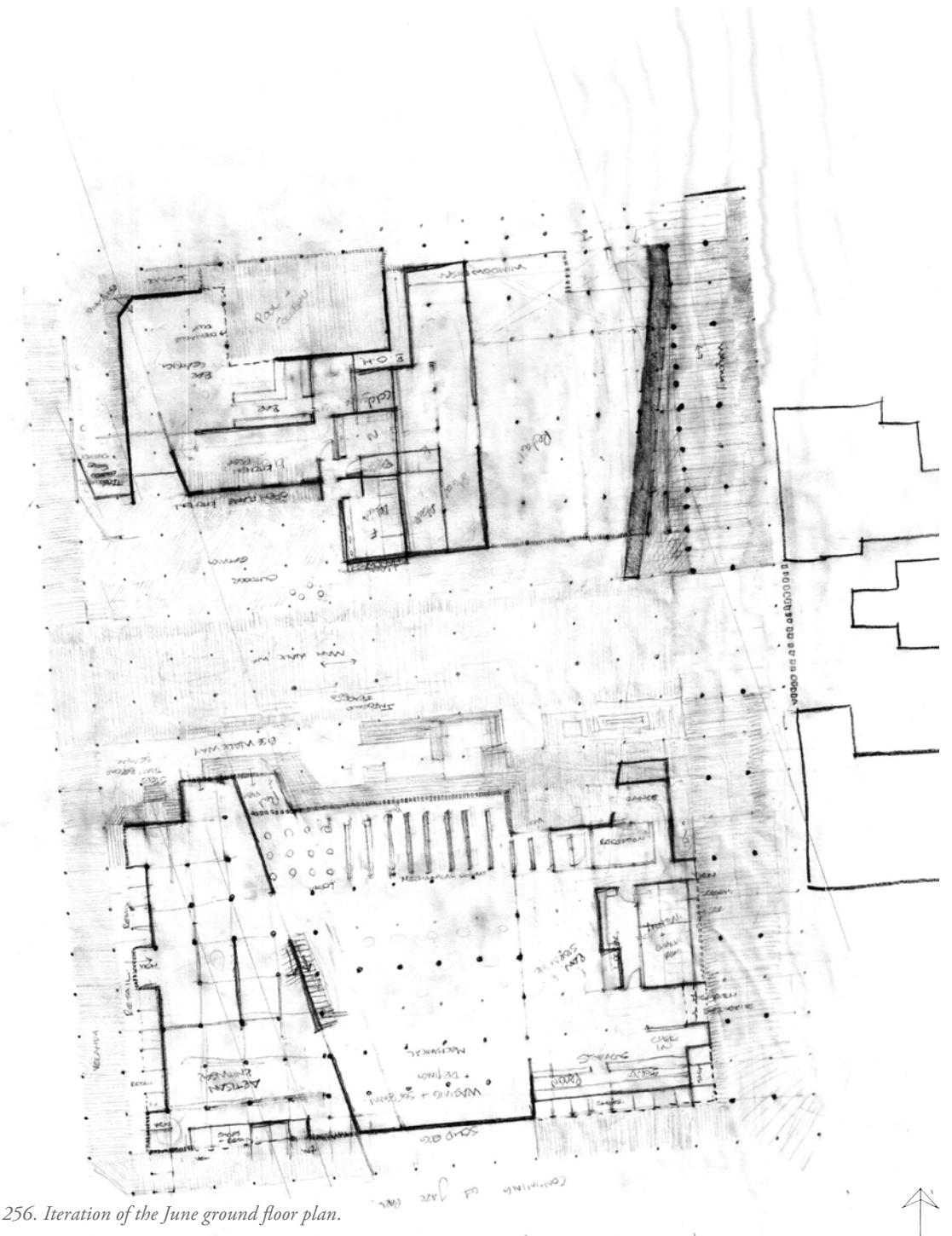


Fig.256. Iteration of the June ground floor plan.

The plan showed in fig. 259 moved away from the idea of the stepped seating that formed part of the factory building facade. Two or three steps were opted for an edge condition that would wrap around the factory and retail buildings. These stepped edge start to define the square that forms a focal point in the scheme.

Creating an open plan for the retail space allows for maximum adaptability when arranging the garments for display. This iteration saw the separation of the functions of machine looms production and hand looms production. A definite separation allows for both programmes to be equally valued by the public.



## Development of the sections

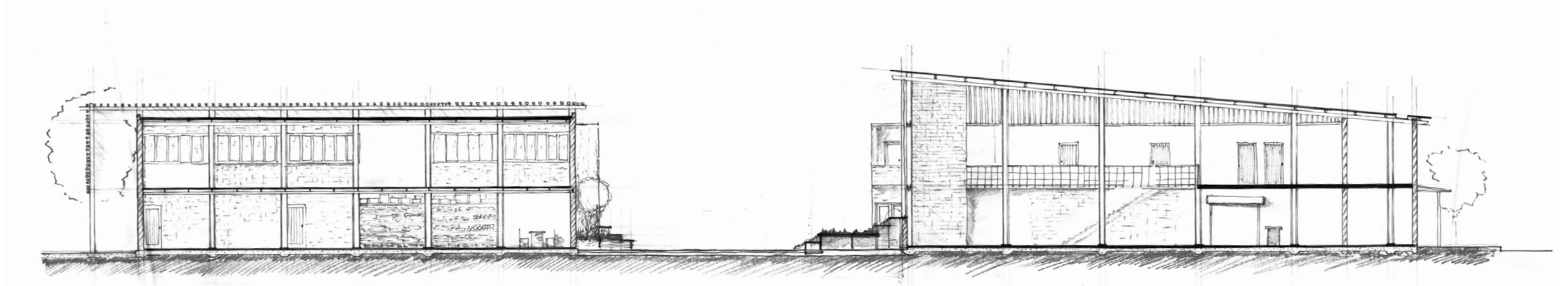


Fig.260. Section a-a exploring the roofs and volumes.

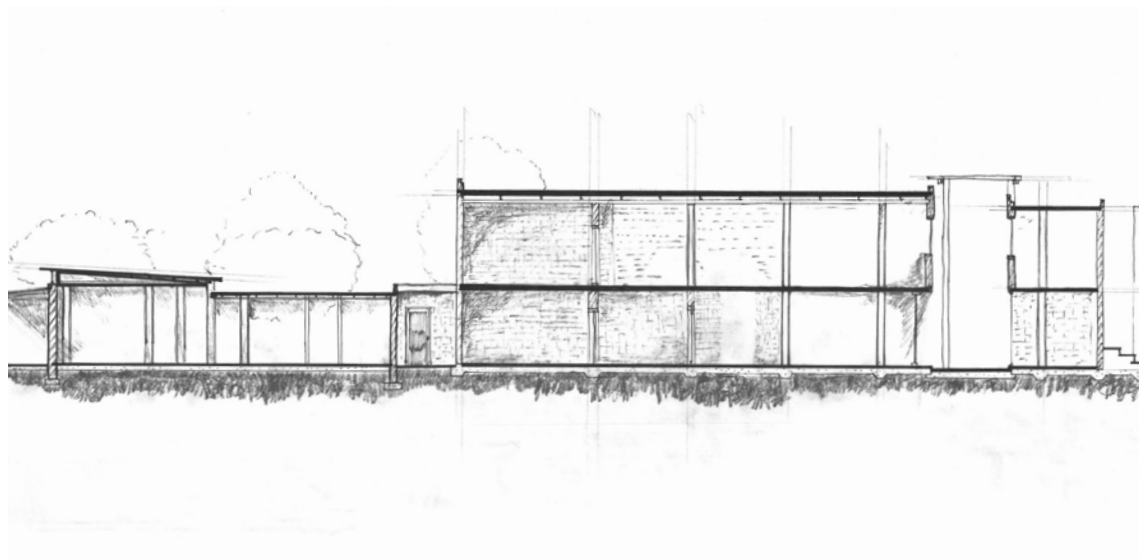


Fig.261. Section b-b shows the relation between studio, retail and shabeen volumes.



Fig.262. Plan indicating sections.

The sections in fig. 260 and fig. 261 explore the various material and structural components of the project. The development of these sections were a crucial point from design development to the technical development of the project. The materiality explored in these iteration were a steel frame construction with patterned brick panel infill. The foundation was a raft foundation with column footings for the steel columns. Plywood was used as a lightweight material to construct the flat roofs and first floor from.

The frame is a steel frame with brick infill to start celebrating the weaving identity of the project. Brick screens and metal shading screens cover openings and these screens express this idea of weaving space, materials and programme. The screens become the threshold between various programmes.

Tectonic development of the roofs.

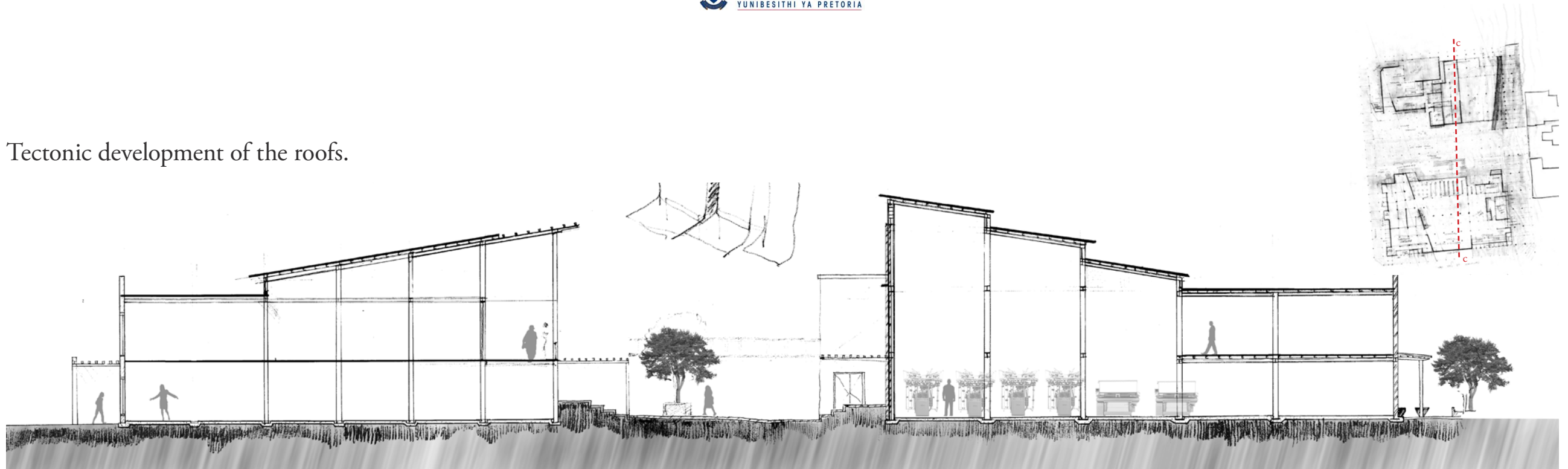


Fig.263. Section c-c shows the roof iteration of the studio space and factory space to filter in southern light.

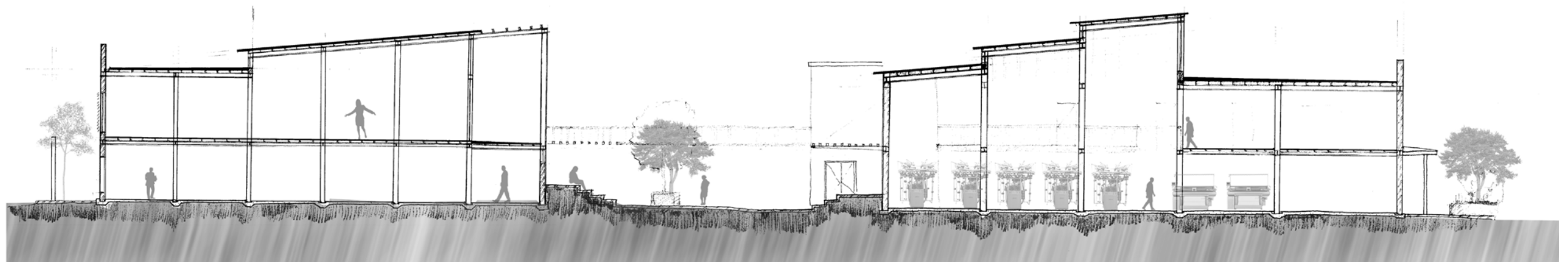


Fig.264. Section c-c shows the roof iteration of the studio space and factory space and how it defines the square.

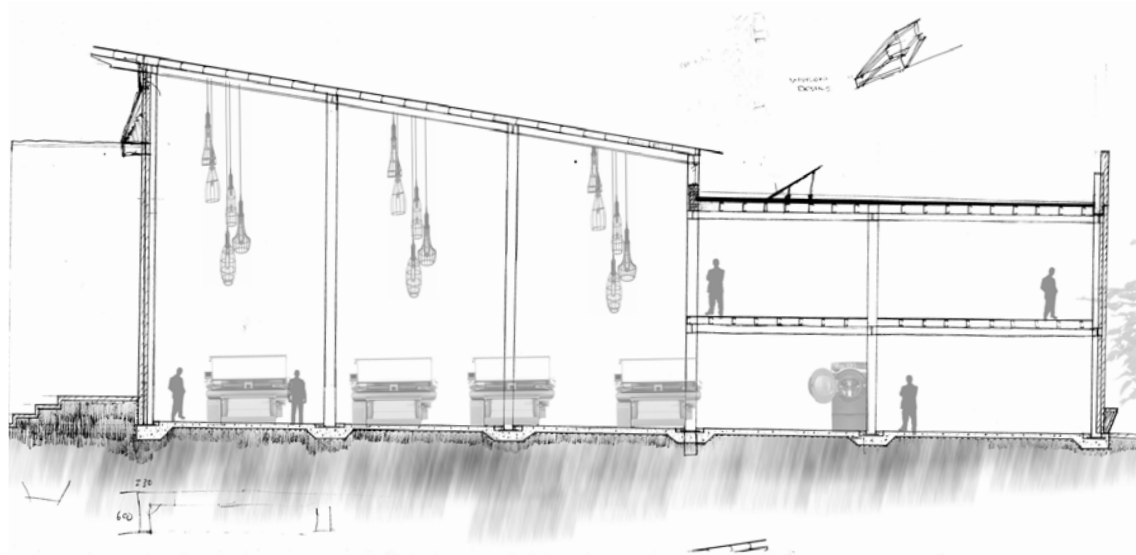


Fig.265. Section d-d of the factory space and the volumes and structure.

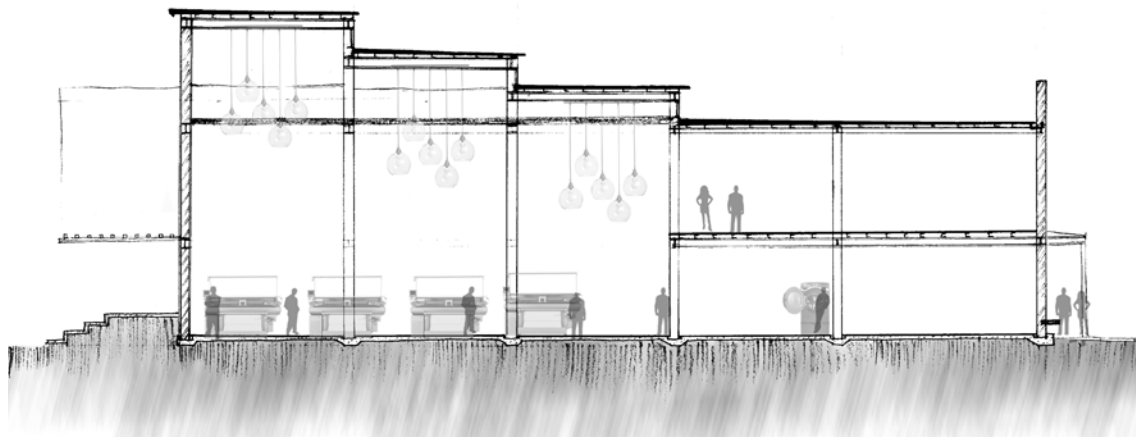


Fig.266. Section d-d shows the roof manipulation to express the grid.

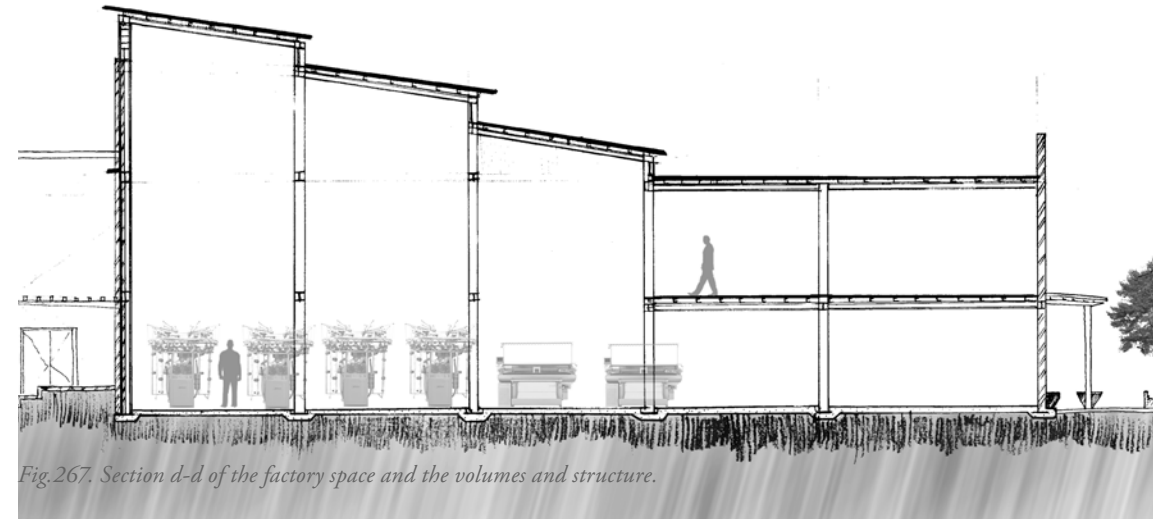
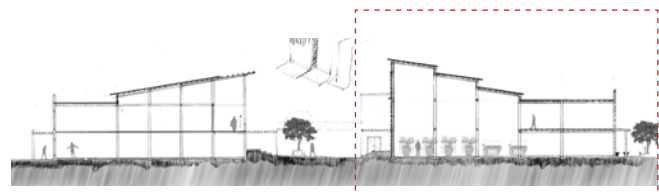


Fig.267. Section d-d of the factory space and the volumes and structure.

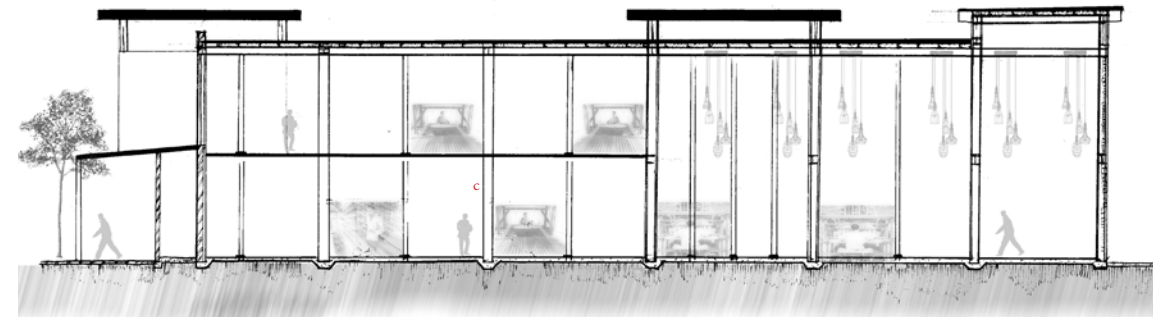


Fig.268. Section e-e shows the roof of the hand loom factory.



Fig.269. Plan indicating sections.

The various roof iterations of the factory space explored ways that the building could open up onto the square and relate to the studio across it. It was decided to develop the mono pitch for the tech crit in September as seen in fig. 270. It was proposed that the roofs and first floor are constructed from plywood. The geometry of the plywood fits into the grid proposed for the columns.

Fig. 268 shows the hand loom section. The levels of the roof and the columns create an interesting section. The idea of a flat roof will be iterated further.



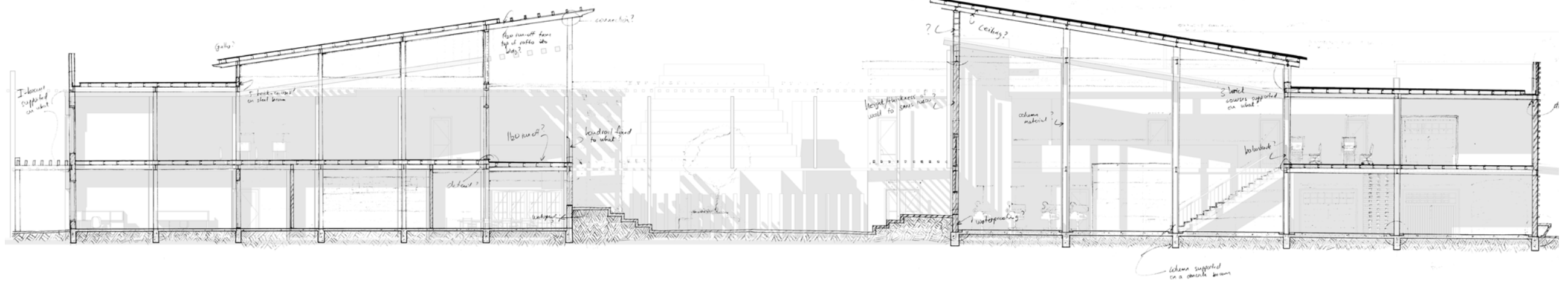


Fig.270. Sections developed for the technical crit of the factory and studio space.

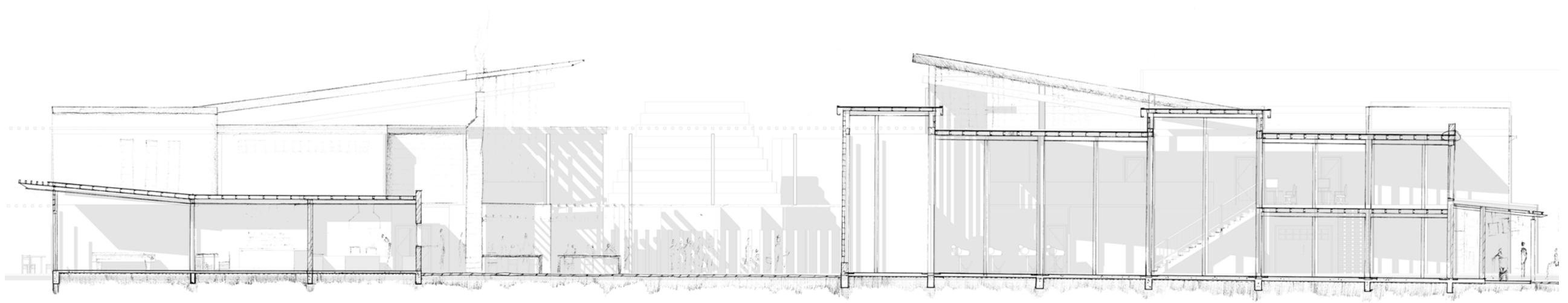


Fig.271. Sections developed for the technical crit of the hand loom and shabeen space





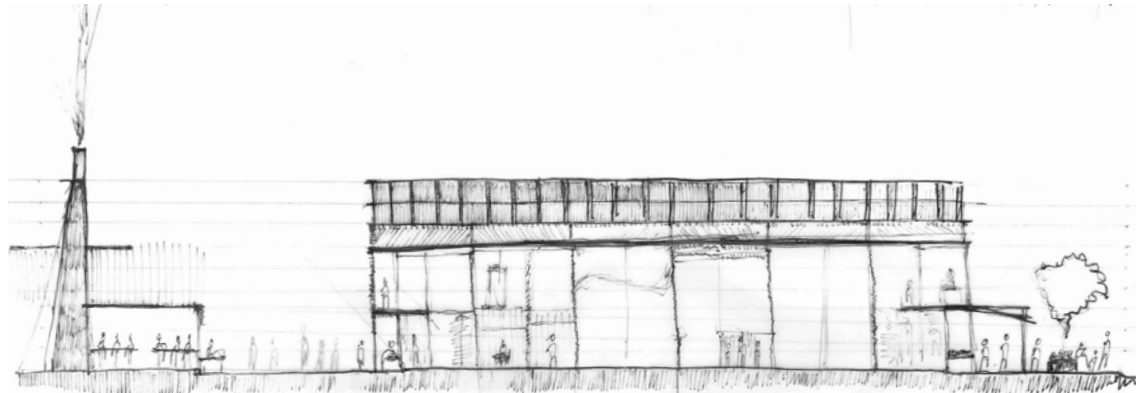


Fig.274. Section b-b through the hand loom factory and outdoor kitchens.

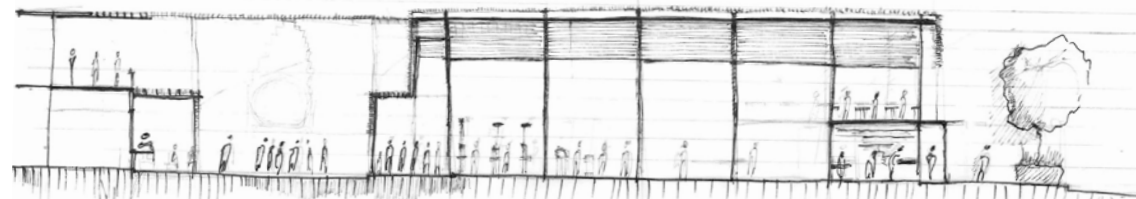


Fig.275. Section c-c through the machine loom factory and studio.

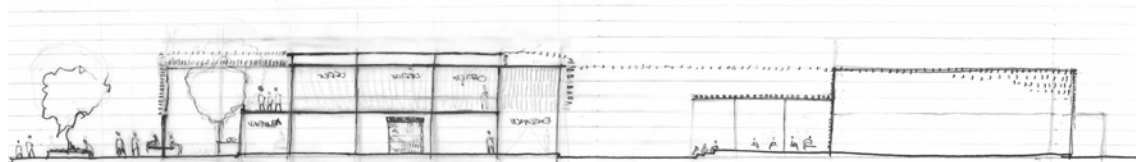


Fig.276. Section d-d through the admin area and retail display space.

## Techné

The design consists primarily of the following components.

1. The production of the garments (mechanical and hand woven garments)
2. Retail (Informal and formal trade)
3. Civic space (public square and pedestrian avenues)

The technical concept of the design was taken from the design concept of weaving materials. Taking the existing material palette and using the idea of the colonnade and the loom machine to start weaving the various components together in order to create something new yet reminiscent of the materials it was woven from.

Using the concept of the colonnade and the various threshold found in Marabastad, the technical exploration of this project would further enhance the ideas of layering through the material palette and choices.

The nature of the programmes are that of stitching and weaving of various fabrics therefore the same concept of weaving will be carried through the design. Using materials such as steel, brick, glass and concrete, the tectonic concept is to weave these various materials in order to reflect Marabastad and as well the various buildings proposed on the site.

## Material Palette

The material palette for the project is a reflection of the materials found in Marabastad. The intention is not to mimic the existing materiality of the study area, but rather to understand the choice of the materials used on site and build onto that existing palette.

The existing built fabric speaks of a low tech approach to construction, with maximum durability and adaptability of space. Materials such as brick, steel and concrete make up base of the exiting fabric. Skins such as glass, shutters and fencing allow for the addition and removal of certain elements.

The columns that make up the colonnade are either concrete columns, brick columns or steel columns. The buildings along Boom Street are made of face brick or brick that has been plastered and painted. The roof structures are either concrete flat roofs hidden behind a parapet wall or low pitched steel corrugated sheeting. Glass is used in the window store fronts with a metal shutter for safety and security purposes. Pavers such as cement blocks have been laid by the municipality whilst original slate pavers can be found hidden along the side avenues and alleyways. Additional materials are all the goods and products that vendors sell. These temporary materials become part of the urban fabric even of for a short period of time. This constant change adds to the trade identity of Marabastad



Fig.277. Existing brick facade.

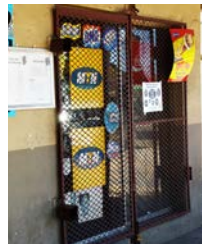


Fig.278. Existing metal screens.



Fig.279. Security roller shutters



Fig.280. Existing roof metal sheeting.



Fig.281. Existing concrete pavers.

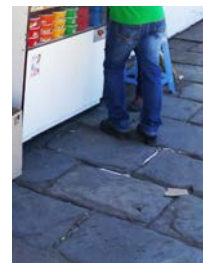


Fig.282. Existing stone pavers.



Fig.283. Brick Pavers.



Fig.284. Brick Pavers.



Fig.285. Patterned brick skin.

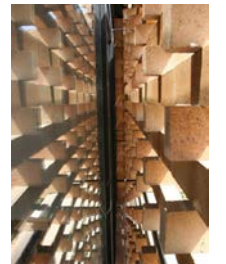


Fig.286. Brick screen.

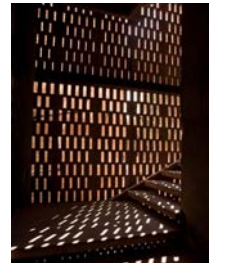


Fig.287. Screens.



Fig.288. Structural steel grid.



Fig.289. Metal screen shading.

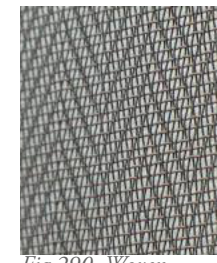


Fig.290. Woven metal screen



Fig.291. Roof metal sheeting

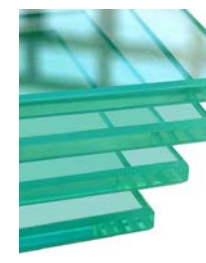


Fig.292. Glazing

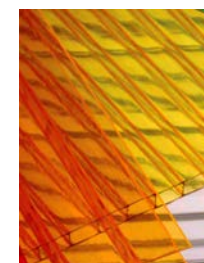


Fig.293. Polycarbonate skylights

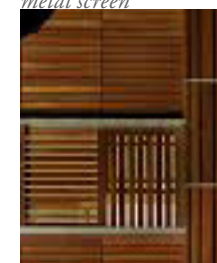


Fig.294. Timber shading



Fig.295. Street furniture.



## Structure



Fig.296. Diagram of the various structural columns

The structure comprises of 560mm x 560mm brick columns on the edge of the buildings, four 160mm x 65mm steel C sections welded at the edges to create one column which make up the primary structure to support the roofs and 120mm x 120mm steel square hollow core sections that will be used to create the

various work spaces in the hand loom factory.

The various screens that will be form part of the skin that wraps the building will be fixed to the C sections that create a single column.

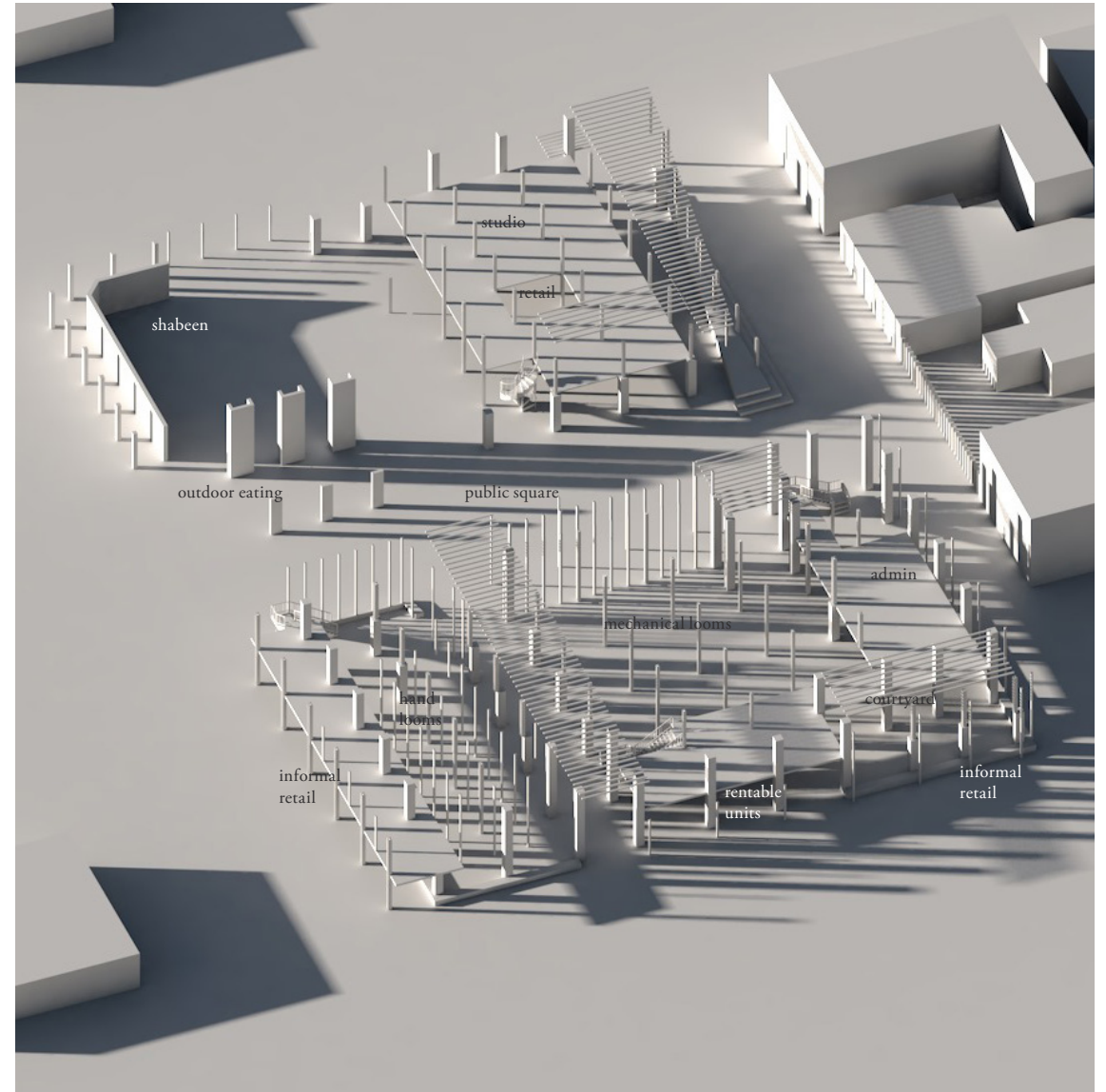


Fig.297. Structure and grid of the buildings

Tectonic development of the plans and sections.

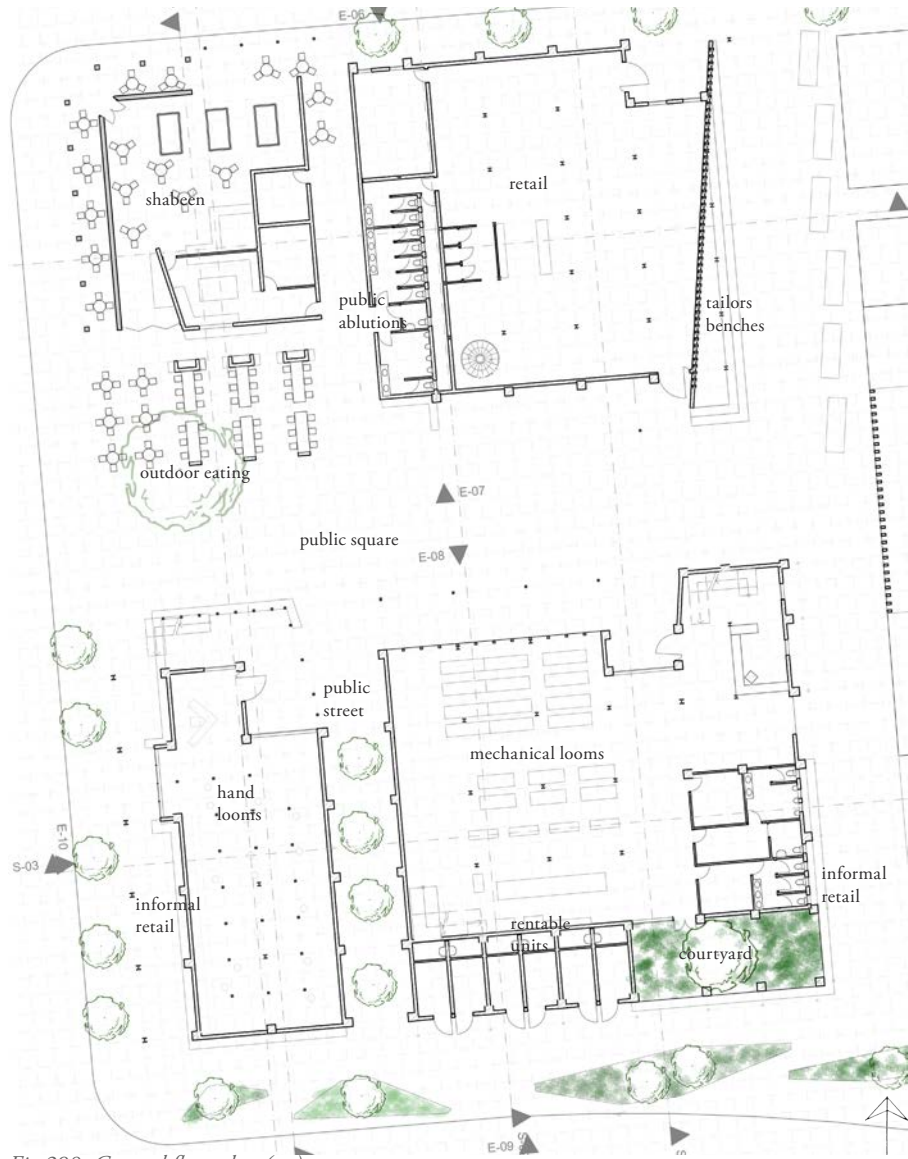


Fig.298. Ground floor plan (nts).



Fig.299. First floor plan (nts).



## Sections

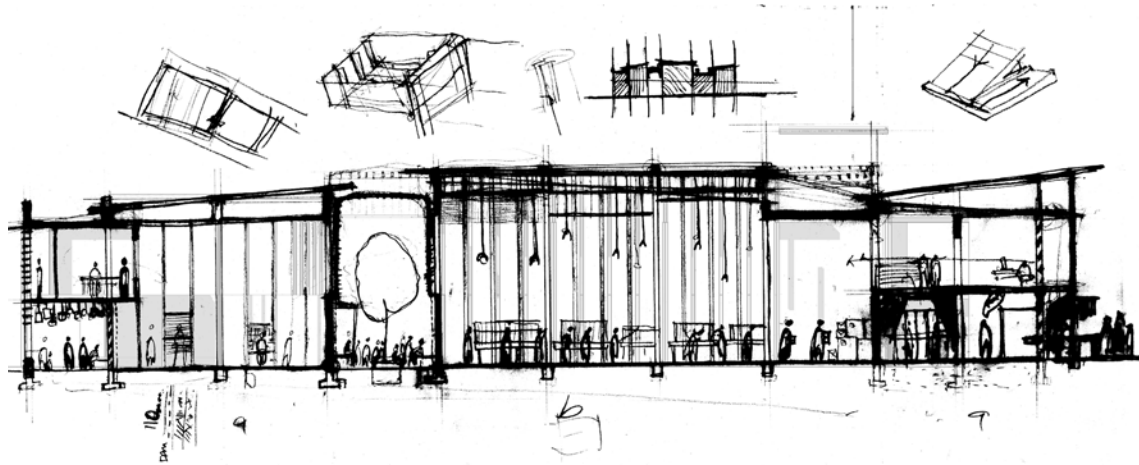


Fig.300. Section a-a through the factory spaces.

Section a-a shown in fig. 300 runs through the length of the factory space, from the street condition of Jerusalem street to the eastern where the pedestrian route runs through the site. This section starts to indicate the various material used to define the various conditions of the programme.



This section evokes the ideas of the layering of space even though its on a sketch plan level, it communicates far more than the earlier sections that ran through the design and retail building and the factory space.

The edges of the building are constructed out of concrete and brick columns. the roofs are supported by H columns, Concrete roofs act as gutters which carry storm water to a storage tank beneath the courtyard. The hollow core square profiles become part of the handloom machines. The machines are constructed around and to the square columns.

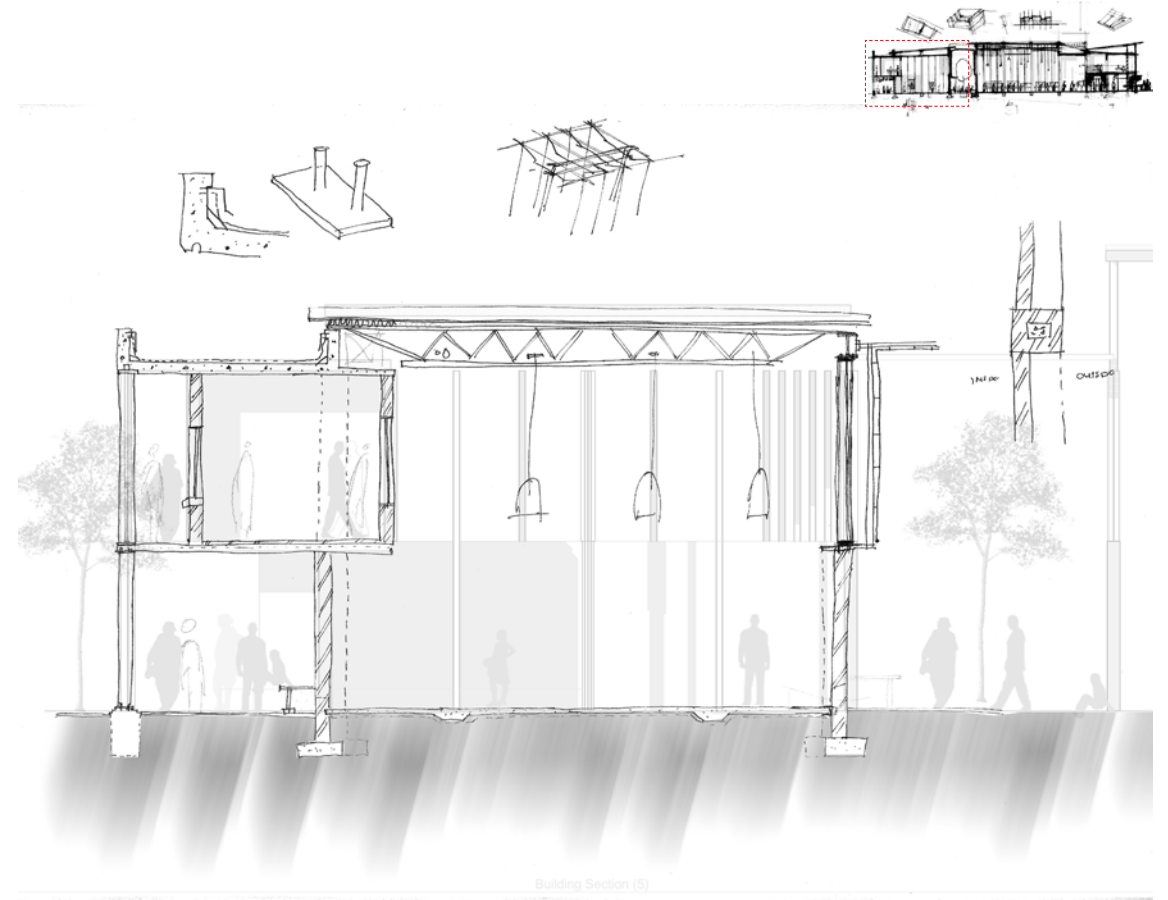


Fig.301. Section through the hand loom space and informal trade edge.

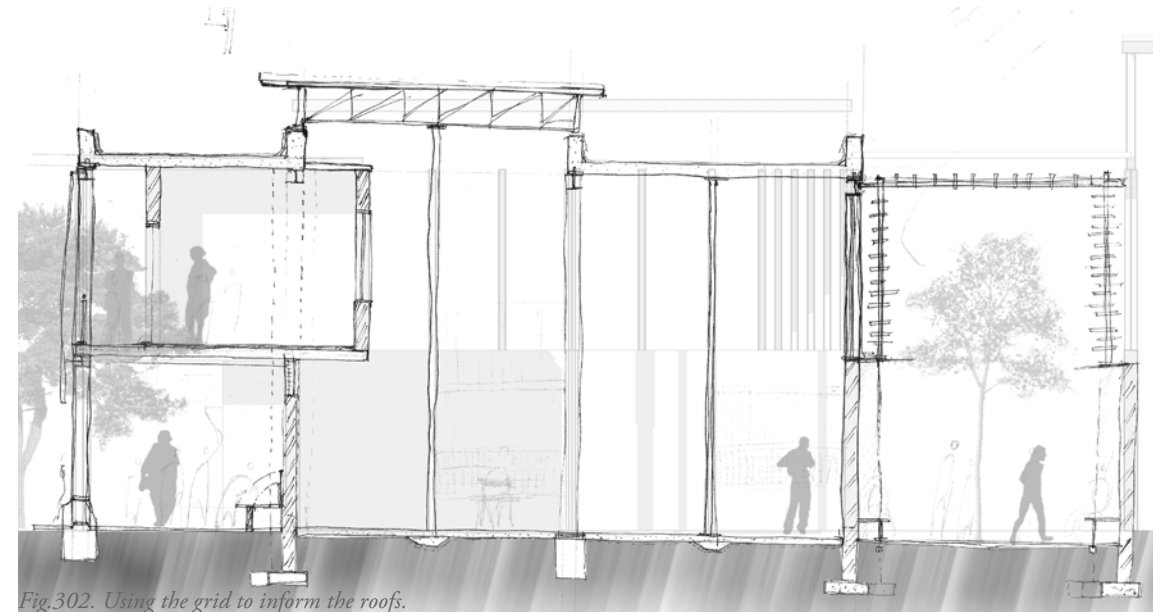


Fig.302. Using the grid to inform the roofs.

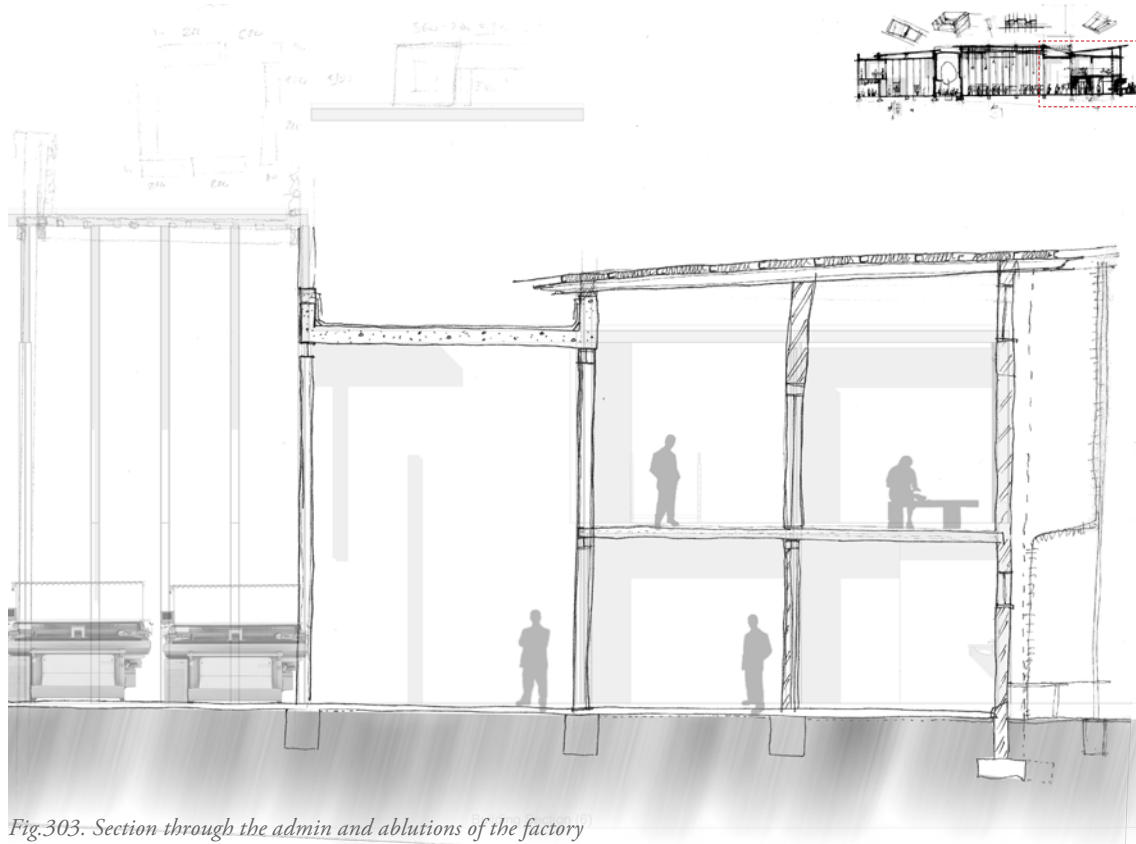


Fig.303. Section through the admin and ablutions of the factory

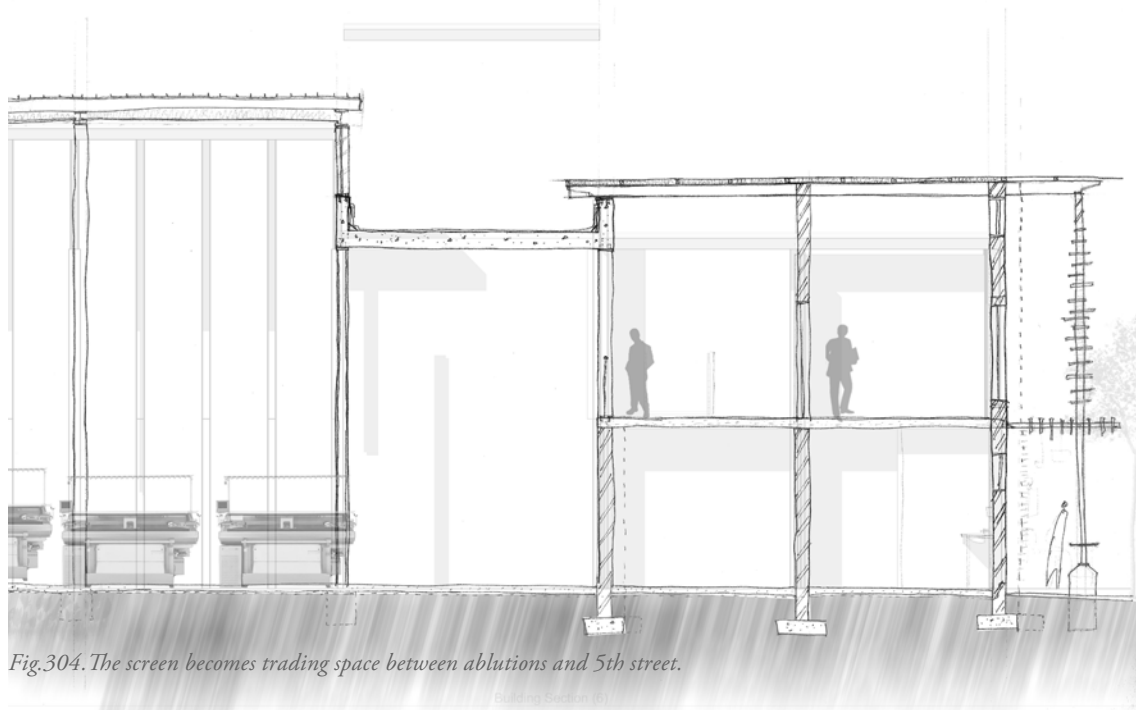


Fig.304. The screen becomes trading space between ablutions and 5th street.

## Final Presentation Plans, Sections and Renders.



Fig.305. View of the entire site showing the retail space, factory spaces and Shabeen.





GROUND FLOOR PLAN  
1:100

Fig.306. Ground Floor Plan (nts)

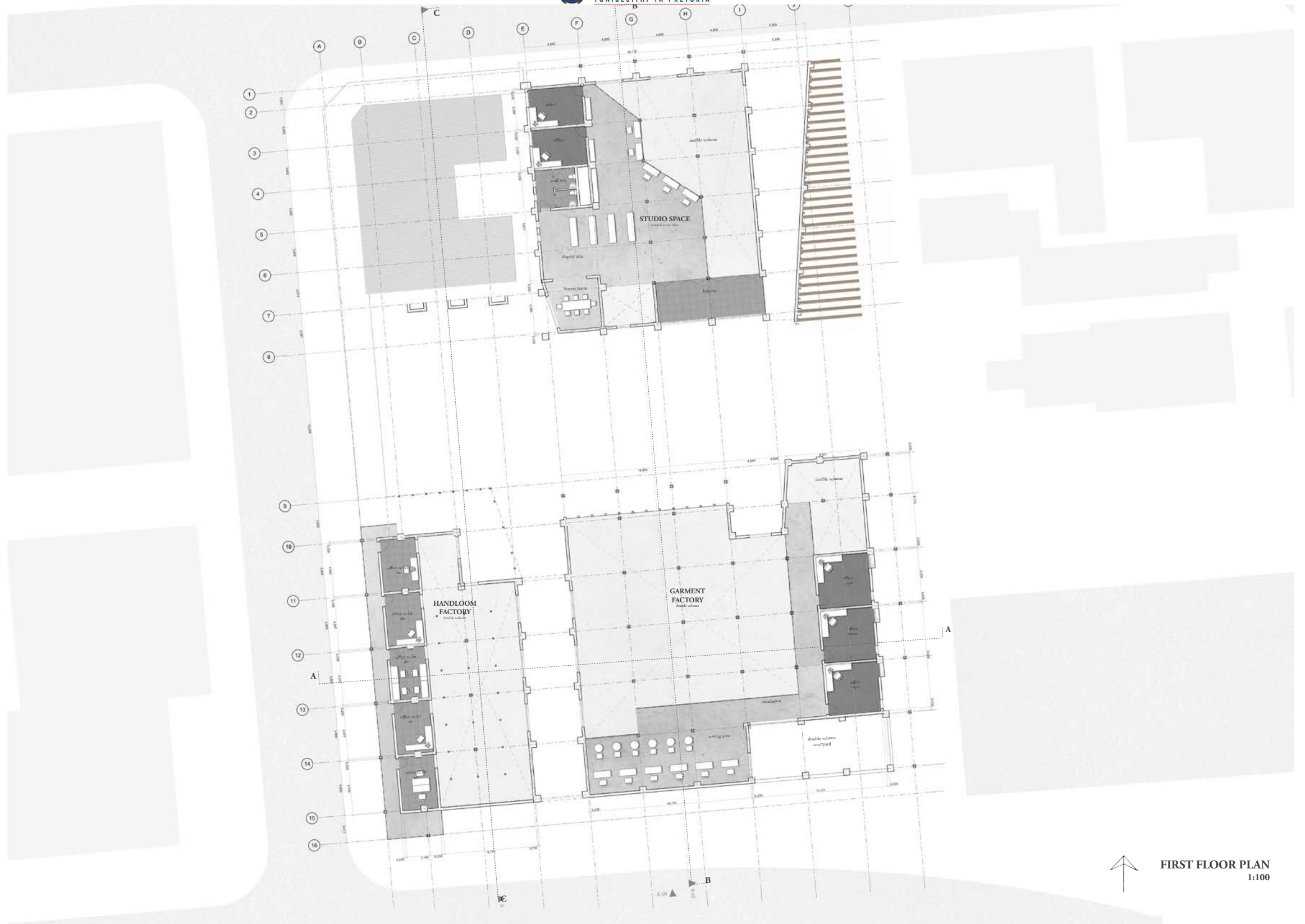


Fig.310. First Floor Plan (nts)





Fig.311. View down 5th Avenue



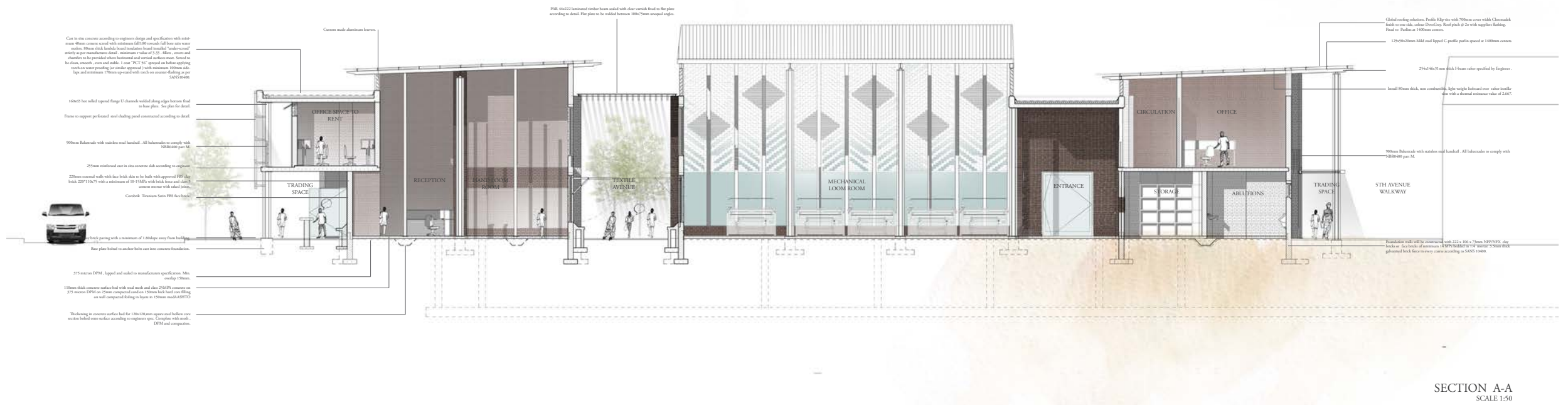


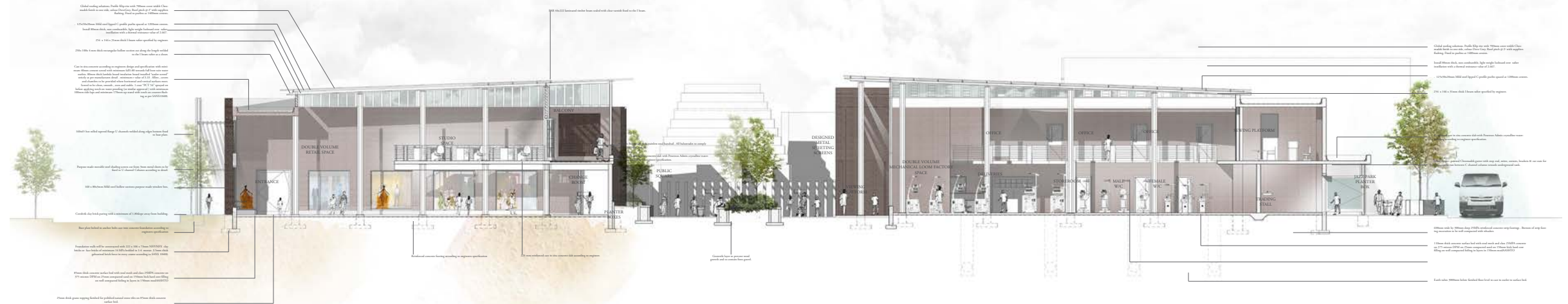
Fig.312. Section A-A through the factory spaces (nts)





Fig.313. View of the entrance to the public square from Jerusalem street.





SECTION B-B  
SCALE 1:50

Fig.314. Section B-B through the factory and retail space (nts).





*Fig.315. View down the viewing corridor between the factory spaces.*



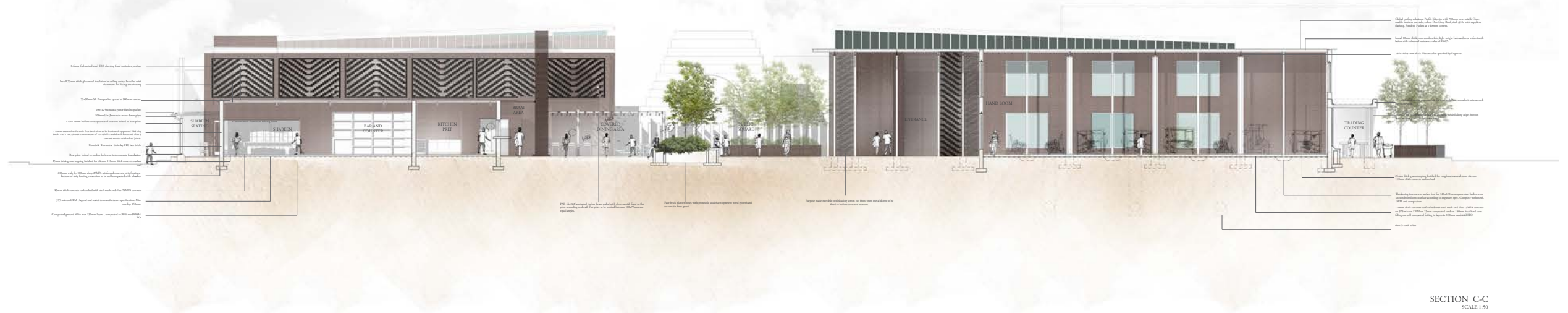


Fig.316. Section C-C through the handloom factory, outside eating space and shabeen. (nts)





*Fig.317. View from Bloed street.*



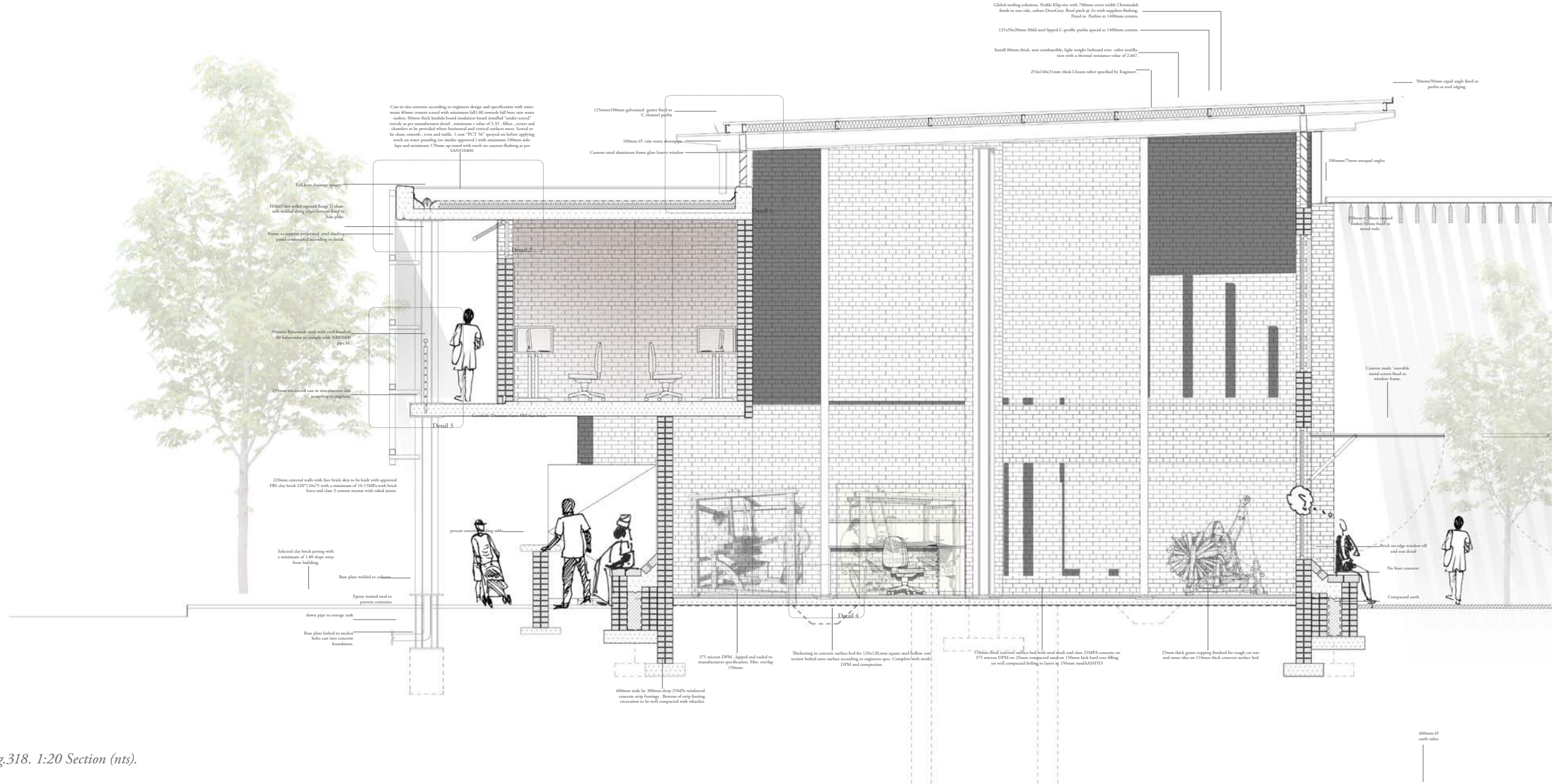


Fig.318. 1:20 Section (nts).

SECTION THROUGH THE  
HAND LOOM FACTORY  
SCALE 1:20





*Fig.319. View from the balcony of the studio.*



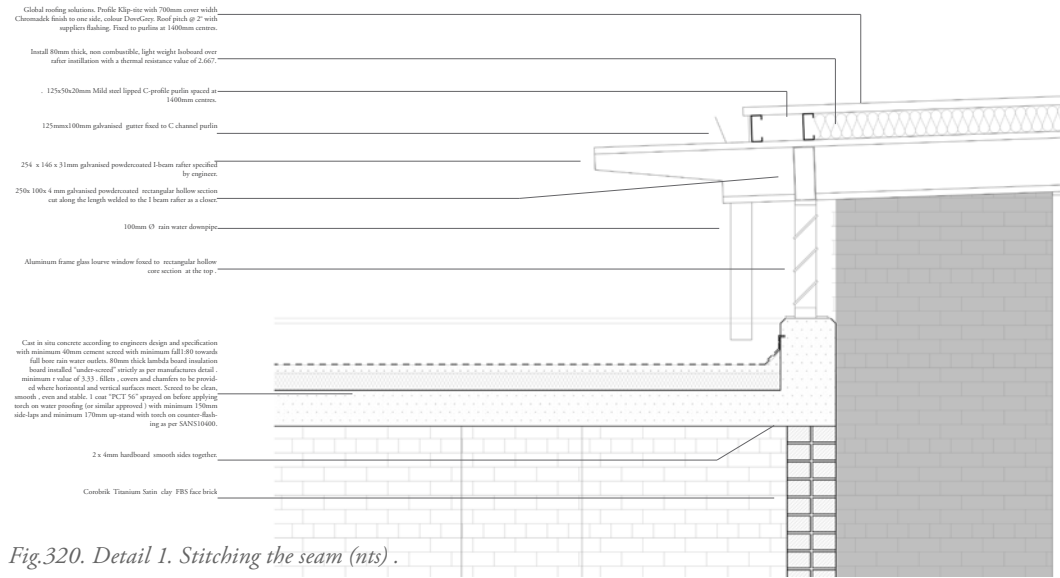


Fig.320. Detail 1. Stitching the seam (nts).

Detail 1: Stitching the seam

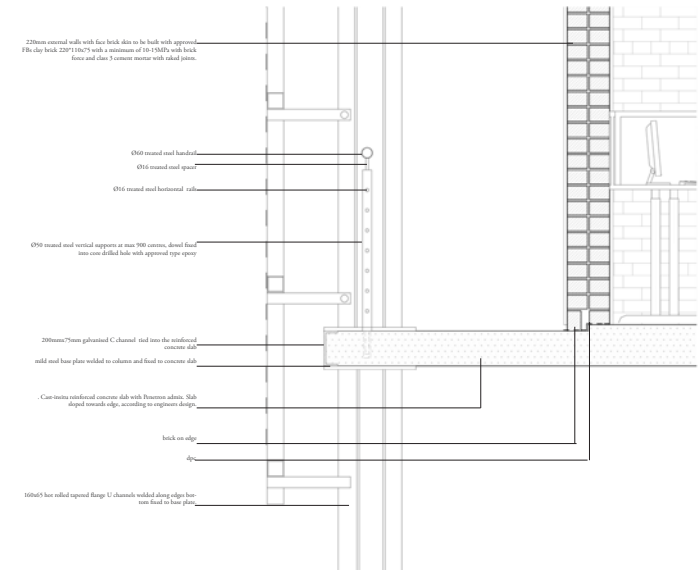
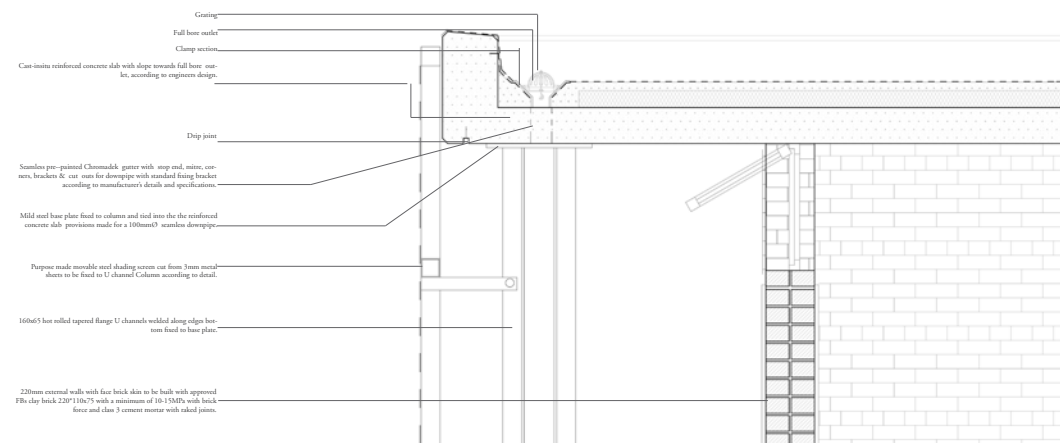


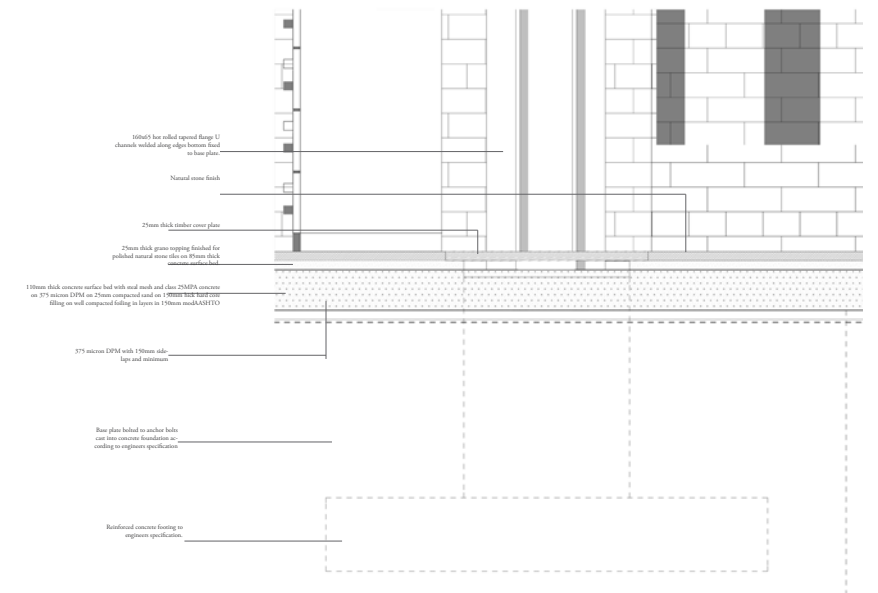
Fig.323. Detail 3. Weaving the materials (nts).

Detail 3: Weaving the materials



Detail 2: Weaving the materials

Fig.321. Detail 2. Weaving the materials (nts).



Detail 3: The knitting needle

Fig.322. Detail 4. Knitting needle (nts).





*Fig.324. View of the shabeen and entrance from Jerusalem street.*





*Fig.325. View down 5th Avenue from Bloed Street.*





Fig.326. Entrance to the Handloom Factory and the screens.





*Fig.327. The screen becomes trading space between ablutions and 5th street.*





*Fig.328. View from Grand Street. Entrance to the retail and Design studio.*





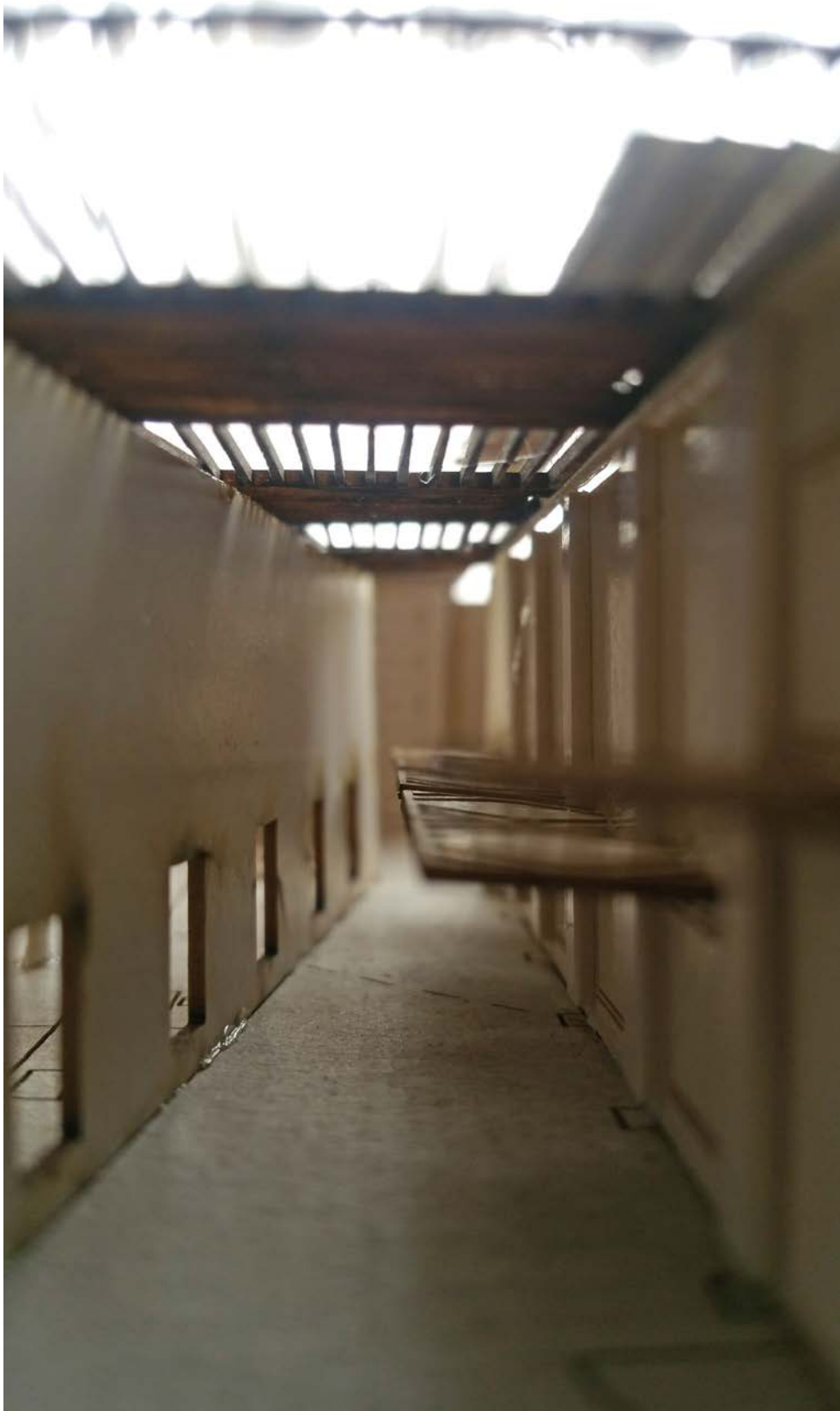
Fig.329. Entire site.





*Fig.330. View of the public square.*





*Fig.331.Retail window shopping avenue.*



*Fig.332.Framing the view of the temple.*



# Water Usage

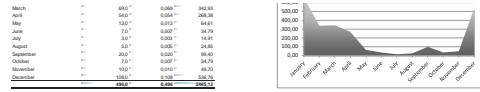


The water strategy is to collect the storm water from the roof run off as well as from the ground run off.

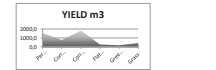
The water is needed for the public ablutions as well for the garment manufacturing process.

The knitwear needs to be washed before it is packaged and shipped off. This grey water that is produced will be fed back into the ablation system to feed the public ablutions.

According to the calculations a mix of storm water collection and municipal water will be needed.

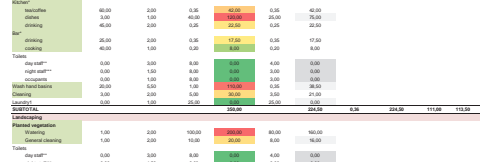


MONTH	PRECIPITATION (mm)	YIELD (m³)
January	100.0	100.0
February	150.0	150.0
March	200.0	200.0
April	250.0	250.0
May	300.0	300.0
June	350.0	350.0
July	400.0	400.0
August	450.0	450.0
September	400.0	400.0
October	350.0	350.0
November	300.0	300.0
December	250.0	250.0

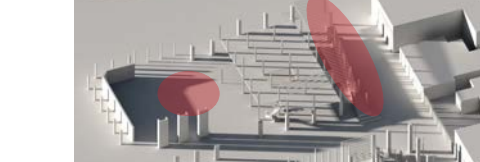


MONTH	PRECIPITATION (mm)	YIELD (m³)	DEMAND (m³)	MONTHLY BALANCE	VOL. IN TANK (m³)
January	100.0	100.0	200.0	-100.0	100.0
February	150.0	150.0	200.0	-50.0	150.0
March	200.0	200.0	200.0	0.0	200.0
April	250.0	250.0	200.0	50.0	250.0
May	300.0	300.0	200.0	100.0	300.0
June	350.0	350.0	200.0	150.0	350.0
July	400.0	400.0	200.0	200.0	400.0
August	450.0	450.0	200.0	250.0	450.0
September	400.0	400.0	200.0	200.0	400.0
October	350.0	350.0	200.0	150.0	350.0
November	300.0	300.0	200.0	100.0	300.0
December	250.0	250.0	200.0	50.0	250.0

DESCRIPTION	AREA (m²)	RUNOFF COEFF.	YIELD (m³)
Roof structure	1335	0.8	1068
Paving A	2104	0.8	1683
Gravel	0	0.2	0
Grass	0	0.1	0
Other	0	0	0
<b>TOTAL AREA (m²)</b>	<b>3439</b>	<b>0.8</b>	<b>2751</b>



MONTH	YIELD (m³)	DEMAND (m³)	POTENTIAL BALANCE	VOLUME IN TANK (m³)
January	100.0	200.0	-100.0	100.0
February	150.0	200.0	-50.0	150.0
March	200.0	200.0	0.0	200.0
April	250.0	200.0	50.0	250.0
May	300.0	200.0	100.0	300.0
June	350.0	200.0	150.0	350.0
July	400.0	200.0	200.0	400.0
August	450.0	200.0	250.0	450.0
September	400.0	200.0	200.0	400.0
October	350.0	200.0	150.0	350.0
November	300.0	200.0	100.0	300.0
December	250.0	200.0	50.0	250.0



MONTH	YIELD (m³)	DEMAND (m³)	POTENTIAL BALANCE	VOLUME IN TANK (m³)
January	100.0	200.0	-100.0	100.0
February	150.0	200.0	-50.0	150.0
March	200.0	200.0	0.0	200.0
April	250.0	200.0	50.0	250.0
May	300.0	200.0	100.0	300.0
June	350.0	200.0	150.0	350.0
July	400.0	200.0	200.0	400.0
August	450.0	200.0	250.0	450.0
September	400.0	200.0	200.0	400.0
October	350.0	200.0	150.0	350.0
November	300.0	200.0	100.0	300.0
December	250.0	200.0	50.0	250.0

MONTH	YIELD (m³)	DEMAND (m³)	POTENTIAL BALANCE	VOLUME IN TANK (m³)
January	100.0	200.0	-100.0	100.0
February	150.0	200.0	-50.0	150.0
March	200.0	200.0	0.0	200.0
April	250.0	200.0	50.0	250.0
May	300.0	200.0	100.0	300.0
June	350.0	200.0	150.0	350.0
July	400.0	200.0	200.0	400.0
August	450.0	200.0	250.0	450.0
September	400.0	200.0	200.0	400.0
October	350.0	200.0	150.0	350.0
November	300.0	200.0	100.0	300.0
December	250.0	200.0	50.0	250.0

MONTH	YIELD (m³)	DEMAND (m³)	POTENTIAL BALANCE	VOLUME IN TANK (m³)
January	100.0	200.0	-100.0	100.0
February	150.0	200.0	-50.0	150.0
March	200.0	200.0	0.0	200.0
April	250.0	200.0	50.0	250.0
May	300.0	200.0	100.0	300.0
June	350.0	200.0	150.0	350.0
July	400.0	200.0	200.0	400.0
August	450.0	200.0	250.0	450.0
September	400.0	200.0	200.0	400.0
October	350.0	200.0	150.0	350.0
November	300.0	200.0	100.0	300.0
December	250.0	200.0	50.0	250.0

## WATER MANAGEMENT MODEL

### A WATER RESOURCE INFORMATION (YIELD, m³)

#### A1 RAIN WATER HARVESTING DATA

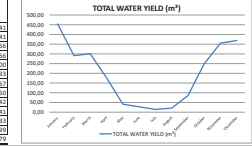
DESCRIPTION	AREA (m²)	RUNOFF COEFF.	YIELD (m³)
Roof structure	1335	0.8	1068
Paving A	2104	0.8	1683
Gravel	0	0.2	0
Grass	0	0.1	0
Other	0	0	0
<b>TOTAL AREA (m²)</b>	<b>3439</b>	<b>0.8</b>	<b>2751</b>

#### A2 RECYCLED / ALTERNATIVE WATER SOURCE

MONTH	WEEKLY YIELD (m³)	MONTHLY YIELD (m³)	WEEKLY DEMAND (m³)	MONTHLY DEMAND (m³)	TOTAL / MONTH (m³)
January	0	0	0	0	0
February	0	0	0	0	0
March	0	0	0	0	0
April	0	0	0	0	0
May	0	0	0	0	0
June	0	0	0	0	0
July	0	0	0	0	0
August	0	0	0	0	0
September	0	0	0	0	0
October	0	0	0	0	0
November	0	0	0	0	0
December	0	0	0	0	0
<b>ANNUAL AVE</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

### A3 TOTAL WATER YIELD

MONTH	AVE RAINFALL (mm)	CATCHMENT AREA (m²)	ALTERNATIVE WATER SOURCE (m³)	TOTAL WATER YIELD (m³)
January	0.1	3439	0.00	106.8
February	0.09	3439	0.00	106.8
March	0.08	3439	0.00	106.8
April	0.07	3439	0.00	106.8
May	0.06	3439	0.00	106.8
June	0.05	3439	0.00	106.8
July	0.04	3439	0.00	106.8
August	0.03	3439	0.00	106.8
September	0.02	3439	0.00	106.8
October	0.01	3439	0.00	106.8
November	0.01	3439	0.00	106.8
December	0.01	3439	0.00	106.8
<b>ANNUAL AVE</b>	<b>0.10</b>	<b>3439</b>	<b>0.00</b>	<b>1068.0</b>

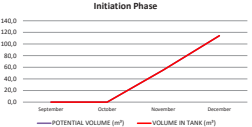


### C WATER BUDGET

TANK CAPACITY (m³): 10000

MIN VOLUME (m³): 0

MONTH	YIELD (m³)	DEMAND (m³)	POTENTIAL BALANCE	VOLUME IN TANK (m³)
January	100.0	200.0	-100.0	100.0
February	150.0	200.0	-50.0	150.0
March	200.0	200.0	0.0	200.0
April	250.0	200.0	50.0	250.0
May	300.0	200.0	100.0	300.0
June	350.0	200.0	150.0	350.0
July	400.0	200.0	200.0	400.0
August	450.0	200.0	250.0	450.0
September	400.0	200.0	200.0	400.0
October	350.0	200.0	150.0	350.0
November	300.0	200.0	100.0	300.0
December	250.0	200.0	50.0	250.0



### C2 WATER BUDGET

YEAR 1

MONTH	YIELD (m³)	DEMAND (m³)	POTENTIAL BALANCE	VOLUME IN TANK (m³)
January	100.0	200.0	-100.0	100.0
February	150.0	200.0	-50.0	150.0
March	200.0	200.0	0.0	200.0
April	250.0	200.0	50.0	250.0
May	300.0	200.0	100.0	300.0
June	350.0	200.0	150.0	350.0
July	400.0	200.0	200.0	400.0
August	450.0	200.0	250.0	450.0
September	400.0	200.0	200.0	400.0
October	350.0	200.0	150.0	350.0
November	300.0	200.0	100.0	300.0
December	250.0	200.0	50.0	250.0



### D WATER DEMAND

LANDSCAPE IRRIGATION DEMAND (m³)

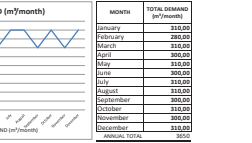
MONTH	WEEKLY IRR.	MONTHLY IRR.	WEEKLY IRR.	MONTHLY IRR.	WEEKLY IRR.	MONTHLY IRR.
January	0.02	0	0.025	0	0.025	0
February	0.02	0	0.025	0	0.025	0
March	0.02	0	0.025	0	0.025	0
April	0.02	0	0.025	0	0.025	0
May	0.01	0	0.025	0	0.025	0
June	0.01	0	0.025	0	0.025	0
July	0.01	0	0.025	0	0.025	0
August	0.02	0	0.025	0	0.025	0
September	0.02	0	0.025	0	0.025	0
October	0.02	0	0.025	0	0.025	0
November	0.02	0	0.025	0	0.025	0
December	0.02	0	0.025	0	0.025	0

MONTH	PERSONS	WATER CAPTA/DAY	DOMESTIC DEMAND
January	50	200	10000
February	50	200	10000
March	50	200	10000
April	50	200	10000
May	50	200	10000
June	50	200	10000
July	50	200	10000
August	50	200	10000
September	50	200	10000
October	50	200	10000
November	50	200	10000
December	50	200	10000

### E EVAPORATION LOSS (For 'open' reservoirs)

AREA OF RESERVOIR (m²)

MONTH	TEMPERATURE IN RATE	EVAPORATION RATE	TOTAL LOSS (m³)
January	0.06	0.15	0
February	0.05	0.14	0
March	0.03	0.1	0
April	0.02	0.08	0
May	0.01	0.06	0
June	0.01	0.05	0
July	0.01	0.04	0
August	0.02	0.05	0
September	0.03	0.07	0
October	0.05	0.12	0
November	0.08	0.18	0
December	0.12	0.28	0



### F TOTAL WATER LOSS & DEMAND

MONTH

MONTH	TOTAL DEMAND (m³)
January	11000
February	11000
March	11000
April	11000
May	11000
June	11000
July	11000
August	11000
September	11000
October	11000
November	11000
December	11000

# Electricity Analysis

## ELECTRICAL DEMAND - TYPICAL

ITEM	QUANTITY	WATTS	HOURS	EXTERNAL	
				kWh PER DAY	ANNUALLY
street lights	6	250	11	16.50	6022.5
paving lights	200	2,9	11	6.38	2328.7
tree uplighters	20	150	11	33.00	12045
<b>TOTAL</b>				<b>55.88</b>	<b>20396.2</b>

## SERVICE YARD

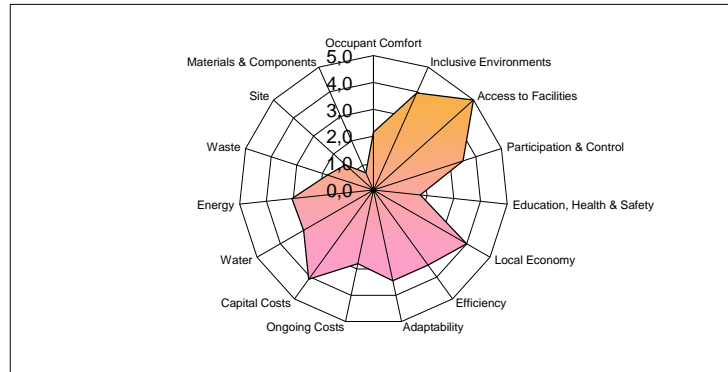
ITEM	QUANTITY	WATTS	HOURS	kWh PER DAY	ANNUALLY
pumps - 4					



# SBAT Analysis

## SUSTAINABLE BUILDING ASSESSMENT TOOL (SBAT- P) V1

PROJECT	ASSESSMENT
Project title: Marabastad Textiles	Date: 20-09-16
Location: Marabastad	Undertaker Sandeep Nicha
Building type: Retail, light industry, studio, restaurant	Company / organisatic University of Pretoria
Internal area   2500	Telephone: Fax:
Number of us 80	Email:



Social	3,3	Economic	3,6	Environmental	2,0
Overall	2,9	Classification			

### Building Performance - Environmental

Criteria	Indicative performance measure	Measured	Points
<b>N 1 Water</b>			<b>3,0</b>
:N 1.1 Rainwater	% of water consumed sourced from rainwater harvested on site	100	1,0
:N 1.2 Water use	% of equipment (taps, washing machines, urinals showerheads) that are water efficient	100	1,0
:N 1.3 Runoff	% of carparking, paths, roads and roofs that have absorbant/permeable surfaces (grassed/thatched/looselaid paving/ absorbant materials)	0	0,0
:N 1.4 Greywater	% of water from washing/relatively clean processes recycled and reused	100	1,0
:N 1.5 Planting	% of planting (other than food gardens) on site with low / appropriate water requirements	0	0,0
<b>N 2 Energy</b>			<b>3,0</b>
:N 2.1 Location	% of users who walk / use public transport to commute to the building	100	1,0
:N 2.2 Ventilation	% of building ventilation requirements met through natural / passive ventilation	50	0,5
:N 2.3 Heating & Cooling	% of occupied space which has passive environmental control (no or minimal energy consumption)	50	0,5
:N 2.4 Appliances & fittings	% of appliances / lighting fixtures that are classed as highly energy efficient ( ie energy star rating)	75	0,75
:N 2.5 Renewable energy	% of building energy requirements met from renewable sources	30	0,3
<b>N 3 Waste</b>			<b>1,0</b>
:N 3.1 Toxic waste	% of toxic waste (batteries, ink cartridges, flourescent lamps) recycled	100	1,0
:N 3.2 Organic waste	% of organic waste recycled	30	0,3
:N 3.3 Inorganic waste	% of inorganic waste recycled.	50	0,5
:N 3.4 Sewerage	% of sewerage recycled on site	0	0,0
:N 3.5 Construction waste	% of damaged building materials / waste developed in construction recycled on site	0	0,0
<b>N 4 Site</b>			<b>1,0</b>
:N 4.1 Brownfield site	% of proposed site already disturbed / brownfield (previously developed)	0	0,0
:N 4.2 Neighbouring buildings	No neighbouring buildings negatively affected (access to sunlight, daylight, ventilation) (100%)	100	1,0
:N 4.3 Vegetation	% of area of area covered in vegetation (include green roofs, internal planting) relative to whole site	0	0,0
:N 4.4 Food gardens	Food gardens on site (100%)	0	0,0
:N 4.5 Landscape inputs	% of landscape that does not require mechanical equipment (ie lawn cutting) and or artificial inputs such as weed killers and pesticides	40	0,4
<b>N 5 Materials &amp; Components</b>			<b>0,0</b>
:N 5.1 Embodied energy	Materials with high embodied energy (aluminium,plastics) make up less than 1% of weight of building (100%)	40	0,4
:N 5.2 Material sources	% of materials and components by volume from grown sources (animal/plant)	30	0,3
:N 5.3 Ozone depletion	No materials and components used requiring ozone depleting processes (100%)	0	0,0
:N 5.4 Recycled / reuse	% of materials and components (by weight) reused / from recycled sources	0	0,0
:N 5.5 Construction process	Volume / area of site disturbed during construction less than 2X volume/area of new building (100%)	0	0,0

### Building Performance - Economic

Criteria	Indicative performance measure	Measured	Points
<b>EC 1 Local economy</b>			<b>4,0</b>
EC 1.1 Local contractors	% value of the building constructed by local (within 50km) small (employees<20) contractors	100	1,0
EC 1.2 Local materials	% of materials (sand, bricks, blocks, roofing material) sourced from within 50km	65	0,7
EC 1.3 Local components	% of components (windows, doors etc) made locally (in the country)	100	1,0
EC 1.4 Local furniture/fittings	% of furniture and fittings made locally (in the country)	65	0,7
EC 1.5 Maintenance	% of maintenance and repairs by value that can, and are undertaken, by local contractors (within 50km)	70	0,7
<b>EC 2 Efficiency</b>			<b>3,5</b>
EC 2.1 Capacity	% capacity of building used on a daily basis (actual number of users / number of users at full capacity*100)	100	1,0
EC 2.2 Occupancy	% of time building is occupied and used (actual average number of hours used / all potential hours building could be used (24) *100)	65	0,7
EC 2.3 Space per occupant	Space provision per user not more than 10% above national average for building type (100%)	0	0,0
EC 2.4 Communication	Site/building has access to internet and telephone (100%), telephone only (50%)	100	1,0
EC 2.5 Material & Components	Building design coordinated with material / component sizes in order to minimise wastage. Walls (50%), Roof and floors (50%)	80	0,8
<b>EC 3 Adaptability</b>			<b>4,1</b>
EC 3.1 Vertical heights	% of spaces that have a floor to ceiling height of 3000mm or more	100	1,0
EC 3.2 External space	Design facilitates flexible external space use (100%)	100	1,0
EC 3.3 Internal partition	Non loadbearing internal partitions that can be easily adapted (loose partioning (100%), studwall (50%), masonry (25%)	25	0,3
EC 3.4 Modular planning	Building with modular stucture, envelope (fenestration) & services allowing easy internal adaptaptation (100%)	100	1,0
EC 3.5 Furniture	Modular, limited variety furniture - can be easily configured for different uses (100%)	85	0,9
<b>EC 4 Ongoing costs</b>			<b>2,8</b>
EC 4.1 Induction	All new users receive induction training on building systems (50%), Detailed building user manual (50%)	70	0,7
EC 4.2 Consumption & waste	% of users exposed on a monthly basis to building performance figures (water (25%), electricity (25%), waste (25%), accidents (25%)	0	0,0
EC 4.2 Metering	Easily monitored localised metering system for water (25%) and energy (75%)	80	0,8
EC 4.3 Maintenance & Cleaning	Building can be cleaned and maintained easily and safely using simple equipment and local non-hazardous materials (100%)	80	0,8
SO 4.5 Procurement	% of value of all materials/equipment used in the building on a daily basis supplied by local (within the country) manufacturers	50	0,5
<b>EC 5 Capital Costs</b>			<b>4,1</b>
EC 5.1 Local need	Five percent capital cost allocated to address urgent local issues (employment, training etc) during construction process (100%)	100	1,0
EC 5.2 Procurement	Tender / construction packaged to ensure involvement of small local contractors/manufacturers (100%)	100	1,0
EC 5.3 Building costs	Capital cost not more than fifteen % above national average building costs for the building type (100%)	100	1,0
EC 5.4 Sustainable technology	3% or more of capital costs allocated to new sustainable/indigenous technology (100%)	80	0,8
EC 5.5 Existing Buildings	Existing buildings reused (100%)	30	0,3

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## *Conclusion*

The aim of this dissertation was to investigate identity of the *individual*, the *collective* and of *place*. With this in mind, the concept of identity morphed into the understanding of the *everyday*. The everyday presented itself through the ordinary, mundane and the normal tasks that one would perform on a day to day ritual. The selected study area revealed its identity through the retail occupation of space and how users occupy the colonnade, the building edges, any open space. The way retail and trade starts to manifest in vacant space, the opportunities that arise from leasable space starts to inform the way that space will be and is appropriated. This occupation of space is the trade identity of Marabastad which becomes its everyday identity.

The programme of garment manufacturing spoke to the retail identity found in Marabastad, the craft of making addressed the ideas of craftsmen weaving their identity into the garments and the retail aspect looked at how informal and formal trade manifest in space.

This was but one take on identity of place and space the understanding of the everyday was examined through the lens of retail.

Identity and architecture are topics for continuous iteration and dialogue, the aim of the project was to add the next layer to the discourse. The dissertation has come to a conclusion but the dialogue and the conversations about identity of space in a South African context have started before this dissertation and will continue long afterwards. That was and remains the goal for this investigation, to understand and add to the existing layers of *who* we are as the *individual*, the *collective* and how *we* occupy space.



*Closing statement for the dissertation.*

*i am not an **architect**  
that is the problem  
i am not an **architect***

*for me it is the **search**  
only a **search***

***search** for the unknown that i have not known  
neither do i know how it will manifest*

*that is actually the essence of my work  
it **begins** somewhere  
**ends** somewhere*

*and in that **process***

***I** grow  
↻  
the **work** grows*

***We Grow Together***

B.V Doshi