intervene

4 the building; technical report

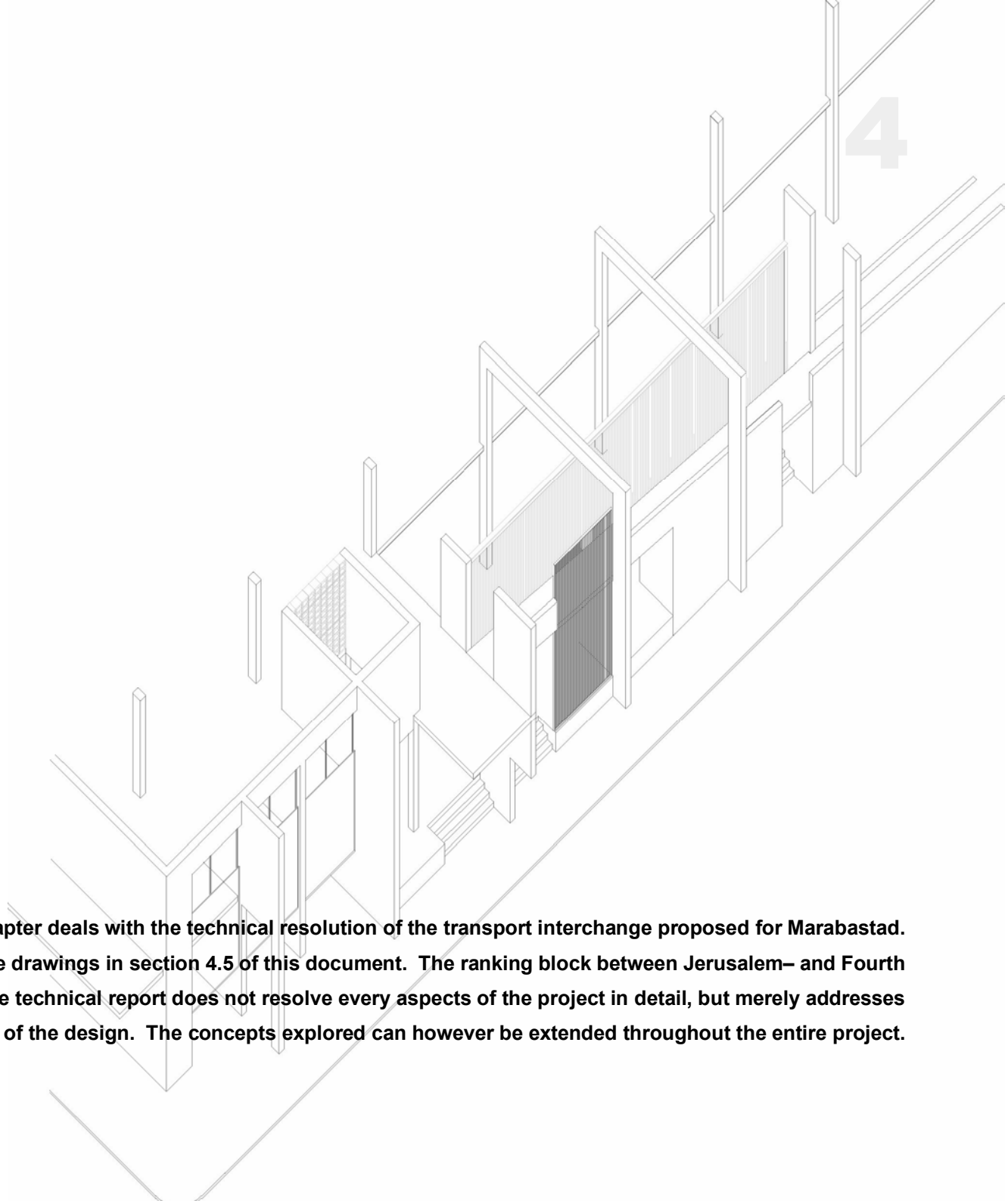
intervene (in-ter-vēn') *v.i.* to come or be between; to happen in the meantime; to interfere; to interpose

interpose (in-ter-pōz') *v.t.* to thrust in the way; to offer, as aid or service

4

the building; technical report

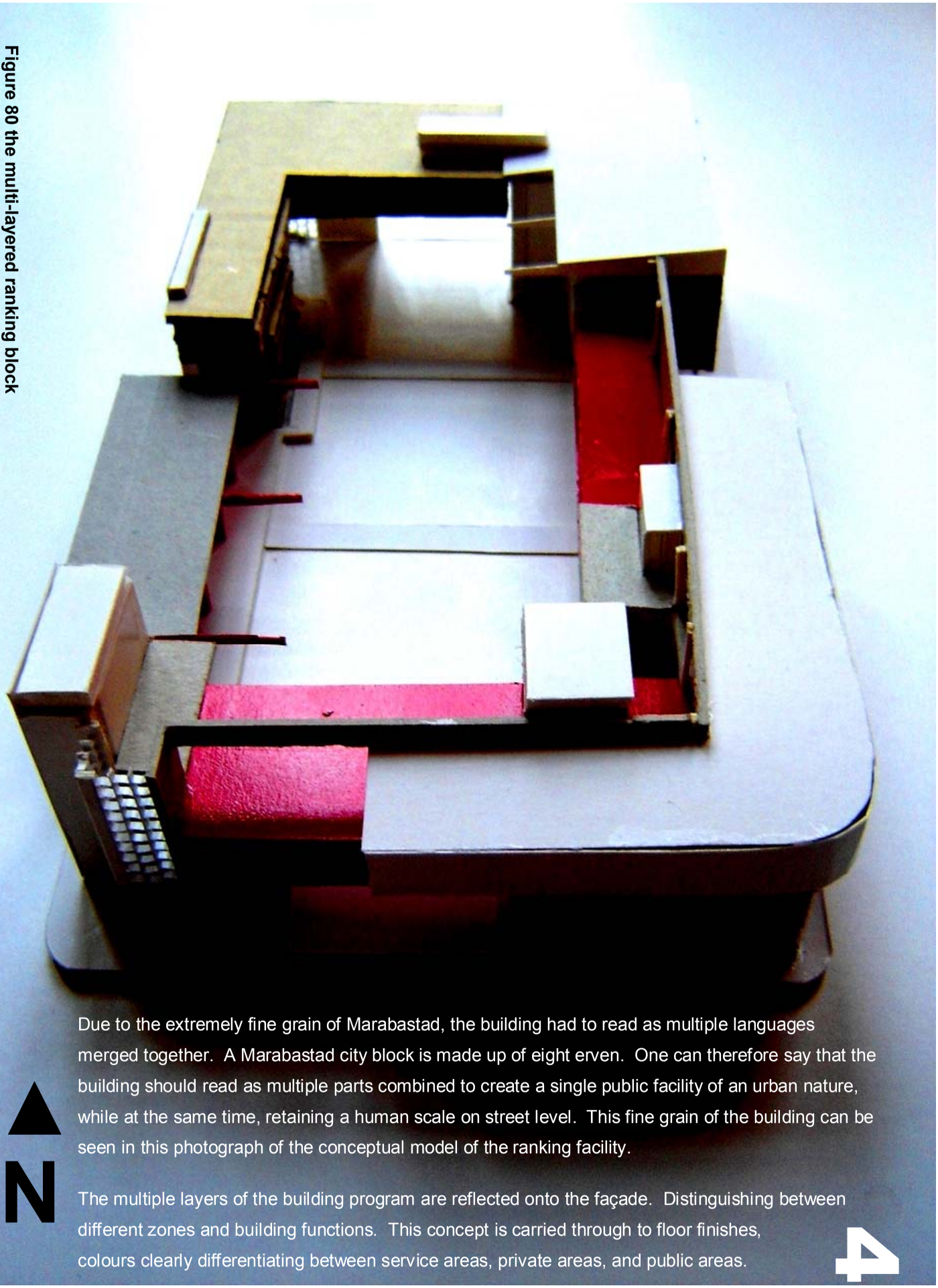
The project comprises an overlay of systems and functions.
This should manifest in the spaces created by the building.
Constructed of the amalgamation of different parts,
the building itself becomes an **INTERFACE**.



4

This chapter deals with the technical resolution of the transport interchange proposed for Marabastad. This chapter should be read together with the drawings in section 4.5 of this document. The ranking block between Jerusalem– and Fourth Street is the focus of this part of the study. The technical report does not resolve every aspects of the project in detail, but merely addresses the most important elements of the design. The concepts explored can however be extended throughout the entire project.

Figure 80 the multi-layered ranking block



Due to the extremely fine grain of Marabastad, the building had to read as multiple languages merged together. A Marabastad city block is made up of eight erven. One can therefore say that the building should read as multiple parts combined to create a single public facility of an urban nature, while at the same time, retaining a human scale on street level. This fine grain of the building can be seen in this photograph of the conceptual model of the ranking facility.

The multiple layers of the building program are reflected onto the façade. Distinguishing between different zones and building functions. This concept is carried through to floor finishes, colours clearly differentiating between service areas, private areas, and public areas.

The building consists of a city block perimeter building, with taxi ranking facilities situated to the centre of the block. The taxi rank is enclosed by various thresholds and boundaries creating opportunities for a variety of formal and informal building functions. The entire ground floor functions around ranking and hawking facilities.

A section through the block (figure 81) provides an introduction to the building's science.

The western façade of the block, facing Fourth Street forms the main link between the two proposed ranking blocks.

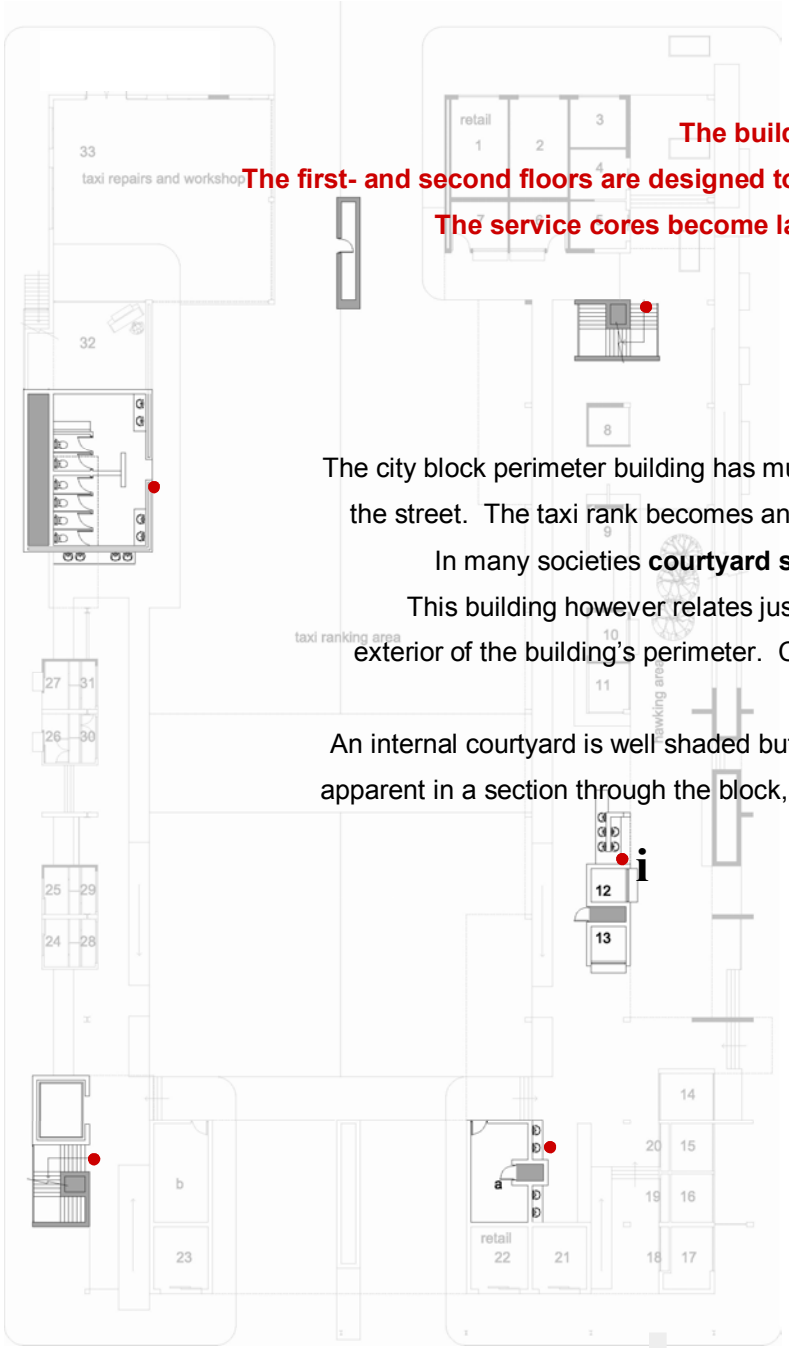
The greater part consists of a lightweight roof structure that provides a canopy for a loose-fit adaptable plan.

Figure 81 a section through the block

The eastern façade bordering Jerusalem Street creates a definite street edge at first glance, however functioning as a multiple layered threshold between the ranking area and the street.

The north-western corner of the block houses a taxi repairs and workshop area. With high levels of visual permeability it reminds of the existing ritual of taxi repairs taking place on the corners of streets throughout Marabastad.

The hostel, with overnight accommodation, is situated on the top floor of the facility. Facing north, with a cavity wall screening the hostel from the ranking facility to the south, allows adequate thermal and acoustic levels in this part of the building.



The building contains multiple service cores, to provide flexibility in terms of rentable space. The first- and second floors are designed to be let to single, or multiple tenants, with separate access points and service cores. The service cores become landmarks in the building and will be painted a bright color to indicate access points, information kiosk and restrooms (figure 82).

The city block perimeter building has multiple advantages, besides providing a layered threshold between the ranking facility and the street. The taxi rank becomes an internal “courtyard”, extending the interior of the building towards the centre of the block. In many societies **courtyard spaces are generally associated with public gatherings**, enclosing and framing space. This building however relates just as strongly to the street: extending the inside of the building to both the interior and the exterior of the building’s perimeter. Covered walkways, shading devices and colonnades extend the boundary between inside and outside. The narrow width of the building provides for adequate cross-ventilation. An internal courtyard is well shaded but could be disadvantageous in terms of air movement. The open plan of the ground floor, apparent in a section through the block, promotes airflow through the ranking facility. Primary wind from the north east ventilates noise and fumes caused by vehicles (figure 83).

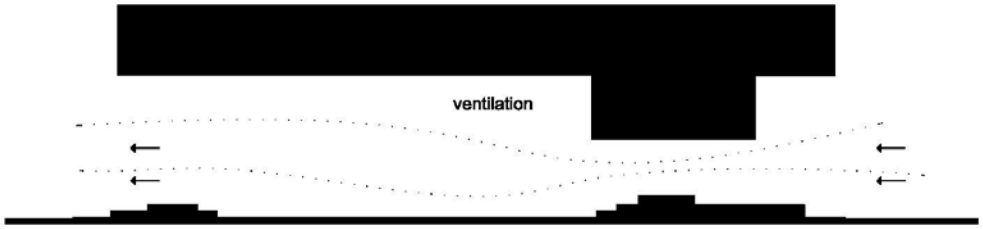
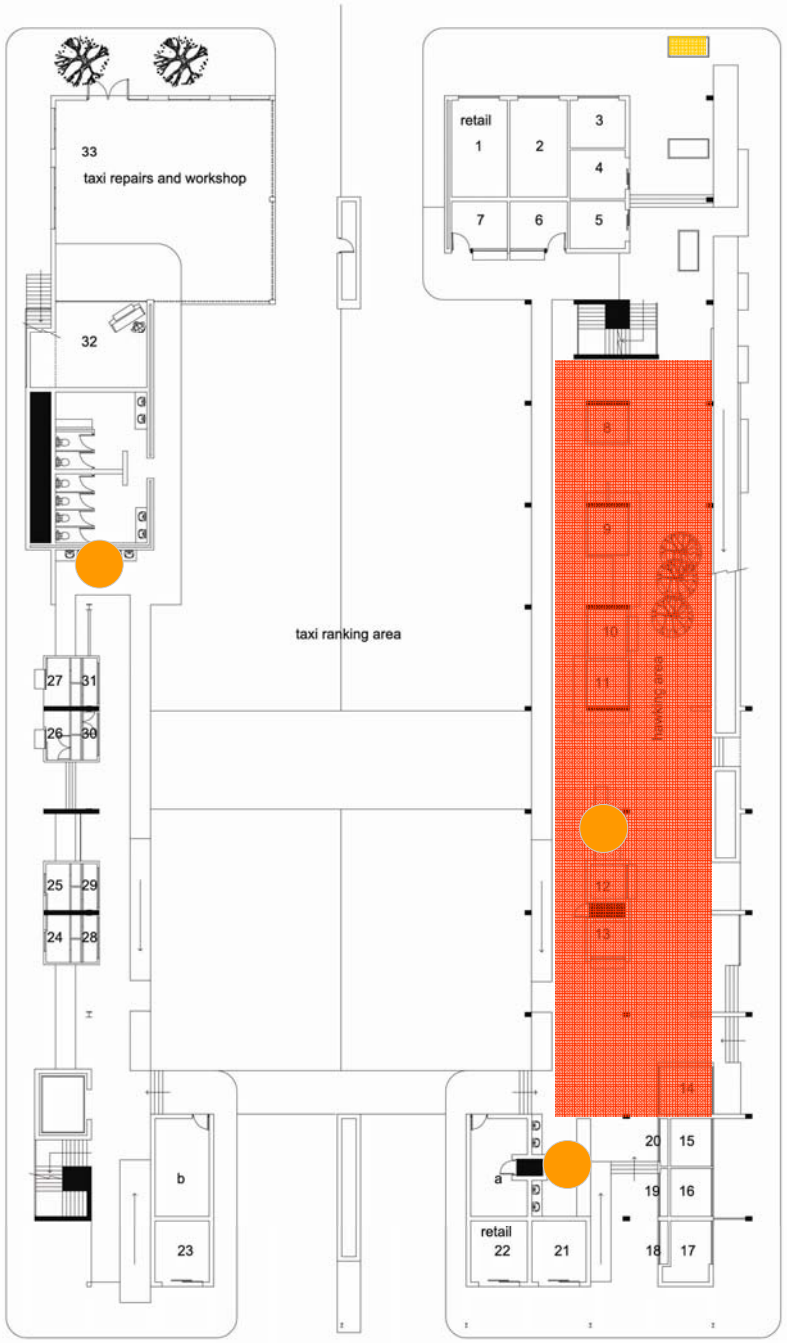


Figure 82 access and services

Figure 83 ventilation

Figure 84 basic facilities for trade



Basic facilities like wash basins, stalls and seating for hawkers are provided on the ground floor (figure 84).

For safety and hygiene reasons food preparation and consumption should be restricted to certain zones. Although it would be impossible to draw a definite boundary between zones, slaughtering and food preparations will have to be controlled to some extent. Designated areas can be highlighted clearly on a diagram at the information kiosk, and the joints between concrete slabs can be filled in with mosaic to distinguish zones (figure 85).

The sidewalk to the north of the block offers space for mobile trading stalls. Ramps provide easy access, for trolleys and wheelchairs, to all platforms.

The first– and second floors house a storage facility for hawkers. Stores of various sizes, ranging from 9m² to smaller “lockers”, can be rented by individuals.

mobile trading stall

food preparation and consumption

wash basins

Figure 85 mosaic boundaries

In providing basic flexible facilities, the building aims to accommodate current rituals associated with hawking and trade in Marabastad while promoting hygienic practises.

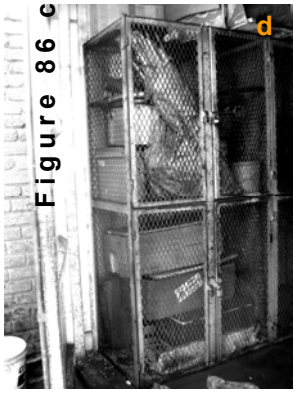


Figure 86 curren trade practices

a unhygienic circumstances due to lack of facilities
b mobile benches used by hawkers
C trolleys used to transport goods are accommodated with ramps to hawking areas
d typical "lockers" currently used

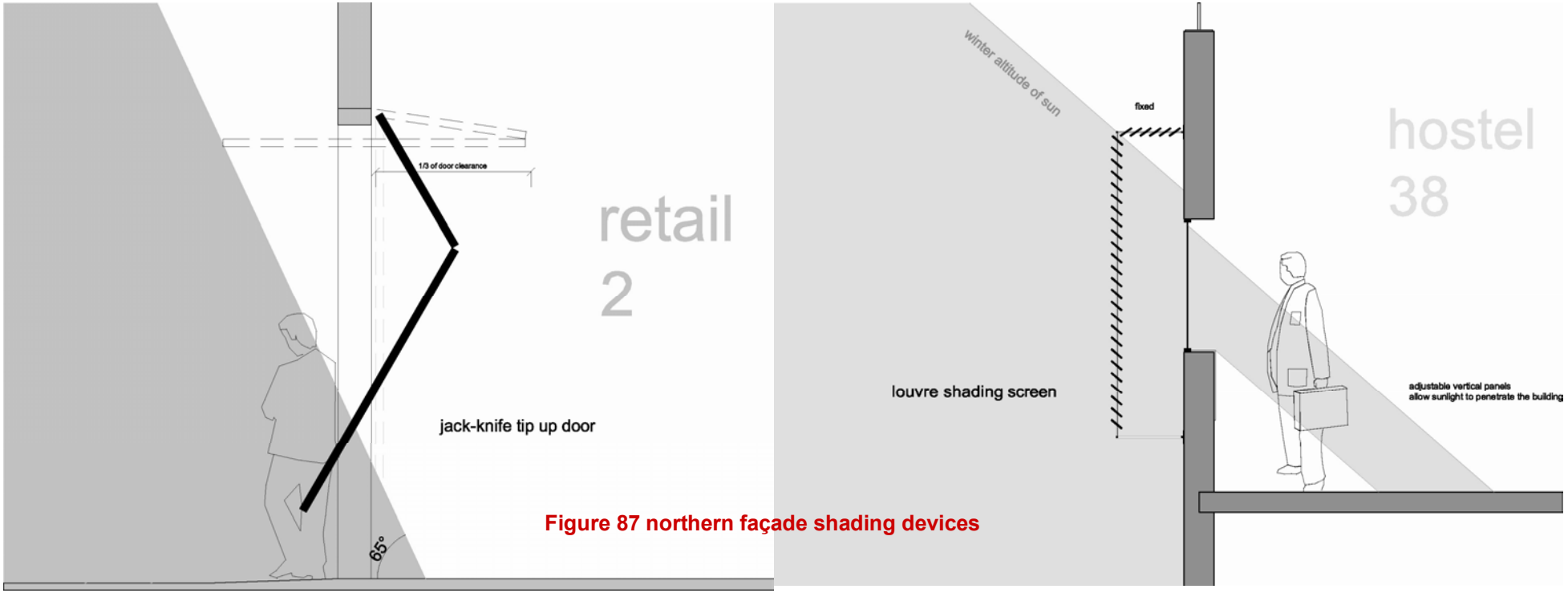


Figure 87 northern façade shading devices

For optimal thermal comfort, glazing is kept to a minimum. North-facing windows are protected from direct sunlight in summer while allowing sunlight to penetrate in winter (figure 87). Jack-knife tip up doors to the retail stalls create the sense of canopies, shading the sidewalk in front of stalls. This shaded walkway extends the boundary between inside and outside, allowing trade to spill out onto sidewalks. A louvre screen provides sun protection to the hostel on the second floor. With adjustable vertical louvres, sun penetration can be regulated accordingly.

Figure 88 north elevation

Rentable office spaces are situated to the southern side of the block for thermal comfort.
For the purpose of this project they are occupied by a medical health care facility on the semi-public first floor and a learning centre on the semi-private second floor.

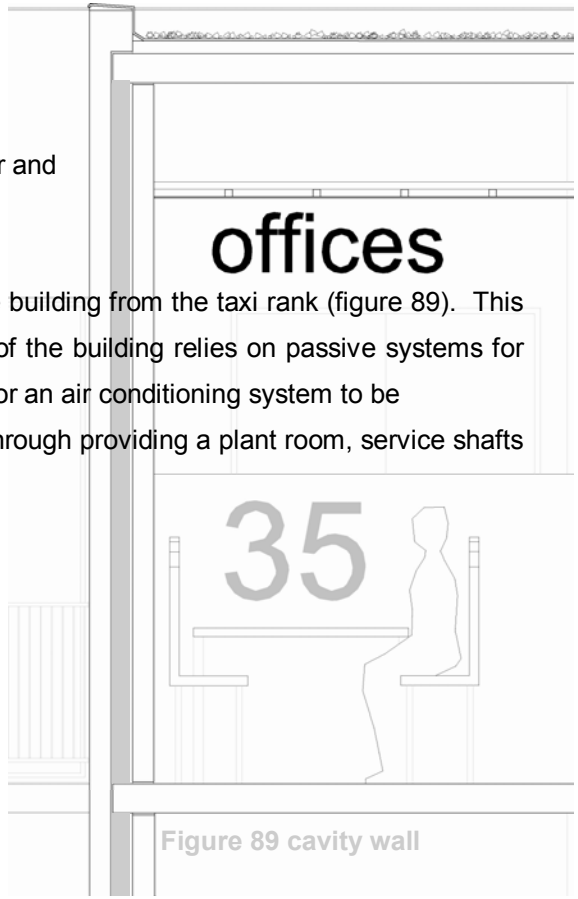


Figure 89 cavity wall

As ranking facilities are generally associated with excessive noise, a cavity wall separates the interior of the building from the taxi rank (figure 89). This cavity also ensures adequate thermal insulation to the west-facing walls of office areas. The greater part of the building relies on passive systems for user comfort. The spaces set aside as rentable office space forms a separate part of the building; allowing for an air conditioning system to be implemented in this part of the facility only. The possibility of an air conditioning system is accommodated through providing a plant room, service shafts and ceiling space to accommodate ducting.

The boundary between the building and Bloed Street is extended through a colonnade formed by a covered walkway on the first floor (figure 95). Reminding of the shaded sidewalks of Marabastad, this threshold becomes part of un-programmed space to be activated by the users.

Figure 90 south elevation

The northern and southern sections of the building, with their respective entrances and service cores have solid street edges. These two solid masses are linked on the first floor by a narrow slab (figure 91), housing a restaurant which looks unto the ranking facility. Between this walkway and the pedestrian ramp an un-programmed space is framed, providing a place for meeting and trade (figure 92).

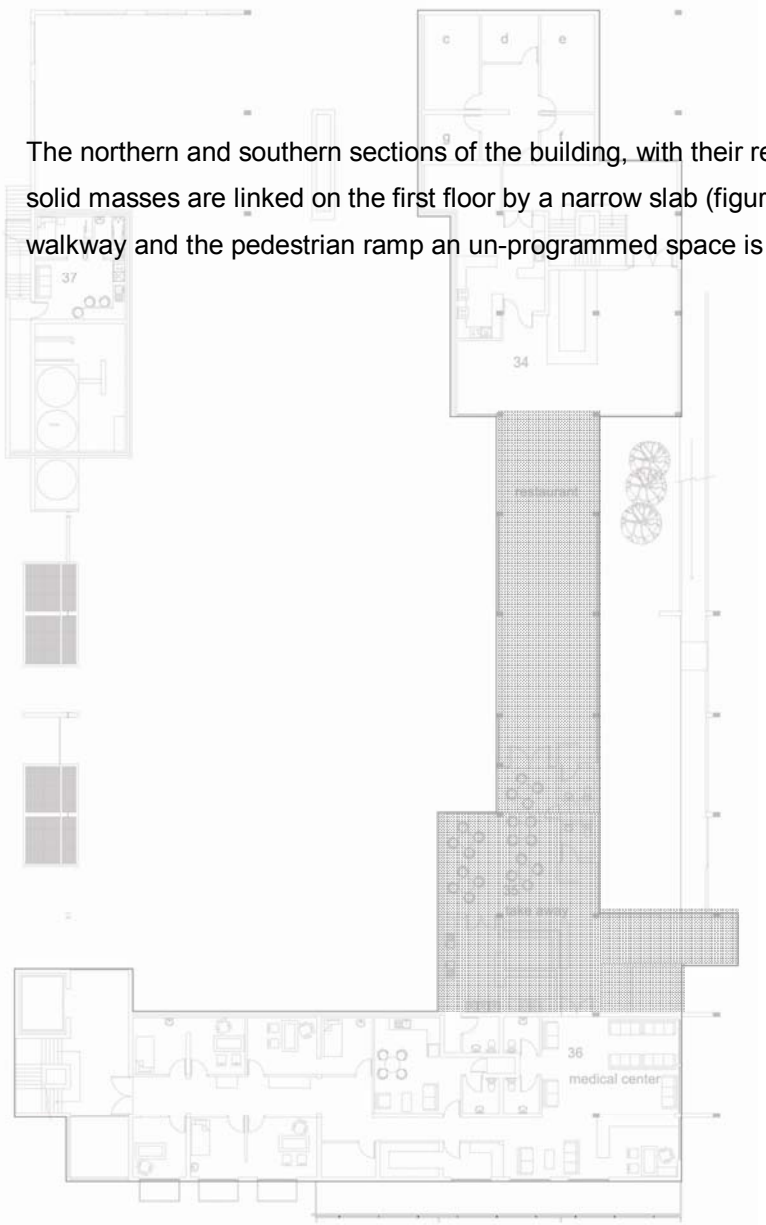


Figure 91 a walkway connecting two parts of the building

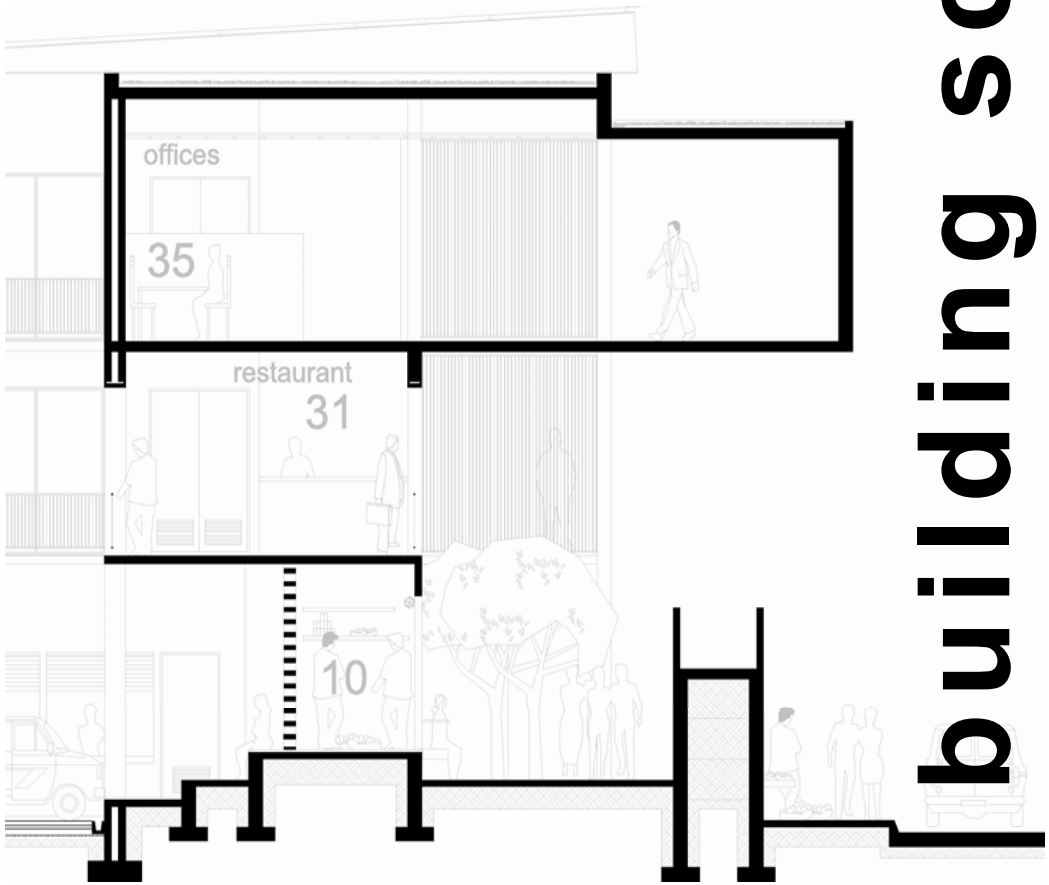


Figure 92 a space for meeting and trade

Multiple layers are present in the building horizontally as well as vertically, distinguishing between public and private space, formal and informal building functions, and programmed and un-programmed space. Thresholds like canopies, colonnades, visually permeable boundaries and throughfares, extend the boundaries between spaces. Un-programmed space comprises the *"in-between"* to be *"activated by the movement of crowds"* (Tschumi1994:13).

Un-programmed space becomes the place of the possible event

The design takes existing rituals occurring on the site and merges them in architectural spaces. Some spaces have set functions, some are prescriptive of their use while others allow for user and tenant appropriation.

The eastern façade, with its pedestrian ramp acts as multi-layered threshold between the sidewalk and the ranking facility (figure 93). With maximum physical and visual permeability, the eastern elevation strengthens physical and visual links between the street and the interior courtyard. The concept of buttress walls is applied to the eastern streetscape of the block. In-between these projections, informal building functions can be activated.

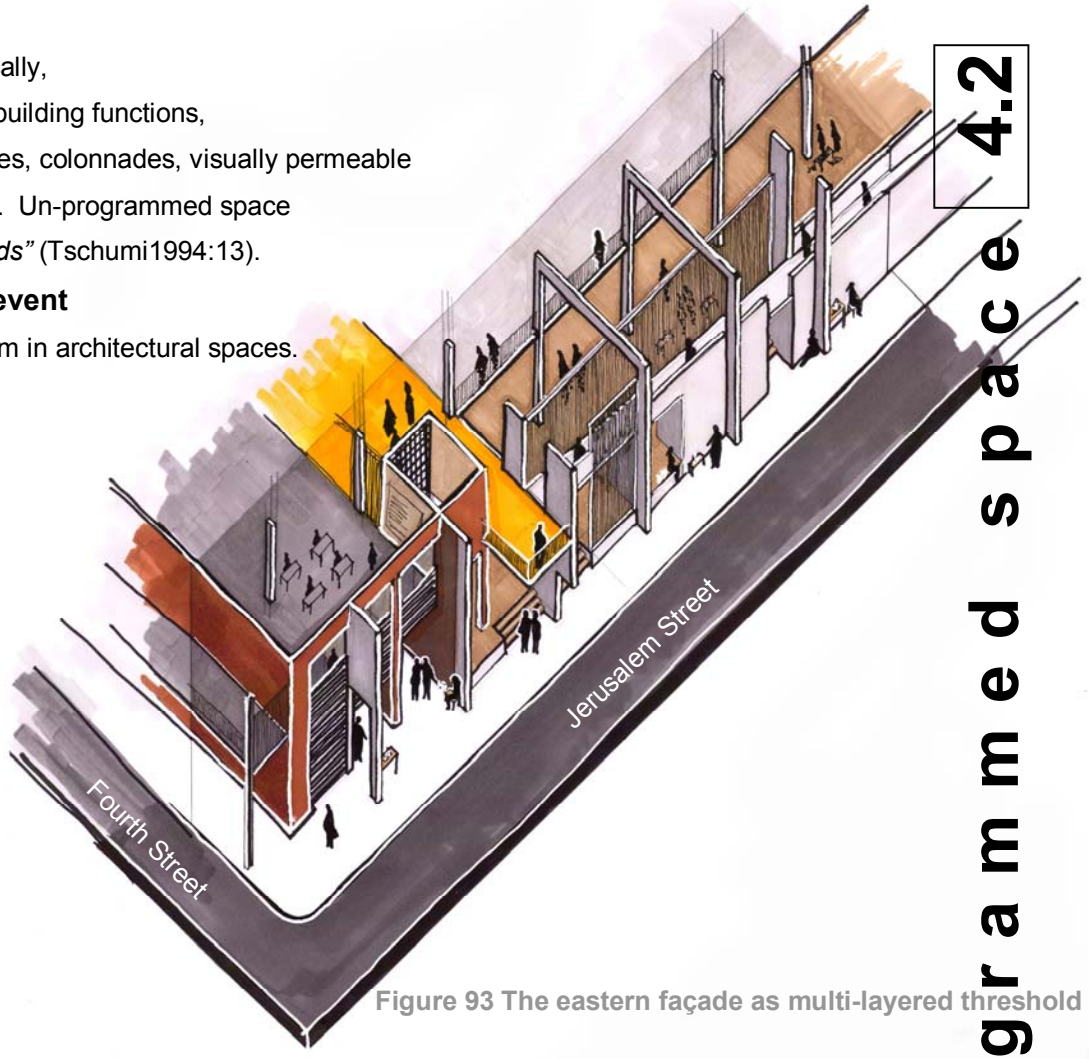


Figure 93 The eastern façade as multi-layered threshold

Figure 94 east elevation

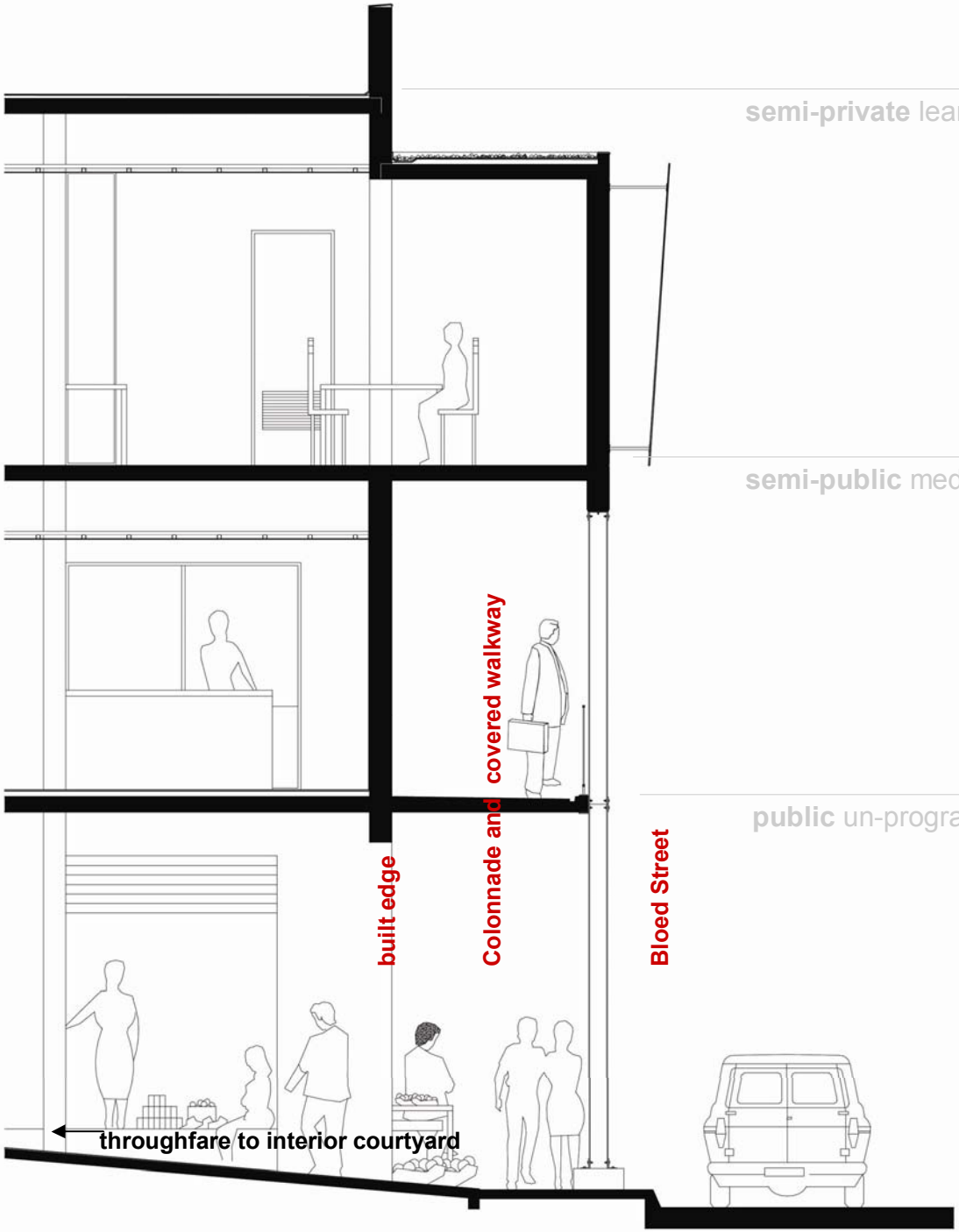


Figure 95 section through Bloed street colonnade

Transitions between spaces can be achieved through applying boundaries with varying levels of permeability and interaction. Covered walkways and colonnades create opportunities for public interaction.

The Bloed Street colonnade extends the built edge of the south facing retail stalls, creating an un-programmed space in-between the façade and the street.

The ground floor to the eastern side of the block consists of a fixed column grid (figure 96) which allows for a flexible, loose-fit plan. A variation on the conceptual idea of "**buttress walls**" (figure 62,p63) can be applied to this grid, to form opportunities for informal trade. Between these walls, different configurations can host a variety of trading opportunities.

The ground floor plan offers a possible configuration (figure 98). The columns can be filled in with masonry, concrete blocks, roller shutter doors etc. to form more permanent trading stalls.

Trade will not be confined to stalls, but will spill out onto the platforms (figure 97).

Between these stalls, an "in-between" is framed.

Figure 97 more permanent stall

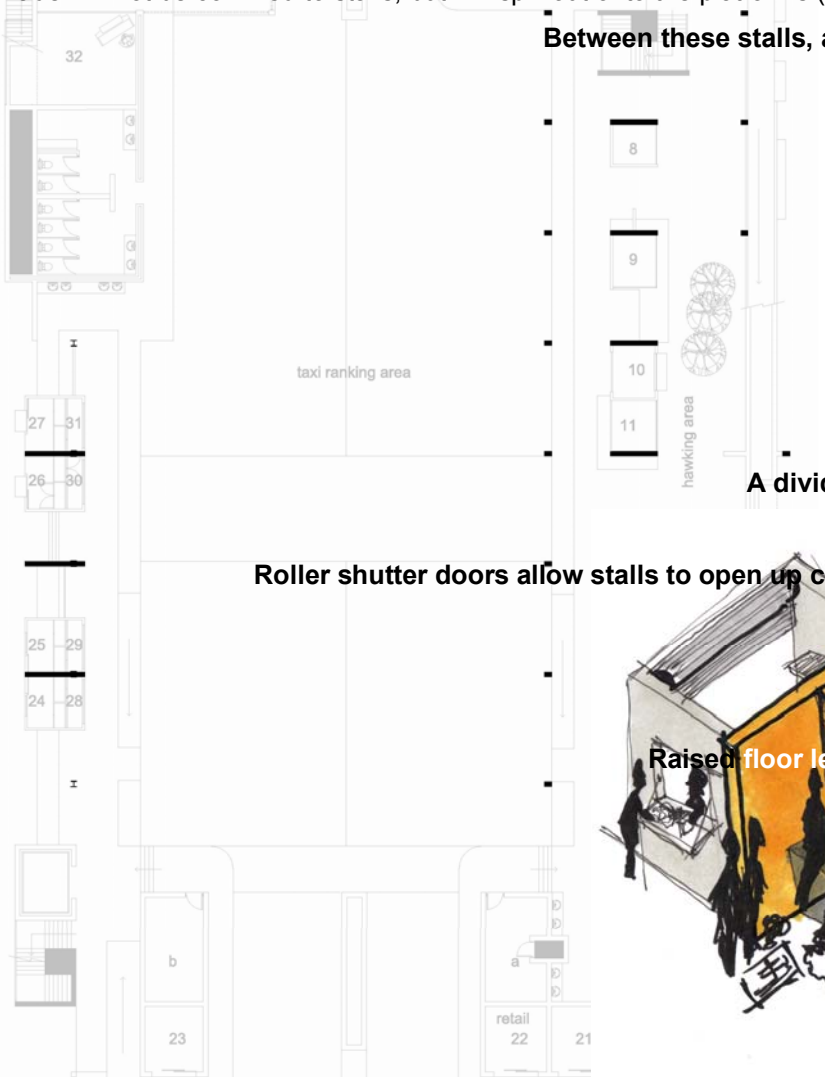
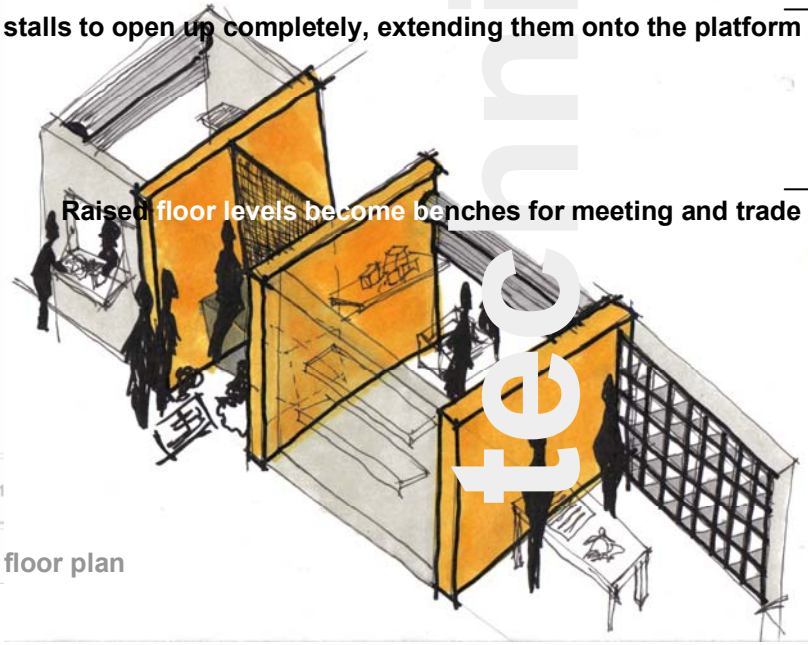


Figure 96 fixed elements of the flexible ground floor plan

A dividing wall can create two informal trade areas

Roller shutter doors allow stalls to open up completely, extending them onto the platform

Raised floor levels become benches for meeting and trade



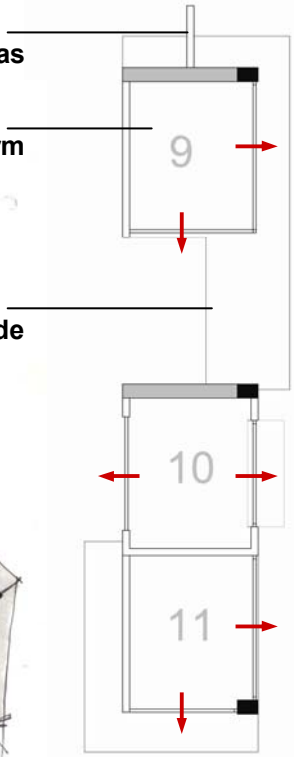
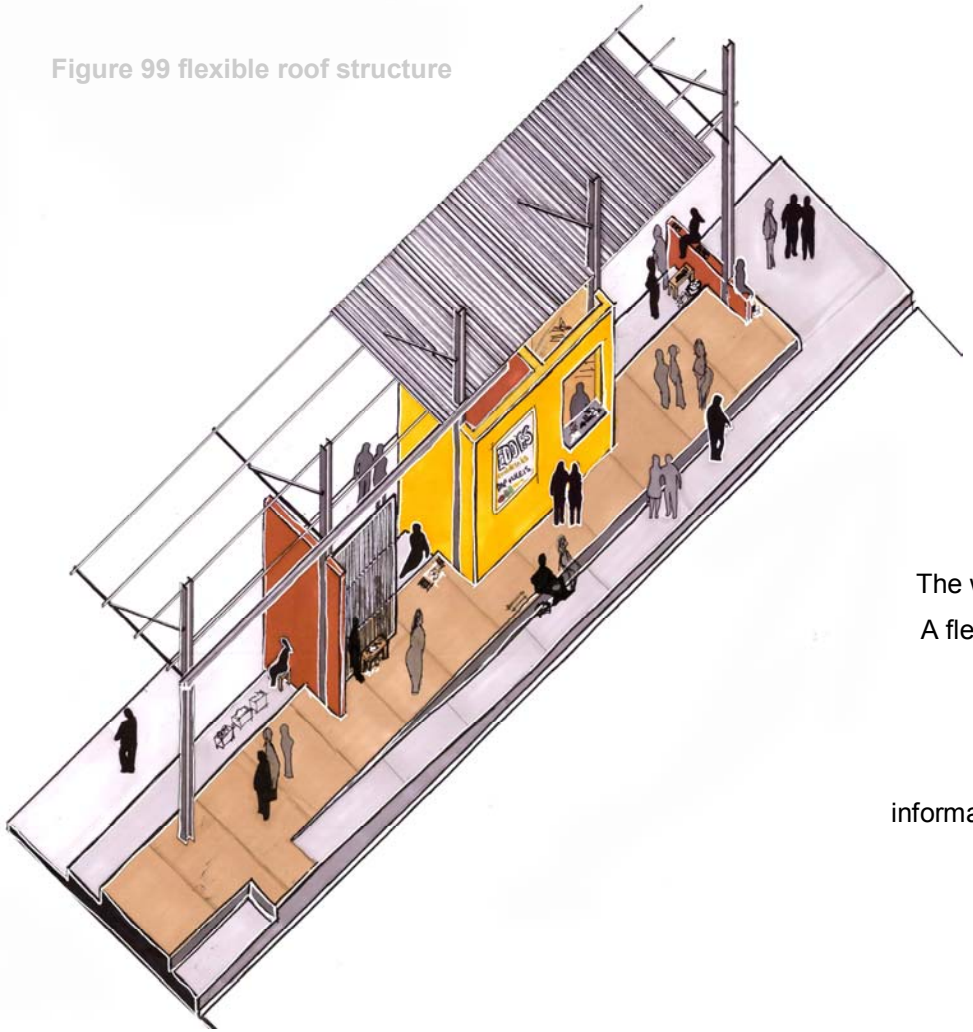


Figure 98 possible configuration plan

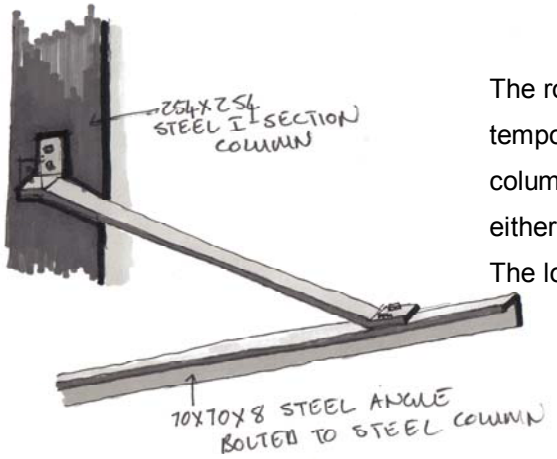
Figure 99 flexible roof structure



The western platform of the block forms part of un-programmed space (figure 100). A flexible roof structure with galvanized steel sections can be filled in with masonry to suit a variety of configurations (figure 99).

Simple interventions like raised floor levels can provide seating, areas for informal trade and a platform to distinguish pedestrian zones from the ranking facility.

Figure 100 west elevation



The roof structure over the western platform is constructed of steel elements to reflect its temporary nature. Steel I-section columns are bolted to rods cast into 500x500 concrete column bases. Two steel angles, carrying the purlins and roof sheeting, are bolted to either side of each column, one higher than the other.

The lower carrying a box gutter for **rain-water collection**.

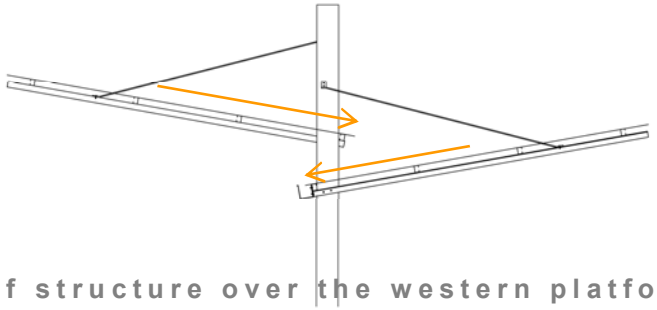
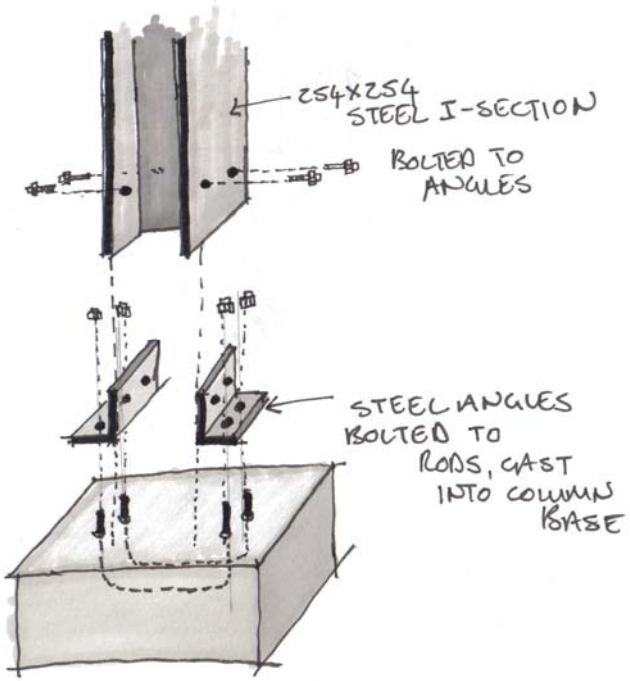
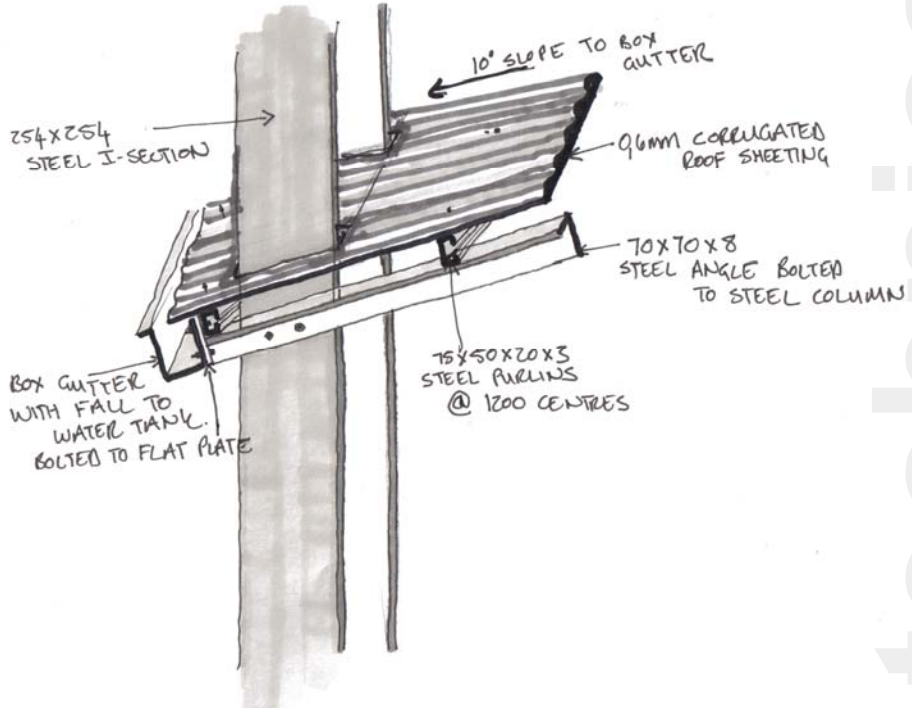


Figure 101 roof structure over the western platform





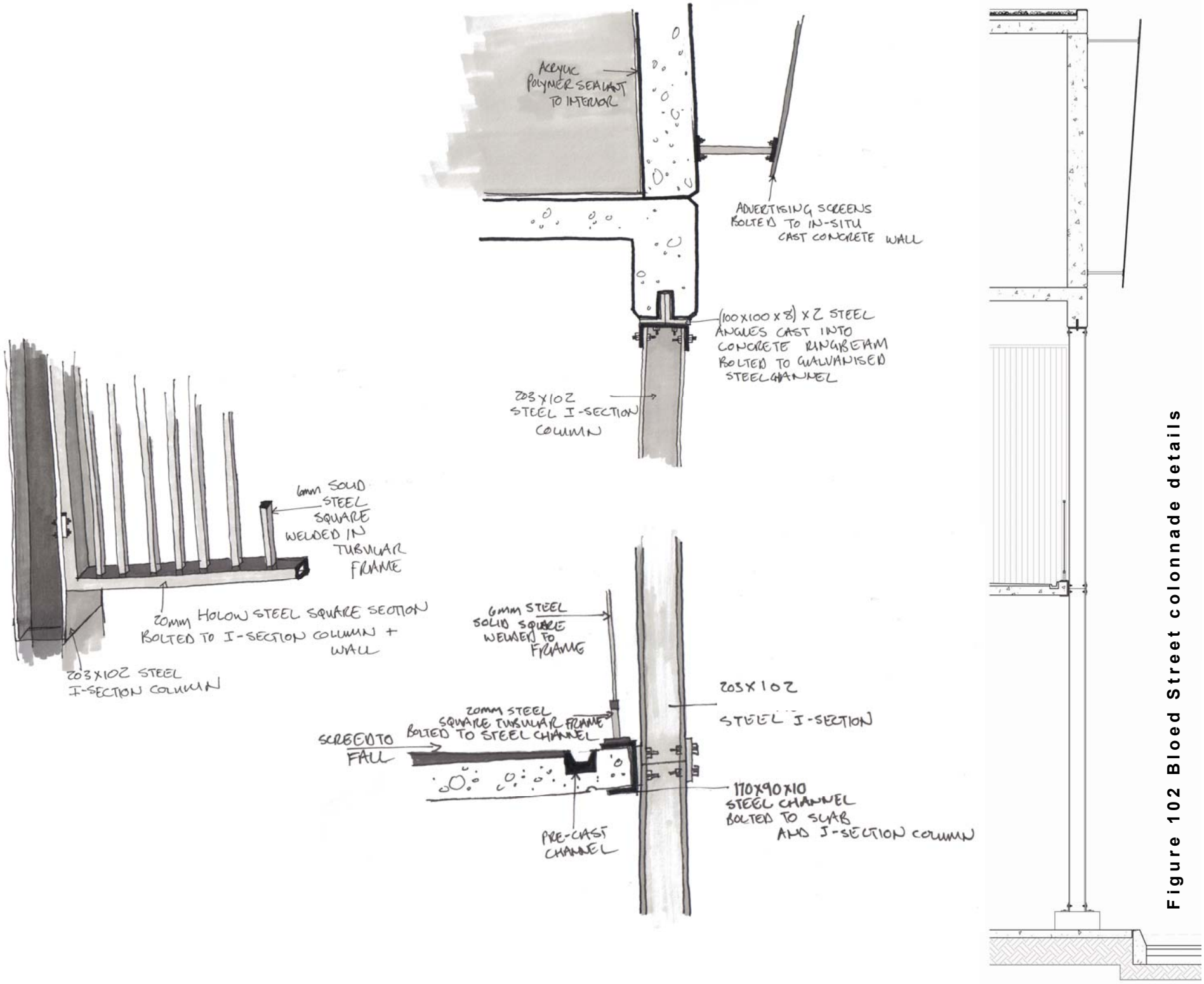


Figure 102 Bloed Street colonnade details

The structure consists mainly of concrete and brickwork with some steel elements. Although the project was intended as a community facility, a financial feasibility study confirms that **the project is financially feasible** and should ensure adequate return to sustain all costs involved in construction and operation of the building.

All materials used require extremely low maintenance. The building is robust and requires no glass windows on ground floor level. Floors to service areas and ranking- and hawking platforms with heavy pedestrian traffic will require durable surfaces.
Exposed corners of walls, columns and platforms in public areas will be fitted with aluminium corner protectors.

The concrete **floors** of the western platform are strengthened and coloured with a granolithic concrete material comprising a blend of cement, hard-wearing aggregates, lime fast pigments and additives that set rock hard. This finish has exceptional abrasion resistance, reduces drying shrinkage and requires no repainting.

The eastern platform is constructed of pre-cast concrete square slabs. These squares can be used to demarcate territory by the hawkers. An individual may for instance take ownership of a few squares to set up a temporary stall. The concrete slabs are painted with an acrylic polymer sealer, to provide a smooth durable surface. All service areas, walkways and staircases will also be painted with this sealer to demarcate public areas.
The more permanent retail stalls, and restaurants will receive screeds with colour pigment added. Floor finishes of the hostel and rentable office spaces will be specified by the tenants.

Most of the exterior masonry **walls** will be constructed of face brick, while interior walls will receive plaster and paint. The exterior walls of service cores housing public toilets, information kiosk, staircase– and elevator shafts, will be plastered and painted a bright colour to provide landmarks within the facility. For the purpose of this dissertation, yellow is used as it reminds of the bright yellow steel elements used in the Belle Ombre station building and bus rank. This will provide a sense of continuity to public transport facilities in Marabastad.

High levels of visual permeability is achieved through the use of wire mesh, concrete blocks and, horizontal and vertical steel sections welded in steel frames (figure). Besides providing boundaries, these elements also create opportunities for hawkers to hang their merchandise for display.

Figure 103 elements for visual permeability

Figure 104 site layout

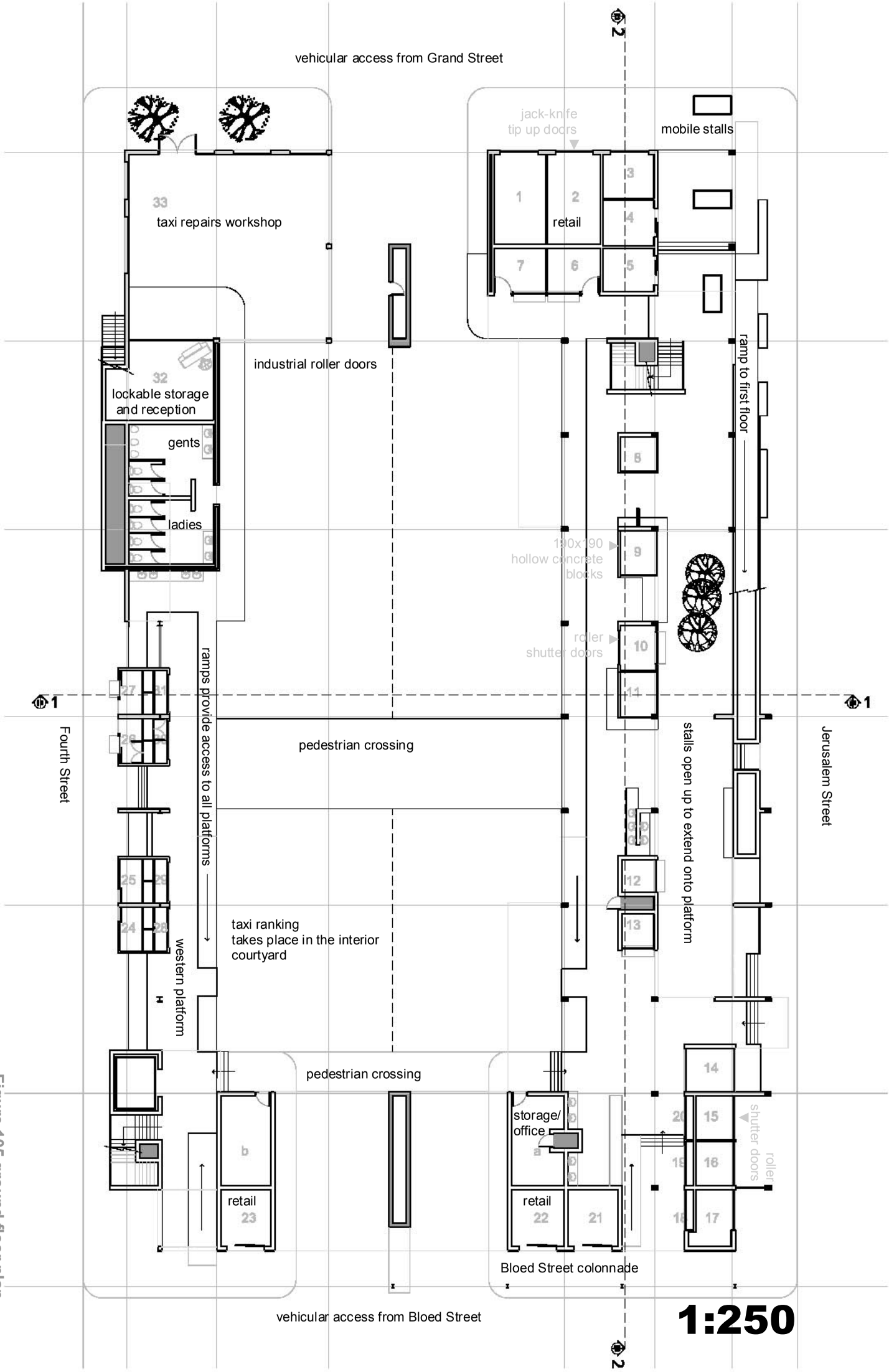


Figure 105 ground floor plan

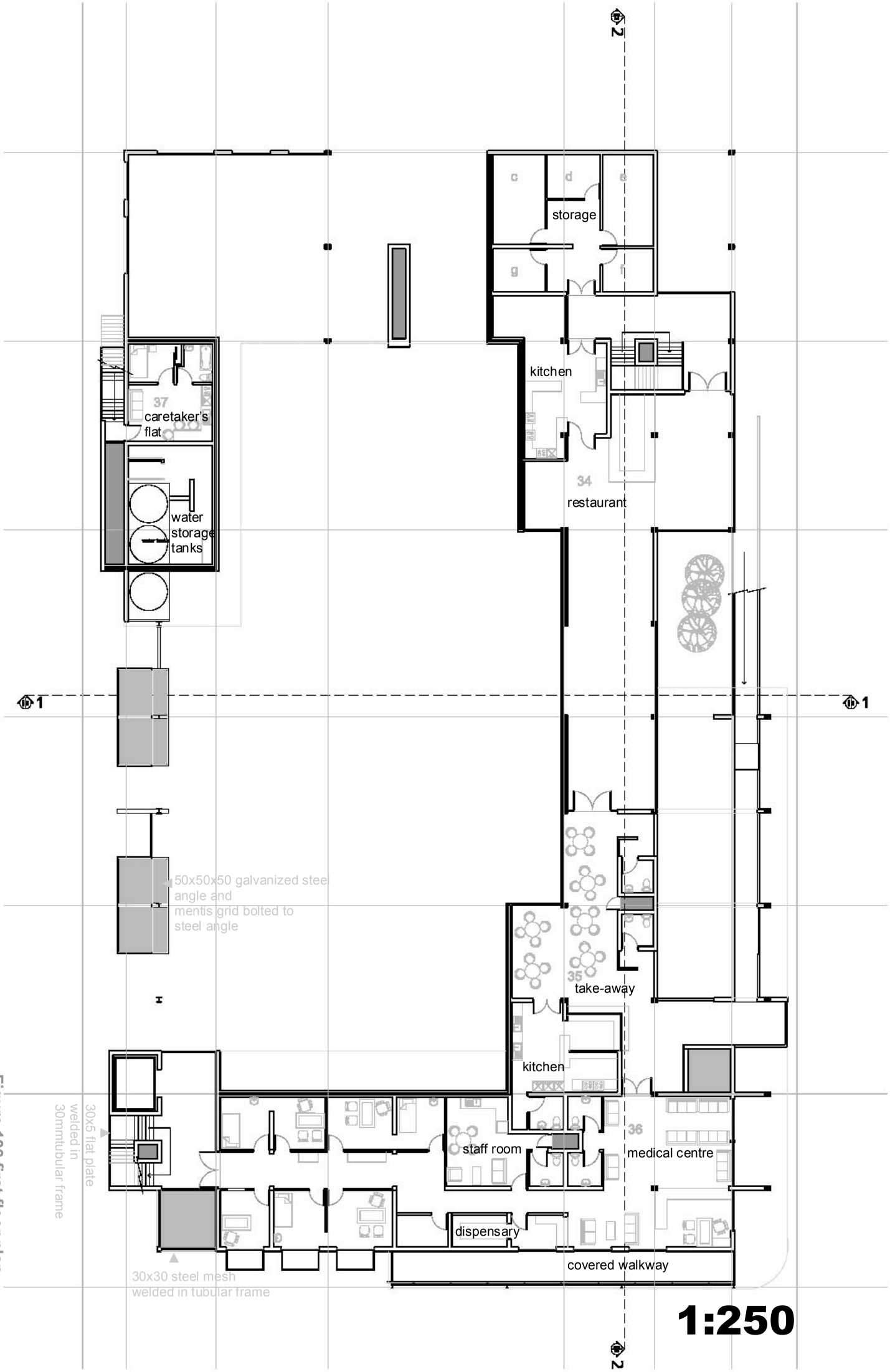
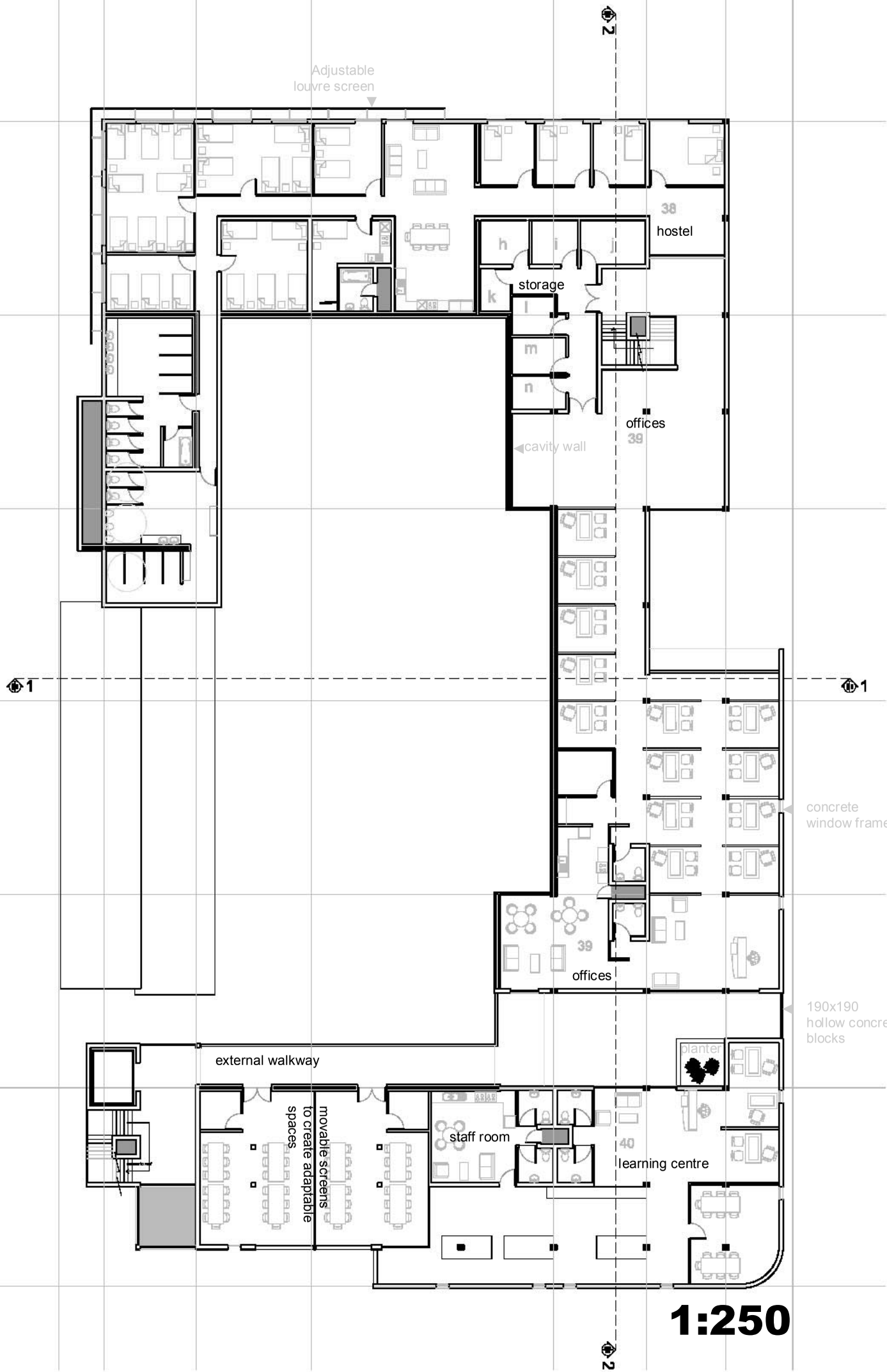


Figure 106 first floor plan



1:250

Figure 107 second floor plan

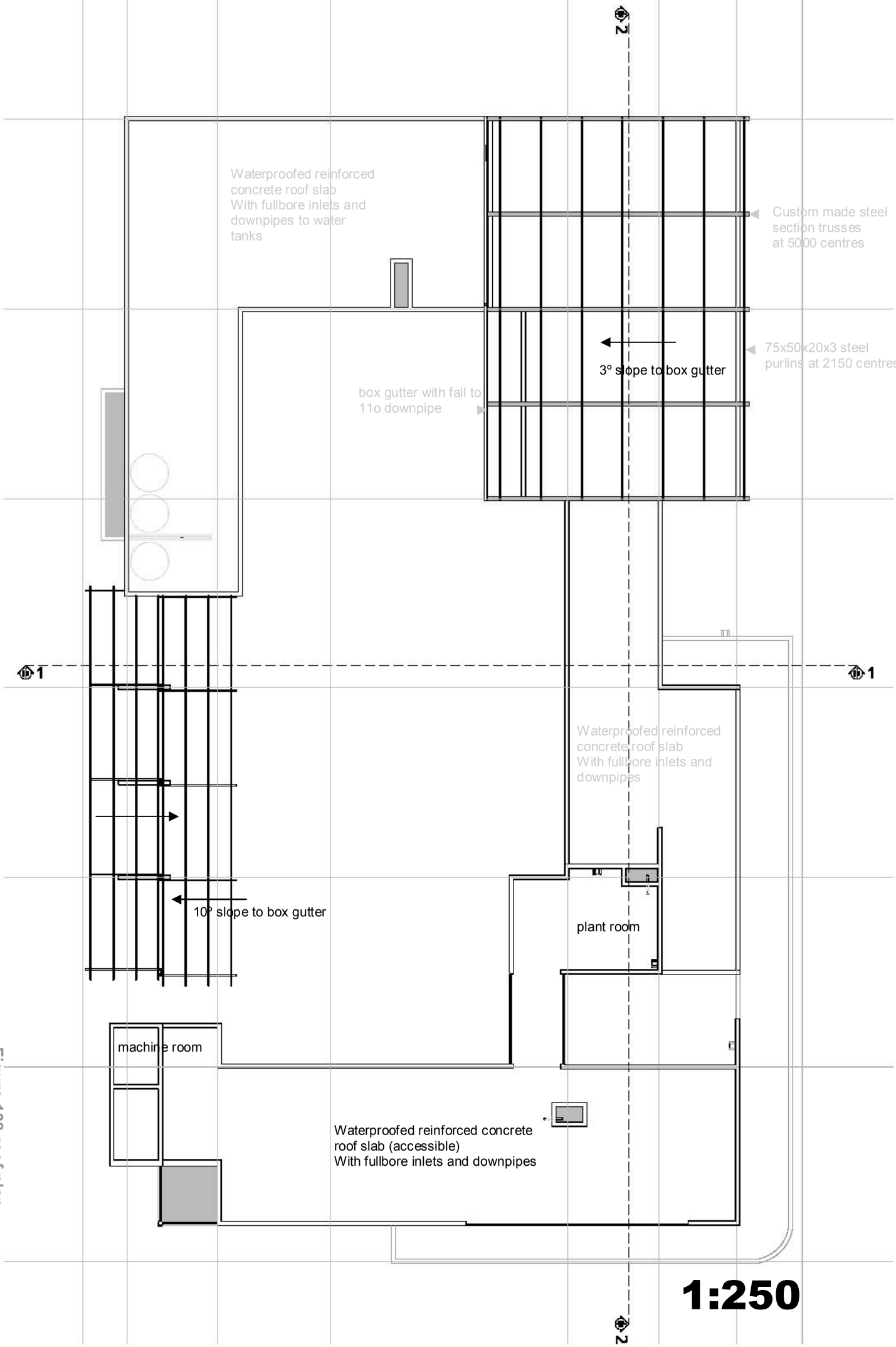
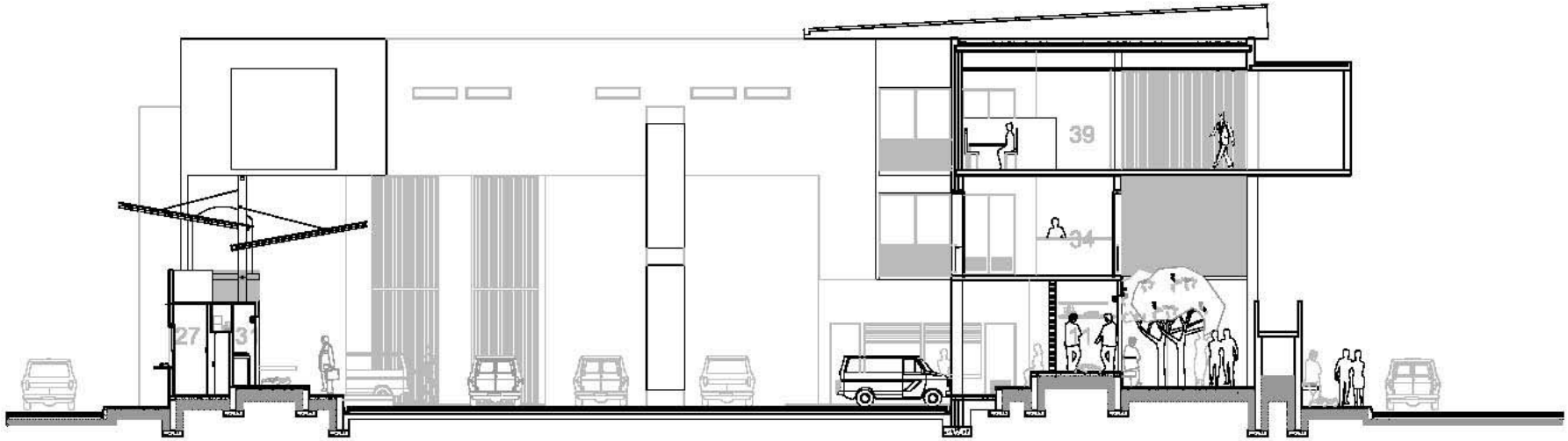
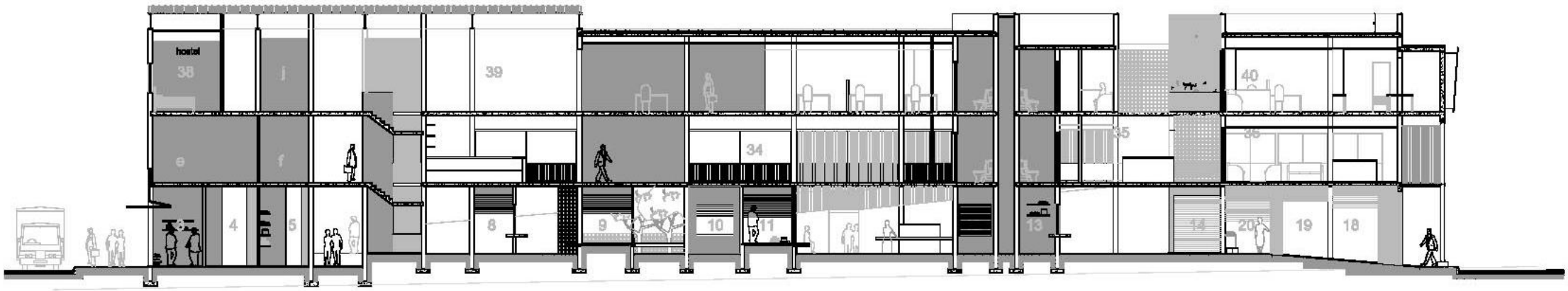


Figure 108 roof plan

1:250



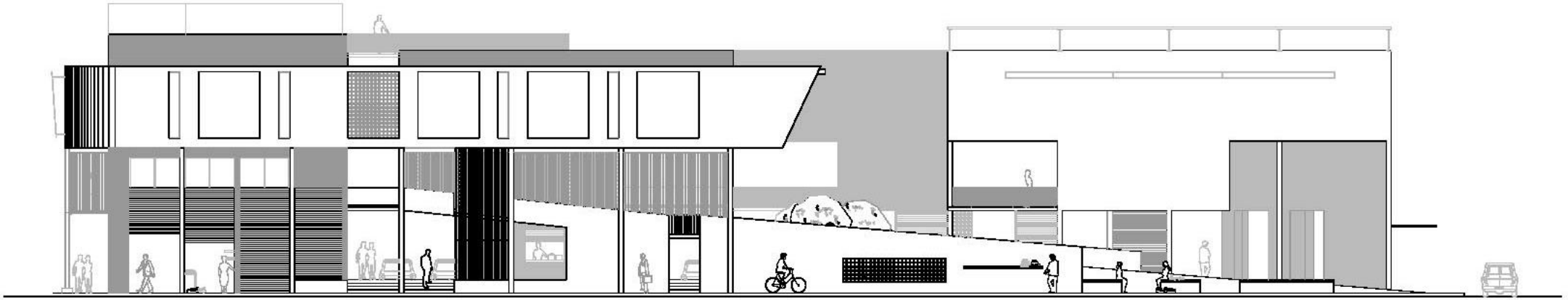
section 1 1:200



section 2 1:250

Figure 109 sections

north elevation 1:250



east elevation 1:250

Figure 110 elevations

south elevation 1:250

west elevation 1:250

Figure 111 elevations