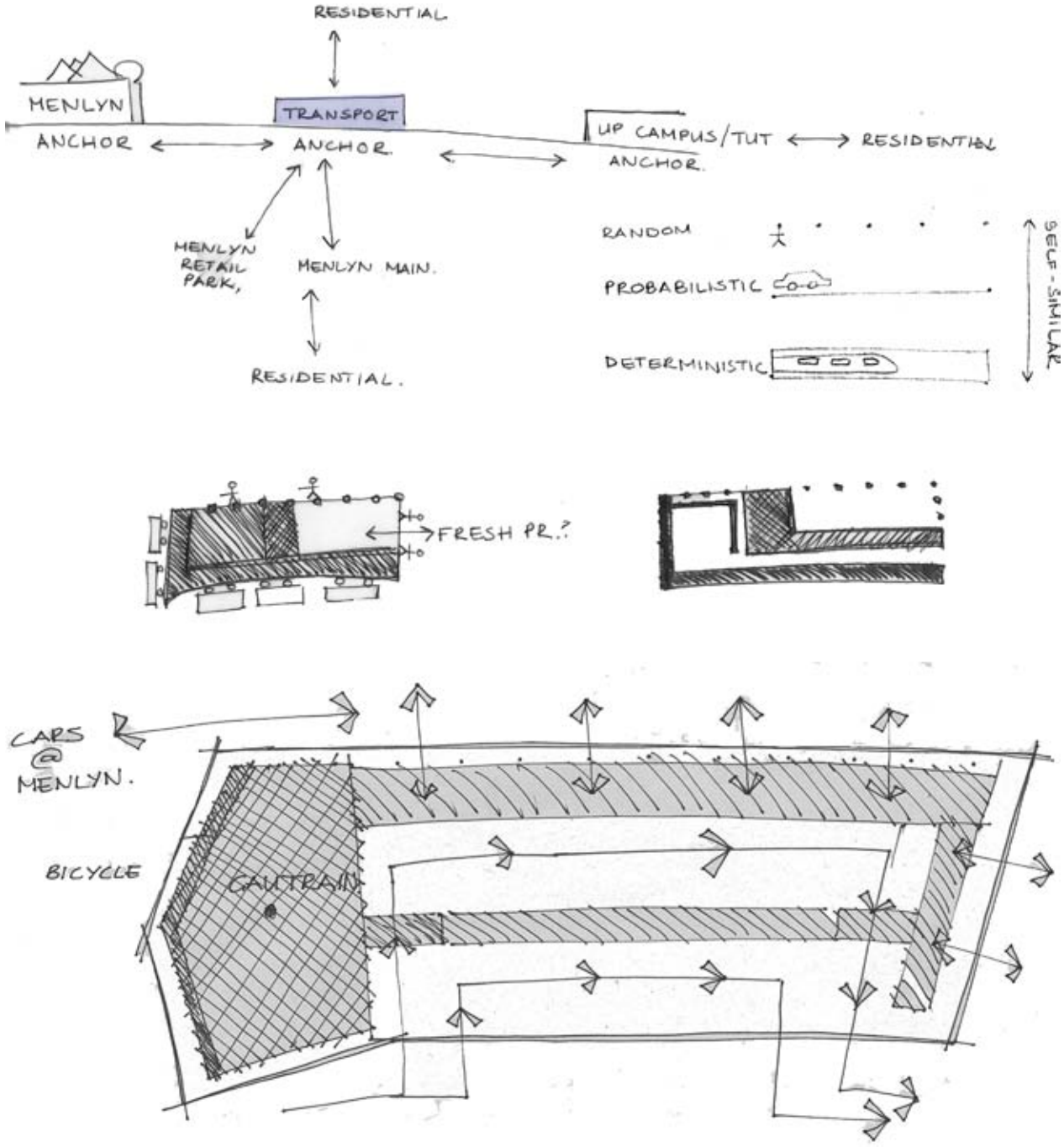
CHAPTER 6
DESIGN DEVELOPMENT

This dissertation intends to reinforce the Menlyn precinct as an important node within Tshwane as well as to contribute toward a more cohesive and integrated public transport system throughout Gauteng. The addition of a transport node at Menlyn could add a new node (and link) to the small-world network that forms the current transport system and contribute positively towards the experience and accessibility of the area.

The intention of the design is to create a platform for users to interact and to come into contact with different forms of public transport. The platform becomes a place for interaction, integration, transition and emergent activities.

The initial focus of the dissertation was the integration of different public transport modes. A Menlyn Intermodal Transport Exchange was proposed as a project subject. The project scope later evolved into a Platform Building (with an underground Gautrain stop) at Menlyn, located within the Menlyn Intermodal Transport Exchange.

The design process and development will now be explained in a chronological order.



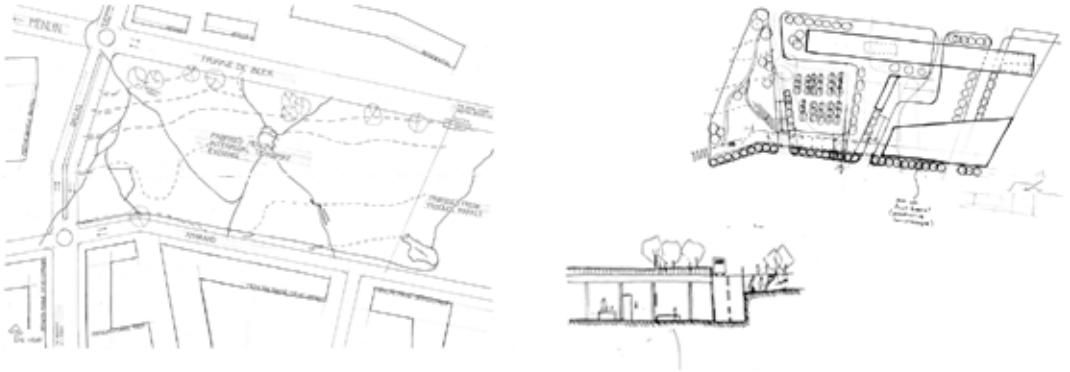
ILLUS. 6.1: Menlyn Intermodal Transport Exchange planning diagrams - April.

6.1 APRIL - FINAL PROJECT PROPOSAL AND CONCEPT

The Menlyn Intermodal Transport Exchange was proposed as a dissertation topic. The existing modes of transport were analysed and superimposed. The superposition and local transport was regarded as a chaotic system. Chaotic systems theory was investigated and led to the theory of fractals and small-world networks. The Menlyn Intermodal Transport Exchange was presented as a node within a small-world network.

Critique during design review:

- What is the relevance of fractals in architecture?
- Is the Menlyn area fractal/non-fractal?
- Should the transport interchange be one building or a series of smaller units around a node?



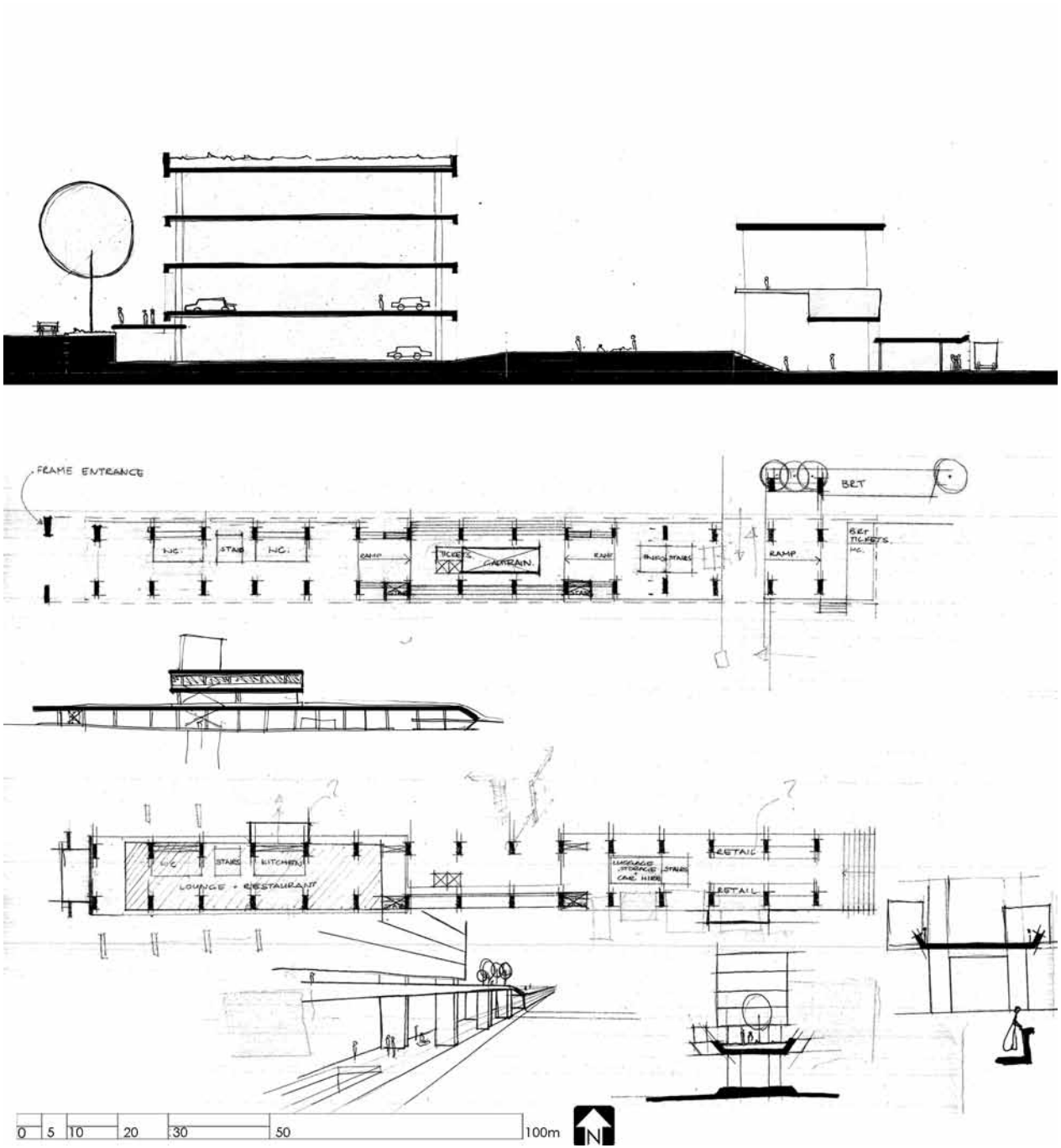
ILLUS. 6.2: Menlyn Intermodal Transport Exchange site plan diagrams - May.

6.2 MAY - CONCEPT DEVELOPMENT

The existing urban frameworks for Menlyn were investigated and an urban framework was proposed. Discussions with Mr. A. Wepener (a traffic engineer from BKS) addressed some of the functional aspects regarding an intermodal exchange. A site plan took shape and spaces for different modes of transport on site were identified.

Critique during design review:

- Why is it conducive to become more fractal?
- The connection between the different modes of transport is not visible on the site plan.
- The flows of different modes of transport should be better analysed and portrayed on plan.



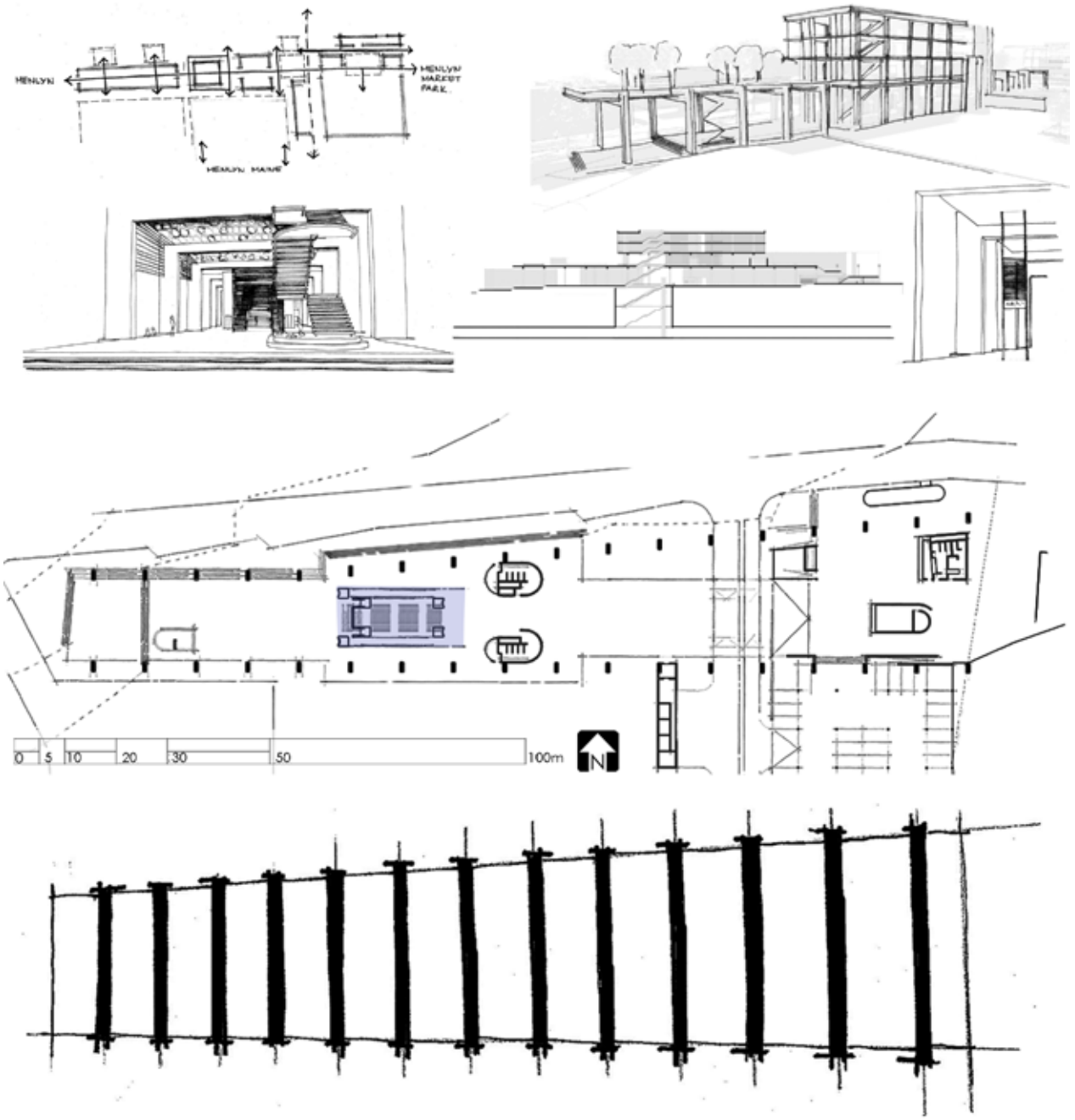
ILLUS. 6.3: Platform Building at Menlyn sketch plans and drawings - June.

6.3 JUNE - DESIGN (SKETCH PLAN STAGE)

The design of the intermodal transport exchange started to focus on one building. As the building concept evolved, it embraced and approached the concept of a platform building. The platform stretched between the different transport modes present at the transport interchange and the Gautrain entered this building from underground. The building became a blank canvas on which different activities of the transport exchange users could emerge.

Critique during design review:

- An intermodal transport exchange is too big a project for a dissertation.
- More integration should take place between different modes of transport.



ILLUS. 6.4: Platform Building at Menlyn sketches, plans and drawings - July.

6.4 JULY - DESIGN (ADVANCED SKETCH PLAN STAGE)

The scope of the project was re-evaluated and all focus was turned on the development and design of the Platform Building. The building has an underground Gautrain stop and is located at the Menlyn Intermodal Transport Exchange. This building should serve as platform for users of different transport modes to integrate with the Gautrain. The parti diagram suggests a blank canvas with a continuous rhythm. This rhythm was implemented in the form of prominent column-and-beam structures at regular intervals.

Critique during design review:

- What is the reasoning behind the structure?
- What are the architectural concepts of the building?
- Indicate the different circulation routes.
- Should the roof or the column be most apparent?

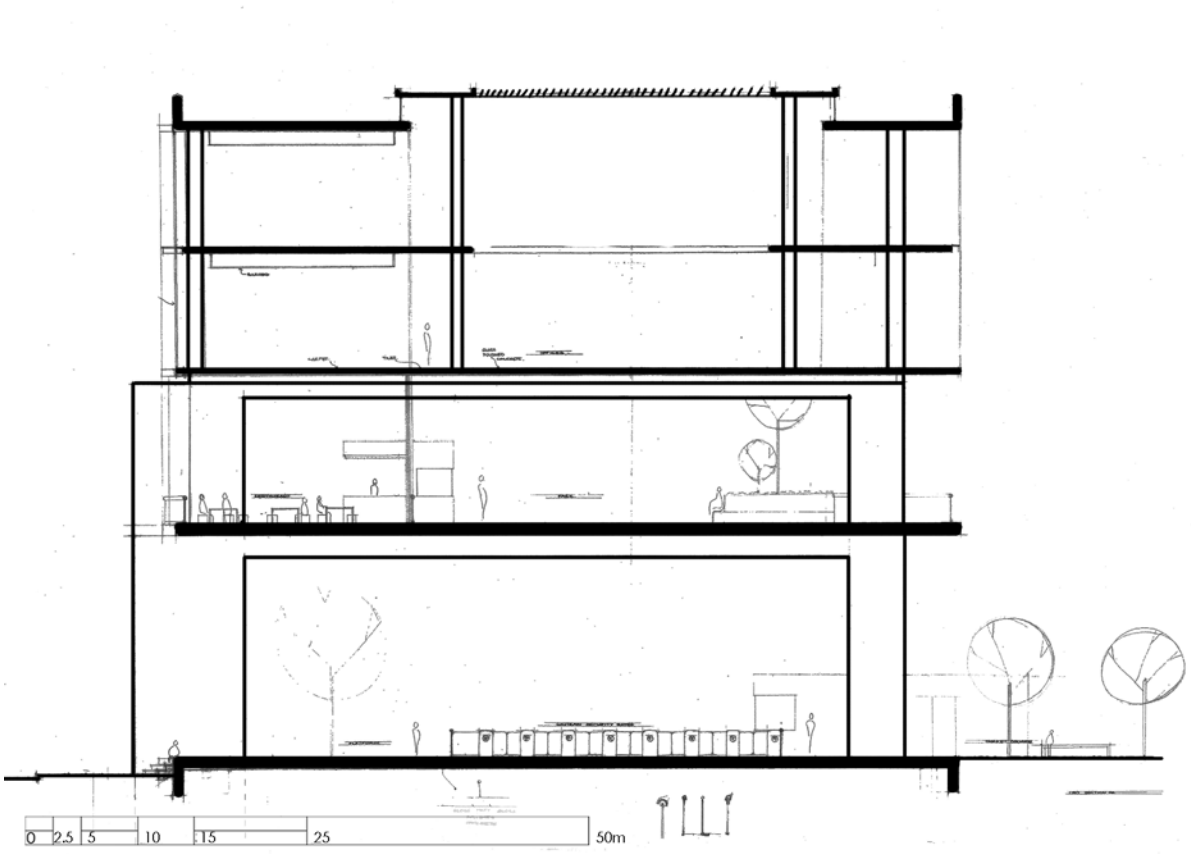
ILLUS. 6.5: Platform Building at Menlyn sketch section - August.

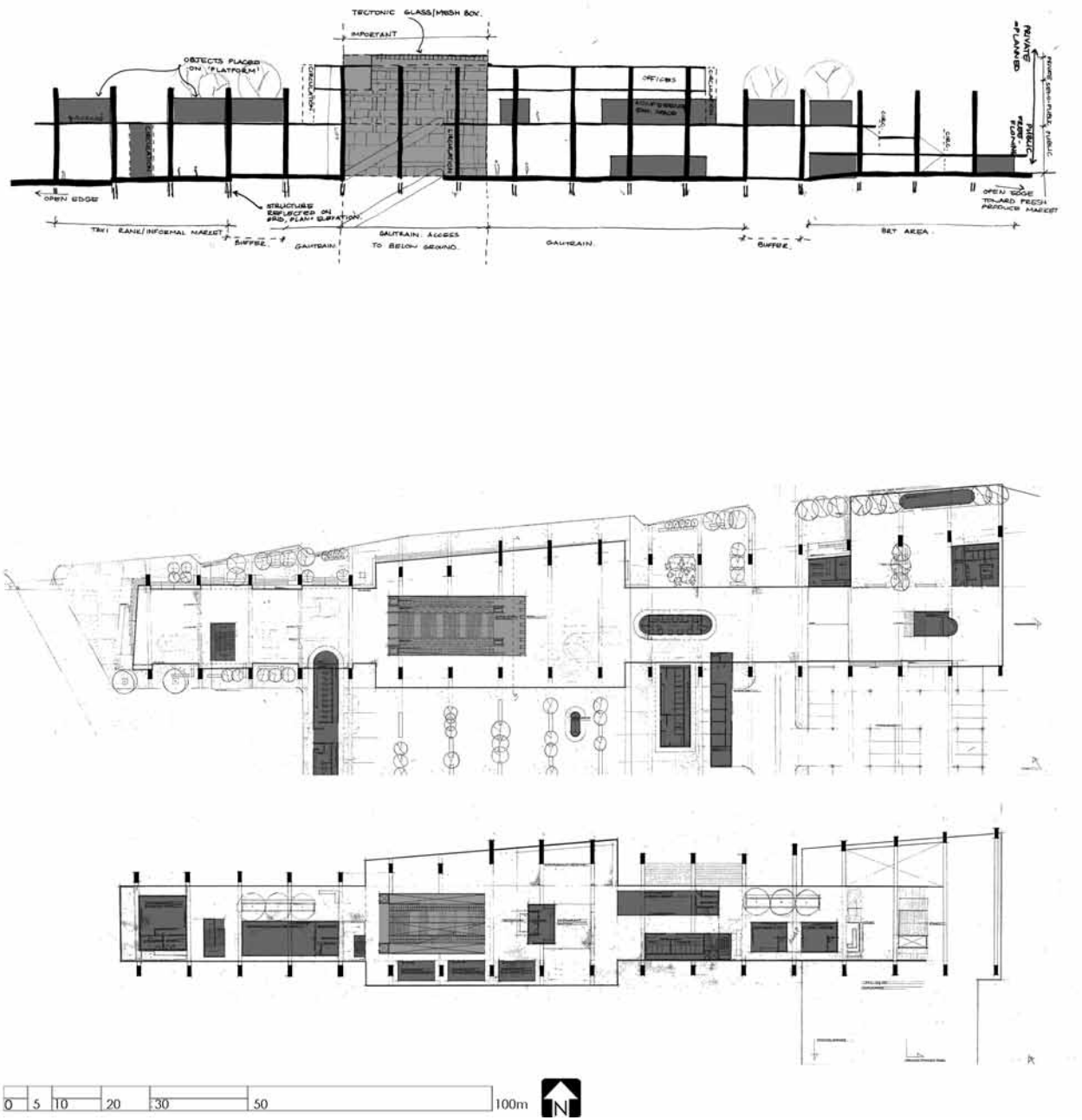
6.5 AUGUST - TECHNICAL 1

The building as platform was investigated further. The structure was expressed as an important concept and prominent feature within the design. The different functions of the building were carefully placed as objects on the platform, separate from the structure. The entrance/exit of the Gautrain from below ground was accentuated with a skylight lending importance and function to the building.

Critique during design review:

- Ceiling heights should be reconsidered.
- How will users be protected from rain?
- How will temperature be controlled within the building?
- Skylight should be better resolved.
- How do the different systems within the building work?





ILLUS. 6.6: Platform Building at Menlyn diagram, ground floor plan and first floor plan - September.

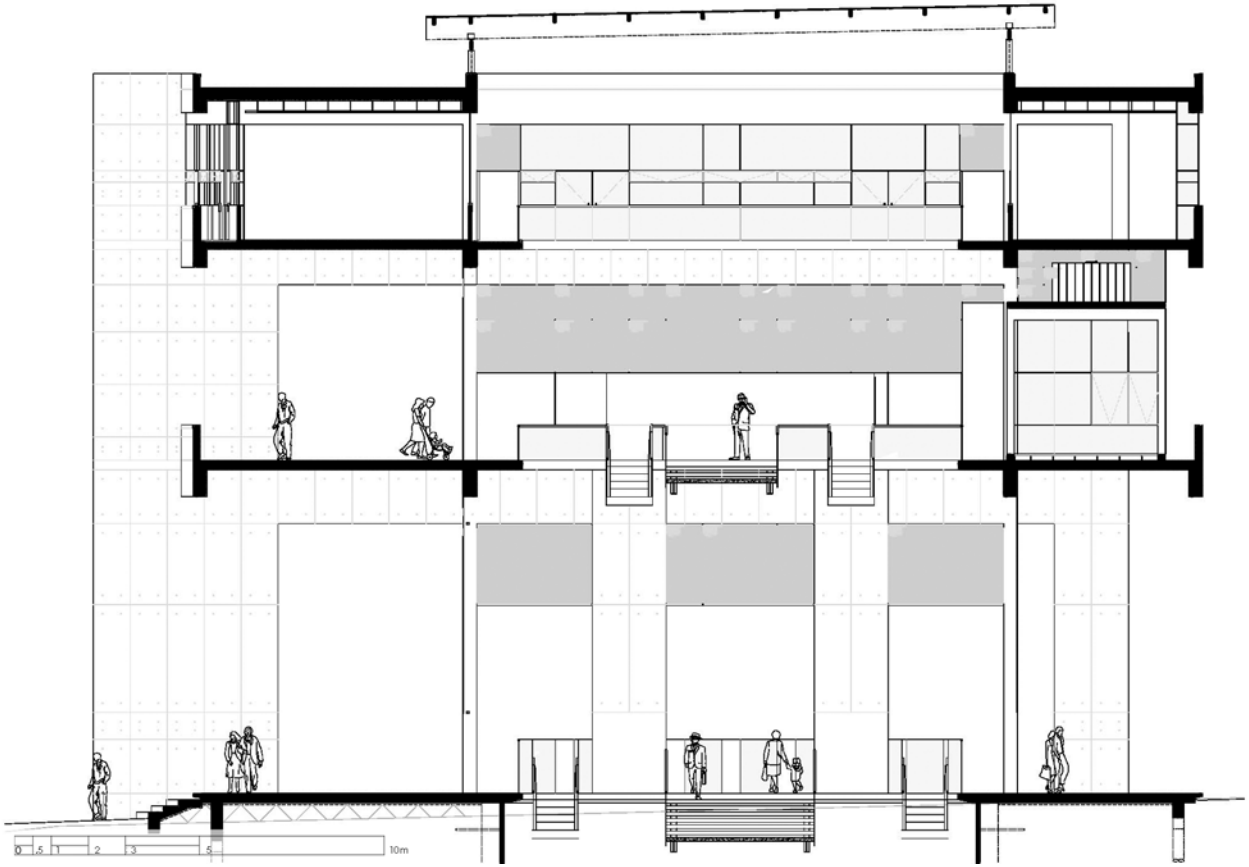
6.6 SEPTEMBER - TECHNICAL 2

The design presented was a further exploration of the platform. As the building moved from public on ground level to private on second level, the placement of 'objects on the platform' became more deliberate and dense. The importance of the Gautrain entrance/exit was accentuated with a mesh box-like structure that stretches up to roof level. This structure was divided by a grid pattern which transformed to a more human-scale as one progresses from public to private.

Critique during design review:

- How do sustainability issues influence the design?
- What is the theory behind the grid?
- How will the Gautrain corporate ID be incorporated into the project?
- Difficult to read interior and exterior spaces.

ILLUS. 6.7: Platform Building at Menlyn section - October.



6.7 DISCOVERIES AND NEW PERSPECTIVES

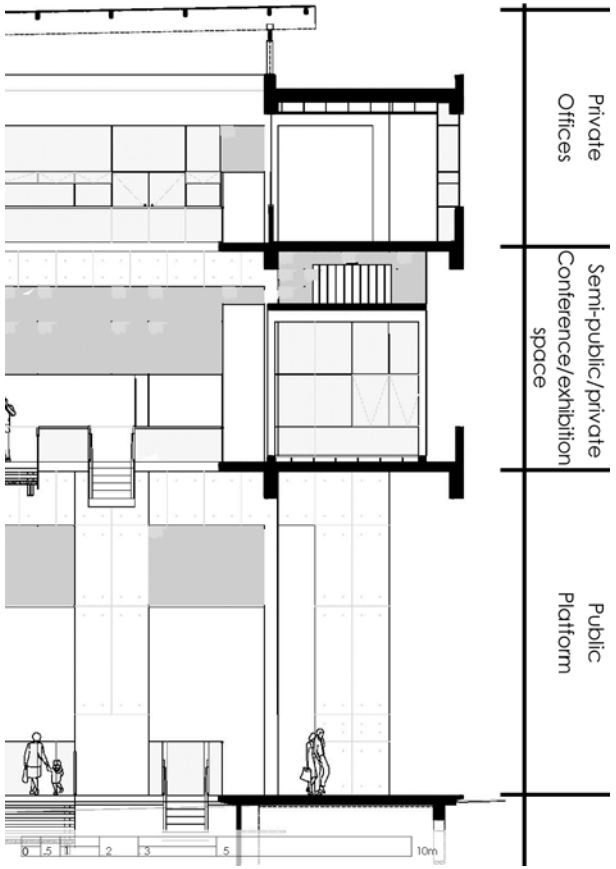
- The initial concept of integrating and connecting different modes of transport and their users with one another remains although the scope of the project has changed from an intermodal transport exchange to a Platform Building.
- The project focuses on creating a platform for different activities.
- There are particular functional issues that remain relevant to all projects.
- The route of different users of a building is paramount, but the design should allow for flexibility.
- The wish of any user of a building is to know that his/her needs and 'human'-scale was taken into consideration during the design process.

CHAPTER 7
DESIGN SOLUTION

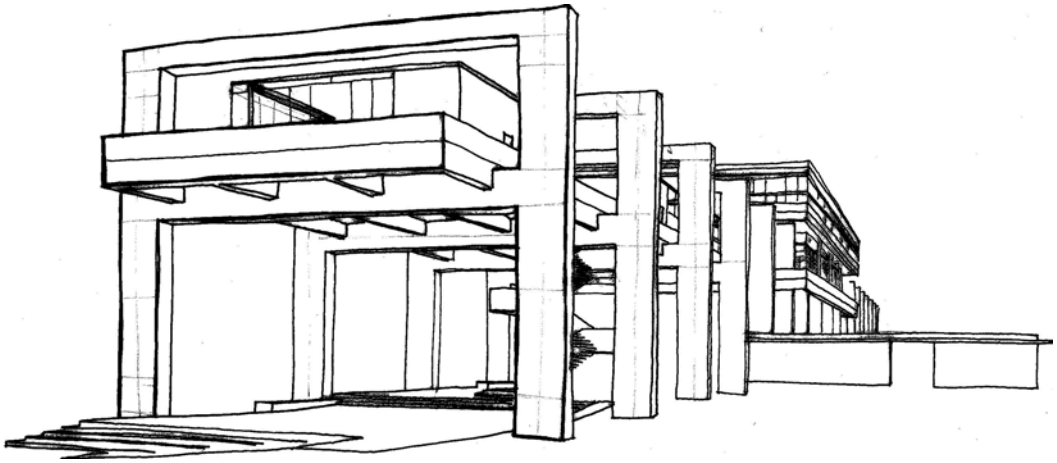
The Platform Building (with an underground Gautrain station) at Menlyn promotes the integration of various public transport modes with the Gautrain (illus. 7.3). The description of the building as a 'platform building' could be interpreted as:

- an open, flat form on which different activities such as transition, waiting, eating, buying, selling, meeting, viewing etc. take place.
- a place, means, or opportunity for public expression of opinion.
- a formal declaration of principles, i.e. public transport should play an important role in the transport system.
- the threshold between the Gautrain and other modes of public transport.
- a point from which the public can access public transport.

The Platform Building at Menlyn includes conference/exhibition spaces and offices/ facilities for the managers, staff and tenants of the Menlyn Intermodal Transport Exchange. These functions are separated by level as their nature changes from public to private (illus. 7.1).



ILLUS. 7.1: Functions indicated per level.



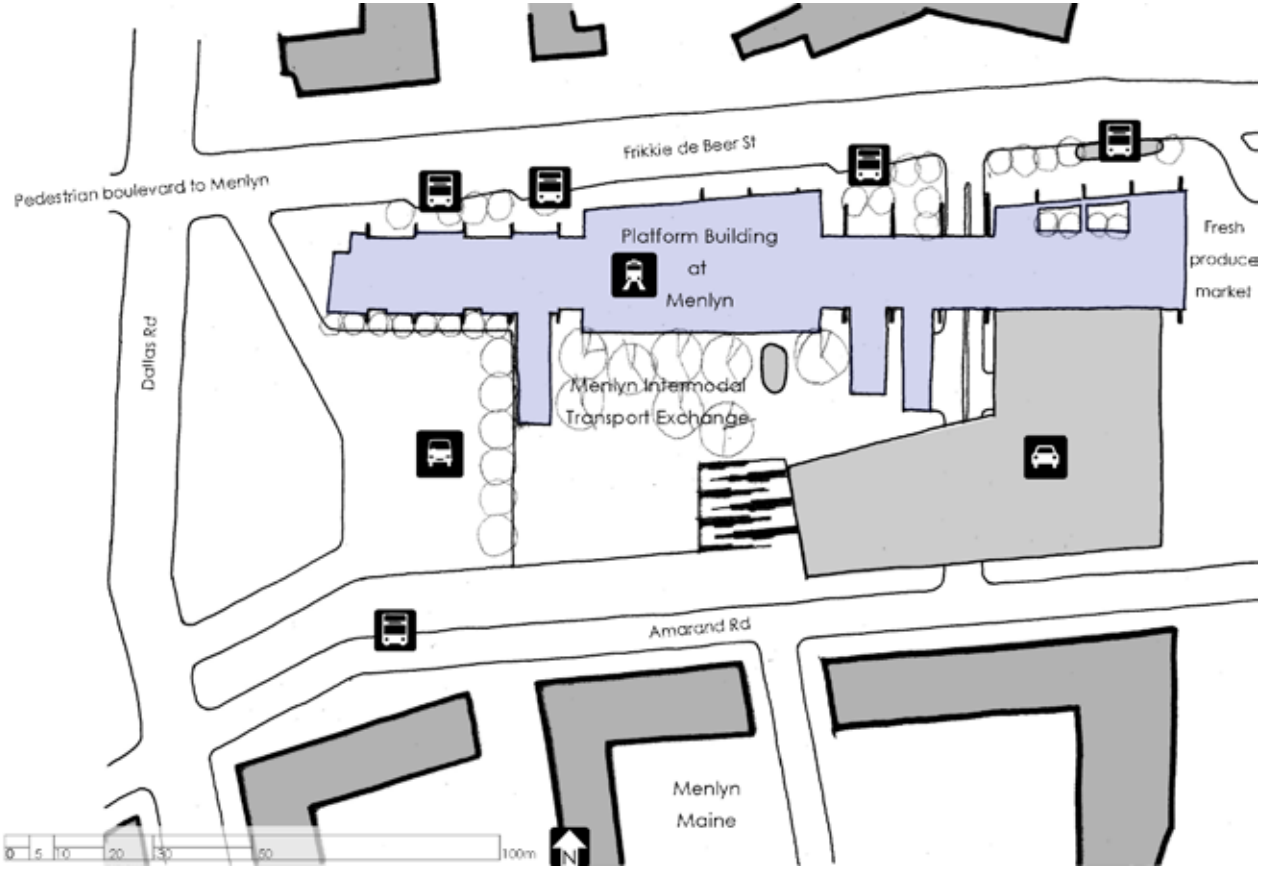
KEY

Bus stop

Taxi rank

Parking Garage

Entrance/exit to underground Gautrain station



ILLUS. 7.2: Sketch of Platform Building at Menlyn from South West corner. (Above)

ILLUS. 7.3: Location of platform building on site and in relation to other transport modes. (Right)

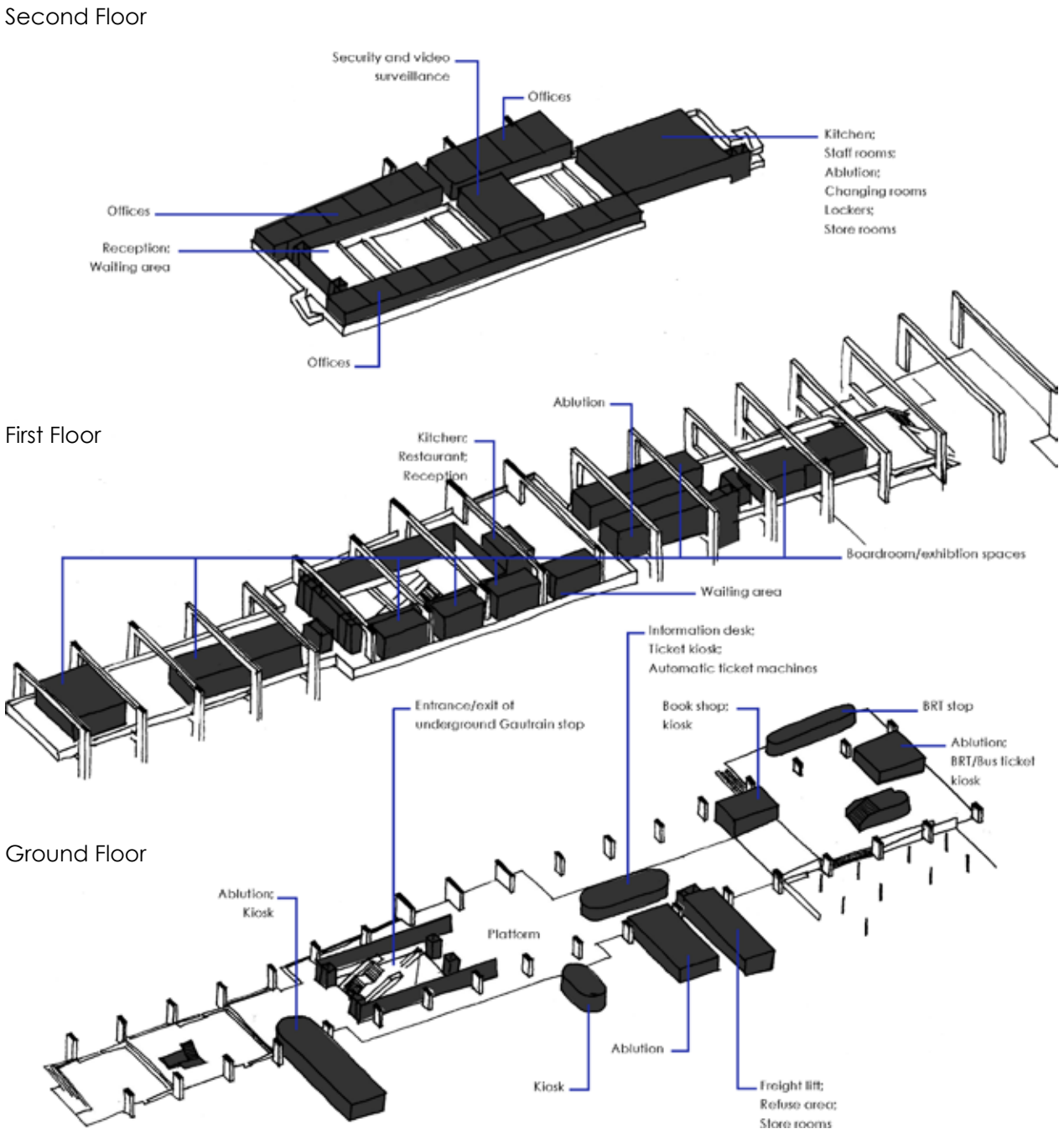
7.1 ACCOMMODATION LIST

7.1.1 GROUND FLOOR (PUBLIC)

- Entrance/exit of underground Menlyn Gautrain station. This area forms the focus and identity of the building
- Circulation areas including the platform and three stairways to the first floor
- Gautrain facilities that include:
  - Information desk
  - Ticket kiosk
  - Automatic ticket machines
  - Office
- Services that include:
  - Freight lift
  - Refuse area
  - Store rooms
- Three public ablution facilities located near the taxi rank, Gautrain entrance/exit and BRT stop.
- BRT stop
- BRT/Bus ticket kiosk
- Luggage storage
- Book shop
- Kiosks

7.1.2 FIRST FLOOR (SEMI-PUBLIC/PRIVATE)

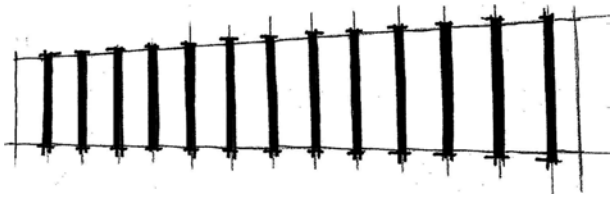
- 8 Boardroom/exhibition spaces that include:
  - kitchenettes
  - store rooms
- Kitchen
- Restaurant
- Public ablution
- Seating areas
- Waiting area
- Reception
- Circulation areas including 2 stairways to the second floor



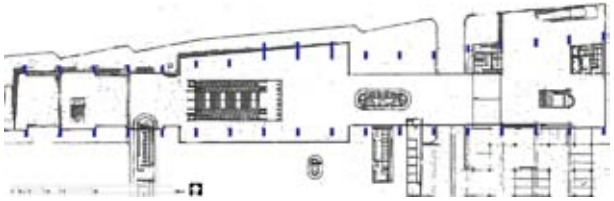
ILLUS. 7.4: Location of facilities in the Platform Building at Menlyn.

7.1.3 SECOND FLOOR (PRIVATE)

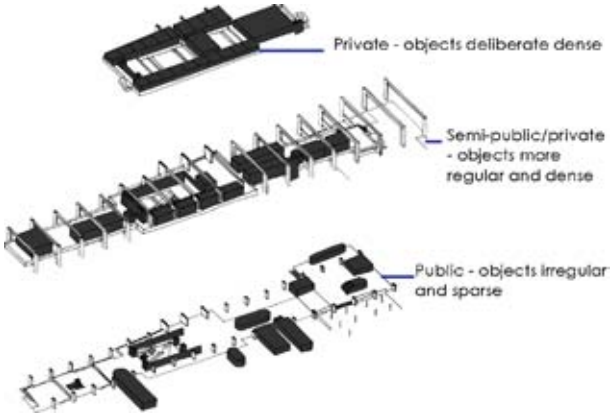
- Reception
- Waiting area
- Offices for:
  - Gautrain management
  - Taxi management
  - Bus management
  - Station manager
- Security and video surveillance office
- Kitchen
- Staff room
- Ablution
- Store room
- Facilities for the station staff that include:
  - Ablution
  - Staff room
  - Changing including showers and lockers



ILLUS. 7.5: Parti diagram.



ILLUS. 7.6: Platform and column-and-beam structure.



ILLUS. 7.7: Objects on platform.

7.2 FINAL DESIGN

The Gautrain Platform Building at Menlyn is designed to serve as a platform for transition and integration of the Gautrain and other public transport modes present at the Menlyn Intermodal Transport Exchange.

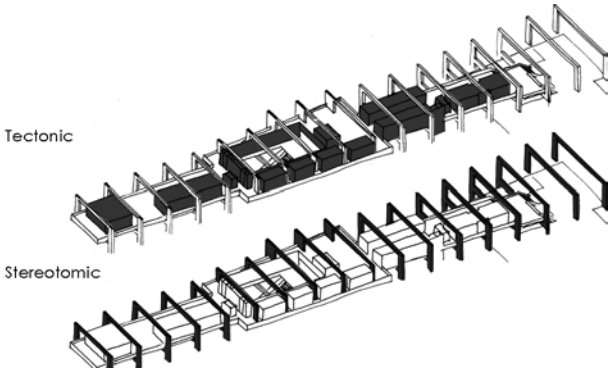
The parti diagram (illus. 7.5) indicates a form divided by vertical lines at regular intervals. This is translated into built form as a platform divided by prominent column-and-beam structures (illus. 7.6). These off-shutter concrete structures form different spaces and give the users a sense of scale as they move through the building. The structure influences and informs the rest of the building in planning and finishes.

The building is divided into three levels that progress from public to private (illus 7.1). The facilities, echo the users of the building, and are placed like objects on the platform. The placement of these 'objects' becomes more deliberate and increases as the building progresses from public to private (illus. 7.7). The glazed, tectonic 'objects' stand in contrast with the stereotomic nature of the building structure (illus. 7.9). This contrast emphasises the seemingly haphazard placement of the 'objects' on the platform.

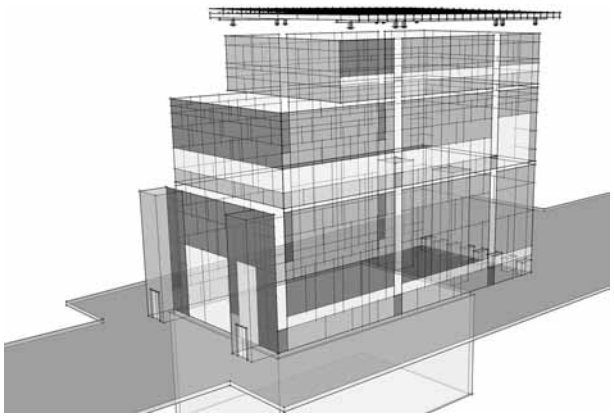
The location of the entrance/exit to the underground Gautrain station is a crucial identifying aspect of the Gautrain Building at Menlyn. This importance is indicated by a metal fabric box-like structure that surrounds this entrance/exit and extends up to the roof level of the building (illus. 7.10). This GKD metal fabric structure will be visible from afar and gives the impression of being a solid mass. When viewed from near, the mesh structure will become lightweight and transparent. The same GKD metal fabric used for the structure is used in the rest of the building as screens on the western façade and at service ducts.

The metal fabric of the structure is divided into different panels by means of a grid pattern (illus 7.11). This grid becomes smaller as the building moves from public to private and is projected into other areas of the building. The grid serves to contribute to and communicate the human scale of the building.

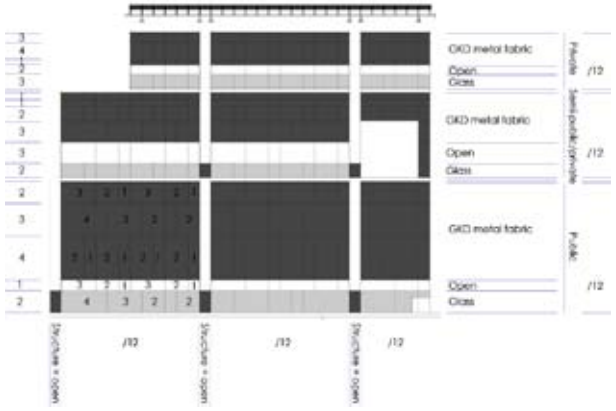
ILLUS. 7.8: Perspective of Platform Building at Menlyn form South East corner. (Opposite)



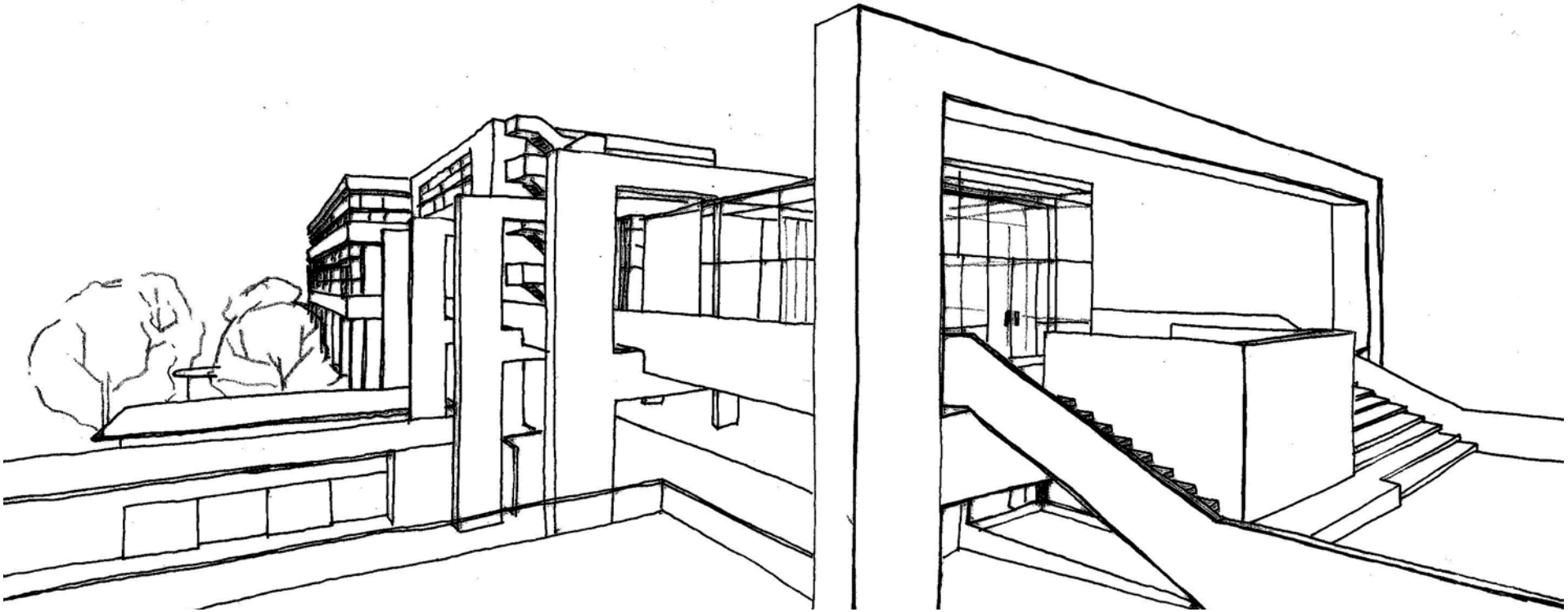
ILLUS. 7.9: Example of stereotomic vs. tectonic on second floor.

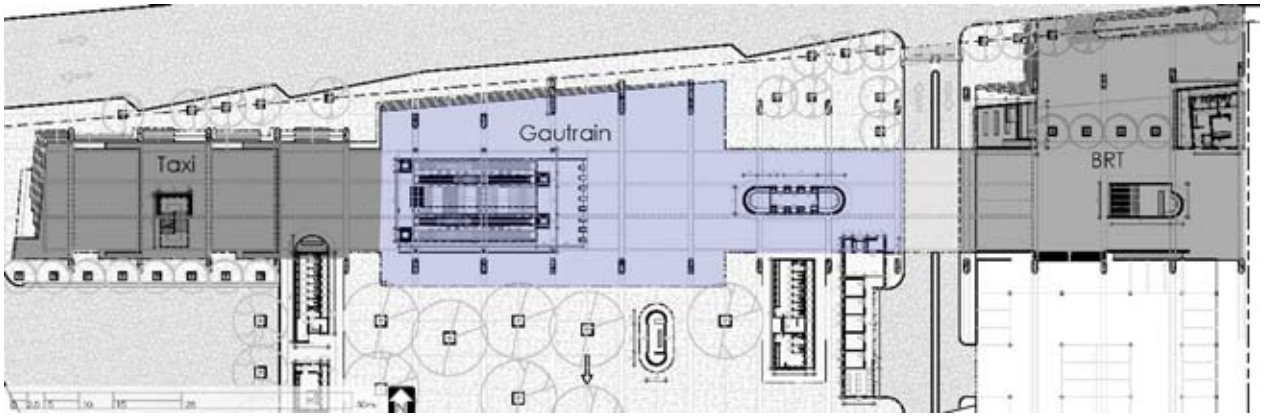


ILLUS. 7.10: GKD metal fabric structure.



ILLUS. 7.11: Example of grid pattern.





ILLUS. 7.12: Ground floor plan indicating different functional areas.

The ground floor plan is divided into three main platform areas (illus. 7.12). The first platform area is located alongside the proposed taxi rank. This platform area is void of anything besides stairs leading to the first floor and signage. The platform will be used by pedestrians transitioning in an East-West direction and it is envisioned that the platform will be appropriated by the taxi rank users.

The second platform area, and focus of the project is the Gautrain platform. The building entrance, entrance/exit to the underground Gautrain station, Gautrain facilities and main circulation routes are located on this platform.

The third platform area is the BRT platform. This platform is the location of the BRT stop, BRT and bus ticket kiosk, book shop and entrance to the parking garage. All three platforms have public ablution facilities and circulation routes to the first floor.

The conference/exhibition spaces as well as the restaurant are located on the first floor. The conference/exhibition spaces, placed like objects on the platform can be rented and used privately, or the entire floor can function as a conference/exhibition space.

The management offices of the different transport facilities, security and staff facilities are located on the second floor. This floor reads as a glass box hovering above the platform underneath, providing further differentiation between public and private space (illus. 7.13).

The vision of the building is to be understated subtle; a backdrop to the vibrancy of its user, but elegant in its own right.

ILLUS. 7.13: South elevation of Platform Building at Menlyn.

ILLUS. 7.14: Perspective of Platform Building at Menlyn form North West corner.