



DESIGN
PLATFORM

↑ Exit

DESIGN CONCLUSIONS

08:00

Plans

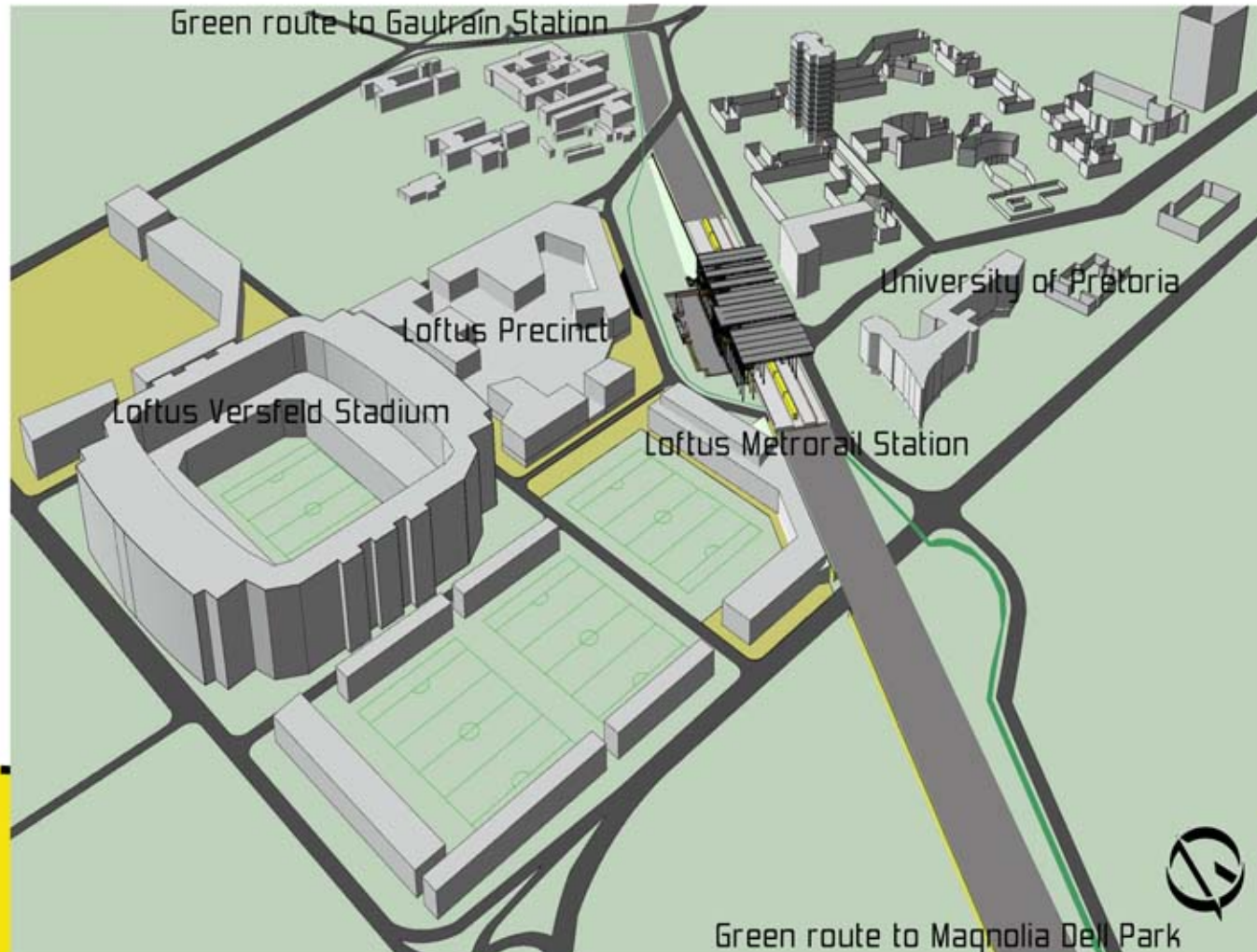
Perspective drawings

Technical details



Design conclusions

Loftus Metrorail Station - a building conforming to functionality, ease of movement and legibility, by means of identifying the diverse range of elements and the needs of each individual.
Establishing the movement theory and maintaining it as the primary organizational force within the building.



Ground level circulation

- Pedestrian through fare
- Commuters
- Shoppers
- Entrances
- Disabled
- Staff circulation



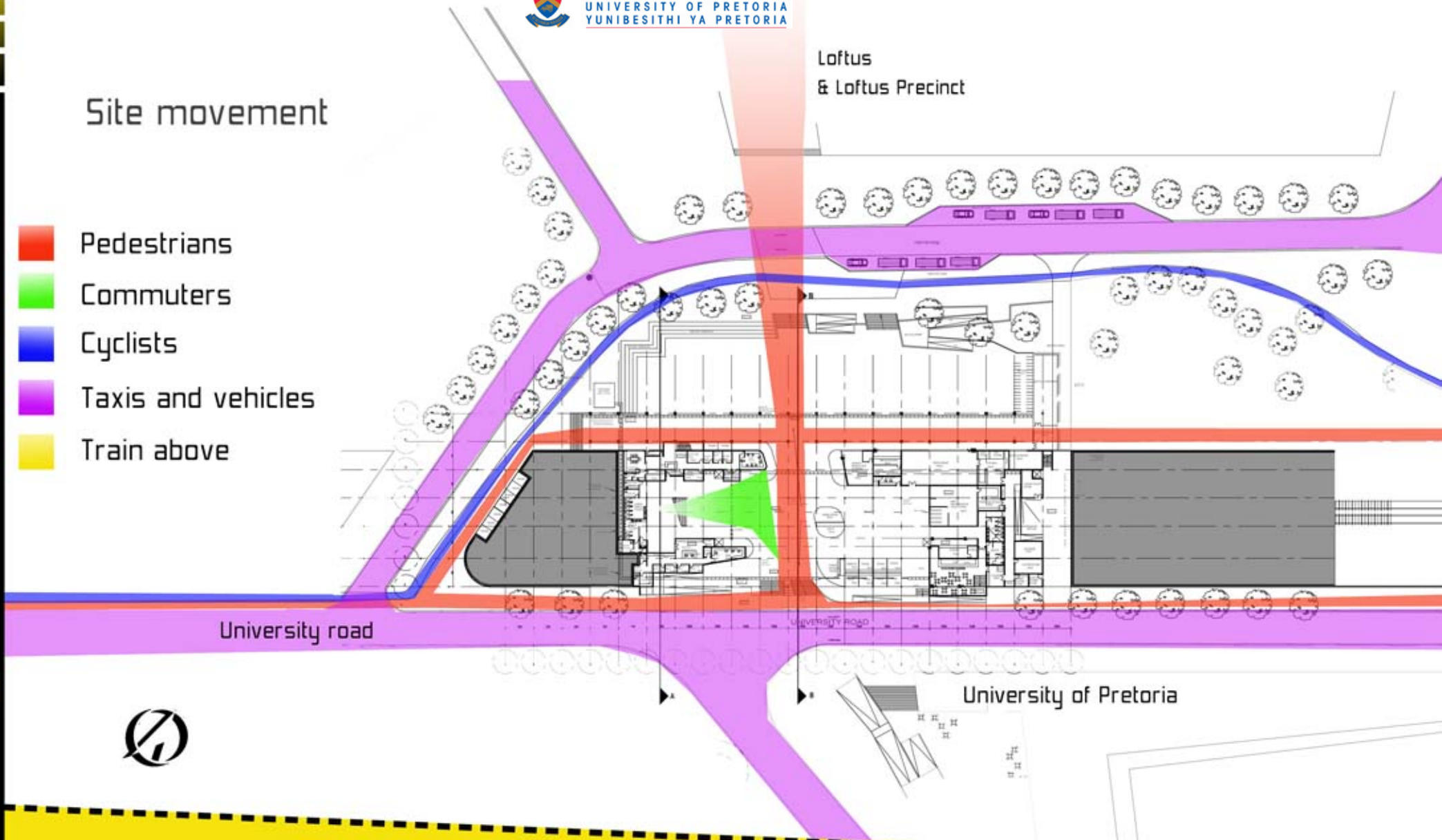
08:02

On the street level, University road, directly opposite the proposed new entrance for the University of Pretoria, is the entrance to the station building. This entrance leads straight through the building, 'hidden' underneath the tracks, towards Loftus stadium. It is this through fare that divides the 'shopping mall' and the station quarters in locality and in ownership, but at the same time feeding off one another in sharing the users.



Site movement

- Pedestrians
- Commuters
- Cyclists
- Taxis and vehicles
- Train above



08:03

All movement systems are integrated as a whole into the site.



Ground level programme

- Bicycle rental and repair
- Restaurant and shops
- Public ablution
- Trade
- Commuter ablution
- Security Metrorail
- Admin Metrorail
- Station building
- Shopping mall



Program on ground level:

- Station building:
 - Administration
 - Security quarters
 - Public facilities
 - Circulation facilities

Shopping mall:

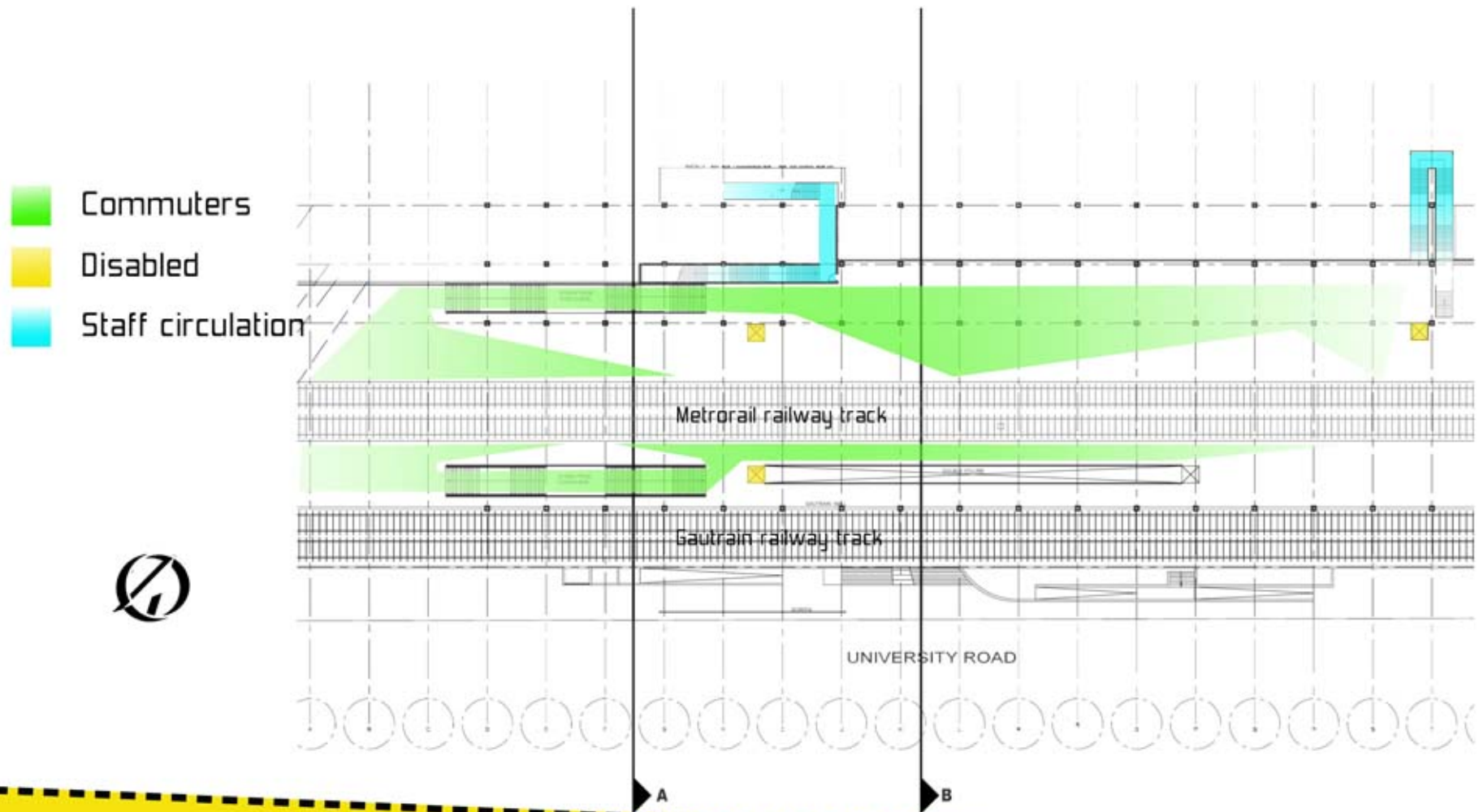
- Manuka Restaurant
- Keg and Leopard Pub
- Woolworths food store
- Subway
- Nashua Mobile

Odyssey Internet Café

- Kaka Smoothie bar
- ATM facility
- Security Office and Information
- Trader stalls (news stand, fresh produce, florist, craft etc)
- Public toilet facilities
- Service and deliveries.

As stipulated in the Metrorail requirements, the station and commerce facilities are separated.
Strategic placement of the program within the building to assist ease of movement and legibility.

Platform circulation



08:05

Program:
Train arrival and departure
Seating

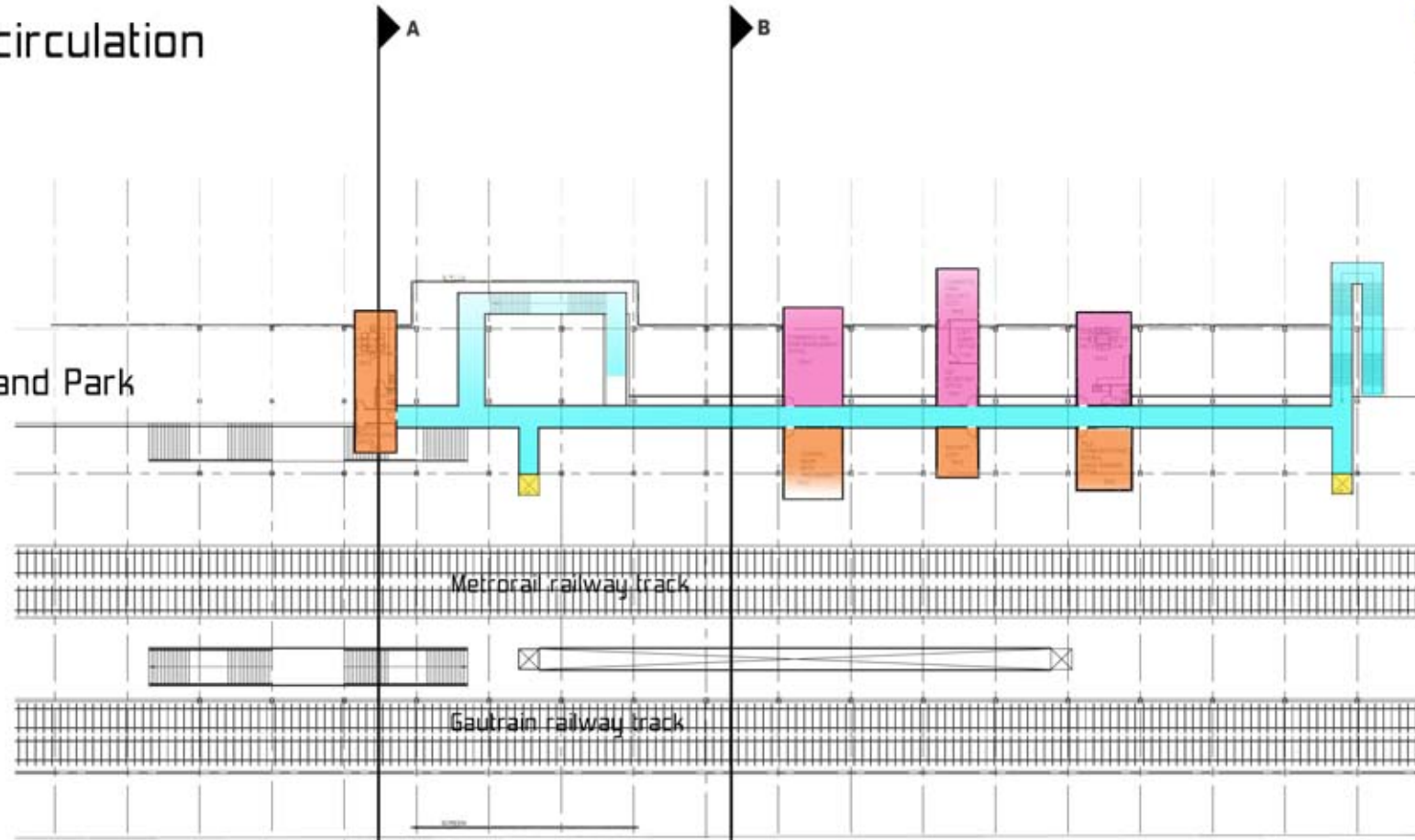
Zones: Quick zone and Waiting zone

progression in levels = progression



Mezzanine circulation

- Staff: Shopping and Park
- Disabled
- Staff circulation
- Staff: Station



On this level the two independent entities; Metrorail and Station Shopping mall: use the same areas for administration
On the East, overlooking the platform, is the Metrorail staff program, and on the West - overlooking the park and precinct - the Station shopping administration program.

UNIVERSITY ROAD

- | | |
|----------------------------|-------------------------------------|
| Program: | |
| Metrorail Staff: | Station Shopping mall Staff: |
| Station Supervisors Office | Security office and CCTV |
| Control room | Administration offices |
| Data Processing room | Secretary office |
| Security office | Manager office |
| CCTV office | Staff room and Kitchenette |
| | Toilet facility |

- Tele-Communications room
- Cable terminal room
- Staff room and Kitchenette
- Toilet facility

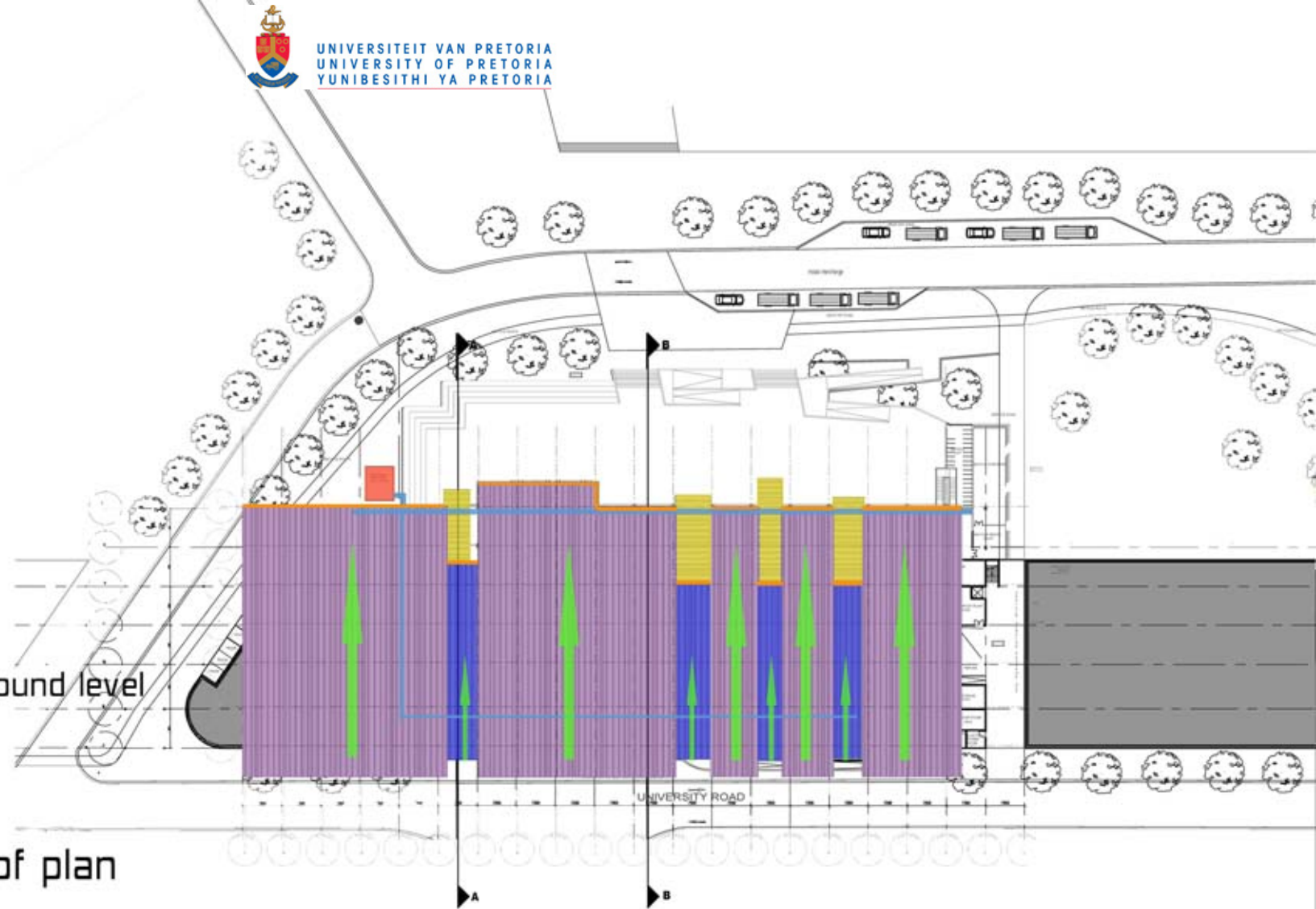
08:06

from public to private



Site drainage

- Slope
- Lower roof
- Higher roof
- Box roof
- Water tank
- Trenches on ground level
- Gutter

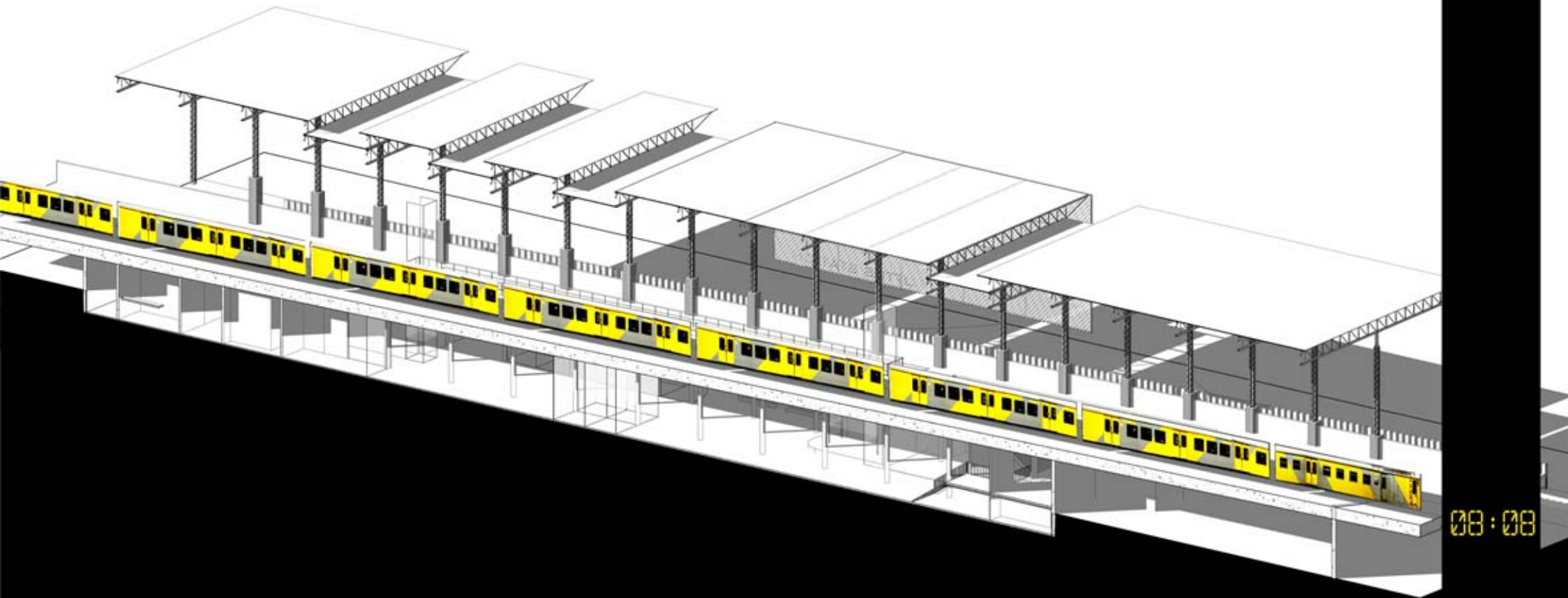


Roof plan

08:07

Rainwater and storm water is stored in an underground tank with submersible pump. A Submersible pump, with sensor - pumps abundant water into storm water channels in road reserve.

Service ducts are situated out of site in the service alleys. They are easily accessed from staff areas and prohibit any public entry. From the duct, sewerage is connected to the connection in the road reserve, the site falls to the South corner near Lynnwood Road.



00:00

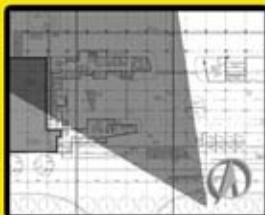
Roof Plan Axonometric displaying the staggered roof:

- allowing daylight penetration and natural ventilation.
- the shadows cast on the platform direct passengers to the focus point in the distance i.e. Loftus Versfeld Stadium



clarity of form

08:13



Perspective view of the main entrance into the station from University road
The display screen not only acts as shading device but more so marks the entrance to the building
Users can see Loftus Versfeld and the precinct from this point - enticing movement in that direction

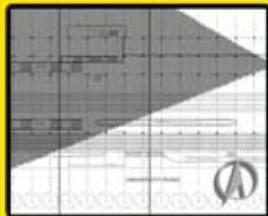
BUS STATION



08:14



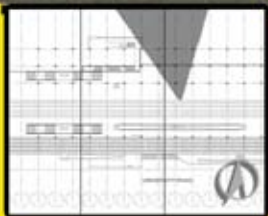
08:09



View of the platform parallel to the railway - the two passages created by the steel structure literally divides the two movement zones. The staff offices above the platform convey a human scale within the large steel structure. Once again circulation above is visible from this area



08:10



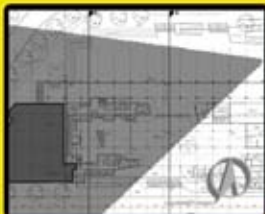
Perspective from the viewpoint of an arriving passenger - with Loftus Versfeld Stadium as focal point. Passengers can easily comprehend where to go - due to the open structure - exposing all modes of movement, from all directions possible



permeability

connectivity

08:11



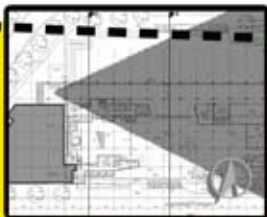
Perspective illustrating the arcade created by the steel structure reaching down and touching that 'which belongs to the ground. Accentuating the spill out space of the commerce but more importantly constantly reminding the users of activities on the higher level.



legibility



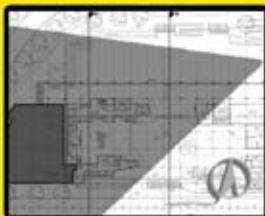
08:12



Internal view showcasing the arcade
The arcade highlights the space created instead of the mass created



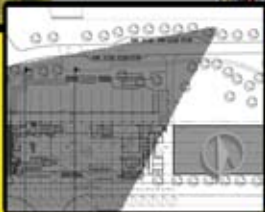
08:15



Perspective view overlooking the station building - illustrating the possibility of events that may occur in the courtyard area

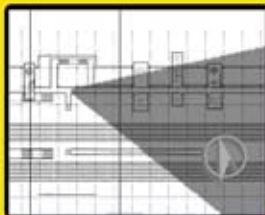


08:16



Perspective view of the modal interchange, green route (urban park) and the station building. All modes of movement is visible from this point. Thus defining this point as a node and facilitating decision making

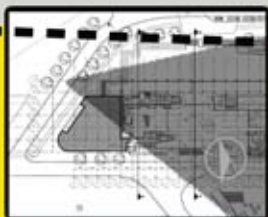
08:17



View from the Mezzanine level where staff members are accommodated
Surveillance necessary for security and station operators is ideal - a full 180 degree view of the platform is possible
Focal points in the landscape, such as the Engineering Tower building at the University of Pretoria, constantly reminds users of their surroundings.



08:18



Perspective from the exit point of the slipway (under the railway)

- a clear visual of circulation routes as well as the train arriving and departing on the platform - assisting with orientation and legibility
- the GKD mediamesh provides space for interaction with the users



East Elevation



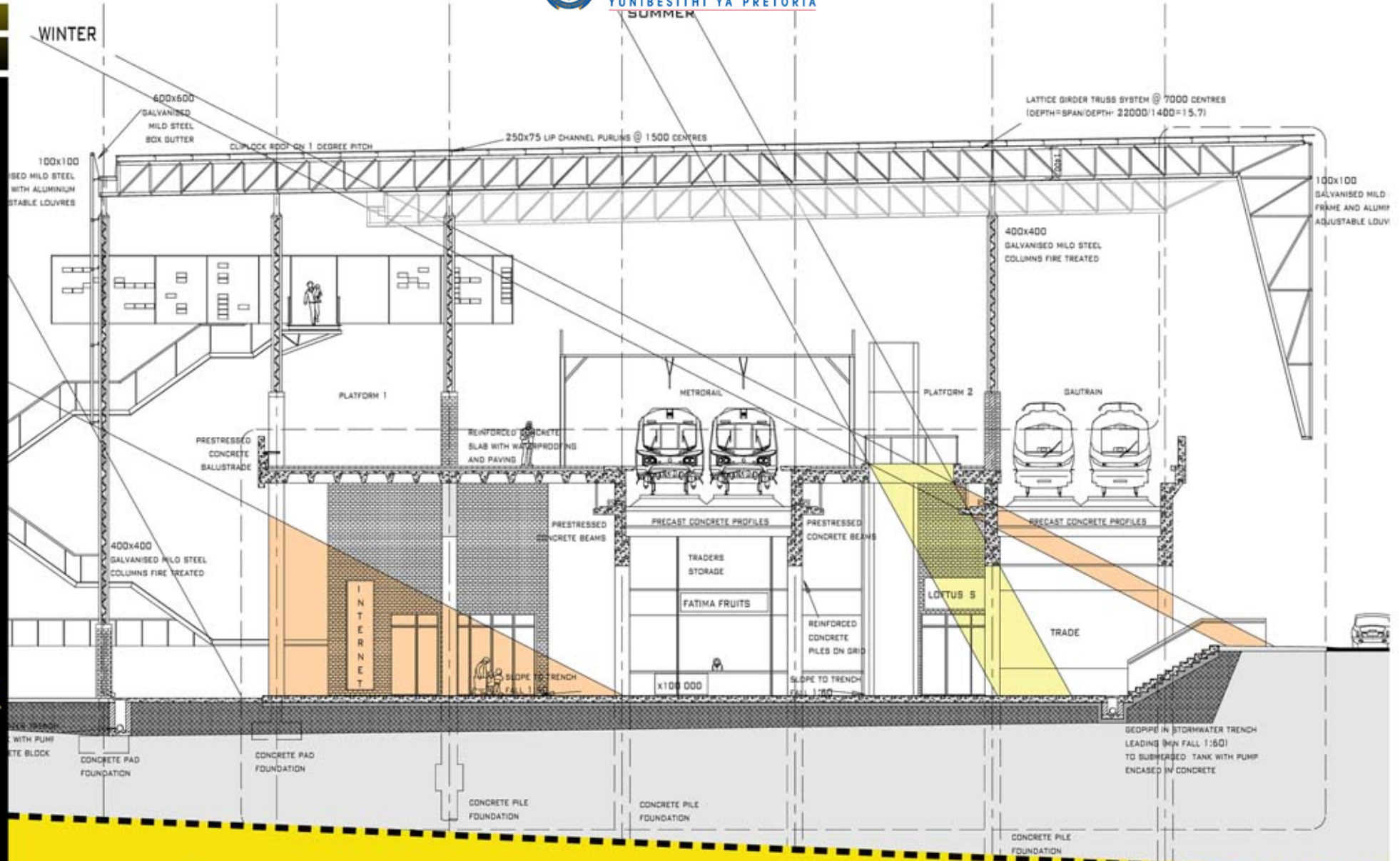
08:19



West Elevation



08:20



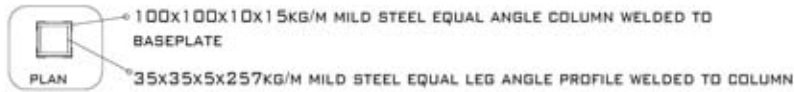
08:21



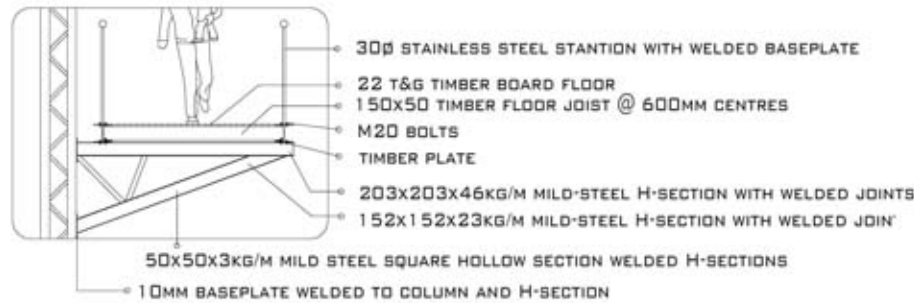
Section B-B
Scale 1:200



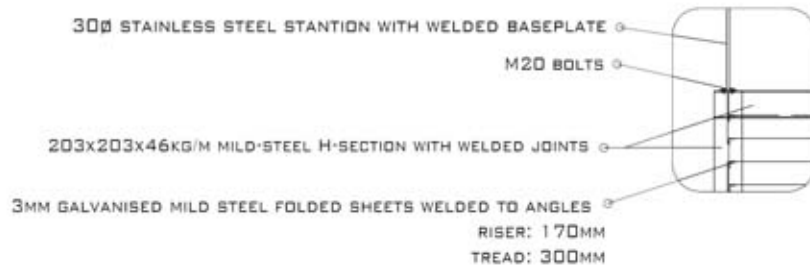
Column detail



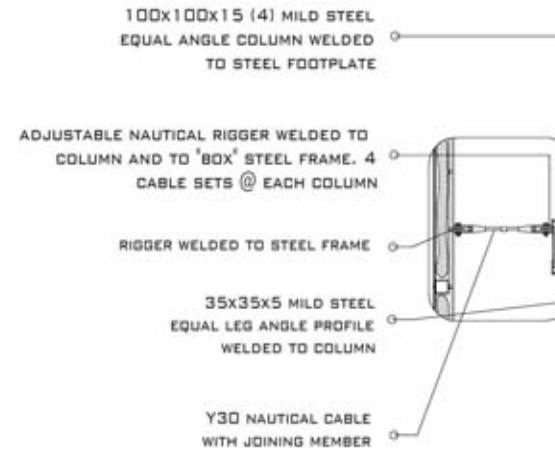
Walkway detail



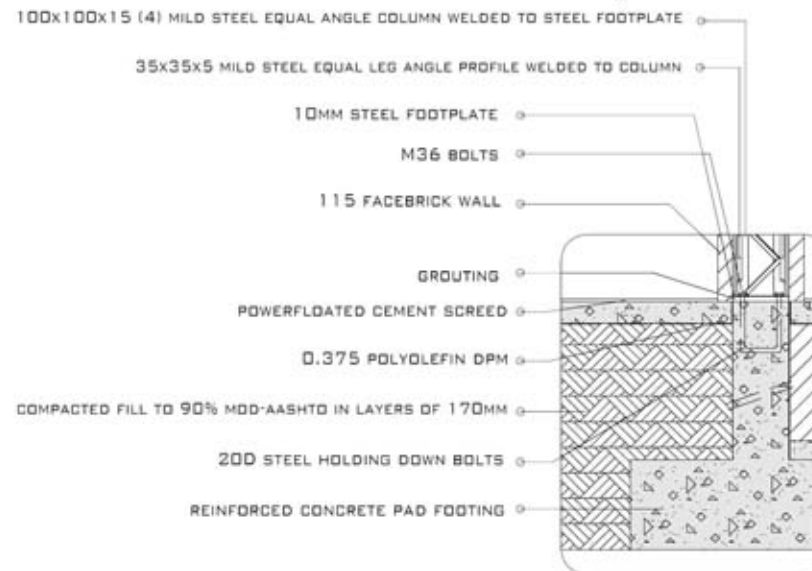
Stair and balustrade detail



Cable system detail



Column footing detail



Details

Scale 1:50



STORAGE TANK CALCULATION:

AVG DAILY RAINFALL: 36MM

ROOF M²: 2405M²

THUS: $2405 \times 0.036 = 86.6\text{M}^3$

OUTSIDE FLOOR AREA: 903M²

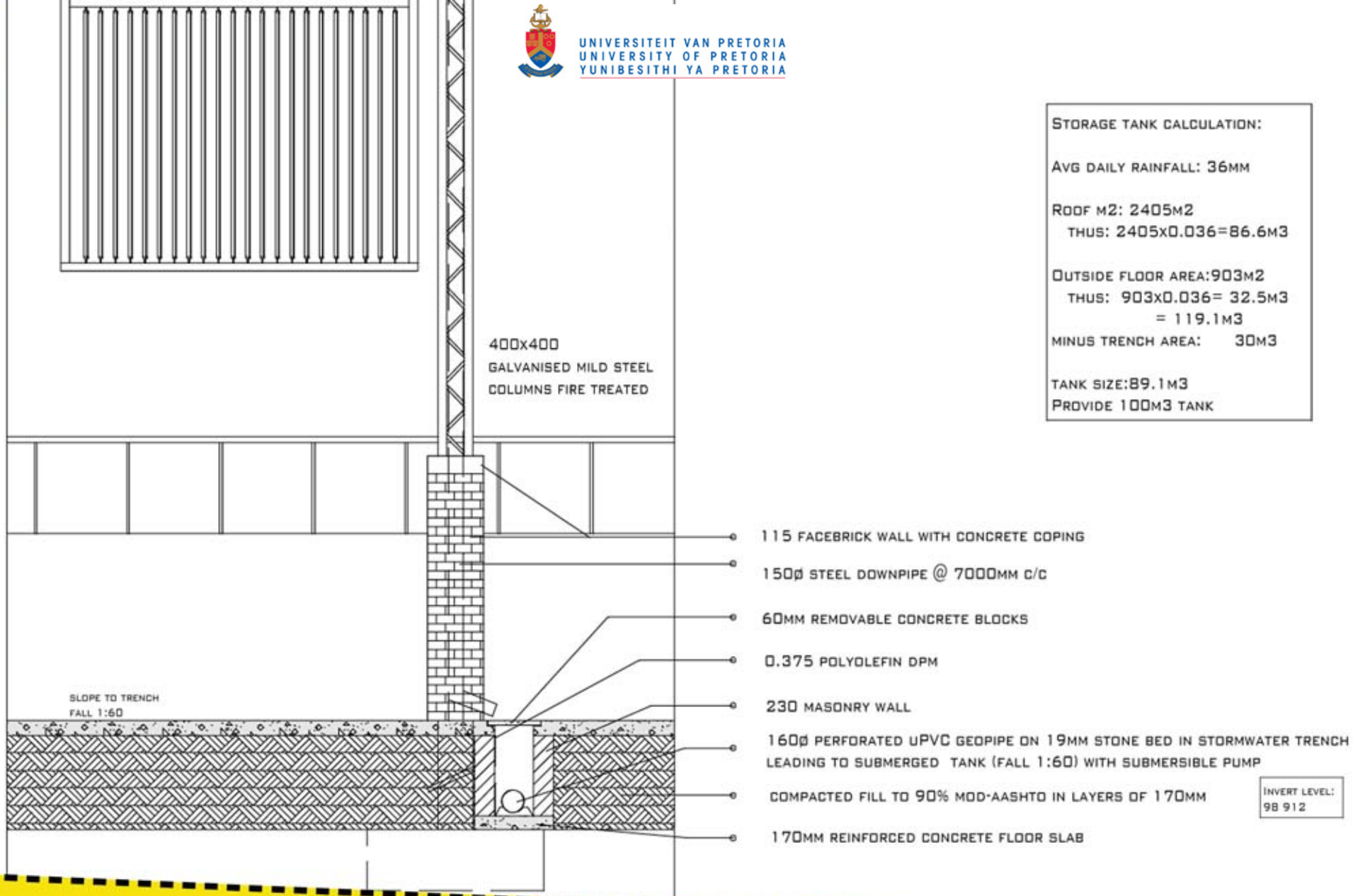
THUS: $903 \times 0.036 = 32.5\text{M}^3$
 $= 119.1\text{M}^3$

MINUS TRENCH AREA: 30M³

TANK SIZE: 89.1M³

PROVIDE 100M³ TANK

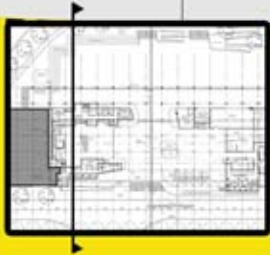
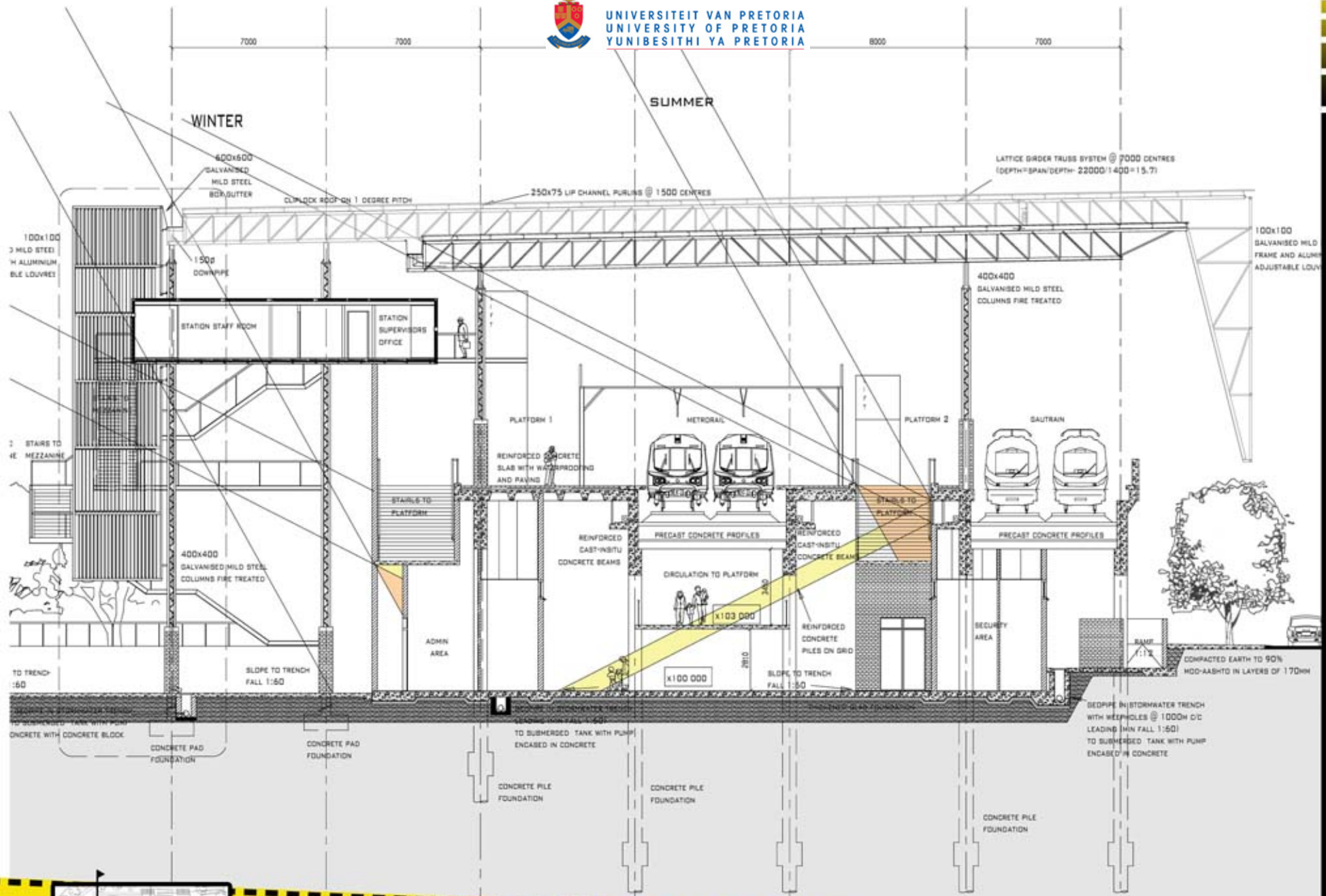
400x400
GALVANISED MILD STEEL
COLUMNS FIRE TREATED



INVERT LEVEL:
9B 912

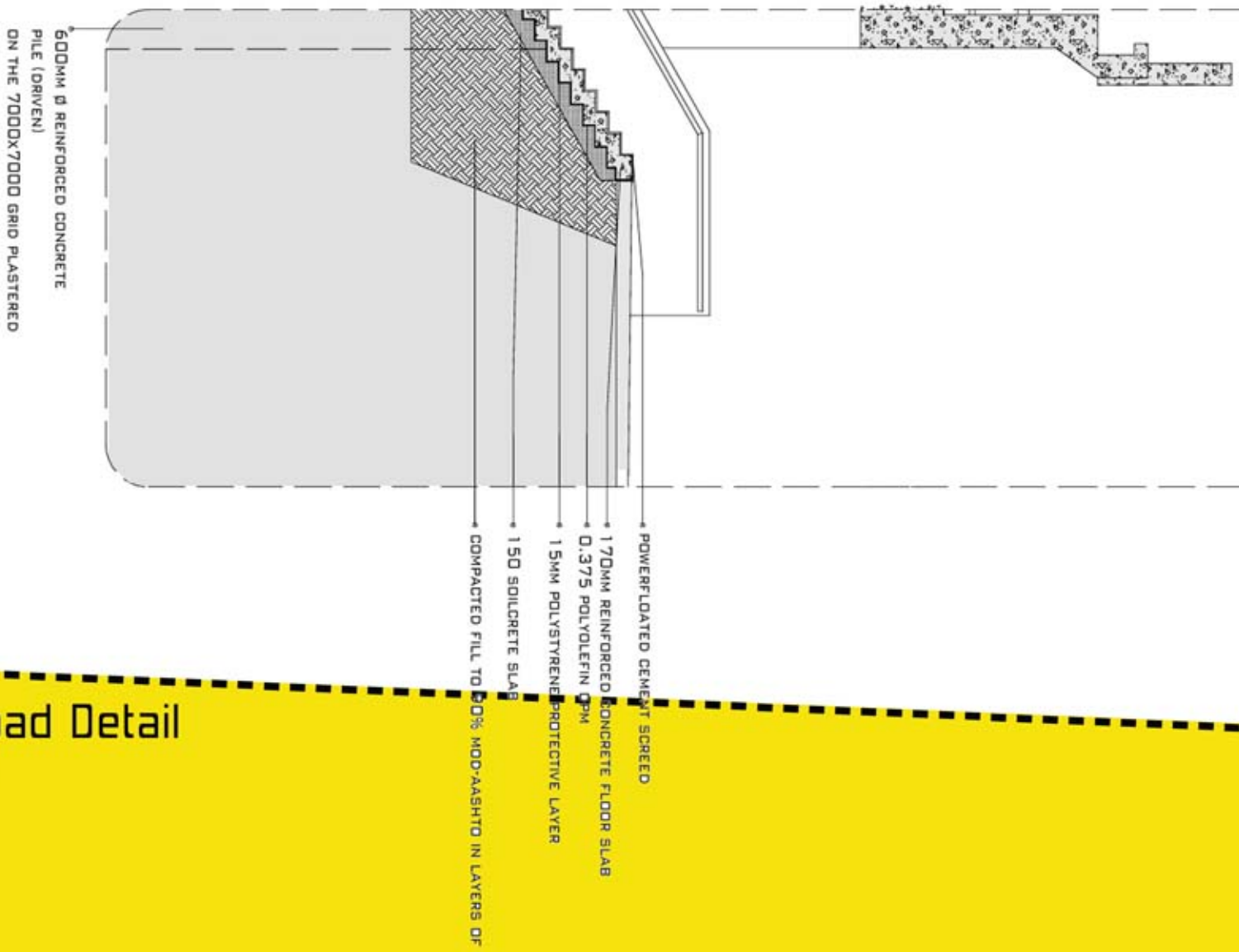
08:23

Skin Detail
Scale 1:100



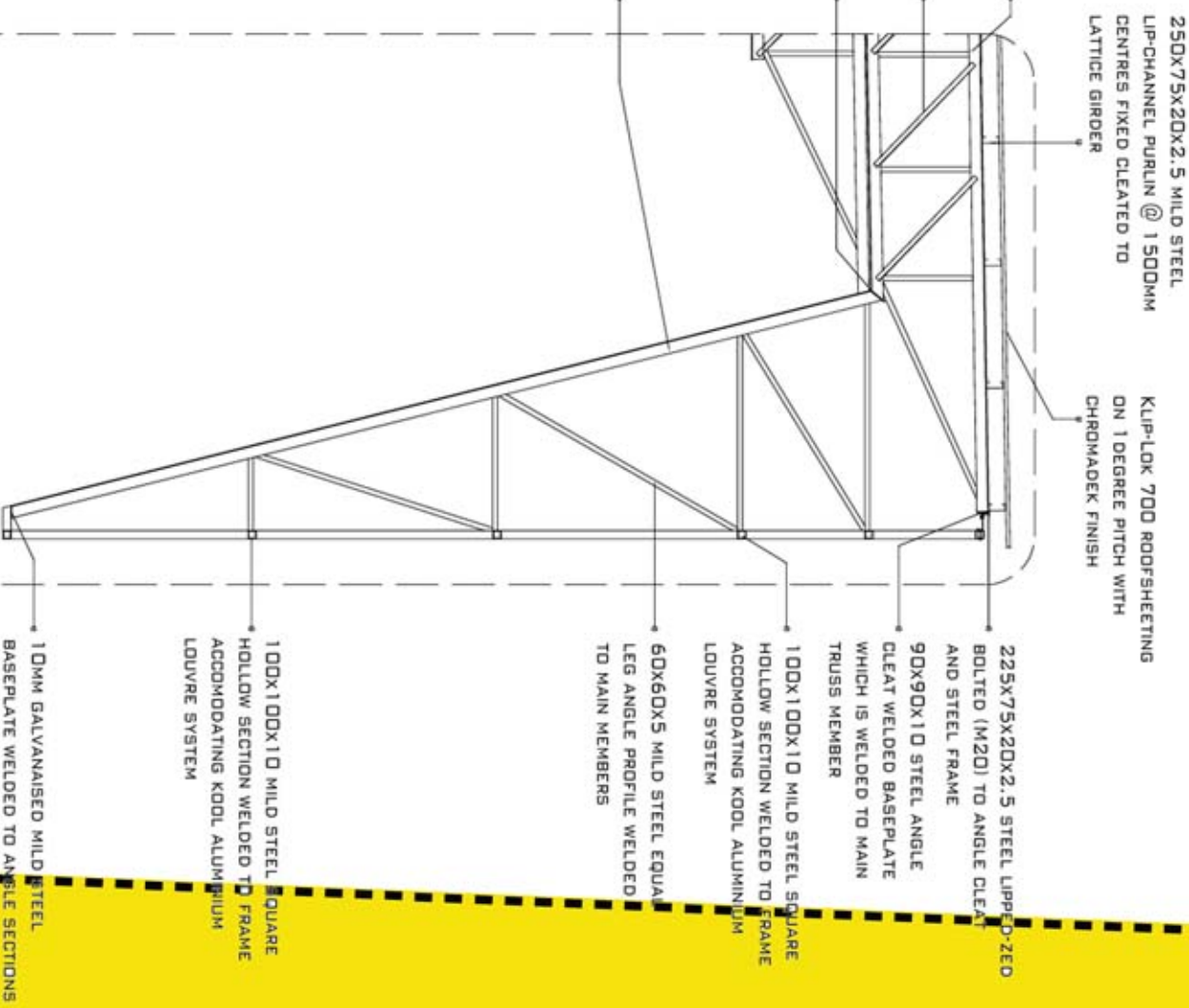
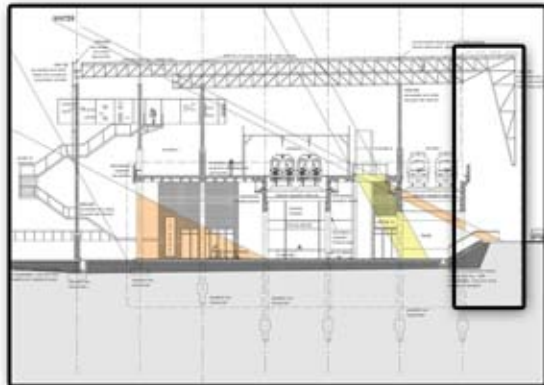
Section A-A
Scale 1:200

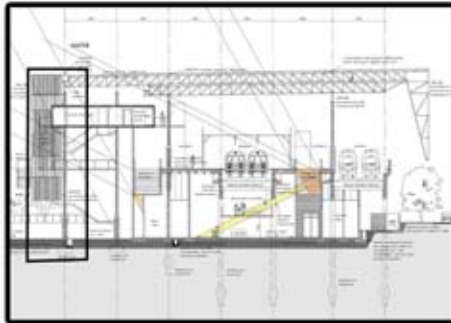
08:24



08:25

Univerity road Detail
Scale 1:100





100x100x10 MILD STEEL SQUARE HOLLOW SECTION WELDED TO VERTICAL MEMBERS AND FIXED TO COLUMNS @ 7000MM CENTRES

COOL ALUMINIUM ADJUSTABLE GALVANISED STEEL ROD FIXED TO STEEL FRAME

225x75x20x2.5 STEEL LIPPED-ZED BOLTED (M20) TO ANGLE CLEAT AND STEEL FRAME

COOL ALUMINIUM AEROWING GALVANISED STEEL FIN SYSTEM

90x90x10 STEEL ANGLE CLEAT WELDED TO COLUMN

200x200x10 HOLLOW SQUARE SECTION WELDED TO COLUMN BASEPLATE AND BOLTED TO TRUSS

DRIP

TRANSLUSCENT INSULATION (EXTRUDED) POLYSTYRENE BALLS WEAVED INTO BAGS

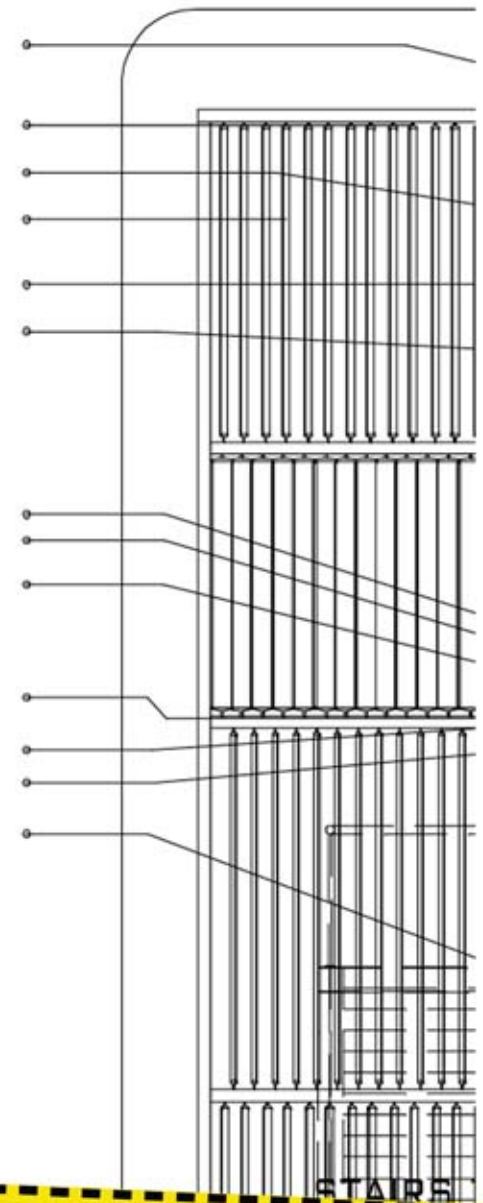
TRANSLUSCENT (70%) CORRUGATED (MAKROLON ROMA) POLYCARBONATE SHEETING OVERLAPPING ONE CYCLE AT HORIZONTAL SEAMS AND FIXED WITH SCREWS TO FRAME

STEEL WINDOW FRAME WELDED TO STRUCTURAL FRAME

DOUBLE GLAZING OPENING SECTION

6MM FROSTED SAFETY GLASS

240x85x33KG/M MILD STEEL CHANNEL FIXED TO FRAME STRUCTURE WITH M20 BOLTS



STAIRS

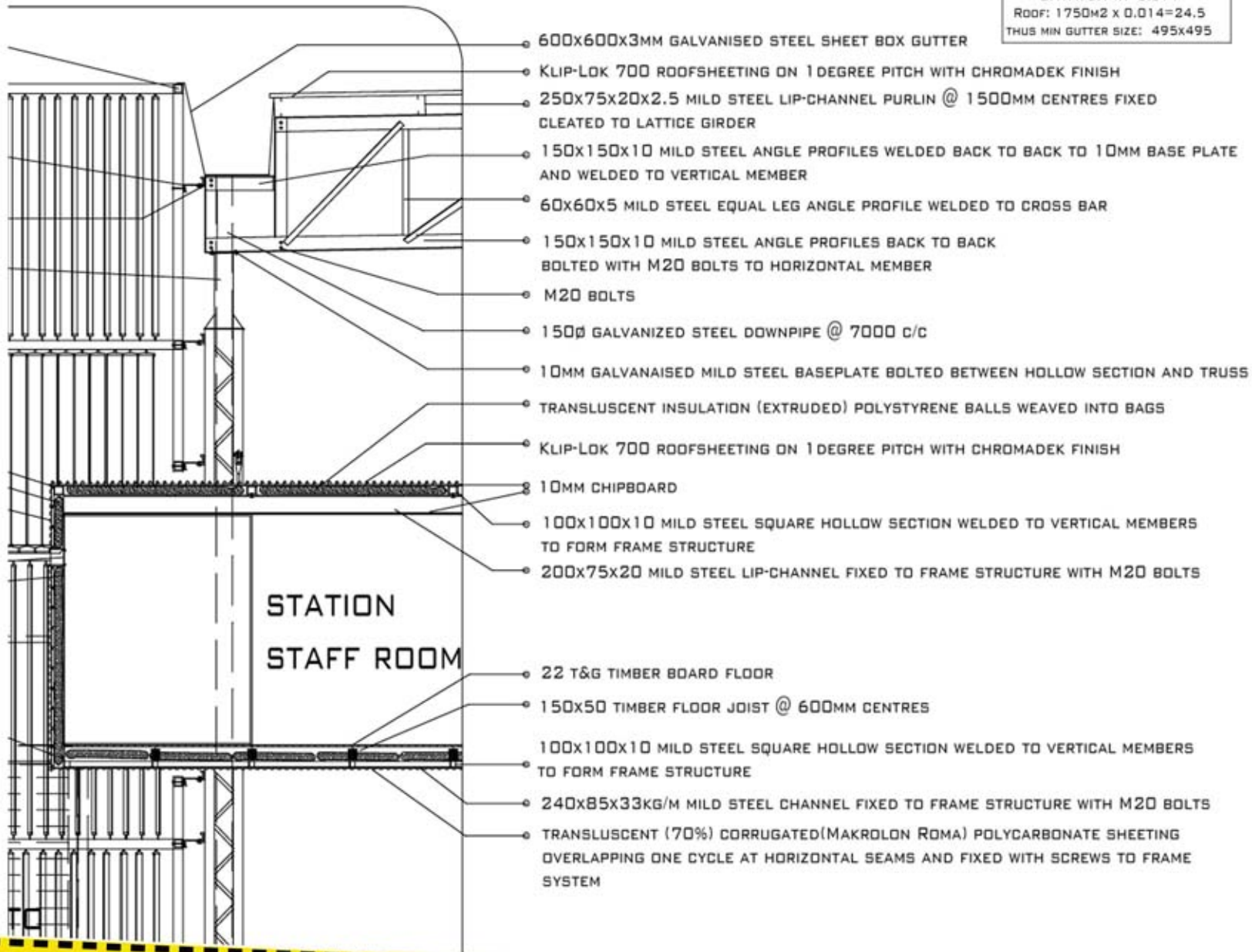
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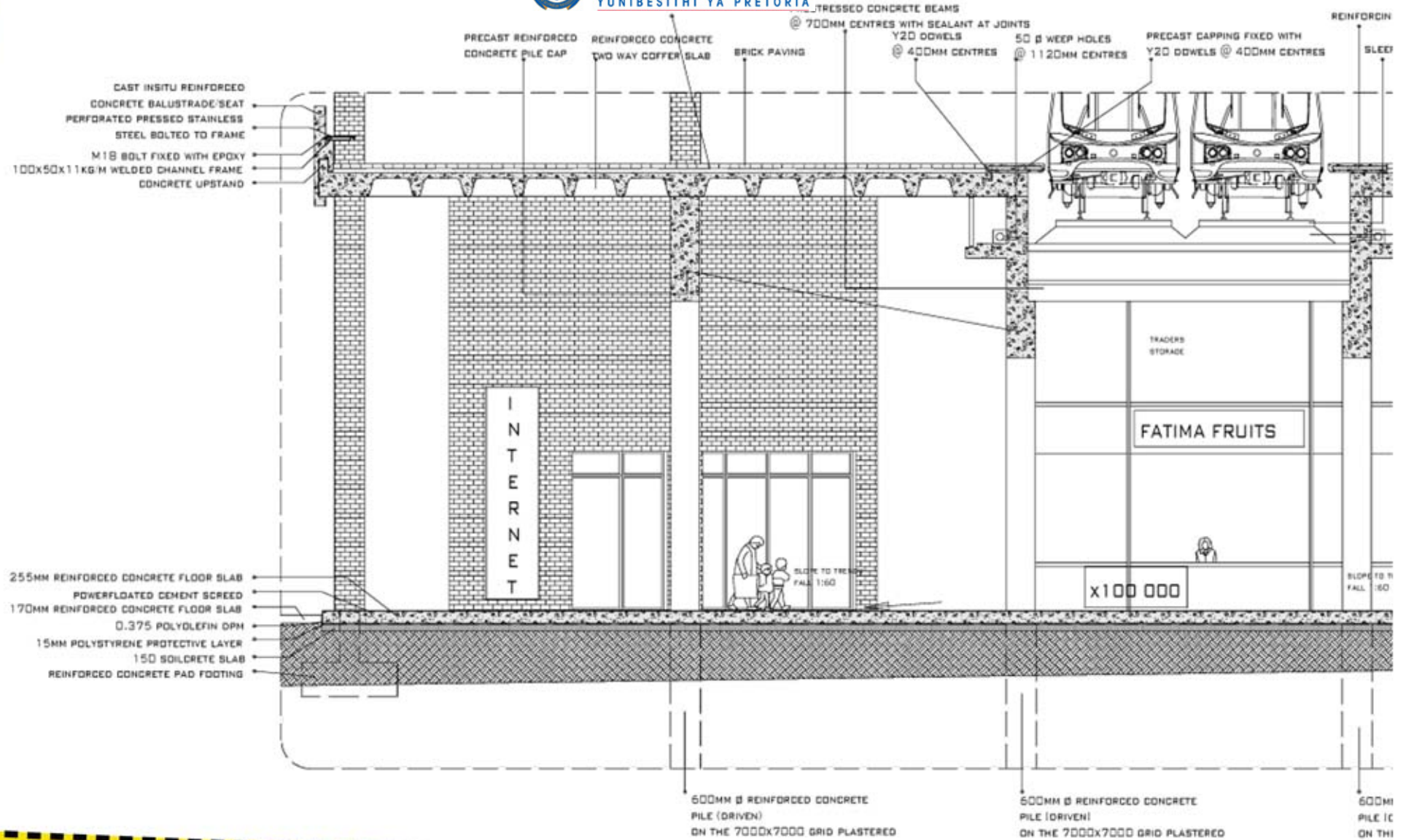
Facade Detail

Scale 1:100



GUTTER CALCULATION:
140MM² (SUMMER/1M²)
0.1M x 0.14M=0.014
ROOF: 1750M² x 0.014=24.5
THUS MIN GUTTER SIZE: 495x495





08:29

Sub structure Detail

Scale 1:100

