chapter 08

technical investigation

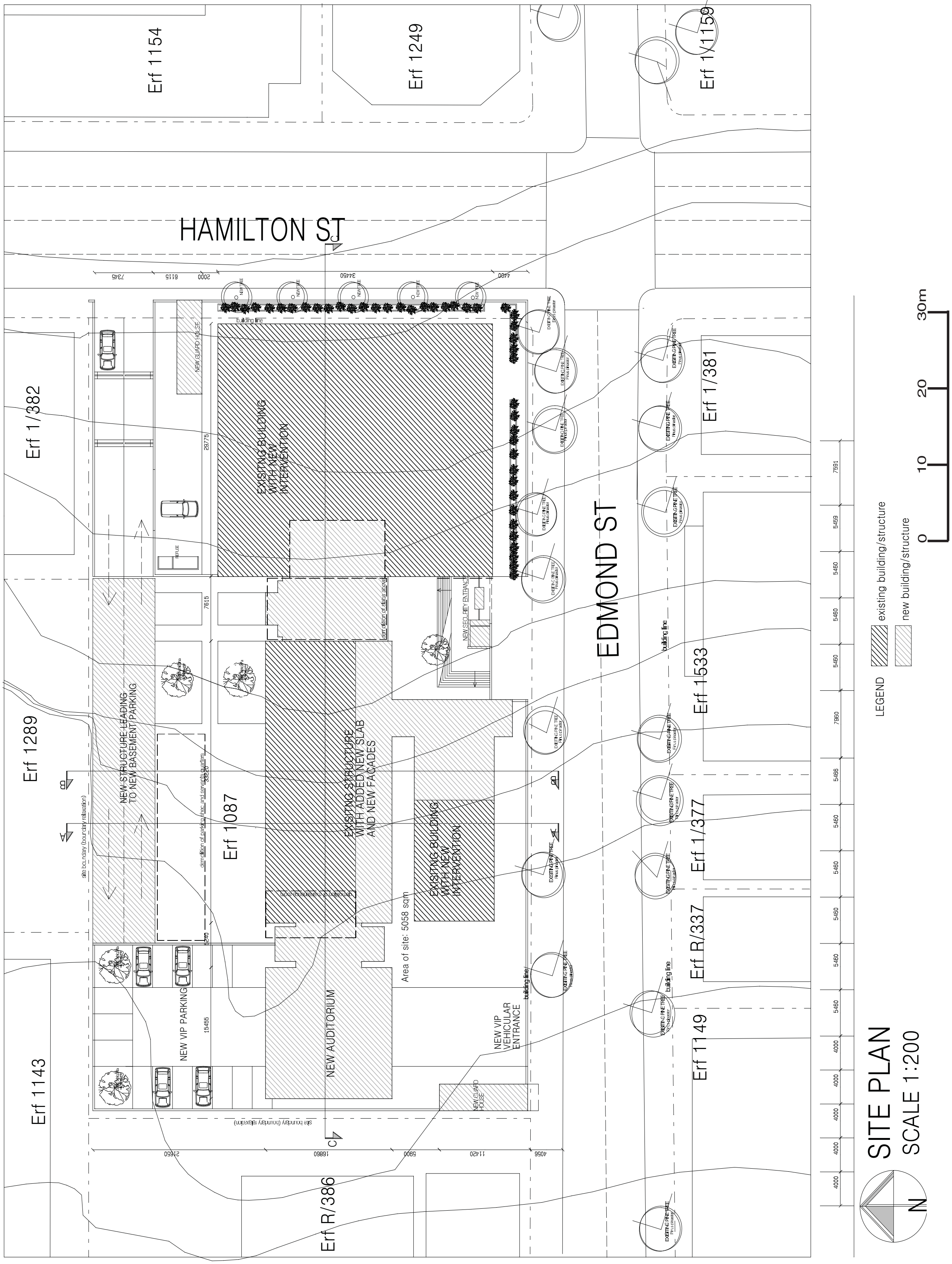

Erf 1154
Erf 1249
Erf 1/1150
HAMILTON ST
Erf 1/382
Erf 1/381
NEW GUARD HOUSE
EXISTING BUILDING WITH NEW INTERVENTION
EDMOND ST
NEW SECURITY ENTRANCE
Erf 1289
NEW STRUCTURE LEADING TO NEW BASEMENT PARKING
Erf 1087
EXISTING STRUCTURE WITH ADDED NEW SLAB AND NEW FACADES
EXISTING BUILDING WITH NEW INTERVENTION
Area of site: 5058 sqm
Erf 1533
Erf 1/377
Erf R/337
NEW VIP PARKING
NEW AUDITORIUM
NEW VIP VEHICULAR ENTRANCE
NEW GUARD HOUSE
Erf 1149
Erf 1143
Erf R/386
LEGEND
existing building/structure
new building/structure
0
10
20
30m
SITE PLAN
SCALE 1:200
N

Fig.353:Site Plan

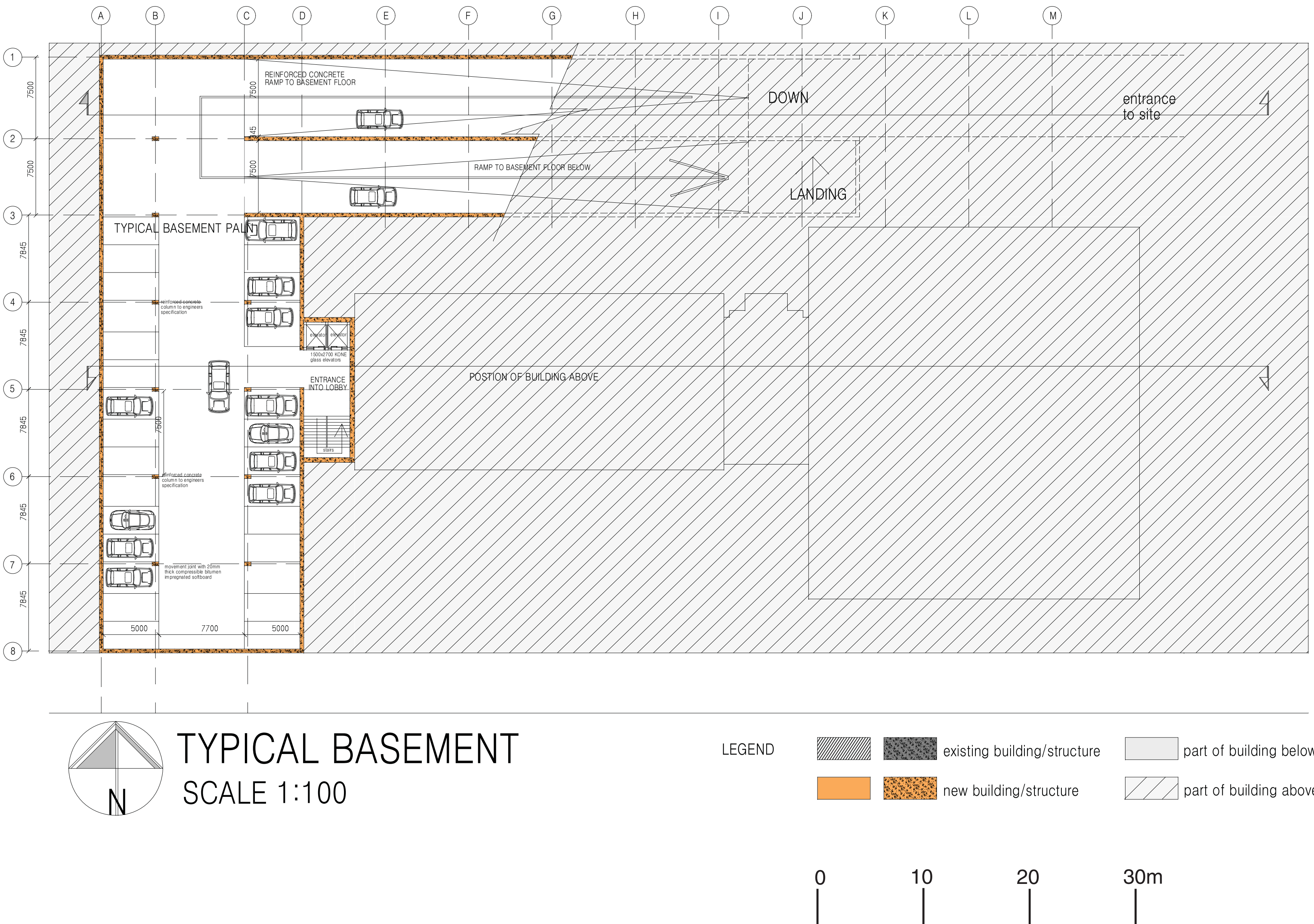


Fig.354:Typical Basement Plan

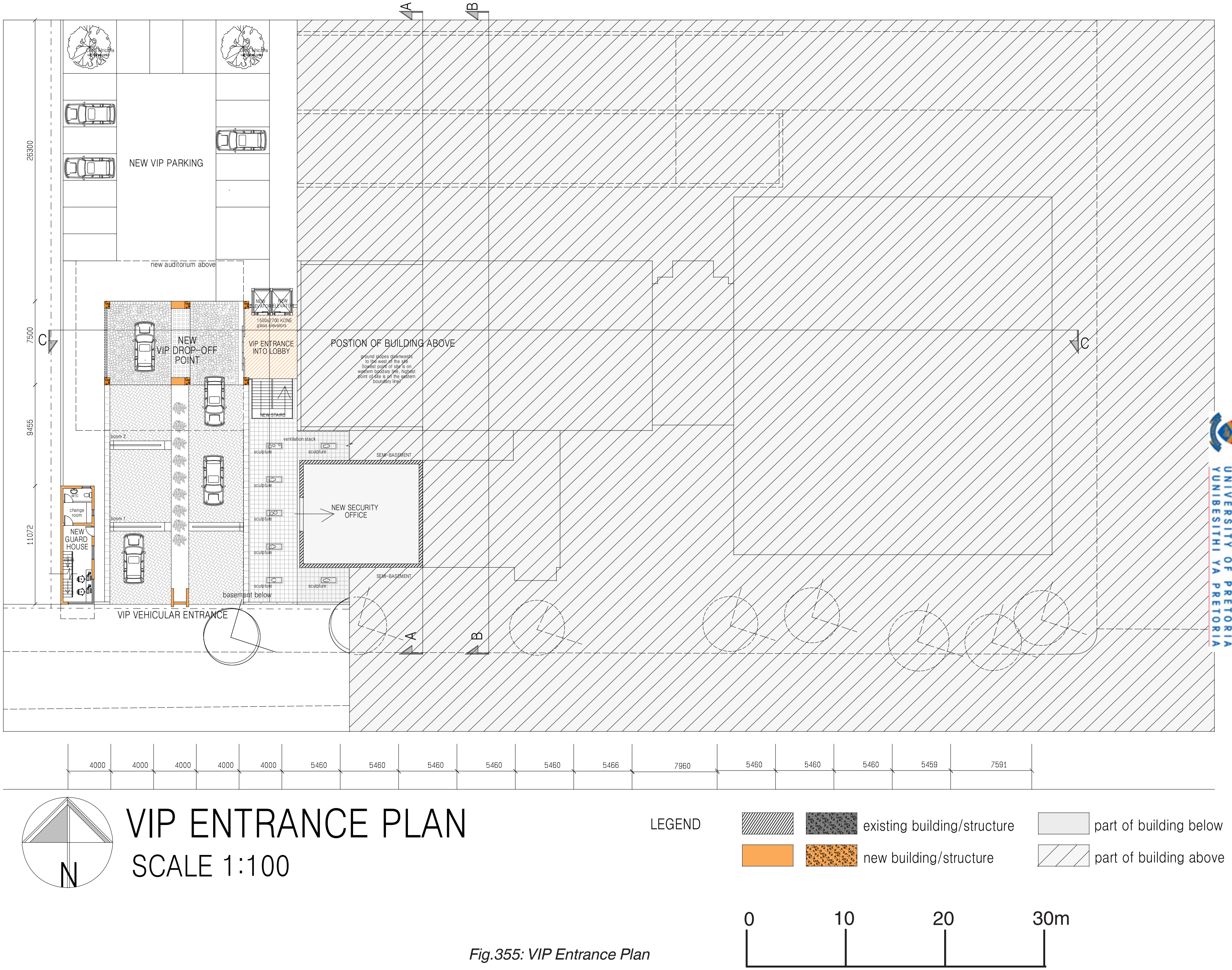


Fig.355: VIP Entrance Plan

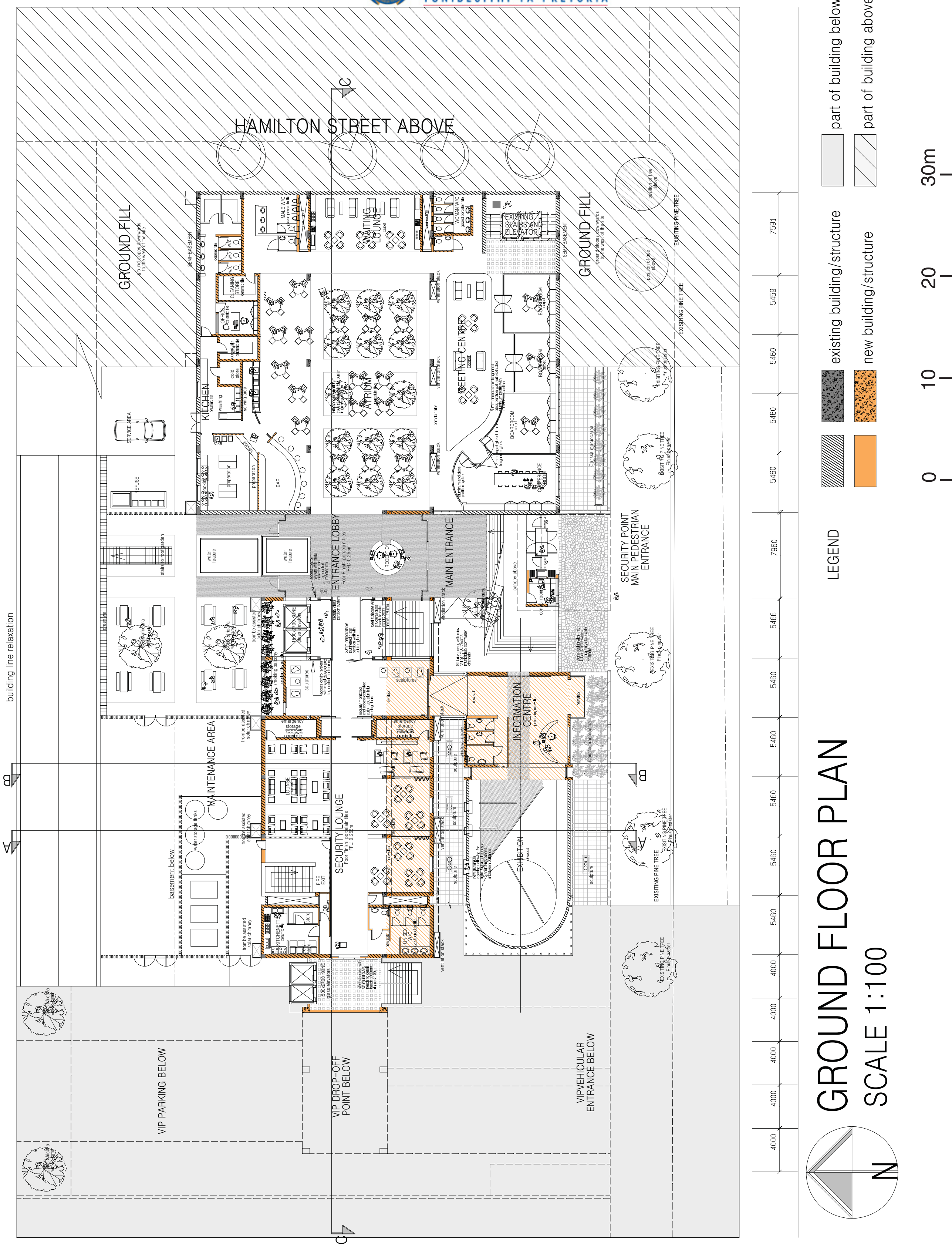


Fig.356: Ground Floor Plan

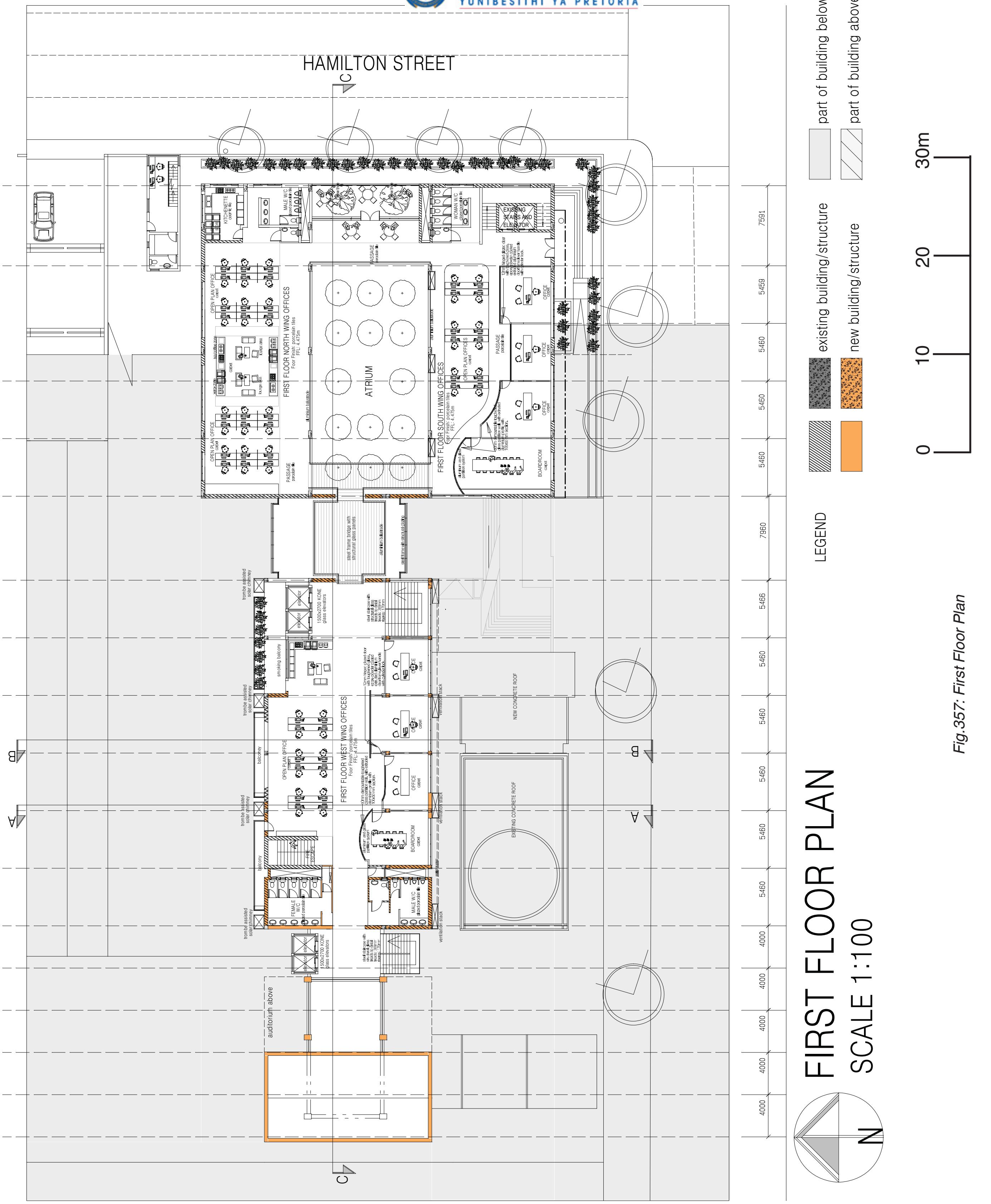
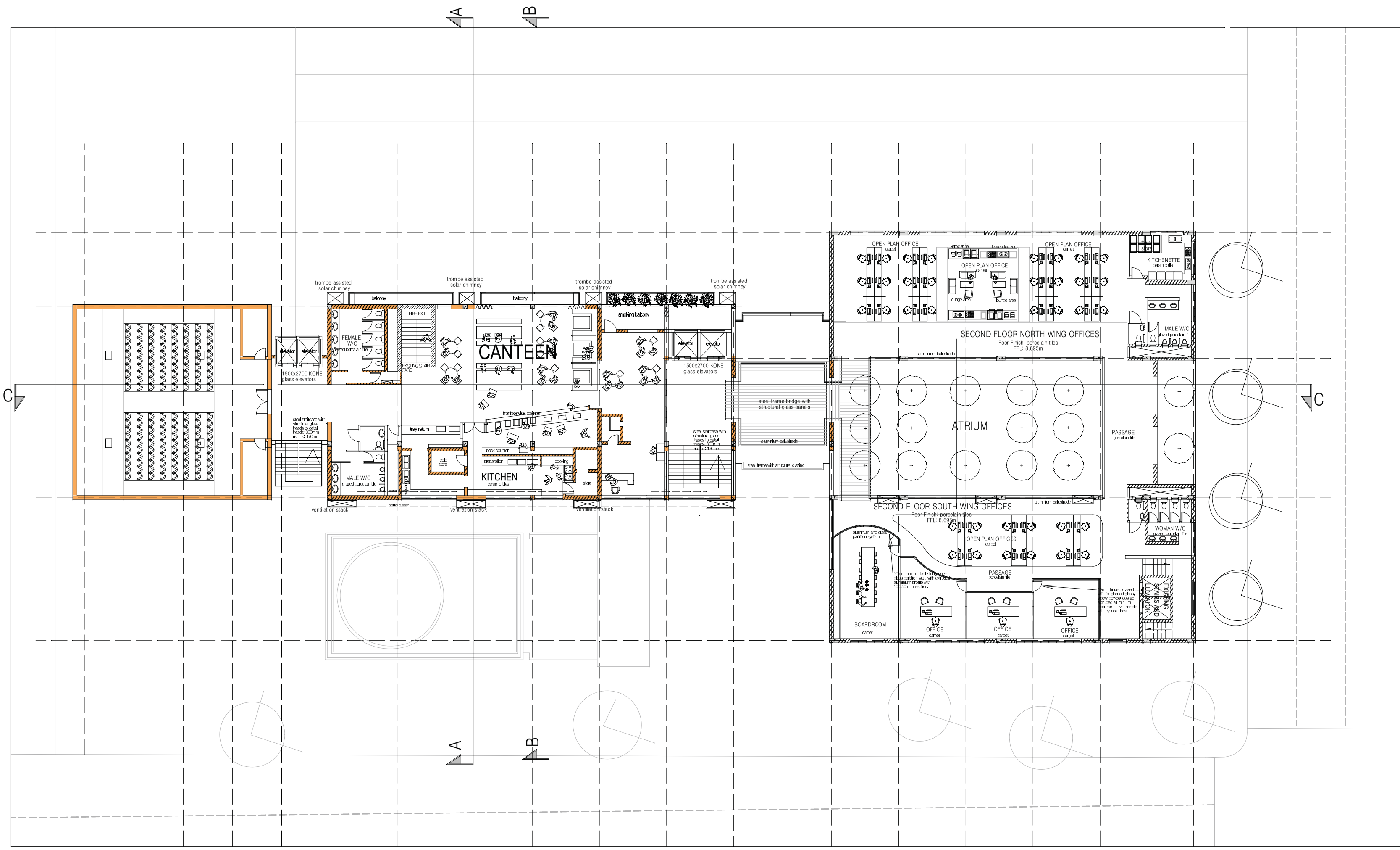


Fig.357: First Floor Plan



SECOND FLOOR PLAN

SCALE 1:100

N

LEGEND

- existing building/structure
- new building/structure
- part of building below
- part of building above

0 10 20 30m

Fig.358: Second Floor Plan

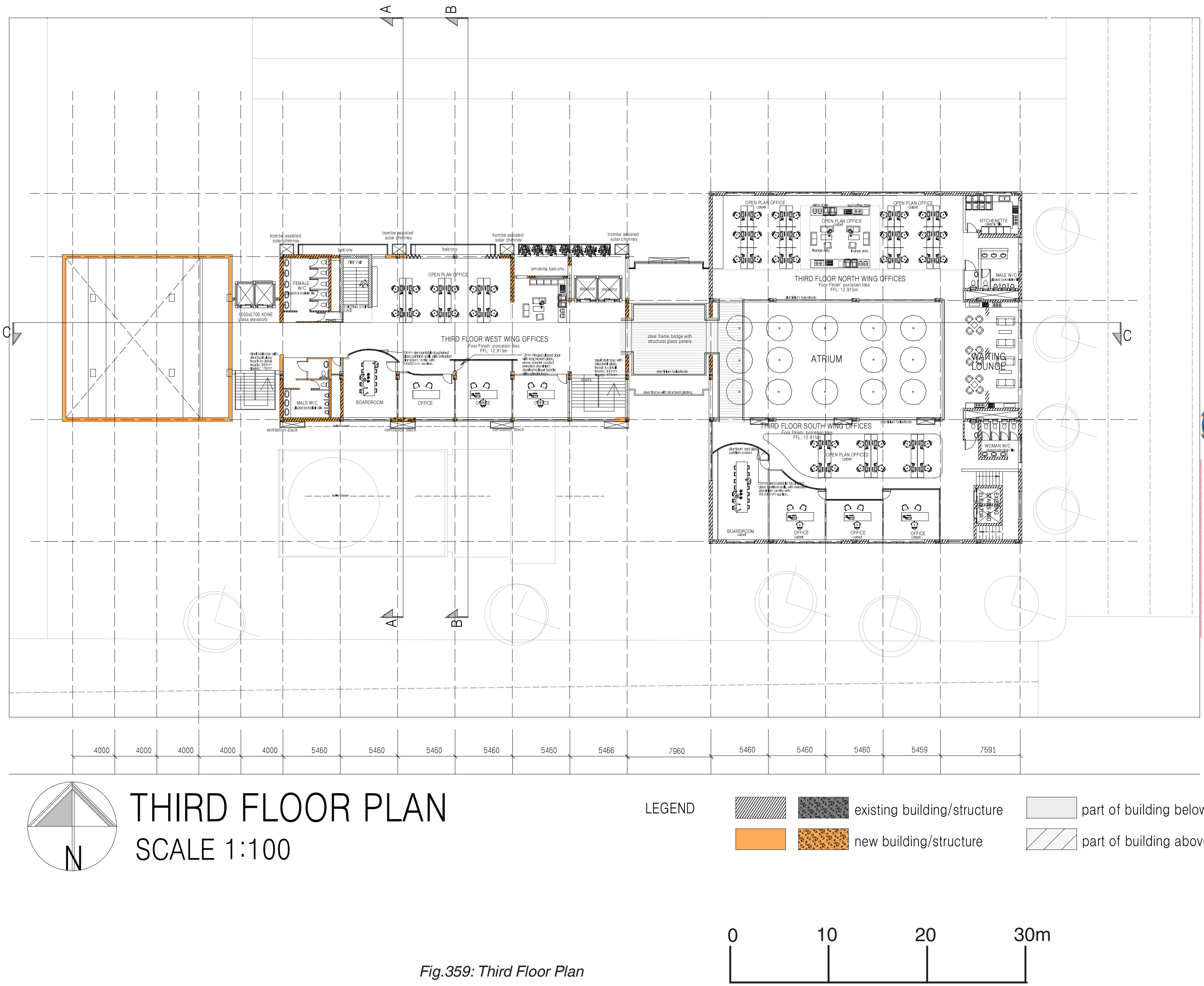


Fig.359: Third Floor Plan

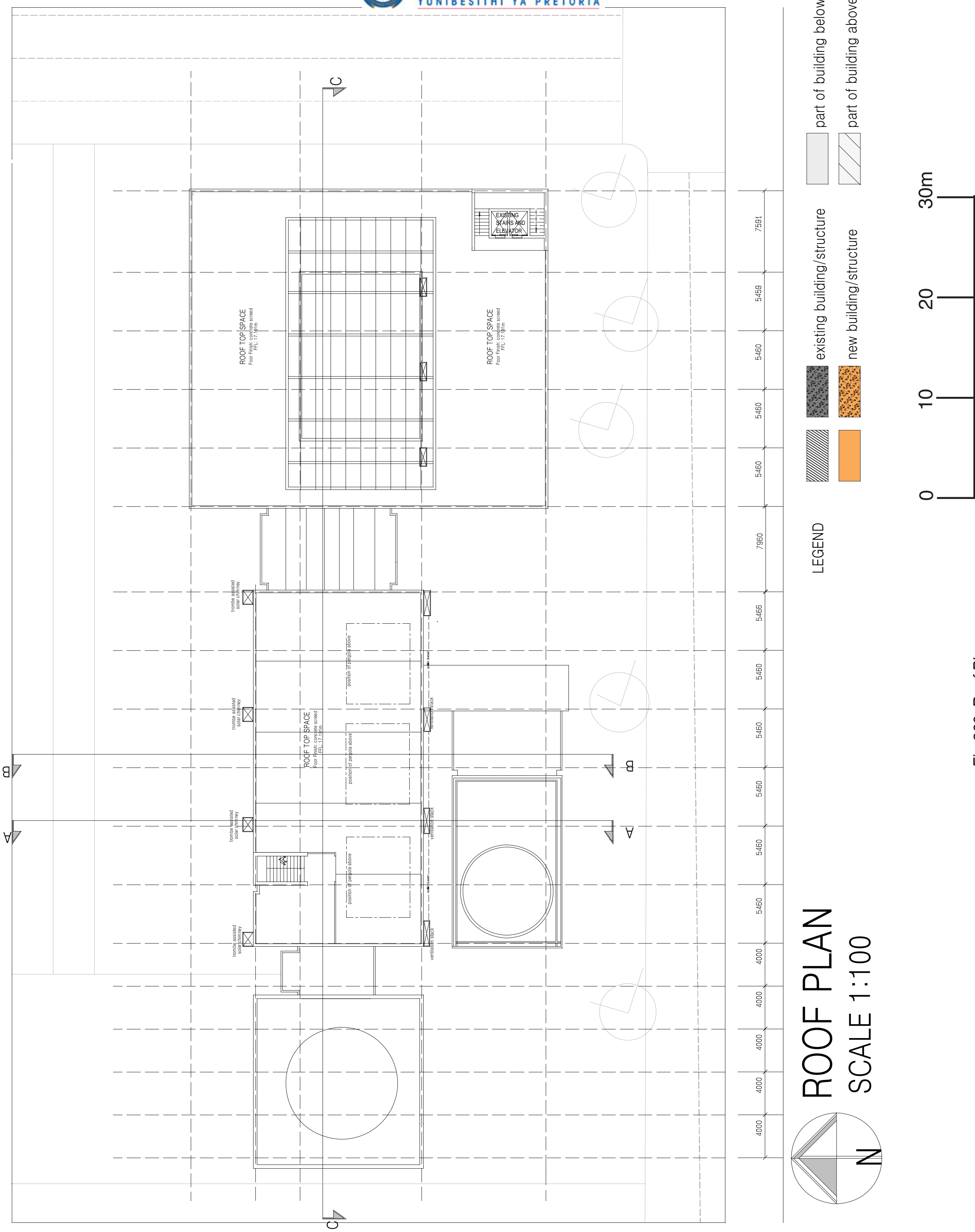


Fig.360: Roof Plan

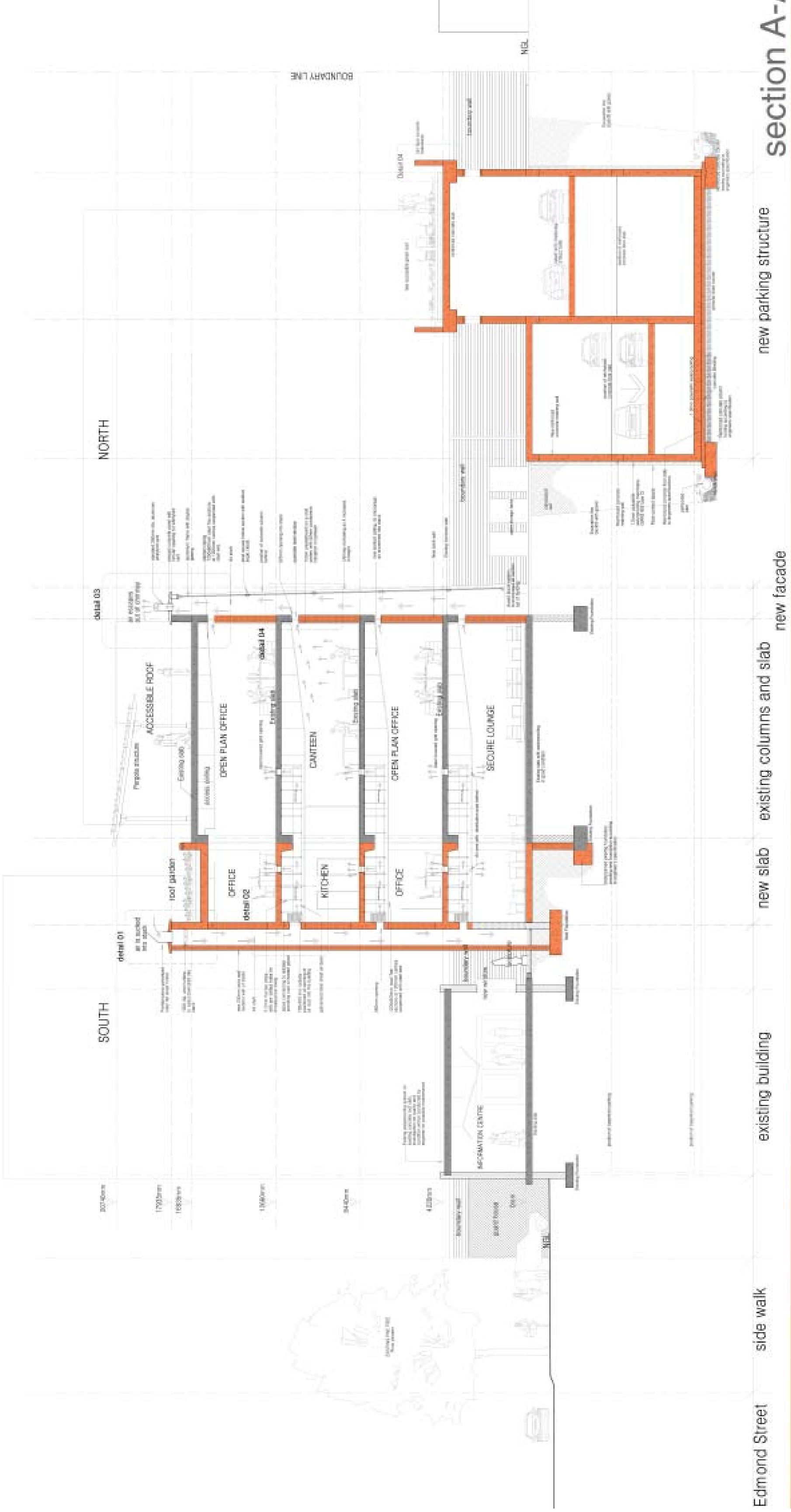
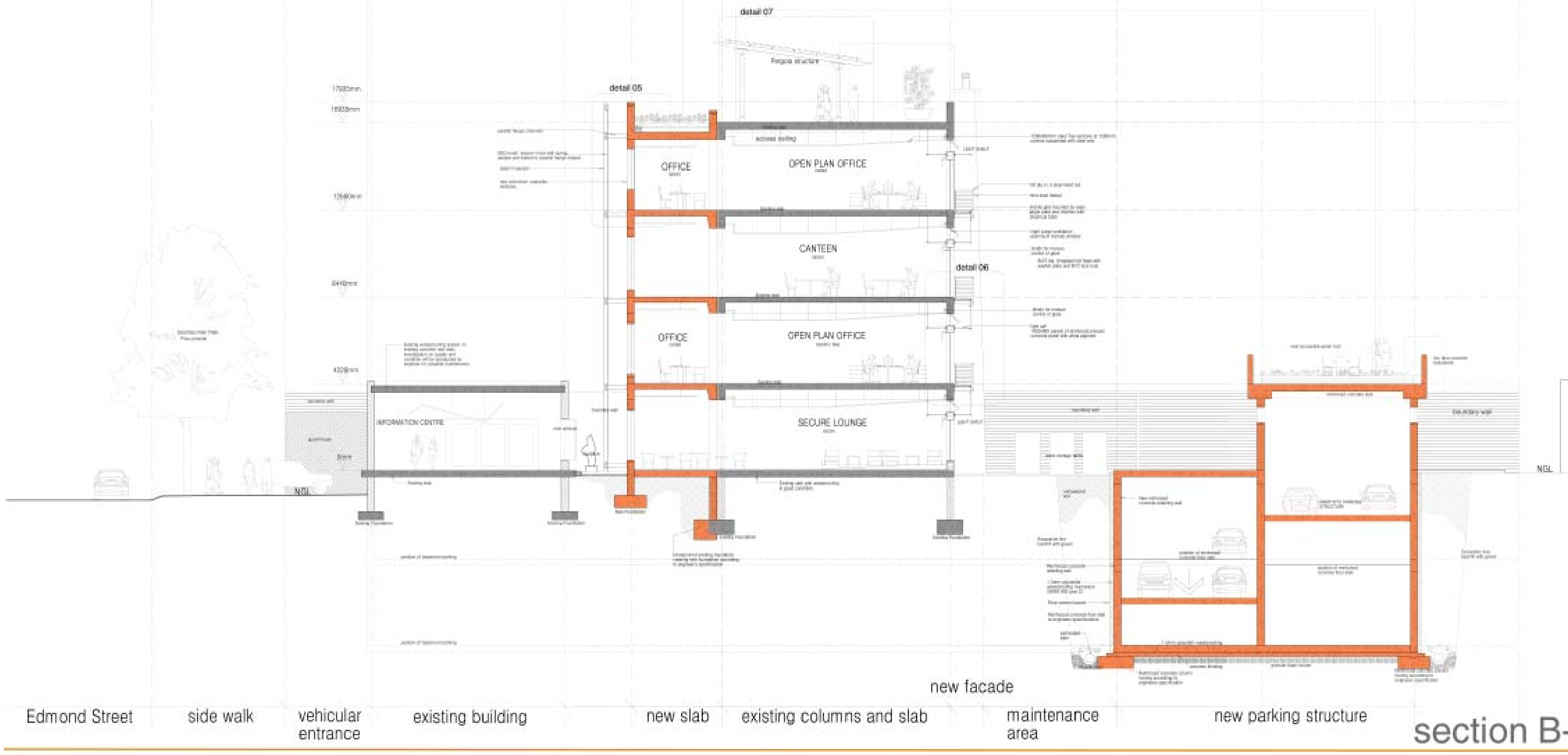


Fig.361: Section A-A



0 5 10 15m

Fig.362: Section B-B

South Elevation

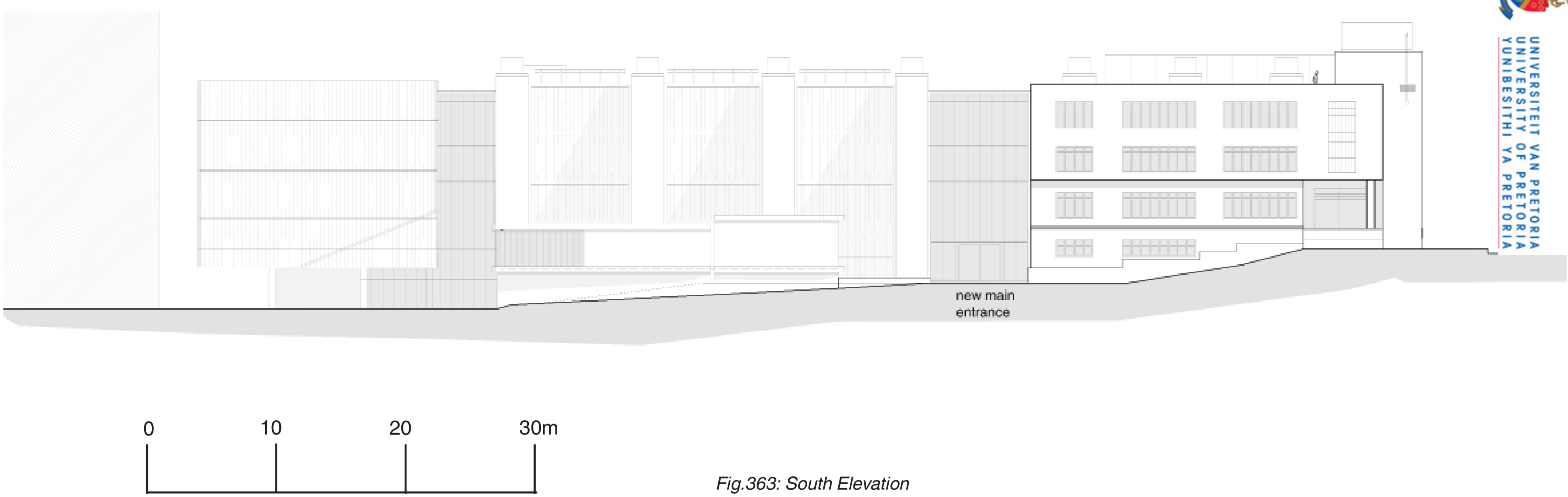


Fig.363: South Elevation

North Elevatioon

Fig.364: North Elevation

_technical investigation

8.1 STRUCTURE

The existing Agrivaal building comprises of concrete column and slab construction, indicative of Art Deco and early Modernism in South Africa. There are a number of grid systems used in the organisation of the building, as a result of many additions through the years. Large spans of space were achieved by the use of deep beams, some measuring up to 850mm. In the courtyard building (phase 1 and 2) 345 x 690mm rectangular reinforced concrete was utilised. Phase 3 extension has 345 x 345mm square reinforced concrete. Estimated slab thickness used throughout the existing building ranges from 255 to 300mm.

The new addition to the building mimics the structure in terms of material, however differs in detail. Subtle differenced include the profile of beams, the finish of the concrete and the size of column utilised. The intention is to highlight the new structure, however in a manner that does not lose the integrity of the existing. Columns continue to respect the original grid system used by the architect of the Agrivaal.

The new vertical circulation utilised steel construction. The steel structure is placed between concrete masses for both circulation shafts. This contrast from the heavy and solid appearance of the existing Agrivaal Building. Steel columns consists of a rectangular hollow profile with two steel channels welded to opposite side (refer to fig. 299). The hollow profile provides rainwater downpipes. Each column will need new column footings.

Fig. 298 shows the added floor space and the auditorium as new structures.

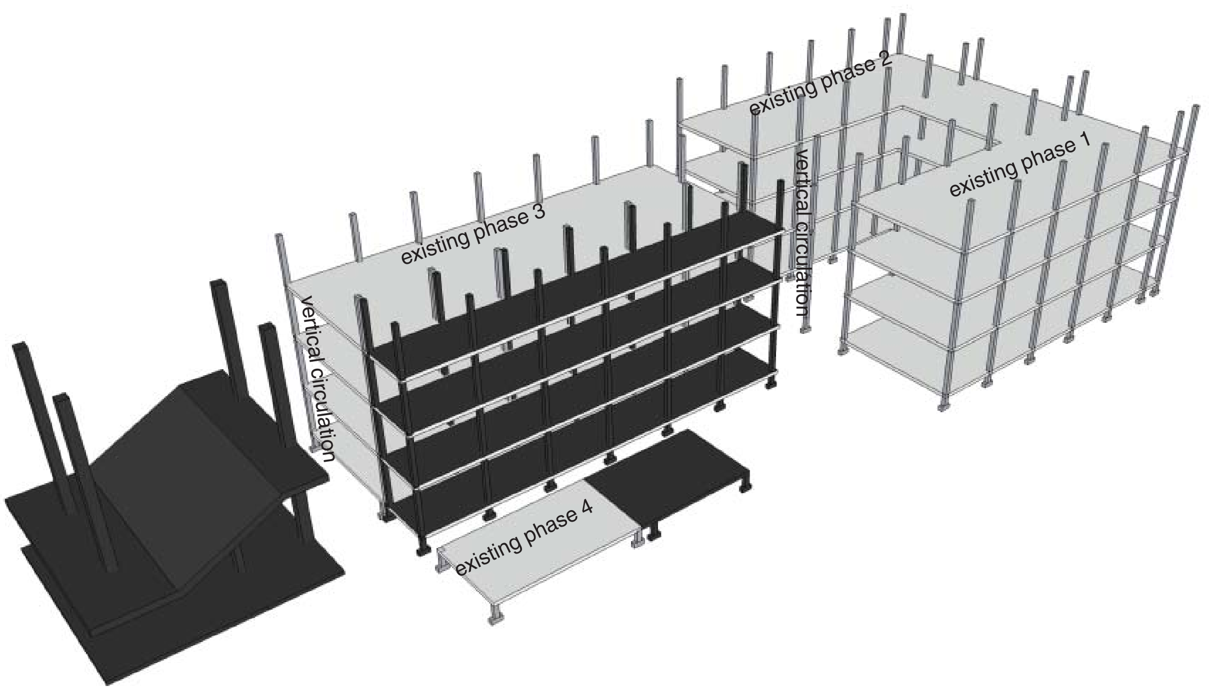


Fig.365:New and existing structure. [Source: author]

There are three primary structural additional to the building. They can be categorized as

1) addition of floor space on phase 3

2) vertical circulation at two points along the building (stairs and elevators)

3) addition to the information centre

4) new auditorium

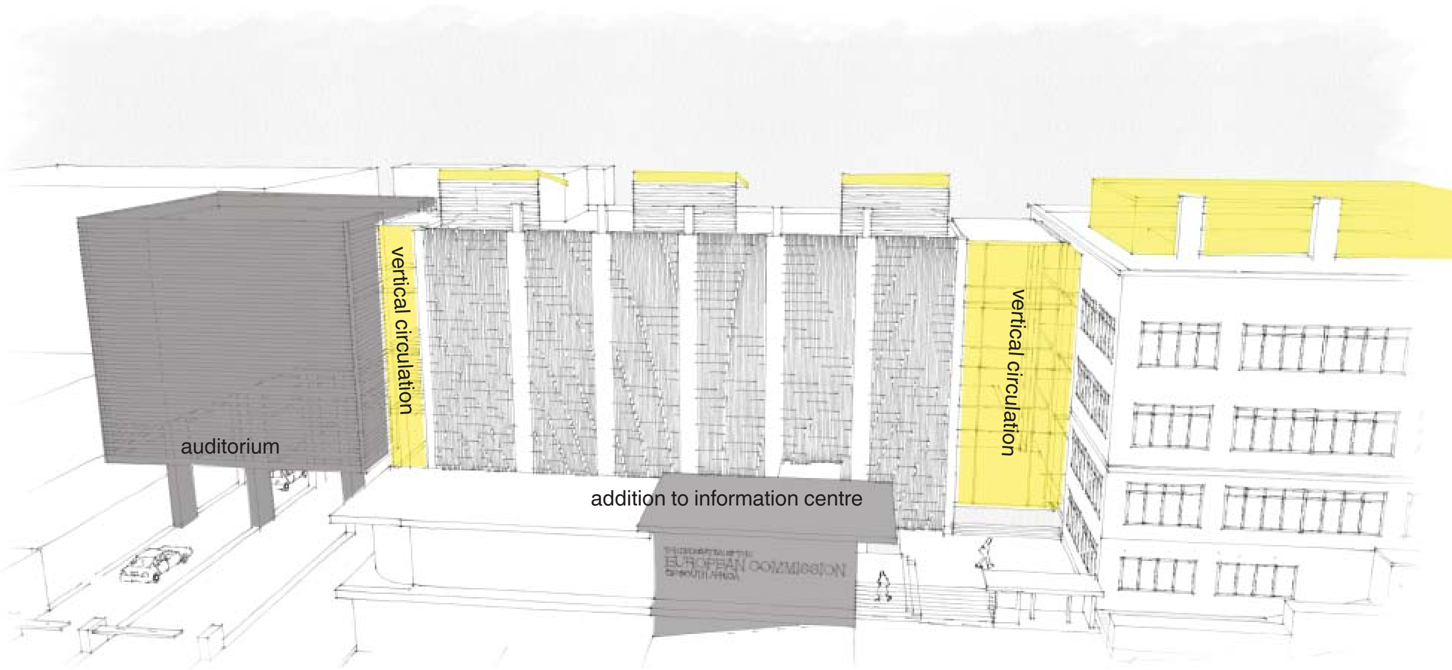


Fig.366: New and existing structure

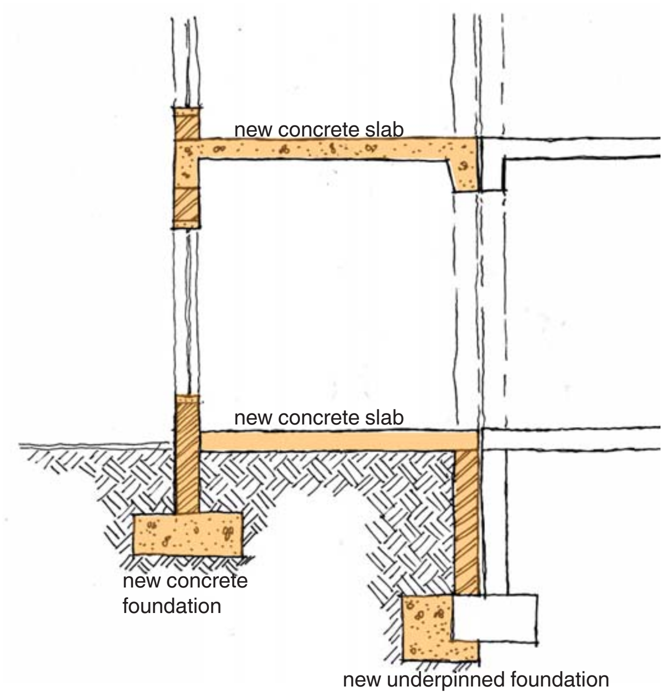


Fig.367: New concrete structure [Source: author]

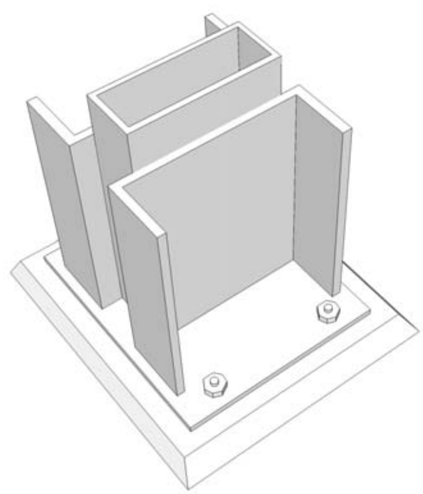


Fig.368: Steel column, rectangular hollow profile with two steel channels welded to opposite sides. [Source: author]

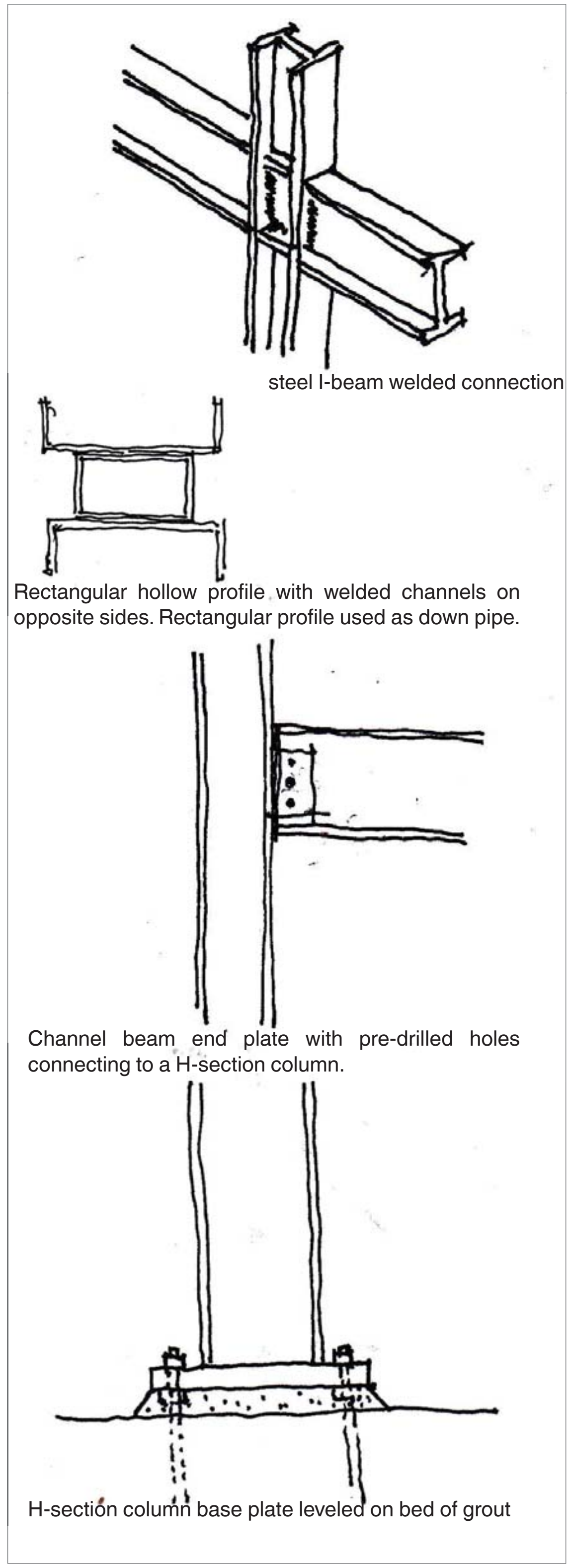


Fig.369: CONCEPT sketches of steel details, drawings not to scale. [Source: author]

8.2 MATERIAL STRATEGY

Material choice for a building that will be used on a daily basis, including areas for public use, must be durable and have easy cleaning qualities. Materials chosen were either to complement and in some cases completely contrast the existing materials. Housing the Delegation of the European Union, the building intends to reflect an appearance of transparency, integration and high-technology while respectful to nature. Other issues influencing material choice included security, respect for cultural heritage, and sustainability.

Existng Materials

Fig.370: Terrazzo Cladding

Fig.371: Clay Bricks

Fig.372: Existing Parquet Flooring

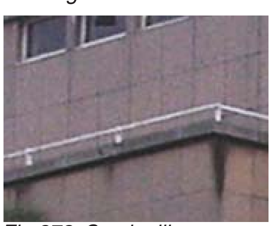


Fig.373: Steel railing

Proposed Materials

Metals

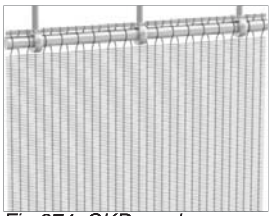


Fig.374: GKD mesh

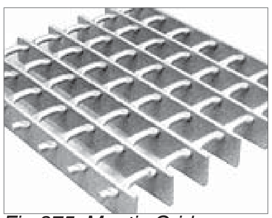


Fig.375: Mentis Grid

Fig.376: Steel

Fig.377: Stainless steel clables

Glass

Fig.378: Safety glass

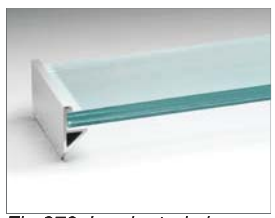


Fig.379: Laminated glass

Fig.380: Toughened glass

Timber

Fig.381:Timber florring

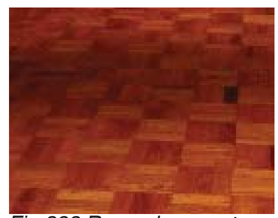


Fig.382:Reused parquet flooring

Concrete

Fig.383: Concrete

Metals

Steel

Steel will be used as the primary load bearing structure material for the vertical circulation, and for the secondary structure as façade screen.

Steel columns are needed to support the new vertical circulation shafts, located at the main entrance and to the east of the new auditorium. These columns will be painted with fire retardant paint.

Heritage: Steel is utilised as it is a structural material that can be disassembled from the existing building. This is in accordance with the Burra charter.

Sustainability: According to the South African Institute of Steel Construction (2011), Steel has a number of advantages which include: "low waste, flexibility, offsite manufacture, speed, resource efficiency, adaptability, demountability, long lasting appeal, safety, reusability and recyclability. These inherent characteristics result in many social, environmental and economic benefits to satisfy sustainability's 'triple bottom line'".

Old and new: The use of steel for the vertical circulation and the screen system in the southern façade is intended to contrast the appearance of the solid, heavy terrazzo in the existing courtyard building. A clear distinction in material choice and articulation of both these elements in the design emphasises that they are new.

Other Metals

GKD mesh

GKD mesh is utilised on the southern façade as a protective layer, on what would have been a façade articulated with glass. Possible bomb threats are part of the security design considerations. The façade is also parallel to Edmond street, where the new main entrance to the building is located. The screen acts as a unifying element from the auditorium to the main entrance of the building.

Mentis grid

Mentis grid is used mainly on the northern façade on balconies that are new additions to the existing structure.

Timber

Offices in the exisitng Agrivaal Building consists of parquet teak flooring. Some of the material has been damaged or stolen. However there is a large amount of the parquet available to be reused.

Many of the offices have good condition teak cupboards, door frames and decorative wall framing. Apart from the vandalized material, many can be recycled and used for flooring, paneling or furniture.

In the proposed design, timber is used as partition systems, demarcating different zones of security and/or privacy. Timber is also used as a floor finish to highlight areas of prescribed use, such as waiting areas, walkways etc.

All timber used will have the South African Bureau of Standards (SABS) seal of approval.

Heritage: Existing timber will be reused throughout the building. The existing timber does not have high heritage value however, it is part of the original material palate, and thus contributes to memory of the space.

Sustainability: Exisitng teak timber on site will be reused. Any new timber used will be sourced locally from a certified sustainable forest.

Old and new: The existng teak timber had a deep dark colour, which will be maintained. New timber used will be a lighter shade, creating a contrast between the exisitng and the new.

Glass

Glass is used to contrast the solid heavy appearance of the existing Agrivaal Building. The glass and steel articulation provides light and transparent links at certain parts of the building which is experienced visually from outside the building. When inside the building, clear distinction of the new is experienced by being completely surrounded with glass, natural light and exposure to the exterior.

Safety glass is utilised in the building as it provides strength and thus safety for use in high activity areas such as stair cases, elevators and large glass openings. Safety glass used include toughened glass, and toughened laminated glass.

Glass applications include the staircase, elevator shaft, partition systems and large window openings.

All glazing type and fixing will adhere to the SABS, The application of the National Building Regulations (NBR), Part N on glazing. Indicating guidelines on saftey, waterproofing, awareness of glass around people, position of glazing, requirements on fixing and material choice.

Heritage: Glass allows the transparency and visual link to the exisitng building. Where steel structure and glass infill provide for the 'link' between the **old and new** structures, it is executed in a manner that lightly touches the existing and appears to be temporary.

Sustainability: Glass is a recyclable material. It provides a visual and physical connection to the outdoors. Windows can be opened or closed to manipulate indoor air qulaity and comfort, including ventilation, keeping heat in or out.

8.3 SYSTEMS - VENTILATION, HEATING AND COOLING SYSTEM

7.3.1 Ventilation

Ventilation in the Agrivaal Building will make use of trombé assisted solar chimneys on the northern façade. The southern façade of the building will have stacks, used for introducing new air into the building. Stacks on the southern façade are composed of masonry 230mm walls with openings to each floor, and a whirlybird at the top of the shaft to encourage air movement. The northern trombé assisted solar chimneys will have glass panels facing the northern sun. This allows solar energy to accumulate in the chimney creating pressure and thus an upward movement in the stack.

The ventilation system works on the following principles refer to Fig. 317:

- Air moves from an area of high air pressure to an area of low pressure.
- Warm air in the room rises and accumulates at the ceiling. The slanted ceiling encourages the movement of air towards an opening leading to the stack.
- The trombé assisted solar chimney has been heated due to the accumulation of longwave radiation from the solar energy exposure on to the glass panel. This has cause negative pressure in the stack. This also encourages the movement of air from the room towards the opening of the trombé stack.
- Heated air moves upwards, which is speeded up by the narrowing of the stack. The building's masonry layer is insulated on the interior side, limiting heat transfer into the building.
- When air is channeled into a constricted opening, its speed increases (venturi effect).
- The air exists the the chimney.
- Due to the negative pressure on the north side of the building, the southern side experiences displaced air, thus sucking in air from the southern façade stack.

7.3.2 Heating and Cooling

The heating and cooling of the building is dependant on the principles of the ventilation system. The ventilation system delivers the heated or cooled air to the intended space. This system was designed after consultation with Vosloo (2011).

The air drawn in from the atmosphere on the southern façade (due to suction, since warm air escaped from the chimney on the northern façade), will pass through a heated or cooled radiator resulting in the users required temperature for the space occupied.

Thus, the goal is to attain a heated 'liquid' to pass through the radiators to achieve warm air. For cool air, cold 'liquid' is need to circulate in the radiators.

For cool air :

The concept used to achieve the cooling of a 'liquid' such as anti-freeze liquid or glycol is evaporative cooling.

The stack located on the southern façade is separated into two separate ducts (refer to Fig. 324). Duct A is where the evaporative cooling will take place. Duct B is where the air will pass through the cool radiator to achieve cool air.

Both ducts have large radiators position at the top of the stack, where air enters from the atmosphere. In duct A water is sprayed onto the radiator where by evaporative cooling lowers the temperature of the glycol. The excess water is collected and recycled into a water system. The cool glycol from stack A is pumped into the second stack B to circulate in the large radiator, which can now cool the air that moves through it (refer to Fig. 325). Smaller radiators are position before the entrance of the opening leading into level of the building to further cool the air if needed.

For warm air :

The concept used to achieve the heating of a 'liquid' such as glycol or oil is through solar energy utilising a parabolic heat collector.

For heated air into the building, hot liquid from a parabolic heat collector positioned on the roof is circulated into the radiator (refer to Fig. 322 and 323). Air from the atmosphere passes through the radiator , warming the air intend for the interior space. The movement of air is dependant on the ventilation system, specifically the displacement of air form the northern stacks causing suction in the southern stacks. The southern stack narrow towards the bottom, encouraging the movement of air. Funnels aid in directing air into openings to the interior spaces.

The parabolic heat collector uses solar energy to concentrate the suns energy onto a focal point where heat transfer liquid (usually oil) is positioned. When the liquid is heated it is pumped into an insulated storage tank ready for use.

Ventilation

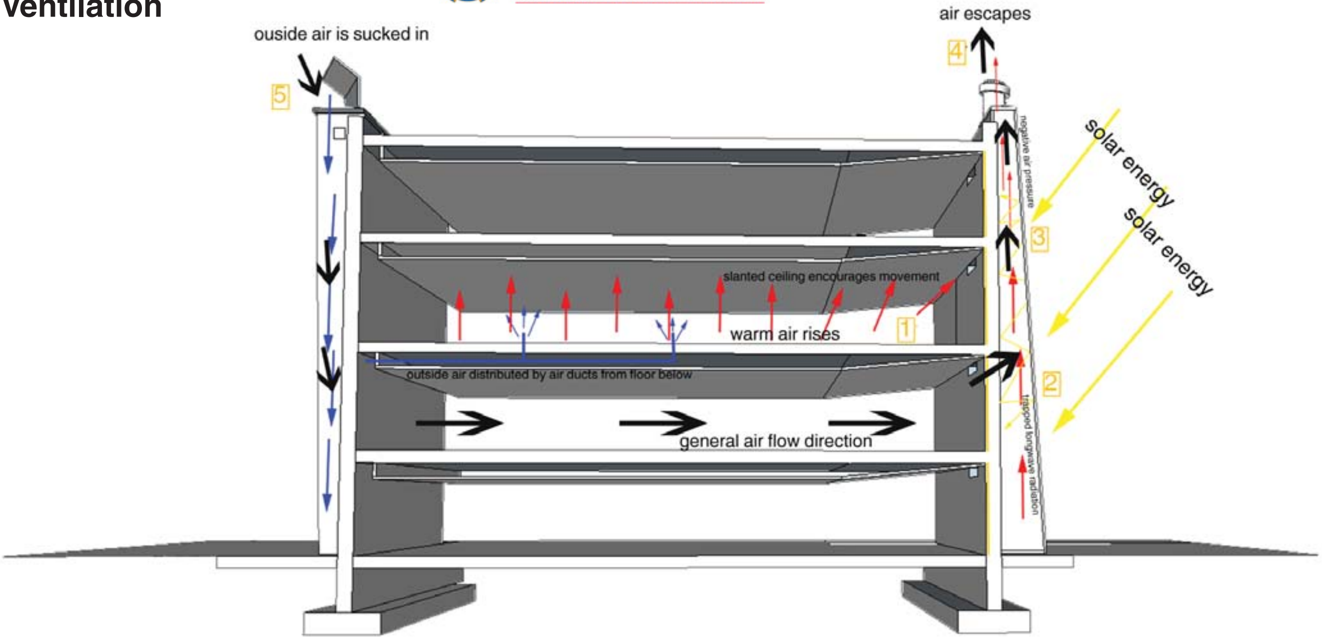


Fig.384: Ventilation system. [Source: author]

Ventilation Concept

ventilation →

1 Warm air in the room rises and accumulates at the ceiling.

2 The trombé assisted solar chimney has been heated due to the accumulation of longwave radiation from the solar energy exposure on to the glass panel. This has cause negative pressure in the stack.

3 Heated air moves upwards, which is speeded up by the narrowing of the stack. The building's masonry layer is insulated on the interior side, limiting heat transfer into the building.

4 The air exists the solar chimney.

5 Due to the negative pressure on the north side of the building, the southern side experiences displaced air, thus sucking in air from the southern façade stack.

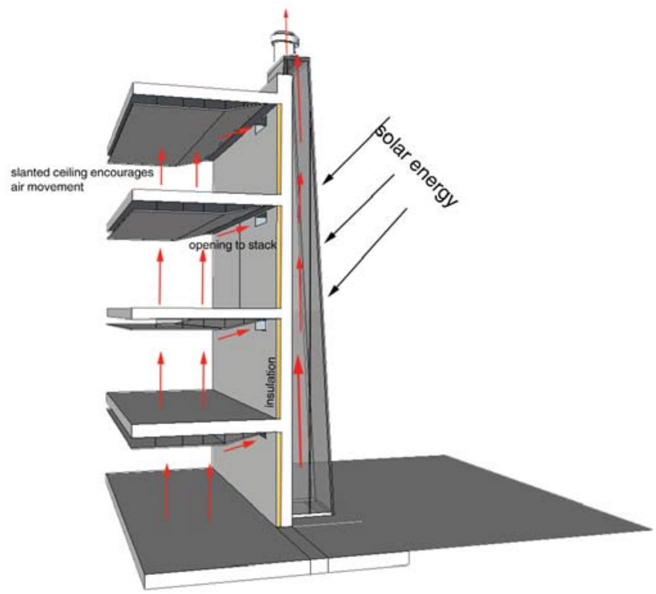


Fig.385: Trombe assisted solar chimney . [Source: author]

Heating and Cooling

VENTILATION SYSTEM + WARM AIR or COOL AIR = CONDITIONED ROOM

[delivery system] [conditioned air] [conditioned room]

Warm air

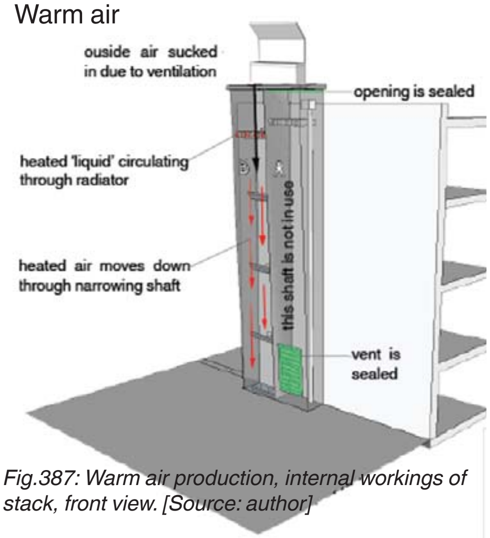


Fig.387: Warm air production, internal workings of stack, front view. [Source: author]

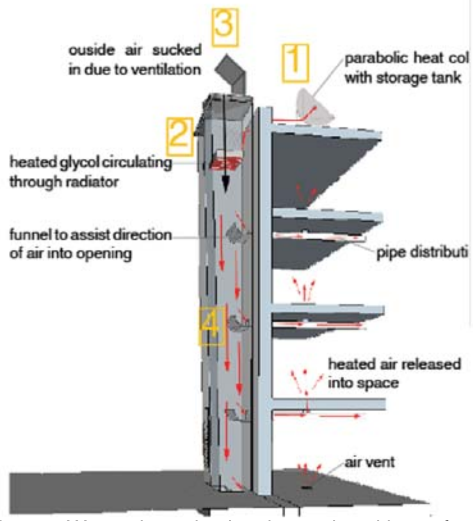


Fig.388: Warm air production, internal workings of stack connected to parabolic heat collector, side view [Source: author]

Heating Concept

WARM AIR NEEDED → CONCEPT : need hot liquid to pass through radiator at the top of the stack to warm air

↓

1 Parabolic Heat Collector

↓

Solar energy heats a 'liquid' in the parabolic heat collector to high temperatures → heated water STORED in an insulated tank

↓

2 when needed a valve is opened and hot 'liquid' is pumped into radiator → 3 outdoor air that passes through the heated radiator is warmed, 4 a secondary radiator located just before the entrance of the space will heat the air further if needed by the users of the space

Heritage: The ventilation and heating/cooling system utilise are masonry structures that can demolished from the structure without damaging the existing structure or facade. Openings for air movement between shaft and room can be closed and plastered back to match original building material.

Sustainability: The ventilation and heating/cooling system tries to be passive systems. The exception includes pumps that rely on electricity. Areas such as the auditorium use a monitored air conditioning system.

Old and new: The stacks used for ventilation and heating/cooling system are repetitive elements on the new north and south façades. On the courtyard building façade (south), the terrazzo cladding takes importance and thus the stacks are placed inside the building, protruding out of the concrete roof. New architectural language informed by the ventilation and heating/cooling system provides character to the proposed design.

Cooling Concept

COOL AIR NEEDED → CONCEPT : need cool liquid to pass through radiator at the top of the stack to cool air

↓

Evaporative Cooling

↓

1 The stack will be divided into two sections.

←

2 stack A: radiator will be circulating glycol in it, which has high thermal capacity. Air from outside stack will pass through the radiator while water is sprayed onto the radiator. This will cool glycol.

↓

3 stack B: cool glycol is transfered from stack A to stack B's radiator. Air from outside passes through radiator in stack B. This produced cool air.

→

4 a secondary radiator located just before entrance of the space will also receive cooled glycol, where the cool air in stack B can further be cooled if needed by the users of the space

Cool air

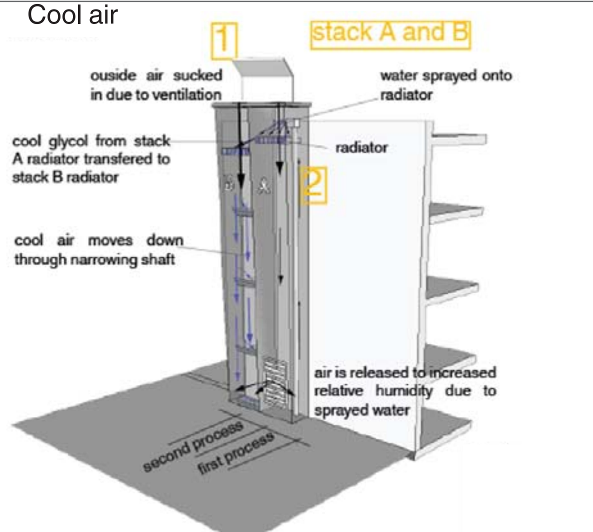


Fig.389: Cool air production, internal workings of stack front view. [Source: author]

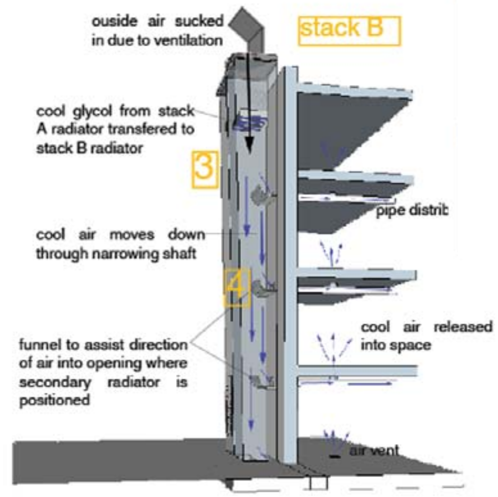


Fig.390: Cool air production, internal workings of stack B, side view

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DETAIL 01

Southern Façade Stack

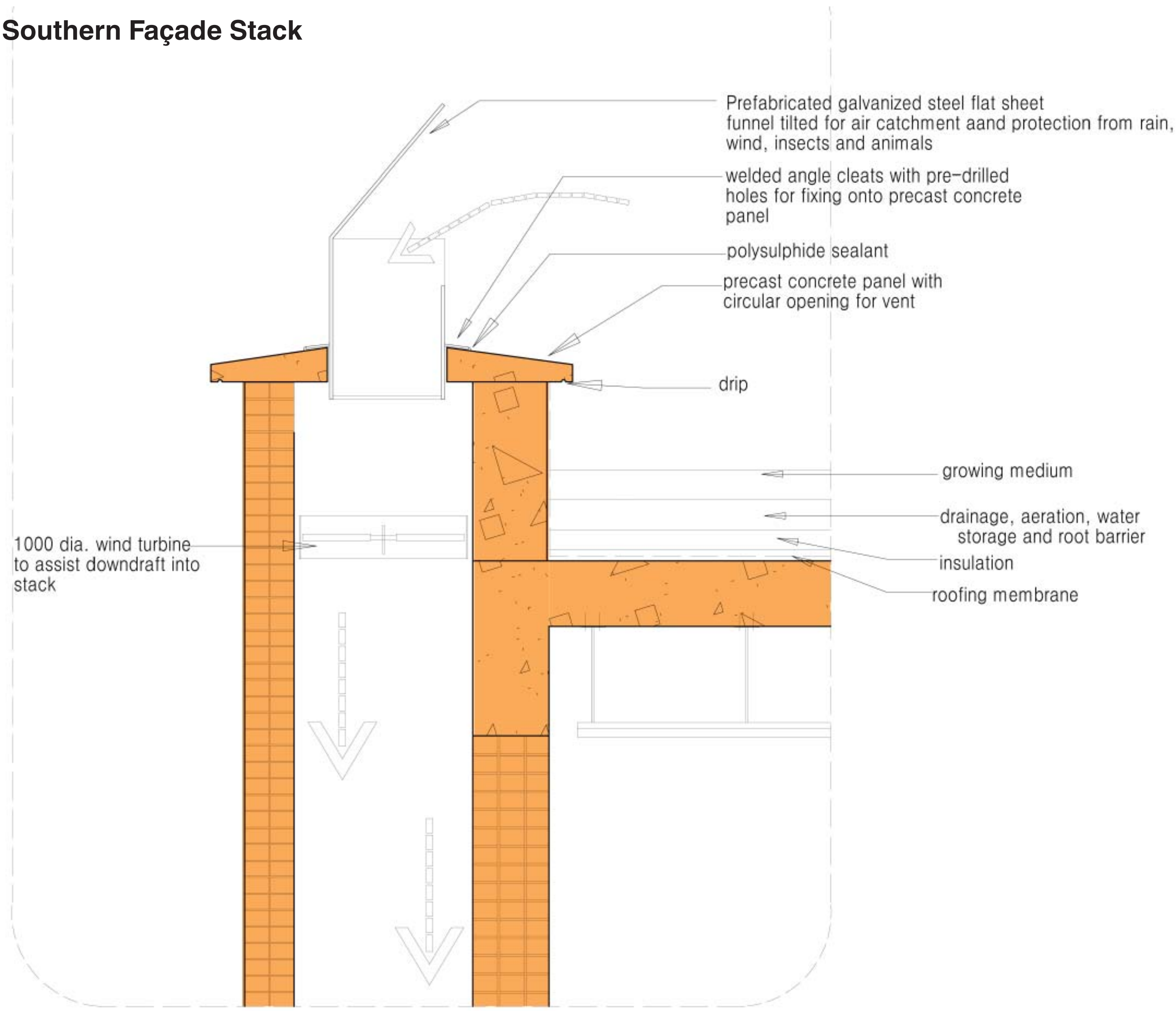


Fig.391:Southern façade stack - top condition

WHAT is the 'southern façade stack' ?

This is a masonry air shaft with openings into the building allowing fresh air into a designated space. The stack is divided into two shafts.

WHERE is it located?

It is found on the southern façade of the building

WHY is it used in the design?

It is used in the ventilation of the building, where air dispelled from the solar chimney on the northern façade, creates displaced air, thus new air is suck into the building through the southern façade stacks.

It is also used to provide cool air for the building : one shaft provides fresh air into the building, the second shaft allows the cooling of glycol in a radiator that provides cool glycol to circulate in secondary radiators at each level of the building. This provides cool air for the building.

DETAIL 02

Southern Façade Stack

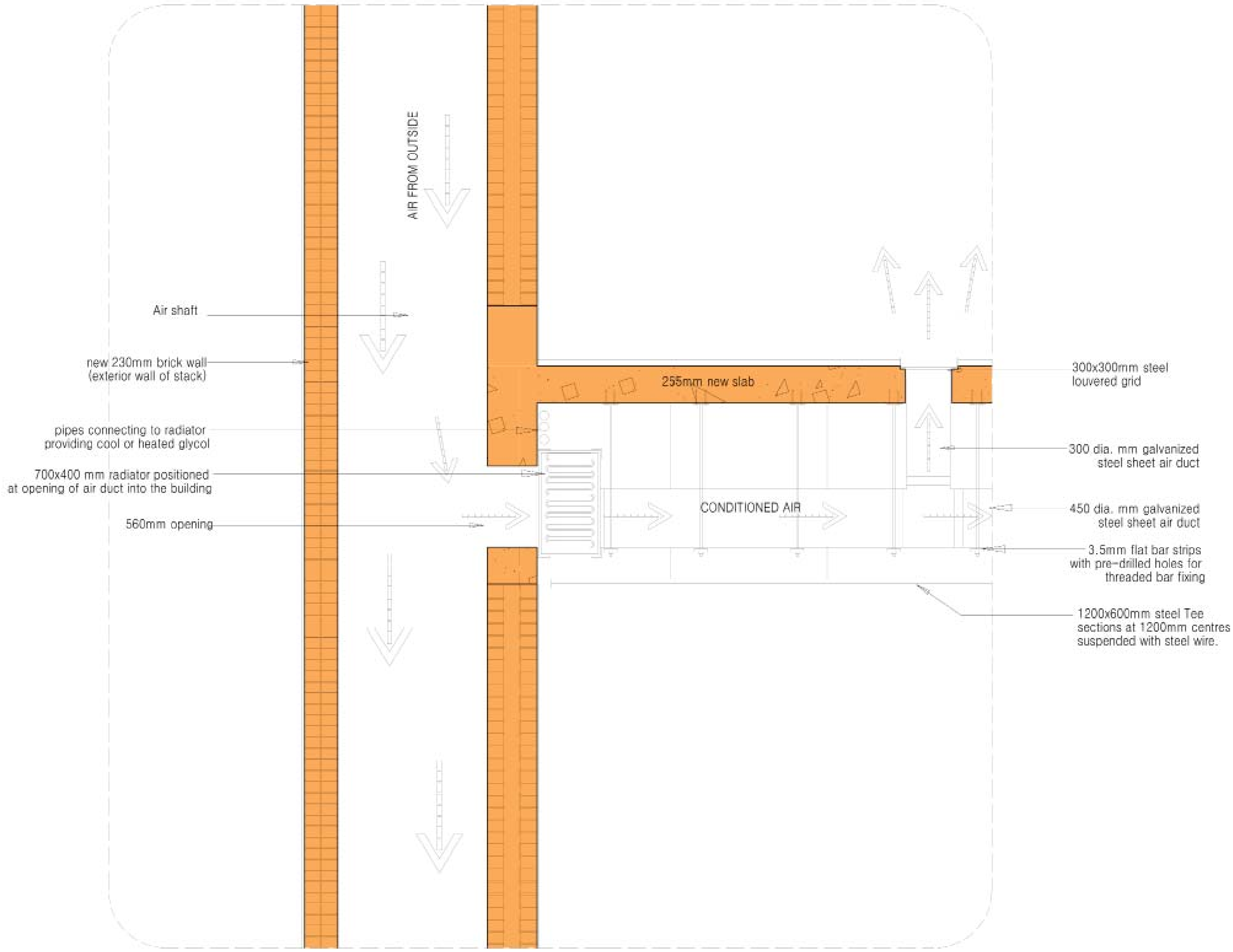


Fig.392: Southern façade stack - *middle condition*

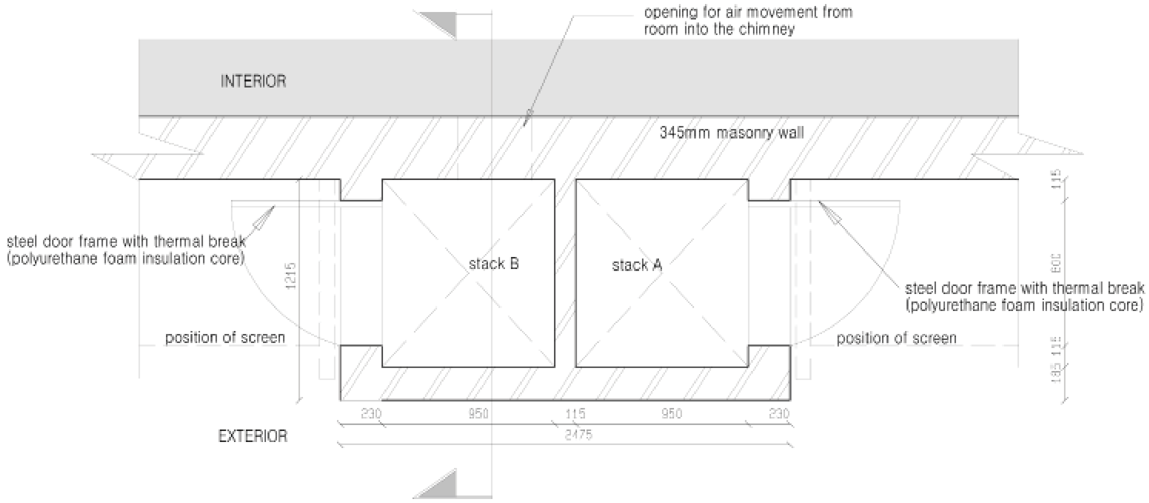


Fig.393:Plan of southern façade stack

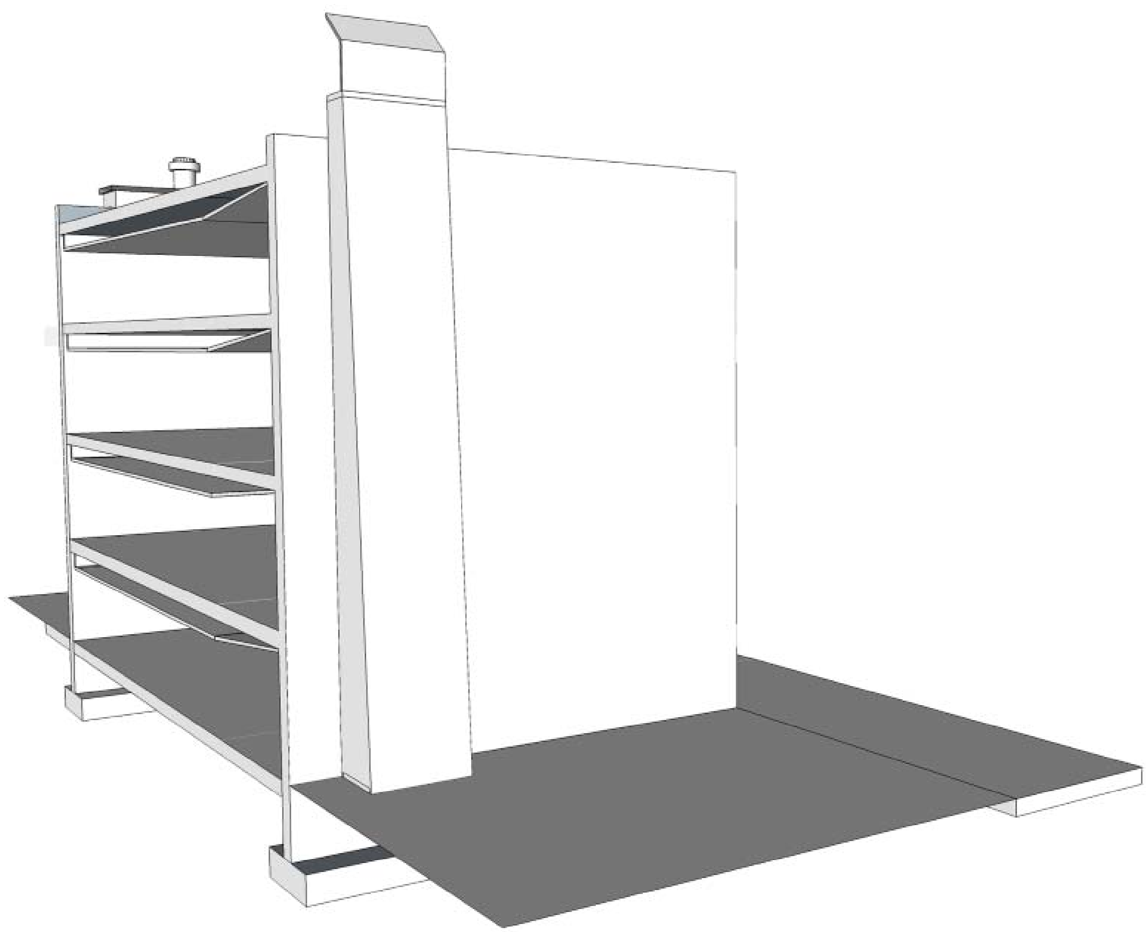


Fig.394:Exterior appearance of southern façade stack

DETAIL 03

Trombe Assisted Solar Chimney

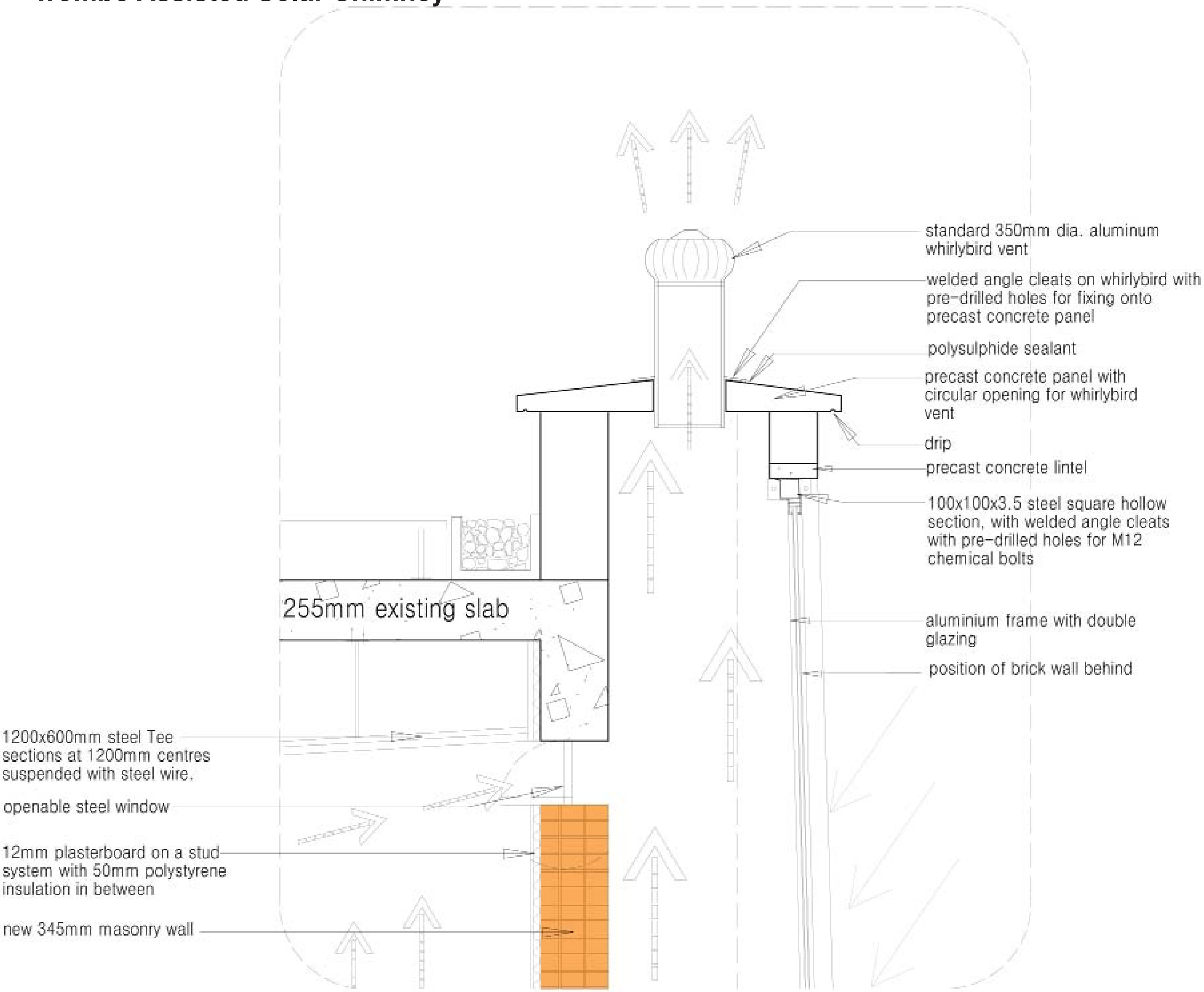


Fig.395:Section through Trombe Assisted Solar Chimney - top condition

WHAT is the 'trombé assisted solar chimney' ?

A trombé assisted solar chimney is a masonry air shaft with openings at every floor level allowing air to exit the space, into the shaft and into the atmosphere. The north facing façade has double glazing , which traps longwave radiation.

WHERE is it located?

It is found on the northern façade of the building

WHY is it used in the design?

It is used in the ventilation of the building. The trombé assisted solar chimney is heated due to the accumulation of longwave radiation from solar energy exposure on to the glass panel. This causes negative pressure in the stack, thus the warm air rises. This also encourages the movement of air from the room towards the opening of the trombé stack.

DETAIL 04

Southern Façade Stack

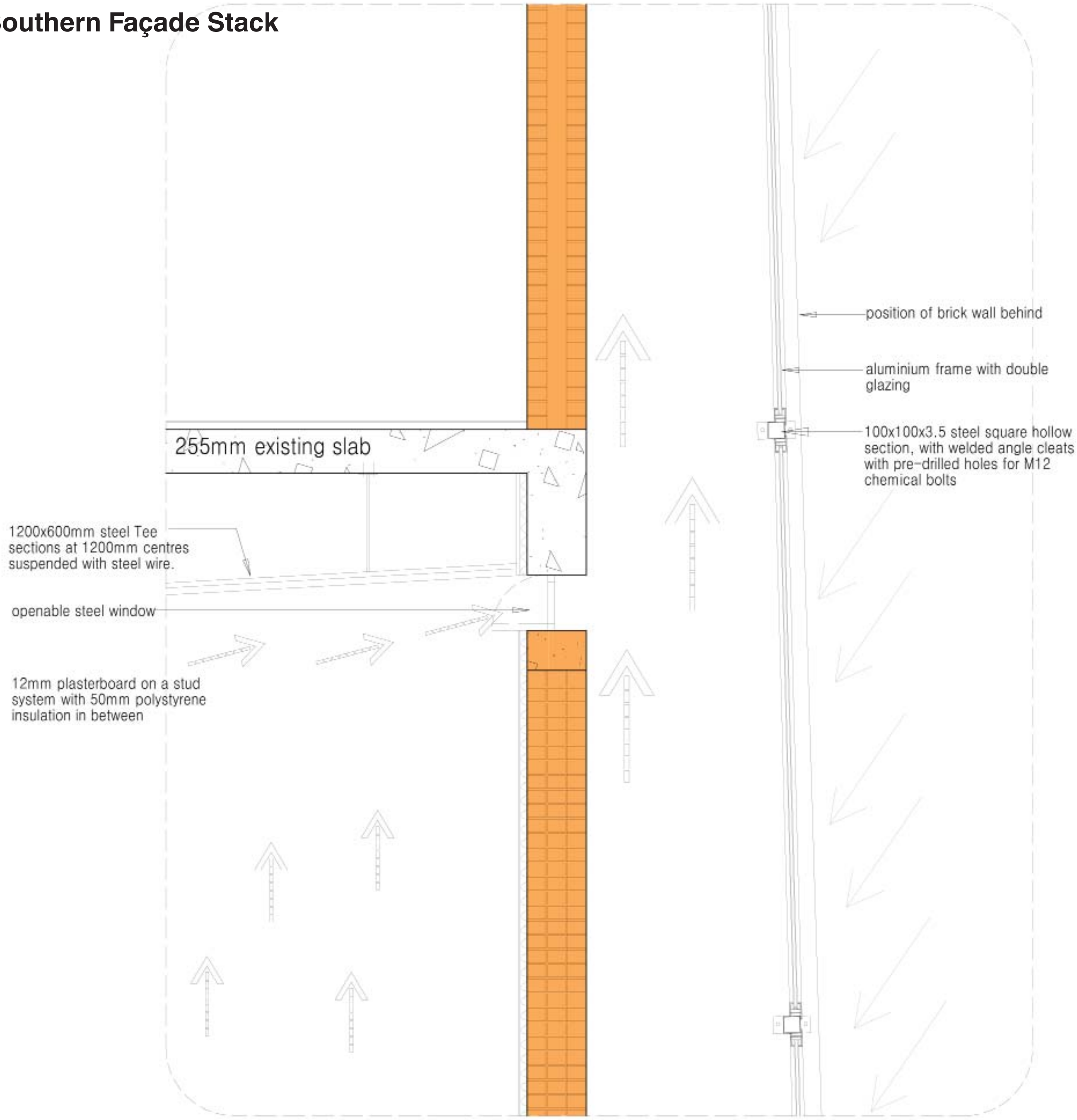


Fig.396:Section through Trombe Assisted Solar Chimney - middle condition

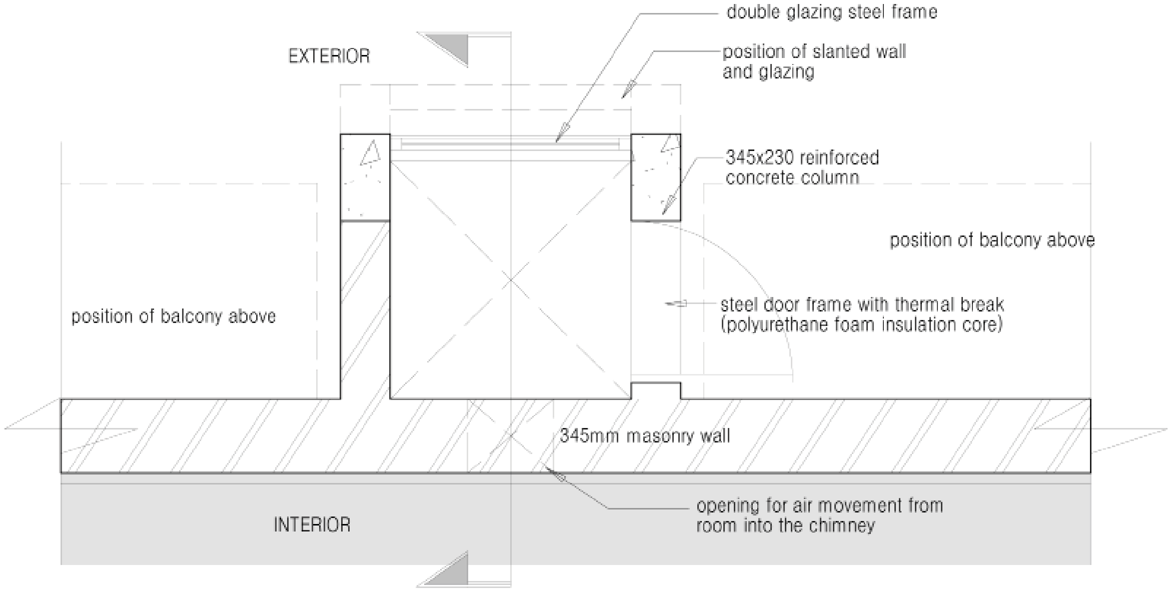


Fig.397:Plan of Trombe Assisted Solar Chimney

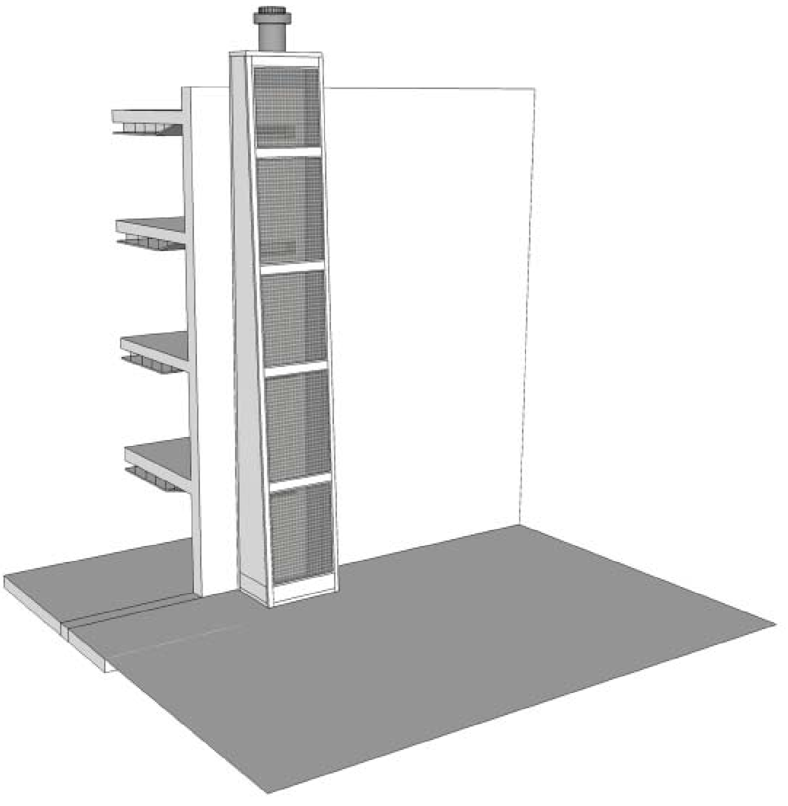


Fig.398:Exterior appearance of Trombe Assisted Solar Chimney

8.4 FAÇADE TREATMENT

8.4.1 SOUTH FAÇADE SCREEN SYSTEM

As mentioned, GKD mesh is utilised on the southern part of the building as a protective (security) layer to a façade that is mainly comprised of glazing. This transparency portrays an image of openness between the European Commission and the South African public. It is also possible as the southern façade does not receive harsh solar exposure.

The screen also acts as a unifying element from the auditorium to the main entrance of the building.

GKD metal fabrics are non-corrosive, durable, heat, fire and impact resistant and sustainable for all climates and environments.

According to GKD Metal Fabric (2011),

- Stainless steel used in GKD metal fabrics contains 35% post industrial and 25% post consumer content recycled material.
- Recyclable directly correlates with minimization of waste
- Recycling stainless steel involves no health hazardous materials
- Utilizing GKD metal fabrics is an environmentally responsible and resource efficient choice
- does not require a surface coating that can deteriorate and possibly pollute the environment
- does not require hazardous cleaning products to maintain
- is 100% recyclable, retaining its' inherent qualities throughout the recycling process
- is low maintenance
- Is accepted by LEED®

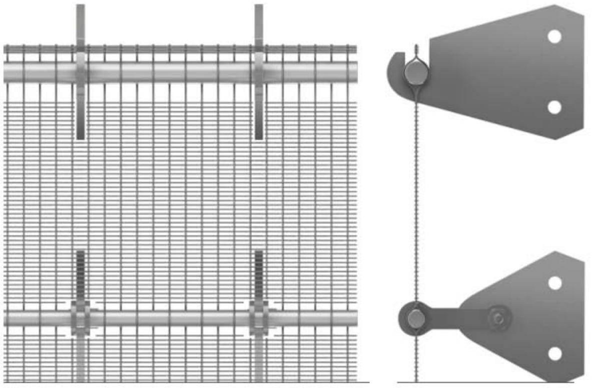


Fig.399: GKD mesh, Woven-in bar with spring, top and middle attachments [Source: www.gkdmetalfabrics.com/pdf/attachments/woven-in_bar_with_spring.pdf, accessed 2 October 2011]

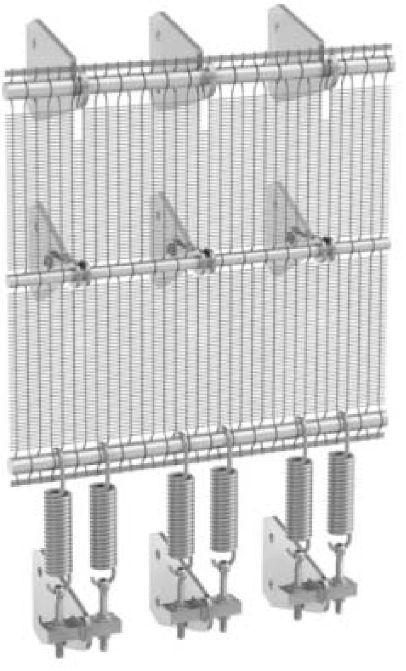


Fig.400: GKD mesh, Woven-in bar with spring [Source: www.gkdmetalfabrics.com/pdf/attachments/woven-in_bar_with_spring.pdf, accessed 2 October 2011]

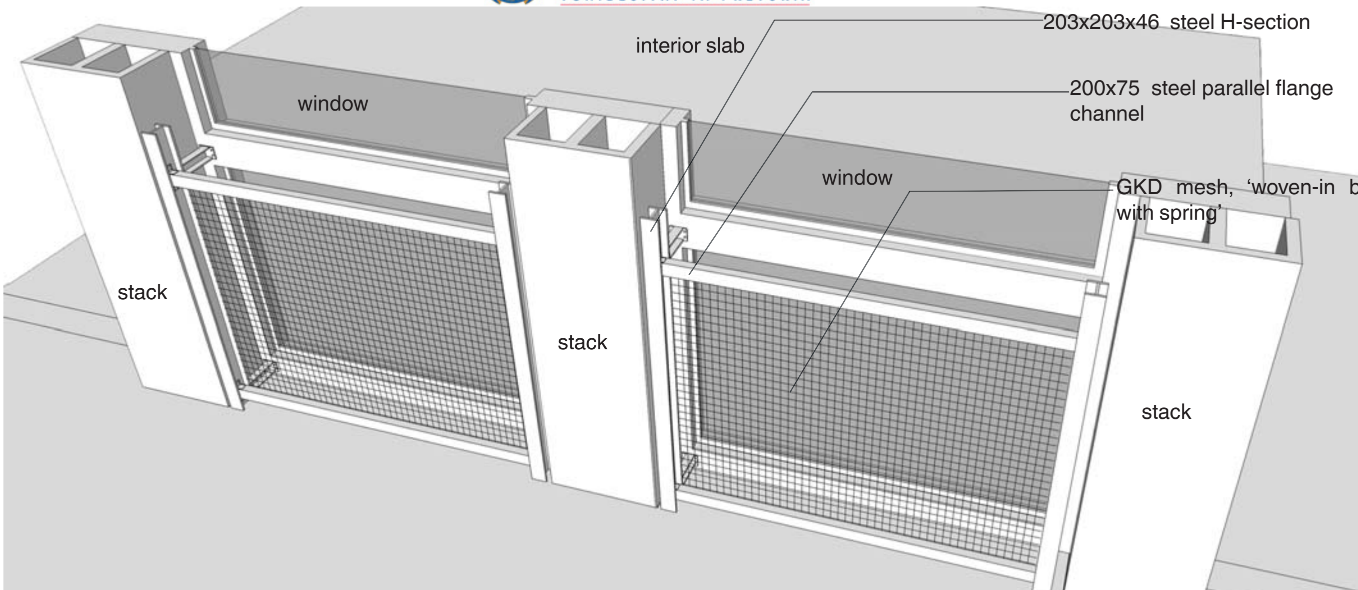


Fig.401:3D representation of proposed stack and screen south facade. [Source: author]

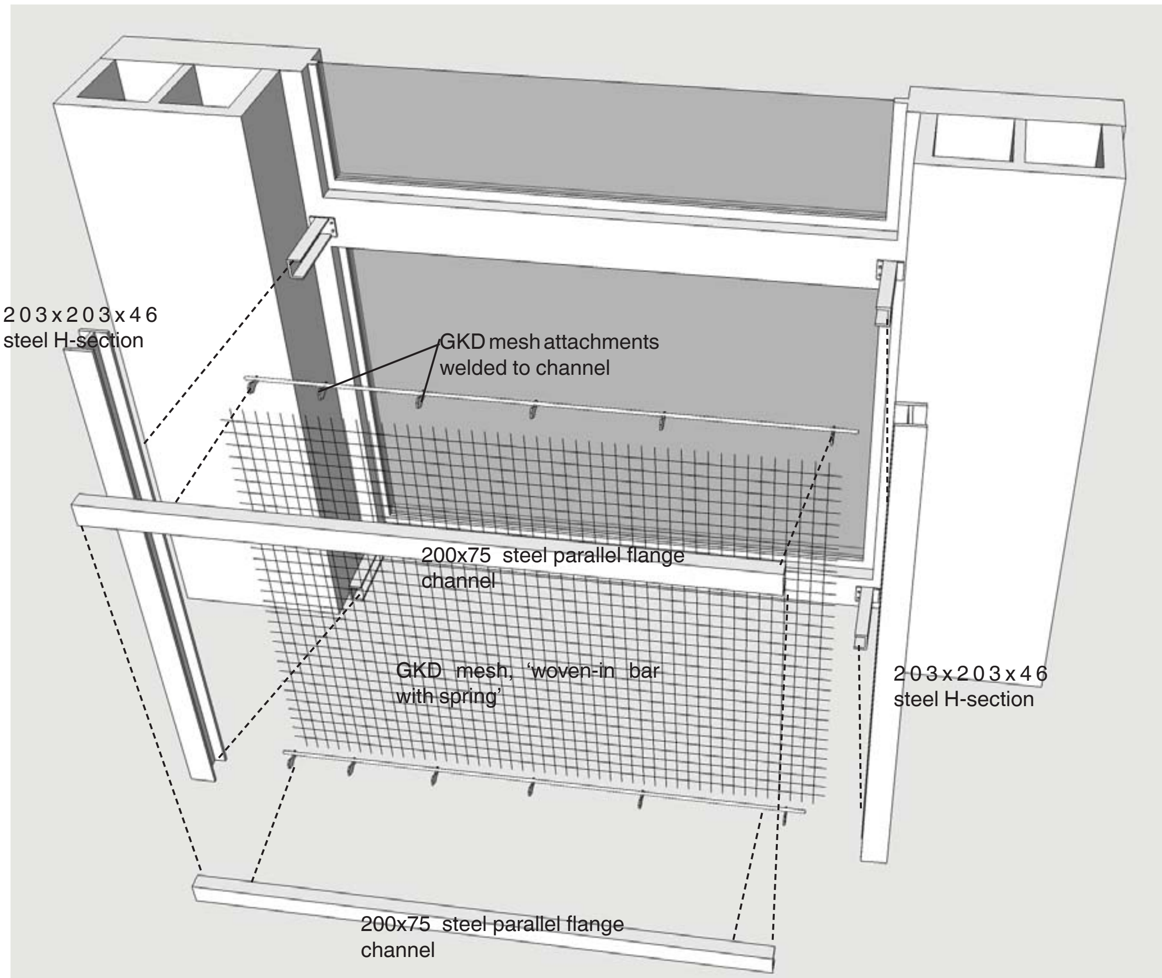
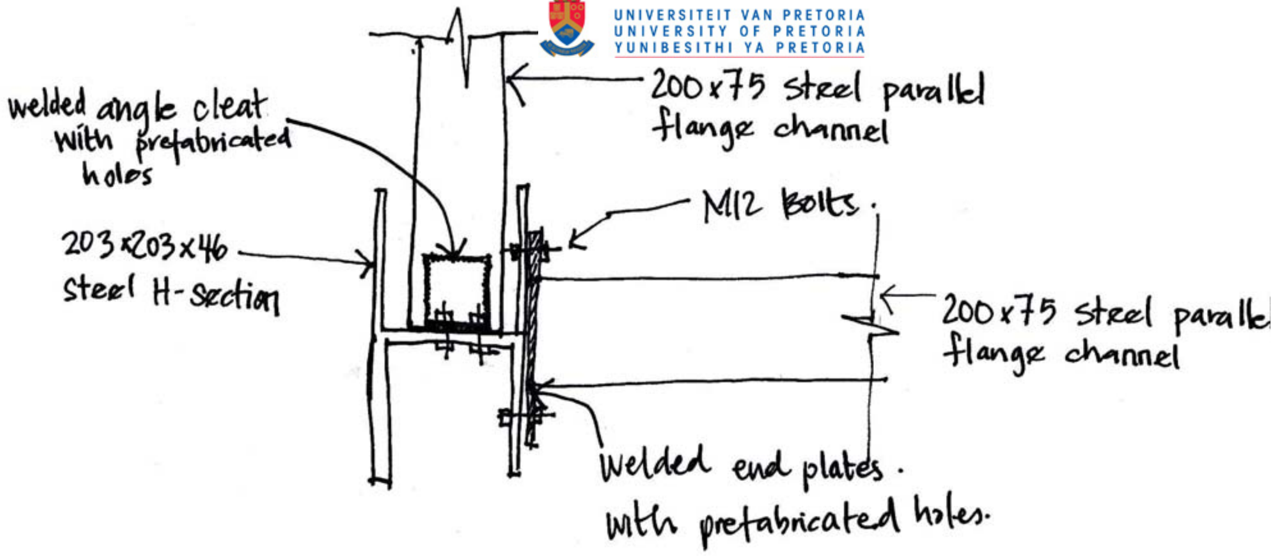


Fig.402:Exploded image of screen. [Source: author]



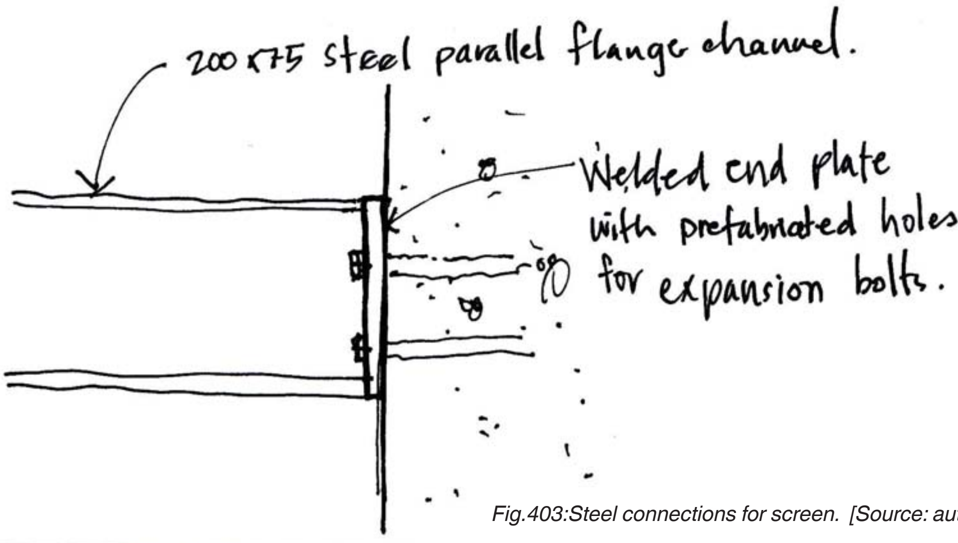
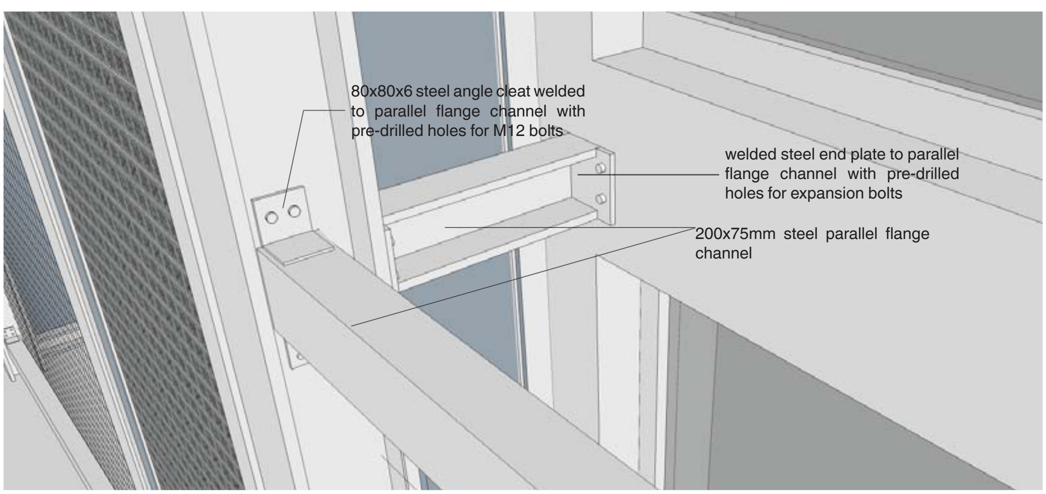


Fig.403:Steel connections for screen. [Source: author]



DETAIL 05

Screen Detail

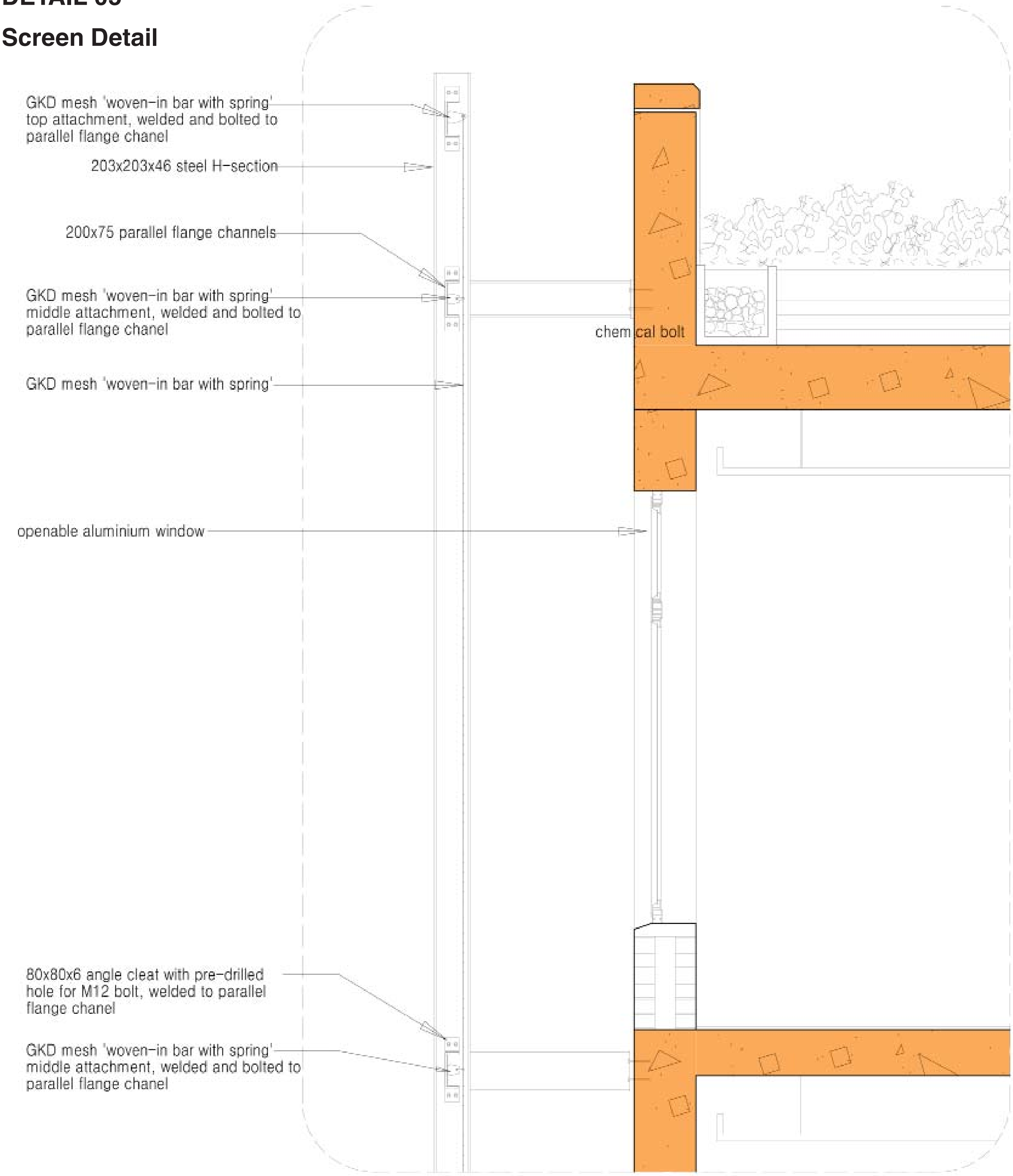


Fig.404:Screen detail with GKD mesh fixing. [Source: author]

8.4.2 NORTHERN FAÇADE TREATMENT

Existing Façade

The existing northern façade has large opening with no solar control. For the open plan offices, glare, excessive heat gain and excessive sunlight is not conducive for a working environment.

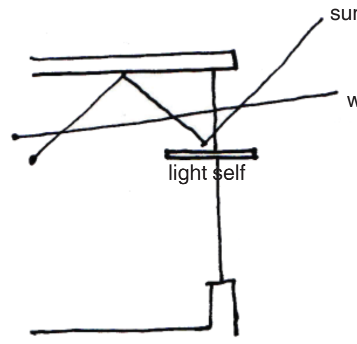


Fig.405:Light shelf concept [Source: author]

Concepts Applied to Existing Northern Façade

Light Shelf

The light shelf allows daylight to penetrate deep into the building. This horizontal light-reflecting overhang is placed at 2100mm. This surface is then used to reflect daylight onto the ceiling and deeper into the space.

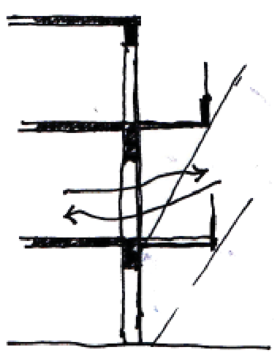


Fig.406:Balconies [Source: author]

Balconies

Users of the office spaces will benefit from access to outdoor air. Balconies provide visual connection to the exterior, smoke breaks and social interaction. The addition to the existing building acts as a shading device for the opening of the floor below.

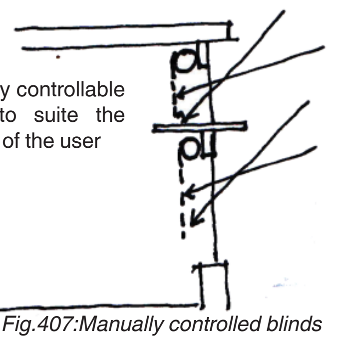


Fig.407:Manually controlled blinds [Source: author]

Manually controlled blinds

Internal upward rolling retractable blinds are positioned at the openings, where manual control allows the users of the space to manipulate their comfort in terms of glare, and exposure to the moving sun.

Night purge openings

During the night, purge windows automatically open during summer, where night air cools the internal spaces.

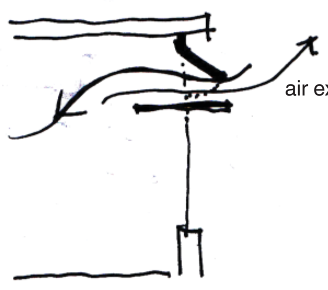


Fig.408:Night purge openings [Source: author]

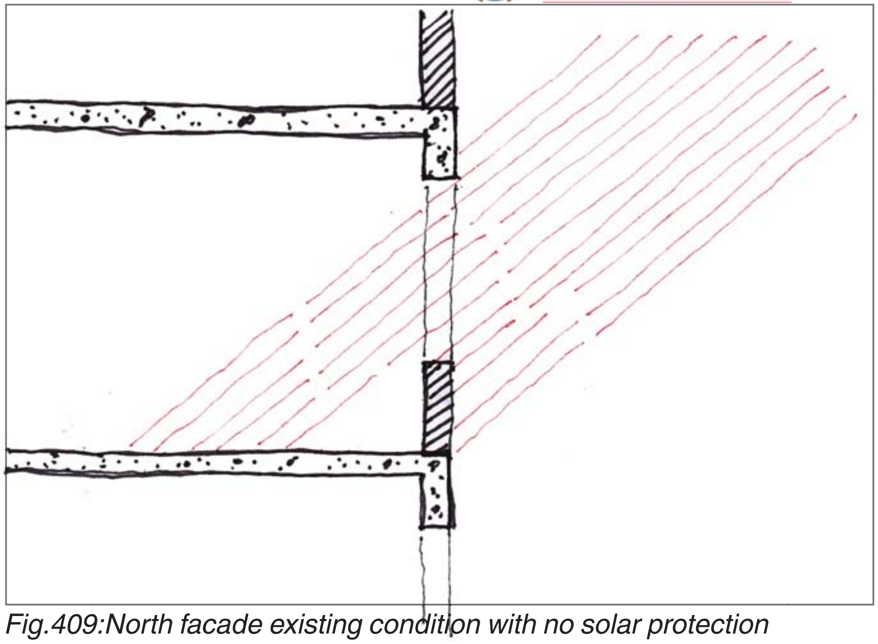


Fig.409:North facade existing condition with no solar protection [Source: author]

Solar Angles

Fig 342 -345 utilises sun angles for Pretoria predicting the effects of the light self. Six times were investigated, 08hoo, 12h00 and 16h00 on the 21 December and 21 June.

Solar Times Clock Times	06h00 06h18	08h00 08h18	10h00 10h18	12h00 12h18	14h00 14h18	16h00 16h18	18h00 18h18
Azimuth - 21 Desember	112 east	101 east	91 east	0	91 west	101 west	112 west
Altitude - 21 December	10	35	63	88	63	35	10
Azimuth - 21 March/September	90 east	76 east	53 east	0	53 west	76 west	90 west
Altitude - 21 March/September	0	26	51	65	51	26	0
Azimuth - 21 June	N/A	55 east	34 east	0	34 west	55 west	N/A
Altitude - 21 June	N/A	14	32	40	32	14	N/A

Fig.410: Table of solar angles in Pretoria [Source: Napier,2000]

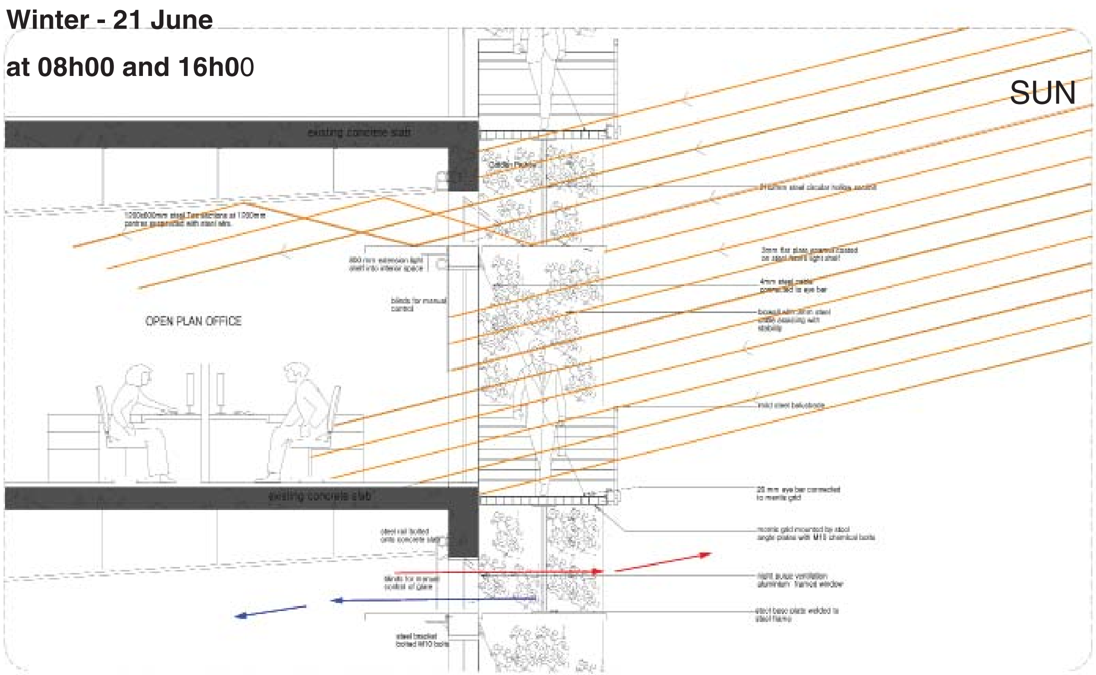


Fig.411: 21 June, Winter, solar angle condition at 08h00 and 16h00 (solar angle at 14 degrees) [Source: author]

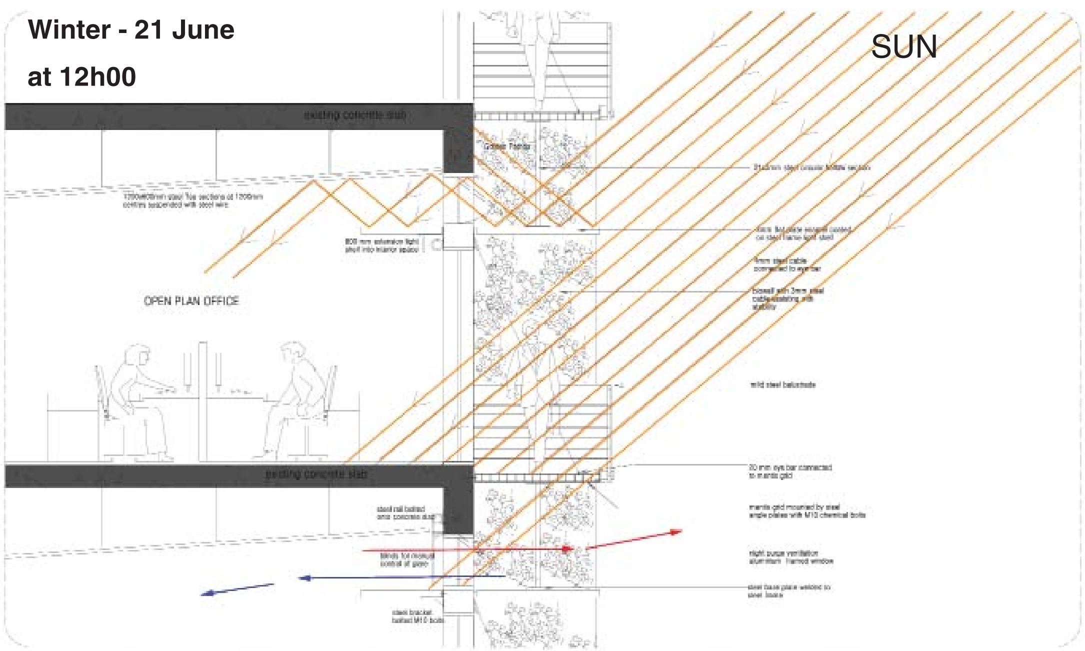


Fig.412: 21 June, Winter, solar angle condition at 12h00 (solar angle at 40 degrees) [Source: author]

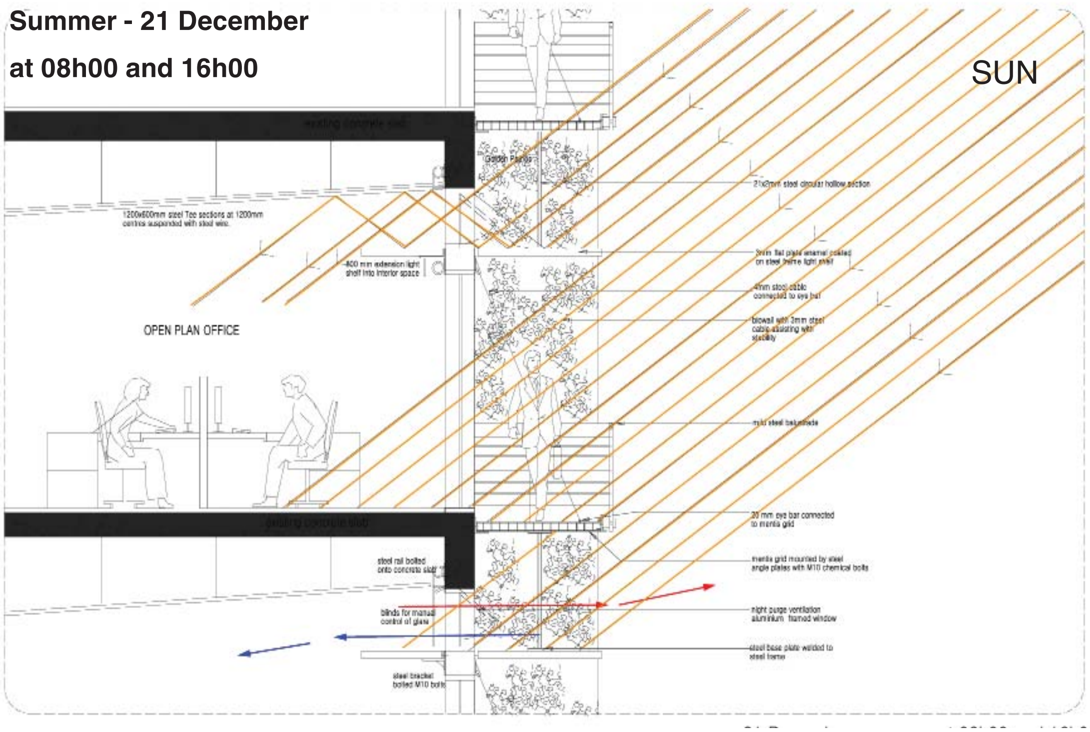


Fig.413: 21 December, Summer, solar angle condition at 08h00 and 16h00, (solar angle at 35 degrees) [Source: author]

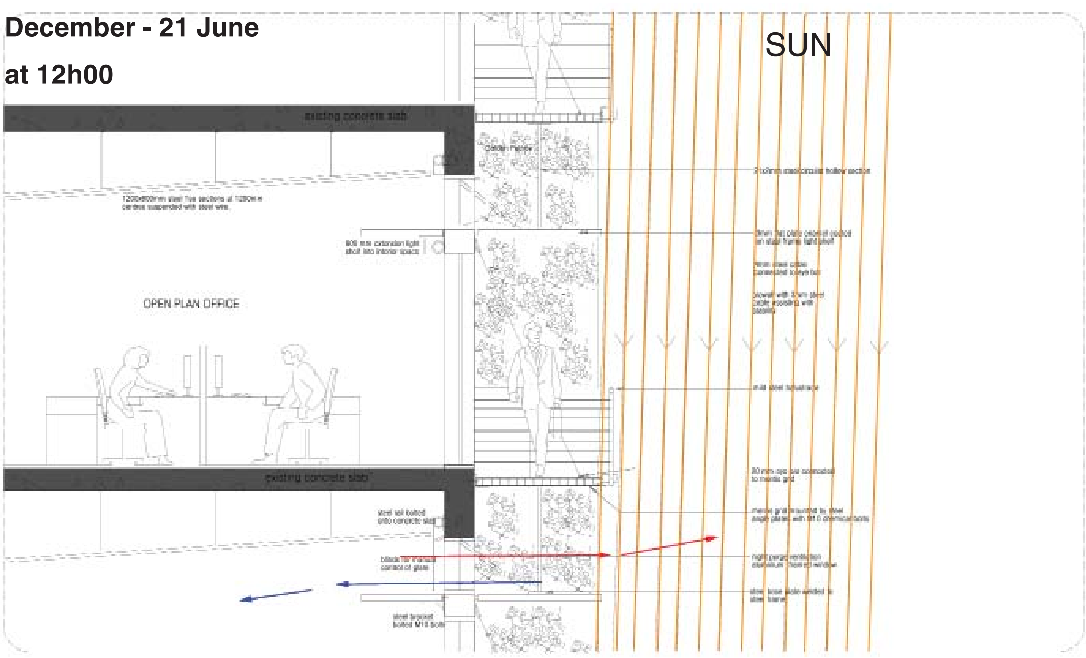


Fig.414: 21 December, Summer, solar angle condition at 12h00, (solar angle at 88 degrees) [Source: author]

DETAIL 06

North Façade Treatment

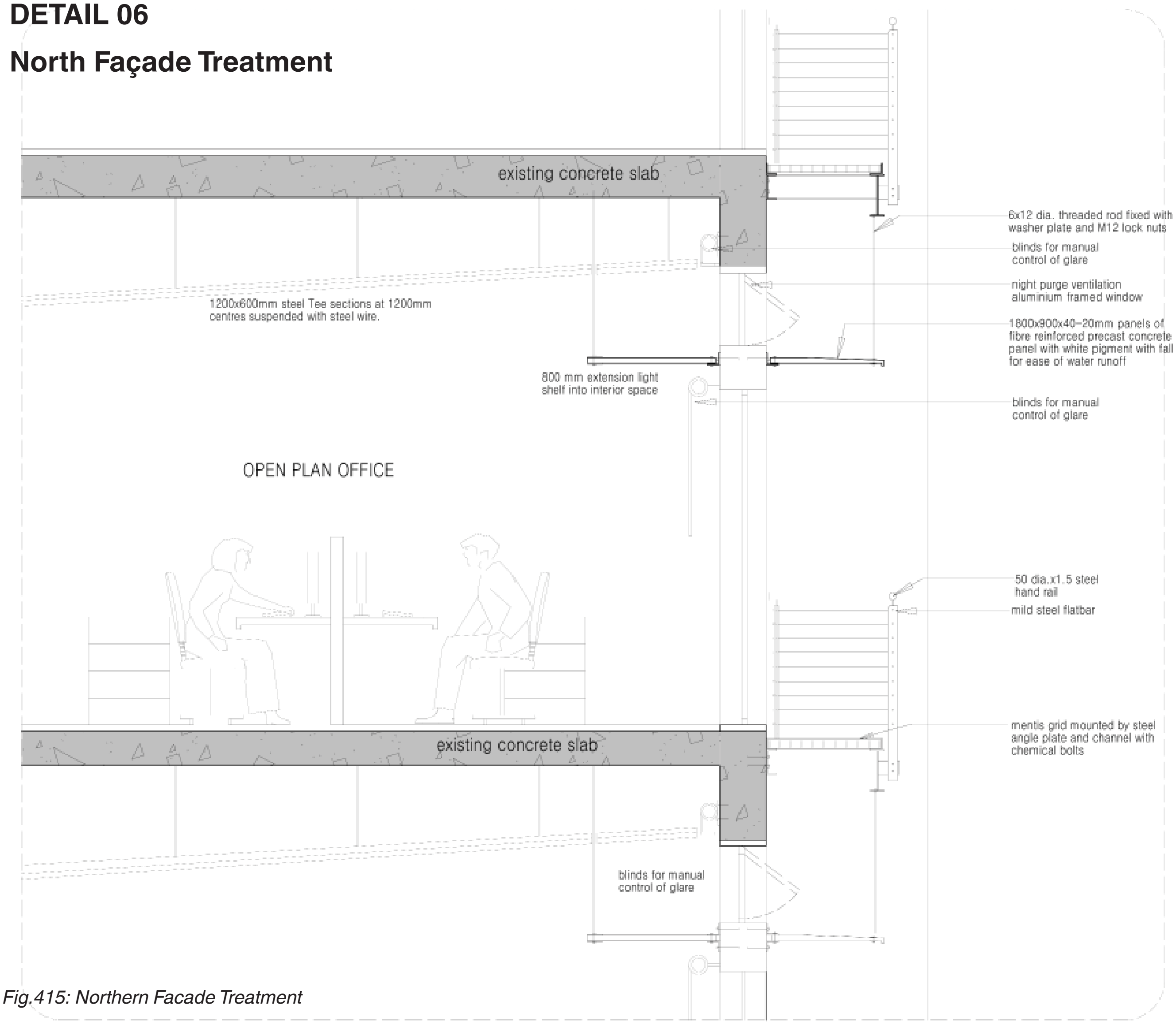


Fig.415: Northern Facade Treatment

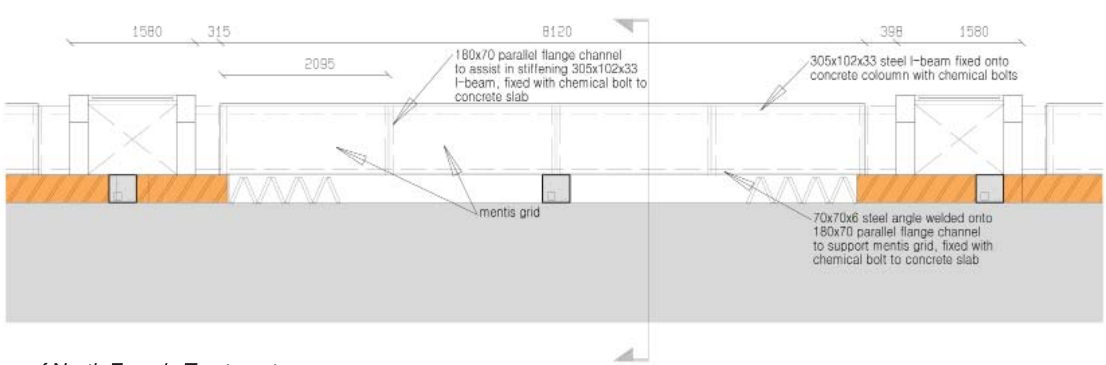


Fig.416: Plan of North Facade Treatment

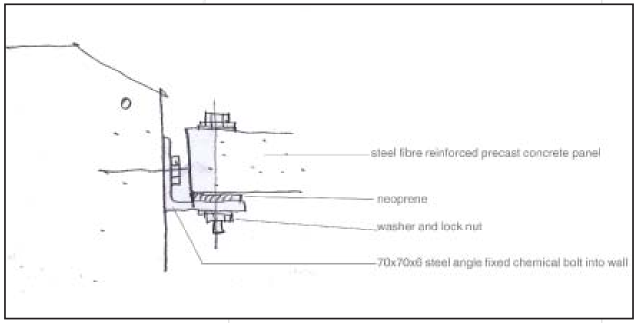


Fig.418:Light shelf fixing to wall

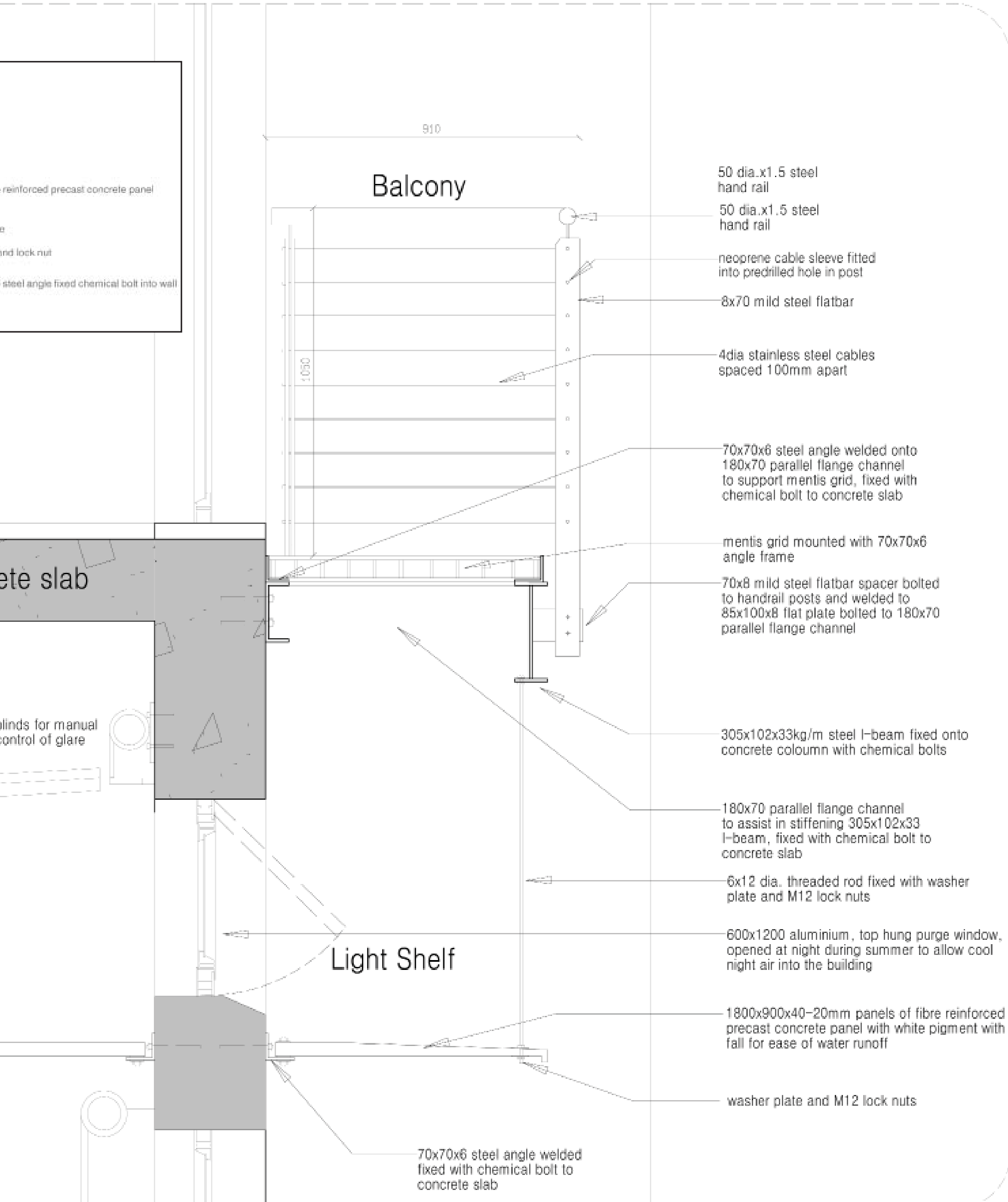


Fig.417:Northern Facade Treatment, new balcony and light self detail

8.5 Pergola Structure

DETAIL 07

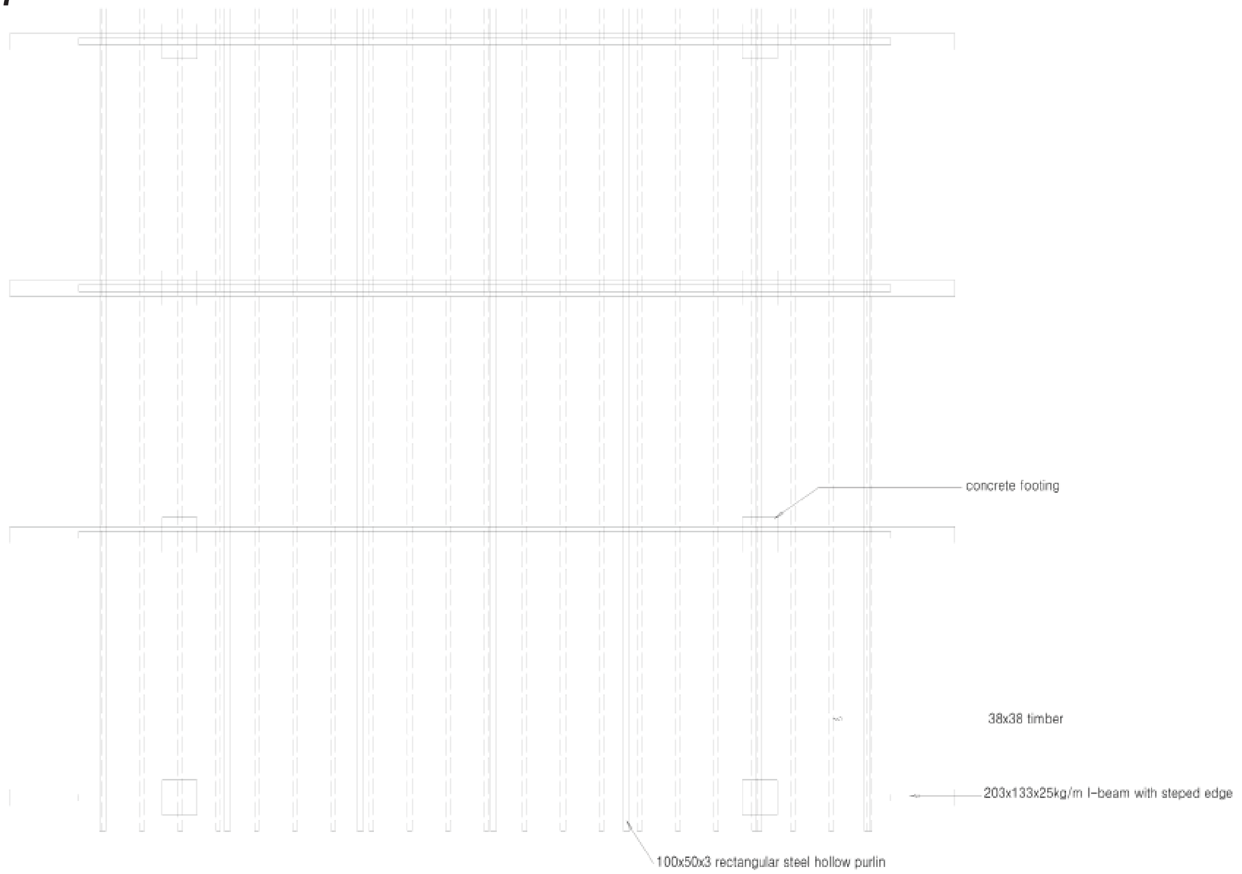


Fig.419: Plan of Pergola

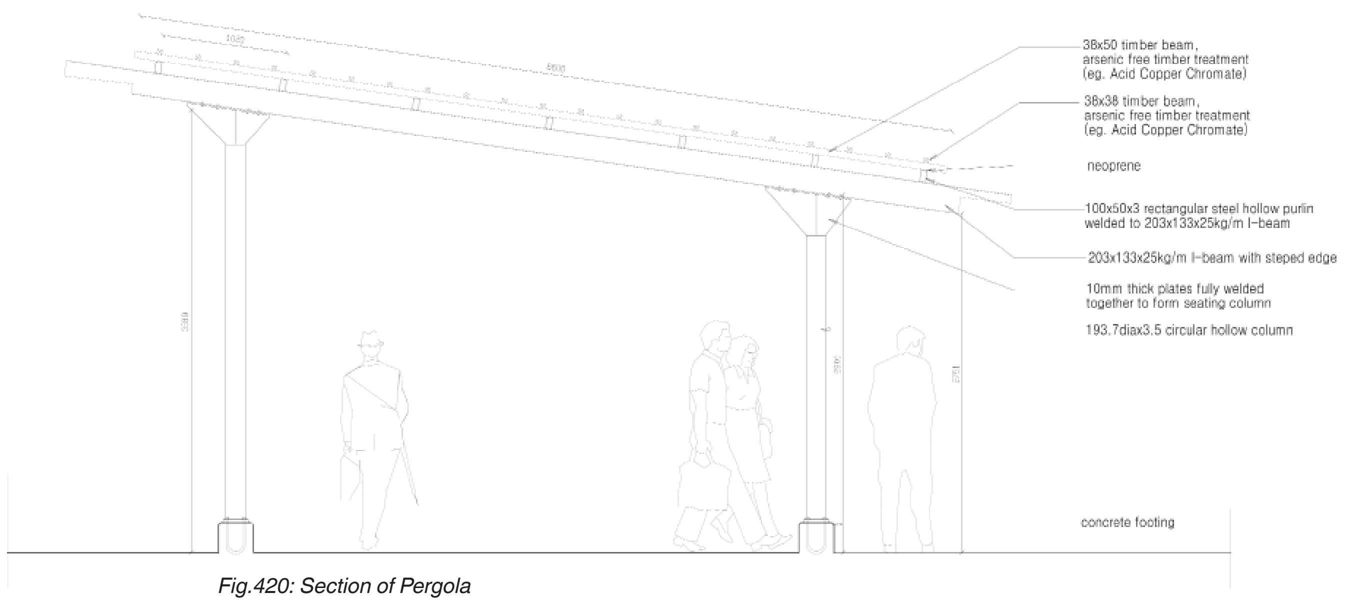


Fig.420: Section of Pergola

8.5 Stairs

DETAIL 08

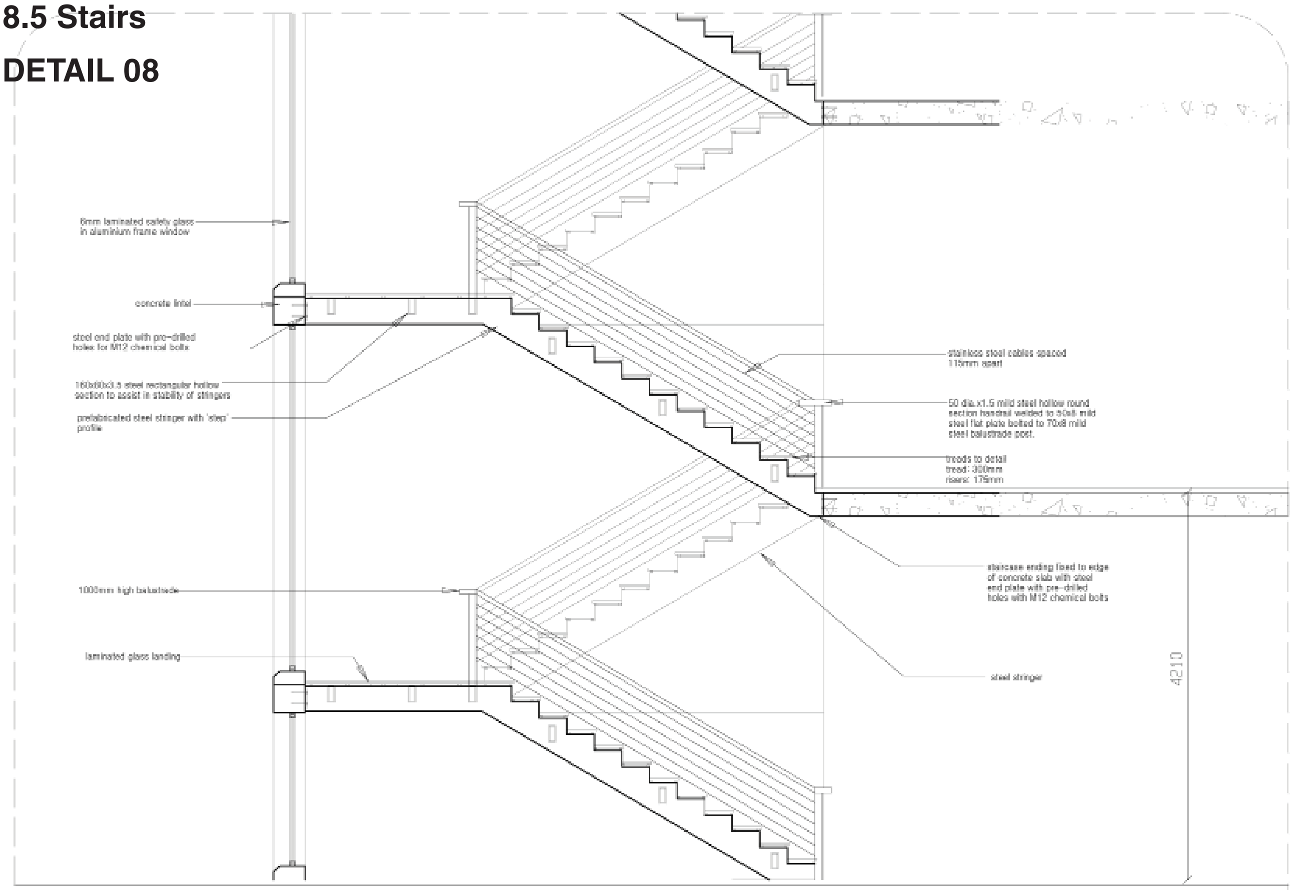


Fig.421: Section of Glass Stairs

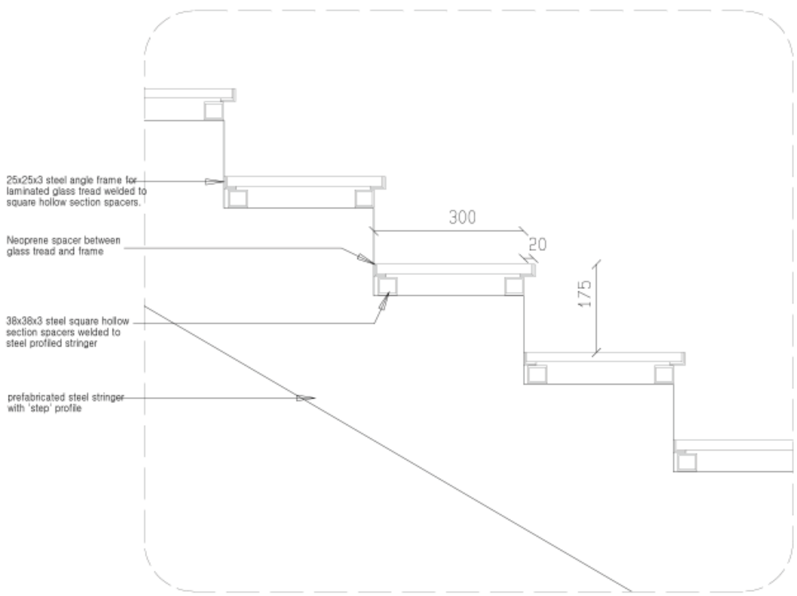


Fig.422: Detail of Stairs

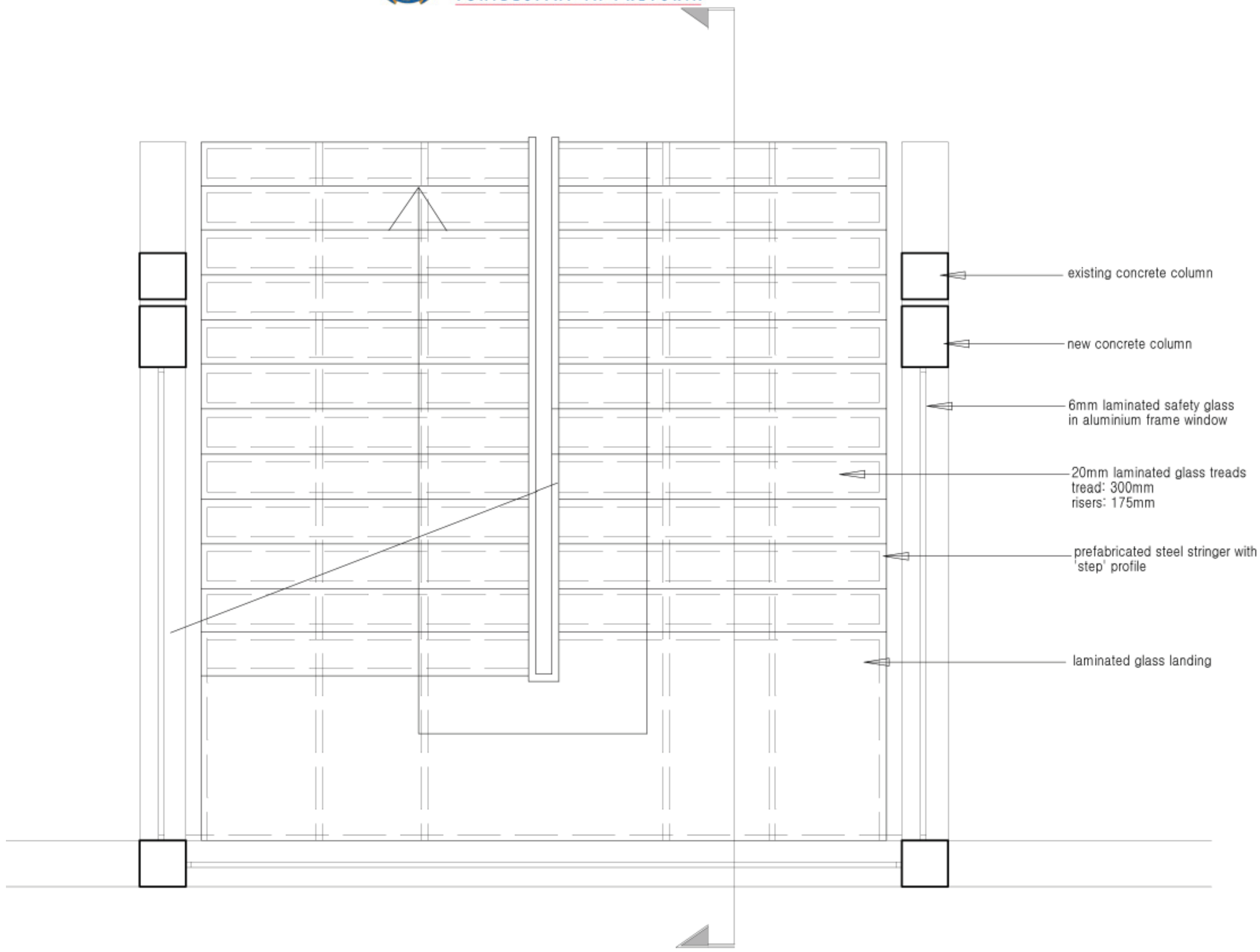


Fig.423: Plan of Stairs

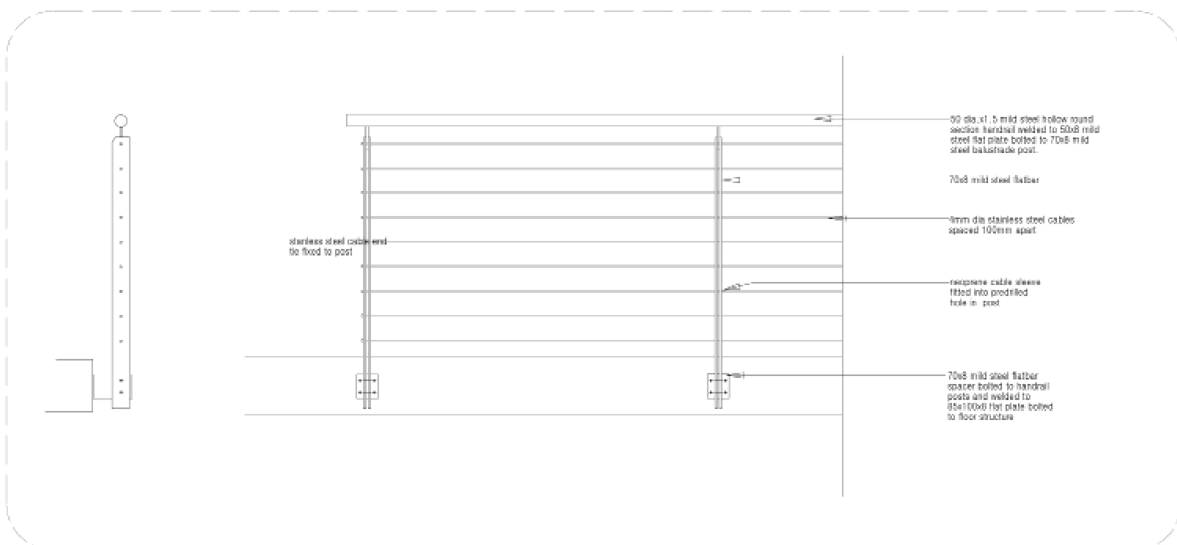


Fig.424: Balustrade Detail

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8.6 RAINWATER RECYCLING

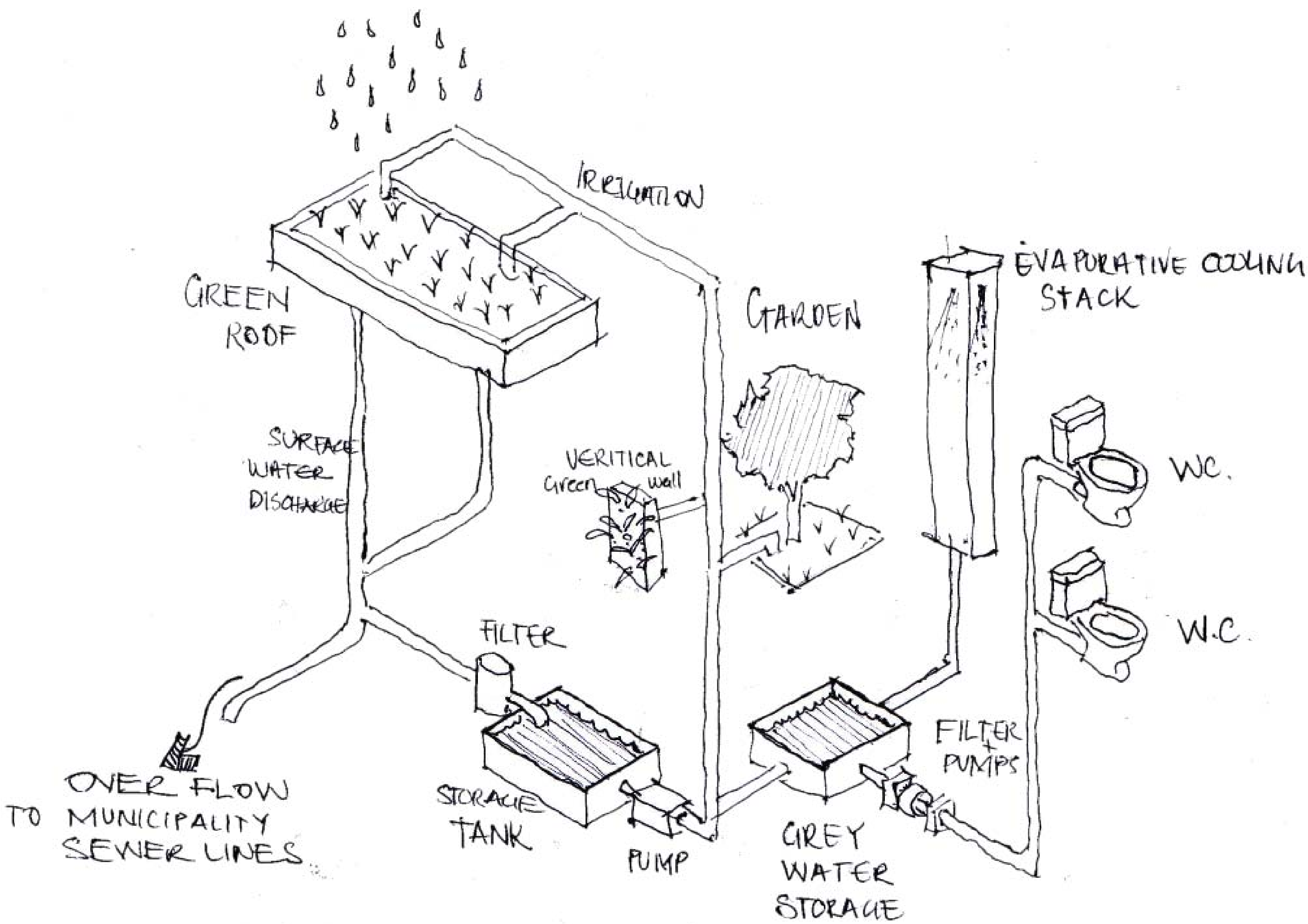


Fig.425: Proposed recycle water cycle for the Agrivaal Building

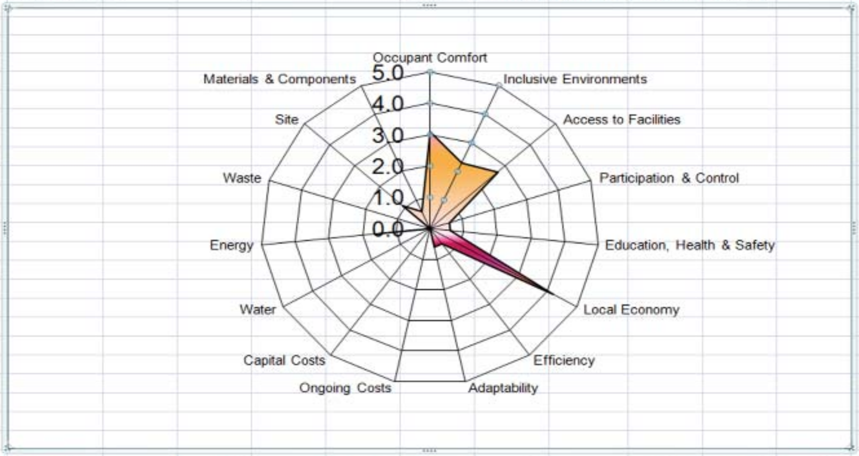
Water recycling

Rain water from the concrete roof will be utilised

Rain water from the concrete roof will be utilized for the irrigation purposes of the roof garden. Runoff will be directed (refer to fig 312) through the filter system and then into a storage tank. A pump directs the water for irrigation purposes back to the garden roof, the vertical garden on then northern façade of the building and the general landscape. This water is also utilized for toilets and the heating and cooling system that requires water for evaporative cooling.

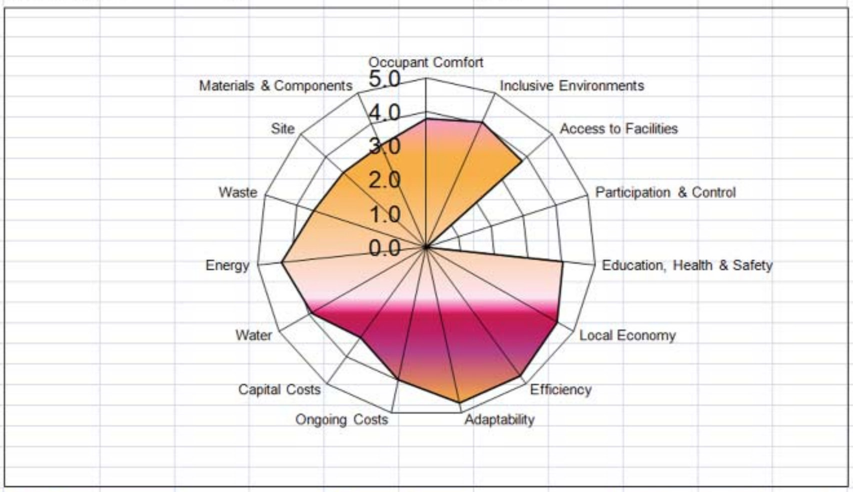
8.7 SBAT

Building type: Office complex		SBAT ASSESMENT FOR THE CURRENT CONDITION OF THE AGRIVAAL BUILDING (DERILICT STATE)
Internal area (m2):	5700	
Number of users:	0	



Social	1.9	Economic	1.1	Environmental	0.7
Overall	1.2	Classification	VERY POOR CONDITION		

Project title:	Proposed Agrivaal Building	Date:	
Location:		Undertaken by:	
Building type:	Office	Company / organisation:	
Internal area (m2):	6500	Telephone:	Fax:
Number of users:	150	Email:	



Social	3.1	Economic	4.2	Environmental	3.7
Overall	3.7	Classification			

The SBAT rating tool was used to evaluate the design. The Sustainable Building Assessment Tool provides an indication of the performance of a building or the design of a building in terms of sustainability.

The tool is ideally used on a building that has recently been completed, however for the purpose of this project it will be used theoretically. An assessment of the building in its current condition will be recorded, and a second assessment will be done in terms of the new proposed design.

The rating tool is divided into three components namely social, economic, environmental components.

The social component includes aspects such as access to natural light, proximity and access to public transport, disabled access to functions, noise and air pollution.

The economic component provides an indication of the economical performance including cost of construction and material, locally sourced materials and the use of local labor instead of specialized labor.

The environmental component deals with recycling of waste, water consumption and reuse, greening of the site etc.

According to the tool, the existing building receives 1.2/5, classifying it as ‘very poor condition’. All aspects concerning the building received low rating.

The proposed design receives 3.7/5, which is an improvement from its existing state. Areas of ‘participation and control’ received very low marks as the building is not in use yet.