

context: analysis + synthesis



Pretoria, 1960:264).

In 1930 a strip of land on the north-western boundary of Pretoria Boys' High School was established as the Fuel Research Institute (Pretoria Boys' High, 2000). The construction of the first building complex along Lynnwood Road was completed in 1933. The architecture of these buildings reflects the style of typical Public Works buildings of the time. In January 1980 the control of the Fuel Research Institute was entrusted to

the Council for Science and Industrial Research (CSIR, 1980). The site, including the buildings, was government property.

In 1990 the University of Pretoria entered into an agreement with the Department of Education and Culture for the acquisition of the South Campus site (University of Pretoria, 1996:501). Renovations were made to the existing buildings to house numerous university functions.



Figure 30: Aerial photograph, 1939.



Figure 29: First buildings of the Fuel Research Institute completed in 1933.



Figure 31: Fuel Research Institute, 1957.



Figure 32: Aerial view of the south-west corner of the University Campus, 1967.

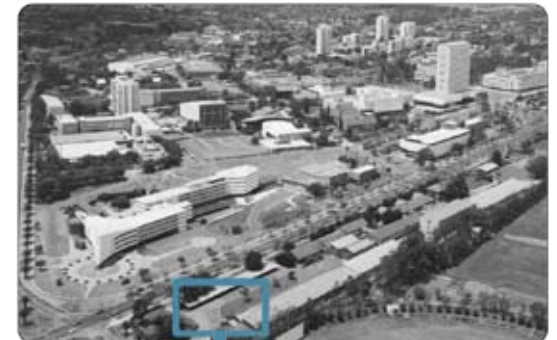


Figure 34: Aerial view of the University Campus, 1989.



Figure 33: Fuel Research Institute, 1980.

The site offers a rich context of industrial heritage, including a collection of red brick buildings dating back to 1933, with high volumes and open spaces between them. Traces of history in the biophysical environment include two rows of trees planted around 1950 that border Lynnwood Road, and a fuel tank embedded in the ground on the western border.

The reason for the South Campus's isolation lies in its heritage. The South Campus was not included in the initial planning of the University of Pretoria, and when the site became part of the University grounds in 1990, no alterations or additions were made to attempt to integrate the two campuses.

- Historically significant buildings
- Healthy buildings which can be adapted
- Sick buildings which structures can be reused or removed

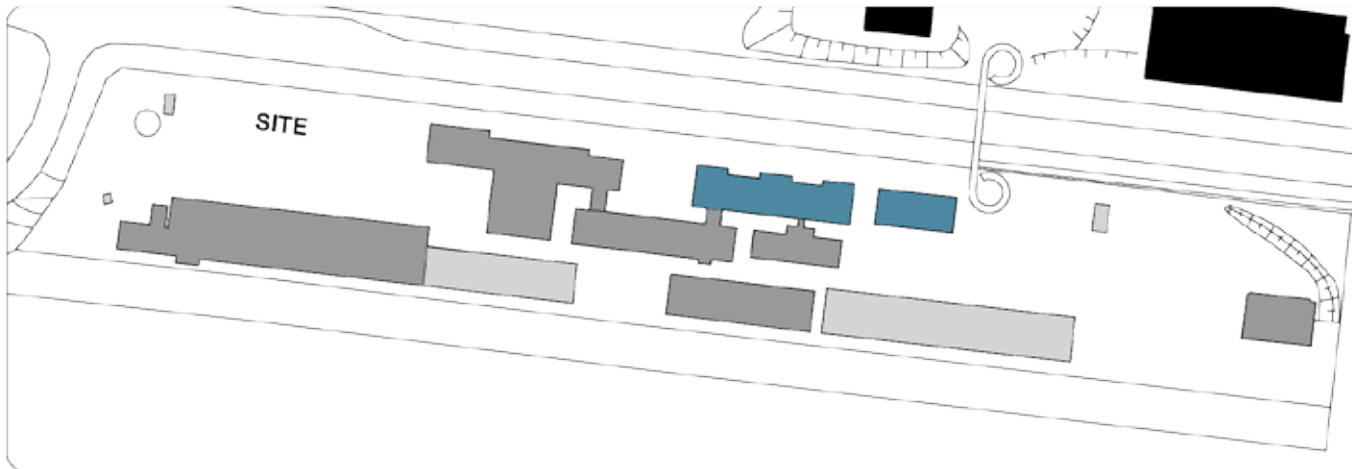


Figure 35: Historic value comparison between the buildings on South Campus.



Figure 36: Heritage buildings and traces of history.

Figure 38: Interior spaces and volumes of existing buildings.

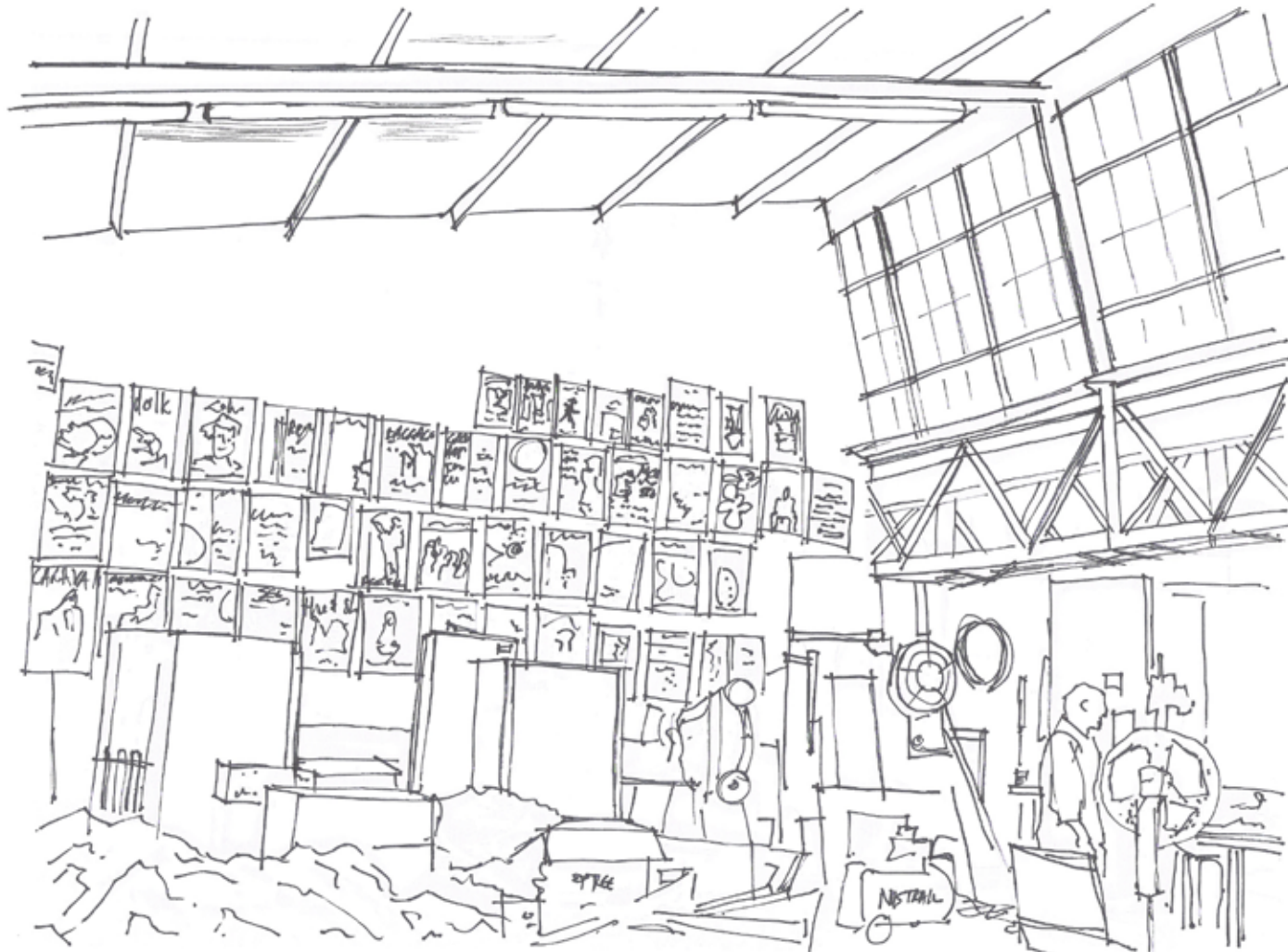


Figure 37: Sketch of the interior of the existing building.



Figure 39: Existing building interior.



Figure 40

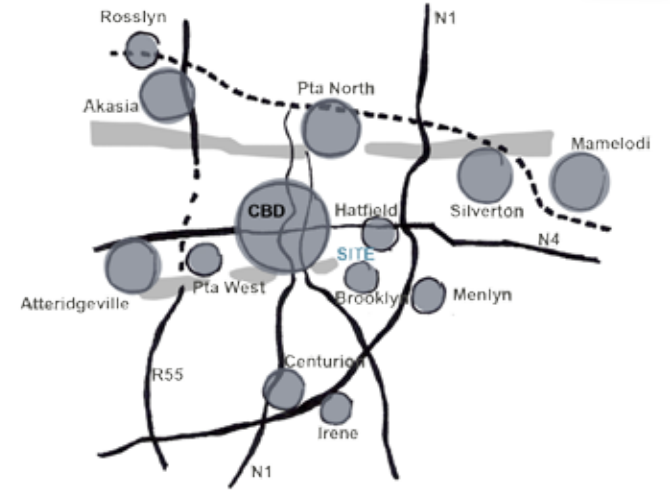


Figure 42: Diagram of Tshwane activity nodes.



Figure 41: Figure ground of Tshwane.

macro scale_ city wide

Various activity nodes can be identified within the City of Tshwane. These activities are clustered around strategic points in the city. The proposed site is located in an educational cluster situated in the Central Western Region of Tshwane.

The site is positioned between two nodes of high activity: the Brooklyn and Hatfield Metropolitan Cores. Brooklyn has developed into a major commercial node proposed to be densified and extended to the north (City of Tshwane Metropolitan Municipality, 2006). Hatfield, as a rapidly developing existing node, will accommodate the future Gautrain Station.

Figure 43: Figure ground of the University of Pretoria and surrounding areas.

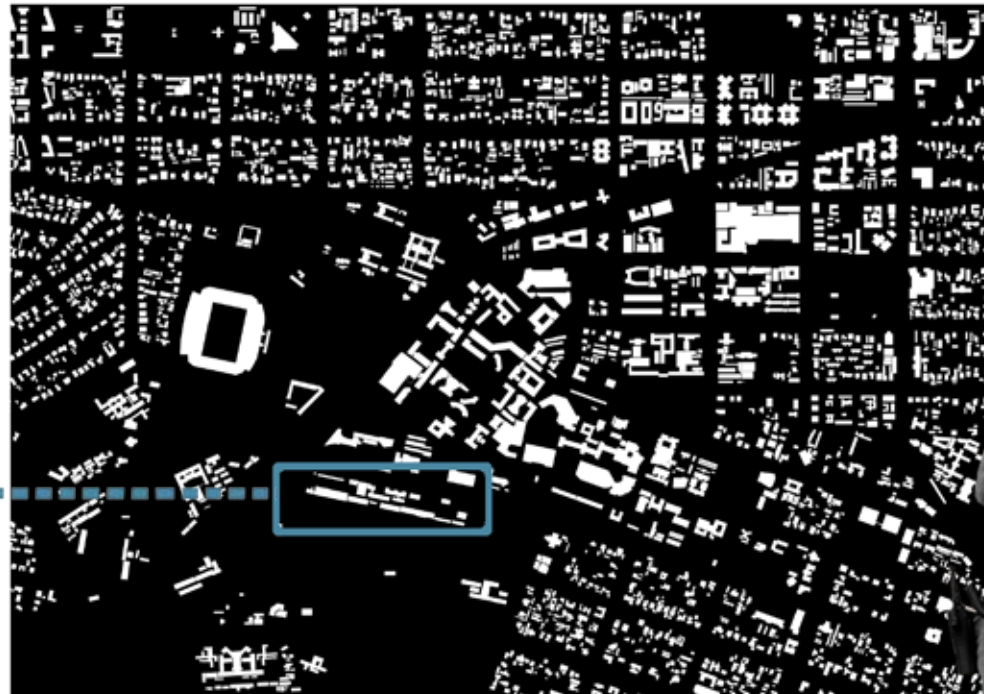


Figure 44



Figure 45: Surrounding land uses.

Figure 46: Transport diagram.

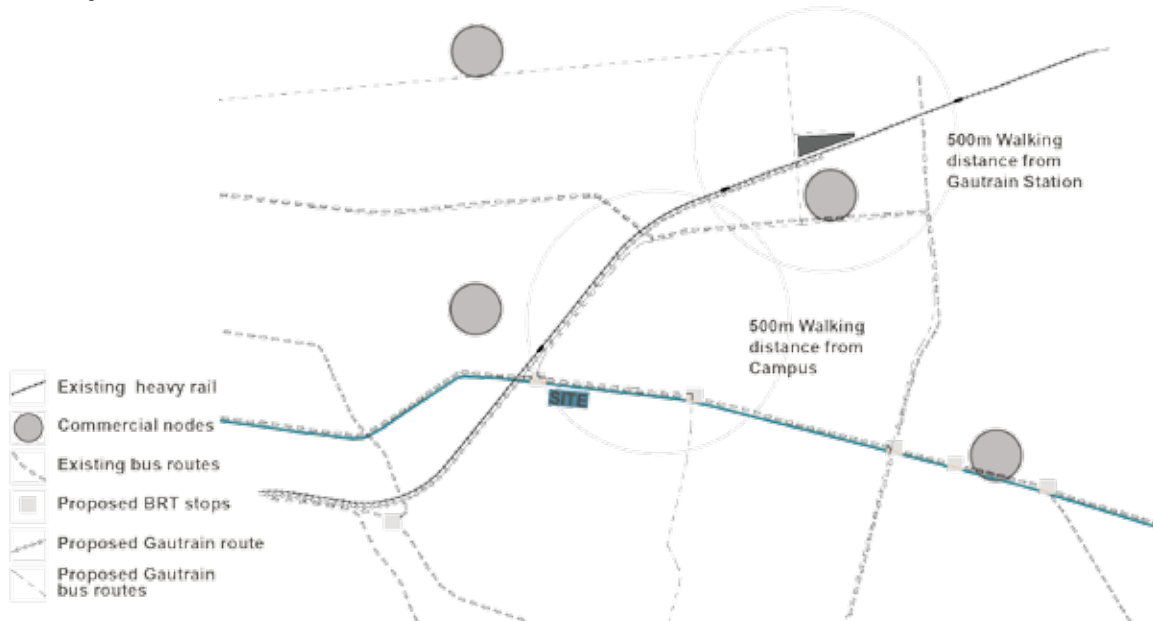
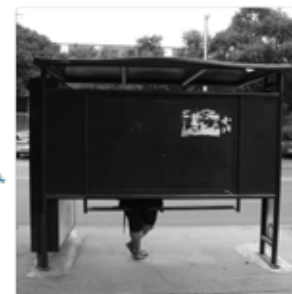


Figure 47: Train station in University Road.



Figure 48: Bus stop in Lynnwood Road.



meso scale_ study area

Access and activities

Current activity around the site is primarily linear along Lynnwood Road. This road forms an east-west vehicular access route between the eastern suburbs and the Pretoria CBD. Pedestrian activity results from the large number of student cars parked along the road, as well as school children and students gathering at bus stops.

The Tshwane Spatial Development Framework proposes for Lynnwood Road to become an activity spine with activities concentrated along specific portions of the road. Where appropriate, traffic calming measures will be implemented to create a pedestrian and cyclist orientated environment (City of Tshwane Metropolitan Municipality, 2006).

Different modes of public transport in close proximity to the site include the railway station on University Road, and several bus and taxi stops along Lynnwood Road. A Bus Rapid Transport (BRT) stop, on the corner of University and Lynnwood Roads, will be completed in 2009 (Claasen, 2008:9). The future Hatfield Gautrain Station is within walking distance of the University of Pretoria, providing access for students from Johannesburg, Midrand and Centurion.

Forthcoming implementations around the site will generate a flow of pedestrians. Ease of access to the site via different public transport amenities increases the feasibility of the proposed development.

Campus development

The context of the University of Pretoria is changing from suburban to urban. Areas where densification is occurring includes the Hatfield Core and pockets along Lynnwood Road.

The Main Campus is continuously expanding to accommodate the rapid growth of student numbers. Increased walking distances on campus are becoming time-consuming to traverse, resulting in a need to cluster similar facilities.

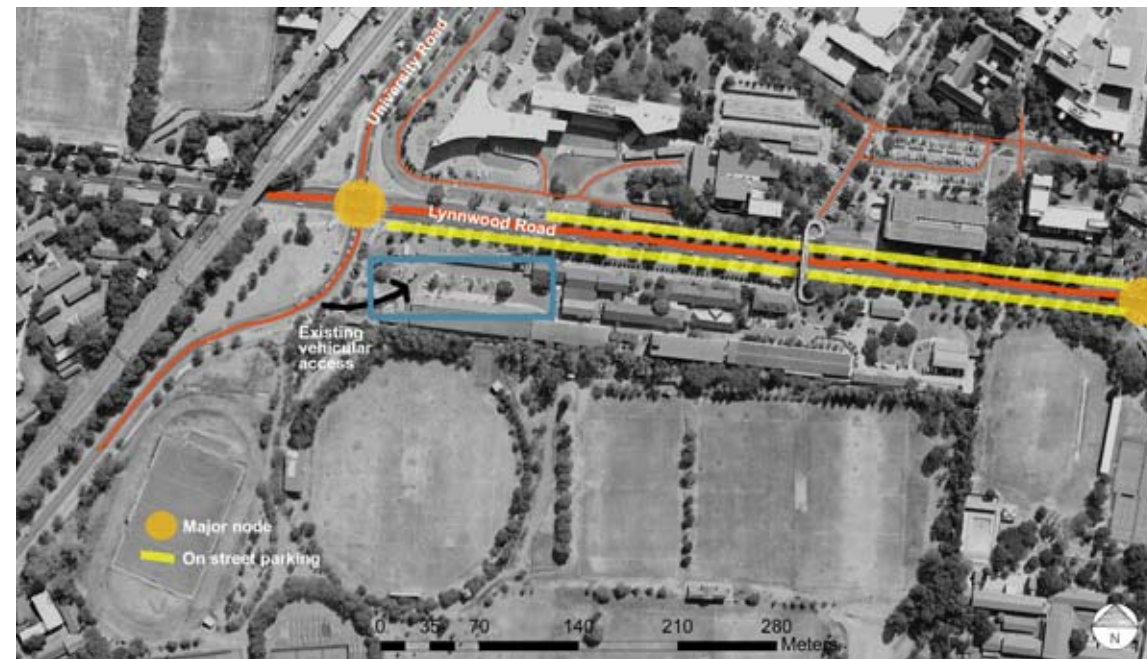
Isolation

The South Campus is an isolated land parcel which is not sufficiently integrated into its surroundings. Permeability is prohibited by palisade fencing surrounding the campus. The fast movement of vehicles on Lynnwood Road and the uncomfortable pedestrian bridge across it, minimizes movement between the two campuses. The school sports fields along the east and south borders are fenced and walled off, therefore prohibiting infiltration into the site. A variety of opportunities present themselves to reconnect the site with its surroundings and create a place with identity.

Figure 49: Pedestrian movement analysis.



Figure 50: Vehicular movement analysis.



micro scale_site

Social context

It is important for a campus layout to encourage impromptu encounters amongst students, faculty members, visitors and activities. Most casual interchanges, chance meetings, entertainment and study activities on campuses take place outdoors (Francis & Marcus, 1990:143). Some of the criteria necessary to stimulate social interaction can be found on South Campus, but others are desperately lacking.

Social areas located on the South Campus include the cafeteria with indoor and outdoor seating, the eastern green area, and a private courtyard space. These outdoor areas create places where one can study and eat in relative comfort.

The South Campus has no recognizable point of entry; therefore visitors unfamiliar with it have difficulty gaining access. The entrances to the South Campus are located at the two ends of the site, while the edges remain impermeable. Spaces around the entrances discourage gathering and lingering.

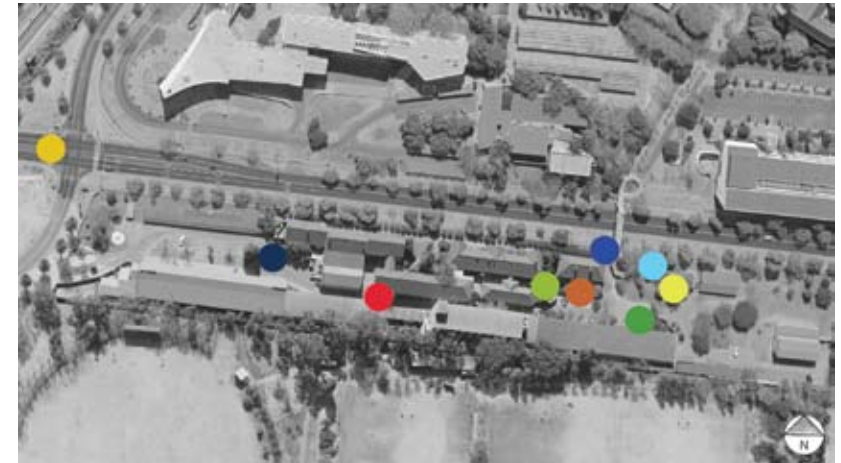


Figure 51: Social study legend.

The campus has not been designed to accommodate a central plaza or gathering place. Any campus community needs a place for friends to meet, bands to play, displays to be placed and people to watch other people (Francis & Marcus, 1990:154).

Trucks servicing the cafeteria and printing press, as well as private vehicles, share the main pedestrian street. The presence of vehicles discourages comfortable pedestrian movement.



Figure 52: Detail site analysis.

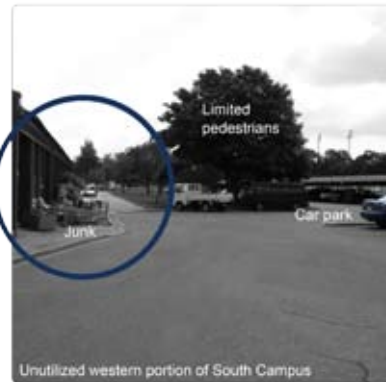
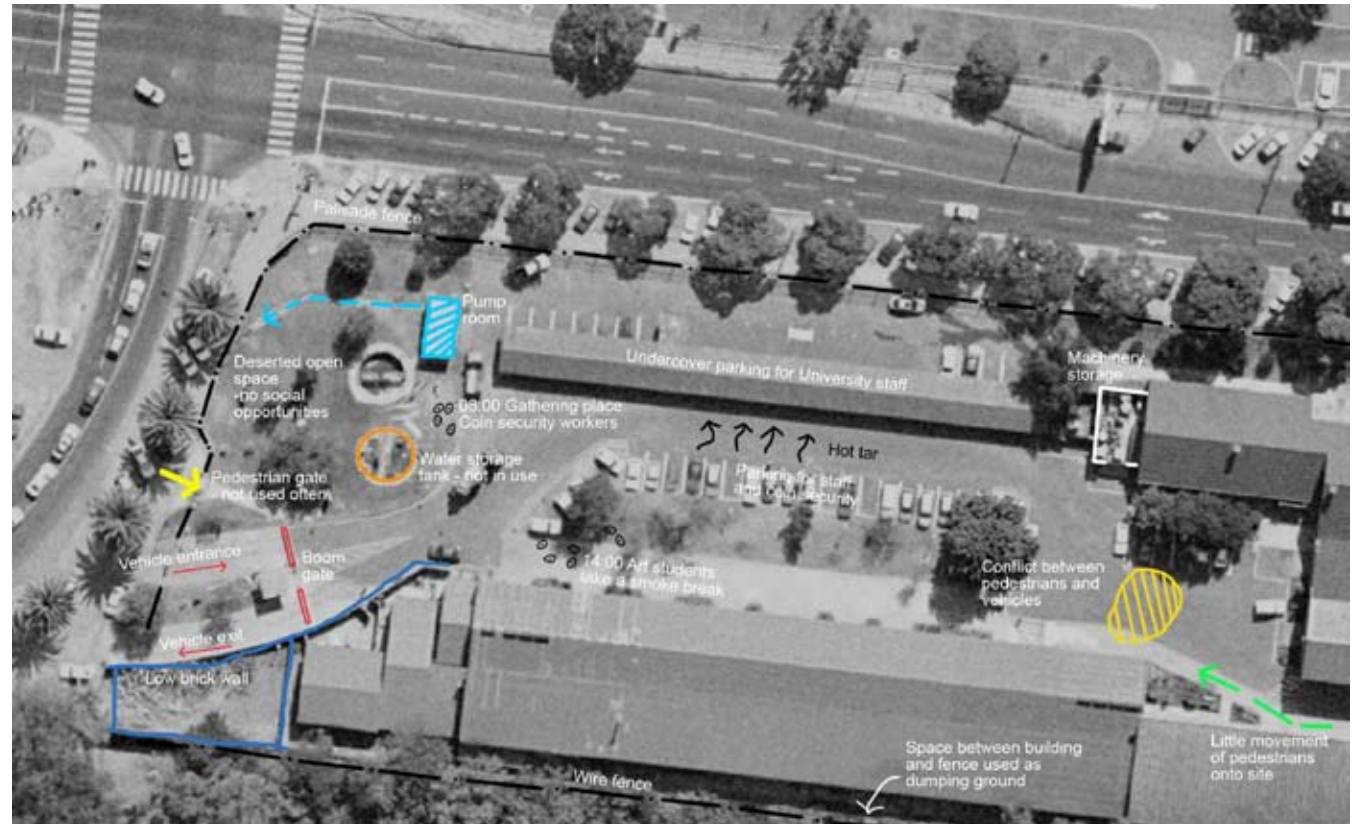
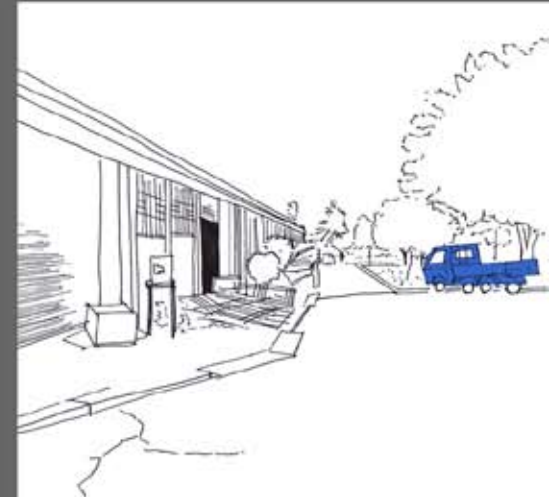
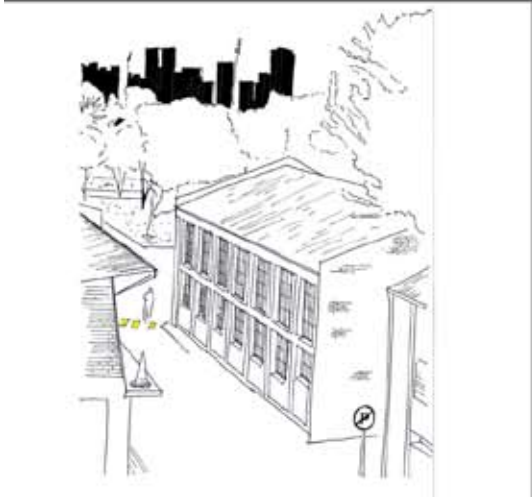
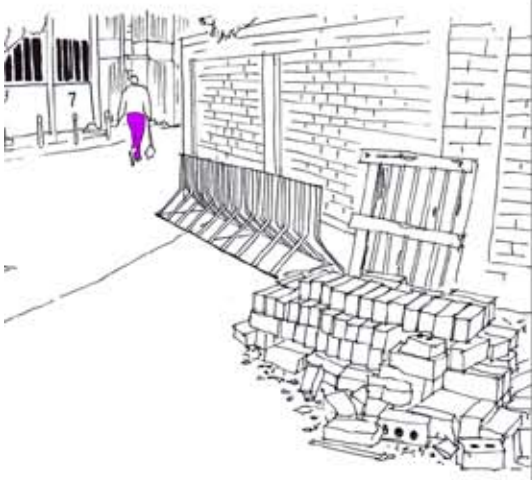
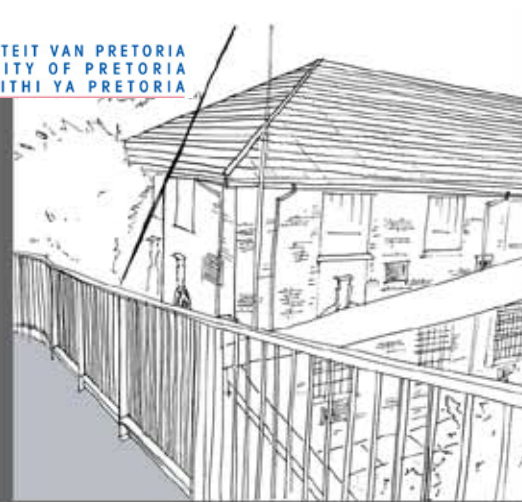
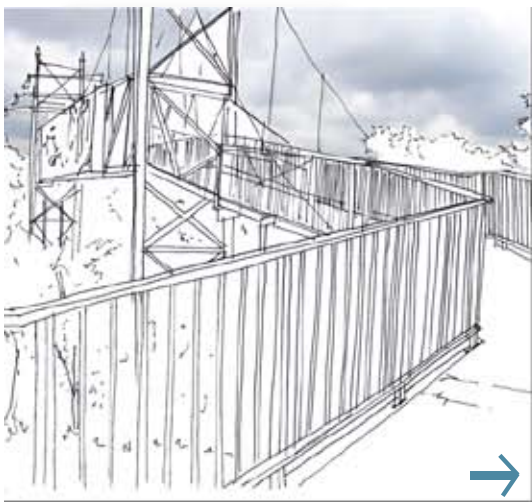


Figure 53: Social study of South Campus.



UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA



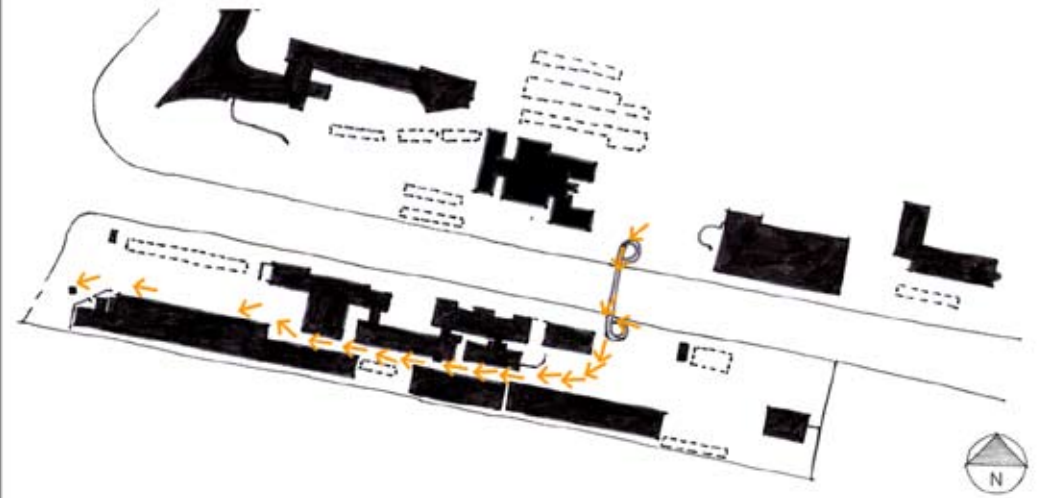
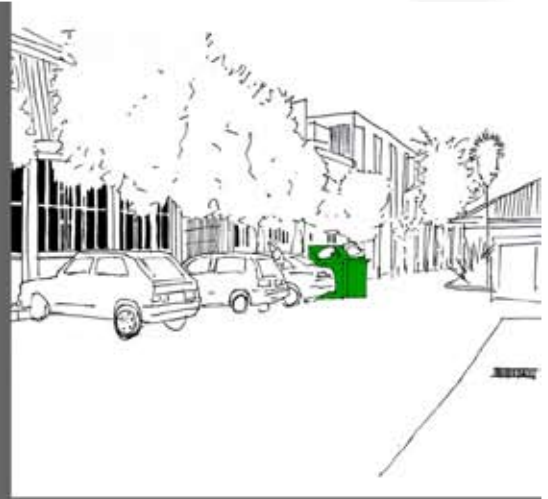


Figure 54: Visual sequence showing progression from Main Campus through South Campus.

Climatic context

Location: 25°45'23"S
28°13'31"E

Climate: Summers: Hot with 60% sunshine days
Winter: Mild to cold with 80% sunshine days but less heat intensity

Sun angles: Summer: 88° altitude
Winter: 44° altitude (Schulze, 1986)

Precipitation: Summer rainfall region prone to late-afternoon thunderstorms and hail (South African Weather Service, n.d.)

Humidity: 59% monthly average

Wind: Summer: north-easterly
Winter: north-westerly (Napier, 2000:8-9)

Topography: 1:56 slope from east to west

Figure 55: Average temperatures in Pretoria.

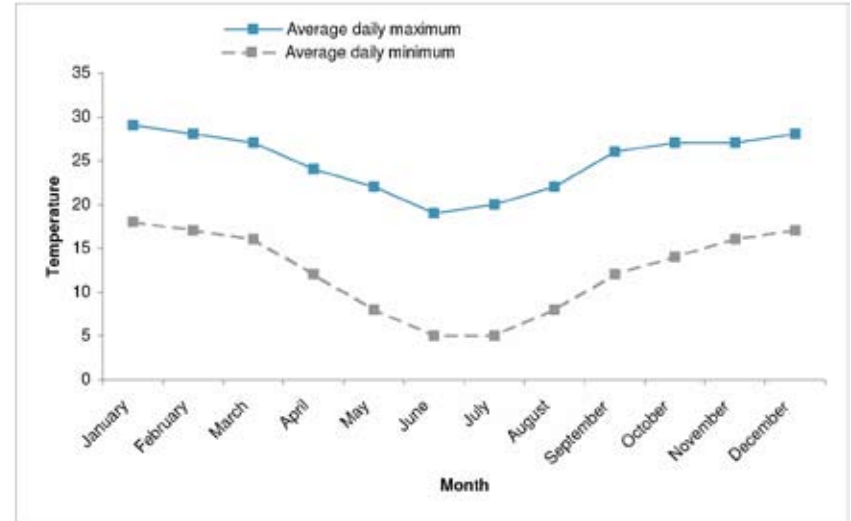


Figure 56: Average rainfall in Pretoria.

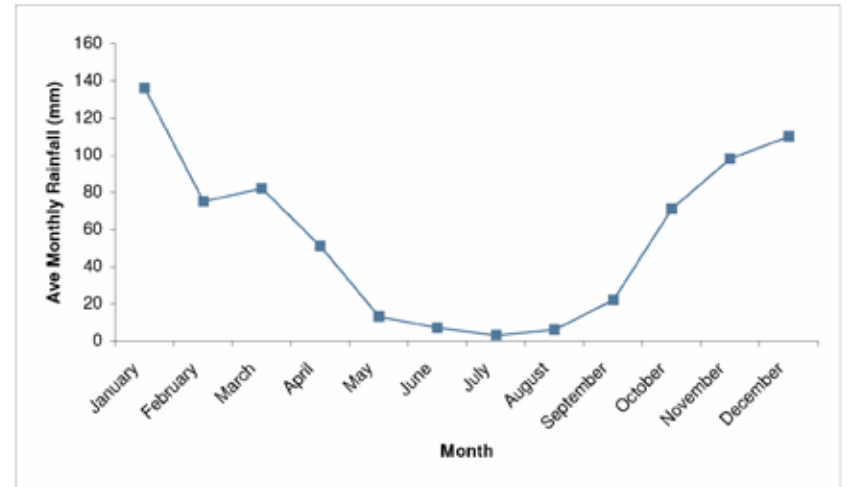
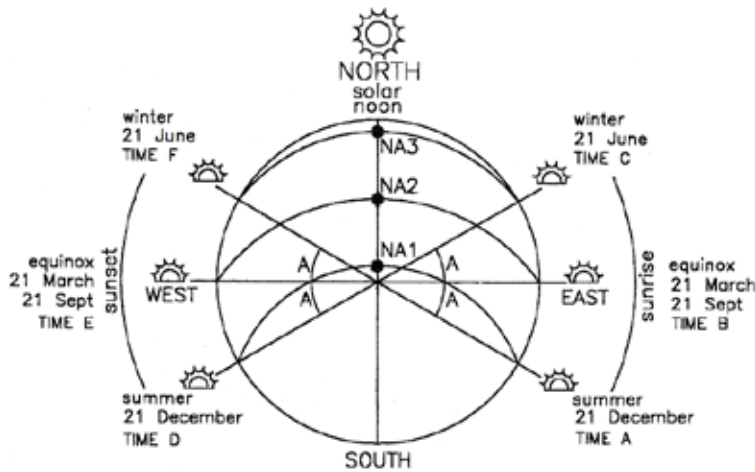


Figure 57: Sun angles for Pretoria.



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

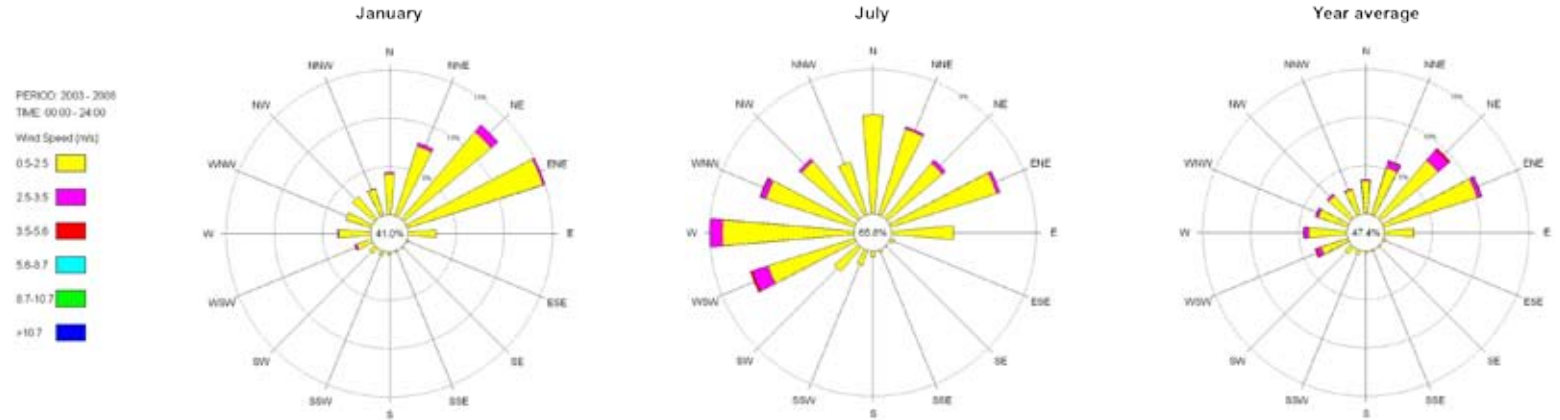


Figure 58: Pretoria wind rose.

Legislative context

Restrictions as per zoning certificate issued by the City Council of Tshwane:

Details: Remainder of Portion 332 of the farm Elandspoor 357-JR, Pretoria
Town-Planning Scheme, 1974

Use zone: Educational

Purpose for which buildings may be erected: Places of instruction and social halls, amongst others

Site area: 29 250m²

Density restriction: None

Floor space ratio: 2, 0

Height: 19m

Coverage: 60%

Coverage used: 8701m² (29.75%)

Coverage available: 8849m² (30.25%)

Building lines: Sides – 4,5m
Street – 3,5m

SABS restrictions

Occupancy class: A2 – Theatrical

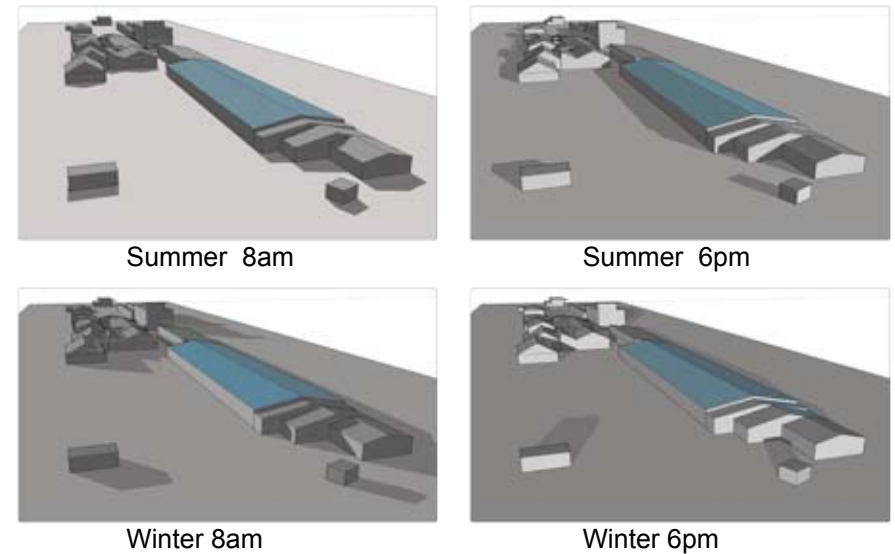


Figure 59: Shadow patterns on South Campus.

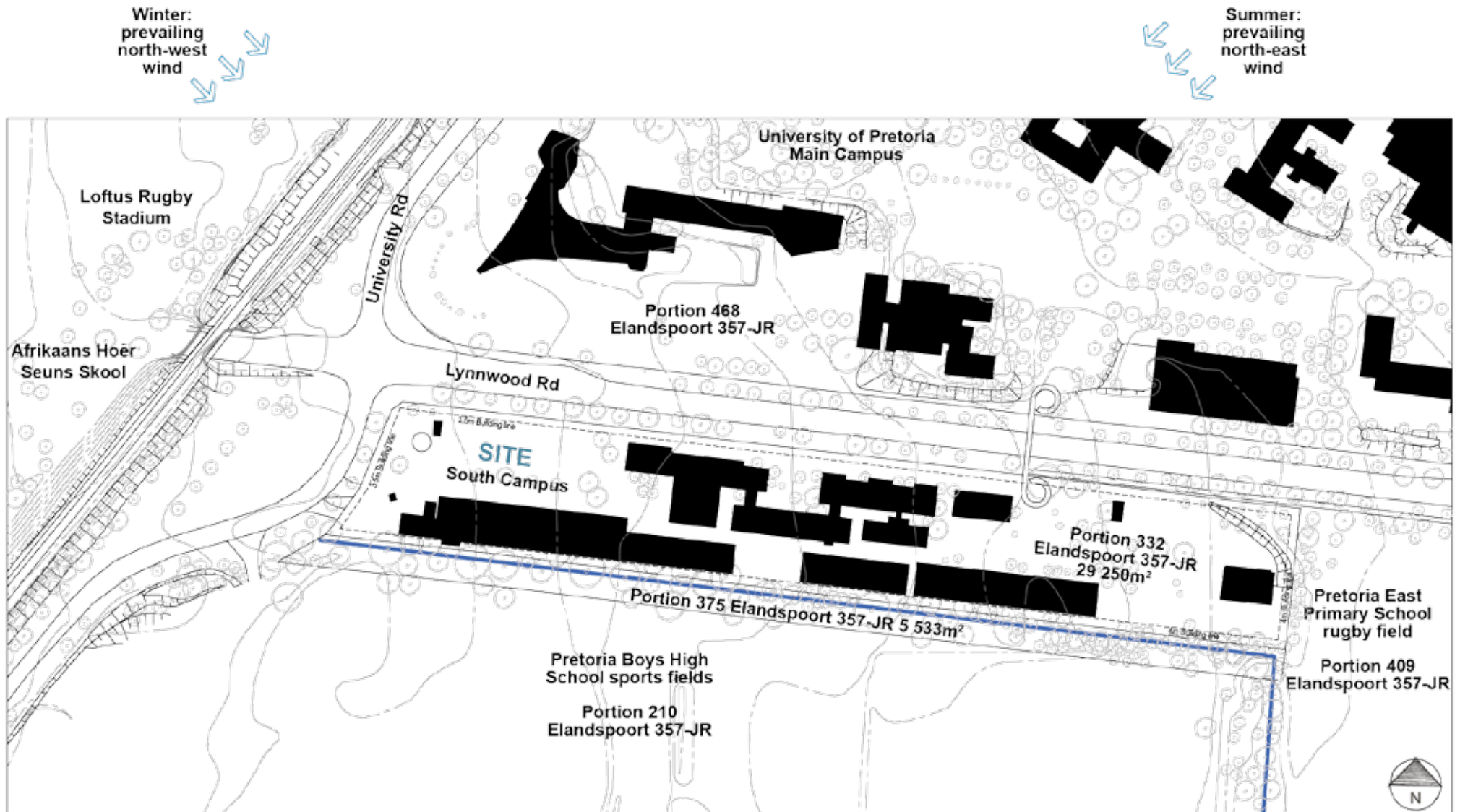


Figure 60: Site analysis diagram.



Figure 61

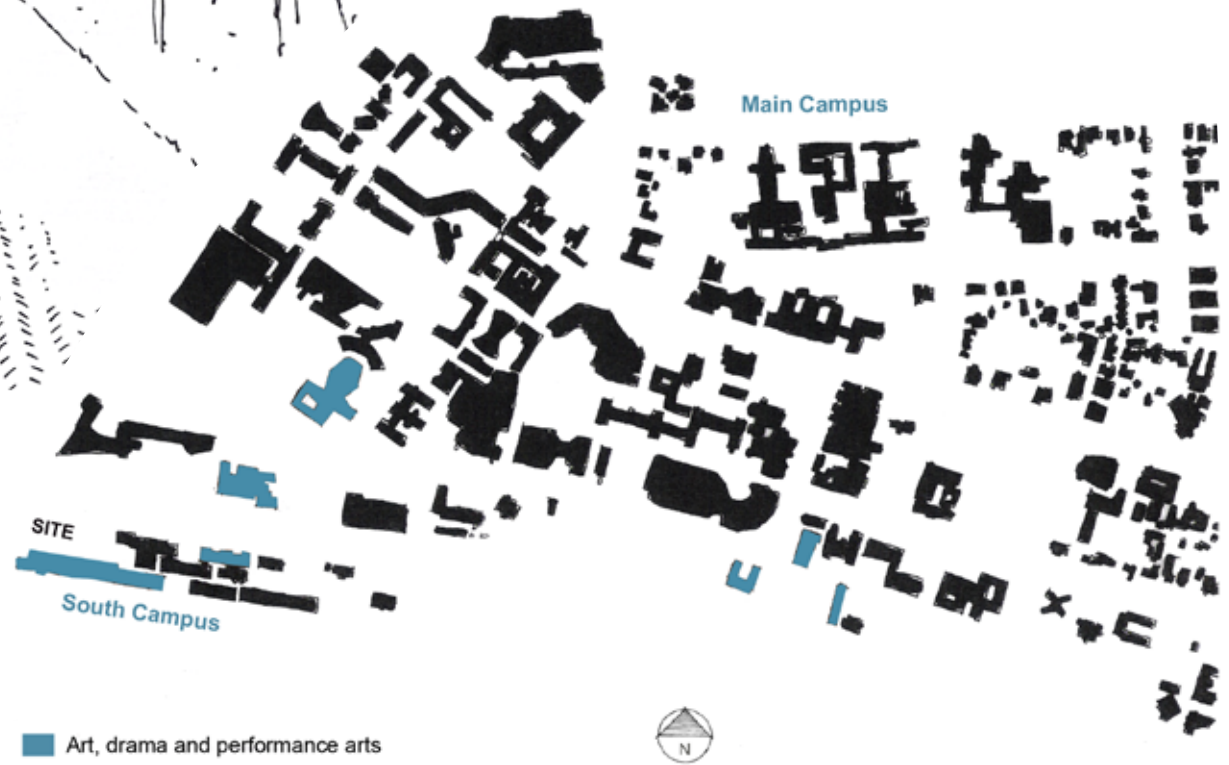


Figure 62: Figure ground indicating buildings of related use.

contextual influences

Reichen and Robert... for the reuse of an industrial site

Luc Besson Cinema Studios

Saint-Denis_ France

2004 – 2010

Film director Luc Besson purchased a former electrical plant located on the banks of the Seine in the Paris suburb of Saint-Denis (Jodidio, 2005:438-443). On a previous occasion, Luc Besson filmed scenes from several movies inside the 220m long building (Plaine Commune, 2008) and now he intends to convert the space into a “Cinema City”.

The aim of the architect is to preserve the valuable industrial heritage of this 1933 Art Deco building. Restorations revolve around the vast nave, and numerous devices including generators, cranes and staircases will be retained (Defawe, n.d.). Old façades will be refurbished to preserve the initial colours of the building, and the addition of new glass is designed to respond to the original plans. The industrial volumes of the plant can be easily adapted to movie-making.



Figure 63: Site location and existing power plant.

precedent study



Figure 65: Proposed Cinema City.



Figure 64: Proposed façade of renovated building.



Figure 66: Cross section showing re-used industrial spaces.

Foster + Partners... for a design responsive towards the existing

Carrée d'Art
 Nîmes_ France
 1984-1993

Located next to the Maison Carrée, a well preserved Roman temple, the Museum of Contemporary Art encourages a dialogue between ancient and modern architecture. Sir Norman Foster recalled that “the challenge was to relate the new and the old, but at the same time create a building that represents its own age with integrity” (Preserve the Modern, 2007).

Primary elements of Roman architecture are present in the Carrée d'Art. The museum contains a large portico, supporting columns and a rectangular foundation. However, the museum does not simply replicate but rather responds to the Roman architecture. The ancient design is expressed through lightweight modern materials such as glass and steel.

In relation to the urban context of Nîmes, the nine-storey structure is partially sunk into the ground to achieve the same scale as the surrounding buildings. Railings, advertising boards and parking were removed to extend the square in front of the building and create a strong pedestrian realm (Foster and Partners, n.d.). Today the square is lined with café tables and clusters of people reigniting the social life of Nîmes.

Although the context on the South Campus does not have the same historic value as the above precedent, careful consideration should be taken in the design of a new building in response to the existing.

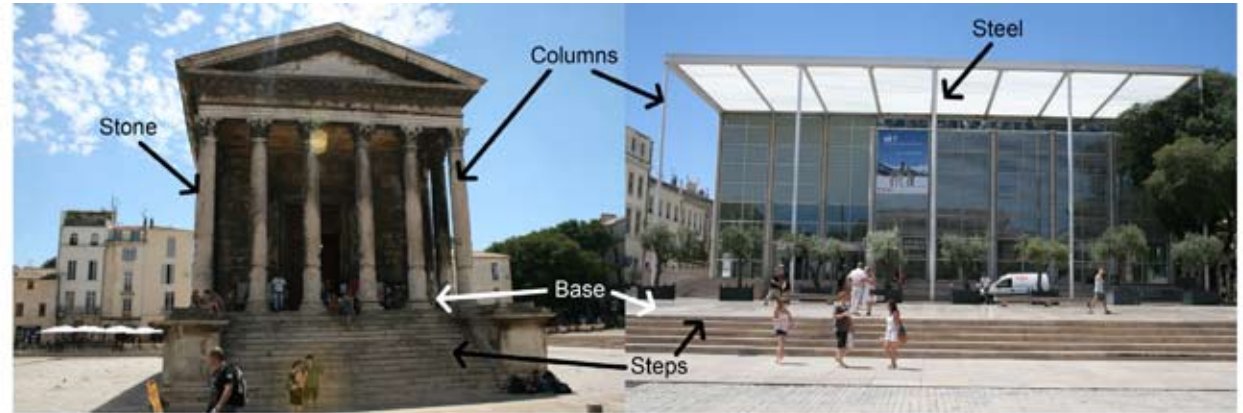


Figure 67: Ancient versus modern.



Figure 68: Place de la Maison Carrée, a public square.



Figure 69: Response to context.

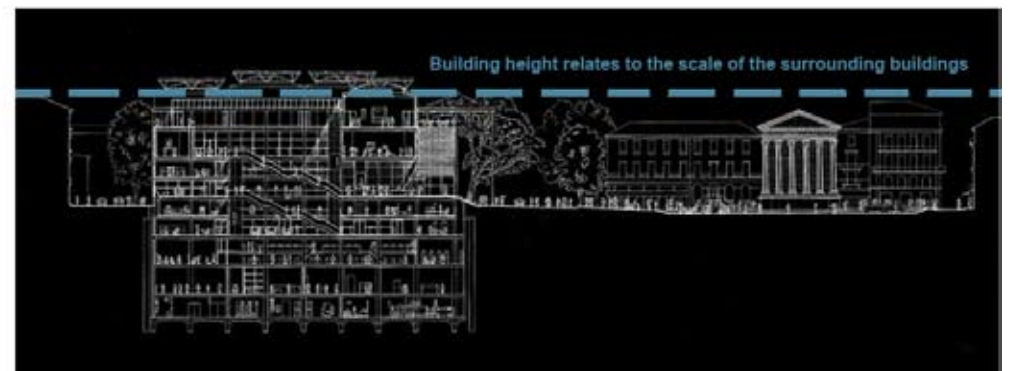


Figure 70: Cross section showing building height in relation to context.