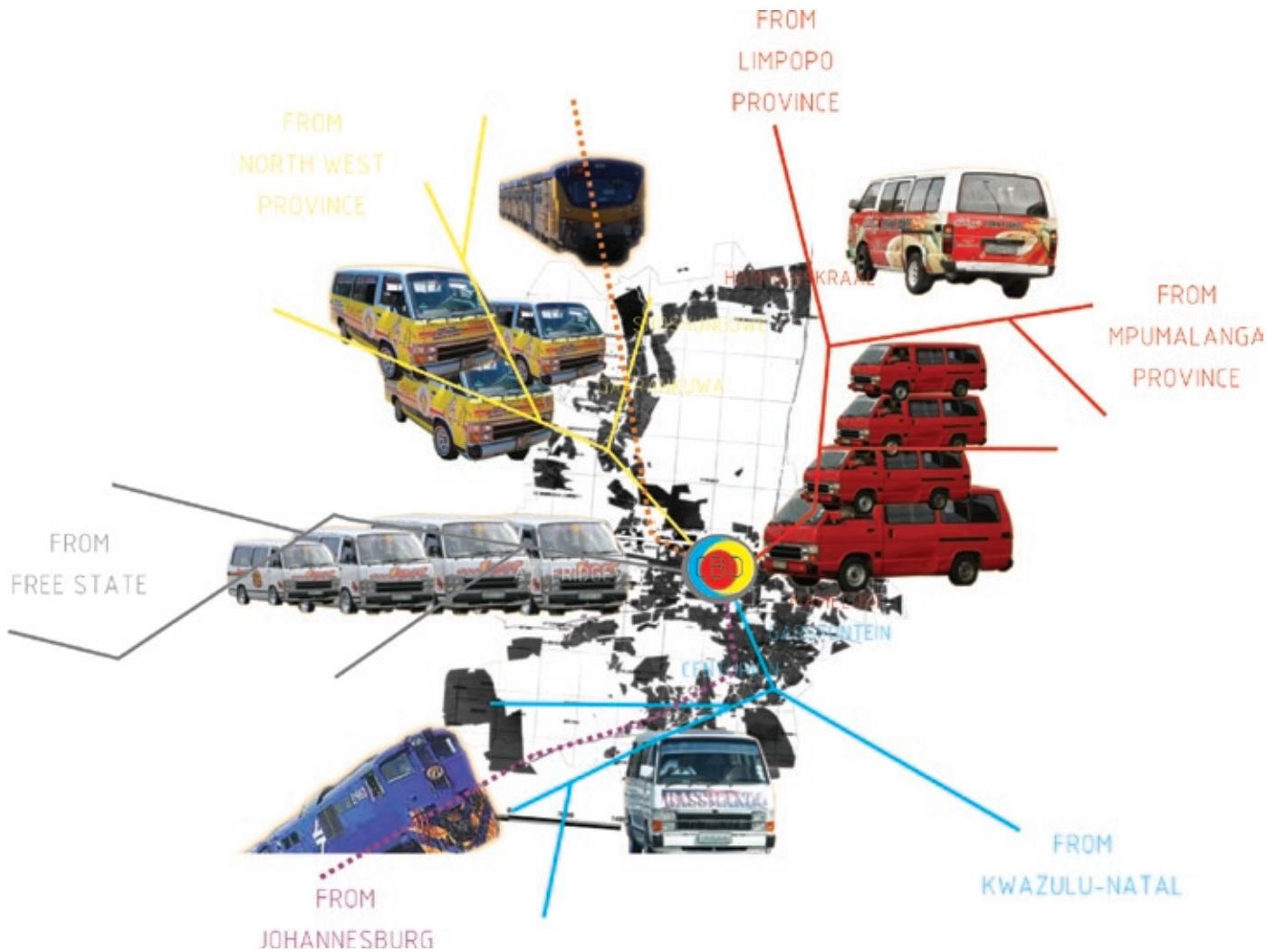


# 5. SITE ANALYSIS

Key words: Meeting point  
Access  
Movement  
Activities



The predominant modes of transport from the rural environment to the Pretoria CBD are the taxi and the train.

The criteria for site selection within the precinct are that the site:

- should be located on the periphery of the Pretoria CBD
- must be in close proximity to transport interchanges
- must be on an important city axis to enhance orientation

Fig 5.1: Modes of transport for entering Pretoria CBD



## Site location

It is important that the site is located on the northern periphery of the CBD near the Bloed Street and Belle Ombre transport interchanges. The northern periphery is the first meeting point between the city and the rural immigrant.

The proposed site is between Boom Street (north), Bloed Street (south), Paul Kruger Street (west) and Andries Street (east). It is between the Bloed Street Taxi Station currently under construction to the East, and the Belle Ombre Train and Taxi Station to the West.

Boom Street (north) is the northern periphery of the Pretoria CBD. It is a one-way street running from Marabastad in the west to Prinsloo Street in the east. Bloed Street (south) is a one-way street running from Prinsloo Street in the east to Marabastad in the west. Paul Kruger Street is the dominant northern entry and exit artery for the CBD. It has lanes in both directions and runs from the northern entry/exit intersection with Boom Street through Church Square to the Pretoria Train Station at the southern periphery of the CBD.

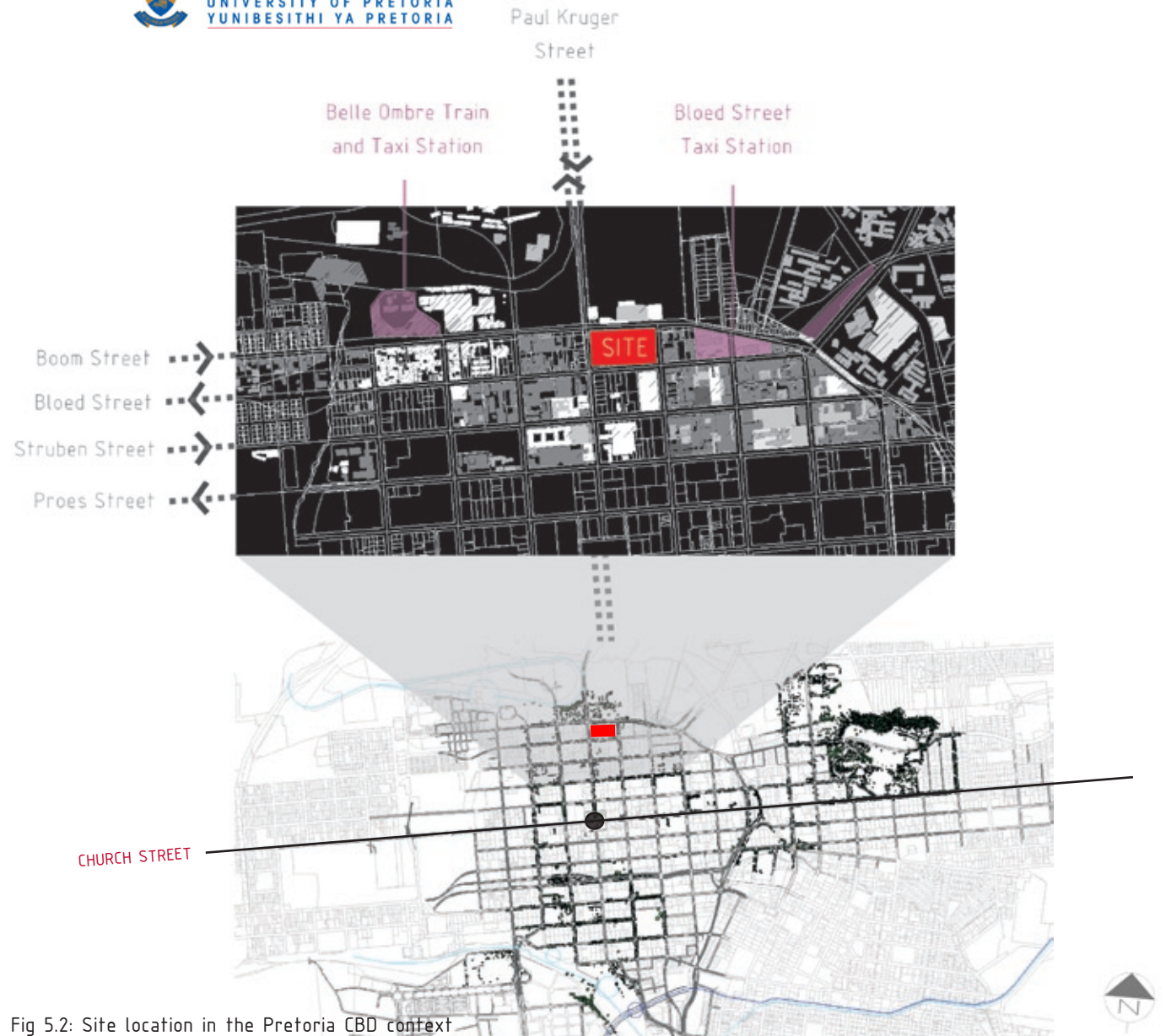


Fig 5.2: Site location in the Pretoria CBD context

## Site Analysis

## Site Access

The Pretoria CBD can be accessed by vehicle and by train. Vehicular access is mainly through the N4 and the N14. The N4 connects Tshwane with Nelspruit and, beyond that the Maputo harbour. Secondary access is through D.F. Malan, Paul Kruger, Voortrekker and Nelson Mandela Boulevard. Trains stop at Pretoria Station in the south and Belle Ombre Station in the North.



Fig 5.3: Transport access in Tshwane

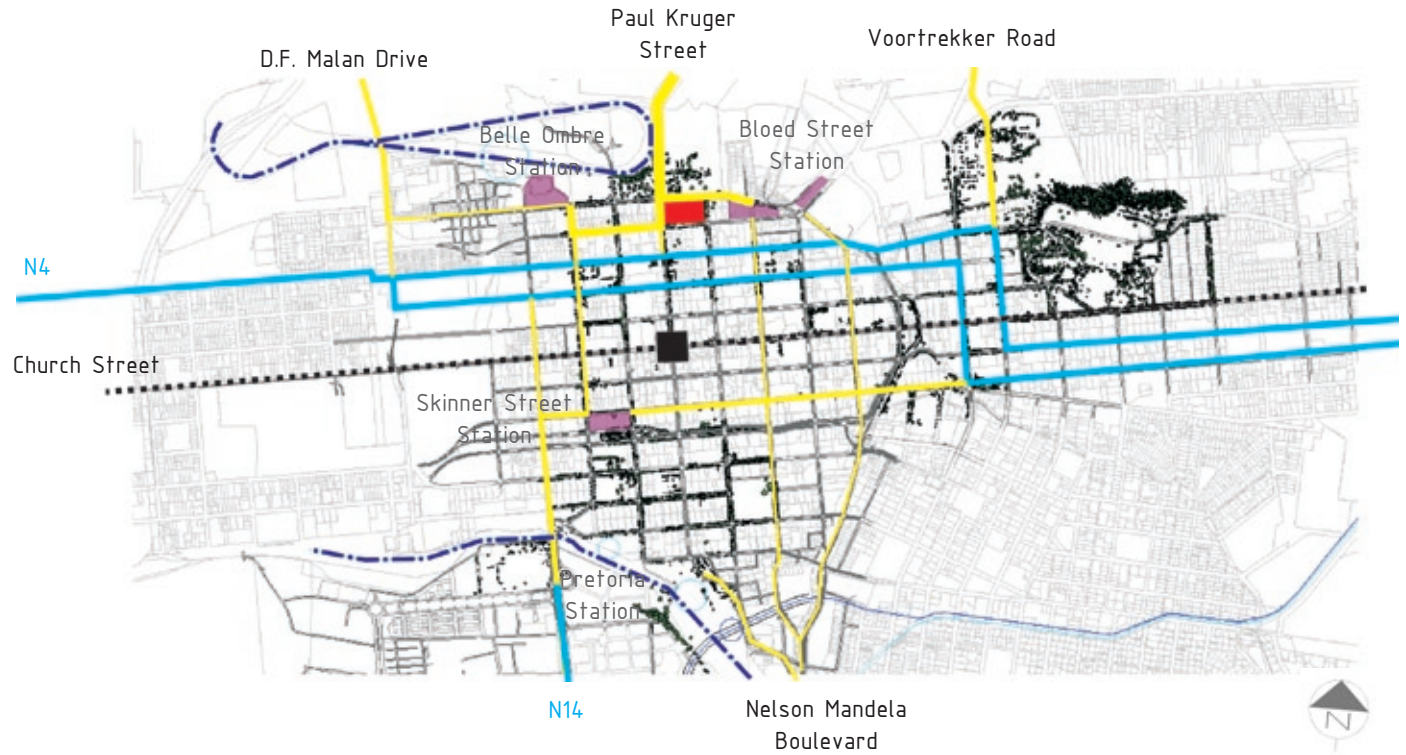


Fig 5.4: Transport access in Pretoria CBD

- Legend:
- Freeway
  - Through-routes
  - Railway
  - Taxi flow
  - Site
  - Church Square
  - Transport interchange



## Vehicle movement

Paul Kruger Street is the northern entry/exit node to the Pretoria CBD. However, most vehicles turn off in Boom, Bloed, Struben or Proes Streets. This is because Paul Kruger Street is intercepted by Church Square presenting a vehicle slow-down zone.

The main vehicular movement is in Boom and Bloed Streets. Vehicular movement consists primarily of private vehicles and minibus taxis. There is a large discrepancy between vehicular movement in the peak and non-peak periods. Peak periods are from 6h00 to 8h30am and 16h00 to 17h30pm. Vehicular movement at night and on weekends are low.

Table 5.1 summarizes a weekday 5-minute vehicle count in Boom and Bloed Streets as measured in February 2007. Peak measurements were taken at 7h00am and off-peak measurements at 10h30am.

Table 5.1: Traffic volume per 5-minute interval

Street		Taxi	Bus	Private
Boom	Peak	95	8	103
	Off-peak	46	2	38
Bloed	Peak	76	4	72
	Off-peak	41	1	42

## Site Analysis

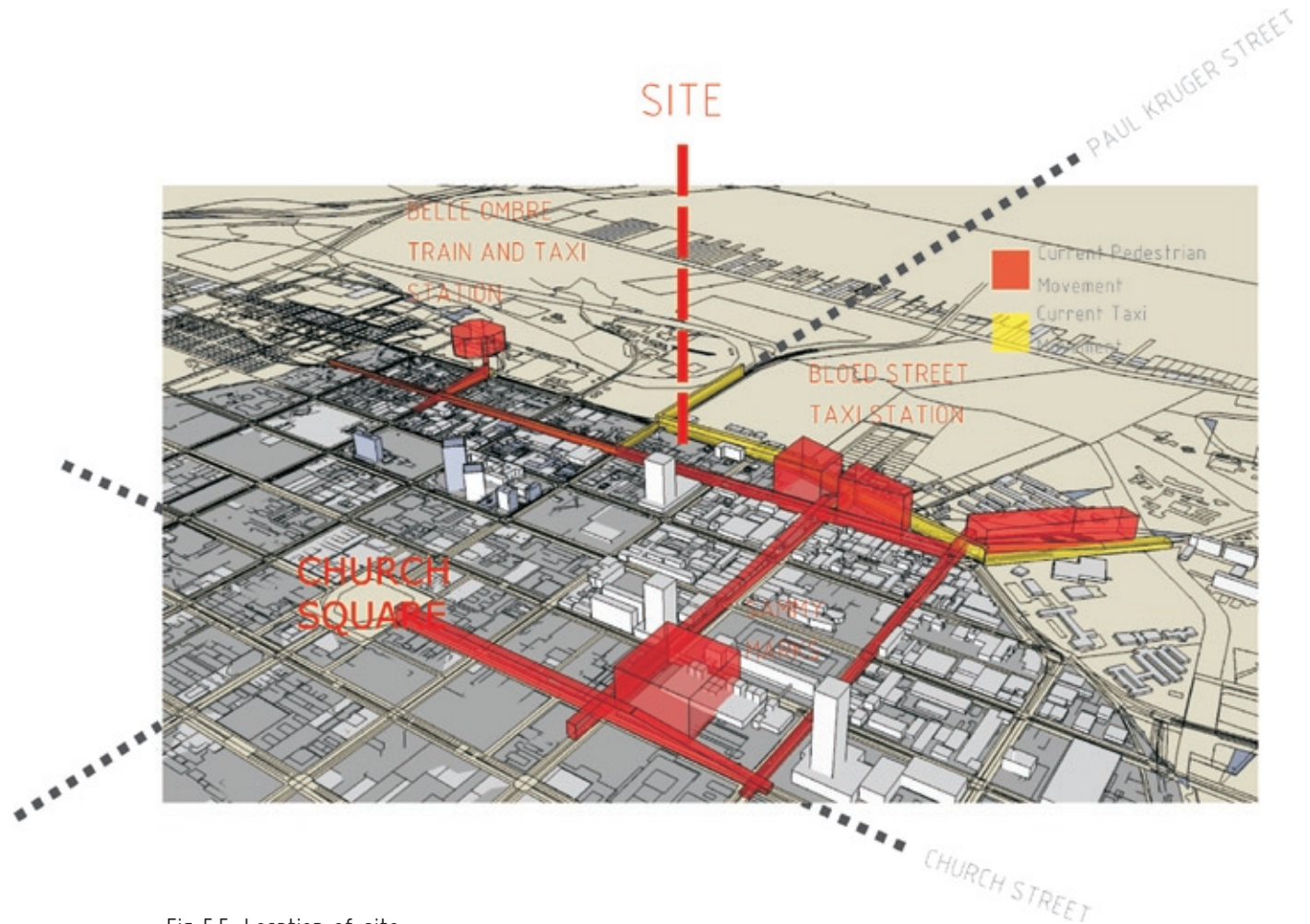


Fig 5.5: Location of site

## Pedestrian movement

The fortification of erven is the primary reason for the perimeter pedestrian movement in the precinct and the selected site. Pedestrian movement is predominantly on the side-walks. The pace of the pedestrian movement is fast, as people move from one place to the next. There is very little infrastructure where it is possible to pause and sit.

In the week, there is a rush of pedestrian movement in the mornings and late afternoons as commuters hurry to and from the taxi stations. It reaches its peak from 11h30am to 14h00pm. Streets are quiet at night due to the limited activities in the precinct. Saturday mornings are busy but the street are desolate on Sundays.

Bloed Street is the primary east-west artery that connects Bloed Street Taxi Station and Belle Ombre Train and Taxi Station. Van der Walt Street is the primary north-south artery that connects Bloed Street Taxi Station and Sammy Marks Square. Pedestrian movement on Andries Street is restricted due to the renovation of the Department of Home Affairs and the construction of the National Research Library. The pedestrian movement on Paul Kruger Street is secondary to that of Bloed and van der Walt Streets due to the limited activities on Paul Kruger Street north of Struben Street.

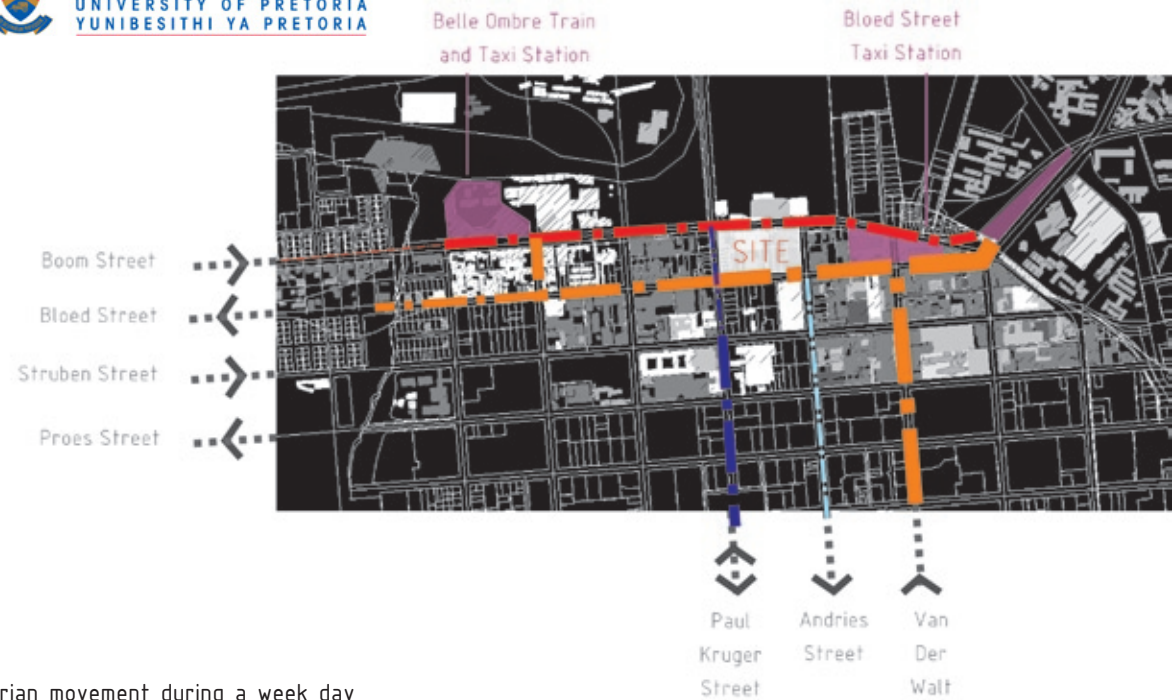
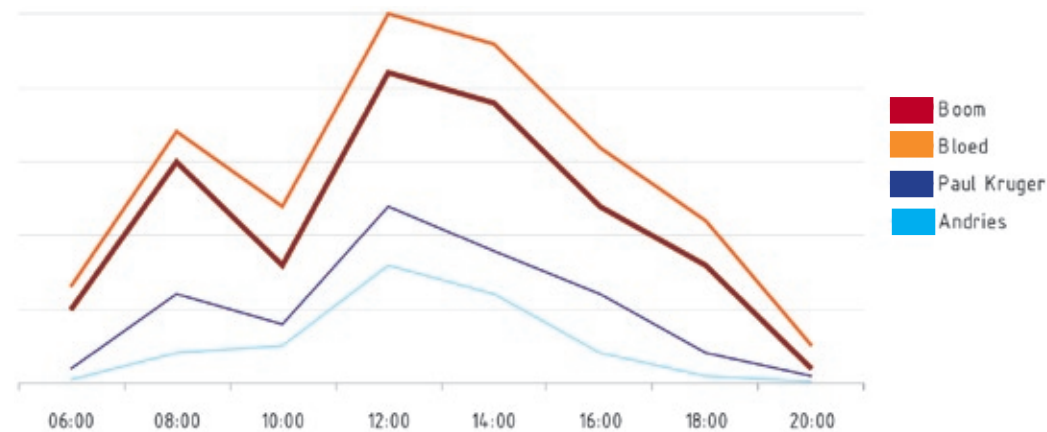


Fig 5.6: Pedestrian movement during a week day



Graph 5.2: Pedestrian movement during a week day





Fig 5.7: Photograph collage of streetscape

Site Analysis





Fig 5.8: Photograph collage of streetscape





## Activities

The pedestrian activity on the side-walks generate a multitude of new opportunities. Jan Gehl, an urban designer from Denmark remarks that it is generally true that new activities are generated in the vicinity of existing activities (Gehl 1987: 25-27). This is particularly evident in Bloed and Van der Walt Streets as these streets are congested with informal traders and pedestrians.

Informal traders sell various goods, ranging from hair products, electronics to food and drinks. Informal trader stalls are mainly composed of steel tables and canvas tent structures which are stored in the surrounding shops (Bloed Street 2007: Interview). Informal traders are situated either adjacent to the shop windows or to the street. The latter option creates an improved symbiotic relationship between the traders and the formal shops.

Shops range from small enterprises selling furniture, electronics and food to large corporate shops such as Timbercity. There are disagreements between informal traders and shopkeepers as stalls obstruct the on-street advertisements of the shops. In addition, the informal traders pollute the walkway and obstruct pedestrian movement.

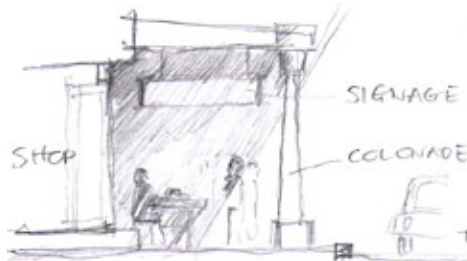
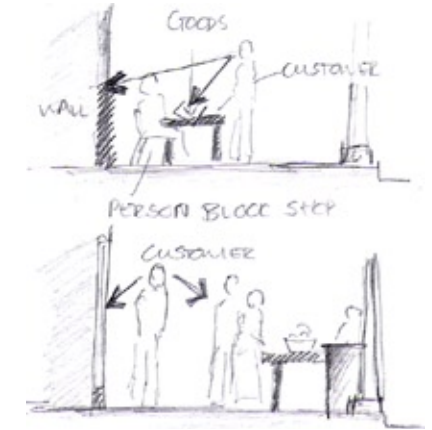
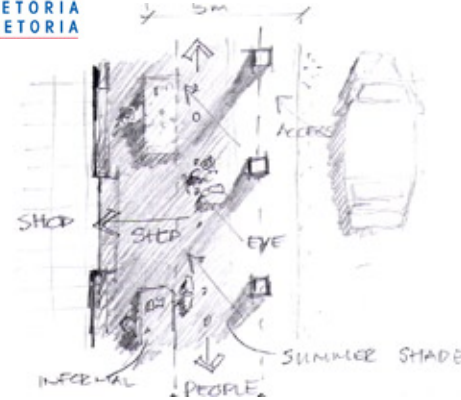
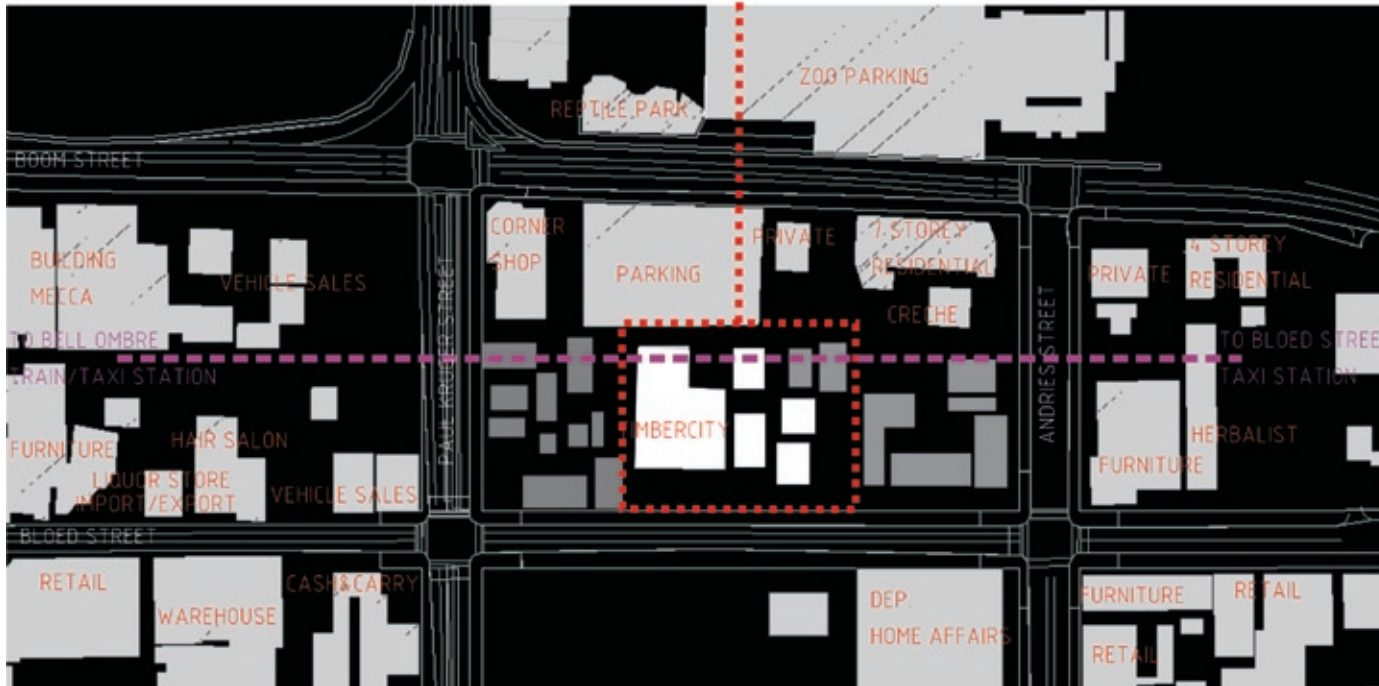


Fig 5.9: Photograph collage of activities in 1km radius

## Site Analysis



SITE



The entire city block bounded by Paul Kruger, Boom, Andries and Bloed Streets is in the process of being demolished. In February 2007 selected buildings were cleared and demolition commenced.

By September 2007 these buildings were demolished. Several of the remaining buildings are still occupied by commercial and private tenants. In addition, there are several buildings of heritage value (to be discussed later).

The demolished section of the city block is occupied by the temporary relocation of the Bloed Street Taxi Station (BSTS). This will continue until the completion of the Bloed Street Taxi Station currently under construction adjacent to Van Der Walt Street.

Fig 5.10: Formal activities

Demolition commences on site



Operational  
BSTS

Taxi station relocates to site



Construction  
BSTS

Open site for future development



Operational  
BSTS

Fig 5.11: Site February 2007

Fig 5.12: Site September 2007

Fig 5.13: Future





## Architecture

As for the entire precinct, the main building principle is economies of scale. The economic use of brick, concrete and steel is evident throughout. Most of the structures are derelict but in use. There are a few renovated buildings but with little architectural value.



Fig 5.14: Photographs of buildings within 500m radius of site

Advertising boards and screens dominate the built structures. Buildings without advertising screens are brightly painted to advertise the businesses or services within them. Several businesses spill out onto the side-walk during the day.



Fig 5.15: Advertising screens dominate built structure

Safety is a primary concern as most buildings have strenuous safety precautions, such as barbed wire, steel bars and electrical fencing. Access to buildings are restricted through fenced entrances or security gates. Most of the erven have precast concrete or steel palisade fences.



Fig 5.16: Safety precautions

## Site Analysis





## Heritage

Buildings with heritage value are neglected. Some are still in use as offices or day-care centres. The heritage structures are mostly single storey units constructed of masonry, mortar, concrete, timber and steel. The heritage buildings give a historical dimension to the urban fabric of the northern periphery.



Fig 5.17: Aerial photograph of heritage buildings

### Figure list:

- 1 Single storey late Edwardian
- 2 Single storey late Victorian
- 3 Corner cafe from Bazaar era
- 4 Single storey Victorian/Edwardian era
- 5 Single storey Victorian/Edwardian era
- 6 Two storey with sandstone engraving
- 7 Single storey Edwardian era
- 8 Single storey Edwardian era



1



2



3



4



5



6



7



8

Fig 5.18: Elevation photographs of heritage buildings



## Scale

The city scales down to the northern periphery of the Pretoria CBD. The general building height in the precinct is between one and three storeys. Photographs taken from the roof of Park College, on the corner of Struben and Paul Kruger Street illustrates that trees conceal the general built structures.

However, the Department of Home Affairs, on the corner of Bloed and Andries Street is a 37-storey glass tower. Due to the vast difference in scale between this building and the rest of the precinct, it acts as an orientation beacon and it is immediately identifiable.

The general building height on the allocated site is one storey. The only structure framing the site is the seven-storey residential apartment complex on the corner of Boom and Andries Streets. The apartment complex dominates the scale of the site.

Side-walks are generous at an average width of 5000mm. The fact that the built structure is predominantly lower than 2 storeys adds value to the spatial experience of the street. Side-walks are cast in shadow by the London Plane trees in Boom Street and the Jacaranda trees in Paul Kruger, Andries and Bloed Streets.

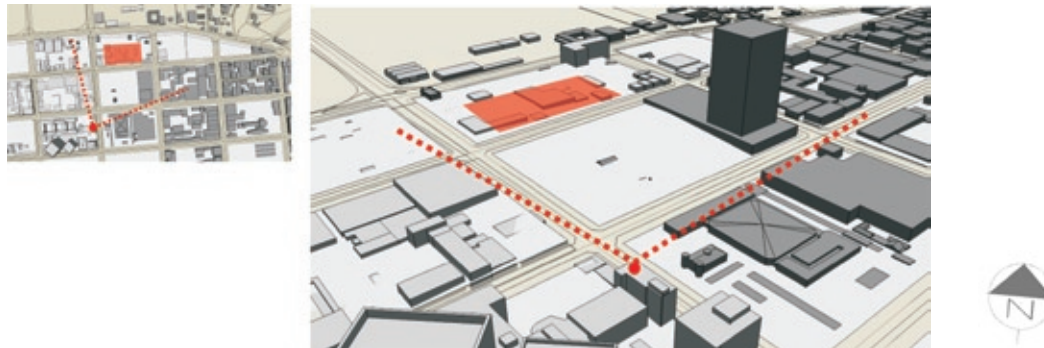
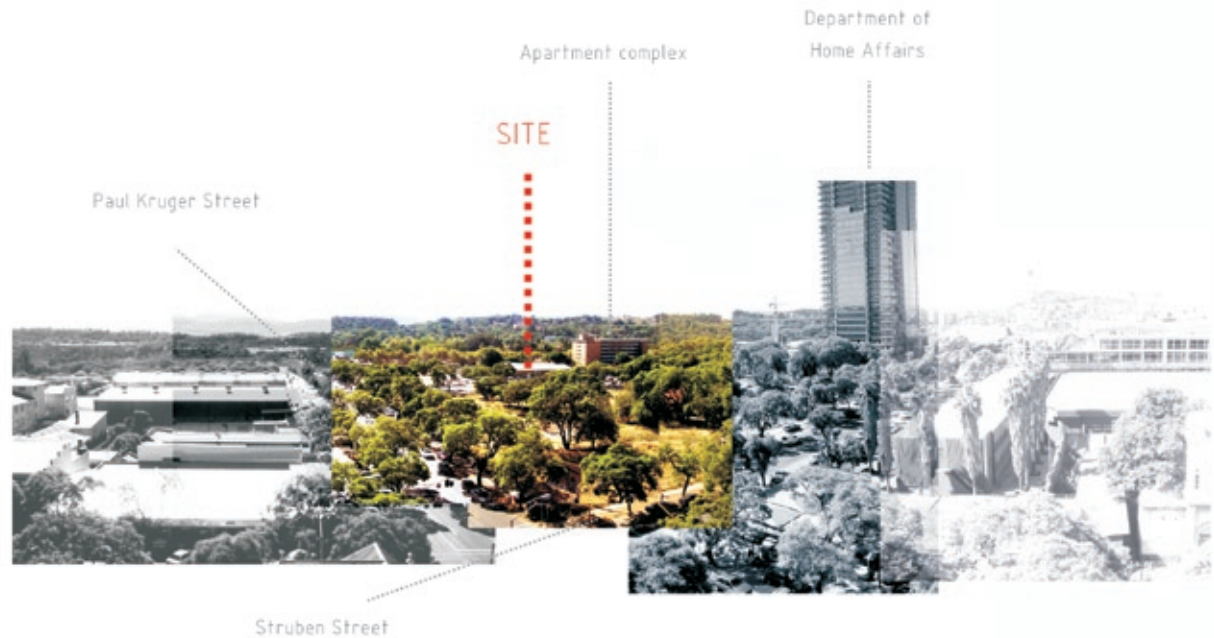


Fig 5.19: Photograph of site from Park College roof

## Site Analysis



Table 5.2: Summary of climate data for Pretoria

Month	Temperature (° C)				Precipitation		
	Highest Recorded	Average Daily Maximum	Average Daily Minimum	Lowest Recorded	Average Monthly (mm)	Average Number of days with >= 1mm	Highest 24 Hour Rainfall (mm)
January	36	29	18	8	136	14	160
February	36	28	17	11	75	11	95
March	35	27	16	6	82	10	84
April	33	24	12	3	51	7	72
May	29	22	8	-1	13	3	40
June	25	19	5	-6	7	1	32
July	26	20	5	-4	3	1	18
August	31	22	8	-1	6	2	15
September	34	26	12	2	22	3	43
October	36	27	14	4	71	9	108
November	36	27	16	7	98	12	67
December	35	28	17	7	110	15	50
Year	36	25	12	-6	674	87	160

## Climate

The Pretoria CBD has warm summer temperatures and relatively cold winter temperatures. Pretoria falls in the summer rainfall region, and is prone to late-afternoon thunderstorms and hail. Winds are calm in the CBD. The predominant wind direction is north-east in the morning and north-west in the afternoon.

The summer sun angle is 88° in altitude and the winter sun angle is 44° in altitude. (Schulze, 1986) Table 5.3 shows the sun angles at various times of the year, given that Pretoria is at a latitude of 26°.

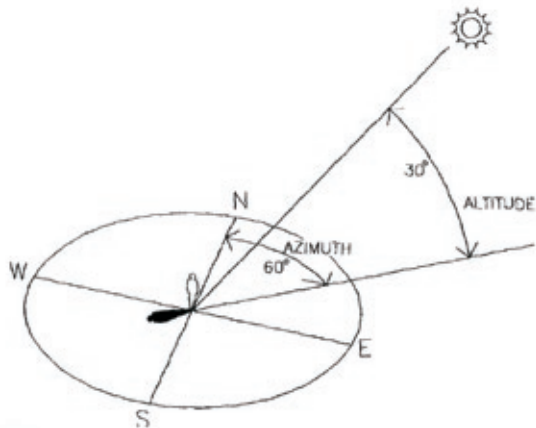


Fig 5.20: Diagram of sun angle

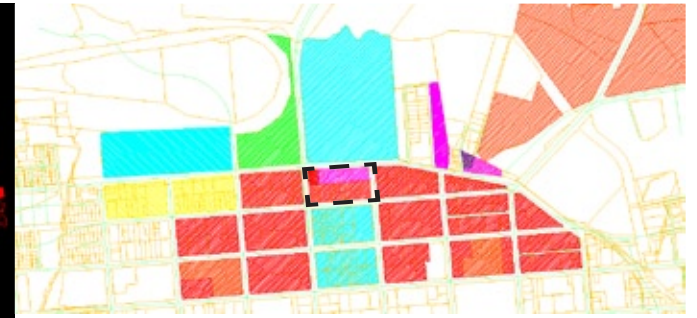
Table 5.3: Sun angles for Pretoria CBD

Solar Times	06h00	08h00	10h00	12h00	14h00	16h00	18h00
Clock Times	06h18	08h18	10h18	12h18	14h18	16h18	18h18
Azimuth - 21 Desember	112 east	101 east	91 east	0	91 west	101 west	112 west
Altitude - 21 Desember	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



## Legal

The city block is zoned for residential in the north and for general business in the centre and south of the block. The site is zoned as General Business. Legal coverage is 60% (zone 4), maximum height is 19m (zone 5), floor space ratio is 2.5 (zone 4) and the minimum sidewalk is 3.5m from the building line.



- Legend
- Residential
  - Commercial
  - Government
  - Industrial



Fig 5.21: General zoning in the precinct

## Physical

The average height of the site is 1306m above sea level. The site slope down to the north at an average angle of 1.75°. The south perimeter, Bloed Street, is elevated approximately 3800mm above the northern perimeter, Boom Street.

Boom Street is lined with London Plane trees and Paul, Kruger, Andries and Bloed Streets are lined with Jacaranda trees.

The site is predominantly covered with asphalt, concrete and paving. Very little natural vegetation exists on the site.

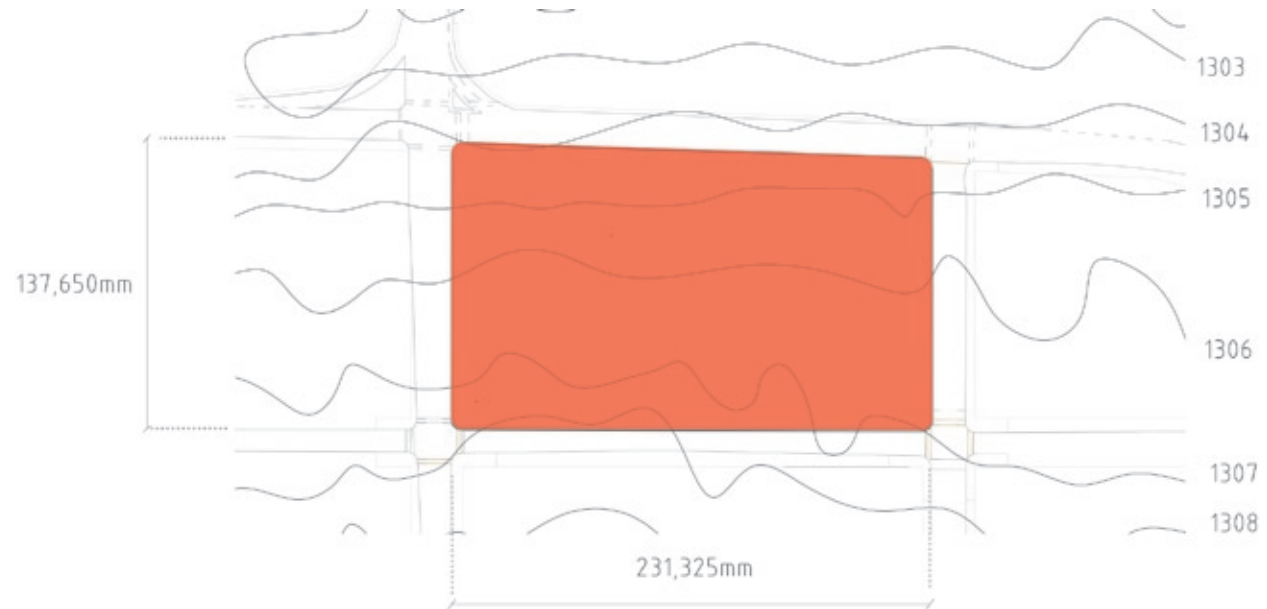


Fig 5.22: Physical properties of site

## Site Analysis



## SWOT analysis

### Strengths:

- Visible site on entry into the Pretoria CBD from north in Paul Kruger Street
- Link with city centre down Paul Kruger Street
- Adjacent to Bloed Street Taxi Station to the east
- Proximate to Belle Ombre Train and Taxi Station to the west
- Adjacent to Department of Home Affairs
- Adjacent to Zoological Gardens
- On-site 7-storey residential apartment complex
- Existing London Plane and Jacaranda trees on site perimeter
- Brown built site

### Weaknesses:

- Few night activities
- Limited residential units
- Limited buying power in precinct
- Derelict infrastructure in terms of roads and services

### Opportunities:

- Creating internal pedestrian link between Bloed Street and Belle Ombre transport interchanges
- Vacant land for market area
- Vacant land for urban park area
- Increasing street activity
- Integrating with Zoological Gardens
- Establishing 24hr-activities

### Threats:

- Safety and security in large open space
- Management of pollution



Fig 5.23: Opportunity for pedestrian link between transport interchanges

