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CHAPTER _____ **4**
Physical Site Analysis

CHAPTER 4: Physical site analysis

4.1 Introduction

In the previous Chapter Berea Park was selected as the most suitable site amongst the four potential sites as established using the Site Selection Criteria (Refer to Chapter 3, Table 4).

A descriptive and analytical research method (Refer to Chapter 1 section 1.7) will be used to perform an in-depth analysis of Berea Park. This includes gathering data, maps, photographs – such as different views and the current state of Berea Park (Refer to Fig. 43 and 44) and observing the current situation.



Fig. 43: Berea Park - view from Lilian Ngoyi Street (previously known as Van der Walt Street) (Author, 2012)

4.2 Site location

Berea Park is situated on the edge of Pretoria South CBD and Sunnyside; between Lilian Ngoyi Street (previously known as Van der Walt Street) (West) and Nelson Mandela Drive (East). The Apies River is adjacent to the site (parallel to Nelson Mandela Drive). (For a full description of the site's location refer to Chapter 1 section 1.8 and Fig. 8)



Fig. 44: Panorama view of Berea Park - Lilian Ngoyi Street (previously known as Van der Walt Street) (Author, 2012)

4.3 Historical background of Berea Park (Refer to Fig. 45)

Berea Park sports grounds originated as a cattle compound in 1882. It was the first sport grounds in Pretoria and hosted a cricket match against the English (Northern Cricket Club) in 1888.

Before SuperSport Park was built in 1986 to replace Berea Park, according to South Africa.info, cricket players who used to play at Church Square moved to Berea Park, where they couldn't disturb councilmen (WikiUP, 2010).

The Berea sports club was built during 1897. Mercedes Benz showcased the first automobile in South Africa to Paul Kruger (who was president at the time) on the Berea Park sports grounds.

In 1903 the Berea Club was sold to the Central South African Railways (CSAR) (later known as South African Transport Services SATS), after which the Club was used by the railway staff as one of the first sport facilities in Pretoria (WikiUP, 2012).



Fig. 45: Berea Park timeline (Aerial photos from Google Earth and modifications by Author, 2012)

The Berea Southern Clubhouse was completed in 1907 (Refer to Fig. 46 and 47). The Northern Club Hall, designed in Edwardian style, locally referred to as 'Neo-Cape Dutch' style (Pretoria Historical Dictionary, 2000:19) (Refer to Fig. 48) was added and the Berea Rugby Club opened during 1926 (WikiUP, 2012). The two buildings were connected by a bridge with timber frame windows (Refer to Fig. 49).

The Bowling greens clubhouse was built during 1955 and used by the members of the bowling club until 1965 (Naude, 2006:19).

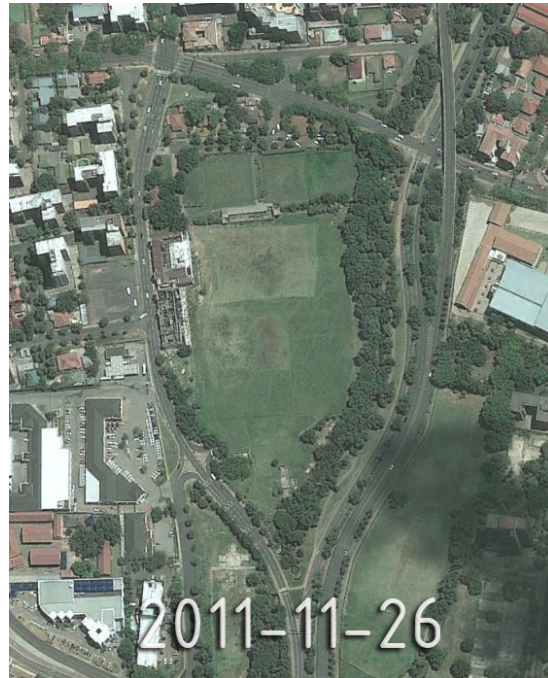
The clubhouse and club hall were used as administrative offices and conference facilities during the 1990s. The Clubhouse was occupied by Founders Primary and High School until the grounds burnt down in a fire in April 2010. The fire "caused considerable damage to the buildings." (WikiUP, 2010)



04 PHYSICAL SITE ANALYSIS

Today, Berea Park Sports Grounds are the property of the Department of Land Affairs. According to WikiUP (2010) the sport grounds as well as the Berea Southern Clubhouse and Northern Club Hall are protected by Section 34(i) of the National Heritage Resource Act because they are older than 60 years and therefore have high cultural heritage value.

Berea Park sports grounds was and still is considered an important landmark to the southern gateway of Pretoria but lost its identity and became only a memory in the minds of old Pretorians. According to Naude (2006:11) Berea Park “used to be a core of social activities and leisure time action over weekends. This role has now become redundant.”



The implementation of the design proposal of a waste park can also contribute to the regeneration of Berea Park as a core of social activities, restoring the sports grounds as an important and noticeable landmark in Pretoria. Acknowledging the historical significance of the site and reminding Pretorians thereof.



Fig. 46: Club House Front (Le Roux, 1992:155)



Fig. 47: Club House Back (Le Roux, 1992:156)



Fig. 48: Club Hall Front (Le Roux, 1992:156)



Fig. 49: Bridge connecting the Club House and Club Hall (Le Roux, 1992:156)

4.4 Current conditions of Berea Park

4.4.1 Transportation

An adequate number of transportation routes exist around Berea Park with various bus stops and train station such as Mears and Pretoria station available (Refer to Fig. 50).

None of the bus stops or train stations are in close proximity of the site and therefore the necessity for a bus and taxi drop-off on the northern side of the site for example to accommodate people travelling to and from the Gautrain Pretoria Station.

There is an existing informal taxi rank in Rhodes Avenue which can be modified into a formalised bus and taxi drop-off system.

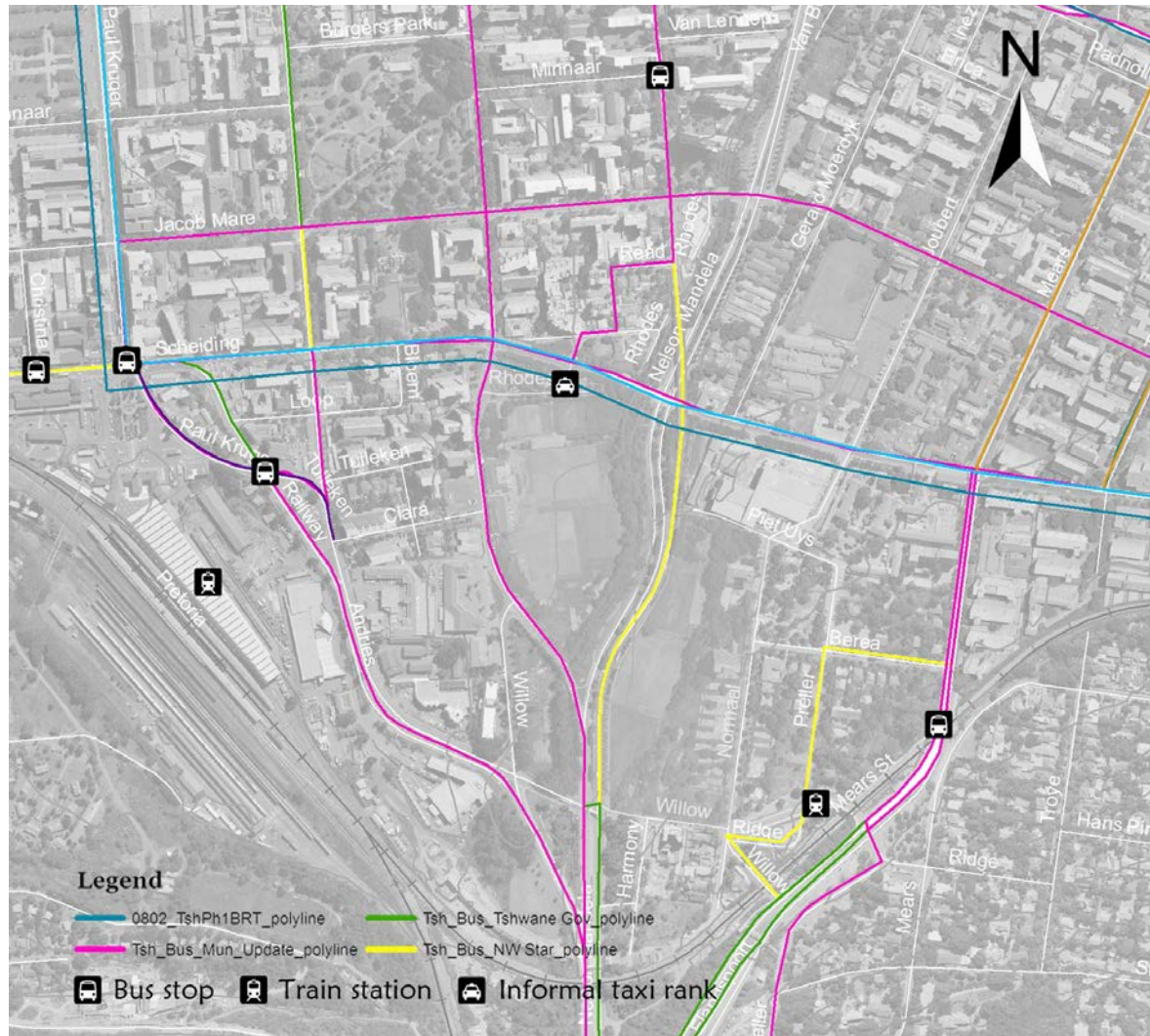













Fig. 50: Berea Park Transportation (Map from ArcGIS and modifications by Author, 2012)

4.4.2 Land use

The most prominent land use around Berea Park is residential, mainly on the northern and western sides of the site, with a few commercial activities and businesses to the south-western side (Refer to Fig. 51).

A significant amount of land is used for educational purposes east of the site, such as UNISA Sunnyside campus and Oost-Eind Primary school. This provides an enormous opportunity for students to attend educational tours at Berea Waste Park.

-  Petrol station
-  Hotels
-  Berea SDA Church
-  Melrose House Museum
-  Breytenbach Theatre
-  Mens Clinic Int.
-  Kia-Ora Backpackers
-  KFC
-  Residential
-  Educational
-  Commercial and Business

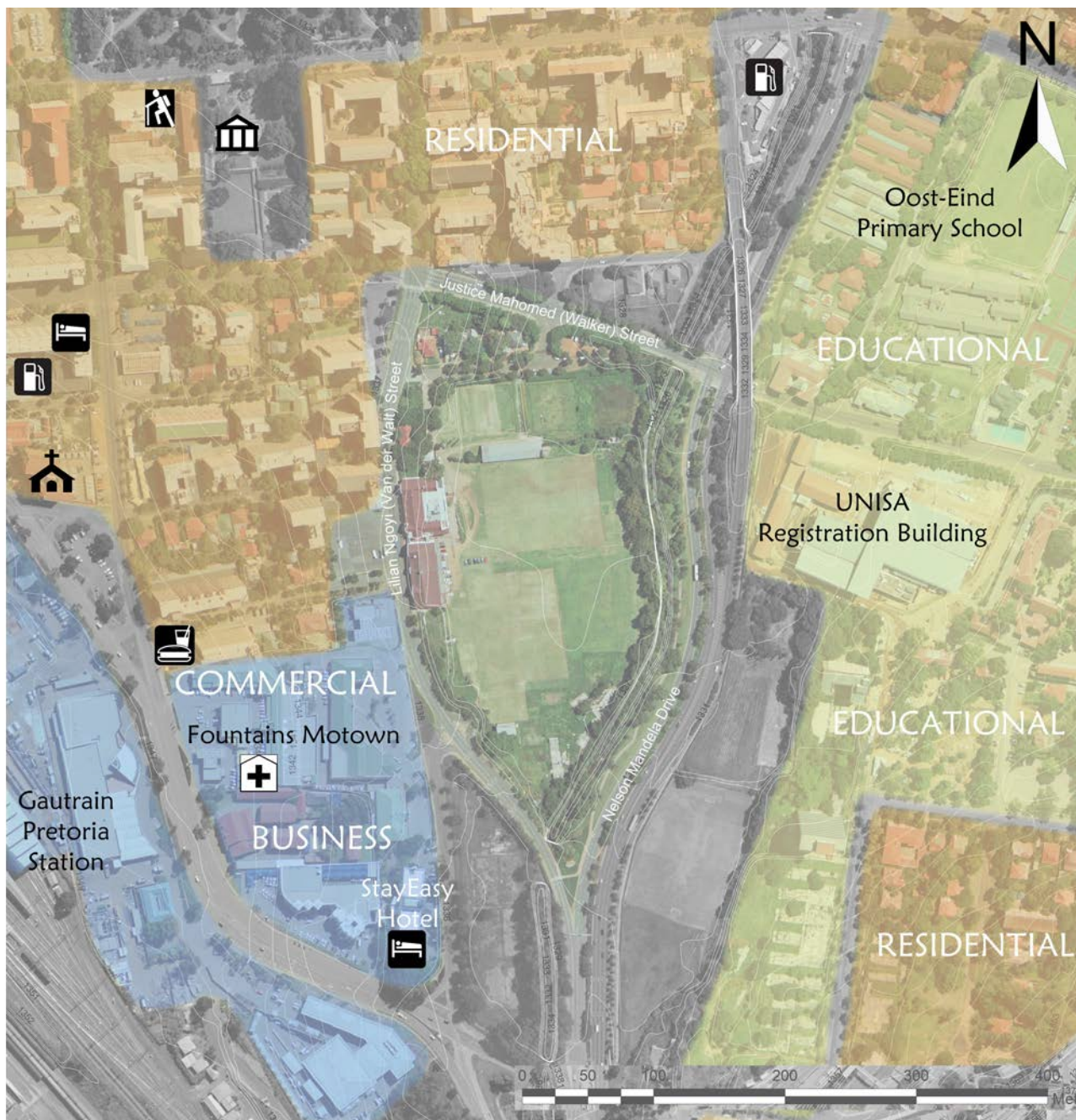


Fig. 51: Existing Land Use (Map from ArcGIS and modifications by Author, 2012)



4.4.3 Surrounding buildings

To the north and west of Berea Park residential buildings, mostly flats, surround the site (Refer to Fig. 51 and 52). Some of the buildings near the site are Oost-Eind Primary School in the north-east, UNISA Registration Building in the east, StayEasy Hotel in the south (Refer to Fig. 53), the Gautrain Pretoria Station in the south-west and Fountains Motown shopping centre in the West (Refer to Fig. 54).

Fig. 52: Residential Buildings (Author, 2012)



Fig. 53: StayEasy Hotel (Author, 2012)



Fig. 54: Fountains Motown Shopping Centre (Author, 2012)

4.4.4 Movement and access

It is important to know how the site is currently being accessed and used. Pedestrian movement around the site and access to the site were mapped as illustrated in Fig. 55.

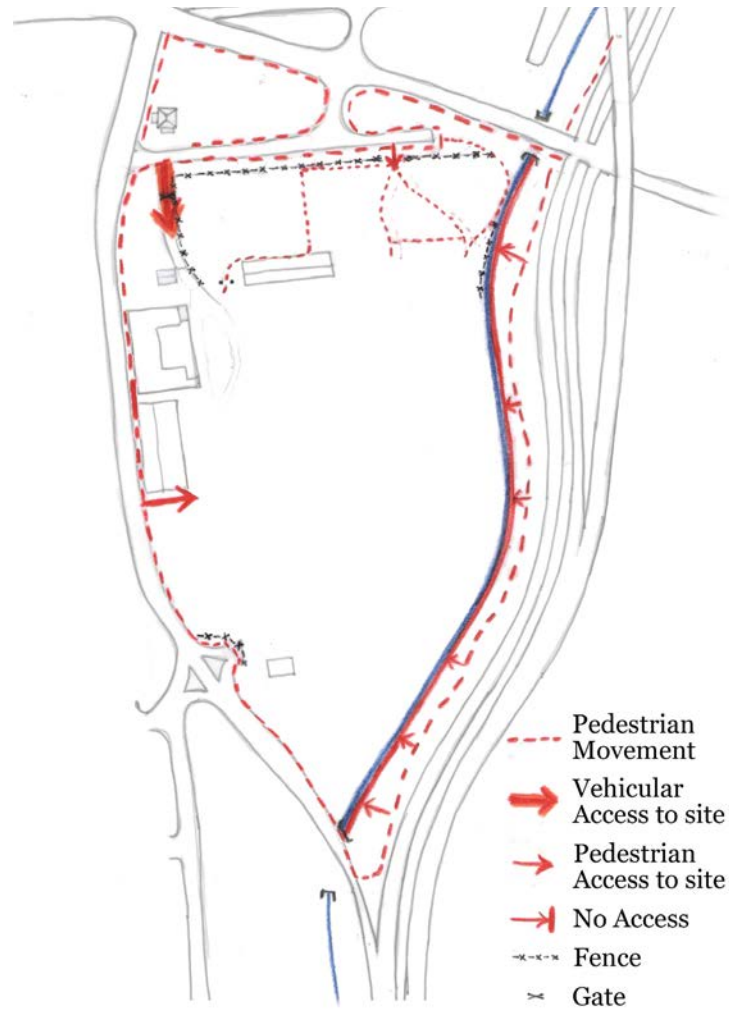


Fig. 55: Movement and Access (Author, 2012)

Main access to the site is from the northern side with no access to the site from the eastern side (along the Apies River, refer to Fig. 56), there is also limited access from the western side due to the closed off buildings.



Fig. 56: No Access along Apies River (Author, 2012)

4.4.5 Existing buildings, structures and activities

The two existing buildings as described in section 4.3 are older than 60 years and of high historical significance. According to Naude (2006:11) the

buildings need to be recorded, protected and re-used. Another building on site is a single storey building called the Bowling Green Clubhouse (Naude, 2006:19-20) (Refer to Fig. 60). The building isn't older than 60 years, therefore not of high historical significance and can be demolished.



Fig. 57 & 58: Existing Buildings (Author, 2012)



Fig. 59: Existing Buildings (Author, 2012)



Fig. 60: Bowling Green Clubhouse (Author, 2012)



Fig. 61: Foundations of Demolished Buildings (Author, 2012)

The existing buildings (Refer to Fig. 57, 58, 59 and 60), structures and activities were mapped (Refer to Fig. 62). The buildings are not currently in use due to the damage caused by the fire. Foundations of the demolished buildings and pavilions are still visible on site as well as the building rubble thereof (Refer to Fig. 62, 63 and 64).

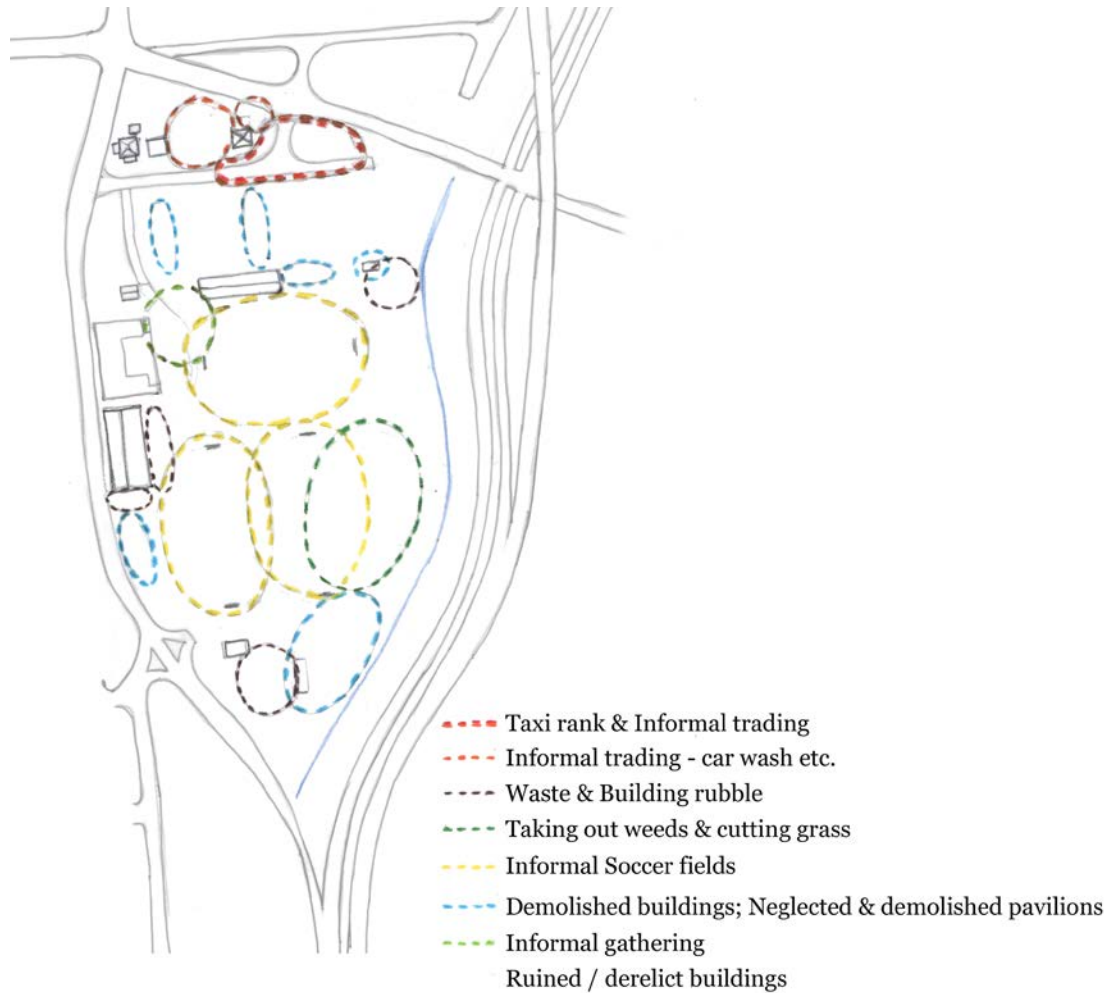


Fig. 62: Activities on Site (Author, 2012)



Fig. 63 & 64: Foundations of Demolished Buildings (Author, 2012)

An informal taxi rank has formed to the immediate north of the site that includes informal trading and businesses (Refer to Fig. 65 and 66).

Even though there is very little activity on the site, informal soccer fields are maintained on a regular basis, which indicates that games take place there.



Fig. 65: Informal Trading (Author, 2012)



Fig. 66: Informal Taxi Rank (Author, 2012)

Existing servitudes were also mapped (Refer to Fig. 67). The servitude along the Apies River is 16.55m wide according to information gathered from ESRI ArcGIS software (2010). All the existing servitudes have the right of access for municipal purposes.



Fig. 67: Services (Author, 2012)

4.4.6 Vegetation

A limited amount of vegetation exists on site. The original vegetation of the site according to AGIS Atlas was Marikana Thornveld but the site is environmentally disturbed and is now described as disturbed urban temperate Bushveld.



Fig. 68: Vegetation (Author, 2012)

Planted vegetation does occur on site with the most dominant being Kikuyu grass. *Acacia karroo* and *Jacaranda mimosifolia* are present next to Lilian Ngoyi Street (previously known as Van der Walt Street). Tall trees such as *Celtis Africana* and Oak trees (*Quercus robur* – English Oak) occur along the western banks of the Apies River (Refer to Fig. 68).

The possibility to enhance the environmental condition of Berea Park exists by vegetating the river banks of the Apies River and planting indigenous trees on site.

4.4.7 Geology

“It would seem that this area was either built up and the area was filled with soil from another area or that the area was flattened to level it for the sports fields that exist there today” (Naude, 2006:6).

The following information regarding the geology of the site was gathered from the AGIS Atlas (2006):

Sedimentary rock: Shale

Soil formation: Hu 34% Av 22%

Soil pattern description: PT1 - Red, yellow and/or greyish soils with low to medium base status

Water-holding capacity: 41 – 60mm

Land capability: Moderate potential arable land

The possibility to enhance the environmental condition of Berea Park exists by vegetating the river banks of the Apies River and planting indigenous trees on site.

4.4.8 Climate

Pretoria’s average annual rainfall is between 650 - 700mm. The average rainfall for each month is illustrated in Table 5.

The maximum and minimum temperatures in Pretoria for each month have also been included (Refer to Table 5).

On a later stage the data can be used to formulate a water budget in terms of the amount of water that can be harvested and the water requirements of the waste park (Refer to Chapter 8, section 8.1.3.2).

Berea Park’s climatic data is consolidated in Fig. 69.

Month	Precipitation (mm)			Temperature (°C)			
	Average Rainfall	Number of Rain Days	Highest 24hr Rainfall	Average Daily Maximum Temperature	Average Daily Minimum Temperature	Highest Temperature	Lowest Recorded Temperature
January	136	14	160	29	18	36	8
February	75	11	95	28	17	36	11
March	82	10	84	27	16	35	6
April	51	7	72	24	12	33	3
May	13	3	40	22	8	29	-1
June	7	1	32	19	5	25	-6
July	3	1	18	20	5	26	-4
August	6	2	15	22	8	31	-1
September	22	3	43	26	12	34	2
October	71	9	108	27	14	36	4
November	98	12	67	27	16	36	7
December	110	15	50	28	17	35	7
Average rainfall per year	674	87	160	25	12	36	-6
per week	12.96						

Table 5: Pretoria’s Annual Rainfall and Average Temperatures, 1961 - 1990 (Weather SA, 2003)

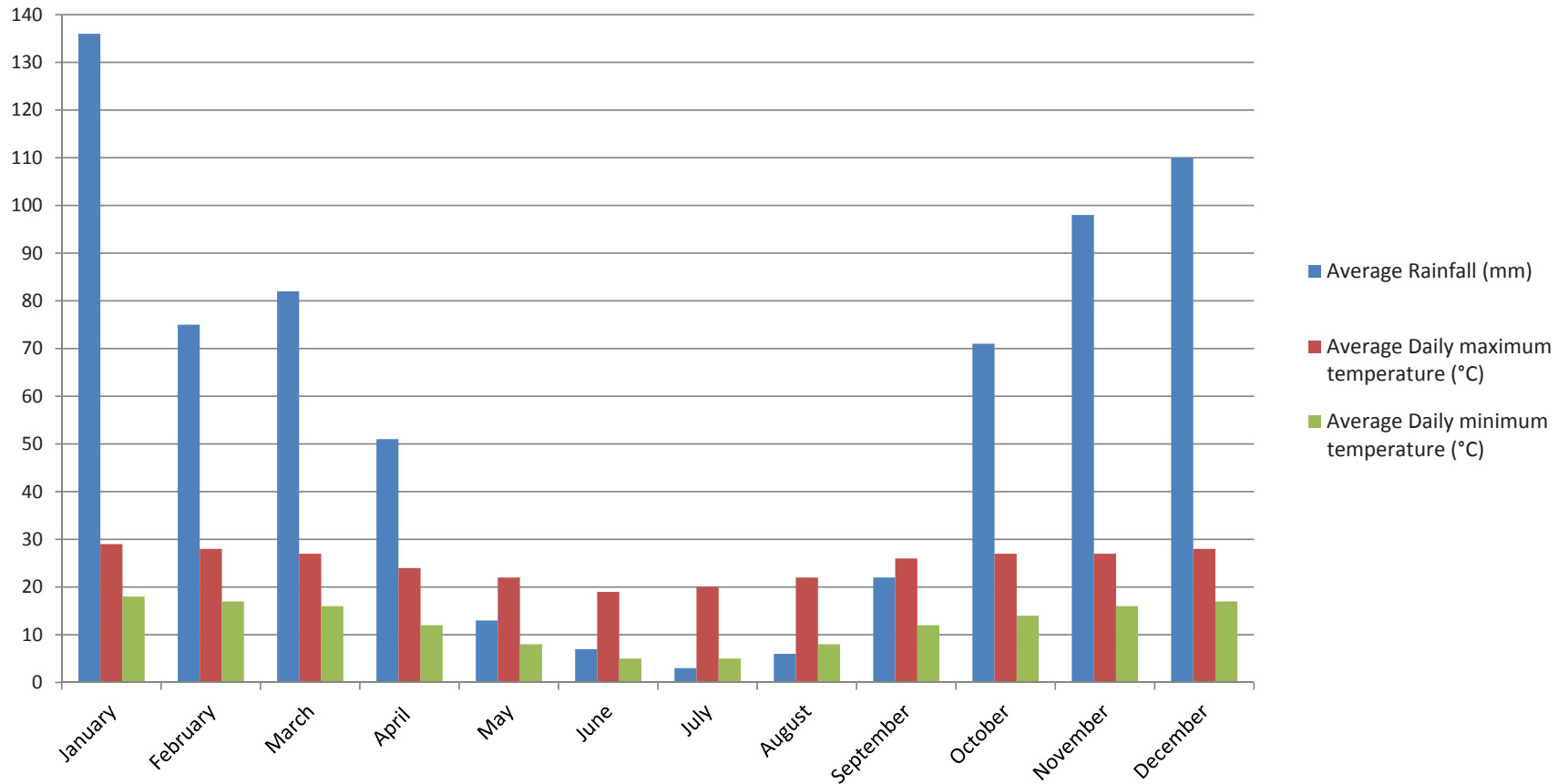


Fig. 69: Consolidated Climatic Data of Berea Park (Weather SA, 2003)

4.5 SWOT analysis

After analysing the physical site, mapping the existing land use, surrounding buildings, transportation and all the existing activities, the findings on Berea Park’s current condition and physical characteristics were synthesised by means of a SWOT analysis after which the site could be spatially explored, nodes and connections to the existing environment proposed, a concept developed and the design development started (as per Chapter 6).

The SWOT analysis is used to determine the site’s strengths and weaknesses as well as the opportunities and threats the site entails.

4.6 Consolidated Analysis

By executing the SWOT analysis (Refer to Table 6) it was found that numerous opportunities exist to revitalise and “plug” Berea Park into the surrounding urban context such as the regeneration of Berea Park as the core of social activities, where people from different parts of the city can come together and socialize – a place where communities come together; creating awareness of the site’s historical significance and restoring the derelict buildings.

SWOT Analysis				
	Strengths	Weaknesses	Opportunities	Threats
1	Location - Gateway to Pretoria	Lost identity	Regenerate Berea Park as a core of social activities	
2	Historical value - site and building older than 60 years	Derelict buildings	Create awareness of historical significance	
3			Restoration of derelict buildings and give new and applicable functions	
4	Close to natural water source = the Apies River	No activities along the Apies River - unsafe	Activating the Edge of the Apies River to ensure maximum security for pedestrians	Security
5		Site is environmentally disturbed	Enhance environmental status of Berea Park	
6	Land capability: Moderate potential arable land		Urban agriculture	
7		Not in the proximity of existing garden refuse sites	Develop a waste park - relieve pressure from surrounding garden refuse sites	
8		Site not visible from the road - awareness	Enhance visual attraction and visibility from the streets	
9	Easily accessible to public	No defined entrance to site	Provide more than one well-defined entrance	
10	Adjacent to densely populated residential communities (Sunnyside and Pretoria South CBD); Residents relatively young	Residents have low average household income; high unemployment rate	Job Creation - collection and sorting of waste	
11	Close to public transport routes	No bus stop in close proximity (within 200m)	Existing informal taxi rank in Rhodes avenue can be modified into a formalised bus and taxi drop-off system	
12	Close to UNISA Sunnyside Campus and Oost-Eind Primary school		Educate students (visitors) about reducing and reusing waste (recycling)	

Table 6: SWOT Analysis of Berea Park (Author, 2012)

Another opportunity is to allow visitors and people passing by to move along the Apies River in a secure environment by providing a well-lit walkway all along the Apies River.

There is also an opportunity to enhance the environmental condition of the site and introduce urban agriculture; to create jobs and to educate visitors about the story of waste.

All the maps of the current conditions of Berea Park were layered on top of each other to condense the findings into a consolidated analysis (Refer to Fig. 70).



Fig. 70: Consolidated Analysis (Author, 2012)

4.7 Current future plans for Berea Park

Several frameworks have been proposed for Berea Park for instance the Department of Land Affairs (landowner) is planning to develop the site into housing, consisting mainly out of a hotel and flats (Refer to Fig. 71).

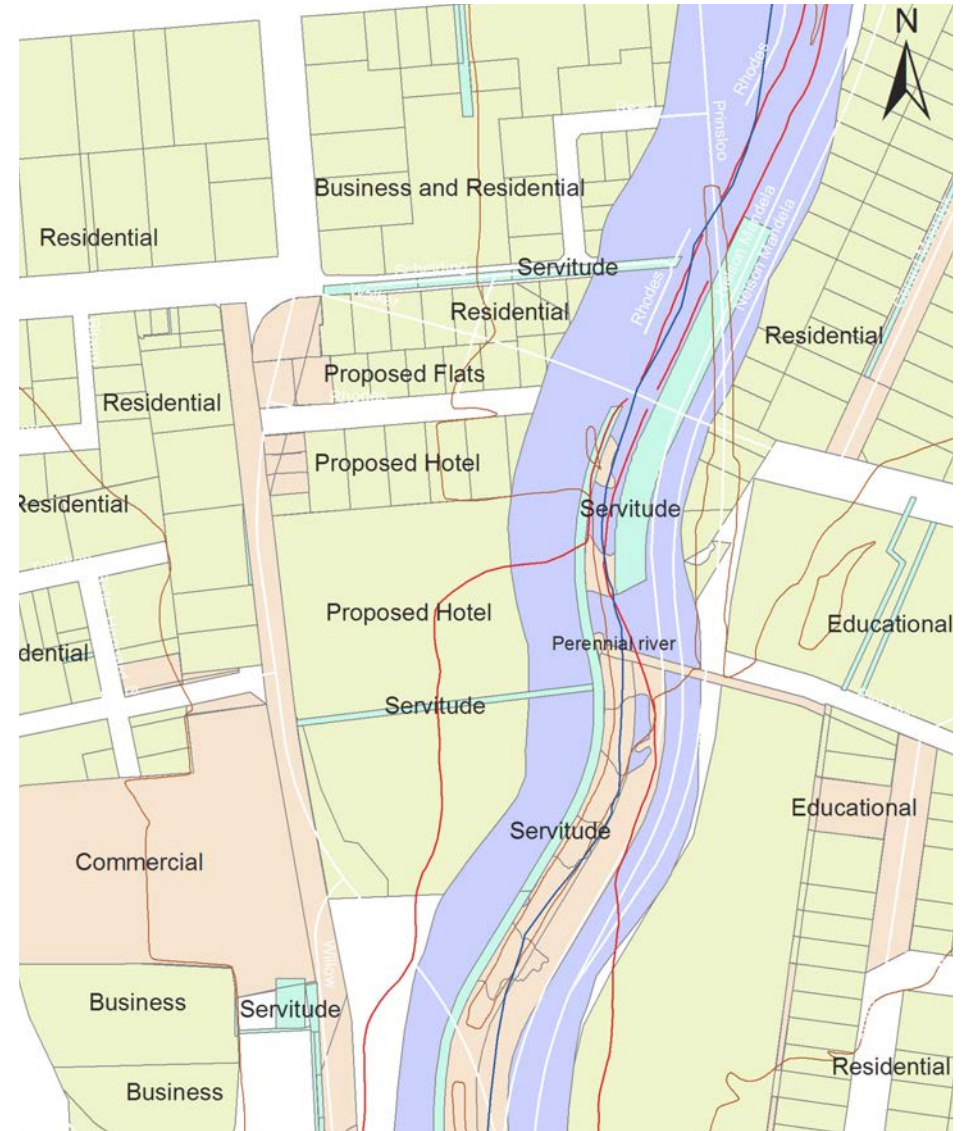


Fig. 71: Department of Land Affairs Framework for Berea Park (ArcGIS, 2012)

Capitol Consortium proposed during 1999 in their Pretoria Inner City integrated spatial development framework that the valuable open space of Berea Park should be preserved and further developed as open space (Capitol Consortium, 1999:24).

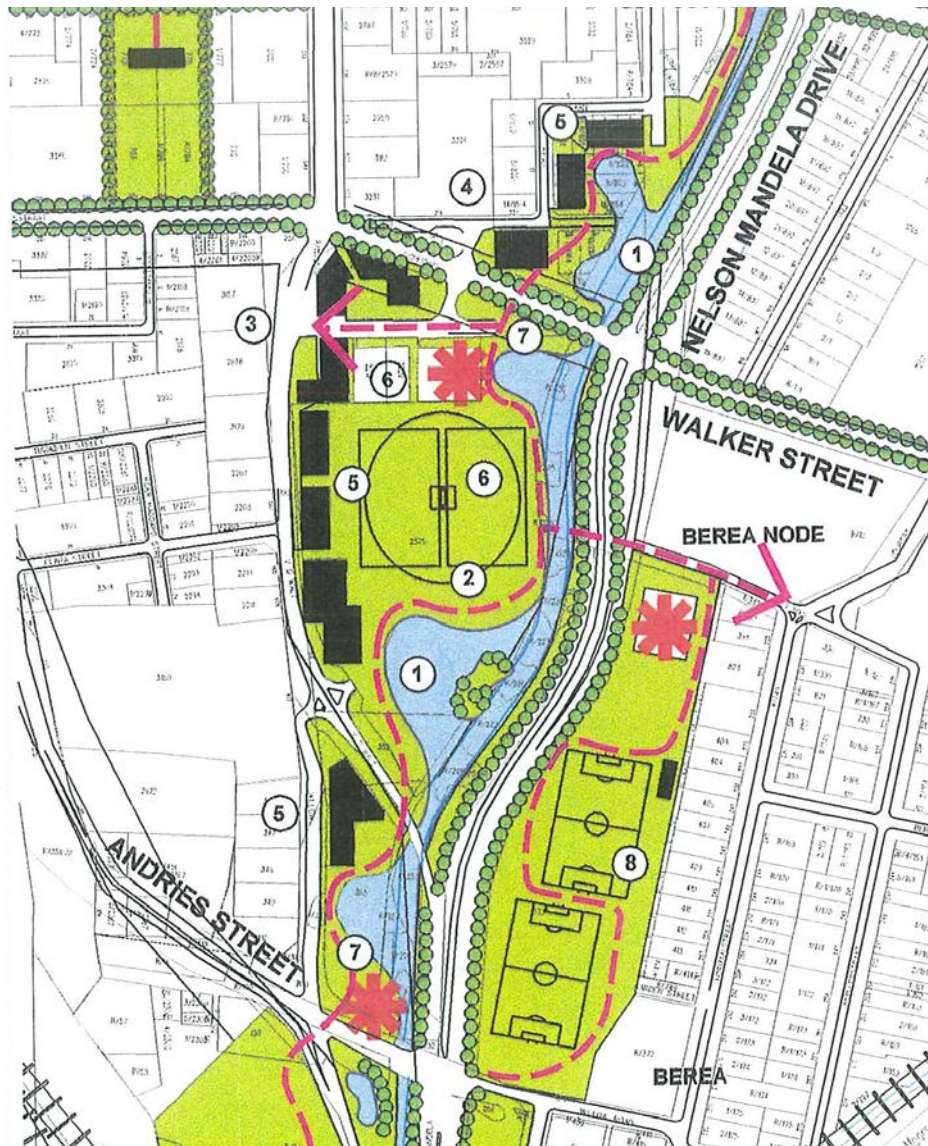


Fig. 72: Pretoria Inner City ISDF for Berea Park (Capitol Consortium, 1999)

Some of the proposed development opportunities (Refer to Fig. 72) were to widen the Apies River and introduce a series of fountains; a circulation route penetrating the site; extending the surrounding urban grid; new building fabric on the edge of the open space; freely and publicly accessible open space activities such as informal play fields and children play environments need to be developed; Fauna and Flora display gardens along the Apies River activity spine. Lastly Capitol also proposed informal play fields and children play areas on the area east of Mandela Drive (UNISA Sunnyside Campus) (Capitol Consortium, 1999:24-25).

In another framework from Rekopane Consortium designed by Grosskopff, Lombart, Huyberechts & Associates Architects in 2009 it was proposed that historical elements of the site such as the granite kerbs, historic alignment of the walkways, historic fence etc. be retained as far as possible. This framework proposes two new buildings, an outdoor amphitheatre, parking area, riverside walkway and garden.

According to the author the most suitable proposal of the three mentioned is the proposal from Capitol Consortium to embrace Berea Park as an open space and further celebrate and develop Berea Park as open space. Many of the suggestions made in the proposal match the activities and ideas proposed by the author (Refer to Chapter 6).

Developing valuable open space into buildings and parking lots, as suggested by the other two proposals, was not found to be agreeable.

Safe and public accessible parks are limited in Pretoria and therefore another reason why Berea Park needs to be conserved and protected.

4.8 Conclusion

The physical factors mentioned in Chapter 3, section 3.6, confirm that Berea Park is the most appropriate site for the proposed program – developing a waste park.

In short, the current condition of Berea Park can be described as quiet and neglected with little activity on site. Two of the buildings are of historical importance but stand unutilised. The soccer fields are maintained for informal soccer games. There is no diversity of vegetation - there are only trees along the Apies River. The soil is suitable for urban agriculture.

The proposed future plans for Berea Park include developing the valuable open space into housing or buildings with a parking area. Another plan, resembling the author's idea, is to preserve and further develop Berea Park as open space.

Berea Park is an important landmark to the southern gateway of Pretoria, because it has the potential to contribute to the image of the city, making the park's location ideal. The site is a valuable, ecologically viable open space because it has the potential to be developed into something much greater than proposed in other frameworks – not only respecting what the site once meant to the community, but also giving the site new meaning by designing a biodiverse 'hybrid' that considers both the history and future plans of the site.

Not only will the waste park uplift the community by enhancing the quality of life, providing job opportunities and education, it will also influence the residence of Pretoria CBD and Sunnyside to be more environmentally conscious.

The program for Berea Park and the reasons for the different activities proposed will be discussed in Chapter 6.

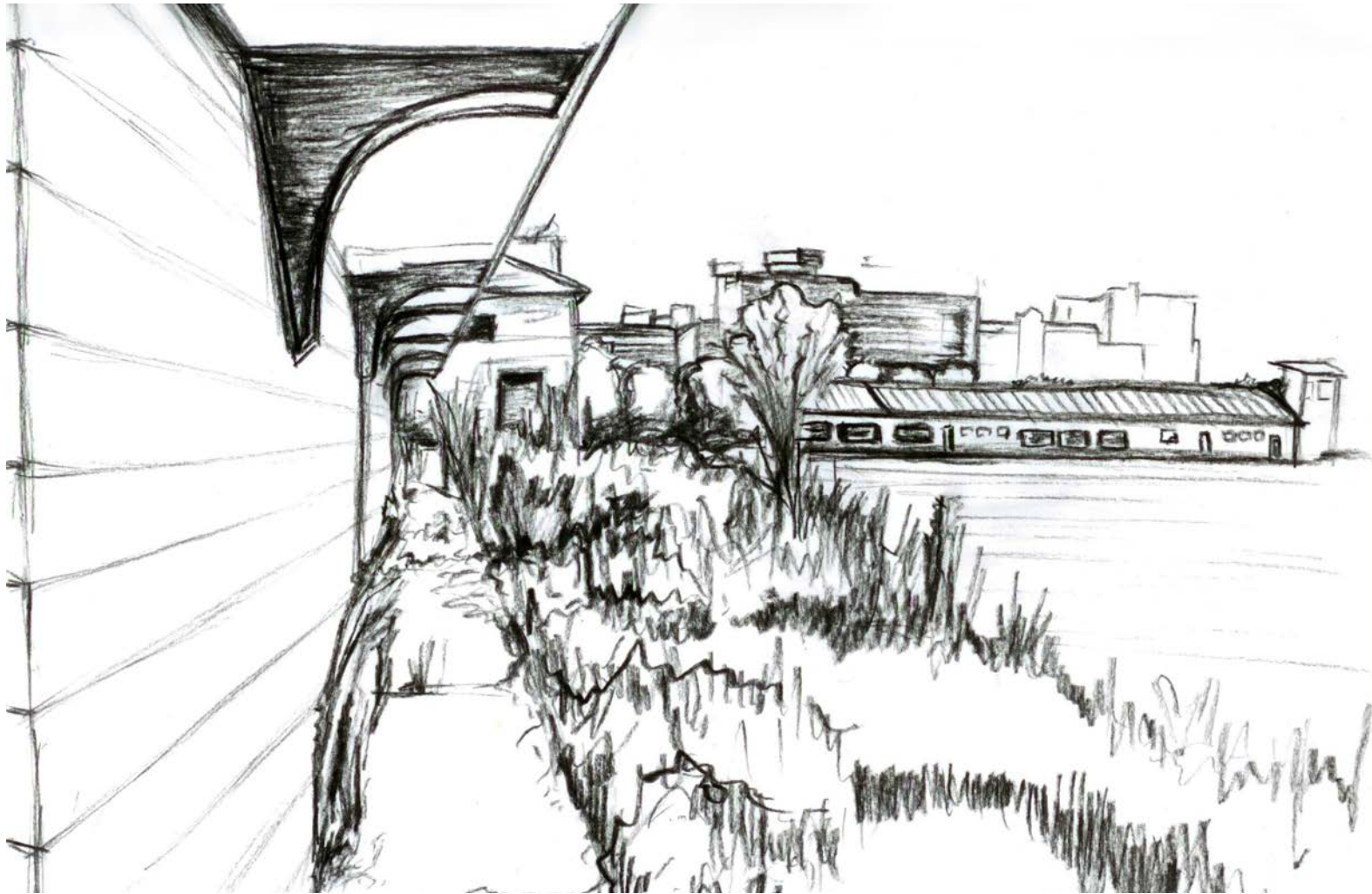


Fig. 73: Sketch of Site - from the Southern building looking in Northern direction (Author, 2012)