

Appendix A

Hove's Drift

When Pretoria was established, the land that the chosen site sits on was a property called Prinshof, named after Joggem 'Tweeduum' Prinsloo and in the early 20th century the area served as the Prinshof Experimental Station where the cultivation of different types of grass species took place. Property on the west bank was owned by Theodore Hove (1834-1906)(VD Vaal, 1999). A linocut work by Hendrik Pierneef called Uniegebou Vanaf Prinshof, Pretoria, show what the area looked like in 1925 (Fig.2.46).

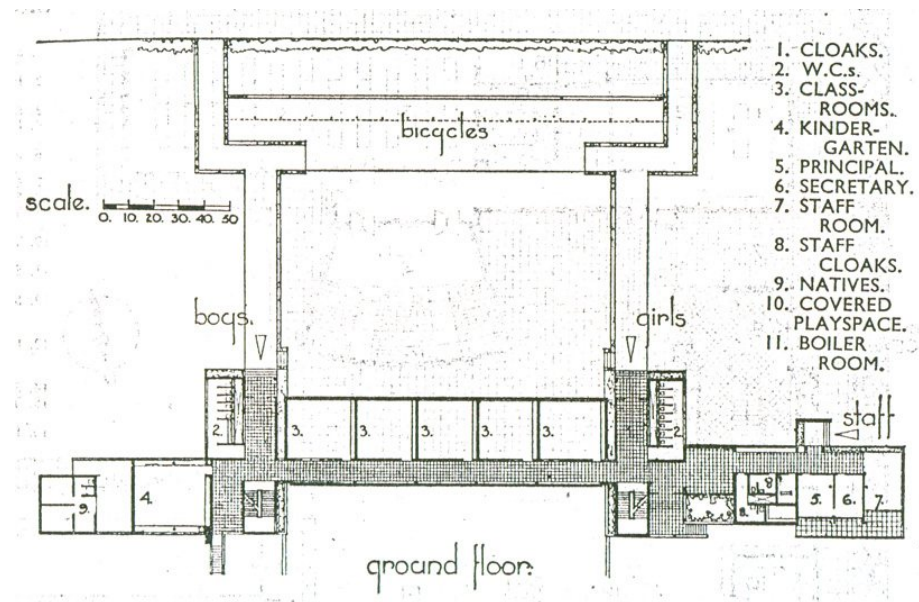
Hove's drift provided access across the Apies River from central Pretoria to the north and in 1932 a bridge was built

here by Bain & Proudfoot. In 1935, Dr Savage street, was built across the bridge. The road was named after Dr SR Savage who was Mayor of Pretoria in 1907-1908 (VD Vaal, 1999).

Prinshof School

In 1943 the School at Prinshof was built for the Transvaal Provincial Administration. It was designed by Basil South in association with Rees Poole Architects and was said to be a bold example of Modernism (Richards, 1944, pg113).

From the end of 1991, the buildings on the campus had all been abandoned and had been allocated to house 700 exiled children of the African National Congress from Tanzania. During this period of political unrest in South Africa, there had been declarations by faceless bombers of a

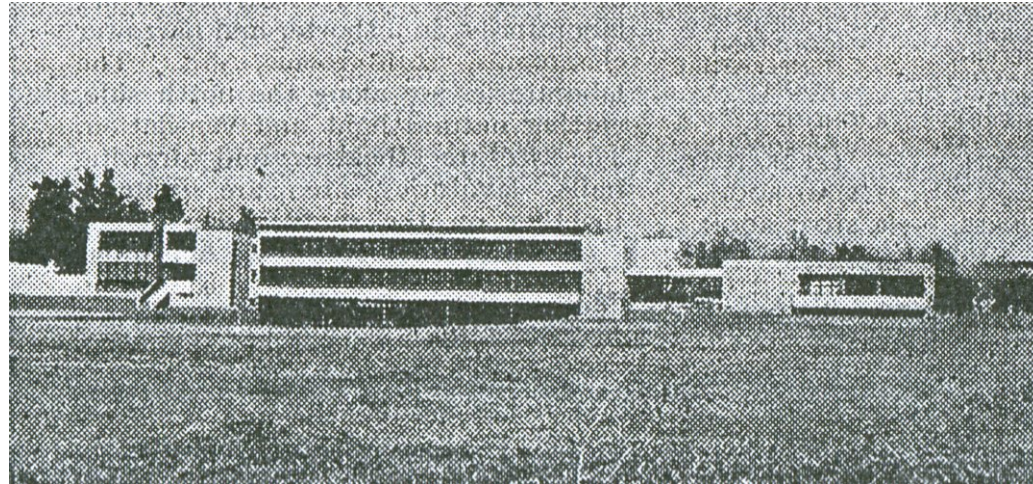


A.01 Ground Floor plan of the original building (Richards, 1944, pg 113)

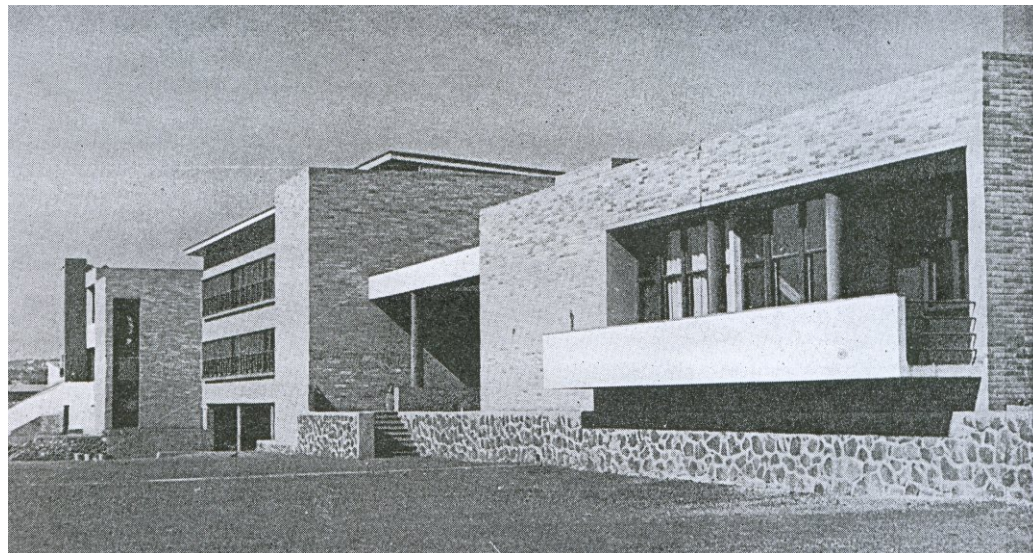
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'scorched earth' policy and became quite apparent when on 15 July 1991 at 1:50am, a bomb exploded from inside a first floor classroom of the main school building partially destroying it. Blame was placed on the Boere-Vryheidsbeweging although they denied having anything to do with the bombing (Dunn, 1991, pg1).

One week later on 22 July 1991 at 1:24am a second bomb exploded on the campus, this time on the boundary of Dr Savage Street leaving a 5m hole in the concrete perimeter wall. The leader of the Orde-Boervolk, although denying involvement, stated that all 'white' schools standing empty



A.02 North elevation of the original building (Richards, 1944, pg 113)



A.03 North west elevation of the original building (Richards, 1944, pg 113)

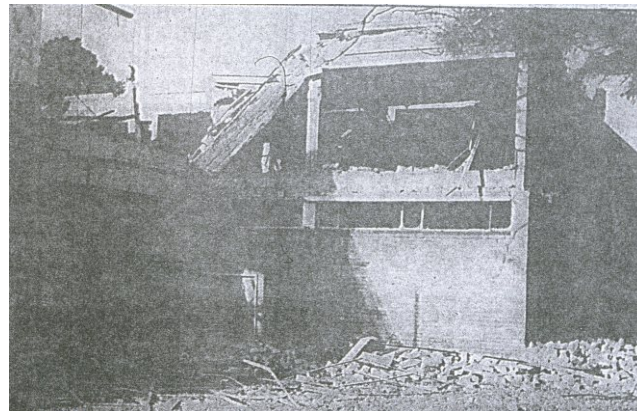
should be destroyed or given back to the white communities (Brand, 1991, pg1). Several right wing groups claimed responsibility for the bombings, however on 11 June 1998 two members of the Afrikaner-Weerstandsbeweging; Andries Stefanus Kriel and Petrus Jakobus Judeel, were granted amnesty by the Truth Commission for the bombing of the Hillview High School. They were also involved in the bombing of the Cosatu House in 1991 and the Verwoerdburg and Krugersdorp post offices in 1992 (www.truth.org.za).

Due to the unrest the exiles were not housed on the Hillview campus, which was given to the Pretoria Technikon in 1992 and now facilitates the Arts faculty and women's dormitory.

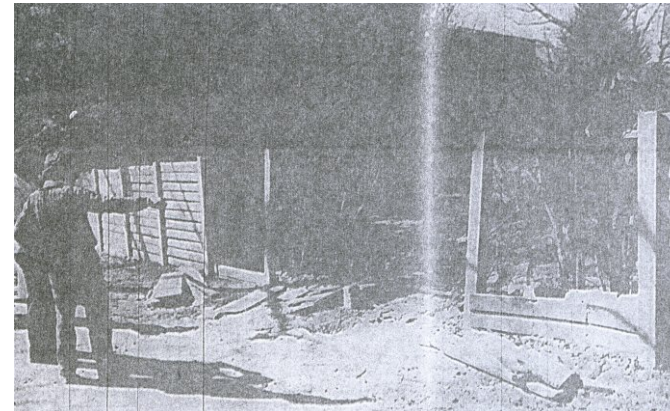
The partly destroyed buildings have been incorporated into the newer buildings but unfortunately the original parts are completely unrecognisable and hidden.

The remaining building is not protected for its historical significance, but because of its architectural merit and history, it needs to be conserved. Although the building is being used and does not appear to be under threat from demolition, the additions and colour schemes remove the original character of the building, resulting in the loss of its cultural significance (Burra, 1998, chapt2.2). These can and should be removed since they do not contribute to the cultural significance of the building (Burra, 1998, chapt15.1).

A.04 Damage to the main school building from the first bomb (Wolhuter, 1991, pg1)



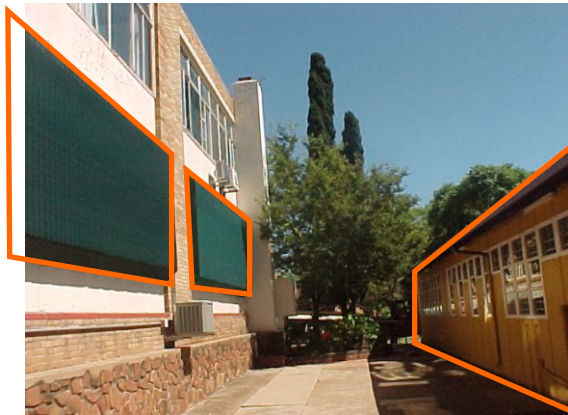
A.05 Damage from the second bomb along Du-Toit street (Pitso, 1991, pg1)



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A.06 South elevation of the original building from the entrance to the campus. To a certain extent, the landscaping celebrates the building by framing it, however overgrowth should not hide the building any further. The small prefabricated security hut has no architectural merit and does not respect the *place* behind (Burra, 1998, chapt3.1).



A.07 North elevation. When change is being considered, a range of options should be explored to seek the option which minimises the reduction of cultural significance (Burra, 1998, chapt15.1). Sun shading was obviously a necessity, however the materials used (shade netting) are very inappropriate and reduce the merit of the building. Fortunately their nature makes them very temporary.



A.08 North elevation, showing classrooms and cafeteria. Permanent fixtures that change the character of the building are the strip windows on the ground floor and the cafeteria additions. These should have been designed in such a manner that they stood apart from the building, thus becoming easily identifiable (Burra, 1998, chapt15.1).

Appendix B

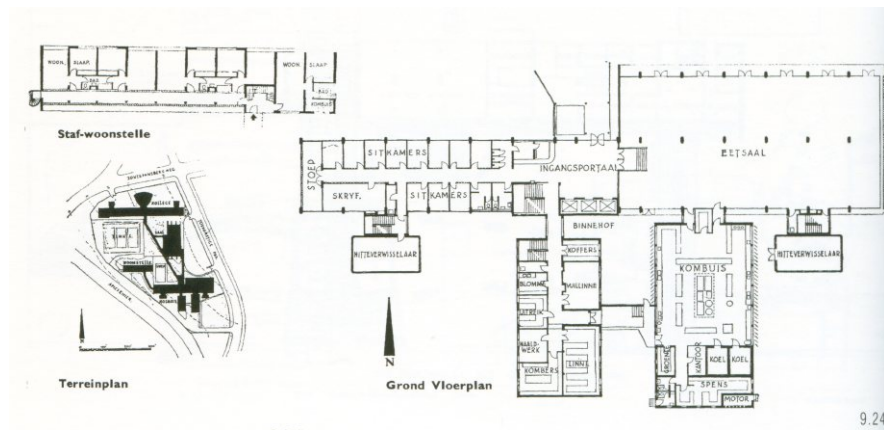
College of nursing:

On the east bank of the Apies river, on Dr Savage street sits the Pretoria nurses college. This series of buildings was designed by Joubert, Howie, Owens & Van Niekerk in 1965 and is exemplary of Brazilian Modernism with its open staircase, brise soleil, pilotis and the organic form of the

lecture and assembly halls. The strong modernists influence in both the Prinshof School and the College of Nursing was probably due to the fact they were commissioned for the Transvaal Provincial Administration, which strongly promoted Modernist architecture at that time (Gerneke, 1998, pg228).

The site plan (Fig.2.56) indicates the original design intended for paths leading to social and recreational spaces along

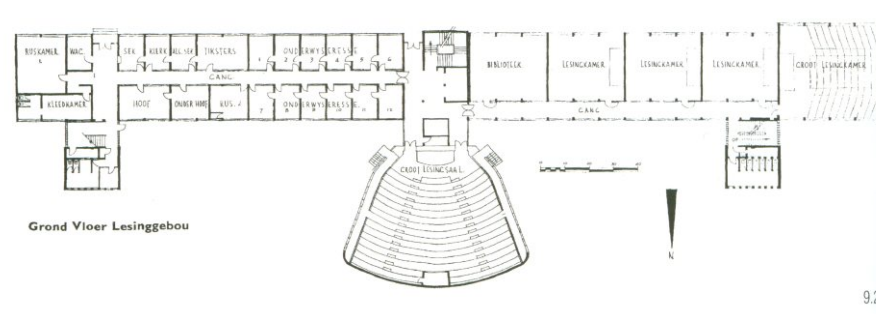
B.01 Site plan and ground floor plan of staff facilities (Gerneke, 1998, pg228)



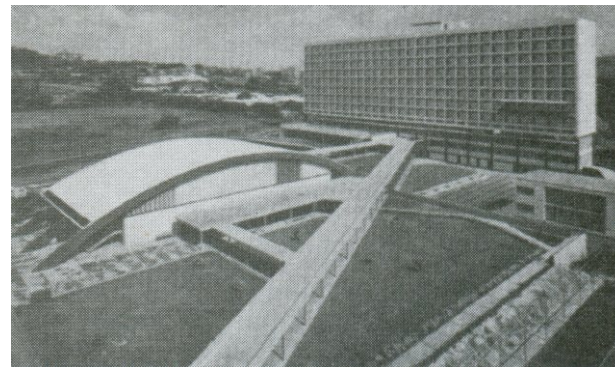
B.02 West elevation from PTA Tech. campus



the Apies river. Even though the river separated the College of Nursing and Prinshof school, these spaces tied the land parcels through activity. Since then, walls have been erected on both sides of the river, separating the parcels from the river and each other. From within the PTA Tech. campus, the walls prevent views to the river (Fig.2.59), while along the river the walls distort views of the Nursing college and hide the campus (Fig.60).



B.03 Lecture hall ground floor plan (Gerneke, 1998, pg228)



B.04 Aerial view of the College of Nursing (Gerneke, 1998, pg228)



B.05 Lecture hall (Gerneke, 1998, pg228)

Appendix C



Geology

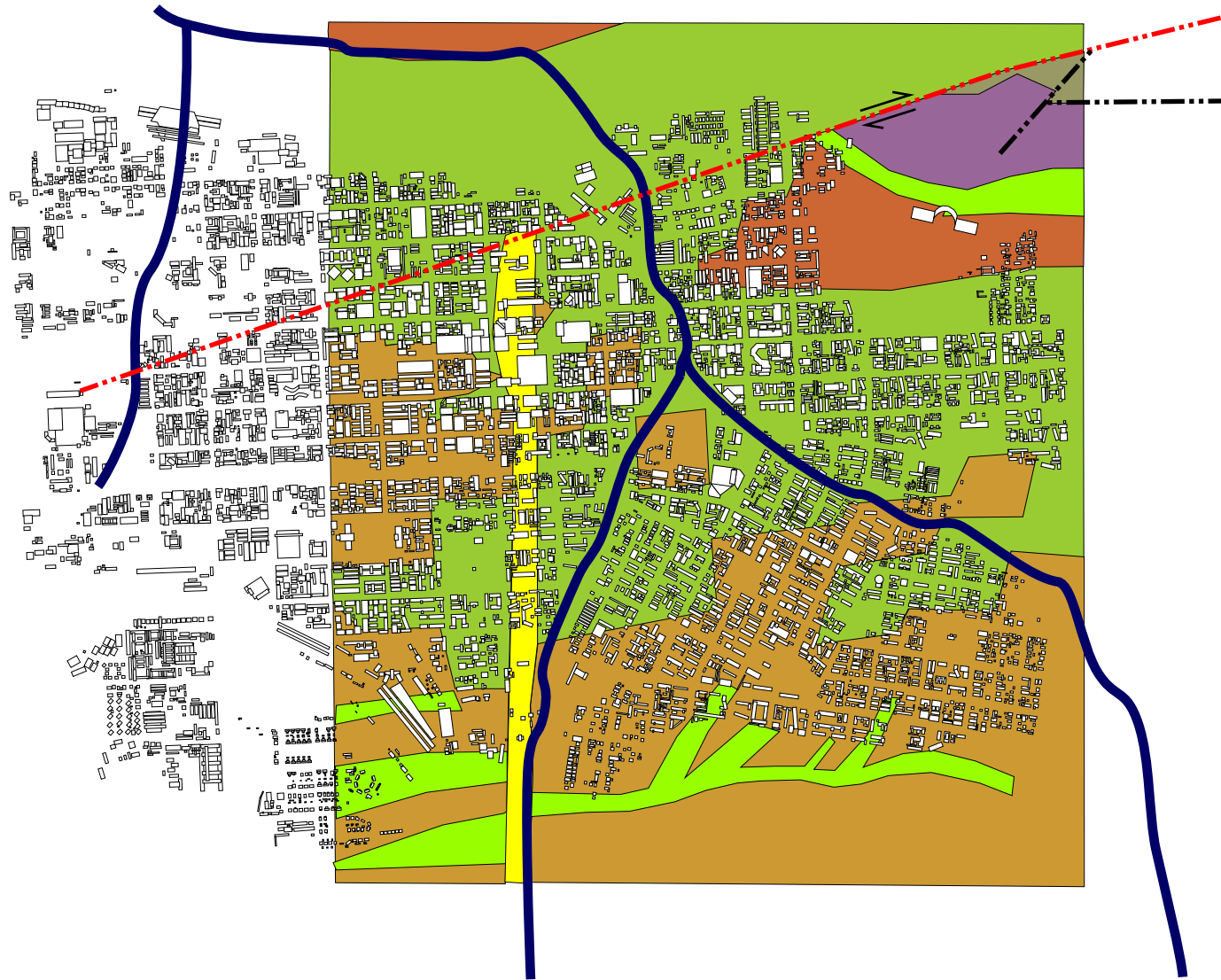
According to Fig.2.16, the geology of the proposed area is predominantly made up of Igneous rock, more specifically; Hekpoort Andesite. In an un-weathered state, Hekpoort Andesite is extremely hard with a bearing capacity of 1,5Mpa, providing a good footing for structures, unfortunately this does make excavating the rock very difficult.

This rock type is very susceptible to chemical weathering, resulting in the formation of residual soils made up of red and yellow zones, both containing active clays. These usually have a depth of 10m-30m and are medium active, this means that they will produce a heave of 15mm-20mm at the ground surface resulting in the cracking of walls and floors. This chemical weathering gives Hekpoort Andesite a highly variable soil profile over very short distances. A layer of solid rock can be within a few metres of decomposed rock so extensive soil tests should always be taken before construction. Change in amounts of water in the clays due to climatic effect will cause swelling and shrinking of the soil mass, contributing further to heave or settlement (Purnell, 1994, pg16).

Other problems in this region would be that the rock-bed dips northwards at 30 degrees resulting in the southern face of an excavation to slide. The presence of water contributes greatly to this process; fortunately the water table in the Andesite is around 6m depths, this is season dependent so excavation in the drier months would be more favourable. The other problem in the area is Pretoria's major fault line, the

Meintjieskop Fault that bisects the study area (Purnell, 1994, pg12). The fault line is not a threat in terms of seismicity, but it is a strike fault, so any structure spanning over the fault will be 'pulled' in two directions.

-  Hekpoort Andesite
-  Diabase
-  Strubenskop Shale
-  Daspoort Quartzite
-  Syenite
-  Timeball Hill
-  Meintjieskop Fault
-  Apies River



C.01 Geology map of Pretoria (Purnell, 1994, pg49)

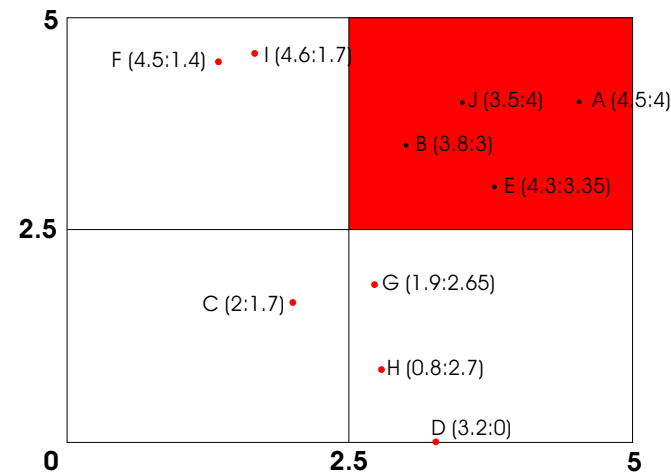
	STAKEHOLDER GROUP	POWER			LEVEL OF CONCERN			
		Influence of Others	Direct Control of Resources	Y-Axis	Technical	Social	Environmental	X-Axis
		0.35	0.65		0.2	0.3	0.5	
A	Medical Research Council	4	4	4	4	4	5	4.5
B	University of Pretoria	3	3	3	3	4	4	3.8
C	Pretoria Technikon	3	1	1.7	0	4	4	2
D	Students	0	0	0	0	4	3	3.2
E	Departments of Arts Culture Science & Technology	4	3	3.35	3	4	5	4.3
F	Environment	4	0	1.4	4	4	5	4.5
G	Labour	2	3	2.65	4	2	1	1.9
H	Unions	4	2	2.7	1	2	0	0.8
I	Community	3	1	1.7	3	5	5	4.6
J	Professionals	4	4	4	3	3	4	3.5

Appendix D

Key stakeholder management plans

A - Medical Research Council (MRC)

The MRC has the highest power and level of concern because they are joint clients with University of Pretoria and are co-funding the project. Their major concerns would be during construction, after construction they occupy the building and is up to them to make it function. Concerns before and during construction would be the cost of the project and the time of completion as it is in their interest to occupy the building as soon as possible. A cost analysis would be given to them with an indication of how long it would take for the building to pay for itself. Alternative construction and HVAC systems would have an environmental impact and cost analysis done to encourage the MRC to take a more ecological approach



	RISK DESCRIPTION	PROBABILITY	IMPACT	FACTOR	RISK CATEGORY
	SOCIAL				
01	Removing cultural link from traditional medicinal systems	3	5	15	High
02	Inadequate passive HVAC systems	4	5	20	High
03	Disruption of existing campus atmosphere	4	5	20	High
04	By removing the existing walls, is there a security problem	3	4	12	Medium
05	Salary disputes	2	3	6	Low
06	Isolation of existing land parcels	1	4	4	Low
07	Enclosing the Apies River	1	4	4	Low
	ECONOMIC				
08	Changes in technology	4	5	20	High
09	Size of the building becomes inadequate for the rapidly growing field of medicinal plants	3	5	15	High
10	Contract misinterpretation	3	5	15	High
11	Inadequate staffing	3	4	12	Medium
12	Exchange rate	5	2	10	Medium
13	Delays with construction schedule	3	4	12	Medium
14	Lack of funds	1	5	5	Low
15	Profit deficit	1	3	3	Low
16	Downtime	2	5	10	Medium
17	Complexity of components leading to functional failure	2	5	10	Medium
18	No market potential	1	3	3	Low
19	Adaptability to other functions	1	4	4	Low
20	Availability of materials	1	5	5	Low
21	Discrepancies of ownership between private and governmental departments	1	3	3	Low
	ENVIRONMENTAL				
22	Contamination of Apies River with fertilizers	4	5	20	High
23	Large consumption of water	4	5	20	High
24	Large production of organic waste	5	3	15	High
25	Introduction of invader plant species to the area	4	5	20	High
26	Disruption of water table	3	4	16	Medium
27	Removal of a greenfields site	4	3	15	Medium
28	Damage to the biophysical environment	2	5	10	Medium
29	Legislation	2	3	6	Low
30	Damage to river system during construction	1	5	5	Low

for the research centre.

B - University of Pretoria

The EBRC would house the Department of Ethnobotany for University of Pretoria. The concern for the University of Pretoria would be the same as the MRC, so the same measures would be taken. They would also be concerned with the department not being on the main university campus. It would need to be communicated to them that by locating the Department of Ethnobotany as part of the EBRC;

- Start-up and running costs would be shared with the MRC
- They would have full use of the terrariums
- They would be able to utilize the existing facilities at the MRC
- They would have exposure to the latest research done by the MRC

E - Departments of Arts Culture Science & Technology (DACST)

The DACST will provide R11000000 to the MRC and Department of Ethnobotany, the majority of funding for the EBRC. The DACST would be concerned that the money they are contributing is being used appropriately towards the research of medicinal plants. All expenditures relating to the design and construction of EBRC are to be relayed to the DACST. All research done is to be documented and presented to DACST, along with the integrated costs thereof.

J - Professionals

There needs to be constant dialogue between the

professional team involved in the EBRC to minimise any discrepancies during construction. All matters discussed are to be recorded and distributed to all parties involved.

High-risk management plans

Social

01 There is a concern that the cultural significance behind the processing of medicinal plants will be lost with a more scientific research approach. To maintain the cultural ties, traditional healers are to be involved at the EBRC with the cultivation and research processes. Traditional healers are also employed by the EBRC to show the public the correct methods of cultivation and collection of the correct plants.

02 The passive HVAC systems are all to be backed-up with a mechanical HVAC system, but is operated from a management position to prevent unnecessary use.

03 By incorporating the Department of Ethnobotany into the EBRC, the EBRC contributes to the campus atmosphere rather than eliminating it. This is strengthened preserving green spaces around the EBRC and incorporating art displays throughout the site.

Economic

08 Rapid advances in technology result in a continual upgrading of electronics and machinery. By providing loose fitting / moveable workstations, new components and machinery can be fitted, replaced etc with limited interference.

09 The field of ethnobotany is rapidly growing, resulting in increased research. The site on which the EBRC sits, allows

for extensions of the building southwards along the river.

10 To prevent any contractual discrepancies between the professional team and the client, the parties involved are to discuss and explain the entire contract before it is signed.

Environmental

22 To increase productivity, the cultivated plants growing around the EBRC, and those inside the terrariums will occasionally be fertilized. To prevent these fertilizers from flowing into the Apies River, all runoff is directed through channels into the constructed wetland, where the fertilizers are removed from the water.

23 The quantities of plants on the site result in the need for large amounts of water. To limit consumption of municipal water, all grey water is cleaned through the wetland and reused, while all rainwater is collected and used for irrigation.

24 To prevent unnecessary disposal of organic waste from the EBRC, all plant matter is composted on site and is used in the landscaping.

25 With the introduction of plant species that are not indigenous to the region, there is the possibility of these plants spreading and creating an ecological disturbance. To prevent this, all exotic species of plants are to be isolated within the terrariums.

Material	R/m ²	Amount (m) ²	Cost (R)
Research centre / laboratories	4 000	4 400	17 600 000
12mm laminated tempered glass	800	340	272 640
Steel	12 000/ton	24 tons	288 660
'GKD' woven steel mesh	20	480	9 600
30mm steel tube	20/m	4 868	97 352
Painted steel cladding	180	185	33 300
Epoxy finish	80	2 099	167 920
Photovoltaic solar panels	30 000 each	30	900 000
External works / landscaping	40	18 489	739 560
Total			20 109 032

Appendix E

Schedule of Accommodation

Space	Function	Pop.	No.	Area (sqm)	Total (sqm)	Specialised Mechanical Equipment
Entrance/Atrium	Information, security, displays		1	70	70	
MRC area manager	Closed office	1	1	30	30	
Dept. Ethnobotany School Head	Closed office	1	1	30	30	
Staff offices	Open plan offices	16	2	100	200	
Kitchen	Staff kitchen		1	12	12	
Lecture hall	Student & public lectures	300	1	230	230	
Seminar room	Staff / student consultation		1	60	60	
Computer lab	MRC & post-graduate use		1	70	70	
Teaching labs	Undergraduate labs	90	3	70	210	
General labs	Plant research & post-graduate labs	24	9	70	630	Spectrophotometer, flashchromatograph, evaporator, fume cupboard, centrifuge rotor
Isolated lab	Plant research & post-graduate labs		1	25	25	Spectrophotometer, flashchromatograph, evaporator, fume cupboard, centrifuge rotor
Dark room			1	35	35	
HPLC			1	25	25	High pressure liquid chromatograph
Physiology lab			2	25	50	Spectrophotometer, flashchromatograph, evaporator, fume cupboard, centrifuge rotor
Herbarium			1	100	100	
Micro lab			2	70	140	Spectrophotometer, flashchromatograph, evaporator, fume cupboard, centrifuge rotor
Sterilization room	Instrument sterilization		1	36	36	Autoclaves, centrifuge

Space	Function	Pop.	No.	Area (sqm)	Total (sqm)	Specialised Mechanical Equipment
Cold room	Isolated storage - plant /abstract /chemical		1	30	30	
Glass store			1	30	30	
Chemical store			1	25	25	
Terrarium 01	South east coast / Subtropical climatic zone		1	150	150	
Terrarium 02	Semi-arid / Desert steppe climatic zone		1	150	150	
Terrarium 03	Mediterranean / Garden Route climatic zone		1	150	150	
Library	To serve as the University Ethnobotany Library		1	180	180	
Kitchen	Staff kitchen			14	14	
Plant room	To house mechanical systems		1	120	120	
Café	Snack bar / coffee shop residents and public		1	125	125	
Sorting room	Sorting of cultivated plants		1	73	73	Grinder, drying machine
Lavatories		WC	Urinal	WHB		
	Male				15	
	66	3	6	6		
	Female				15	
	66	9		6		
	Paraplegic	3		3	6	
Total					3036	