

# index

## List of figures

### 1. Introduction

Visual Culture

Philosophy

Reflection

Visual Culture & Architecture

Le Parc de la Villette

Conclusion- the way forward

### 2. Inner City Spatial Development Framework

Current Condition

Proposed Condition

A Unique Image

Mandela Development Corridor Urban Design Framework

### 3. Urban Design

South African Cities: a Manifesto for change

Finding Lost Space

Creating Vibrant Urban Places

### 4. Client, User, Interested & Affected parties

4

6

10

14

20

African landscape offers to all its people points of connection, place, personhood and history. All peoples leave fragments of their presence in the form of artefacts, which allow us glimpses of worlds other than our own. It is, however, imperative to questioning citizenry to acquire the skill of informed observation that they may understand properly and empathetically the of these artefacts, the places they inhabit and the people them. This contemplative skill is most adequately guided by Archaeology - a science of absence and intangibles. Archaeology the seemingly opposed science of presence and tangibles capable of giving powerful material form to many of our insights. An alliance of these two disciplines may productively imbibe the spirit of a plan and its people and so be innovative, compassionate and humane.

5. Implementation 24  
 Funding & Implementation  
 Other related projects

6. Historical Context- Site specific 26

7. Bio-physical context 30  
 Soil  
 Hydrology  
 Topography  
 Vegetation  
 Climatological Aspects  
 Apies River

8. Socio- economic context 34

9. Physical Context 36  
 Site & Surroundings

10. The Sustainable Design 38  
 Learner's Resource Centre  
 Design  
 The Third Vernacular

11. Precedents 42  
 Mediatheque, Sendai, Japan- Toyo Ito, 1999  
 University Library Delft; The Netherlands, Mecanoo Architects, 1998  
 Duduza Resource Centre- Joe Noero Architects, 1992

12. Accommodation Schedule 48

13. Concept Development 50

14. List of References 54

## University of Pretoria etd - Strydom, C (2003)

- Fig.1.1 Barbara Kruger, 1987- Shifting signifiers to create an active spectator. (Taylor; 1997; p.295)
- Fig.1.2 Images of Las Vegas, Nevada- Show the power of Capitalism- "Where's the architecture?"(Taylor; 1997; p.236,p.265)
- Fig.1.3 Site plan of Le Parc de la Villette- B. Tschumi. (Tschumi; 1987; p.10)
- Fig.1.4 Abstract system (Tschumi; 1987; p.4)
- Fig.1.5 Folie as a symbol (Taylor; 1997; p.251, 252)
- Fig. 1.6 A wavy roof- memory of the preceding frame- Le Parc de la Villette(Taylor; 1997; p.253)
- Fig. 1.7 Nothing is Hiding- photograph:Laura Vida, San Francisco (Taylor; 1997; p.126)
- Fig 2.1 Public transport & Pedestrian movement (Capitol Consortium; 2002; p.38)
- Fig 2.2 ISDF development concept (Capitol Consortium; 2002; p.38)
- Fig 2.3 Main structuring elements (Capitol Consortium; 2002; p.38)
- Fig 2.4 Urban precinct (Capitol Consortium; 2002; p.39)
- Fig 2.5 Site integrated with Museum Mall (Capitol Consortium; 2002; p.38)
- Fig.4.1 Pedestrian Movement in & around the site
- Fig.4.2 Green Spaces linking the movement through the city
- Fig.4.3 Nodes, Districts, Gateways
- Fig.4.4 Educational Institutions in context
- Fig.4.5 Site as a recreational node
- Nolli map of the city: Morne Pienaar, UP
- Fig.5.1 Charts of EU funding ([www.EUSA.org.za](http://www.EUSA.org.za))
- Fig. 6.1 Site showing historical context
- Fig. 6.2 Elevations of Southern Clubhouse (Pretoria City Council; Building Plans: Stand 2375)
- Fig 6.3 Photographs of Historical Buildings: Cornus Strydom
- Fig 7.1 Soil Map & Key (Purnell; 1984; p.40)
- Fig 7.2 Topography of site (Freedom Park Competition)
- Fig 7.3 Climatogram (Holm; 1996; p.69)
- Fig 7.4 Sun Angles
- Fig 7.5 Wind Rose (Holm; 1996; p.70)
- Fig 7.6 Microclimate
- Fig 7.7 Section of Apies River (ARUDF; 1999; p. 15)
- Fig 8.1 Founders school- South Clubhouse
- Fig 8.2 Map of Social, Economic & Physical Context
- Fig 8.3 Photographs: Cornus Strydom
- Fig 9.1 North West view to CBD (Freedom Park competition)
- Fig 9.2 West view to Unisa (Freedom Park competition)
- Fig 9.3 North West view (Freedom Park competition)
- Fig 9.4 South West view (Freedom Park competition)
- Fig 9.5 Map of Constraints and Opportunities
- Fig 9.6 North west entrance to site
- Fig 9.7 View from South Clubhouse Balcony
- Fig 9.8 View to Unisa from site
- Fig 9.9View to Union Buildings from site
- Photographs: Cornus Strydom
- Fig 10.1 Passive Climate Sketches (Holm et al; 1996; p.6,9,16-19)
- Fig. 10.2 Polley's arcade, Norman Eaton. 1953 (Fisher et al; 1998; p.122)
- Fig.10.3 Little Theatre, Norman Eaton 1940 (Fisher et al; 1998; p.142)
- Fig.10.4 Aula at University of Pretoria, Phillip Nel & Partners (Fisher et al; 1998; p.226)
- Fig 10.5 Kleine Teater Skinner street- Norman Eaton
- Fig 10.6 NG Church, Burgerspark, Daan Kesting 1969 (Wessels; 2001; p.27)
- Fig 11.1 Plate, tube, skin- elements of structure (Pollock; 2001; p.193)
- Fig 11.2 The urban spectacle (Pollock; 2001; p.191)
- Fig 11.3 Sections (Webb; 2001; p.47)
- Fig 11.4 Plans (Webb; 2001; p.49)

- Fig 11.5 Glass facade with Bakama building (Lootsma; 1999; p.22)
- Fig 11.6 Grass roof (Betsky; 1998; p.125)
- Fig 11.7 Site plan (Betsky; 1998; p.127)
- Fig 11.8 Section of building (Lootsma; 1999; p.27)
- Fig 11.9 Plans of building (Betsky; 1998; p.128)
- Fig 11.10 Bridges connecting reading rooms (Betsky; 1998; p.131)
- Fig 11.11 Section & elevations (Noero; 1994; p.28)
- Fig 11.12 Hall and market (Noero; 1994; p.29)
- Fig 11.13 Courtyard (Noero; 1994; p.28)
- Fig 11.14 Courtyard
- Fig 11.15 Internal street
- Fig 11.16 Section (Noero; 1994; p.30)
- Fig 11.17 Site plan (Noero; 1994; p.27)
- Fig 13.1 Makro site showing links
- Fig 13.2 Spatial planning
- Fig 13.3 System overlay- conclusion
- Fig 13.4 Berea Park Site
- All unsourced figures by Author

# figures list of figures

## This study will investigate the contemporary responsibility of an architect.

Architecture has always been seen as something static, but there is a need for a change. As in art the experience of diversity in a city makes more knowledgeable human beings.

Visual Culture is a relatively new discipline.

This is a visual event in which information, meaning and pleasure is sought by the consumer by means of visual technology. A building in itself will become a tool for visual technology: creating definite emotions in the user, orientating the user and informing the user.

Two important philosophies influence the study of visual culture and architecture: structuralism (through the discipline of semiology) and post-structuralism (through the introduction of time and difference). Through Semiology (science of signs) the full semantic potential of architecture is realised. Meaning of architecture is not fixed, but must be read inter- textually. This means a global architectural culture and information is possible, but the conditions are still local.

*"The translatability of words into images and images into words, engenders an all consuming mediascape"* Bernard Tschumi (Taylor, 1997: 256).

Through the investigation of the topic, the aim is to rediscover architecture. Meaning, re-addressing the visual aspect of architecture and urban design. As a result, architecture becomes more accessible and not so far removed.

### Visual culture

This is visual events in which information, meaning and



technology, and this includes any form of apparatus to be looked at or to enhance natural vision from an oil painting to television, internet and architecture(?) (The Visual Culture Reader, 1998: 3).

This is a characteristic of modern and post-modern culture to render experience in visual form. This makes linguistic discourse more comprehensive, quicker and more effective (The Visual Culture Reader; 1998; p. 7).

Today our culture is disjunctured and fragmented visually, so the question arises what is real and what is not. This is because of the society of control in which we live (Figure 1.1)(The Visual Culture Reader, 1998: 8).

Towards the future visual culture will be read transculturally, with intertextuality as its basis (The Visual Culture Reader, 1998: 14). Design becomes a mediator, which involves mental- and social activity, and moves between cultures beyond specific cultural- and political location (The Visual Culture Reader, 1998: 22). In post-modern society the third world were steered towards the whole world "living the same historical moment": this is impossible in a society with layers of meaning (The Visual Culture Reader, 1998: 29). Today there is a tendency towards a polycentric visual culture:

*"a multidimensional world of intertextual dialogism"*  
(The Visual Culture Reader, 1998: 45).

If architecture is a sign, it is a function of its relations with other signs (Taylor, 1997: 52).

### Philosophy

Two important philosophies influence the study of Urban Design:

# 01 introduction

Figure 1.1:  
Barbara Kruger, 1987 - Shifting signifiers to create an active spectator.

## University of Pretoria etd - Strydom, C (2003)

In *Event-Cities 2* (2000), Bernard Tschumi is extensively influenced by the above mentioned philosophies (structuralism, post-structuralism). Tschumi talks about the need for seduction through the language of display (Tschumi, 2000: 229).

A "slow dance" begins between the dynamic body of the visitor/ consumer and the static body of the object of consumption (whatever is experienced visually). The result is architecture of display. The voids in such architecture become places of events, not programmed and open to appropriation (Tschumi, 2000:392). These public spaces are circulation spaces where events can take place (Tschumi, 2000: 514).

Urban design happens on the margin of social, economic and cultural density. Tschumi (2000: 519) talks about a "triple revolution" - informational, interdisciplinary and ideological. A global architectural language is created (Tschumi, 2000: 519). A building becomes a generator of events, a condenser of the city with cultural and social transformation accelerated (Tschumi, 2000: 521).

Bernard Tschumi explains in *Hiding* (Taylor; 1997; p.241) that the disguise (façade, street) indicates other systems of knowledge. Architecture encourages a movement of bodies in space: space activated by movement.

Architecture and semiotic theory explains that meaning and frame of reference differ (Taylor, 1997: 244). All we see around us is signs of signs, there is no signifier and signified. Meaning changes with context and according to Tschumi there is only the deregulation of meaning (Taylor, 1997: 248). This leaves an absence of "ground/ foundation" that stimulates a revising of architecture.

All production is reproductive co-production: the result is semantic plurality (Taylor, 1997: 254). How do you marry

"historical' stable images and unstable images (eg. cinema, computer generated images)? There must be an interface where events are a matter of change (Taylor; 1997; p. 260). A non- programmed space for experiments and innovations. The building becomes an assemblage of superimposed surfaces (Taylor, 1997: 263). The meaning and experience will be subjective: the question arises if a wall is really a wall, or a roof a roof. Is it moved beyond its mere functionality?

### Semiology

Semiology (science of signs) is an important part of this study; the signifier and the signified (The Visual Culture Reader, 1998: 61). People have the perception that they need signs to orientate themselves. This is because of the mass experience of modernity, the consequence of the intensity of capitalism (Figure 1.2)(The Visual Culture Reader, 1998: 125).

A social ordering of space came into being; as far back as colonialism, as a failure of European spatialising. The European rectified the raw African landscape by classifying it as "aesthetic" (The Visual Culture Reader; 1998; p.187). Classifying it into a order, making it readable and understandable. In the defining colonial order, the visual and the linguistic were needed for the endless exhibition that took place; the political culture of imperialism (The Visual Culture Reader; 1998; p.283).

### Reflection

Architecture is a discipline, a science and an artform, the same as music and choreography to name only two. In today's visual world, where everything is contemporary, how does Visual Culture influence the profession of architecture?



*Figure 1.2:  
Images of Las Vegas, Nevada - Show  
the power of Capitalism...  
"Where is the architecture?"*

## University of Pretoria etd - Strydom, C (2003)

Can architecture become a social artform in today's society? Can the same principles, for example in music, choreography and art be applied to urban design and the tectonics and typology of architecture? Can architecture be experienced again in a contemporary manner?

*" Architects are going to be the fashion designers of the future, dressing events to come and holding up a mirror to the world...rethinking public imagination, public space and public forces is transforming architects into public scientists...(with) semi-conscious preoccupations of collective vision – glamour, meditation, advertising and celebrity...engage in the banal dreams of the contemporary world...explodes the hierarchy of the design process...input of different disciplines (with) technological, public and economic change"*  
(van Berkel et al; 1999; p. 14).

Can architecture be experienced as art again here in South Africa; can it be contemporary and audacious? Can it be educational and psychological? Can it become a mouthpiece for contemporary society without excluding and without compromising sustainability?

### Visual Culture and Architecture

The programme and type of building is based on the investigation of the Visual Culture- and Urban Design theory. A Learner's Resource Centre will create the landmark and gateway quality of the building and will enhance the image of Pretoria as the Capital of South Africa. The function of the building will be a digital information hub, educating the community in literacy: reading and computers. The building will become a mediasuit: people wearing this media suit "have the capacity of their brains expanded" (Ito, 2001: 36).

### Parc de la Villette

Parc de la Villette is described as the largest discontinuous building in the world (Figure 1.3)(Tschumi, 1987: II).

The decision was made to base the design on an urban program of an abstract system; an intermediary (Tschumi, 1987: IV). For example, the ordinance survey grid overlaid on the site, marking points of events. There is a casual relationship between site and another concept and the program and architecture. In this case architecture is not the signifier and the programmatic not the signified.

With Superimposition a specific aspect is reinforced (points of events). The Cinegram (as a film analogy) explains the idea of a montage; the discontinuity, repetition, inversion, substitution and insertion (Tschumi, 1987: VI). The design

becomes architecture: a montage of building elements.

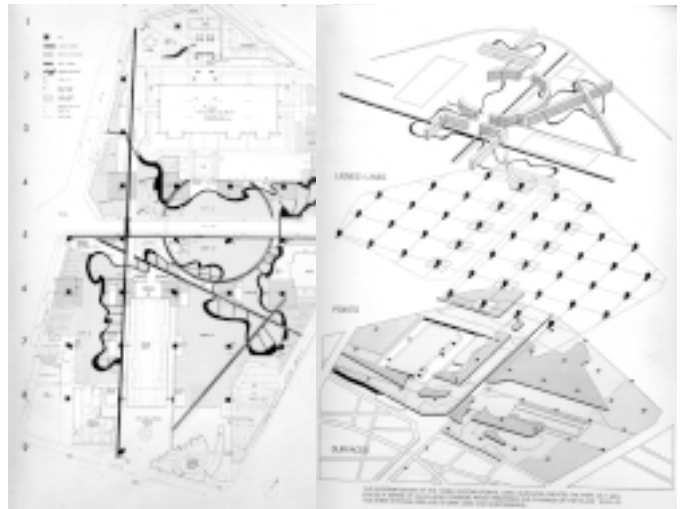
Inter-textuality is important, there's an overlapping of the abstract and figurative (Tschumi, 1987: VII). Meaning is dismantled, where the socially produced questions the humanist assumptions of style. Architecture as a refuge of humanist thought. In La Villette, a pure trace and play of language is practised. There is a semantic plurality (Tschumi, 1987: VIII).

The Urban Park is based on cultural invention, education and entertainment (Tschumi; 1987; p.1). Lines, points and surfaces create calculated tensions that reinforce the dynamism of the place (Figure 1.4). The areas of intense activity are deconstructed according to existing site characteristics and use (Tschumi, 1987: 1). Objects, movements and spaces contribute to the dynamism of the park (Tschumi, 1987: 8). The Folie is a play of signs: a clear symbol of the park (Figure 1.5).

A plurality of interpretations is the result. The signification is in the events occurring in the sequence where there is memory of the preceding frames (Figure 1.6)(Tschumi, 1987: 12). The Folie binds everything together and enhances the transference. The meaning is always a function of both the position and the surface (Tschumi, 1987: 26).

**Figure 1.3:**  
*Site plan on Le Parc de la Villette.*

**Figure 1.4:**  
*Abstract system*



### Conclusion – the way forward

The impact of contemporary theories of visual culture on architecture are investigated. The intention is to achieve a different and fresh approach at a time when we are continuously bombarded by popular visual culture. The dynamism discussed in this document refers to the programme of the building versus popular semiology. Le Parc de la Villette is an example of this dynamism, where architecture can be experienced linguistically, but also visually. The semantics of la Villette is a play of signs, where the visitor is guided on a psychological level by physical elements.

The reason for investigating the relationship between Visual Culture and Architecture is to see if architecture can move from something static to something contemporary and dynamic: an “event-full” building within an “event-full” setting of a South African city. Something that can be a mirror of society here and now. Nothing is *hiding* (Figure 1.7).

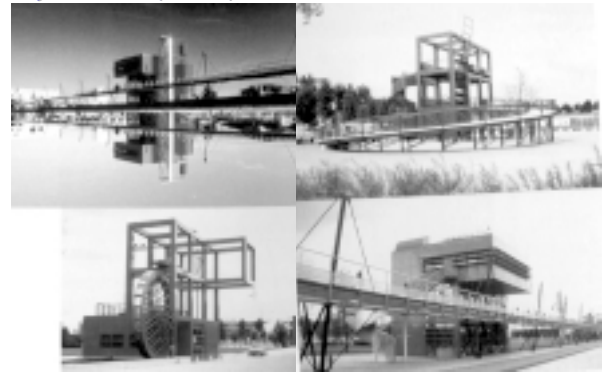


Figure 1.5:  
*Folie as symbol*

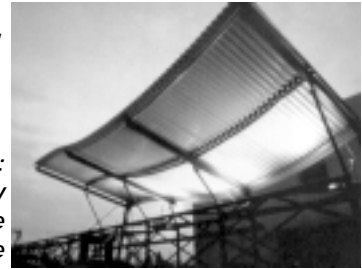


Figure 1.6:  
*A wavy roof - memory  
of the preceding frame  
- Parc de la Villette*

Figure 1.7:  
*Nothing is Hiding. Photograph Laura Vida*



# 02 inner city spatial development framework

The biggest problem in the inner city of Pretoria is the decentralisation to the east. Edge cities are created and with the political change the Inner city of Pretoria has been transformed.

After World War II office blocks sprung up in the CBD. People moved to the East. The Edge city was initialized: a Work city that increases in population at 9 a.m. In 1994 when the policies of segregation were removed the city got a new character and meaning, that of cultural diversity.

At the moment it is mainly people from Mamelodi and Atteridgeville that are utilising the inner city (Capitol Consortium, 1999: 1)

The Inner City Spatial Development Framework definition: a set of guidelines for the management and comprehension of the inner city of Pretoria. This is to promote growth and development of the inner city in a positive manner. This framework deals with both realities and imposed perceptions prevalent in the area (Capitol Consortium, 1999: 2)

## Current condition

South Berea is the area south of Scheiding street and east of Railway street. This area functions as the Southern Gateway to inner city and CBD. At the moment there is a land use transition and an emergence of retail.

Berea Park is a major recreational node with sports facilities. It is neglected and mainly serves the population to east-Sunnyside. This area surrounds the Pretoria station and gives rise to major pedestrian activity. Berea is a high density residential area with parks, religious-, educational- and medical facilities. This area has weak links with Sunnyside (Capitol

Consortium, 1999: 9).

West Berea also forms part of the Southern Gateway next to the Pretoria station. It has a low density stagnant land use which is State council related. There is major pedestrian movement and major informal activity.

## Proposed condition

Berea is in need of social support services for the residential population by means of implementation policies. Transport types are needed to decrease major traffic routes and to facilitate pedestrian facilities and routes (**Figure 2.1**). Integration with Sunnyside is proposed (Capitol Consortium, 1999: 23). New open space systems and nodes are proposed to ensure a safe, secure, viable and sustainable environment.

The uses proposed in this area include multi- functional spaces, commercial, offices, residential, entertainment, sports and education (Capitol Consortium, 1999: 33).

Berea Park is underdeveloped, derelict and underutilized. It could be transformed into a major attraction for visitors and investors in the context of the Open Space system of the inner city. Berea Park has small scale retail and residential opportunities for people living in Berea and Salvokop as well as Unisa workers and students. This area has

*Figure 2.1: Public transport and pedestrian movement*



*Figure 2.2: ISDF development concept*



the potential to become a major landmark and statement, as a gateway for the Inner city (**Figure 2.2**)(Capitol Consortium, 1999: 28).

South Berea has great potential for mixed land use. With the Pretoria- and Gautrain stations nearby, formal/ informal retail and tourist facilities like hotels are proposed. Resource facilities and parks for the residential population are of great importance and form part of the open space system (**Figure 2.3**)(Capitol Consortium, 1999: 23). West Berea is seen as the cultural precinct. The station is of importance for pedestrians and the informal sector and has the opportunity for extensive land use (Capitol Consortium, 1999: 28).

UNISA as an Institutional node needs to be integrated with Sunnyside, Berea and the neighboring residential districts to celebrate its regional function as an educational node.

The Development facilitation act needs to be studied to promote employment and residential activities close together in the Berea area.

The Pretoria Station Precinct needs an increase in residential use, social-, educational facilities, health care and recreational space. Formal- and informal trading will enhance this and make it more sustainable (Capitol Consortium, 1999: 23).

If this area is user friendly to visitors and tourists and attractive residential opportunities are initiated, an area with 24 hour activity will be created (Capitol Consortium; 1999; p.35). At the moment 230 000 commuters are using the railway line and a proposed 370 000 will be using it in future (Capitol Consortium, 1999: 35)

Proposed pedestrian streets will be Church-, Minnaar-,

Esselen-, Paul Kruger- and Scheiding streets. The ring road vehicular system will include NMD east, DF Malan west, Jacob Mare Rissik (South), Scheiding/ Walker (South), Soutpansberg (North) (**Figure 2.4**)(Capitol Consortium, 1999: 39).

### A unique image

To achieve the image of a Capital City all significant urban and natural spaces must be linked. Pretoria has outstanding features and with the possibility of the Parliament coming to Pretoria this will be enhanced. As a gateway city all resources, services and facilities must be adequate. To achieve a marketable image as a world class city the urban fabric must be legible and aesthetically pleasing.

To create a people's place the sense and perception of the users of the city need to be enhanced. There must be a constant awareness of context and history. A sense of order and unity through pattern and human scale (facades, arcades, courtyards, lanes) must be promoted. Permeability and physical legibility (landmarks, physical- and visual linkages) will enhance this (Capitol Consortium, 1999: 20).

The green, open space system will link the Apies river, Walkerspruit, Steenhovenspruit and the Ridges and Koppies by parks, trails and squares. An important continuous interlinked system which is accessible and activated for recreation and entertainment. This system will be dependant on pedestrian movement and public transport to create a productive and supportive institutional environment.

Accessibility to the Apies river through Berea Park creates the opportunity for activity nodes on the site. These green activity spines will be used for pedestrian movement, recreational and public facilities (Capitol Consortium, 1999: 30). Floods will be controlled through automatic flood control gates and a retention dam at Groenkloof (Capitol

**Figure 2.3:**  
*Main structuring elements*



## University of Pretoria etd - Strydom, C (2003)

Consortium, 1999: 48).

The image of Pretoria through branding can change perception and attitudes of users. The culture- and historical heritage, African ecology and the Gateway to Africa concept can be marketed. The link with the Museum Mall is of utmost importance (**Figure 2.5**).

(Capitol Consortium, 1999: 20).

### **Mandela Development Corridor Urban Design Framework**

The idea of this framework is to ensure maximum connectivity and maximum economic benefit for people using the city.

The City of Tshwane agreed the release of land into market place. A problem is degradation due to socio economic change and the flight of capital and activity from the CBD. The Apies river is seen as part of Pretoria's city life and viable urban change is needed (Holm Jordaan Group, 2001: 4). A vibrant and intense urban development will create a 24 hour safe, exiting and economic viable environment. Promotion of a Series of Corporate head offices along Nelson Mandela Drive will enhance the Capital image of the city (Holm Jordaan Group, 2001: 5).

The land facilitation of this framework has many different developers involved to make developments more viable, without one developer dictating everything. With the socio- economic change there are people reliant on public transport, pedestrian routes and housing in flats (Holm Jordaan Group, 2001: 6). The city council owns extensive areas of land in this area and this ensures maximum economic gearing and symbiotic land use (Holm Jordaan Group, 2001: 10). The Apies river system ensures an open space network with liveable urban spaces and positive spatial definition and ground floor activities. All ground floor uses will be orientated towards the river (Holm Jordaan Group, 2001: 13).

### **Placemaking elements**

The idea is to enhance the legibility and quality of urban fabric and to create vistas to and from important places. Maximum frontage of the buildings with a coherent character will ensure that new addresses are created (Holm Jordaan Group, 2001: 20)

Ground floor retail is promoted to ensure a vibrant and safe development. The Apies interface will have colonnades with visual and physical access. The idea of a Corporate Image and headquarters will dictate a higher built form along the edges (Holm Jordaan Group, 2001: 22).

maximum connectivity maximum economic benefit

Figure 2.4:  
Urban precinct



Figure 2.5:  
Site integrated with the Museum Mall



The proposed framework along Nelson Mandela drive is that of a high density, mixed use corridor development. The result will be a democratic space where the inhabitants take ownership of private and public spaces.

Public transport becomes an integral part of the city fabric, generating more pedestrian movement and thus more activity on street level. Trading will happen along these connective routes.

The Gautrain proposal will have a positive influence on the inner city of Pretoria. This will result in an increase in job opportunities and an increase in the social and economic sustainability of the city. People will live close to modes of transport and economic activities will be enhanced.

## 03 urban design

Kevin Lynch in *Image of the City* discusses five aspects of a city: nodes, districts, routes, landmarks and edges (Lynch, 1960: 46). The links and crossings between these aspects are of importance to create an integrated city fabric (See Figure 4.3).

Movement through a city can be visual, pedestrian, public – and private transport and the balance between those.

The image of Pretoria as a Capital City will be experienced mainly by visual means, and making spaces not accessible to pedestrians, for example the hard edge along Nelson Mandela drive, appropriate and rich.

The vision of this design is from *South African Cities: a manifesto for change*: the growth of South African cities must be managed so that it can accommodate the lowest social denominator; people dependant on pedestrian and public transportation movement and who seeks livelihood in small-scale, self-generated employment (Dewar et al, 1991: 88).

The two pillars of the planning philosophy according to Dewar and Uytendogaardt are a humanist approach and the natural condition of a certain urban settlement (Dewar et al, 1991: 13). The human approach considers the fact that human settlements are created.

The natural condition of the setting addresses the conservation ethic of planning consciousness (Dewar; 1991; p.13). This stresses the basic resources in a setting, and the dynamic balance thereof with human activities.

Intuition is important and the variety of experience

created, creates new horizons and opportunities (Dewar; 1991: 13).

A successful urban settlement can withstand any economic, political, technological and cultural change

Berea Park with its gateway quality is on the Nelson Mandela drive which creates a barrier, and divides the city in an east- and west portion. This makes pedestrian movement in the east-west direction difficult.

### South African cities- a Manifesto for change:

Dewar and Uytendogaardt (1991; p. 79) have certain elements defining structure in an urban setting:

- **regional open spaces** – this includes the reservation of nature rooms to retain the character of the context and to limit remedial action. Along the Apies River a green spine is created with pockets of larger green spaces along this spine. Berea Park in itself is such a green open space that will be used for recreation and education.

- **site making actions** – this makes way for future urban development for example the emphasis on public transport and pedestrian movement. These movement patterns will decide the function and use of the site. These actions guide the development in a certain direction, leaving enough freedom for the inhabitants to develop the Berea area (Dewar et al, 1991: 80).

- **activity systems** - along main routes like Scheiding-, van der Walt streets and Nelson Mandela drives there must be a mix of the most intensive economic and social activities

(Dewar et al, 1991: 80). This is possible if the area is compacted and densified. It will ensure the better integration of Berea Park into the city fabric and will minimise the degradation currently obvious on the site.

A grid of continuous direct public transport reinforced by higher density mixed use must be encouraged, for example the expansion of the Pretoria Station and the Gautrain, a bus drop-off point in Nelson Mandela drive and a taxi terminal on the corner of Walker street and Nelson Mandela drive. This will promote pedestrian movement through the Berea area as well as movement in a North-South direction.

- **the spatial logic** of transportation channels must be enhanced by locating public spaces along these channels, coinciding with points of highest accessibility, for example Berea Park.

- **public facilities and social services** need to be located along these movement systems to celebrate its function and to create a sense of scale and hierarchical order, by placement of the institutional functions on Berea Park, and the commercial activity close to the transportation nodes (Dewar et al, 1991: 82).

- **an activity mix** of private sector activities along Nelson Mandela drive maximises the potential of strategically located land parcels, for example, placing the market area near the Gautrain station.

- **by creating the Scheiding street link** urban activities are integrated, a continuity of fabric is created and there is a definite response to movement. An example of this is

the Scheiding street/ Walker street physical link from the station to Sunnyside.

- **the vehicular routes are multi directional** and are organised according to balanced land use. All vehicular routes are pedestrian streets as well. Although Nelson Mandela drive is a pedestrian street, it is an unfriendly street for walking.

Emphasis will thus be on east-west linkages, for example Scheiding street, and north-south linkages will be enhanced by public transport like taxi's and trams.

- **public facilities** – encourage the use of scarce resources. Public facilities and functions need to be accessible (Dewar et al, 1991, 84). The lack of public amenities will be rectified by introducing a library, resource centre and information centre. These have links with the existing schools, for example Berea High School and UNISA and are placed along pedestrian routes and links.

- **urban spaces** – connect a variety of open public social spaces with a variety of scales. This creates urban rooms with denser mixed use surrounding it. It creates a collective urban life with collective spaces as is evident along the Nelson Mandela drive (Dewar et al, 1991: 84).

Public infrastructure includes a systemic integration of public facilities, institutional facilities, small scale economic enterprises and decentralised wholesaling. Wholesaling is important, creating opportunity for light industrial manufacturing and definite links with the station and market area (Dewar et al; 1991; p.88).

Trancik's theory complements that of Dewar and Uytenbogaardt. The constraints of the site are viewed as unique opportunities and design generators. The barrier created by Nelson Mandela drive and the proposed Gautrain railway, running through the Berea Park site, creates an expanse of lost space. This space is not utilised and could create a monotonous, derelict, unsafe area. If utilised it can achieve integration with the existing city fabric (Trancik; 1986; p.219) (See Figure 9.5).

Three theories are combined: The **figure ground theory** addresses spatial definition and the relationship between private and public space (Trancik, 1986:97); the **linkage theory** highlights the connective qualities of an urban settlement. Connecting parts of the city and relating buildings to spaces (Trancik, 1986: 106). The **place theory** addresses the social responsiveness of an urban settlement. The cultural and human characteristics of an area must be understood in order to turn it into a place with contextual meaning (Trancik, 1986: 112).

According to Trancik a mixed or integrated use assures greater richness and vitality than single-used spaces (Trancik, 1986: 220). The proximity between housing and employment are addressed and a vibrant community that could function on its own is established.

### Finding Lost Space

Trancik poses an integrated approach to urban design (Trancik, 1986: 219). This comprises the following principles:

**-Linking sequential movement-** with the isolation of Berea Park caused by Nelson Mandela drive, an opportunity arises to unify the space. The new built environment will be integrated with the existing city fabric by the Scheiding/Walker street link and the green open space system along the Apies River. A vital spatial unity is created (Trancik, 1986: 220). Here the pedestrian can experience the movement from the station to Sunnyside and along the Apies River in a north-south direction. The pedestrian is placed in the forefront by extensive landscaping and "green fingers" as movement systems. The high vehicular movement will be kept along Nelson Mandela Drive, with pedestrian movement north-south limited to accessible area along the river. Main pedestrian movement will be enhanced in an east- west direction.

The public transport network is of utmost importance identifying nodes linked by pedestrian movement.

**-Lateral enclosure and edge continuity** – street level activities are important in newly designed areas, ensuring continued use and vibrancy (Trancik, 1986: 221). This is created by a hard edge with ground floor activities. Along Nelson Mandela drive the hard street edge is celebrated and this will enhance the Capital City Image of Pretoria experienced from the car. Open spaces along the Apies river will create "cooling- off" areas oriented towards the pedestrian. The public and private spaces are defined by hard-

and soft landscaping. This enhances the exterior and interior link of the buildings (Trancik, 1986: 221).

Along the Nelson Mandela drive there is a flow of voids as one turns into the "green fingers". The building edge creates squares and landmarks.

- **Integrated bridging**-. Trancik explains this as a bridge becoming a "building" and vice versa (Trancik, 1986: 222). The Scheiding street link will become a "bridge" with commercial activity along it. This ensures 18 hour activity in the form of markets like mealie cooking and herb traders, for example the Warwick Junction in Durban (Dobson, 2001: 7). The architect placed the framework for development there, designing structure, but the functioning of Warwick Junction is due to the freedom of the users and that generated vibrancy.

This provides an uninterrupted mesh of activities along "passageways" (Trancik, 1986: 222). Spaces for movement are created through Berea to Sunnyside, where the urban space supports the street.

- **Axis and perspective** – this principle helps the user with visual orientation (Trancik, 1986: 225). Hierarchy is established in a space where it was not evident. Visual and physical importance is used to clarify block patterns. For example the visual axis of Nelson Mandela drive as an entrance into the city. The placement of the resource centre along Nelson Mandela drive and on the fork where van der Walt and Nelson Mandela split, establishes the space as a landmark and gateway. If simple organising geometries are used, the orientation in a setting is simplified. The historical

grid pattern of the street layout in Pretoria is thus conserved.

- **Indoor and outdoor fusion** – this is important for creating new urban spaces. Landscape and urban fabric are integrated to ensure energy efficiency- and year round usage (Trancik, 1986: 225). Buildings on the Berea Park site are placed to create collective urban spaces. Passive surveillance and security are thus promoted.

This theory accommodates change and spontaneous evolving of outside spaces.

All these theories are based on a thorough understanding of context, place and spatial analysis. All decisions must take into account the existing fabric. As discussed above, Trancik, Dewar and Uytendogaardt's theories influenced the design of the resource centre extensively.

The most important aspect of this space must be flexibility, adaptability, simplicity and directness (Dewar et al, 1996: 15).

The resource centre in Berea Park will be loose pavilion buildings creating a procession of spaces adding to its uniqueness and landmark qualities (Dewar et al, 1996: 20). Being a landmark, it should also respond to the surrounding spaces like the river and opening up to the western station area, creating a precinct on its own. The hard continuous edge on the eastern side responds to Nelson Mandela drive and creates a series of open spaces along the street (Trancik, 1986: 221, 225). This space could be used for community functions and recreation.

That ties in with the institutional functions of UNISA, private colleges and the Technikon (See Figure 4.4). This designed space becomes a destination for people wanting information and education. Another theory applicable is that of Responsive Environments by Bentley et al (1985: 9 –11). This theory brings the above mentioned theories to a more specific scale. Principles are permeability, variety, legibility, robustness, visual appropriateness, richness and personalisation. The space is as flexible as possible.

Respect for the topography and environment is an important guideline in the framework. An urban space is created at this precinct, celebrating culture, equity and freedom of choice (Dewar et al, 1991: 84).

The site of the resource centre becomes a merger between the natural landscape and the formal landscape (built environment). "Green fingers" are created by the permeability of the resource centre. A safe place for recreational and religious activities is created.

How people address place-making over the years becomes crucial. The answering of human needs, the dignity of people and activities and the making of places are applied to a more contemporary society.

The supply of social services and public amenities to the lowest social denominator are important. The lack thereof makes it the driving force for the urban design framework. Creating a place where people can live, work and the pedestrian gets priority over the vehicle.

### Creating Vibrant Urban Places

Three important functions applied to Berea became important while studying the theory of Vibrant Urban Places:

**Multi- functionality** – these types of spaces have an important social role (Dewar et al, 1996: 18). They allow a variety of activities to happen all through Berea. The market area has a variety of commercial activities ranging from cooking to arts and crafts. This will ensure that commuters from the train will use these facilities as well as people living in Berea. It enhances flexibility and increases overall usability of the area. Unexpected events and demands can easily be accommodated - the resource centre could be used for community meetings and information spreading.

**Connections-** Berea and Nelson Mandela drive will become a tracery of spaces where the public life of the community takes place (Dewar et al, 1996: 20). All these routes accommodate activity- the "green fingers" permeating the site become playgrounds for children. In the design of an urban framework social, humanist and environmental considerations become the driving force (Dewar et al, 1996: 20).

The range of opportunities and choices are enhanced by creating a place that embraces the user and that is environmentally conscious and usable.

**Institutions-** Social amenities like places of learning

## University of Pretoria etd - Strydom, C (2003)

and recreation give structure to the area (Dewar et al, 1996: 20). This in turn is given form by universities and schools - Unisa on the southern side of the site and Berea High school on the site. An "Institutional Link" from north to south (Pretoria Technikon to Unisa) is formed. This institutional function is thus enhanced by movement patterns like Nelson Mandela drive and Scheiding street, with a range of informal/ formal activities along them. The resource centre has a unique character being a landmark and gateway building into Pretoria. It is important to have appropriate, supportive institutions (Dewar et al, 1996: 21).

### Conclusion

*"Change...related to accepting the realities of place. Accepting these realities is the superimposition of a construct, and constraint is a magnificent assistance to creativity."*  
– Roelof Uytenbogaardt (Nuttal; 1993; p.14)

Creating an environment that could function on its own, but is still linked with the greater inner city.

Positive urban environments are complex. Richness and diversity results because of freedom of action and iterative application (Dewar et al, 1996: 45). The result must be a balance between freedom and constraint, that is easily readable,

logical and with predictable response. A minimalist structure creates a rich range of opportunities. The location, size and form of land parcels determine this guiding structure.

The most important aspect is which public elements and infrastructure should be provided (Dewar et al, 1996: 48). There must be integration and overlapping in these elements, ensuring convenience. These integrative social services and public amenities can accommodate a range of demands. Positioning of social services and functions are determinants of design, not the form. The result is broad, but specific, guidelines. In other words, a well thought through basis for further development.

The vision for Berea is to accommodate the lowest social denominator. This will be achieved by creating an urban settlement with the main function of education and commercial. With its existing high density residential component, people dependent on pedestrian- and public transport are accommodated. The other amenities are supportive in achieving this goal. **See the *Design Essay* at the end of the discourse for the design conclusion.**

The brief is derived from an initiative of the City Council of Tshwane to upgrade the CBD of Pretoria. This endeavour is initiated together with the ISDF (Inner City Spatial Development Framework), MDCUDF (Mandela Development Corridor Urban Design Framework) and the ARUDF (Apies River Urban Design Framework).

*“ living, stimulating and economically viable spine of the Pretoria Inner City”*  
(Hlahla; 23 –06- 2001).

*“ landmark, a pleasant environment for recreation and entertainment...walk along Apies River in a pleasant, vibrant and robust environment in contrast to the pseudo-urban environments which we find within enclosed and introverted shopping malls.”* Jaksa Barbir (AARI's chairman)  
*“Sparkling , clean water and a healthy ecological system...handsome buildings with shops, coffee bars and restaurants for passing pedestrians, green lawns and trees.”*  
(Hlahla; 23 –06- 2001).

The City Council proposed the revision of the existing frameworks mentioned above. A more comprehensive Urban Design Framework along the Apies River and Nelson Mandela drive is envisaged. This framework has as its basis the pedestrian as the user of the city (**Figure 4.1**). To rehabilitate the city as a chain of green spaces, where the most important is the Apies River (**Figure 4.2**). A city is experienced by the way people move through it and use it.

To market Pretoria as the administrative capital of South Africa, the image of the City gets high priority from the City Council of Tshwane. Particular attention will be given to the landmark and gateway qualities of buildings in the city (**Figure 4.3**).

The City Council of Pretoria through the ISDF identified certain sites with priority for development along the Apies River, because there is numerous state-owned land along the river.

Berea Park was identified as the site for a Learning Resource Centre. The site belongs to Transnet who put some of their land next to the Apies River up for sale (Capitol Consortium; 2002; p.68). This building will house bureau's

of the Department of Environmental Affairs and Tourism and the Department of Education.

The reason for this is to function as an information centre for people coming into Pretoria, as well as a resource centre for the local community.

The information centre will inform people about Pretoria and its surroundings, and as this is the Southern Gateway into Pretoria it celebrates that function. An exhibition space displaying Modern South African Culture will be housed here. There is a physical link with the new Freedom Park development and the Museum Mall including Burgers Park and Melrose House.

The resource centre will function as an interactive library and study centre for people living in the CBD. This is needed because the State Library has insufficient space for study, and surrounding colleges and universities require a central visual library (**Figure 4.4**). A Digital Library will function as a database with all the newest journals, magazines and excerpts from books of the last five years available on the computer. A central library will thus be created. This will be especially useful to schools in the city, where research is a problem for pupils. Adult literacy classes (reading, writing and computer literacy) will be presented to the local community in the evenings.

Intermediary term clients will be from UNISA, Vista University, Pretoria Graduate College (on the site), University of Pretoria and the Pretoria Technikon. They will all be involved in running the resource centre. Their incentive is to create a digital library for their students and the community as a whole.

This will also function as an educational clinic, where the different institutions will have a first contact area with future students. Post graduate students from the different institutions will help to run these satellite offices.

The development will also be a recreational space for students, workers and residents in the community. It will be a “cooling-off” space for commuters using the Pretoria Station, and other means of public transport (**Figure 4.5**).

A definitive pedestrian movement occurs along the site because most of the students of the mentioned institutions use public transport to get to class.

This “urban park” will include open green spaces next to the Apies River. Benches, litter bins and sufficient lighting

University of Pretoria etd - Strydom, C (2003)

will be provided to give this area 24 hour activity and security.

Linking in with this, is a small scale commercial activity node and a taxi terminal. Because of the nearness of the Pretoria Station and the Gautrain station, this becomes a stop over for commuters (Figure 4.6). The existing taxi stop will be formalised and the small- scale commercial node will fit in with that. A bus drop-off point will be placed in Nelson Mandela drive to accommodate tourists visiting the site. This will also soften the monotonous eastern side of the site by lencouraging people to move over the river. This will be

managed by the City Council.

A small overnight facility for visiting schools and a residential component for employees will be established. This will ensure 24 hour activity and the “eye on the street” concept.

According to the Integrated Spatial Development Framework of the Pretoria Inner City (Capitol Consortium; 1999; p.33), the Berea Node should have a multi- functional use including commercial, offices, residential, entertainment and education facilities. Southern Berea has a great link with

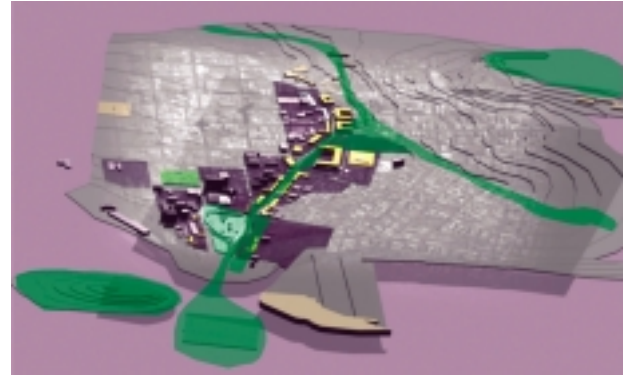


Figure 4.2:  
Green spaces linking the movement  
through the city

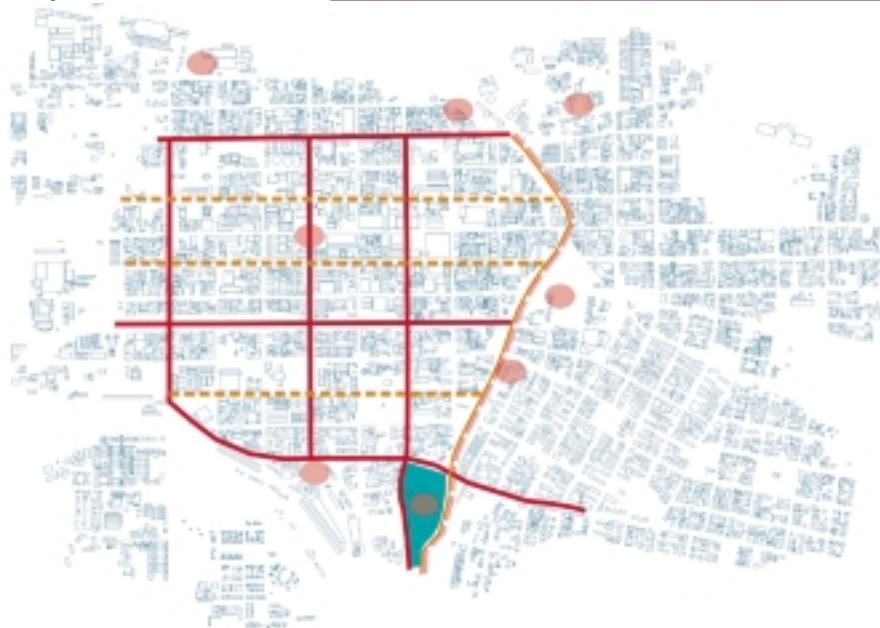


Figure 4.1:  
Pedestrian movement in  
and around site

● Activity Node   
 ● Berea Park site   
 — Major Pedestrian Route   
 - - - Minor Pedestrian Route   
 - - - Proposed Pedestrian Route

## University of Pretoria etd - Strydom, C (2003)

the Pretoria Station and serves as the southern gateway into Pretoria and must provide tourist facilities as well as resource facilities for the resident population (Capitol Consortium; 1999; p.28).

Berea Park more specifically is a major feature of the open space system in the inner city and an attraction for visitors and investors. This area has the potential to become a landmark and statement as a gateway for the Inner city (Capitol Consortium; 1999; p.28).

A Section 21 company, involving the government departments and the tertiary institutions, will be established to run this project. Funding will be provided by the European Union. The aim of the EU is to start programs in South Africa to better the social, economic and environmental state of the country. The sub-clients therefore become tenants.

Figure 4.3:  
*Nodes, districts, gateways*

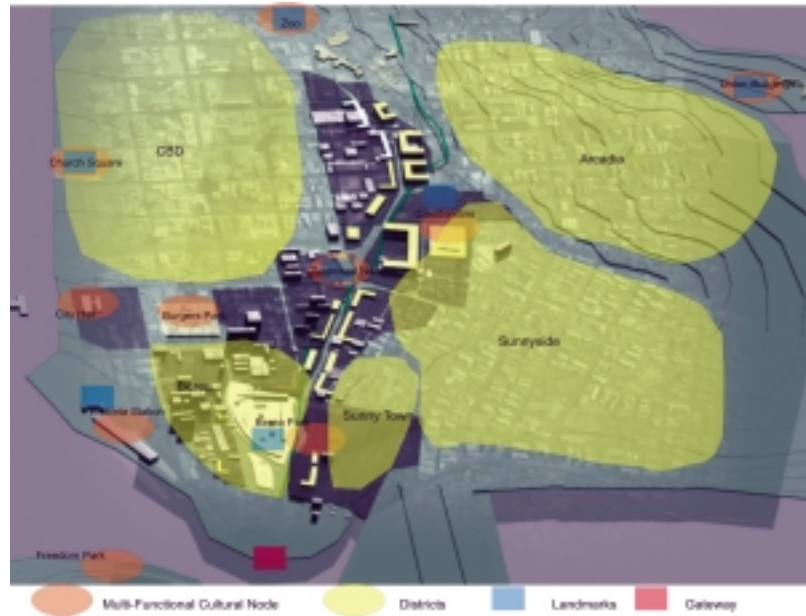


Figure 4.4:  
*Educational institutions in context*

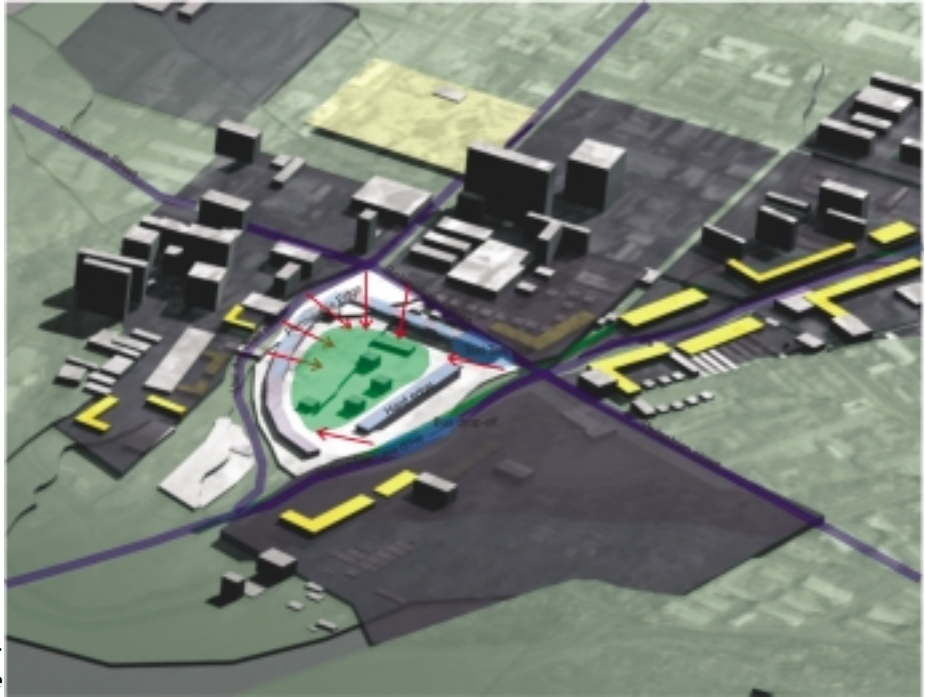


Figure 4.5:  
Site as recreational node



Figure 4.6:  
Transportation route

The European Programme for Reconstruction and Development (EPRD) has projects specifically aimed at bettering education and micro-enterprises in South Africa ([www. EUSA.org.za/](http://www.EUSA.org.za/) annual report). The European Union is seen as “investors in People” and similar projects include the Labour Market Skills Development which assists and lends expertise to the Department of Labour to implement the Skills Development Act.

Particular attention will be paid to developing the capacity of both the national and provincial Departments of Education in relation to accessing and managing donor funds, and in the field of adult literacy through continued support to the SA National Literacy Initiative

EPRD projects in the education and training sector aim to assist the South African government in restructuring the delivery of education and training to previously disadvantaged groups. Key areas range from adult education and early childhood development, to school rehabilitation and tertiary- and technical education. The EPRD is currently implementing ten projects in this sector, to which the European Union has committed

- 151,9 million. Support for this sector accounts for about 18% of EPRD funding.

Government (under the responsibility of the Ministry of Finance), the private sector and NGOs.

The projects and programmes financed under this budget line should support the South African Government’s strategy, and in particular the Growth, Employment and Redistribution (GEAR) Government programme, based on promotion of economic reforms, support to private sector and delivery of basic social services and infrastructures to the poorest.

Attention has to be given to coherence with MIP and South African policies, to sustainability of projects, and to monitoring of project implementation. The resulting Financing Proposals have to be submitted to the EU Member States before being endorsed by the European Commission and financed by the EPRD funds.

The implementation of the projects starts with the signature of a Financing Agreement between the European Commission and the responsible partner, who is required to submit annual workplans and regular technical and financial reports.

Project implementation will be undertaken either by the Government (concerned Departments) or by agents of decentralized cooperation (NGOs and other partners).

The South African Government agrees that NGOs and other partners should continue to implement projects with EPRD financial support, and 25% of financial resources will be devoted to programmes developed by these agents.

Participation may be extended to include other developing countries in duly substantiated cases and in order to ensure the best cost-effective ratio.

Expression of interest by firms can be made to the SA Department of Finance and the EU Delegation in Pretoria ([www. EUSA.org.za/budget](http://www.EUSA.org.za/budget))

### Other Related Projects

The ‘Education Sectoral Support Programme’ has three components, with weak links between the components: (1) a bursary programme, funding the National Student Financial Aid Scheme through TEFSA, a Government agency), accounting for 44% of funds, (2) management improvements, especially financial management at provincial and sub-provincial levels, accounting for 8% of funds, and (3) upgrading school infrastructure, accounting for 45% of funds. ([www. EUSA.org.za/](http://www.EUSA.org.za/) report)

# 05 implementation

## Funding & Implementation

The 1996 EPRD was designed in close co-operation with the national Government. It focused on a small number of programmes, in order to reach a coherent developmental overall programme. Main beneficiary sectors were good governance and institutional strengthening and social sectors (education and health).

A Multiannual Indicative Programme (MIP) for 1997-1999 was prepared with the Government and agreed upon in May 1997. It provides guidelines for the EU/SA co-operation programming, with an average 125 million ECU to be committed every year.

Project implementation will be undertaken by the

**EDUCATION SECTOR SUPPORT PROGRAMME  
(www.EUSA.org.za/annual report)**

Project No.	:	98-73200-01
Commitment	:	• 23,000,000
Increase 20%	:	• 4,600,000
EC Disbursement	:	• 26,559,893

**Aim**

The project aims to support the SA Government’s programme and reforms for improving the conditions of education, particularly for the historically disadvantaged communities, through the provision of better educational facilities, access to tertiary education, and improved finance and governance.

**Implementation**

Department of Education

**Status**

Funds from the first tranche for the bursary component have all been allocated. This component was administered by the National Student Financial Aid Scheme (NSFAS) and enabled access to tertiary education for disadvantaged students. The implementation of the SA Schools Act component of the programme is in the final stages. This component assists the Department of Education in the implementation of the financial aspects of the SA Schools Act, and operates at both national and provincial level. In addition to training and capacity building at provincial level, provision is made for local technical assistance to be deployed in the provinces.

**LIBRARY BOOKS AND TRAINING PROGRAMME  
FOR HISTORICALLY DISADVANTAGED  
INSTITUTIONS**

Project No.	:	95-75070-09
Commitment	:	• 13,000,000
EC Disbursement	:	• 4,820,617

**Aims**

- To provide text books for undergraduates;
- To provide library books, audio-visuals, electronic serial and document delivery systems;
- To improve information technology;
- Capacity building of library staff.

**Implementation**

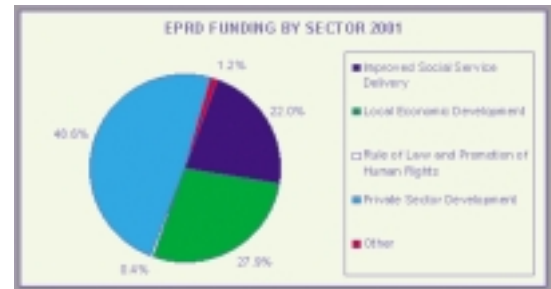
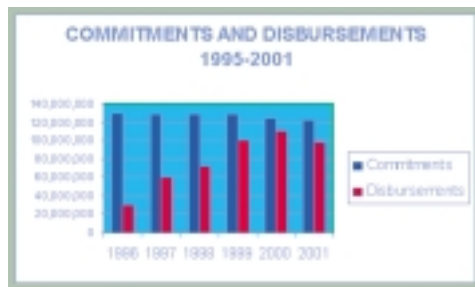
Department of Education

**Status**

Work Plan 4 for 2001 – 2002 was approved in July 2001. A number of supply tenders were launched and these are:

- Tenders for materials and textbooks were evaluated and contracts with suppliers were signed by the Contracting Authority (Department of Education) and endorsed by the Delegation. The delay in the award of contracts for the Materials and Textbook Tenders has set back implementation by 2 months;
- The Open International Tender for the back-sets of Journals was cancelled since no qualified bids were received. Consequently direct agreements were signed with a number of suppliers. The Direct Agreements for SABINET Online and CDROM Database were also signed and implemented;
- The Open International Tender for Information Technology (IT) was published on 6 November

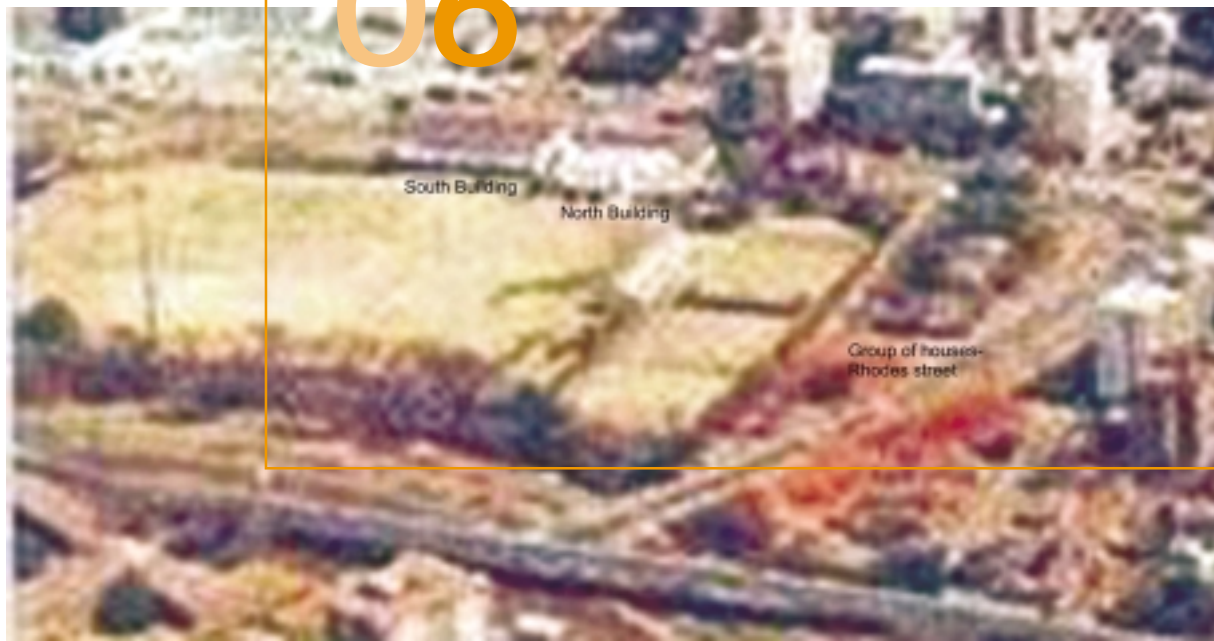
*Figure 5.1:  
Charts of EU funding*



# historical context

## 06

Figure 6.1:  
Site showing historical context



A short synopsis of events that happened along the Apies River:

- **200 000 years ago** – Stone age communities got water from the Apies River.
- **AD 1200** – Iron age communities settled along the river.
- **1825 – 1826** – Bakwena tribe settled along the river and called it Enzwabuklunga (Painful) referring to the sharp stones at Fountains Valley. Later the Tshwane People settled along the river.
- **1830's & 1840's** – Voortrekkers including the farmers Bronkhorst and van der Walt settled along the river.
- **1857** – The name Apies were given to the river because of vervets on the banks (*Cercopithecus aethiops*)
- **1912** – The first date palms planted along the river.
- **1980's** – The first proposal for the city lake at Caledonians by Floris Smith & Meyer Pienaar Argitekte & Stadsbeplanners in 1983 and Gouws Uys & White Landskapargitekte in 1989. (Hlahla; 23 –06- 2001).

### Site specific

The Houses on the north of Berea Park have some basic characteristics:

- Simple form

- Shield roof
- Verandah on columns and stoepwalls
- Face bricks/ painted plinth
- Plastered top walls (bo-mure)
- Timber windows and doors
- Set back from the street
- Fenced gardens
- It has social importance as group of houses (Le Roux et al, 1990: 157) (See figure 6.4)

The Clubhouse in Berea was built and is owned by the S.A. Transport Services (Le Roux et al, 1990: 163).

In 1845 the Andries van der Walt house was built on the western bank of the Apies river but has been demolished before the 1890's.

Football was forbidden on Church Square, and the players asked the vice-president of the then municipality of Pretoria for other sports grounds.

The ground belonged to The Bourke Trust Company and in 1888, Loftus Versfeld started the Pretoria Rugby Club and they leased the ground from the Bourke Trust Company (Jansen, 2001: 3)

The Berea Club was developed in 1897. In 1902 the Old Caledonian hall was built but was for exclusive use of Spoonnet workers. In 1903 the Bourke Trust Company sold Berea Park to the Pretoria Railway Institute for £ 12500. The Southern Clubhouse was built in 1907, designed by S.A.R. & H., for £ 8000 and upgrading of the sports grounds was done for £ 4000 (Figure 6.2).

In 1913 the club had 1200 members. In 1926 the northern club hall was built as a loose-standing building (Figure 6.1). In the same year the Pretoria Rugby Club moved to Loftus Stadium and the Berea Rugby club was started (Jansen; 2001; p.5). Some additions were done in 1938 and later in the 1940's. Apparently these were the last alterations made on the buildings. It was the only sports facility in the young Pretoria. The Railway Club provided a library, music room and bar to its members.

Thus, this landmark location has great cultural and historical value (Le Roux et al, 1990: 164).

The first South African motor car (a Benz) was exhibited at Berea Park in 1897 (ARUDF, 1999: 16).

**An assessment of the current state of the building includes:**

**The Southern Clubhouse 1907**

The quartzite stone plinth needs to be cleaned and preserved (Figure 6.9). The verandas on the street façade were previously filled in with bricks and steel windows were inserted.

Two gables were demolished, another storey added and then again rebuilt (Figure 6.8).

The external walls are treated with a textured paint that needs to be maintained. The advertisement boards are insensitive to the building typology. The Art Nouveau with sand-blasted glass double entrance doors needs to be celebrated more (Figure 6.7). The conclusion is that the building should be conserved and continuous maintenance is of utmost importance. This building will be included in the design of the resource centre and will form part of the development.

**The Northern Club Hall 1926**

Although a different architectural typology, this building is sensitive to the existing southern building. The arches for the entrance doors to the hall was adapted and the red brick plinth was painted white. Again the texture paint on the outside needs maintenance. The entrance to the hall is in an alley between the two buildings which undermines the importance of the building (Figure 6.14, 6.15). A floating "dance floor" of Oregon pine, tongue and groove jointed planks was replaced in the seventies with a Maculata strip timber floor. This floor consists of 150mm by 50mm lathes on 300mm by 75mm Oregon pine beams, 1500 mm in both directions (Jansen, 2001: 10). These beams are on steel springs mounted on masonry footings and are in a working order. The clubhouse and hall was connected by a walk bridge (Figure 6.11).

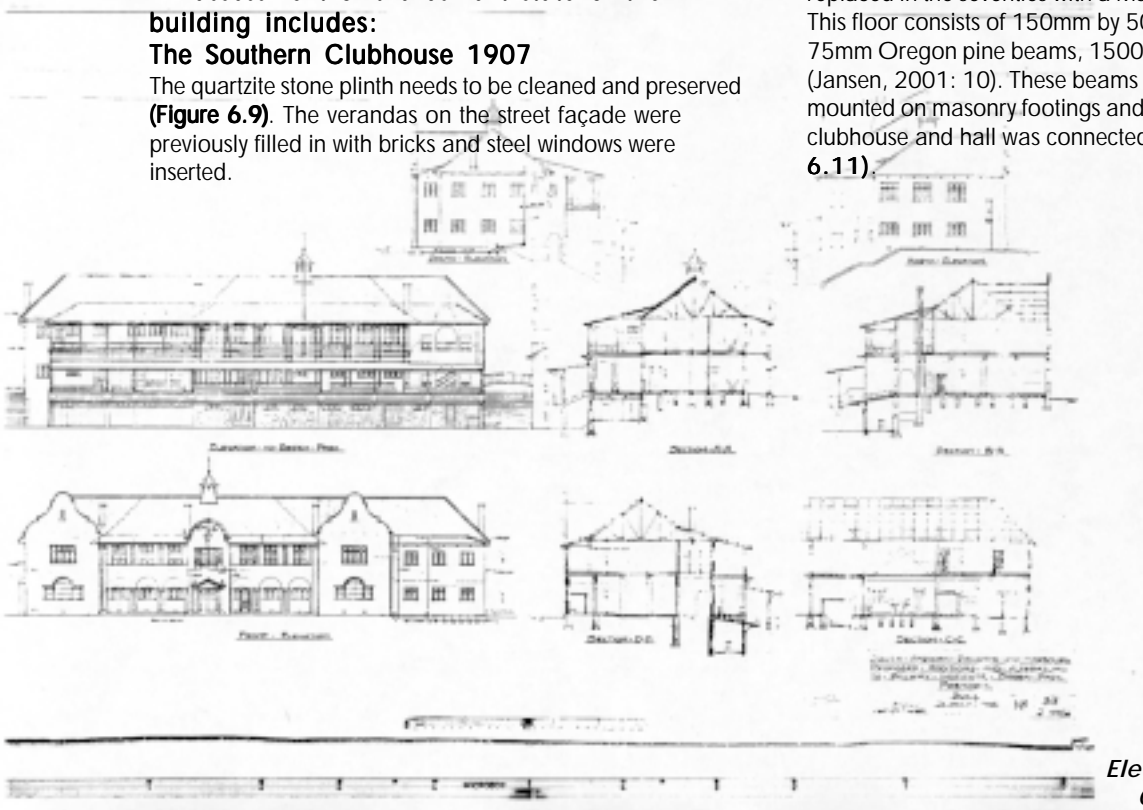


Figure 6.2, 6.3: Elevations of the Southern Clubhouse built in 1907

*Figure 6.4:  
View of Rhodes street with residential buildings to left*



*Figure 6.6:  
South Clubhouse, stairs to sportsfield*



*Figure 6.8:  
South Clubhouse, western gables*



*Figure 6.5:  
South Clubhouse, eastern balcony*



*Figure 6.7:  
South Clubhouse, van der Walt entrance door,  
sandblasted glazing*



*Figure 6.9:  
South Clubhouse, stone plinth*



University of Pretoria etd | Strydom, C (2003)

Figure 6.10:  
South Clubhouse, refurbishing of new classrooms



Figure 6.11:  
Bridge between Northern building and Southern Clubhouse



Figure 6.12:  
South-Eastern view of bridge



Figure 6.13:  
Interior of bridge looking south



Figure 6.14:  
Entrance to alley with bridge, from van der Walt street



Figure 6.15:  
Northern Building, entrance foyer from alley



## Soil

Central Pretoria is underlain by shales and andesite of the Pretoria Group with a vertical syenite dyke in the north- south direction (Purnell, 1984: .6) (**Figure 7.1**). In the Pretoria area conditions changed rapidly, resulting in alternating bands of shale and quartzite and four volcanic suites of which the Hekpoort andesite is close to the base.

The shaly zone is the Timeball Hill formation composed of shale, siltstone and flagstone with a white, yellow or red colour on weathering (Purnell, 1984: 9). The Hekpoort Formation is grey to green andesite, amygdaloidal to non- amygdaloidal lava with base of agglomerate and tuff near the base. The vertical syenite dyke is 100 m in width.

The hekpoort andesite weathers down to clayey silts and silty clays with a maximum depth of 10m (Purnell, 1984: 23). In the southern and western parts andesite bedrock may be encountered within few hundred millimeters from the surface. No foundation problems should be encountered.

The syenite dyke weathers same as andesite and soft rock will be encountered at 14m and hard rock at 20 – 25m.

**Reaction:** After soil testing in andesite on a large site, ordinary footings or slightly deeper strip foundations can be used (Purnell, 1984: 35). Deep piling can be used in these problematic soils to reach inactive material with a suitable bearing capacity (Minimum 1,5 MPA). Stiffened raft foundation is recommended. This foundation comprises a grid of reinforced concrete beams cast integrally with the floor slab (Purnell, 1984: 36).

Subsurface pipes and drains, by means of flexible joints, needs to be installed to prevent subsurface drainage. Drainage should divert rainwater away from the foundations. Trees with

excessive desiccating influence should be kept away from these structures.

In excavations vertical pre cast concrete piles can be used tied back with anchors and horizontal concrete plastering. Some sort of shoring technique should be used on all excavation faces (Purnell, 1984: 36) The syenite weathers in the same way as andesite. With deep excavation in these soils, strong inflows of water must be anticipated. Attention must be given to construction joints (Purnell, 1984: 37).

## Hydrology

The depth of the water table is affected by climatic conditions, being deeper during periods of drought and shallower in times of high rainfall. The water table in the andesites are 6m deep (Purnell, 1984: 10).

Groundwater moves to approach the overall gradient, but as the water table declines to approach the base of the topography it moves in diverse directions corresponding to those of the surface drainage (Purnell, 1984:11).

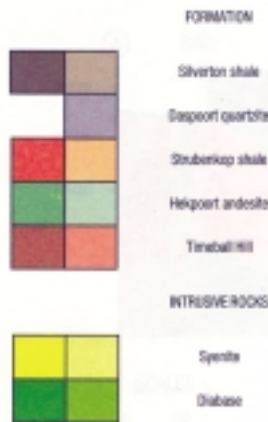
**Reaction:** With the Pretoria Dyke of syenite, the groundwater is higher in west. In Central Pretoria basements of structures require regular pumping into the stormwater system. This is lowering the groundwater in the vicinity.

## Topography

The site is situated between two ridges; Muckleneuk (South-east) and Salvokop (South-west). The slope of the site falls to the north. On the west is the Pretoria station area, to the east is Sunnyside, to the south-east is Unisa and to the north is Pretoria CBD (**Figure 7.2**).

Figure 7.1:  
Soil map and key

# 07 bio-physical context



## University of Pretoria etd - Strydom, C (2003)

**Reaction:** The natural topography has as a result a natural flow of water to the north for example the implementation of a wetland.

### Vegetation

- **Northern slopes:** *Ochua Pulchra* (lekkerbeuk), *Burkea Africana* (wilde sering), *Strychos Purgens* (Botterklapper), *Bequertiodenron* (Stamvrug), *Ficus pretoriae* (Wildevy), *Rhus* (Karee), *Acacia Caffra* (wag 'n bietjie).

- **Southern slopes:** *Protea Caffra* (Suikerbos), *Acacia Caffra*

- **Riverbanks-** *Celtis Africana* (Witstinkhout), *Kiggelaria africana* (Wilde perske), *Halleria Lucida*, *Leucosidea sericea*, *Buddleja salvifolia*, *Cassinopsis ilicifolia*.

- **Historical:** *Phoenix canariensis* (Palm), Acorn trees and jacarandas (Gouws et al; 1989; p.21)

**Reaction:** The planting of indigenous trees will have as a result sustainable vegetation.

### Climatological aspects:

(Gouws et al, 1989: 26)

**Makro:** Intermediary savannah biome – between dry savannah biome (150 – 1500mm rain/year) and humid savannah biome (> 1000mm rain/year)

Half dry and very warm/ light frost. The location of the area is 25,8 - 30,7 degrees east and 22,0-25,9 degrees south (Holm, 1996:69).

### Temperature:

Maximum - January 27 - 38 degrees celcius

July 17 - 27 degrees celcius

**Figure 7.2:**  
*Topography showing the "poort" between the koppie*



Minimum- January 13-1 degrees celcius

July 0 -10 degrees celcius

The average monthly diurnal variation is 13 Kelvin.

Frost period – 120 days between May & September. (Gouws et al, 1989: 29)

### Climatogram (Figure 7.3)

Pretoria at 12:00 Latitude 25,77 degrees-

Solistic - 64, 23 degrees, Winter- 40,73 degrees

(Holm, 1996: 72) (Figure 7.5).

**Precipitation:** 679 mm rain yearly

Extremities: 372mm & 914mm rain

November – March most rain with February the maximum, 50 – 80 days rain a year

Average monthly humidity is 59 % (Holm, 1996: 69)

**Winds:** North East, SouthEast –summer

South West, North East - winter

Wind rose (Figure 7.4) (Gouws, 1989: 28)

**Seasons:** October, March, April – warm, dry

November, December, January, February –warm, humid

May, June, July, August, September – cold and dry

**Reaction:** The design of the building will accommodate a dry, warm climate with maximum ventilation and sun-shading.

**Micro:** (Gouws et al, 1989: 30)

In tree rich, wide streets there is extensive evaporation and transpiration. Next to rivers there is less variation in daily temperature. In treeless wide areas like parking it is open and dry. In the afternoon it is warm but cools down in the evening. Narrow streets and courtyards are 4-6 degrees Celcius less in the afternoon and late afternoon (not in the evening). Still

bright evenings can be experienced with cabatic flow: cold air in valleys, warm air out (Figure 7.6).

**Reaction:** Pedestrians must be protected by trees, arcades or canopies. South facades should be tree lined because of radiation. The most pollution is gasses, solids and noise.

**Apies River** (ARUDF, 1999: 16)

Two springs in Fountains Valley, delivering up to 30 million litres of water per day, are sources for the Apies River. Bulk of this water is distributed into the water network of the city. Based on water quality guidelines for recreational use, the river is in general usable. Areas with a decrease in water quality are limited. The Apies River has ten tributaries also providing water (ARUDF, 1999: 7).

The conservation of the Apies river includes the natural- and landscaped area. The river is canalised without a natural riverbed. There are a lot of indigenous trees along the river. Littering is a problem and needs to be addressed.

The accessibility to individual sites are problematic from the side of the river, but is good in general. There is potential for rail transportation, cycles & pedestrian movement (ARUDF, 1999: 16).

**The infrastructure & services is in good condition:**

The stormwater management is in a good condition with a concrete lined channel and 50 yr flood line of 12m. It has surface drainage & street inlets to manage the flow of the water. This could be applied for more sustainable energy use, for example electricity generation. The water pipes are 450mm diameter & 525mm diameter on the right bank, and 900 mm diameter & 150mm diameter on the left bank. There is sufficient electricity supply and the sewerage is moved in 600mm diameter pipes on the right bank. The sewers are in the street reserves (Figure 7.7).

**The public amenities at the moment :**

Social infrastructure includes the sports fields to east and the Museum Mall to the north.

Public infrastructure is created along pedestrian routes but needs to be improved.

Maintenance and care are insufficient and the concrete canal needs repair (ARUDF, 1999: 15)

Jan	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ave
Maximum average monthly temperature (°c)	28,6	28	27	24,1	21,9	19,1	18,6	22,2	25,5	28,6	27,1	28	24,81
Minimum average monthly temperature (°c)	17,4	17,2	16	12,2	7,8	4,5	4,5	7,6	11,7	14,2	15,7	16,8	12,13
Average monthly amplitude (K)	11,2	10,8	11	11,9	14,1	14,6	15,1	14,6	13,8	12,4	11,4	11,2	12,68
Average monthly relative humidity (%)	58,0	59,5	60,0	59,5	55,0	53,0	50,0	46,0	45,0	49,5	54,0	56,5	53,83
Average monthly rainfall (mm)	136	75	82	51	13	7	3	6	22	71	98	110	56,17
Rhum 32	74	76	78	76	75	71	64	61	64	68	70	75	70,75
Rhum 44	45	44	41	34	31	29	28	29	35	40	43	44	36,92

Figure 7.3: Climatogram of Pretoria

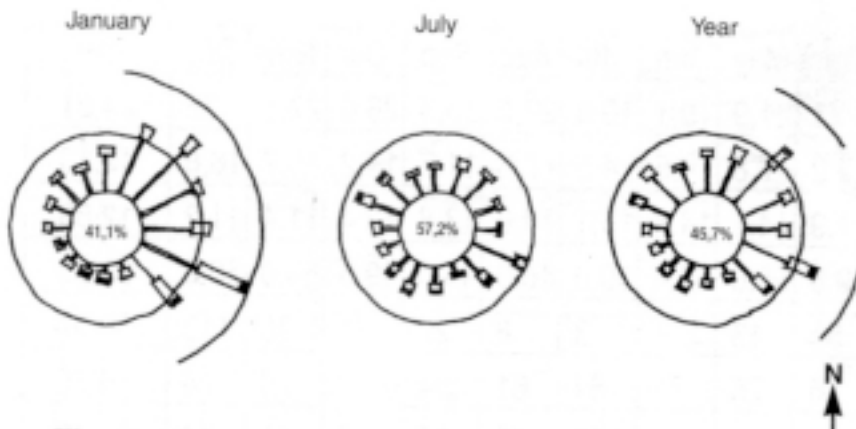


Figure 7.4: Windrose of Pretoria; intensity and direction is indicated, percentages indicate wind stillness

Suburban refers to an area where nature is organised and discernible as a green strip running through a low to medium density built-up area (ARUDF, 1999:6). Berea can be seen as suburban. The potential of the South Berea node as a gateway promoting human scale towards the city centre with tree lined, building set-back, designed street interfaces (ARUDF, 1989: 44).

Figure 7.5:  
Sun angles on the site

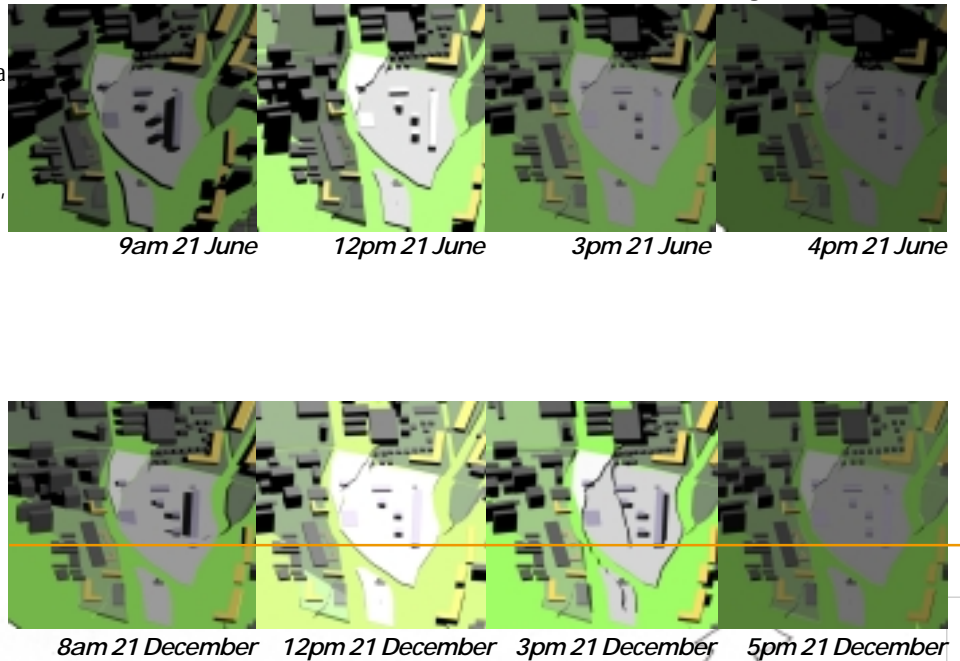


Figure 7.6:  
Microclimate



TYPICAL SECTION

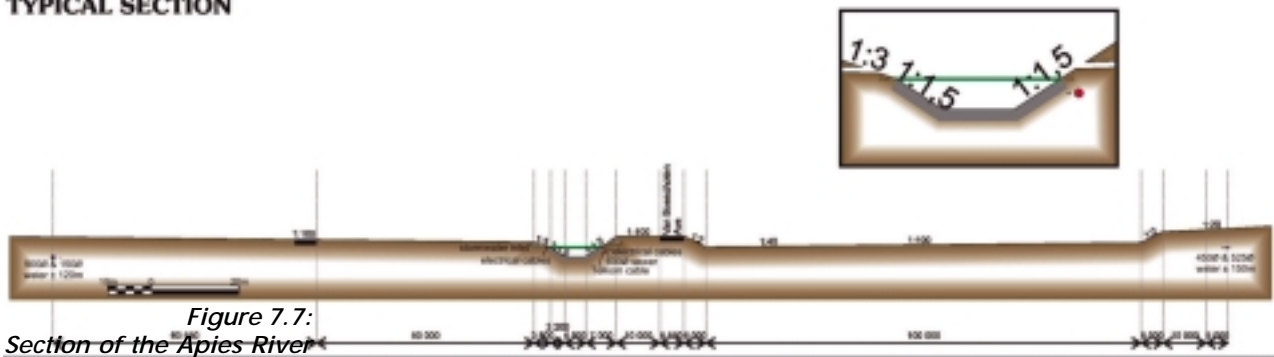


Figure 7.7:  
Section of the Apies River

# 08 social- and economic context

The social context consists of a high density residential component. There is a lack of social amenities in the area - study space and recreational space. Commuters using the metro rail move through the area to and from work and the surrounding educational institutions (Figure 8.1).

The people living in the area are mainly lower middle class, because of migration of people into the city for job opportunities. The social amenities and economical state of the area can be improved dramatically.

The education of people is important. The bad debt on service fees in the residential blocks is in the excess of millions of rands because of peoples ignorance towards fees like levis, water and electricity. The community need to be educated about elementary things like paying bills.

After an interview with Mr. Jonas, the headmaster of Founders school, it became apparent that most of the people in Berea use the train as transport. People living in Berea mostly work in the CBD, including informal trading. Most commuters in Berea use Pretoria Station as a transportation node. Students of the different schools and colleges are a mix of local residents and commuters coming from the edge cities. The crime in the area is 75 % vehicle theft related and 15% petty theft and house breaking (Capitol Consortium, 2002: 67) (Figure 8.2).

Figure 8.1:  
Founders school, South Clubhouse



University of Pretoria etd - Strydom, C (2003)

1: Rhodes street (north) 2: c/o Walker and Nelson Mandela streets 3: North west corner, residential buildings



4: Nelson Mandela drive, Prinsloo bridge 5: c/o Andries and Nelson Mandela streets

6: Eastern edge of Nelson Mandela drive



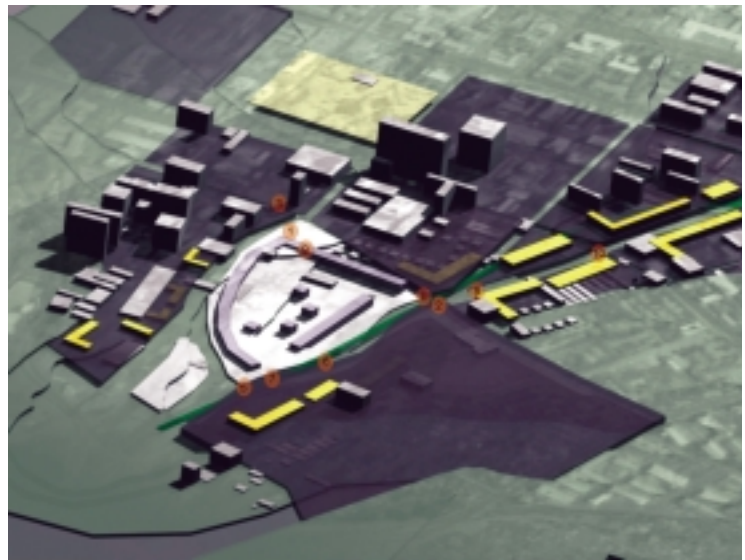
7: North western entrance to site



8: Nelson Mandela drive with MOTH club to the right



Figure 8.2:  
Map of physical- social- economic context



## Site and surroundings, Stand no.

2375. The site of Berea Park is situated on the Southern entrance into Pretoria. It is a 48282 s.q.m site belonging to Transnet. It is currently used as a sport field and the historic buildings house the Pretoria Graduate Academy. The Berea High School is on the terrain, but only the northern part of the site is utilised. The site is overall in a derelict state.

The site is under-utilised, because it forms an integral part of the open space system along the Apies River. It could be used as a green space for education and recreation. The site faces onto Nelson Mandela drive and has great landmark- and gateway potential. It links up with Unisa, Pretoria Station, the proposed Gautrain station and various colleges including Vista University and the Pretoria Technikon. It also has Freedom Park to the south-west and the Museum Mall to the north. The tourism potential is also recognised.

Berea Park is surrounded by multi-storey, high-density residential blocks to the north and links up with Sunnyside to the east. There is a need for recreational- and educational amenities for the local community. To the west there is mainly two- to four storey buildings and to the east and south, mainly open space . Three important vehicular routes surround the site:

**Nelson Mandela drive:** it is part of the Pretoria ringroad system and is a high-speed street serving the southern suburbs and is channelised along the Apiesriver.

**Walker street/ Scheiding street:** is on the northern part of the site and is a one-way street serving high-speed traffic during peak hour in a east-west direction. Scheiding street leads to the Pretoria Station.

**Van der Walt street:** it is a high- speed, one-way street serving traffic in a north-south direction during peak traffic.

The current state of Berea Park gives rise to various constraints and opportunities for the designer (**Figure 9.5**).

# 09 physical context



Figure 9.1:  
North West view to CBD



Figure 9.2:  
West view to Unisa



Figure 9.3:  
North West view



Figure 9.4:  
South West view

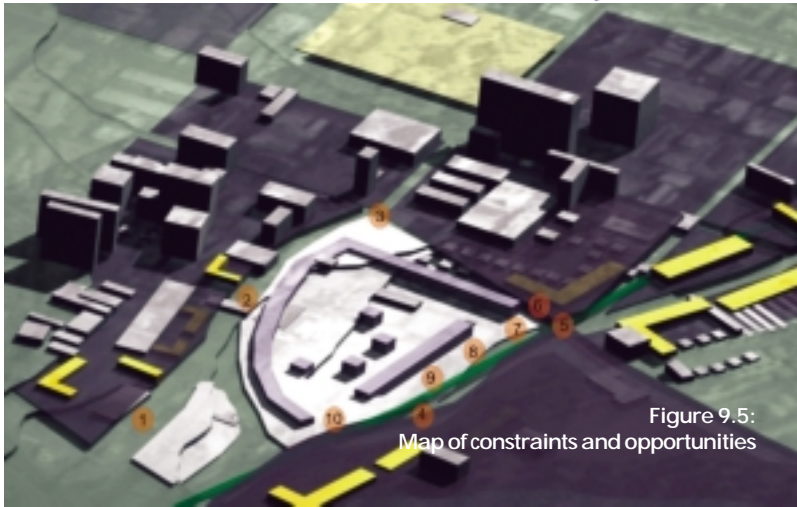


Figure 9.5:  
Map of constraints and opportunities

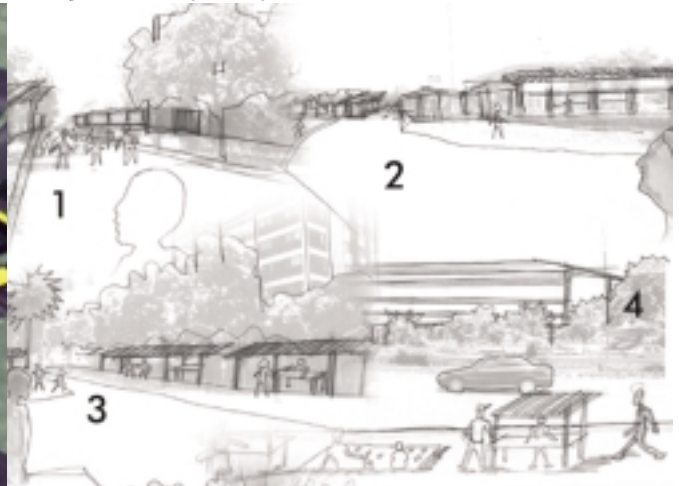


Figure 9.6:  
North-west entrance to site

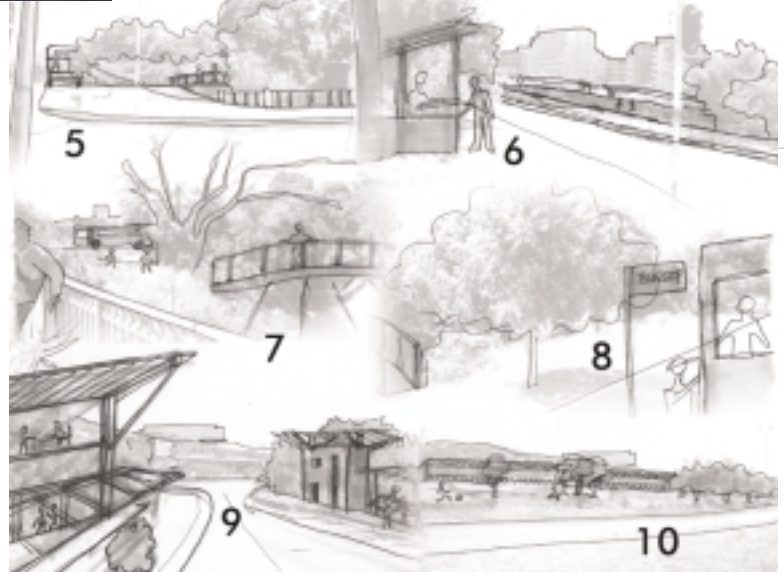


Figure 9.7:  
View from South Clubhouse balcony

Figure 9.8:  
View to Unisa form site

Figure 9.9:  
View to Union Buildings from site



## The study of the climatic context had as a result the passive climate design.

Solar passive design is climate sensitive and uses resources from the natural environment such as the heat of the sun, wind and temperature differences to heat or cool the building, or to generate energy (Holm, 1999: 1). This reduces the negative impact on the environment caused by energy consumption.

The temperature for thermal comfort is 21-22 degrees Celsius with air movement of 1m/s (Holm, 1999: 5). The optimum humidity is 50%. The illuminance is the luminous flux uniformly distributed over a unit area. One lux equals one lumen per square metre.

Orientation is important for lighting, west and east orientation is undesirable because of unwanted heat gain. Preference should be given to rooms that need natural light close to the facade. Room depth should be kept to a maximum of 15 metres to ensure natural lighting.

Windows with a higher sill height let in more light, as well as larger, vertical windows. The minimum area of openings should be 10% of the floor area (Holm, 1999: 7). The most suitable plan forms for South Africa are oblong and courtyard forms. The longest sides should be orientated north (Holm, 1999: 10).

External spaces should have shade in summer and buffer zones should be placed (Holm, 1999: 70). Thermal mass is advisable and is provided by massive floors and walls. Lightweight insulated roofs are feasible.

External surfaces should be light coloured or reflective to minimise solar gain. Summer sun should be screened and winter sun allowed to penetrate. An equatorial window of 21,2% of the floor area is sufficient for the winter period. Natural ventilation is sufficient for summer period and management of openable windows is advisable. Direct evaporative cooling is not effective, but ventilation with the stack effect is advisable (Holm, 1999: 71).

## Learner's Resource Centre

The design brief is compiled by the architect to accommodate a new identity for the city of Pretoria. The client explicitly wanted the landmark and gateway quality of the building to be celebrated and to establish a new aesthetic for Pretoria. The designed space needs to be transparent, accessible, flexible, open, safe, sustainable and economic. It has to have visual identity, serve the community and ensure regeneration in the social, economic and environmental context.

The building will function as a Learning Resource Centre. This will include a study centre for people living in the city. Smaller classrooms will be used for adult literacy classes as well as individual study rooms for students. A small rental fee will be payable for this use.

The digital library consists of computers with all the most recent (last 10 years) journals, magazines and excerpts from books. This will make research easier and more accessible to anyone. Internet will be provided to create a global library. Together with the digital library, an audio-visual library will house video machines, televisions, compact disc- and DVD players.

The exhibition space will display Modern Culture in South Africa as well as a temporary exhibition for schools in the city. This links up with an information centre for tourists.

Administrative offices will provide space for the state departments as well as the institutions involved.

An "Urban Park" will be used for recreational facilities, to link in with the green space along the Apies River. Commercial activities will link in with the Taxi terminal, providing amenities to the public transport user. A small residential component houses employees for a small rental fee as well as overnight facilities for visiting schools.

The building will have the following functions:

**Tourism-** information centre, dynamic exhibition

**Educational-** study centre, adult literacy classes, visual library (internet), digital library

**Transport interchange-** taxi stop, commercial enterprises

**Recreational-** Urban Park next to Apies river.

## Design

Nelson Mandela Development Corridor and the Apies River will be analysed to create a people's place. Nelson Mandela Drive is a main road leading into the Capital City of South Africa with a high vehicular load. The ideal is to organise the city around non-programmatic spaces. Places where events can take place.

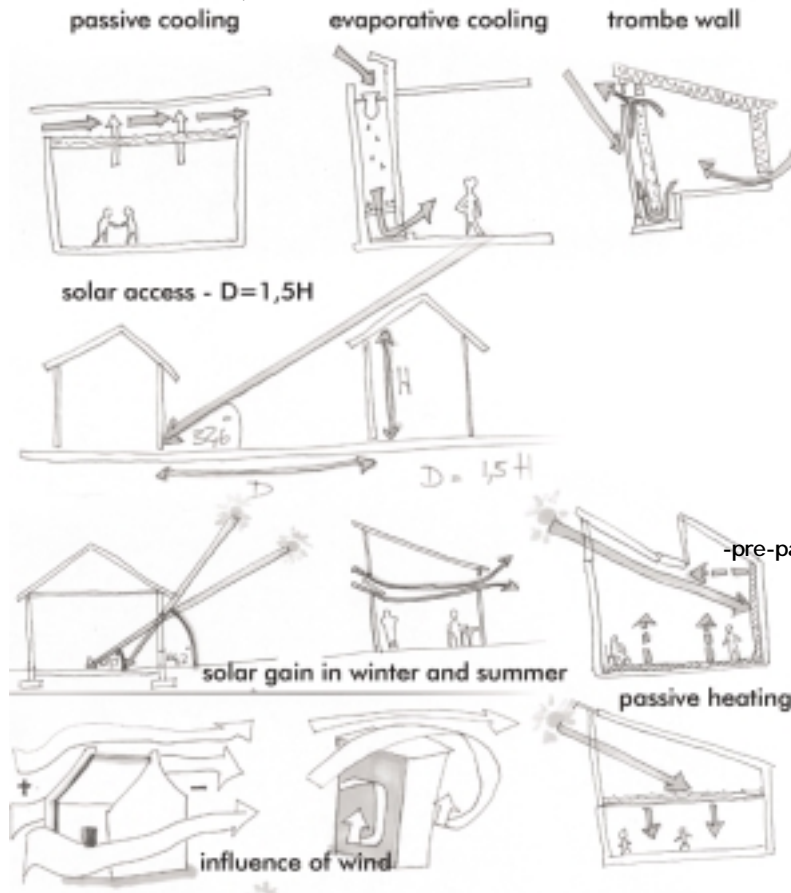
The site for the building serves as a landmark and a gateway. This fits into the study theme of architecture and visual culture. The semiology of architecture is explored to ensure the image of the city. The building will be a visual experience, asking the question what architecture is and what the different elements of architecture really means.

The regionalism of Pretoria will be researched to see where the current image of Pretoria is rooted and to influence the appropriate design decisions. An identity will be established to promote a more dynamic experience for the user (see introduction to document).

The building function will be a Learning Resource Centre because of its location. The multi-functionality of the building is to enhance the Berea area with an already high residential component. Social amenities will be provided, especially educational. The site is within walking distance from various colleges, UNISA and Vista University.

This building will be public, serving the community with a study centre, as well as an "urban park" for recreation. Through this the definite tourism component will be addressed.

The "information centre" will be multi-functional, celebrating the landmark- and gateway quality of the context as well as giving something to the community that is really needed. The site is near the Pretoria Station and next to the proposed Gautrain station, enhancing the public transport and pedestrian movement in Pretoria.



The proposed program of the building includes:

- large rectangular hall for local functions
- computer centre
- study carrels
- class rooms
- courtyards
- administration block
- market
- taxi & bus rank
- cable access, sufficient lighting
- periodicals
- street edge
- market related rental generating spaces
- inner edges- micro- enterprises
- pre-paid meters for electricity and water used by traders
- overnight storage, lockers, bulk storage
- small entrepreneurs
- public toilets
- internet
- children's books
- conference room
- audiovisual centre- cd players, DVD monitors
- café
- open square
- information desk
- bicycle parking
- book stacks
- reading rooms

### The Third Vernacular

Regionalist architecture can be described as the designer directly responding in a place specific way to climate, materials, site, defence, economics, religion and the particular cultural expression of the community. Pretoria regionalism can be seen as the third vernacular, because it is an architectural expression that becomes endemic (Fisher et al, 1998: 123).

Greig suggests the second vernacular as a Gregorian architecture beginning in the early 19th century, and the first vernacular as the colonial invention of Cape Dutch (Fisher et al, 1998: 123).

Pretoria Regionalism has a particular response to nature and landscape through economic use of naturally available and industrially produced materials with a response to climate (Fisher et al, 1998: 123). The character of Pretoria Regionalism includes traditional plan forms, rustic brick either directly as clinker or as whitewashed stock, low-pitched iron roofs, deep shaded eaves and verandahs, sun-shy windows, sensitivity to landscape and land features, an architecture responsive to climatic constraints (Fisher et al, 1998: 125).

Through the Public Works Department a brick aesthetic

was established in Pretoria. Brick architecture was well known to the Dutch Architects working on these projects (Fisher et al, 1998: 129). A good example of this influence can be seen in the Nederlandse Bank on Church Square designed by Norman Eaton in 1953.

Eaton moved towards an adaptation of the modern movement because of poor weathering of material used in the international style (Fisher et al, 1998: 123). Because of the availability of bricks it became popular as decorative and structural material. It's modularity and thermal advantages made it a regional material (**Figure 10.1, 10.2**).

A move towards the Modern Movement promoted a move towards the use of steel, glass and concrete to fulfil the International Style (Fisher et al, 1998: 129). The Brazilian Purist movement had an influence on the use of bricks, glass and exposed concrete. An expressive architecture evolved with the use of exposed concrete, articulation and use of diverse materials, the decorative interpretation of brick as load bearing material and indirect light as natural source of light (**Figure 10.3**). This can be seen in the NG Church in Burgerspark designed by Daan Kesting in 1969 (Wessels, 2001: 27)(**Figure 10.5**).

Figure 10.2:  
Polley's Arcade, Pretoria - Norman Eaton.  
Stairwell detail. 1953.

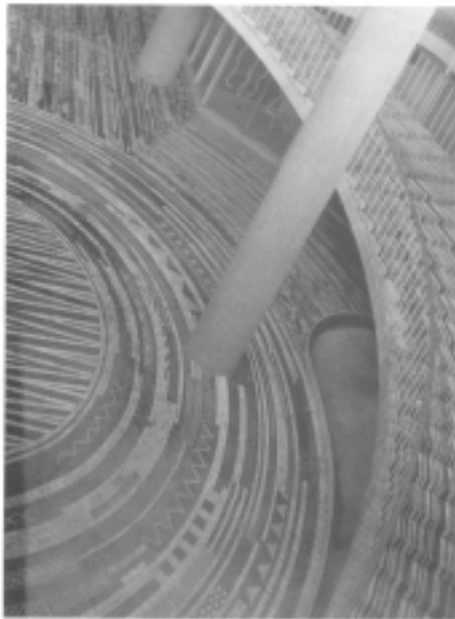
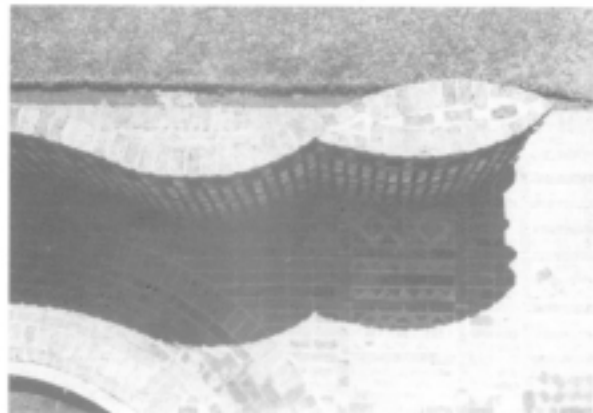


Figure 10.3:  
Little Theatre, Pretoria - Norman Eaton. Brick  
wall detail. 1940.



## University of Pretoria etd - Strydom, C (2003)

Although Pretoria Regionalism can be seen as an “apartheid” architecture, it can still be applied to the situation we have currently. A common bond for people living in the city is the sense of African Landscape and dwelling on African soil (Fisher et al, 1998: 140). The same generators of a global architecture is applicable again: the urbanisation of rural people with ties to a sense of material, climate, landscape and economic restrictions (Fisher et al, 1998: 140). City culture can be seen as a global culture.

The regional tectonics will influence the design of the building to establish an image and identity for Pretoria.



9.13

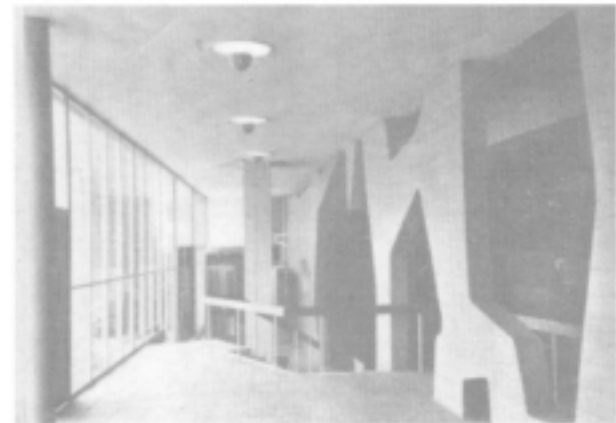


Figure 10.4:  
Aula at University of Pretoria's main campus - Philip Nel & Partners. Decorative concrete screens.

Figure 10.5:  
Little Theatre, Skinner street - Norman Eaton, 1940.



Figure 10.6:  
Doxa Deo Church, Burgerspark. Daan Kesting, 1969.

# 11 precedents

Figure 11.3:  
Building plans

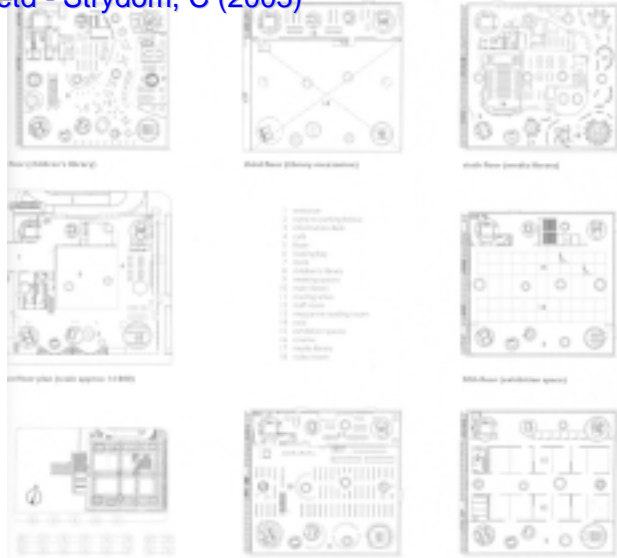
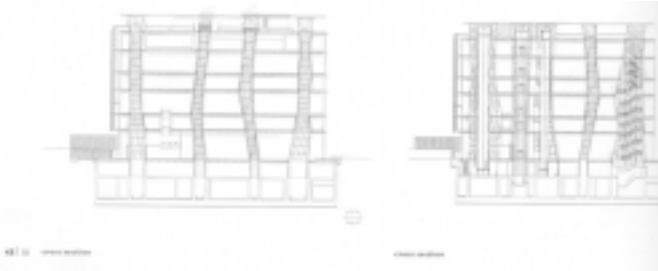


Figure 11.4:  
Section through the building



## Mediatheque , Sendai, Japan – Toyo Ito 1999

According to Ito, the typical form of library and museum is demolished with the rise of the Mediatheque. As he calls it a convenience store for media: paintings, books, films, compact discs and video tapes, without any hierarchy. This new type of building will be close to a railway station and open 24 hrs (Ito, 2001: 36). Marshall McLuhan said in the 1960's "clothing and shelter are an extended form of our skin" (Ito, 2001: 36). Architecture can do just that, acting as a media suit.

Architecture in the guise of a media suit can be described as an externalised brain. The Mediatheque, being on one of the city's main boulevard, is easily accessible and needed to be both culturally and architecturally challenging (Ito; 2001; p.37).

This building becomes an expression of civic pride; with each façade being different it shows a new attitude towards architecture: an ambiguous façade.

The structure of the building is even more so a new attitude: the floor is flat plates of steel embedded in concrete and the vertical structure is a structural tree of welded tubular steel baskets supporting voids (Figure 11.1) (Ito, 2001: 38). The floor plates vary in thickness due to the difference in forces on the tubes. The internal orthogonal ribbing is arranged radially around the tubes (Pollock, 2001: 199). The structural system had as a result an openness that promoted free action and for the user, as Ito describes it, to discover new spaces and uses for themselves. This gives the impression of

lightness. The hollow section trees range in diameter from 7 to 30 feet and comprises of sections of 5 to 10 inches in diameter (Pollock, 2001: 192).

The corner columns are 240mm in diameter for seismic bracing and the other 9 columns are 160mm in diameter and are scattered in between, the straight ducts carry lifts, while the rest carry ducts (Webb, 2001: 49). The columns also double as conduits for vertically circulating air, water, electricity, people and light. Some of the voids have circulation systems like stairs and lifts in them, while the others just let in vast expanse of light.

The furniture was designed by Kazuo Sejima and Karim Rashid to bring colour into a monochrome structure. The furniture, lighting and materials create a unique identity for each floor. It becomes pretentious, forcing symbolism for example the green carpet on the top floor called the "garden of knowledge".

The building is monumental and as Pollock describes it an "urban spectacle" (2001: 191)(Figure 11.2). The ground floor can be seen as an urban plaza with a 5000 square foot open square. All the paths from the ground floor lead to the second floor with periodicals, internet, children's books and offices, separated by curtains to keep visual barriers to a minimum (Figure 11.4). The third floor has a double-height library with 160 000 books, quiet study areas and casual seating overlooking the street. The fourth floor mezzanine has the reference section. The fifth- and sixth floor have galleries that could be rented out to the general public or used for professional exhibitions and performances. The top of the

Figure 11.1:  
Elements of structure

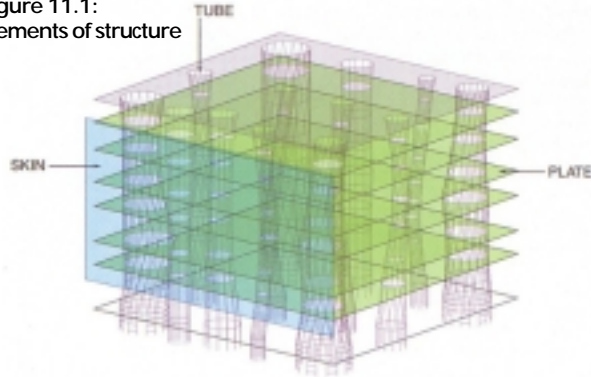


Figure 11.2:  
The "urban spectacle".

building has an audio-visual centre and a theatre, conference room and administrative area all in the centre of the floor (Pollock; 2001: 192)(Figure 11.3).

The city wanted the building to be forward-looking and that held up the design process. It decided to break down the design into three fundamental elements: plates, tubes and skin. A criticism to this design is that the partitions, doors, elevators and stairs were just plugged in to make it an actual building.

The diverse activities on each floor are exposed by transparent and semi-transparent glass and metal. The south façade is a double skin clear glass façade that insulates the building interior in winter and draws hot air up and out in summer (Pollock; 2001; p.201). The west façade has a metal louvered screen and the roof is also a louvered metal screen, hovering on the structural tubes jutting out from below.

The Mediatheque is an innovative and fun building. It wanted to bridge the gap between real and conceptual, a physical embodiment of the electronic labyrinth of today's society (Webb; 2001: 48). The building cost \$100 million and is a popular local resource to the Sendai community. The idea was to create an innovative structural system of gathering and sharing information by electronic, digital, visual and printed means (Pollock; 2001: 191).

The building's structural openness is unfortunately sacrificed for a lot of crammed functions on each floor. The top two floors are used for exhibition space that could rather be used for other functions in the buildings. The movable curtains could rather have been used to improve flexibility than to just enhance visibility. Although the idea is to let the occupants decide on the use of the space, more clues needed to be given for use. The architecture of the building is successful and perhaps through use and time the real potential could be

realised.

### The program of the building includes:

- café
- shop
- open square
- info desk
- bicycle parking
- childrens library
- conference
- periodicals
- offices
- book stacks -160 000 books
- reading
- lounge
- computer studio
- audiovisual
- internet
- theatre

(Pollock; 2001; p.194)

## University Library Delft, The Netherlands 1998

This \$30 million building designed by Mecanoo architects was on commission from the International Netherlands Group Real Estate. The university's library program included that the building be experienced as a square, piazza and public place (Betsky, 1998: 124). The library has a language of sustainability, functionality and legibility.

Being next to the Van Den Boek & Bakema building it tactfully responds to its iconic neighbour (a Brutalist lecture hall) by burrowing into the ground, becoming part of the landscape (van Cleef, 1999: 45)(Figure 11.5). The roof thus becoming a relaxing space for students (Figure 11.6). Although being sensitive to the existing buildings it has its own integrity and celebrates the innovativeness of a readable information hub. The isolated existing buildings creates a sense of no intimacy, and this is solved by the new library bringing a human scale to the surroundings (Figure 11.7). This building organises patrons through visibility; they can see functions they might use. The glass tower signifies the traditional bell tower, giving it a landmark and beacon quality. The cone also brings light into the building and places emphasis on the information desk in the centre. This 160 000 s.q.m library could be seen as a centre of Enlightenment: a sleek glass façade versus the large institutional building (Betsky, 1998: 130) (Lootsma, 1999: 29).

Computers began to free up space in all kinds of buildings (Betsky, 1998: 124). The building has a sense of transparency with the majority of books in a central stockroom. The material stored in the basement can easily be retrieved and the process of information retrieval and perusal gives the impression of a train station or airport rather than a traditional library (Figure 11.8) (Betsky, 1998: 128). The glass façade is layered with galleries giving access to the users. The building could be seen as a large hall with long strips of office space around the hall perimeter (van Cleef, 1999: 46)

The library has 1000 study spaces with 300 of them computer (van Cleef, 1999: 46). The result is a variety of different types of working spaces: private, cellular study spaces with airy communal reading rooms with 500 seats lighted by the white cone (Betsky, 1998: 124). The cone houses the four levels of reading rooms, with the study spaces around the central light filled void (van Cleef, 1999: 45). The double volume in the main hall ensures that enough light falling in through the cone. The library has 80 000 current books and periodicals that are kept in open book cases (Figure 11.9). The building also includes distance reference and information

Figure 11.5:  
Glass facade with Bakema building in background

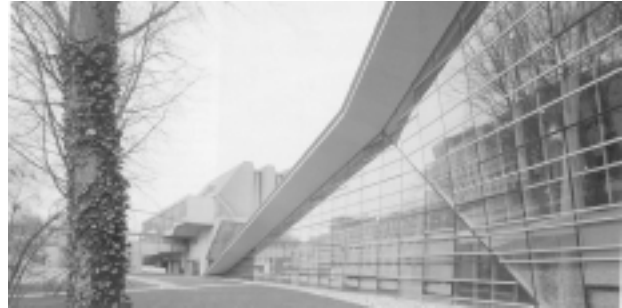


Figure 11.6:  
"Green roof" of building becomes relaxation space.



## University of Pretoria etd - Strydom, C (2003)

services for commercial and industrial companies, and is connected electronically to libraries around the world.

The glazed facades and turf roof has thermal and acoustic insulation properties. Rainwater evaporation ensures cooling in summer and all subsurface water is carried away in subterranean tubes (van Cleef, 1999: 47). Double glazing with horizontal slits in the glass, a 140mm air cavity that is ventilated, solar shading and a sliding inner leaf of toughened glass ensures thermal comfort in the building (Betsky, 1998: 124). The air in the cavity is sucked out at high level on each floor, and to minimise disruption of air flow, open-able windows are kept as small as possible.

In its context the library becomes an intersection between old and new, familiar and strange, public and private. The building goes against the typical static spatial configuration of most libraries to introduce a new dynamism (Figure 11.10). The function of the cone as an expressive element could be questioned but it definitely has an orientating function together with the visibility of each structural element and the building function. The shapeless world of digital technology becomes visible (Betsky; 1998; p.130).

Figure 11.10:  
Bridges connecting reading rooms to the rest of the building



Figure 11.9:  
Building plans

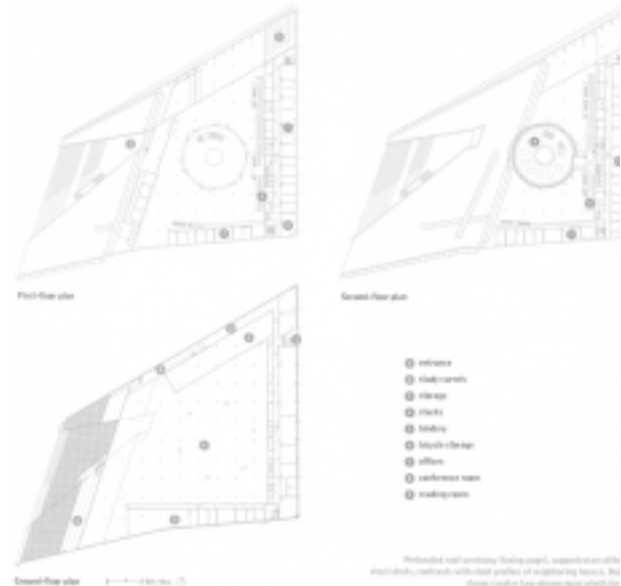
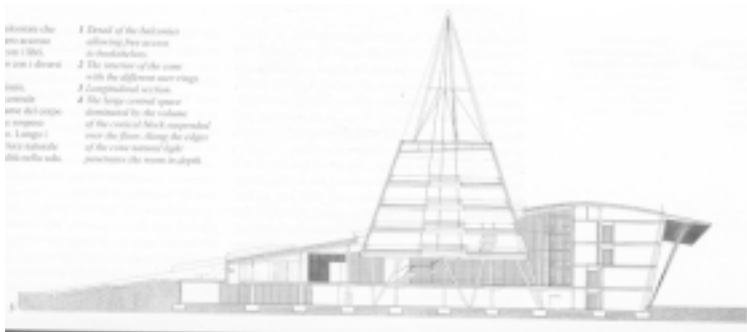


Figure 11.7:  
Site plan



Figure 11.8:  
Section



## Duduza resource centre Joe Noero Architects 1992

The main objective for this development was an educational and community function. The support for this project came from Industrialists in Nigel area. A building was established for a community of 45000 people with 24 hour access (Slessor, 1993: 24).

The program for the building includes a market, taxi and bus rank, classrooms, courtyard, community hall, offices and a flexible space with moveable walls. A board of trustees, consisting of the union and the industrialists initiated the project. In 1992 the building was built for R 1500 000: the aim was neither to be cheap nor expensive; but resourceful. Unskilled and semi – skilled labour were used. Skill transfer was the main objective for this resource centre. The principle during the construction of the building, was that the nature of construction must be made apparent (Noero, 1994: 28). The users of the building are engaged consciously with the building, not just in an abstract sense.

Christiaan Norberg Schultz comments that a place must be experienced as a gathering with concrete presence (Noero, 1994: 28). The creation of place is the purpose of architecture. As soon as language is added to man-made centres, it becomes civilization. As a result of clarity of definition one gets interaction.

Herman Hertzberger sees a variety of opportunities in such buildings. Buildings are three dimensional, not two dimensional (Noero, 1994: 29). A building must be accessible and legible for example the entrance and circulation system. The functions must be recognisable and have comfortable human proportions, give a sense of scale to people and object and ensure flexibility (Noero, 1994: 29). Unfortunately the residential scale of the building results in the importance thereof being undermined. If it had some larger scale some civic pride could have been the result.

After visiting the building, it became apparent that all the ideals of the architect did not realise. A 24 hour community street was proposed where people will move similar to shopping streets. Unfortunately the building is only used until eight o' clock on some evenings. The internal street does have open readable glass "shop fronts". These rooms were added independently along circulation spines. This promotes a vibrancy along these routes (**Figure 11.15**).

The building has a central courtyard with all development around that (**Figure 11.14**). Smaller courtyards were proposed, but unfortunately nothing of the proposed additions were built. Because of this, the building is only experienced in

a linear manner, with the rest of the site left derelict. Every piece of landscaping was supposed to have a particular ecological system, from wet to dry land, for educational purposes. This was also never built. The entrance is clearly differentiated on the eastern side because of the market area. The community edge (active edge) to support activities within the centre, is unfortunately only apparent on the eastern side. The western side is unused and derelict.

Night-time study was proposed (Noero; 1994; p.30). Study spaces could be rented with workspace, a locker and electricity. This was to promote 24 hour activity. This facility is not used (**Figure 11.17**).

Figure 11.11:  
Section

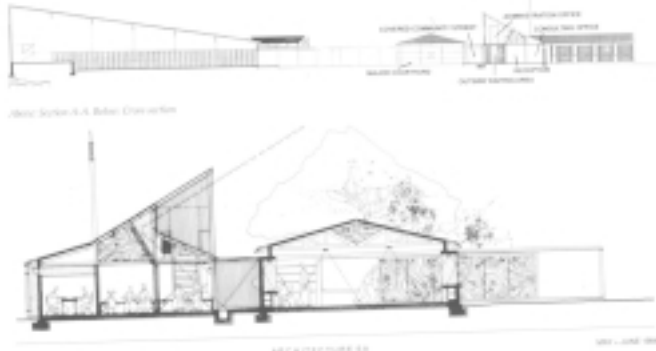


Figure 11.12:  
Market and hall in 1992



Figure 11.13:  
Courtyard in 1992



Figure 11.14:  
Courtyard 2003



## University of Pretoria etd - Strydom, C (2003)

The building is in a derelict state. It appears as if no maintenance was done since its construction. The steel structure is corroded, the plaster has cracked, the paint is faded, sixty percent of the glass windows is broken or not there, the timber panelling in the sliding doors and on the rest of the building is rotted and broken, the sliding doors are not working, the gutters are corroded with holes in it and door handles are broken off. This does not even list all the unmaintained elements.

It appears as if this is due to vandalism at night, and the lack of maintenance.

Functionally the building works well, and the spaces are

flexible. The hall has pivot doors that opens up to the courtyard. Unfortunately the sliding doors in the classrooms are not working. At the moment the building functions consist of a nursery, offices, rehabilitation facilities, matric tuition which includes a science laboratory. It is a pity that the rest of the development was never built, the result is an monotonous landscape and un-utilised space. The passive climate control is successful through light infiltration and cross ventilation.



Figure 11.15:  
Internal street

Figure 11.17:  
Site plan

Figure 11.16:  
Sections of stalls



### Conclusion

After the study of the precedents, certain aspects of each building are seen as influential , regarding visual culture and the design of the building.

### Mediatheque

It describes this building as a new type that will be close to a railway station and will be open 24 hours. The structural system of the building allows an openness and a discovering of new spaces and use for the user. The building can be seen as an “urban plaza” with open squares, thus promoting a definite link between the interior and exterior of the building. A innovative structural system of gathering and sharing digital information.

### Delft library

Sustainability, legibility and functionality are the key words in this building design. It has a sensitivity to culturally relevant buildings on the site, while still keeping its independence and integrity. Through visibility, the building’s function is clear. A new library is created versus the large institutional building. Information services are supplied to commercial and industrial organisations, creating electronic connections with other libraries around the world. The result is a visible digital world.

In both buildings the passive climate control is evident where natural ventilation is used for cooling and heating of the building.

### Duduza resource centre

The concept of the Duduza Resource Centre is derived independently from any form of cultural association. It works functionally and is flexible. The maintenance is poor, and the question arises on the sustainability of the materials chosen, for example the timber panelling. The residential scale of the building is not appropriate. Definite steps need to be taken to rehabilitate the building.

**Acoustics** – 25 – 55 dB, SABS 0103 Act 73 of 1989

**Norms and Standards** – SABS 0400 – 1990

F- face C- concrete A- acoustic T= total c= children a= adult t=temperature

**Consultants** – architect, interior-, landscape-, land surveyor, geologist, town planner, Q.S, structural-, civil-, mech.-, electrical-, fire-, project m.

**Ventilation**

Varies from Xtra Low-0,08 W/m<sup>3</sup>C; Low-0,17 W/m<sup>3</sup>C; Medium- 0,33 W/m<sup>3</sup>C; High- 0,5 W/m<sup>3</sup>C; Xtra high-0, 67 W/m<sup>3</sup>C

Programme	Area/Person	Appliances	Furniture	Finishes	Illumination	Ventilation
Multi Functional Hall	1.1 m <sup>2</sup> /p 450 m <sup>2</sup>	Electricity	Moveable Chairs & Tables	F brick, Carpet tiles, A panels	300 lux	t=18C Low
Kitchen	0,45 m <sup>2</sup> aisle:1,4m	Electricity, H2O, gas	Fixed stoves- refrigerator	Fbrick, polished C screed	500 lux	t=20 C
Computer Centre	1,25 m <sup>2</sup>	Cable, electricity	Moveable chairs, tables	F brick, polished C screed	500 lux	t= 18 C
Study Carrels	1,85 m <sup>2</sup>	electricity	moveable chairs, table	F brick, polished C screed	300 lux	t= 18 C X
Class rooms	2,3 m <sup>2</sup>	electricity, H2O	moveable chairs, tables A panels	F brick, polished C screed,	300 lux	t= 18 C X high
Administration offices	9,3 m <sup>2</sup> T= 250 m <sup>2</sup>	electricity, H2O, internet	moveable chairs, tables	F brick, painted epoxy enamel floor	500 lux	t= 20 C Med
Reading rooms Low T= 375 m <sup>2</sup>	1,1 m <sup>2</sup>	electricity	moveable chairs, tables	painted wall modules, painted epoxy enamel floor	500 lux	t=20 C
Book stacks Low T= 750 m <sup>2</sup> (a)	T= 100 m <sup>2</sup> (c)	electricity	moveable stacks	painted wall modules, painted epoxy enamel floor	150 lux	t= 18 C
Periodicals	T= 200 m <sup>2</sup>	electricity	moveable stacks	painted wall modules, Painted epoxy enamel floor	150 lux	t=18 C Low
Children's books	T= 350 m <sup>2</sup>	electricity	moveable stacks, play carpet	painted wall modules Painted epoxy enamel floor	150 lux	t=18 C Low
Book Stock	T= 180 m <sup>2</sup>	electricity	moveable stacks	painted wall modules Painted epoxy enamel floor	150 lux	t= 15C X low
Conference rooms	4,65 m <sup>2</sup>	electricity	moveable chairs, tables	painted wall modules Painted epoxy enamel floors	750 lux	t=18C Med
Audio Visual Centre	T= 450 m <sup>2</sup>	electricity, cd, dvd, Players, monitors, cable	moveable chairs, tables	painted wall modules painted epoxy enamel floors	300 lux	t= 20C low
Information desk	2,5 m <sup>2</sup>	electricity, cable, internet	moveable chairs, tables, info desk	painted wall modules painted epoxy enamel floors	500 lux	t= 20C Med
Exhibition Space	T= 85 m <sup>2</sup>	electricity	moveable stands	painted wall modules, polished C screed	500 lux	t=18C X Low
Public Toilets (Inside)		electricity, H2O, Services	fixed appliances	painted wall modules painted epoxy enamel floors, waterproofing	150 lux	t= 18 C High
Courtyards	1,05 m <sup>2</sup>	electricity,H2O	fixed outdoor furniture Drinking fountains	paving material, F-brick	30 lux	

## University of Pretoria etd - Strydom, C (2003)

Café	1,0 m <sup>2</sup>	electricity	moveable chairs, tables	painting wall modules, polished C screed	200 lux	t= 18C Med
Kitchen	0,45 m <sup>2</sup> aisle: 1,4 m	electricity, H2O, gas	fixed stoves, refrigerator,	painting wall modules, polished C screed	500 lux	t=20C Med
Market	0,46 m <sup>2</sup> 3,5m aisle	pre-paid meters – H2O -electricity, - gas	fixed counters, -basins, - hot plates	F-brick, polished C screed	100 lux	t=18C Med
Storage	1 m <sup>2</sup>		lockers, bulk storage	Painted epoxy enamel floors	150 lux	t=15C Low
Taxi Rank		electricity, H2O	fixed outdoor furniture Drinking fountains	paving material, face brick	30 lux	
Bus drop off		69m long, 16,2 Transition length	fixed outdoor furniture drinking fountains	paving material	30 lux	
Public Toilets (Outside)		electricity, H2O, Services	fixed appliances	F-brick, polished C screed	150 lux	t= 18C High
Overnight Facilities	T=16 m <sup>2</sup> / room	electricity, H2O, internet	moveable table, chair, bed	F-brick, polished C screed	150 lux	t= !8C Low
Communal bathrooms	1,21 m <sup>2</sup>	electricity, H2O	fixed appliances	F-brick, polished C floors	100 lux	t=22C X high
Circulation Spaces	0,8 m <sup>2</sup> T= 126 m <sup>2</sup>	lighting	Gradient- 8,5 %, Rise- 200mm max, treat- min. 250mm, 1:8 gradient:	textured pigmented concrete screed (SABS 0400-1990; p.91 -94)	100 – 150 lux	t=16 C High
External Circulation		lighting	150mm kerb	paving material	30 lux	

(SABS 0400 – 1990; p. 56)

Sources: (Tutt et al; 1979; p. 293; p. 381; p.412; p.433; p.481) (Van Zyl; p.2-5) (Tutt et al; 1979; p.385-386.) 10% of floorarea (SABS; p.102) 5% of floorarea (SABS; p.108)

### Recycability/Sustainability

Material- low embodied energy, durable materials, flexible space.  
 Recyclable materials, Re usable, low energy use.  
 Passive climate design, Labour intensive/ Skill, transfer, economic.

### Fire regulations

2 escape routes if > 45m to nearest escape route. Room >50 persons.  
 120 minute lag time floor ceiling, walls. Door 800mm wide  
 Route width- 120 people. 1,1m- 190 people, 1,8m well ventilated  
 Fire hydrant for energy 500 m<sup>2</sup>. Extinguisher 1/200 m<sup>2</sup> - 9 litre type  
 Source: SABS 0400-1990; p. 181- 198.

### Sanitary Appliances

**Classrooms/ Lecture = Male-** 4 WC, 7 Ur, 6 HWB, Female- 10 WC, 6 HWB  
**Exhibition = Male-** 1WC, 1 HWB, Female- 1 WC, 1 HWB  
**Market/ Taxi = Male-** 4 WC, 7 Ur, 6 HWB, Female- 10 WC, 6 HWB  
**Offices/ Library = Male-** 4 WC, 7 Ur, 6 HWB, Female- 10 WC, 6 HWB  
**Residential = Male –** 4 WC, 8 Ur, 6 HWB, 6 bath, Female- 12 WC, 6 HWB, 6 Bath  
 Source: SABS 0400-1990; p.124-126.

### Handicapped

Gradient max 1:12 Handrail, Balustrade- 600mm rise  
 1 WC for 100 bedrooms  
 2 WC for > 20 WC  
 2 wheelchairs in aisle  
 Source: SABS 0400-1990; p.152 -155.

### Legislation

Agenda 21	ISO 14001	Environ. Cons. Act 73 of 1989
Nat. Monum. Act 28 of 1969	Urban Develop. Framework	Nat. Heritage Act 25 of 1999
Develop. Facilit. Act 67 of '96	Sectional title Act 95 Of '86	
National Roads Act 64 of '71	Nat. Build. Reg. Act 103 of '77	
Arch. Prof. Act 36 of 2000		Reg. of Deeds act 47 of '37
Lands. Arch. Act 36 of 2000		Atm. Poll. Prev. Act 45 of '65
Land Affairs Act 101 of '87		
Land Survey Act 9 of '27		
Phys. Planning Act 126 of '91		Community Develop. Act.
Internal Security Act 74 of '82		Land Measures Act 27 of '91
Urban Transport Act 78 Of '77		
Nat. Env. Man. Act 107 Of '98		Employment Act of 1997
EIA of ECA sect 21,22,26 of '98		Ground Dev. Fac. Act 67 of '95
Water Services Act 108 of '97		
Constr. Indust. Develop. Act.		

Figure 13.1:  
Makro site showing links



Figure 13.2:  
Spatial planning



# 13 concept development

Figure 13.3:  
System overlay: conclusion

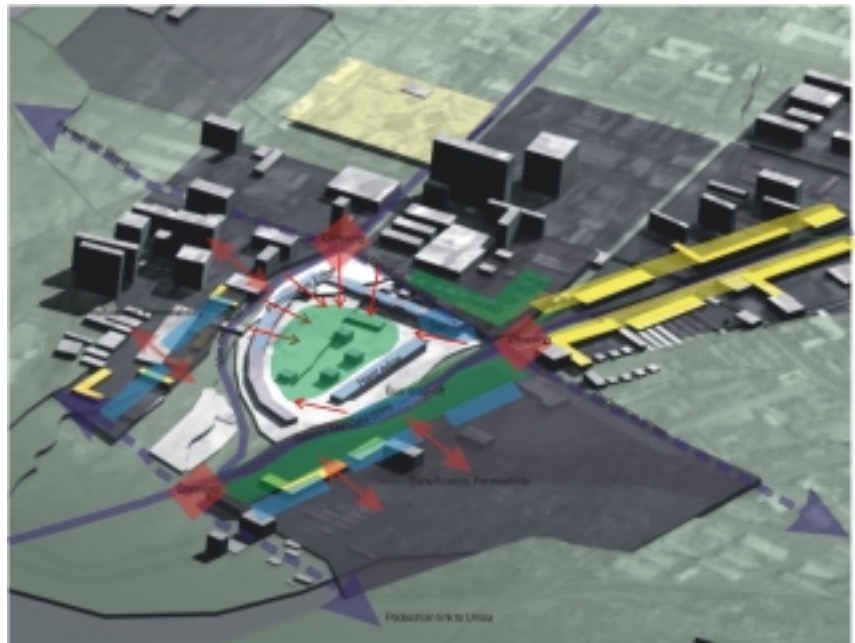


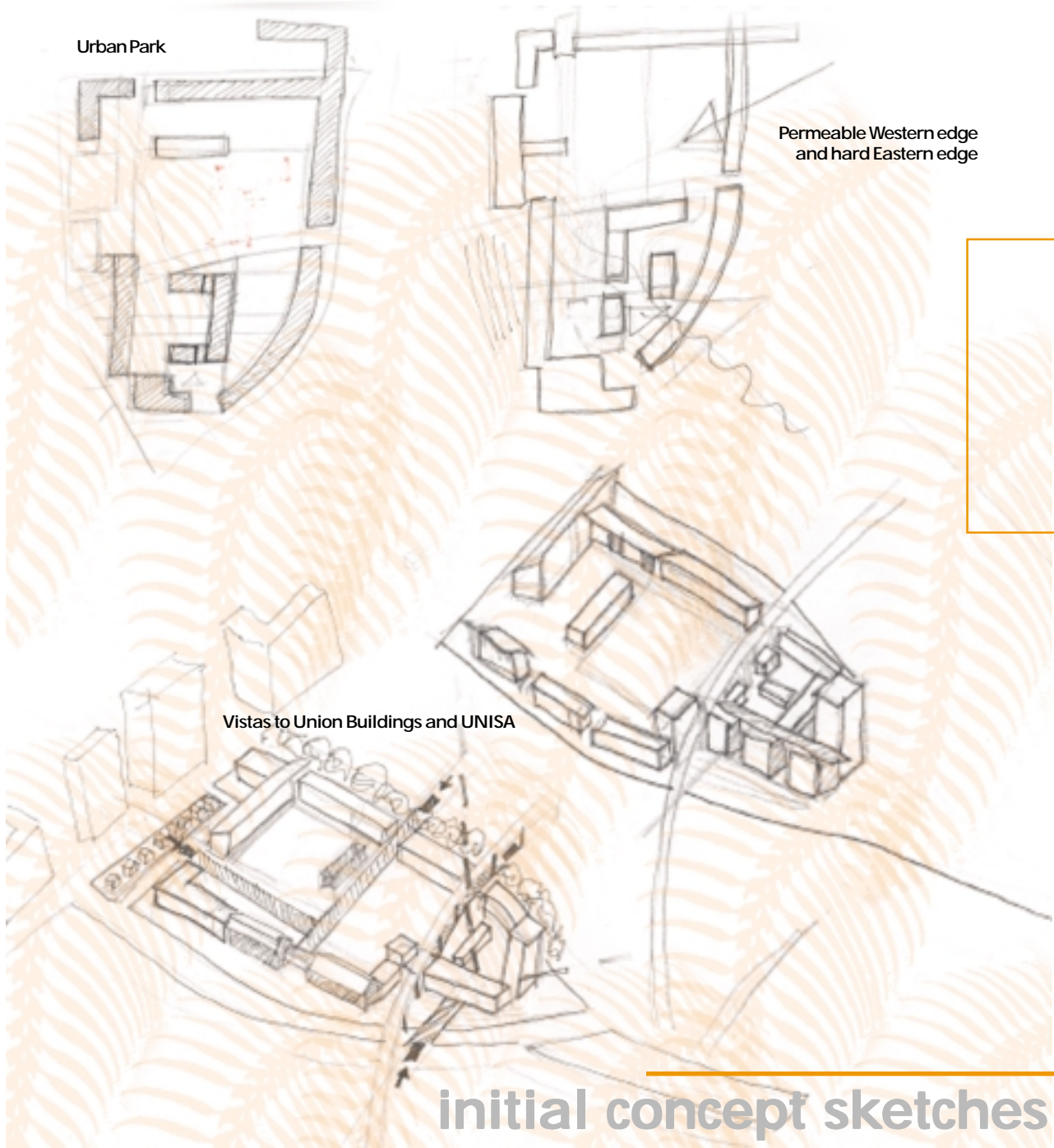
Figure 13.4:  
Makro site

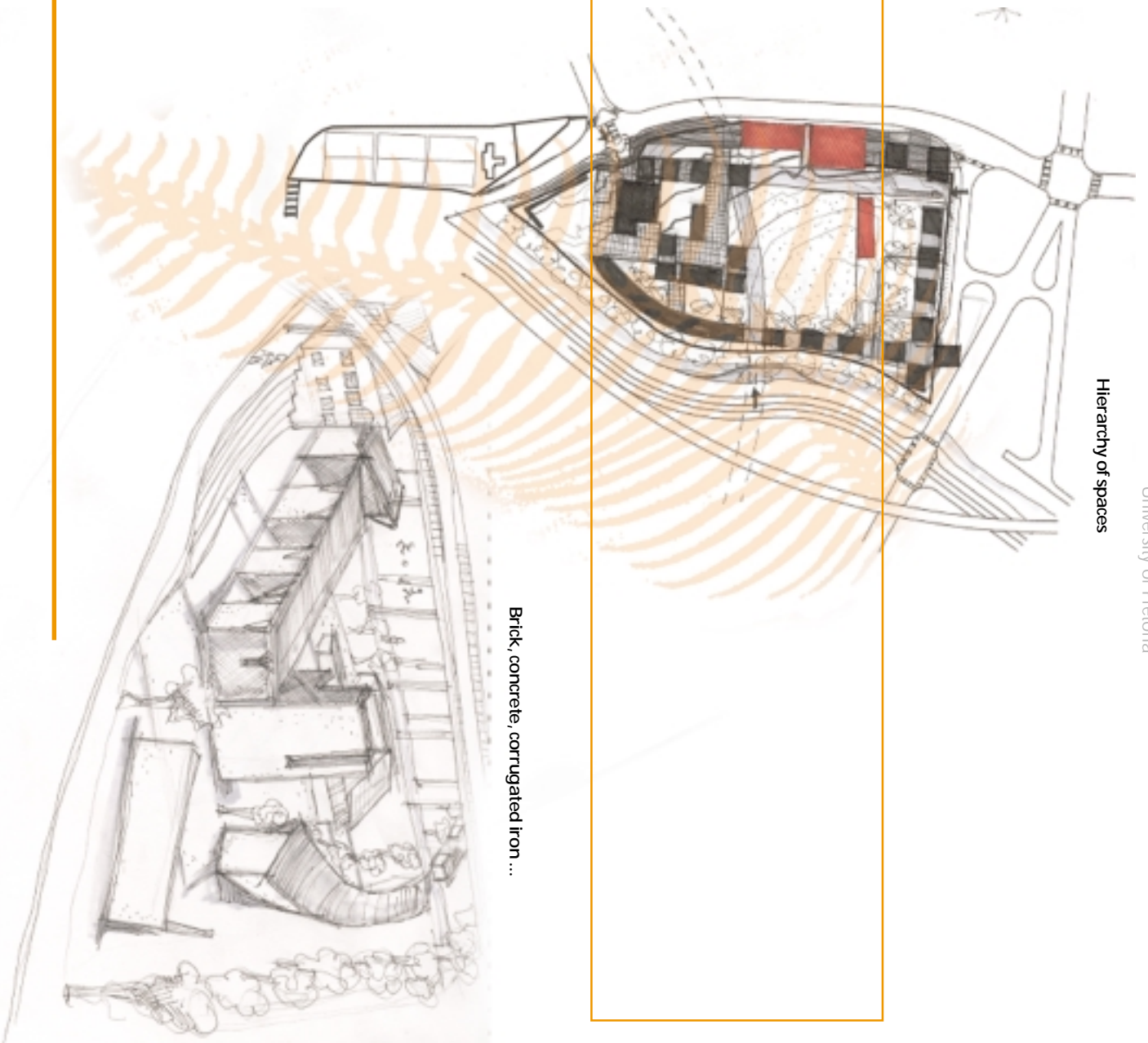
Urban Park

Permeable Western edge  
and hard Eastern edge

Vistas to Union Buildings and UNISA

initial concept sketches





Brick, concrete, corrugated iron...

Hierarchy of spaces

University of Pretoria

## University of Pretoria etd - Strydom, C (2003)

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