TRANSPACE
An architectural intervention for people in transition

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Identity, belonging and being are some of the aspects inventively explored in this document. In times of fundamental change, people tend to find a space, lose it and then find another space as life and the world transform around them.

What does this metamorphosis entail and in what ways are we affected by it? How do we live through it and what may we become on our journey towards each other, particularly when the space and places from which we depart are – at least on the surface – so vastly different?

Within our voyages of transitional discovery, we too often repudiate the underlying structure from which our values, norms and standards are born – the configuration of beliefs that, when being threatened, results in conflict, bringing forth anger and dispute.

The proposed discourse initiates another way of being by concretizing phenomenological philosopher Martin Heidegger’s notion of dwelling. Heidegger’s major means of investigation is etymological, where he investigates the word history of ‘to build’, and its links to dwelling. He argues that as human beings, we cannot fail to dwell, for dwelling ultimately, is the essential existential core of human being-in-the-world from which there is no escape. However, a major problem with dwelling as an idea is its lack of specificity.

The discourse accordingly explores the contributions made by American architect Christopher Alexander, indicating important ways in which Heidegger’s dwelling can be translated into more grounded architectural meaning. Within the urban context, the design addresses these fundamental structures of being and the predicaments experienced between people and place.
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## Translate

**Context analysis**

**Site analysis**

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    - Topography
    - The city past
    - The city present
  - Wider context of the site
    - Precinct scale
    - The framework
    - Influences on the wider context
  - Study area
    - Influences on the study area
    - Assumptions within the study area
- Sosio-economic context
- Institutional context
- Historical context
  - History of the immediate context of the site
  - Heritage impact assessment
- Site analysis
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  - Site elements
  - Macro climate
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0 Transpose

Author

0.1 Concept perspective April 2007
0.2 Collage with images of Pretoria

1 Transcendent

Author

1.1 Illustrating diagrammatically the concept of the boundary
1.2 Illustrating diagrammatically the concept of a moment in transit
1.3 The concepts of interstices presented as rock and soil
1.4 “There is a place where there is no change and the transition envelopes the whole.”

2 Transpire

City of Tshwane Integrated Transport plan 2004:17, edited by author

2.1 Peak hour passengers by private vehicles around the inner city of Tshwane
2.2 Most of the transport interchanges are situated on the outside periphery of the CBD of Pretoria
2.3 Peak hour bus volumes towards the CBD of Pretoria
2.4 Peak hour passenger volumes by train
2.5 The main taxi routes towards the CBD competes with the main bus- and rail routes
2.6 Alexander propose an inverse of the traditional way of looking at public transportation lines
2.7 Alexander propose an inverse of the traditional way of looking at public transportation lines
2.8 Alexander propose an inverse of the traditional way of looking at public transportation lines
2.9 Position of the site in relation to the CBD of Tshwane
2.10 Diagrams illustrating the concept: urban culture
2.11 The interdependance of human needs, culture and the urban environment
2.12 Diagram illustrating the process of program generation
2.13 & 2.14 Everyday activity on and around the site
2.14 Diagrammatic summary of the program, generated from the different contexts

3 Translate

Author

3.1 Map indicating the site in relation to Johannesburg and the City of Tshwane
3.2 Maps indicating the site from city scale to immediate context
3.3 Map indicating black townships around the CBD of the City of Tshwane – 1910
3.4 Map indicating the position of site in relation to the northern and eastern suburbs of the City of Tshwane
3.5 Map indicating the precinct area in relation to the City of Tshwane
3.6 Precinct scale: Site as part of the Tshwane Inner City Development and Regeneration Strategy
3.7 The site as one of the main gateways into the city
3.8 The site as part of the proposed cultural circle
3.9 Defining the capital precinct
3.10 The site functioning as a gateway into the proposed Corridor
3.11 The site in relation to the proposed Tshwane crossing
3.12 The site shown as influential to the zone of urban regeneration
3.13 Movement around the CBD of the City of Tshwane
3.14 Influence from the north and east on the site
3.15 Population densities in the City of Tshwane
3.16 Most important institutional and cultural installations within the wider context of the site
3.17 Influence of the wider context on the study area
3.18 Site scale: Assumptions within the study area
3.19 Interdependence between city and user
3.20 Land uses and zoning within the study area
3.21 ‘Uniegebou Vanaf Prinshof, Pretoria 1925’ by Hendrik Potgieter
3.22 Driving from Boom Street towards Dr. Savage road
3.23 Driving from Boom Street towards Dr. Savage road
3.24 Heritage impact assessment
3.25 Aerial view of the site and intersection
3.26 North-eastern view towards the site
3.27 East-south view towards the intersection and the site
3.28 Eastern view towards the intersection and the site
3.29 Section through Boom Street illustrating existing street character
3.30 Section illustrating future character of Boom Street after the proposed Taxi Retail Park development
3.31 Diagram indicating the different land uses around the site
3.32 Section illustrating possible future character of Bloed Street
3.33 Section through Bloed Street illustrating existing street character
3.34 Section illustrating possible future character of Bloed Street
3.35 Section illustrating possible future character of Bloed Street
3.36 Typical European streetscapes: Views of streets in Paris, France
3.37 Typical European streetscapes: Views of streets in Paris, France
3.38 Section through the intersection
3.39 Sketches showing the concept of the ‘relief zone’
3.40 Photograph of the intersection taken from the adjacent building.
3.41 Main street directions and one-ways
3.42 Axonometric model of the immediate context of the site, indicating the major roads
3.43 Photo of the taxi rank (February 2007) being the key generator of pedestrian activity around the site
3.44 Photo of the taxi rank (February 2007) being the key generator of pedestrian activity around the site
3.45 Existing bus and taxi routes around the site
3.46 Future bus and taxi routes around the site
3.47 Existing pedestrian circulation patterns around the site
3.48 Future pedestrian circulation patterns around the site
3.49 Aerial impression of the new taxi facility in Bloed Street
3.50 Position of site in relation to the new development
3.51 Relocation of the existing taxi rank
3.52 The geological map of the City of Tshwane
3.53 Diagram illustrating the dominant constraints concluded from the site analysis
3.54 Diagram illustrating the possibilities concluded from the constraints of the site analysis
3.55 Concept sketches indicating the relationship between exposure and enclosure to city form

4 Transude

Timothy Hursley in Design like you give a damn
Timothy Hursley in Design like you give a damn
Timothy Hursley in Design like you give a damn
Timothy Hursley in Design like you give a damn
Angela Buckland in Light on a Hill
Angela Buckland in Light on a Hill
Angela Buckland in Light on a Hill
Angela Buckland in Light on a Hill

4.1 The chapel is always open, to provide a space for contemplation and respite from the heat
4.2 The sculptural glazed skin gives the building an unanticipated appeal
4.3 At night the chapel acts like a beacon, signaling Mason’s Bend to passerby
4.4 View from inside the chapel
4.5 Early concept sketches exploring shelter vs. building
4.6 Connections between the diverse activities of the city
4.7 The image indicates the site and its surroundings as an area in need of densification
4.8 The Court at dusk
4.9 Looking from Hillbrow along the southern facade of the building towards Constitution Square
4.10 Eastern approach to the Court.
Angela Buckland in Light on a Hill

4.11 Drawing showing the position of the court in relation to Constitution Square
4.12 Cross-section showing the direct relationship between Constitution Square, the raised entrance podium, the Foyer and the Court Chamber
4.13 Early concept drawings imagining everyday activity around the Court
4.14 Early concept drawings imagining everyday activity around the Court
4.15 Drawing showing the relationship between ideas of ‘inside’ and ‘outside’. The foyer is intended to be as much an inside space as an outside space, its roof a canopy of clouds and leaves.

4.16 Traditional African villages, being defined by a border or the composition of the structures

4.18 Sketch explaining the concept of ‘inside’ and ‘outside’
4.19 Sketches showing the first concept of ‘inside’ and ‘outside’ as being used in the design investigation
4.20 The relationship between ‘inside’ and ‘outside’ as been used within the Constitutional Court, taken further within the design development
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4.22 Interior views of the cafeteria

4.23 Interior views of the cafeteria

4.24 Ground floor plan
4.25 Spatial connectivity
4.26 Circulation
4.27 Diagram showing the circulation as a linear approach
4.28 Outside view of the cafeteria

4.29 Interior view of the dining area

4.30 Ground floor plan
4.31 Spatial interconnectivity
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4.33 Diagram showing the circulation as a turn-around or circular approach
4.34 Spatial interconnectivity
4.35 Circulation
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4.41 Diagram showing the spatial relation between the frame and the building
4.42 Concept sketches showing spatial relationship of the proposed design
4.43 Concepts illustrating confinement and definition
5 Transfigure

11

4.44 In the abstract art, the line sometimes becomes the primary symbol of confinement and definition.

4.45 In the abstract art, the line sometimes becomes the primary symbol of confinement and definition.

4.46 Outside view of Villa Savoye.

4.47 Exploded views of partitions and structural elements.

4.48 Ground floor plan showing free forms of interior in relation to the strict ordering of the columns.


4.50 University Library, Leida, Spain, 1996, by Kristian Gullichsen.


4.53 - 4.59 Work of environmental artist Ned Kahn.

4.60 - 4.63 Images Torre Agbar, Barcelona, Spain.

4.64 Magney House, Bingie Bingie New South Wales.


5 Transfigure

Introduced by Alexander in Pattern Language, redrawn by author.

Author.

Introductory text and settings

5.1 Conceptual diagram showing the relationship between the different subcultures and where they meet.

5.2 Conceptual diagram showing the relationship between the different subcultures and where they meet.

5.3 Concept illustrated on city and site scale.

5.4 Concept illustrated on city and site scale.

5.5 Conceptual diagram showing the relationship between interchanges, stops and lines.

5.6 Interchanges, stops and lines illustrated as concept within the CBD of Pretoria.

5.7 Five stories or more.

5.8 Four stories or less.

5.9 Section through the design intervention.

5.10 Pedestrian routes to pass through public nodes.

5.11 The intersection itself will be treated as a public node.

5.12 Drawing illustrating how, by treating the corners of each site as open space, will contribute to the node as successful public space.

5.13 Sketches illustrating the concept intervention.

5.14 Potential night spots centered around dining facilities.

5.15 Sketches illustrating the concept intervention.

5.16 Concept Pattern 41: Work Community.

5.17 Section through the building showing the different uses.

5.18 Alexander’s illustration on the concept.

5.19 Location of municipal clinics and hospitals around the CBD of Pretoria.

5.20 Concept Pattern 88: Street Café.

5.21 Sketch plan indicating the various different spaces within the cafeteria dining area and corner cafe.

5.22 Sketch plan indicating the various different spaces within the cafeteria dining area and corner cafe.

5.23 A pleasant bus stop with activities around.

5.24 Location of potential bus stops in the design intervention, incorporated with additional facilities.

5.25 First concept sketches exploring building complex footprint.

5.26 Final building footprint.
Introduced by Alexander in Pattern Language, redrawn by author

Author

5.27 Concept Pattern 95: Building Complex

5.28 Entrance to parking basement

5.29 Concept sketch explaining sheltered parking

5.30 Concept sketch explaining shielded parking

5.31 Concept sketches illustrating development of pedestrian street

5.32 Reception nodes

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5.34 Family of entrances

5.35 Open space undefined

5.36 Open space that can be felt

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5.38 Steps creating enclosure

5.39 Visible from lines of approach

5.40 The design development of the entrance, being inseparable from the shape of the building

5.41 The design development of the entrance, being inseparable from the shape of the building

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5.46 Concept sketch exploring the pattern ‘sheltering roof

5.47 Concept sketch exploring the pattern ‘sheltering roof

5.48 Section indicating roof gardens and balconies

5.49 Section indicating roof gardens and balconies

5.50 Concept Pattern 118: Roof Garden

5.51 Concept Pattern 119: Arcades

5.52 Section indicating the use of arcades within the design intervention

5.53 Section indicating the use of arcades within the design intervention

5.54 Plan indicating in red the arcades alongside the building

5.55 Sketch showing how the staircase can be used for seating and social events

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5.66 First concept sketches

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5.68 Sketch illustrating graphically the sequence as processes of collectors and distributors

5.69 – 5.74 Second concept model

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5.82 Future pedestrian patterns

5.83 Sketches explaining the ordering of functional sequences superimposed with pedestrian patterns

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5.85 Responsive sketches later in the concept process

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5.139 Section B-B
5.140 Section C-C
5.141 Section D-D
5.142 Section E-E
5.143 Sectional elevations
5.144 and all onward - various technical detail drawings
**transcendent** *vb* that which is beyond our senses and experience; existing apart from matter
1.1_Theoretical Premise

It is my belief that we live to express. The whole motivation of presence is to express. And what nature gives us is the instrument of expression which we all know as ourselves, which is like giving the instrument upon which the song of the soul can be played.  
(Kahn 1964: 19)

The first time that the author became familiar with the term ‘dwelling’ was during her undergraduate studies the day when Heidegger stepped into the lecture room with the echoes of 'Building, dwelling, thinking'; an essay that will perhaps forever rumble within the author’s basic understanding of architecture. The knowledge gathered from those few lectures might have been rudimentary, but profound enough to bind the author’s idea of architecture to something more than ‘existence’ only. This premise, although emphasizing the idea of dwelling, will not begin with Heidegger.

During her research, the author came upon some interesting writings on the American master architect, Louis I. Kahn; where within his work a ‘theory’ of architecture emerges. Kahn was engaged in a search for the structure of being parallel to Heidegger. It is certainly not worked out in detail, but the basic structure is coherent.

...Kahn thus takes the total 'Being-in-the-world' as his point of departure, and defines our human task as the uncovering of its structure. Thereby he indeed comes close to the philosophy of Heidegger, who was also deeply concerned with ‘beginnings.’ (Norberg-Schulz 1988:202)

As part of the preface to this premise, I want to introduce the notion of culture as opposed to art and communication, keeping in mind Kahn’s expressionists theory, as mentioned above.
1.1.1 Art, Communication, Culture

From the dawn of humanity, mankind has made and been fascinated by a strange and unique concept: the idea of art. This phenomenon has no immediate, practical use; it feeds no mouths and protects no young. Yet even in the most primitive cave-dwellings of 30,000 years ago, we have evidence of artwork (Tindale & Lindsay 1963:18). Though these cave drawings may be completely different from the naturalistic masterpieces of the Renaissance, and those still very unlike the abstract images of today, all fit into the broad genre of art called painting. What do these have in common? Why do we call them all “art?”

At its most basic, art is a form of communication. Art is an expression of emotion, designed by a human as a means of communicating that emotion to other humans. (Edwards 1987:44)

Art is by far the most expressive form of communication that humans understand. The shading and colours of a picture, the moving lines in the body of a dancer, or the fluid harmonies of a song reach a depth that simple conversation never can.

In short, one can argue that art is representation through communication which in turn leads to a shared meaning or understanding. But this shared meaning or understanding is bound to culture:

Of all species of animals, the argument goes; humans are unique in that they occupy something extra, something that animals don’t have. And it is precisely by this ‘excess’ that we are inclined to define the scope of our common humanity. (Ingold, 2000:89)

Richard Shweder (1990: 2) calls this something extra, ‘intentional worlds’. Thus, within this world, things do not exist ‘in themselves’, as different objects, but only as they are given form or meaning within systems of mental representations. And this is not a new debate, because this additional factor – call it mind or self-awareness – is part of the knowledge we have of our identities, our feelings, memories, intentions and ourselves.
Ingold (2000: 40) derived a definition for ‘culture’ from this same concept of humans as the divine creature:

Thus, for such individuals (belonging to different ‘intentional worlds’) the same objects in the same physical surroundings may mean quite different things. And when people act towards these objects, or with them in mind, their actions respond to the ways they are already appropriated, categorized or valorized in terms of a particular, pre-existent design. That design, transmitted across the generations…and manifested physically in the artificial products of their implementation, is what is commonly known as ‘culture’.

We cannot express or communicate this meaning without the second system of representation, language. Language is the only way in which meanings can be effectively exchanged between people, as people within the same culture are able to interpret the sign of language in the same manner. The meanings become natural through the conditioning of culture.

We hold mental representations that classify and organise the world (whether fact or fiction), people, objects and events into meaningful categories so that we can meaningfully comprehend the world. Thus, the conceptual map of meaning and language are the basis of representation; concepts organised, arranged and classified into complex relation to one another. It allows you to distinguish your own individual interpretation of the world, at the same time as holding similar views to that of other people in your culture.
1.1.2 The Art of the Present

A boundary is not something that at which something stops but, as the Greeks recognized, the boundary is that from which something begins its presencing.

Heidegger – Building, dwelling, thinking.

( Hofstadter 1979:145)

It is the trope of our time to locate the question of culture in the realm of the beyond. Our existence these days is marked by a tenebrous sense of survival; living on the borderlines of the ‘present’, for which there seems to be no proper name other than the current and controversial shiftiness of the prefix ‘post’: postmodernism, postcolonialism, postapartheid …

The ‘beyond’ is neither a new horizon, nor a leaving behind of the past. The ‘beginning’ and the ‘end’, is mostly just a myth experienced in the ‘middle’, but in the ‘beyond’ we find ourselves in a moment of transit, where space and time cross to produce conflict between difference and identity, past and present, inside and outside, inclusion and exclusion.

We tend to convince ourselves erroneously that by living within this moment of transit, the ‘beyond’, we are in fact done with that which lies behind us.

‘Beyond’ signifies spatial distance, marks progress, promises the future; but our perception of exceeding the boundary – the very fact of going beyond – is unknowable, without a return to the ‘present’ which, in the process of repetition, becomes disjunctive and displaced. We fervently want to be surrounded by that which is familiar, for there is a sense of disorientation, a disturbance of direction, in the ‘beyond’: an exploratory, restless movement with an indefinite sense of belonging. The question arises: Within the process of transitional discovery, how do we commemorate and brake with the past, and momentarily dream into the future?

Transition, within the context of South Africa, is the name typically given to this time of radical change following the undoing of Apartheid, connoting a shift from a political partition to universal acceptance and justice. It can additionally be seen as our existence ‘beyond’ our country’s brutal past. But as subject of this research, transition is also a culture in its own right - with its own conflict, repressions, and unrealised potentials. The author thus aims to indicate transition as a culture of power and view it in its complex relation to the ways in which it articulates social change.
1.1.3 In-between the City

The conflicting emotions of apprehension and excitement are the heart of the urban experience. The city is a landscape of cultural diversity and subcultural differentiation, thus, a mosaic of social worlds. In its various ‘real’ and ‘imagined’ forms, therefore, it is at once dammed, tolerated, manipulated and celebrated.

Culture is an essential part of the conflict that can be experienced when different social worlds meet. Cultures are like underground rivers that run through our lives and relationships, giving us messages that shape our perceptions, attributions, judgements, and ideas of self and other. Though cultures are powerful, they are often unconscious, influencing conflict and attempts to resolve conflict in imperceptible ways. However, we need to move away from the primary conceptual and organisational categories of ‘race’ and ‘gender’. We need to think beyond these narratives and focus on those moments or processes that are produced in the articulation of cultural differences. These moments can be seen as ‘in between’ spaces, which initiate new signs of identity in the act of defining the idea of society itself.

I am part of my complete country. My hands neither ordering nor begging. Making the cross, liberation spiking my blood with belonging. (Krog 2003:31)

The idea of a space which can accommodate different voices and in which all South Africans can ‘come to rest’, raises the question of a national identity apart from a personal identity. Krog’s text represents a special case of constructing an identity in a time of transition. In her case it happens especially by means of a confrontation with spatial concepts like space, landscape, land and country, presenting ample proof that space is indeed one of the important axes along which identity is constructed. Although there seems to be a desire for closure in the passion to belong, the project of re-constructing an identity is an ongoing process of transformation and change.

My throat feels thick and ostracized, my chest hurts with the indescribable intimacy of belonging and loss. This is my place. Place that in a way never really wanted me. Place that bore my love so fruitlessly. For its veld. For its sky. For its spruits. For its grass and trees. For its horizon, which carries every other horizon I have dreamt of. A love that longs for land. They can sell it, take it, divide it, pawn it, waste it. That will be all right. If only, until I die, I can come and site here. So quite, so here. So completely dissolved into where I belong. I will never lay claim to it. Ever. (ibid.)
Krog felt compelled by the process of the Truth and Reconciliation Commission to construct a new identity for herself. This she does by reacquainting herself with and re-assessing the spaces, places and landscapes that previously constituted her identity. Trinh T. Minh-ha has written: ‘Identity is a way of re-departing. Rather, the return to a denied heritage allows one to start again with different re-departures, different pauses, different arrivals’ (1990:328). Re-visiting spaces, places, landscapes and the country she has known all her life enables Krog to use the South African ‘landscape as a shifting strategic source of identification without implying the adoption of … a fixed, natural, or inherent identity’ (Nash 1994: 239).

It is in this sense that the boundary becomes the place from which something begins its presencing in a movement not dissimilar to the ambulant, ambivalent articulation of the beyond that have been drawn out:

‘Always and ever differently the bridge escorts the lingering and hastening ways of men to and fro, so that they may get to other banks…. The bridge gathers as a passage that crosses.’ (Hofstadter 1979: 145)

Social differences are not simply given to experience through an already authenticated cultural tradition; they take you ‘beyond’ yourself in order to return, in a spirit of revision and reconstruction, to the conditions of the present.
Being in the ‘beyond’, then, is to inhabit an intervening space, as any dictionary will tell you. But to dwell ‘in the beyond’ is also to be part of a revisionary time, a return to the present to re-describe our cultural contemporaneity; to reinscribe our human, historic commonality; to touch the future on its hither side. In that sense then, the intervening space ‘beyond’, becomes a space of intervention in the here and now. To engage with such invention, and intervention, demands an encounter with ‘newness’ that is not part of the continuum of past and present. It can not simply recall the past as social cause or aesthetic precedent; it renews the past, refiguring it as a contingent ‘in-between’ space, that innovates and interrupts the performance of the present. The ‘past-present’ becomes part of the necessity, not nostalgia, of living.

“Figure 1.4
‘There is a place where there is no change and the transition envelopes the whole.’
2. Transpire

**TRANSPIRE**

Problem statement

**transpire** *vb* to come to light; become known
2.1 Re-organisation of Space

In the terrain of geography – in space – many authors write of the new organisations of space and in part relate it to globalisation. Features related to globalisation might include changing patterns of city growth and in particular geographical ‘sprawl’ and an increasingly polycentric urban form (Kloosterman and Mustard, 2001). However, in South Africa one thing does seem to be clear, which is that long-term suburban growth has continued, indeed accelerated, over the recent past. ‘Suburban’ in this context means non-old-core-city forms of growth, and does not necessarily mean growth in local government areas separated from older city areas such as the CBD. Suburban sprawl and decentralisation from the CBD by choice can be credited to two main reasons, firstly, the middle class families seeking larger personal and intimate territories and secondly; fears of overcrowding, parallel to the fear of the poor and racially different people (Madaniipour 2003:47).

For many, the inner city of Tshwane has become a debased version of an ideal; some perceive the CBD to be a dangerous slum, detached from their suburban utopias. The undoing of Apartheid, especially the spatial segregation of ‘races,’ brought forth a redefinition of urban culture within this context. However, it is generally acknowledged that the inner city of Tshwane is currently not a provocative terrain to contemplate central experiences and the idea of the African Capital City (Tshwane Inner City Development and Regeneration Strategy, 2006). The metropolis is an environment of cultural inequality, and this rising inequality has led to a climate of fear, which has become a high-security fortress. But for a large sector, however, the city still means financial income and social interaction. Residing far from the inner city is a matter of choice for some, but for others, is forced upon them by the Apartheid regime. For this group of individuals, the CBD remains a focal arena for the contemplation of the human condition and man’s struggle for self-expression.
2.1.1 The Transitional Context

Countless commuters travel to the city on a daily basis from areas reaching as far as Soshanguve and Temba. A traffic survey completed in March 2004 by the City of Tshwane, indicated that more than 86 400 people cross the Magaliesberg in the morning peak hour between the R511 road (Brits road) and K69 (near Mamelodi). This is only in the southbound direction. 67,2% of these commuters rely on public transport for their daily travels (City of Tshwane Integrated Transport plan 2004:17).

The use of private vehicles, often carrying only a single individual, is a major cause of traffic congestion within the centre areas of the inner city. Cars give people wonderful freedom and increase their opportunities, but the majority of the commuters traveling to the CBD of Tshwane, are financially incapable of having this luxury.

The system of public transportation between suburb and CBD can only work if all the parts are well connected (Alexander, Ishikawa & Silverstein 1977:92). But usually, because of inapt management and agencies there is no incentive to do so. This becomes a general transportation problem.

A city contains a great number of places, distributed rather evenly across a two-dimensional sheet. The trips people want to make are typically between two or more points at random on this sheet, whether from home to work, or to alternative destinations within the work environment of the CBD. No one linear system can give direct connections between the vast possible numbers of point pairs in the city. It is therefore only possible for systems of public transportation to work, if there are rich connections between the great varieties of different systems.

Figure (2.1): Peak hour passengers by private vehicles around the inner city of Tshwane
Figure (2.2): Most of the transport interchanges are situated on the outside periphery of the CBD of Pretoria.
The routine of transition between home and work also exists as a non-linear system. Transportation nodes within the city of Tshwane are mostly located on the periphery, avoiding the congestion of the CBD (figure 2.2). This results in a further transitional line, taking place between the transportation interchange and the final destination within the CBD. In addition, the travel medium often varies between these different transitional lines. Trains, busses and taxis are the means of transport between the suburbs and the major transport interchanges, whereas for the smaller distances between the interchange and the inner city, most people tend to walk.
The traditional way of looking at public transportation assumes that these lines, along which one travels, are primary, and that the interchanges needed to connect the lines to one another are secondary [Alexander, Ishikawa & Silverstein 1977:93]. A public transportation facility located on the interface of Pretoria would therefore be treated as a secondary element, and the routes connecting it with another interchange would be the primary element. There are two practically difficulties, both of which stem from the fact that different kinds of public transportation are usually in the hands of different agencies who are reluctant to cooperate. Firstly, trains, busses and taxis compete for the same passenger market along these corridors. When each mode is operated by an independent agency there is no particular incentive to provide feeder services to the more flexible modes. Secondly, most taxis provide public transportation along the main commuting corridors (figure 2.5), pulling passengers away from busses.

The solution hinges therefore on solving the coordination problem of the different systems [Alexander, Ishikawa & Silverstein 1977:93]. Alexander (ibid) proposes an inverse of the traditional way of looking at public transportation lines, namely, that interchanges are treated as primary and that the transport lines along which are traveled, are secondary elements which connect these interchanges.

Figure (2.5):
Compared to figure 2.3 and 2.4, it is clear that the main taxi routes towards the CBD competes with the main bus- and rail routes.
This dissertation aims to enrich the process of transition through re-delineating the transport interchange, to promote it as an activity node and to provide supportive facilities through focusing on the needs experienced by its users.

1.1.2 Transpire_Re-organisation of Space_The Transitional Context

Figure (2.6), (2.7) and (2.8):
Alexander proposes an inverse of the traditional way of looking at public transportation lines.

Figure (2.7):
Lines being treated as secondary, interchanges being treated as primary.

Figure (2.8):
The process of transition is enriched through re-delineating the transport interchange and to promote it as an activity node.

treating the lines along which are travelled as primary, causes traffic congestion.
2.2.1 The Site Theoretically

The predominant quality which defines the site in relation to the theoretical argument is the concept of the edge, border or boundary. The significance of the convergence of these concepts emphasises the ‘beyond’. In the ‘beyond’ we find ourselves in a moment of transit, where space and time cross to produce conflict between difference and identity, past and present, inside and outside, inclusion and exclusion. This conflict is not given to experience through an already authenticated tradition, but it takes you ‘beyond’ yourself in order to return, in a spirit of revision and reconstruction, to the conditions of the present. It is in this sense that the boundary becomes the place from which something begins its presencing.

This quality of the boundary which the site possess stimulates a sense of transition, a veil through which one moves which demands an encounter with ‘newness’ that is not part of the continuum of past and present. This interval which separates and indicates the difference between constitutes the boundary.

2.2.2 The Site Practically

Located adjacent to the proposed Bloed Street Taxi Retail Park, the site not only leads to a great amount of interaction with different cultural groups, but it becomes part of the routine of transition between home and work, eliminating the additional destination one needs to undertake for alternative services.

Figure (2.9): Position of the site in relation to the CBD of Tshwane
Literally every aspect of our lives. There is an enormous power in design to change lives. Yet all too often one gets stunned by the power of modern technology and economic affluences that one loses sight of the fact that people and place matter.

As result of this interdependence between city and user, one can investigate the basic human aspects that define our existence. All individuals have needs that they strive to satisfy, and these essentials go beyond just food, water and shelter. They include both physical and non-physical elements essential for human growth, development, expression, as well as all those things humans are innately driven to attain. Human needs theorists argue that one of the primary causes of protracted or intractable conflict is people’s unyielding drive to meet their unmet needs on the individual, group and societal level. (Northrup, 1989) Given this condition, human needs become a powerful source of explanation of human behavior and social interaction. Social systems must therefore be responsive to individual desires on all levels.

Urban culture accordingly, can have two levels of meaning: One level of how the city has impacted its citizens, businesses, social organisations, spatial organisations and artistic production. The second level would be the visa versa of above mentioned: How the citizens, businesses, social organisations, spatial organizations, etc. affects the city. Briefly one could say that (1) the city affects the individual and (2) groups of these individuals in turn change the city (figure 2.10).

We as human beings have the ability to produce and consume culture, whether through our physical environment or individual definition. We have the power to control behaviour and expression. The physical design of our homes, neighborhoods and communities shapes...
2.3.1.1 Needs, Culture, Cities

Addressing basic human needs will enhance every individual’s cultural well-being and expression. The presence of a diverse cultural element in the city will spark creativity and innovation. These cultural innovations, derived from different social groups, social classes, ethnicities and social densities, will enrich the experience of Pretoria as an urban environment, making both the city and its cultures, unique.

Healthcare was identified as one of the most urgent human needs in a local context of today. South Africa is burdened by one of the worst tuberculosis epidemics in the world, with disease rates more than double those observed in other developing countries and up to 60 times higher than those currently seen in the USA or Western Europe (Beresford, 8 September 2006). Fueling this condition is the deadly strain of Multi-Drug Resistant (MDR) TB and Extensively Drug Resistant (XDR) TB detected throughout the whole of South Africa. MDR TB is caused by the development of TB bacteria, which have become resistant to ordinary TB drugs. This occurs as a result of inadequate or irregular management of ‘ordinary’ TB, either by using inappropriate drug combinations or by using single drugs for ‘ordinary’ TB.

Other factors include clinics running out of drug stocks, inadequate counseling of patients leading to patients not taking their treatment correctly [poor treatment compliance] or patients not returning for treatment (defaulting treatment). Extensively Drug Resistant (XDR) TB results from failure to treat MDR properly and is effectively immune to all locally available drugs.

South Africa is one of the world’s fastest growing tourist destinations (Pressly, 11 September 2006), home to millions of migrant labourers from neighbouring countries, and its ports and roads service several other African countries. Cumulatively, these factors make for a potentially explosive international health crisis. The threat to regional and global public health is thus clear.
2.3.1.2 Directly Observed Treatment

Directly observed treatment is an important element in the World Health Organisation’s recommended policy package for TB control. Directly observed treatment means that an observer watches the patient swallowing the tablets, in a way that is sensitive and supportive to the patient needs. This ensures that a TB patient takes the right drugs, in the right doses, at the right intervals. In practice, it means providing a treatment supporter acceptable to the patients, to enable them to complete treatment. The supporter may be a health care worker or a trained and supervised community member. Located next to a major transport interchange, the proposed intervention creates the perfect opportunity for this element of implementation.

2.3.1.3 The Client

The National Research and Development Strategy identifies the need to create ‘centres and networks of excellence’ in science and technology, including in the social sciences, as a key component of the human capital and transformation dimensions of government policy. The Department of Science and Technology (DST) is implementing the centers under the guidance of the National Research Foundation (NRF) of South Africa. One of the centres that will be developed is the DST Centre of Excellence in Biomedical TB Research (CBTBR). It is envisaged that such centres will stimulate sustained distinction in research while simultaneously generating highly qualified human resource capacity in order to impact meaningfully on key national and global areas of knowledge.

Internationally acclaimed TB research has been done at both the University of Stellenbosch (Division of Molecular Biology and Human Genetics) and the University of the Witwatersrand (Molecular Mycobacteriology Research Unit) and by creating the CBTBR the two research laboratories will combine their efforts to successfully implement research within the community.

2.3.1.4 Implementation

Given this condition, it becomes clear that the primary need in terms of healthcare becomes the implementation of effective research within the general community, and not the research itself. The following diagram illustrates the areas in need of development and improvement. It also demonstrates the process of program generation:
Figure (2.12): The blocks in colour indicating the areas in need of development and implementation.
2.3.2 The Physical Context As Program Generator

The site and surrounding area demands a certain program brief, generated from the basic accompanied needs experienced by people in transit, and from the rituals associated with transport interchanges. These rituals are manifested through the various activities that take place on a daily basis around the transport interchange. Throughout the process of transition the individual is being confronted with interchanges between journeys; as soon as a preliminary destination is reached, the journey ends and another begins. Through the ritual of transport, individuals will at times be stripped of their personal sphere into the public, forced to interact socially. The idea of the self being rooted in a social context and the suggestion of an interdependent self will be exposed. The design should instigate public interaction with the least amount of intervention.

The continuous efforts of urban planners and designers to idealise and promote communities are feeble attempts in enriching and creating culture. Bernard Tschumi (1994:13) believes that one should ‘design conditions, rather that condition design’. The left-over spaces [voids], between the existing and the designed become public spaces to be appropriated by the user.

These ‘voids’ become the place of potential ‘events’. Events being an ‘indeterminate set of unexpected outcomes’. (ibid) Events are thus seen as the turning point; neither the beginning nor the end. Tschumi suggests that the future of architecture lies in such events.

The design should take temporary events as opposed to permanent functions, and merge them in architectural spaces. The physical needs and requirements of the site will be analysed in detail in the next chapter.
2.3.3 The Feasible Context As Program Generator

Tschumi (1994:23) predicts that, due to the pressure of ever-rising land prices, the non-casual relationships between form and function – as well as space and action – programmes of the future will host various events. One such example is Melrose Arch in Johannesburg, where we find multiple programmes scattered throughout buildings: where office blocks contain health clubs, night clubs, shops and museums. Common or predicted programmes can generate uncommon or unpredictable events. This is also the case with the proposed intervention: it will be designed to accommodate different and evolving functions. Bearing in mind the cost of land near and around the CBD, the design will provide for rentable office space, and while the site simultaneously acts as a gateway into the city, the opportunity for advertisements, will be used.

Figure (2.15): Diagrammatic summary of the program, generated from the different contexts
translate  vb  to interpret or infer the significance of; to transfer or convert
3.1.1.1 Topography

Pretoria, the capital city of South Africa, is located in the municipal area of Tshwane. It is situated in the transitional area between the Highveld and the Bushveld and is bounded by three prominent mountain ridges; the northernmost ridge is the Magaliesberg, further south the Witwaters Mountain range through which the Apies River flows, and lastly the Schurweberg which forms the southern boundary of Tshwane. The development of Pretoria’s street layout stands in relation to the surrounding topography. The east-to-west orientated city blocks line up with the surrounding koppies, and the longitudinal shapes determine the city street character (Van der Waal, 1990).

Figure (3.1): Map indicating the site in relation to Johannesburg and the City of Tshwane.
3.1.1.2 The City Past

Within the urban context of Pretoria, one deals with a city that was given life by an Apartheid Governments who wished to keep cheap black labor close to white cities, therefore given rise to periphery townships, which encompass most of our South African cities. These townships were designed specifically to discourage long-term settlement, and as a result, no provision was made for any form of economic generation. Informal settlements, or squatter camps, were on the other hand not government initiated, but by the inhabitants themselves, this form of informal developments occurred either because the townships were over-crowded, or workers coming from rural areas to work in the city, had no place to stay. The layout of Pretoria is thus typically that of an Apartheid city, fragmented due to an ideological racial segregation.
Until a late date in the 1980s, the growth of suburbs around the inner city was very closely and directly linked to the deepening segregation of South African cities (Mabin, 2007). But since then, suburbia has been the scene of residential desegregation – certainly more so than the townships, the other major component of South African urban residential space (ibid.). There may have been deepening of social rather than racial isolation as the suburbs have continued to boom in the post apartheid period. However, the development of the eastern suburbs has had a detrimental affect on the CBD of Pretoria.

Figure (3.3):
Map indicating black townships around the CBD of the City of Tshwane - 1910
3.1.1.3 The City Present

Over the past thirteen years, South African urban policy makers have made concerted efforts to address the fractured nature of South African cities stemming from Apartheid planning. South African urbanism during the past decade in most respects reflects some of the most innovative policy and institutional narratives and exercises applied to cities anywhere. From integrated development planning to the selective deployment of infrastructure projects, interventions have considerably changed the urban landscape to highly fractured and discordant cities. However, it is striking how unchanged the futures of cities are today. More than a decade after political liberation, it is increasingly clear that current urban planning interventions themselves generate fracturing effects. Yet in significant ways, the ‘apartheid city past’ is as indicative of general urban futures as the repairs and innovations of the past decade.
3.1.2.1 Precinct Scale

The site lies on the north-eastern periphery of Pretoria Central, acting as one of the main gateways into the inner city. This area is bounded on the north by Boom Street, being the primary feeder of traffic into and around the inner city. Nelson Mandela Drive defines the eastern boundary of the precinct, while D.F. Malan Drive forms the western boundary. The south of the precinct area is confronted with the CBD.

Figure (3.5): Map indicating the precinct area in relation to the City of Tshwane
Figure (3.6): Precinct scale: Site as part of the Tshwane Inner City Development and Regeneration Strategy.
3.1.2.2 The Framework

The Tshwane Inner City Development and Regeneration Strategy is a macro scale urban development framework with the intended aim of achieving sustainable urban renewal. The framework is accepted as a given. The author did a revision of the framework, incorporating the selected site within the proposed development.

The interventions into the spatial and physical environment of the inner city, is based on eight building blocks, namely:

- Announcing the destination
- Cultural Circle
- Capital Precinct
- MDC and Apies River Promenade
- Tshwane Crossing
- Zone of Urban Regeneration
- Movement
- Exceptional public Environment

- Announcing the Destination

The significance of the inner city as destination must be announced in bold terms by defining the gateways into the capital area of Pretoria. Furthermore, the entrance into the built environment should be enhanced by creating appropriate landmarks. The proposed site provides an excellent opportunity for such a landmark. By entering the city from the north-east via Dr. Savage Rd, this site and surroundings not only become the first buildings to be confronted with, but it also become the earliest integrated, vibrant, high-intensity, mixed-use and pedestrian environment, linked to one of the main transport facilities within the central business district of Pretoria.

Although most of the gateways into the city could be enhanced by creating landmarks or symbols, the proposed site lends itself to a unique situation: It becomes a destination itself, and not only the announcement of that what might follows. The built form provides an indication that the intensity of development is increasing and changes from low density residential to a definite business environment.

It is therefore proposed that this entrance to the inner city be defined by a landmark or capital symbol celebrating the arrival of the inner city and presenting its character and identity, without compromising the activity that already nourish its users.

Figure (3.7): The site as one of the main gateways into the city
3.1.2.2 Translate_Context Analysis_Wider Context of the Site_The Framework

• Cultural Circle

In keeping with the vision that Tshwane and its inner city be developed as the Capital of Culture in Africa, the main structuring component for the future physical development of the inner city is the proposed Cultural Circle.

This concept is based on the identification of all existing cultural landmarks and facilities and the enhancement thereof, as well as the development of new, contemporary cultural landmarks and the linking of these through a system of mono-rail transport and pedestrian routes.

The diagram illustrates the most important cultural nodes and places of interests within the CBD of Pretoria. It further shows the proposed connecting pedestrian routes and mono-rails. Although the site lies within an area with minimal cultural assets, it forms part of the main pedestrian routes connecting the major nodes in and on the periphery of the inner city.
• Defining the Capital Precinct

The function of the Capital City with regard to the concentration of government headquarters and its ceremonial and celebratory role are most appropriately placed within the inner city as the functional and symbolic heart of the Capital City. The Capital Precinct is defined as the area that will comprise the largest concentration of the Capital City elements.

The Capital Precinct is defined by a road grid that frames the inner city and creates a system of welcoming boulevards. It is proposed to create capital junctions within this system of welcoming boulevards at major crossings. These welcoming boulevards also link important strategic locations that should accommodate landmark developments and capital symbols or landmarks. The convergence of streets at the Boom Street and Bloed Street interchange forms part of the framing grid and has the potential to become an important capital junction.

Figure (3.9): Defining the capital precinct
• Nelson Mandela Corridor and the Apies River Promenade

The Mandela Development Corridor is situated alongside Nelson Mandela Drive on the eastern edge of the Inner City. This corridor is a future focal area for the arts, culture, government, business, sports, entertainment and, commercial development. Nelson Mandela Drive has been upgraded to a dual carriageway and is the new main entrance to Pretoria. The Corridor allows prime exposure on Nelson Mandela Drive.

The open space system along the Apies Rivers can cater for the active recreational needs of residents and employees by providing facilities for walking, cycling and playing. Crossing over the Apies River should be identified through the use of specific design elements.

The land to the north of the proposed Tshwane crossing along the Apies River should be redeveloped for recreational- and entertainment purposes for residents and tourists in an environment that optimizes, compliment and enhances this important natural element. The Zoological Gardens is linked along the Apies River spine. This link could include a system of river boats on the Apies River.

Figure (3.10): The site functioning as a gateway into the proposed Corridor
The site, however not part of the initial proposal, functions as a gateway into the Corridor, and might therefore be considered as an extended section of the development at a later stage.

- **Tshwane Crossing**

  The meeting place of the Apies River, the Walker Spruit, Nelson Mandela Drive and Church Street has been identified as a strategic location for a landmark catalytic development for the Inner City and for Tshwane itself.

  With this in mind, one sees that the site again becomes one of the entrance roads to this development from the north, thus, feeding the Tshwane Crossing directly from all areas at the northern sphere of Pretoria, without rerouting them via the city center.
Zone of Urban Regeneration

The northern, western and north-western (Marabastad) parts of the inner city are highly neglected areas that are in desperate need of urban regeneration. This area is ideally suited for the creation of a true integrated urban residential environment on the edge of the business district (the more central part of the inner city).

The area is within walking distance of the majority of employment opportunities in the inner city, and is also within walking distance of public transport facilities such as Belle Hombre Station and the Bloed Street Taxi Rank. This area comprises large tracts of derelict land or land underutilized, mostly State or Council owned that can be used to create a Zone of Urban Regeneration. The Zone of Urban Regeneration will comprise specific components, namely the Tshwane Park, Residential Development, Infill Business and Social Facilities, Marabastad Urban Village and Creative Industries.

Tshwane Park: It is proposed to create a significant open space area on this land focused along the Steenhovenspruit. This park can comprise hard and soft open spaces, recreation and sport facilities, restaurants and other leisure activities.

Residential Development: The area around the Tshwane Park should be developed as a high intensity urban residential area, comprising of different housing typologies and different price ranges in order to ensure a socially integrated environment. The transformation of this area into a fine grained urban residential area is appropriate from a historic point of view, as most of this area, specifically Marabastad, was traditionally a vibrant mixed-use residential area on the edge of the Inner City, until people were removed.

Infill Business and Social Facilities: The areas in between the residential developments should be developed for fine-grained urban environments comprising businesses, social facilities and entertainment activities that are aimed primarily at the residential population as well as tourists and visitors to the park. A strong emphasis should be placed on the development of employment opportunities that are geared towards the tourism market.
Marabastad Urban Village: Except for residential development, Marabastad is also considered ideal for the creation of an urban cultural precinct, comprising crafts, arts, entertainment etc. If correctly developed and managed in this manner and with a strong authentic historical foundation, this area can become a prime tourism destination in Tshwane.

Creative Industries: The area in front of the Pretoria Zoo is a seriously neglected area that detracts from this world renowned attraction. It is proposed that this area be redeveloper to provide attractive small business opportunities for creative industries that will contribute to the creation of a tourism hub around the Zoo.

The above-mentioned development is seen as a major intervention in the western part of the inner city, but also for the proposed site, as it will become part of the route towards and from this intervention. It will drastically alter the character and perceptions associated with this part of the city, and allow for the creation of vibrant urban areas that are focused on people and their needs.

Figure (3.12): The site shown as influential to the zone of urban regeneration
Movement and Accessibility

The linking of strategic places is an important element of the Strategic Development Framework. These linkages are functional but also contribute to the experience of the inner city as a destination. The role of public transport in this regard is critical and requires significant interventions and the establishment of a management framework. The aim is to make movement within the Inner City as convenient as possible for all modes of transport (private vehicles, public transport, pedestrians and cyclists), and to ensure that all the major elements, districts and tourist destinations are effectively linked.

The site lies between two major taxi ranks, namely the Bloed Street Taxi Rank and the regional taxi rank between Dr. Savage Drive and Soutpanberg Drive. Bloed Street is also being fed from the Belle Ombre Station at the west of the Inner City periphery. It therefore becomes the perfect node of linkage between the different strategic locations.
• Exceptional Public Environment

The foundation of a unique and exciting inner city that is able to attract high quality development is an exceptional public environment that can compete with all the best cities in the world.

The public environment consists of the following elements:

• Public Spaces and Streetscape
• Architectural Quality of Buildings
• Urban Forestry
• Natural Environment

The Tshwane inner city should comprise sufficient public spaces which must be of exceptional quality. These spaces must also function properly for the purpose for which they are intended.

3.1.2.3 Influences on the Wider Context

The northern suburbs have a greater impact on the wider context of the site, due to the higher population densities and a greater amount of commuters traveling towards the CBD.
Figure (3.16): Most important institutional and cultural installations within the wider context of the site.
3.1.3.2 Assumptions within the Study Area

The study area is bounded on the west by Bosman Street, and the periphery of the Technicon of Pretoria’s Art department defines the eastern boundary. Struben Street defines the southern boundary of the study area, while the Pretoria Zoological Gardens and Prinshof School, forms the northern boundary.

Assumptions within the study area include:

- The proposed tram system will be implemented.
- The Boom Street Taxi Retail Park will be built at the current taxi stop in Bloed Street.
- An arcade system will be implemented within the Inner City, connecting various public spaces.
- The urban environment surrounding the proposed site, will maintain its unique identity.
- The series of medical facilities situated on the north-eastern periphery of the inner city, will remain within this area.
Our physical urban environment is shaped by the social and economic conditions and aspirations of the people who inhabit it. Inversely the quality of the physical environment has an impact on the quality of life, and the socio-economic conditions within the area. This reciprocal relationship between human activity and the physical environment is manifested in the change which takes place in and around our cities on an ongoing basis. (figure 3.19)

Access to social infrastructure is an important element of the context in which people live and attempt to gain access to education, training and jobs. Those who live within easy access to health, transport and education facilities will find it easier to make use of services important for their health and development, and to seek economic opportunities.

In the instance of the study area and site these dynamics have over the past years taken the form of a downward spiral, where the dynamic interaction of physical and social conditions, with the added impact of external political influences, have led to the current slum-like conditions.

The physical manifestations of the problem are uncontrolled hawking in miserable conditions, a breakdown of services, neglect of buildings, an unsafe, crime-ridden life on the streets, illegal dumping, accumulation of waste and a generally unsightly and unhealthy environment.

Changes to the outward appearance and urban fabric can only be effective if development plans also consider possible solutions to the social and economic problems affecting the area.

According to the City of Tshwane Integrated Development plan:

- The study area is indicated as 'urban' with land uses varying from special residential to general business.
- The Apies River flood area and river bed is reserved for open space and conservation
- The precinct area is reserved for business, government, parking garages, parking sites, places of instruction, and places of public worship, places of refreshment, residential buildings, restricted industries, retail industries, shops, social halls, and vehicle sales mart.

(3.19)
3.3 Translate: Institutional Context

Figure (3.20): Land uses and zoning within the study area

- **USE ZONE: Special**
  - **USES WITH CONSENT:** Dwelling houses, Filling stations, Institutions, Motor workshops, Places of amusement, Public garages, Restricted industries, Special buildings, Sports grounds, Warehouses.
  - **USES NOT PERMITTED:** Panel-beating and spray-painting, other uses not above.
  - **DENSITY:** N/A
  - **COVERAGE:** Zone 4: 60%
  - **HEIGHT:** Zone 5: 19m
  - **FLOOR SPACE RATIO:** Zone 4: 2.5
  - **BUILDING LINES:** Sides: Null. Street: 3.5

- **USE ZONE: Special Residential**
  - **LAND USE / USES PERMITTED:** One Dwelling-house
  - **USES WITH CONSENT:** Commune, Creches 13-18 children, Institutions, Parking garages, Parking sites adjacent to Zones VII and VIII. Places of instruction, Places of public worship, Social halls, Special buildings, Sports grounds, Toddlers’ workshop. One additional dwelling house.
  - **DENSITY:** 500m² per erf
  - **HEIGHT:** 3 Storeys
  - **COVERAGE:** 50%
  - **BUILDING LINES:** Single storey: sides – 2.25m, rear – 3m. Double storey: sides – 3.75m, rear – 4.5m. Street boundary: 3.5m

- **USE ZONE: General Business**
  - **USES WITH CONSENT:** Dwelling houses, Filling stations, Institutions, Motor workshops, Places of amusement, Public garages, Restricted industries, Special buildings, Sports grounds, Warehouses.
  - **USES NOT PERMITTED:** Panel-beating and spray-painting, other uses not above.
  - **DENSITY:** N/A
  - **COVERAGE:** In accordance with the approved SDP.
  - **HEIGHT:** 15m
  - **FLOOR SPACE RATIO:** 1:1
  - **BUILDING LINES:** In accordance with the approved SDP.

- **USE ZONE: Special**
  - **LAND USE / USES PERMITTED:** Special Residential, Offices (excluding medical and legal professions) and such store-rooms as are supplementary and subservient to the main office use.
  - **HEIGHT:** 1 Storey
  - **COVERAGE:** 50%
  - **FAR:** 0.5
  - **PARKING REQUIREMENTS:** Offices: 4 parking spaces per 100m² gross floor area. Store-rooms: 1 parking space per 100m² gross floor area. Should be permanent dust-free, paved, drained surface to the satisfaction of the Municipality.
3.4.1 History of the Immediate Context of the Site

Pretoria can be considered as a relatively young city, established only in 1855. The development of the early establishment, was not forced upon the river and its location, but rather defined by it, for water was provided to the city from fountains via water furrows. The Pretoria community, due to its political footing and the knowledge of what a contemporary city should look like, was established above the river around Church Square on a grid defined by openings within the Daspoort and Schurweberg ridges (Fisher, Le Roux, Maré 1998:61).

During the time when Pretoria was established, the land within the study area was part of a property called Prinshof, named after Joggem ‘Tweeduim’ Prinshof (Van der Waal 1990:28). In the early 20th century the area served as the Prinshof experimental station where the cultivation of different types of grass species took place (ibid) Property on the west bank was owned by Theodore Hove (1834 – 1906). A linocut work by Hendrik Pierneef show what the area looked like in 1925.

Hove’s drift provided access across the Apies River from central Pretoria to the north and in 1932 a bridge was built here by Bain & Proudfoot. In 1935 Dr. Savage Street was built across the bridge. The road was named after Dr. SR Savage who was major of Pretoria from 1907 – 1908 (Heydenrych & Swiegers 1999: 38).
3.4.2 Heritage Impact Assessment

The following diagram illustrates the most important historical buildings within the study area. The heritage impact assessment in the appendix gives a complete description of each building.
3.5 Site Analysis

3.5.1 Scope of the Analysis

The site is located at the convergence of four major roads, creating a unique transportation and pedestrian junction. The north-eastern side of the site is bound by Boom Street, while Bloed Street forms the southern boundary. Both of the above mentioned are one-way streets respectively running in an eastern and western direction. Boom Street diverges north-east into Soutpansberg Rd, while one enters the junction from this same direction via Dr. Savage Rd. Boom Street, in the southern direction, further diverges into Prinsloo Street, while the south-eastern divergence later extends into Nelson Mandela Drive. The western side of the site is bordered by the future-proposed Bloed Street Taxi Retail Park.

Due to the nature of the brief, the immediate site will be analysed on two levels:

1 Existing demands of the site
2 Future proposals and development

Figure (3.25):
Aerial view of the site and intersection
Figure (3.26): North-eastern view towards the site
Du Toit Street  Prinsloo Street  Intersection

Existing opposite building  Site  Existing taxi rank  Opposite open site

Figure (3.27):
East-south view towards the intersection and the site
3.5.2 Site Elements

The site requires a variety of responses generated from the main site elements and aspects. These will be divided into four categories:

a. Street character
b. Roads
c. Circulation
d. Adjacent buildings

a. Street Character

In an urban setting, the location, form, materials, and other architectural features of buildings largely determine the character of the street and, in turn, affect the character of other design elements that reinforce this authentic urban character. These are the elements that compose the public realm. These elements significantly contribute to the livability of the city. The use and placement of these elements are determined by what type of street character is being sought.
Street character present: The character of a street is established and maintained by many factors beyond the dimensions imposed by vehicular traffic. Land use alone typically creates a critical context. Even if the adjacent land use is identical, local building codes could create streets with very different characters. Two streets with the same dimensions and the same land uses but laid out in accordance with very different building codes – one suburban and one urban – may have widely different characters.

Boom Street: As indicated in figure 3.20 and figure 3.31, the zoning and land uses around the site, varies between that of general business and special residential. The residential area to the north of the site is in fact one of the oldest residential areas within the city, with houses and buildings exceeding 60 years in age. The street character of Boom Street can therefore be classified as both urban and sub-urban.

Figure (3.29): Section through Boom Street illustrating existing street character
Figure (3.30): Section illustrating future character of Boom Street after the proposed Taxi Retail Park development
Figure (3.31): Diagram indicating the different land uses around the site.
Bloed Street south of the site is a more business orientated street, with higher-rise buildings at both sides. These buildings are flanked by retail stores. The stores occupy the first floor of the multi-story buildings with offices or housing over the stores. The buildings are mostly massed shoulder to shoulder with individual stores having their own entrance from the street. These buildings are typically separated from the street by only a sidewalk. The height of the buildings opposite the southern side of the site varies between 2 and 3 stories. Proposed future development will not exceed 4 stories.
The ideal street character: Most spatial and regional planning strategies suggest the setback of upper levels of tall buildings to help create a pedestrian scale at street level and to mitigate unwanted wind effects (figure 3.32). However, as with most European cities, it is shown time and again that it is the more uniform building facades that create the ideal streetscape. The above statement will be explored and considered during the design process.
The vibrant nature of the intersection is an opportunity to generate a lot of energy within the building and to have an exciting on-street interface. Although in a neglected state, it already indicates the potential for being a landmark intervention. It is also important to incorporate the concept of a relief-zone on the corners of each site. These areas become small ‘islands’ where accidental meeting spaces can happen.
Future proposals and development: The street must support the activities of people on the adjacent properties, that is, it must provide optimal volumes of traffic at optimal rates to support the desired land uses and layout of those land uses. The street must be designed not to stifle nor overwhelm adjacent land use. The adjacent property to the site will be developed into a Taxi Retail Park; this Retail Park will be massed together in the form of a mall with individual stores only accessible from the interior of the building. However, there will be stores on the southern side of the development with their own entrance from the street. This will encourage on-street interaction of people on the sidewalks. For the northern side of the development, towards Bloed Street, the sidewalks will be less interactive. This becomes an opportunity for the proposed design.

Urban parking will vary between parking on the street, on surface lots behind the buildings, or in parking ramps. Thus, the same street could easily have very different character depending on the location of parking. The dimensions of the street itself do not create a rural, suburban, or urban street.

Figure (3.40): Photograph of the intersection taken from the adjacent building.
b Roads

Existing road order: Bloed Street, running to the west, consists of man made green space, with high traffic at intervals, due to the existing taxi rank. Bloed Street is also one of the main streets towards Marabastad located to the west of the city.

The Jacaranda trees contribute to a pleasing pedestrian experience. The building should have an appropriate response to this soft space. The pleasant view towards the pedestrian walkway will contribute aesthetically to spaces within the building.

Boom Street has less pedestrian activity with a higher order of traffic in the direction east from the city center. This is partly due to the nearby taxi rank, but also due to the fact that Boom Street forms the periphery of the CBD, and therefore becomes one of the main feeding roads around the Inner City towards the east. The north side of the building therefore demands a hard edge, with appropriate permeability to allow some degree of on-street interaction. It is also the only street within the city of Pretoria planted with Plantane trees. The pleasant contribution of the trees should be incorporated within the design precinct.

Influences of future proposals and development: The proposed Bloed Street Taxi and Retail Park will have two main influences on the roads within the immediate surroundings of the site. Firstly it will increase the amount of traffic moving through the area. Secondly, there will be a more structured system according to which the traffic will flow around the site.

Figure (3.41): Main street directions and one-ways
Figure (3.42): Axonometric model of the immediate context of the site, indicating the major roads.
c Circulation

Urban fragmentation lies at the heart of many of the problems of modern cities. It severely constrains the economic potential of cities and urban regeneration developments find it hard to create sufficiently high levels of pedestrian movement. The basic requirement for a viable pedestrian infrastructure is a simple, interconnected, spatially integrated, continuously animated and intelligible public realm. Critical analysis is required of the urban environment beyond a project’s designated boundary to understand how the surrounding urban layout directly affects movement in and around a particular site.

The pedestrian public realm is the key to successful urban redevelopment. In one sense, vehicular transport systems are the means to deliver pedestrians to the myriad choice of urban facilities that cities afford. The strategic design task for a sustainable pedestrian movement is to build new spatial structures that solve the problem of urban fragmentation. The aim would be to harness urban development sites for their full economic and social potential by building local ‘movement economies’ based on powerful pedestrian infrastructures.

Good pedestrian accessibility then becomes the catalyst for successful urban regeneration. Designing urban layouts that are both globally integrated and locally distinct will bring to urban developments a mix of users – workers, residents and visitors – and with them the essential ingredient for economic vitality, social cohesion, urban safety and investment surety.

Pedestrian movement becomes the key generator of circulation and form. The building must therefore respond to present pedestrian patterns and simultaneously inform a pedestrian friendly environment. The building will have permeable edges to involve passers-by with the activities of the building.

Figure (3.43) & (3.44):
Photo’s of the taxi rank (February 2007) being the key generator of pedestrian activity around the site.
Figure (3.45): Existing bus and taxi routes around the site
Figure (3.46): Future bus and taxi routes around the site
3.5.2 Translate Site Analysis - Site Elements - C Circulation

Figure (3.47): Existing pedestrian circulation patterns around the site.
Figure (3.48): Future pedestrian circulation patterns around the site.
Construction activities for the Bloed Street Taxi Retail Park will start in April 2007. The expected opening of the Bloed Street Mall is 24 October 2008.

The Bloed Street Mall development will entail the following:

- Taxi ranks
- Motor related facilities, i.e. tyre fitment centre, workshop, spares, etc.
- Informal trader stores
- 22 000m² retail shops

The relocation of the existing taxi ranks and informal traders will take place between February and April 2007. The temporary ranking facility will be positioned in the block surrounded by Bloed, Boom, Andries and Paul Kruger Streets.
3.5.3 Macro Climate

**Topography:** The study area falls in a gentle slope from the south-east to the north-east at about 1:35, with a mean level of 1300m above sea level at the intersection of Boom and Bloed Street. The slope places no constraints on development in the area (Van der Waal 1990:10).

**Geology:** Geologically the study area is of Precambrian origin. It forms part of the Transvaal system, and more specifically the Daspoort Stage of the Pretoria series. The geological map (figure 3.52) shows most of the study area underlying geology as composed of localised Andesitic laval with interbedded agglomerate, shale and tuff (Van der Waal 1990:13). A zone of localised shale and siltstone, with quartzite and grit at the top, penetrates the area from the east-west. The broader geological structures are shown in figure... For construction purposes soil conditions are such that highly variable foundation conditions may be expected to occur, from solid rock at shallow depth to potentially expansive residual andesite soils.

**Climate:** The area is characterized by generally high temperatures. Relatively high local humidity frequently combines with high afternoon temperatures in summer to cause an uncomfortable heat.

Rainfall is seasonal [summer rains], with an average of 741mm per year. Mostly precipitation occurs in thunderstorms with rates of around 90 to 100mm per hour. Hailstorms are fairly common and can be severe (City of Tshwane Weather Services).

Average annual cloud cover is 33%, varying between 13% in July and 54% in December. Prevailing winds are calm, and blow from the north-east in the morning, backing to north-west in the afternoon. During winter occasional cold snaps bring wind from the south, while in summer thunderstorms are accompanied by turbulent wind patterns (City of Tshwane Weather Services).

3.5.5 Micro Climate

On a micro-climatic level the proximity of the Apies River valley contributes to some site-specific conditions. For instance 89 days of frost per year are recorded on average in these areas, as opposed to 60 days at the weather bureau up in Pretoria. Lower averages for the winter months are also recorded and the diurnal range of temperature difference between day and night exceeds the Pretoria average (ibid).

From the point of view of urban settlement the main problems posed by the climate within the precinct area are the high summer temperatures, the high diurnal temperature ranges, the intensity of precipitation when it occurs, and the inefficient dispersal of air pollution.

Pollution must be addressed in broader metropolitan context, with emphasis on prevention. The other climate factors will be addressed through efficient climatic design of the building, with emphasis on building mass that counters diurnal temperature movements, shade and shelter against heat and precipitation and the use of appropriate materials.
Figure (3.52): Geology map of the greater City of Tshwane
3.6_Constraints and Possibilities

Figure (3.53): Diagram illustrating the dominant constraints concluded from the site analysis.

Following page: Figure (3.54): Diagram illustrating the possibilities concluded from the constraints of the site analysis.
on-treat commercial exceeded

responsive towards adjacent building

pedestrian crossing

link with adjacent public space

responsive to street and walkway (on-street commercial)

private public space

open public space

on-treat commercial exceeded

pedestrian crossing

entrance to basement parking

responsive to street and walkway (on-street commercial)

public space linked with street activity
3.6.1 Constraints summarised:

Bloed Street consists of medium order traffic and high order pedestrian patterns.

The intersection has ill-defined pedestrian movement and circulation.

The entrance and exit lanes to the proposed new Taxi Retail Park blocks direct interaction between the two interventions.

The delivery and refuse area of the proposed new Taxi Retail Park is located at the west end of the site and also blocks direct interaction between the interventions.

Boom Street is a high order traffic road, with less pedestrian activity.

The gentle slope of the site, although not constraining any development, must be carefully considered during stormwater design.

Figure (3.55):
Concept sketches indicating the relationship between exposure and enclosure to city form.
Transude

vb to pass through the interstices; to release in drops or small quantities
Mason’s Bend is located in Alabama’s former cotton belt, and home to four extended families. Most live in trailers or poorly constructed homes. This rural cluster of homes never had a community gathering space. The chapel was built to provide a space to hold meetings, provide childcare and worship. In addition to creating a central node within the hamlet, residents hoped the structure would serve as a transportation point for a mobile library and a traveling health centre, bringing education and medical services to the community.

The walls of the structure are made of rammed earth containing local clay, cement, and a small amount of water. The walls are capped by a rusting metal drip edge that compliments the color of the earth. The roof is a combination of aluminum sheets and 1980’s GMC sedans car windows salvaged from a Chicago scrap yard. Both aluminum and glass are bolted to a light weight metal frame. Mr. Harris, owner of the Butterfly House, donated the land for the centre and now tends to its beautiful garden.

Sam Mockbee, part of the design team, once described the building as ‘as cutting edge as any piece of architecture in the United States’ (AFH 2006: 196). For him architecture is about shelter for the spirit.

Figure (4.1): The chapel is always open, to provide a space for contemplation and respite from the heat. (AFH 2006: 199)

Figure (4.2): The sculptural glass skin gives the building an unanticipated appeal. (AFH 2006: 198)
Relevance: While urban policy, infrastructure and economic development interventions are important tools to cross the gaps of disarticulated cities, it remains the presence of urban residents themselves and their varied uses of each other as instruments to realise particular aspirations and imaginaries that constitute the most significant form of urban connectivity. Individual urban selves mark both the gap and the connection in interwoven economies - material, symbolic, and spatial. The gap is between what buildings, people, spaces, objects and gestures can be normatively or customarily used for and how they can be put to task to do more than what is specified. This is closely bound to Dewar and Uytenbogaardt’s idea of qualitative settlements:

Settlements of quality enrich the living conditions of all people, both rich and poor. They are not dependant upon technological pre-conditions to perform successfully, and they accommodate ideological and political transitions. They are not based on ephemeral conditions, but are rooted in a basic understanding of human activity and human needs. (Dewar and Uytenbogaardt 1991: 12)

Here, the people constitute themselves as unavoidable insertions into operations of all kinds by only using the ‘primitive’ structure as place of contemplation and respite from the heat. However, it becomes more than a shelter; its act as a connection among disparate uses and users.

Figure (4.3): At night the chapel acts like a beacon, signaling Mason’s Bend to passerby. [AFH 2006: 197]

Figure (4.4): View from inside the chapel

Figure (4.5): Early concept sketches exploring shelter vs building
Implementation: The design intervention will challenge the concept by acting as part of a patchwork of the increasingly dense infrastructure of the city. The city in its very physicality has been largely disjoined and deprived of an overarching institutional logic or public discourse capable of tying its heterogeneous residents together on some conviction of common belonging or reference.

The intervention becomes the catalyst through which the users can put together connections between the diverse infrastructures, spaces, populations, institutions and activities of the city. (figure 4.6)
4.1.2 Constitutional Court of South Africa

The new Constitutional Court of South Africa, situated on Constitution Hill, is a remarkable feat of architectural daring and hope. It celebrates the ideals of a progressive Constitution; commemorate the suffering and struggles of the country's past without slavishly doing obeisance to history and give visible form to the belief that all are equal before the law (Law-Viljoen 2006). The greatest challenge of the building was to embody the moment – both historically and architecturally – and to see into the future.

While architecture in South African cities is an agglomeration of European styles - Cape Dutch, Victorian, Edwardian, Art Deco and more recently, Tuscan, the Constitutional Court reflects the new democratic order, and shows how the city is embracing the challenges of transformation and growth.
Apartheid has had a profound effect on the country's architecture, and is still very evident. 'In no other country does architecture and urban planning bear such vivid witness to history, to politics and to social division. And these deeply embedded traces of apartheid remain ubiquitous in South Africa today' (Mabin, 2007). Apartheid buildings are almost always recognisable by their closed, exclusive nature, often imposing an uneasy presence difficult to ignore. Paul Wygers, an architect at Urban Solutions, one of the consultants on the project, said of the court, 'The building needs to be as active as possible - the court will not be a monument, it will be a people-inviting place.' The court did meet these demands:

...the warmth and openness of the building was undeniable. It was a court for the people, expressing a range of cultural expectations of the concepts of justice and democracy.' (Law-Viljoen 2006)

The new-style architecture is changing the feel of South African cities. Many, who were confined by apartheid to townships and rural Bantustans, or to the countries beyond our borders, have converged on the streets of our cities to claim its promise of a better life. Public space is being occupied in new ways.

It is not about a style or fashion but about a new culture of planning and building, which creates a new approach to architecture and space.

'It was to become an iconic building, celebrated for its daring, it's combination of dignity and accessibility, its warmth and light, and its embodiment of the hopes of a young country.' (Law-Viljoen 2006)

While some would argue that change in South African society is not happening fast enough, the Constitutional Court epitomises a new, open society that caters for creative spaces where people can mingle with each other. The architecture of this work is more spatial than visual. The design space anticipates new ways of how people live. It reflects rural habits within an urban setting - a culture going through a transition.

Figure (4.10): Eastern approach to the Court
Figure (4.11): Drawing showing the position of the court in relation to Constitution Square
Relevance:

Warmth and openness of the building: The Constitutional Court is an invitation to newness and change. Whereas courts are known to be private and daunting, the Constitutional Court is happy, inclusive and open. One feels a participant there. This is a feeling encouraged by such simple things as the levels of seats in the Court Chamber. In that space one feels that one is part of the whole.

Active participation and accessibility: The court becomes part of the public life of the surrounding area, open to be freely used and visited.

Abstraction of tree canopy: The foyer was designed as an abstraction of a tree canopy: ‘The shade of a tree as a place of communal gathering.’ (Law-Viljoen 2006) Light falls through glass splinters in the concrete flat roof to create dappled light. Columns are arranged randomly at angles to reinforce the tree image.

Artist involvement: The idea of artist involvement in the design and building process is a wonderful aspect of the Court. This have enriched spaces and detailing. The ideal would be to involve artists as early as the concept stage of the design, to create the opportunity for a true integration of artworks into the built form.
Implementation: Being confronted with the concept of how people live in the South African urban environment, and by considering our climate as influential to the design of urban space, the author initiates an alternative urban fabric; one in which the segregation of ‘inside’ and ‘outside’ is being enriched by a third dimension of the ‘in-between’. The ‘outside’ dimension, as within the organization of the traditional African village, being defined by a border or the composition of the structures. (figures 4.16 and 4.17)

The transition from the outside to the inside therefore evolves around being in beyond the ‘unfamiliar’, towards that which is known.

Figure (4.15):
Drawing showing the relationship between ideas of ‘inside’ and ‘outside’. The foyer is intended to be as much an inside space as an outside space, its roof a canopy of clouds and leaves.

Figure (4.16) & (4.17):
Traditional african villages

Figure (4.18):
Sketch explaining the concept of ‘inside’ and ‘outside’.
**Figure (4.19):**
Sketches showing the first concept of ‘inside’ and ‘outside’ as being used in the design investigation.

**Figure (4.20):**
The relationship between ‘inside’ and ‘outside’ as been used within the Constitutional Court, is taken further within the design investigation, by adding the third dimension of the in-between.
The following section involves the analysis of specific precedents so as to inform the technical requirements for the selected function of the building. The technical issues which will be considered include the following:

- Spatial interconnectivity
- Circulation
- Sizes

The aim of diagrammatically analyzing the spatial connectivity and circulation requirements of the precedents is not to inform the architectural language, but merely to inform decisions with regards to the functioning of the selected facilities within the building. The different facilities and selected precedents are:

- Cafeterias
  - Condé Nast’s Cafeteria, Times Square, New York by Frank O. Gehry and Associates
  - TV Studio Cafeteria for Televisa, Mexico City by TEN Arquitectos, Architect

- Clinical testing and X-rays
  - X-ray department at King Edward Memorial Hospital, Ealing

4.2.1 Condé Nast’s Cafeteria, Times Square, New York

Figure (4.21), (4.22) & (4.23): Interior views of the cafeteria
4.2.1 Transude_Philosophy Precedents_Condé Nast’s Cafeteria

Figure (4.24): Ground floor plan
Figure (4.25) & (4.26): Spatial connectivity and circulation
Figure (4.27): Diagram showing the circulation as a linear approach

1 Entrance
2 Hot buffet
3 Salad bar
4 Register
5 Dining Area
6 Tray deposit
7 Exit corridor
4.2.2 TV Studio Cafeteria for Televisa, Mexico City

Figure (4.28) & (4.29): Views of the cafeteria outside and inside the dining area
Figure (4.30): Floor plan of the cafeteria indicating the relationship of the different areas

1 Plaza
2 Vestibule
3 Bar
4 Restroom
5 Dining Area
6 Kitchen
7 Offices
8 Deliveries
9 Terrace
10 Serving
11 Tray deposit
Figure (4.31): Spatial interconnectivity
Figure (4.32): Circulation diagram
Figure (4.33): Diagram showing the circulation as a turn-around or circular approach
4.2.3 X-ray department at King Edward Memorial Hospital

Figure (4.34): Spatial interconnectivity
Figure (4.35): Circulation
Figure (4.36): Ground floor plan of the x-ray department
4.3_Form, materials and elements

4.3.1_Competing elements

National School of Theater, Mexico City, Mexico by Ten Arquitectos

The location of the National School of Theater has a unique set of contextual conditions. Two perpendicular highways on the northern and western edges, linked by a circular off-ramp, as well as a metro line, generate continual movements in front of the triangular corner site. The buildings contain three performance areas and their support facilities, rehearsal rooms, lecture halls, administrative offices, a cafeteria, a gym, scenography studios, costume design labs, and a library.

The various volumes are unified in a cylindrical shell, clad in curved steel panels, that creates an acoustic barrier from outside traffic and protects the building from the northern winds.

The spaces are organised as a series of stacked, individual volumes, unified by shared circulation and meeting spaces. The shell enclosure, supported by bent steel tubes held in tension by steel cables, also allows for covered terraces, performance, and event spaces, blurring the distinction between interior and exterior space.
Although the spaces are arranged in terms of their accessibility, the articulated forms represent a model of controlled disruptive order. This contradiction between random appearances and a calculated order creates a paradoxical dynamism among the enclosed forms.

Figure (4.39): View from inside the cylindrical shell towards the entrance
Figure (4.40): Outside view towards building

Figure (4.41): Diagram showing the spatial relation between the frame and the building
Figure (4.42): Concept sketches showing spatial relationship of the proposed design
4.3.2 Confinement and Definition

The precedents in the next section illustrate the concept of confinement and definition of free forms and objects, by the use of simplified elements. Diagram (4.43) illustrates the concept. This principle was applied in the Villa Savoye, designed by Le Corbusier. As opposed to the informal arrangements of the interior, the external form is that of a pure prism. This pure geometry of the façade is entirely distinct from the practical considerations, but it confines the free forms used inside. Le Corbusier confirms this notion:

‘My eyes see something that conveys an idea – an idea expressed not in words or sounds, but solely through prismatic forms, shapes clearly defined by light, which are related to each other. These relationships have nothing to do with practical functions or descriptive effects. They are the language of architecture. You not only have adapted raw materials to the functional requirements of a project but also, transcending these requirements, have established relationships that stir my emotions. That is architecture.’ (Leupen, Grafe, Kornig, Lampe & Zeeuw 1997:116)
4.3.2 Transude Form, Materials and Elements, Confinement and Definition

Figures (4.46):
Outside views of Villa Savoye

Figure (4.47):
Exploded views of partitions and structural elements

Figure (4.48):
Ground floor plan showing free forms of interior in relation to the strict ordering of the columns
The work of Finnish architect Kristian Gullichsen also illustrates this concept: Build form and structure are being treated as relatively independent, although at the same time, it defines one other. (Figures 4.59 and 4.50)

Figure (4.49): The embassy of Finland, Stockholm 1993
Figure (4.50): University Library, Lleida, Spain, 1996
4.3.3 Pretoria Regionalism

The particular vernacular of Pretoria could be termed a third vernacular since there were two previous vernaculars in the history of South Africa, namely the Cape Dutch of the 18th century and the Georgian of the early 19th century (Fisher, Le Roux & Maré, 1998:122).

The Pretoria Regionalism had a particular way of responding to nature and the landscape through the use of natural and industrial materials with specific climatically responsive characteristics (ibid). The third vernacular is considered as a precedent mainly because of the consideration it gave to context in the design process.

The following aspects characterise Pretoria regionalism:

- 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

(Following page) Figure (4.53), (4.54) & (4.55): Images of environmental skin as used in the Pittsburgh Children’s Museum

Figure (4.56):
Prototype of the skin
4.3.4 Environmental Elements

The confluence of science and art has fascinated environmental artist Ned Kahn throughout his career. For the last fifteen years, he has developed a body of work inspired by atmospheric physics, geology, astronomy and fluid motion. He strives to create artworks that enable viewers to observe and interact with natural processes.

His artworks frequently incorporate flowing water, wind, fog, sand and light to create complex and continually changing systems. Many of these works can be seen as ‘observatories’ in that they frame and enhance our perception of natural phenomena. Kahn is intrigued with the way patterns can emerge when things flow. These patterns are not static objects, they are patterns of behavior - recurring themes in nature.

Articulated Cloud - Pittsburgh Children’s Museum, Pittsburgh: Composed of thousands of translucent, white plastic squares that move in the wind, the artwork is intended to suggest that the building has been enveloped by a digitized cloud. The optical qualities of the skin change dramatically with the weather and the time of day. The articulated skin is supported by an aluminum space frame so it appears to float in front of the building (figures 4.53 - 4.56). The design evolved through collaboration with the architects, Koning / Eizenberg.
A second wind-animated shade screen for the arts center is composed of thousands of blue-anodized, 3 inch square, aluminum flaps that move in the wind and create the illusion that the building has been submerged in a vertical sheet of rippling blue water (figure 4.57). As the blue-anodized flaps pivot in and out with the passing breezes they reflect different amounts of light from the sky, changing from deep blues when they are angled down to bright, light-blue glints when they catch the sun, with countless subtle shades of blue in between. The result is a blue-tinted, animation of the ever-changing patterns of the wind. A collaboration with BOORA and DWL Architects and the engineering firm Paragon.

Figure (4.57): Ned Kahn’s ‘Fragmented Sea’
Figure (4.58) & (4.59): Prototype of Ned Kahn’s work implemented in a building facade
The fritted louvers contribute to the energy performance of the building in two ways. They provide partial shade to the building’s surface, and they create a ventilation space that allows heat to rise and escape before reaching the thermal envelope behind. The varying angles at which the louvers are affixed, and the varying degrees of frit intensity, contribute texture and change to this extraordinary surface.

Nouvel’s approach also reveals some of the same atmospheric motions as seen in the work of Ned Kahn. “The surface of this construction evokes the water,” Nouvel says, “smooth and continuous, but also vibrating and transparent because it manifests itself in colored depths — uncertain, luminous, and nuanced.” (Logan: 2006)

Torre Agbar, Barcelona, Spain: In the work of French architect Jean Nouvel, sensitivity and specificity to context – cultural, geographical and architectural – becomes one of the defining themes. In this way, the environmental context played a significant part in the design of the Torre Agbar.

The building (figure 4.60) houses the headquarters for Aguas de Barcelona (Agbar), the municipal water company. The first skin that covers the concrete structure is a layer of polished aluminum in blues, greens, and grays. The second skin, which adds an iridescent sparkle to the building, is made up of 59,619 sheets of clear glass louvers, in 25 different colours. There are 4,400 windows accompanied by the louvers that tilt in various directions to block out any direct sunlight (figure 4.61). At night, the tower becomes yet more magnificent, with 4,500 yellow, blue, pink, and red lights illuminating the exterior.

Nouvel’s approach also reveals some of the same atmospheric motions as seen in the work of Ned Kahn. “The surface of this construction evokes the water,” Nouvel says, “smooth and continuous, but also vibrating and transparent because it manifests itself in colored depths — uncertain, luminous, and nuanced.” (Logan: 2006)
Glen Murcutt: Murcutt is said to be Australia’s most internationally famous architect and is known for his environmentally sensitive design. He pours his creativity into smaller projects that let him work alone and design economical buildings that will conserve energy and blend with the environment.

Murcutt chooses materials that can be produced easily and economically: Glass, stone, brick, concrete, and corrugated metal. He pays close attention to the movement of the sun, moon, and seasons, and designs his buildings to harmonise with the movement of light and wind.
transfigure  vb  to change or cause to change in appearance;  
to become more exalted
5.1_Influences of the design development

In 'Building Dwelling Thinking,' phenomenological philosopher Martin Heidegger discusses the notion of dwelling and contends that ‘only if we are capable of dwelling, only then can we build’ (Heidegger, 1971:160). A major problem with dwelling as a concept is its lack of specificity, particularly in terms of design significance. This chapter explores the possibility that the work of American architect Christopher Alexander, indicates ways in which Heidegger’s dwelling can be translated into more grounded architectural meaning.

5.1.1 Dwelling and Building

In 'Building Dwelling Thinking,' Heidegger’s major means of investigation is etymological: what is the word history of ‘to build’ (‘bauen’) and its links to dwelling? Bauen, says Heidegger, relates to nearness and neighborliness and also implies “to cherish and protect, to preserve and care for” (ibid: 147). Bauen also relates to the Old High German word for building, ‘baun,’ which means ‘to dwell’ in the sense of remaining or staying in place.

In emphasizing this link to place, Heidegger suggests that building relates to dwelling, which therefore can be said to involve a sense of continuity, community, and at-homeness (Harries, 1983). The crux of dwelling, Heidegger argues, is sparing and preserving - the kindly concern for land, things, creatures, and people as they are and as they can become (ibid: 149; Zimmerman, 1983). As human beings, we cannot fail to dwell, for dwelling, ultimately, is the essential existential core of human being-in-the-world from which there is no escape.

At the same time, dwelling is just as much a means as an end. There will always be a certain tension, a kind of imperfection, between what we wish, do, and make. The significant questions are how do we dwell in our own particular situations and how can we shape the quality of our dwelling for better or worse? Heidegger links the quality of our dwelling to the quality of our building, since an effective building arises from a genuine sense of sparing and preserving (Foltz, 1995:159-63).

Heidegger also argues that, in practical terms, dwelling involves the gathering of the fourfold - the coming together of earth, sky, people, and a sense of spiritual reverence, or ‘the gods,’ as he signifies higher realities (ibid.). In this sense, dwelling is no mere extension of existential space or place; rather, it becomes itself the fundamental human activity.
As Heidegger interprets dwelling, the built environment is crucial because it supports and reflects a person and group’s way of being-in-the-world. The built environment is a certain embodied grasp of the world, a particular way of taking up the body and the world, a specific orientation disclosing certain aspects of a worldly horizon (ibid:154-155). The world in which we find ourselves completes us in what we are, and therefore the specific nature of the built environment becomes crucial.

Heidegger argues that, in our modern age, human dwelling is reduced and so, therefore, is building. His explication of why we dwell less fully today is complicated; he suggests that, in part, it is because we manipulate and demand from our world rather than meet it with an attitude of sparing and preserving, thus, allowing it to be and become. In this sense, a key to dwelling is letting ourselves and the world be, and this letting-be includes the ways we build, see, understand, and think.

It is this need for letting-be in designing and understanding that marks the value of Alexander’s work for a deeper, more grounded, understanding of dwelling. Alexander seeks concrete means for identifying and describing built qualities that sustain and strengthen the quality of dwelling - providing ways to see and think more clearly, which, in turn, might lead to better designing and building.
5.1.2 Christopher Alexander and Pattern Language

This reconciliation between people and their built world is a major aim in the research and design of American architect Christopher Alexander. Alexander is very much concerned with architecture in its larger environmental context. In other words, how can activities, buildings, spaces, and landscapes be designed in an integrated, coherent way to create places that are coherent, beautiful, and alive for their residents and users? In short, the aim is place-making that sustains dwelling.

Alexander argues that, if an environmental whole is made rightly, it has a powerful sense of place, which may help people who live in and use that place to have more satisfactory, vibrant lives. In his work, Alexander seeks a way to return a sense of wholeness to the buildings and environments of modern Western society. He emphasizes that the crucial process is healing. Every new construction, whether building or square or street furniture or window detail, must be made in such a way as to heal the environment, where ‘heal’ especially means ‘make whole.’ The obligation is that the thing built must work to create a continuous structure of wholes around itself’ (Alexander 1987:22).

The practical tool that Alexander developed to foster environmental wholes and healing is a ‘pattern language’ — a conceptual method whereby the designer can identify and visualize the underlying elements and relationships in a built environment that promotes a sense of place (Alexander 1987:ix). Alexander emphasizes, however, that successful places are always composed of many interrelated patterns that work synergistically to create a whole greater than the individual parts. Pattern language is not a master list of unchangeable design principles that must be incorporated in all buildings and places. Instead, it is a way of looking at and thinking about buildings and environments so that one can better understand how their parts might work together to create a whole. Design must be premised on a process that has the creation of wholeness as its overriding purpose, and in which every increment of construction, no matter how small, is devoted to this purpose (Alexander, Ishikawa & Silverstein 1977:16).
5.1.3 Developing a Pattern Language

The following patterns were chosen as design tools and applied during the design development:

**Pattern 8: Mosaic of Subcultures**

The city is a landscape of cultural diversity and subcultural differentiation, thus, a mosaic of social worlds. This great variety of human groups co-existing together seems rich, but the modern city dampens all significant variety and encourages conformity. According to Alexander this homogeneous and undifferentiated character kills the richness of variety of life styles and the growth of individual character [Alexander, Ishikawa & Silverstein 1977:43]. He therefore suggests that these cultures and subcultures be enriched by breaking the city into a vast mosaic of spatial territories. (ibid.) However, there are still areas - beyond the boundaries of these subcultures, within the interstices - where people have access to the full diversity of lifestyles. The transport interchange is such vicinity. The proposed design therefore aims to accommodate all styles and cultures, irrespective of the locality.
Pattern 16: Web of public transportation

As mentioned in chapter 2, the system of public transportation within the city, can only work if all the parts are well connected. The traditional way of looking at public transportation assumes that the lines are primary and that the interchanges needed to connect the lines to one another are secondary. Alexander proposes the opposite: namely, ‘that interchanges are primary and that the transport lines are secondary elements...’ (ibid:93) This approach redefines the importance of the transport interchange.

Figure (5.5):
Conceptual diagram showing the relationship between interchanges, stops and lines

Figure (5.6):
Interchanges, stops and lines illustrated as concept within the CBD of Pretoria

(Following page) Figure (5.7) & (5.8)
Sketches illustrating the concept of the four storey limit

Figure (5.9):
Section through the design intervention
Pattern 21: Four storey limit

High buildings have no genuine advantages, except in speculative gains for banks and land owners. They are not cheaper, they do not help create open space, they destroy the townscape, they destroy social life, they promote crime, they are expensive to maintain, they wreck the open spaces near them, and they damage light and air and view. But apart from this, which shows that they aren’t very sensitive, empirical evidence shows that they can actually damage people’s minds and feelings. (Alexander, Ishikawa & Silverstein 1977:115)

The density of building fluctuates within the urban area. Generally it will be higher towards the center and lower towards the edges. As the site lies on the periphery of the inner city, it is not subjected to being a skyscraper. The above problem statement introducing the pattern has a simple explanation: high-rise living takes people away from the ground, and away from the casual, everyday society that occurs on the sidewalks and streets. This individual isolation causes social breakdowns.

At three or four stories, one can still walk comfortably down to the street, and from a window you can still feel part of the street scene. Alexander argues that in both housing and offices buildings, the problems begin when buildings are more than four stories high. (ibid: 118) At less than four stories, you can see detail in the street – the people, their faces, shops. From these stories you can yell out, and catch the attention of someone below. Above four stories these connections break down. Visual detail is lost; the connection to the ground and to the fabric of the city becomes tenuous. The building becomes a world of its own.

The architectural intervention will therefore be limited to three stories, with the additional use of the roof. This will ensure interaction and the proper connection between building height and the users.
Pattern 30: Activity nodes

One of the greatest problems within the urban environment is the lack of open public space. Available public life in cities is spread so thin that it has no impact on the community. Studies of pedestrian behaviour make it clear that people seek out concentrations of other people, whenever they are available. (Alexander, Ishikawa & Silverstein 1977:164) Also, due to the fractured nature of South African cities, community facilities are scattered individually through the city and do not work for the life of the city. To address this problem, Alexander suggest that facilities be grouped together densely round very small public squares which can function as nodes. (ibid.) All the pedestrian movement must also be organized to pass through these nodes. (ibid:165)

The intersection at Bloed and Boom Street is an important spot where action seems to concentrate itself. The next step would then be to modify or adjust the layout of the paths in the community to bring as many as possible of them through this interchange. The interchange will then function as a ‘node’ in the path network. Alexander (1977:167) further proposes that the center of each node be developed as a small public square, with a combination of shops and facilities which are mutually supportive. In this case, the Boom Street intersection will be treated as a ‘public square’ itself. It is suggested that the corner of each site be treated as open public space, with the supportive facilities and shops adjacent to the immediate building. This will be implemented within the design intervention.

Figure (5.10): Pedestrian routes to pass through public nodes
Figure (5.11): The intersection itself will be treated as a public node.

Figure (5.12): Drawing illustrating how, by treating the corners of each site as open space, will contribute to the node as successful public space.
Pattern 33: Night life

Most of the city's activities close down at night; those which stay open won't do much for the night life of the city unless they are together. (Alexander, Ishikawa & Silverstein 1977:180)

Alexander’s argument suggests small, scattered centers of mutually enlivening night spots, where the services being grouped together to form cheery square, with lights and places to loiter (Alexander, Ishikawa & Silverstein 1977: 180-182). The intervention, being multi-functional with facilities varying from dining to overnight accommodation, will easily function as a small group of sustaining night facilities.
Pattern 41: Work community

With this pattern Alexander challenges the work environment, as being part of where and how we live. According to him, the people of our culture believe that they are less alive when they are working than when they are at home (Alexander, Ishikawa & Silverstein 1977:223). The word ‘live’ applies to every moment of our waking lives. By making this distinction, we settle for a work environment less part of our lives and ‘alive’. The work environment created within the intervention becomes part of the energy and activity of the intersection and vibrant transport interchange.

Pattern 47: Health center

This pattern runs hand-in-hand with the problem statement (chapter 2) and forms part of one of the main functions of the intervention. Alexander states it clearly:

Hospitals put the emphasis on sickness. They are enormously expensive; they are inconvenient because they are to centralized; and they tend to create sickness, rather than cure it... (Alexander, Ishikawa & Silverstein 1977:252)
A system of healthcare which is actually capable of keeping people healthy must put its emphasis on health, not sickness. It must therefore be physically decentralized so that it is as close as possible to people’s everyday activities. The transport interchange therefore becomes the ideal spot for the proposed TB testing site. It must also be able to encourage people in daily practices that lead to health, which is exactly what the incentive of the cafeteria is.

Figure (5.18): Alexander’s illustration on the concept
Figure (5.19): Location of municipal clinics and hospitals around the CBD of Pretoria
Pattern 88: Street café

People enjoy mixing in public, whether in parks, squares, promenades or avenues. The street café also provides a unique setting where people can sit lazily, legitimately, be on view, and watch the world go by (Alexander, Ishikawa & Silverstein 1977:437). Alexander (ibid. 438) concludes that the ingredients for a successful street café seem to be:

1. The café must be anchored within the neighbourhood, with an established local clientele. As the intervention is located next to the transport interchange, the same people using public transport on a daily basis will become the main clients of the proposed street café.

2. In addition to the terrace which is open to the street, the café must contain several other spaces which will encourage a variety of people to start using it (figure 5.20). The proposed cafeteria and the café each have different areas which will accommodate the different social styles.

3. The café must serve simple food and drinks – but not a bar. It must be a place which you will be likely to go in the morning to start the day, as in the evening for a nightcap. Due to its location next to the taxi rank, the cafeteria and the café on the corner will be used very early in the morning as well as late at night.
**Pattern 92: Bus stop**

Bus stops must be easy to recognize, ad
pleasant, with enough activity around them to
make people comfortable and safe. (Alexander,
Ishikawa & Silverstein 1977:452)

Bus stops are often set down independently,
with very little thought given to the experience
of waiting there. The relationship between the
bus stop and the surroundings must be carefully
considered. Bus stops must be designed in
such a way that they form tiny centers of public
life. Within the proposed design, the bus stop
is part of the transport interchange and will
also work together with several other activities
for example outdoor shelter, seats, the corner
café and a newsstand.

**Figure (5.23):**
A pleasant bus stop with activities
around

**Figure (5.24):**
Location of potential bus stops in the
design intervention, incorporated with
additional facilities
Pattern 95: Building complex

Alexander argues that a building is a visible, concrete manifestation of a social group or social institution (Alexander, Ishikawa & Silverstein 1977:469). And just as every social group has smaller groups within it, a human building will also reveal itself as a complex of smaller institution. Alexander feels that the more monolithic a building is, the more it presents itself as in-human. The one example he uses, was also used by the author in the precedent of the Constitutional Court of South Africa, namely that of the African hut. A group of huts is ‘human’ too, because it is a complex of buildings, not one huge building by itself. Alexander suggests that whenever possible, a building program must be translated into a building complex, whose parts also manifest the actual social facilities of the situation (ibid: 476). The following diagram illustrates Alexander’s concept (figure (5.27)):
Pattern 97: Shielded parking

Large parking structures full of cars are inhuman and dead buildings – no one wants to see them or walk by them. At the same time, if you are driving, the entrance to a parking structure is essentially the main entrance to the building – and it needs to be visible. (Alexander, Ishikawa & Silverstein 1977:478)

Alexander’s solution to this problem is to put all parking lots or parking garages behind some kind of natural wall, so that the cars and parking structures cannot be seen from outside. However, if the parking garage is a parking basement – as within the case of the intervention – this is very easy to achieve. The difference comes in the fact that the main entrance to the building is not through the parking garage as within Alexander’s example, but from the street. The entrance to the parking garage would therefore be rather hidden behind structures or walls. This is achieved by using the existing basement entrance of the taxi rank as the entrance to the intervention’s parking garage. See figure 5.28.

Figure (5.28): Entrance and exit indication
Figure (5.29) & (5.30): Concept sketch explaining shielded parking
In today’s societies, the social intercourse created when people rub shoulders, and the actual process of movement is now taken place in indoor corridors and lobbies, inside malls, instead of outdoors. This robs the street from people and the streets become abandoned and dangerous. Even the new Taxi Retail Park next to the design intervention is developed as a mall with a range of shops only accessible from the inside. This encouraged the author to approach the intervention different, forcing people to use the sidewalks and open air walkways rather than the inside lobbies and corridors. To create the social intercourse of public movement, as far as possible, the movement between rooms, offices, departments, buildings within the building complex, must also be outdoors, on sheltered walks, arcades, paths and streets.

Alexander concludes: ‘Arrange buildings so that they form pedestrian streets with many entrances and open stairs directly from the upper stories to the street, so that even movement between rooms is outdoors, not just movement between buildings’ (Alexander, Ishikawa & Silverstein 1977:490).

**Pattern 100: Pedestrian street**
**Pattern 102: Family of entrances**

When a person arrives in a complex of offices or services, there is a good chance he will experience confusion unless the whole collection is laid out before him, so that he can see the entrances of the place where he is going. This principle was mainly applied in the TB testing facility, as for the different departments must be clearly visible to avoid confusion (figure 5.32). Alexander proposes that the entrances be laid out as to form a family, meaning they form a group; are visible together and each is visible from all the others.

**Figure (5.33):**
Relation between the entrance and receptions on first floor

**reception nodes**

(5.32)
Pattern 106: Positive outdoor space

Outdoor spaces which are merely ‘left over’ between buildings will, in general, not be used. (Alexander, Ishikawa & Silverstein 1977: 518)

There are two fundamentally different kinds of outdoor space: negative space and positive space. Alexander describes negative outdoor space as shapeless, the residue left behind when buildings – which are generally viewed as positive – are placed on the land. Accordingly, outdoor space is positive when it has a distinct and definite shape, and when its shape is as important as the shapes of the building which surround it (Alexander, Ishikawa & Silverstein 1977: 518). The open space in the corner of the site will be given some degree of enclosure by treating it with steps on which people can sit and relax. See figures 5.35 to 5.28.
Pattern 110: Main entrance

Placing the main entrance(s) is perhaps the single most important step one takes during the evolution of a building plan. Alexander (1977:540) feels that the position of the main entrance controls the layout of the building. This was indeed experienced by the author during the design process. It controls the movement to and from the building, and also all the other decisions about the layout and flow. The following sketches indicate the design development of the entrance, being inseparable from the shape of the building. (figures 5.40 and 5.41)
Pattern 112: Entrance transition

The experience of entering a building influences the way you feel inside the building (Alexander, Ishikawa & Silverstein 1977:548). If the transition is too abrupt there is no feeling of arrival, and the inside of the building fails to be an inner sanctum (figure 5.42). As discussed previously in this dissertation, the author explored the transition from 'outside' to 'inside' with the possibility of working with an additional skin which will present the 'in-between'. This will then enrich the experience between the street and the enclosure of the building. Within this transitional space, the change of light, the change of sound, the change of direction, the change of surface will all be ways in which this pattern can be investigated.

Pattern 117: Sheltering roof

This is perhaps the pattern which comes closest to the essence of this dissertation. Challenged with the notion of dwelling and our 'being' in the world, the concept of 'shelter' becomes part of the debate whether we as humans reflects the ideal way of this being.

Figure (5.42): Alexander’s concept of the entrance transition
Figure (5.43): Sketch showing the transitional entrance of the design intervention
Figure (5.44): Sketches showing the first concept of 'shelter' as being used in the design investigation
The roof in this instance plays a primal role in our lives. The most primitive buildings are nothing but a roof. Alexander (1977:570) argues that if the roof is hidden, if its presence cannot be felt around the building, or if it cannot be used, then people will lack a fundamental sense of shelter. This sheltering function cannot be created by a roof which is merely added to the top of an existing structure. The roof itself only shelters if it contains, embraces, covers and surrounds the process of living (ibid.). It is in this sense that the space under or on the roof becomes useful space; space that people come into contact with daily. The whole feeling of shelter comes from the fact that the roof surrounds people at the same time that it covers them. Implementing the pattern within the design intervention becomes the most dramatic feature of the building. The additional skin the author worked with, takes on the function of the roof as secondary shelter while simultaneously defines a space which includes living space within its volume, not only underneath it. The sketches on the left is early concepts exploring this feature.

Figure (5.45), (5.46) & (5.47): Early concept sketches exploring the roof as enclosure.
Pattern 118: Roof garden

A vast part of the earth’s surface, in a town or city, consists of roofs. Couple this with the fact that the total area of a town which can be exposed to the sun is finite, and you will realize that it is natural, and indeed essential, to make roofs which take advantage of the sun and air. (Alexander, Ishikawa & Silverstein 1977:576)

This pattern was embraced and almost every part of the concrete roof system was designed as usable roof gardens. It was also incorporated as balconies where one can walk out directly out onto it from the lived-in parts.
**Pattern 119: Arcades**

This pattern suggests that wherever paths run along the edge of buildings, one needs to build arcades, and use the arcades, above all, to connect up the buildings to one another, so that persons can walk from place to place under the cover of the arcades (ibid:583).

The steel structure which covers the building automatically creates an arcade system that itself becomes a place that is partly inside the building (figures 5.52 and 5.53). This effect is also increased by the path of the arcade opening directly into it the space created by the building complex. (Figure 5.45)
Pattern 133: Staircase as a stage

A staircase, according to this pattern, is not just a way of getting from one floor to another. The stair is itself a space, a volume, and a part of the building; and unless this space is made to live, it will be a dead spot, and work to disconnect the building and to tear its processes apart (Alexander, Ishikawa & Silverstein 1977:638). The staircase provides for a special situation: from providing place to sit or being a place where someone can make a graceful or dramatic entrance or even a place from which someone can speak. This suggests that the stair always be made rather open to the room below it, embracing the room, so that the stairs together with the room form a socially connected place (ibid.). Figure 5.55 indicates the development of the staircase – its position and character – within the design intervention.
**Pattern 146: Flexible office space**

This pattern poses the question whether it is possible to create a kind of space which is specifically tuned to the needs of people working, and yet capable of an infinite number of various arrangements and combinations within it (Alexander, Ishikawa & Silverstein 1977:690). The diagrams illustrate how the proposed office space was designed as an open wing of space in order to ensure the flexibility of a variety of different users.

**Pattern 147: Communal eating**

The importance of this concept is clear in all societies, and it plays a vital role in almost all social groups as a way of binding people together. Additionally, within the metropolitan society, it creates the possibility of meeting a wonderful variety of new people (Alexander, Ishikawa & Silverstein 1977:699). Communal eating becomes one of the main functions within the design and eating together becomes an important, comfortable, and daily event.

*Figure (5.58):* First floor plan showing the open office space

*Figure (5.59):* Sketch indicating the areas of communal eating
Pattern 150: A place to wait

Waiting is one of the daily rituals for a great amount of people within the study area. Some wait for transportation, some for work, some for service and others for meeting someone else. Alexander (1977:708) argues that the process of waiting has inherent conflicts in it. On the one hand, whatever people are waiting for, has built in uncertainties, which make it inevitable that they must spend a long time hanging around, waiting, and doing nothing. On the other hand, they cannot usually afford to enjoy this time. Because it is unpredictable, they cannot even take a stroll or sit outside/inside. Alexander suggests that the places where people end up waiting must be designed in such a way which makes the waiting possible.

Figure (5.60): Primary and secondary waiting areas on ground floor
Figure (5.61): Timeline indicating the transition of the design process in relation to the development of the project.
The first concept model explores the theoretical and practical isolation of the building surface as the subject of the design. The autonomy of the surface, the ‘free facade,’ presumes a distinction between the structural and nonstructural elements of the building, between the frame and the cladding. Once the skin of the building became independent of its structure, it could just as well hang like a curtain, or like clothing. The focus of the relationship between structure and skin is the architectural surface. The concept also manifests influences of pattern 117 (pg. 124), indicating how the principles of the ‘sheltering roof’ can be applied.

Figure (5.66): Sketch illustrating the ‘growth’ of the skin from being a structural to a non-structural element.
5.2.2 First Concept Sketches

The specific functions of a building may suggest various constructional forms that channel working routines and modes of behaviour. The first concept sketches investigate the organisation of functional sequences by illustrating explorative systems of enclosure. Orientation, that is ‘to find one’s way’, plays a dominant role in this.

**Figure (5.67):** Sketch illustrating graphically the sequence as processes of collectors and distributors

**Figure (5.68):** Sketch exploring systems of collectors

**Figure (5.69):** Systems of enclosure as part of the transition process
As within the Constitutional Court (pg. 87, figure 4.15), the interconnectivity and character of these functional sequences will contribute to the relation between the ideas of ‘inside’ and ‘outside’.

Figure (5.71):
Points from which collectors accumulate

Figure (5.72):
Sketch exploring permeable and responsive footprints
The following diagrams were developed during a very early stage in the design process (March 2007), and illustrates the ordering of facilities within the intervention. It also indicates the relation between the different levels, which accordingly influenced the relation between inside and outside space.

Figure (5.73) & (5.74): Diagrammatic ordering of facilities, March 2007
As within the first concept model (page 132), this model also explores the building surface as subject to the design. However, giving the illusion of being a solid mass, the properties of the building surface – whether it will be made out of concrete, metal, glass, or any alternative materials – are not merely superficial; it construct the spatial effects by which the architecture communicates. Through its surfaces the concept model declares both its autonomy and its participation in its surroundings.

Figure (5.75) - (5.80):
At this stage the concept lack the direct link to the transitional context as described on pages 87, 88 and 124.
5.2.4 Second Concept Sketches

The ordering of functional sequence are still the subject of investigation, but in addition, superimposed with the circulation patterns derived from the site analysis. The sketches also illustrate responsive lines and form generated from these concepts.

Figure (5.81): Existing pedestrian patterns
Figure (5.82): Future pedestrian patterns
Figure (5.83): Sketches exploring the ordering of functional sequences superimposed with pedestrian patterns
Figure (5.84): Sketches responding to pedestrian patterns (red) and responsive lines (black).

Figure (5.85): Responsive sketches later in the conceptual design process.
The conceptual design considered a taxi rank development as part of the intervention proposed by the author, and only at a later stage assumed the Bloed Street Taxi Rank, as to be built by the RAI-group, as a given. The sketches illustrate these early concepts - responsive to the vehicular circulation patterns.

Figure (5.86): Existing vehicular circulation patterns
Figure (5.87): Future vehicular circulation patterns
Figure (5.88): Sketches exploring the ordering of functional sequences and circulation superimposed with vehicular patterns
These sketches illustrate the development of ‘bulk mass’ and introduce the form to which a third range of concept models were developed. This form was predominantly influenced by existing and proposed circulation patterns.
The bulk form is arranged in such a way that it forms a pedestrian street; with many entrances it will result in a highly permeable building. This principle is derived from pattern 100, ‘the pedestrian street’ (pg. 120). To create the social intercourse of public movement as far as possible, the movement between rooms, offices, departments and buildings within the building complex, must also be outdoors, on sheltered walks, arcades, paths and streets.

Figure (5.92): Development of initial bulk form model (figure 5.94)
Figure (5.93): Development of bulk form model 2 (figure 5.95)
Figure (5.94) & (5.95): Bulk form models ‘1’ and ‘2’
Figure (5.96):
Development and aspects of the concept models
5.2.6 First Sketch Plans and Perspectives

Figure (5.101): Basement plan - June 2007
Figure (5.102): Ground floor plan - June 2007
Figure (5.103): The internal ‘corridor’ was later replaced by building mass.
Figure (5.104): First floor plan - June 2007
Figure (5.105): Second floor plan - June 2007
Figure (5.106): Concept sketches exploring interaction between building and sidewalk
Defining an edge itself manifests the theoretical concept of the border, reflecting the process of transition by initiating an alternative urban fabric; one in which the segregation of ‘inside’ and ‘outside’ is being enriched by a third dimension of the ‘in-between.’

Figure (5.107), (5.108) & (5.109):
Perspectives and views of the proposed building - June 2007
The aim is to design a place in which all people would feel welcome, where Africans from urban and rural areas, the young and the old, could gather without inhibition, and have a connection, a sense of belonging and identity.

**Figure (5.110) & (5.111):**
Views as approached from the north-eastern side

**Figure (5.112):**
View from inside of the cafeteria towards the intersection
The intervention encourages active participation and accessibility, offering safe and legible places for people to gather, while everyday activities can happen all around them.

**Figure (5.113):**
Interior views and perspectives

**Figure (5.114) - (5.116):**
Sketches illustrating everyday activity around the building within open public space
Figure (5.117): First concept sections - June 2007
At this stage of the design process, the structure of the building was of primary concern in the dissertation. An investigation of possible structural solutions enabled the designer to have a better concept of the building and the tectonics involved.
The aim was to reveal the structural system of the building to the user, through honesty of construction. Precedents where also sought that dealt with folding planes and alternative load distribution systems.
The structural design of the building evolved increasingly towards the end of the design resolution. It was at this stage that the designer did a revision of her first conceptual ideas and intentions. Cluttered with a vast amount of information, precedental inspiration and external input, the designer was forced to make elementary decisions regarding the structural participation of the additional skin. (Refer to pg. 124 & pg. 88) Retrospectively, the transitional context became an indisputable aspect of the initial concept and this could not be ignored.

**Figure (5.120) & (5.121):**
The work of Rem Koolhaas influential as subjected to folding planes

**Figure (5.122) & (5.123):**
Santiago Calatrava: Marousi, Athens and City of Science, Spain. His work was chosen as alternative precedent after revision of the designer’s initial concepts.
This concept model is still very much concerned with the skin as being unseparable from the structure of the building. However, as mentioned earlier, the ‘free facade’ presumes a distinction between the structural and nonstructural elements of the building, between the frame and the cladding.

Figure (5.127):
Conceptual sketches investigating alternative loadbearing structures
The influence of National School of Theater as precedent, can be directly linked to the investigation of this model (see pg. 94 and pg. 95). The articulated forms represent a model of controlled disruptive order. This contradiction between random appearances and a calculated order creates a paradoxical dynamism among the enclosed forms.

Figure (5.130): The sketches explore the relation between controlled space and random enclosure.
Figure (5.131) & (5.132):
The sketches is part of the experimental model in figure on the following page.
5.2.10 Design Development_Model 5

Model 5 - September 2007

[5.139] Model 5 - September 2007
[5.142] Model 5 - September 2007
transcribe vb put into written form; write out notes in full
The aim of this dissertation was to exploit the concept of social transition and the facilitation of basic accompanied needs experienced by people in transit through the translation of it in terms of an appropriate architectural intervention. The aim was to enrich the process of transition through re-delineating the transport interchange and promoting it as an activity node.

Challenged with aspects like identity and belonging, the discourse initiated another way of being by concretising phenomenological philosopher Martin Heidegger’s notion of dwelling. It accordingly explored the contributions made by American architect Christopher Alexander, indicating important ways in which Heidegger’s ideas on dwelling can be translated and implemented into more grounded architectural meaning.

The predominant quality which defines the intervention in relation to the discourse is the concept of the edge, border or boundary. The significance of the convergence of these concepts emphasises the ‘beyond’. In the ‘beyond’ we find ourselves in a moment of transit, where space and time cross to produce conflict between difference and identity, past and present, inside and outside, inclusion and exclusion. This conflict is not given to experience through an already authenticated tradition, but it takes you ‘beyond’ yourself in order to return, in a spirit of revision and reconstruction, to the conditions of the present. It is in this sense that the boundary, or edge, becomes the place from which something begins its presencing:

The edge becomes a crossing point in the process of transit and therefore a meeting place, where interaction occurs between people, space and systems of life in constant transition. These crossing points are found everywhere within the city, and becomes important spot where action seems to concentrate itself. However, these nodes often lack adequate public facilities. The proposed intervention provides open public and social space for its users and allow for communal interaction. It furthermore provides a catalyst for dealing with public open space by becoming an important node where the relations of interaction can start to initiate a way of using the space, rather than just being a preconceived idea. The concepts explored could be applied on a larger scale throughout the city.

The edge becomes an in-between, functioning as un-programmed space; space to be appropriated by the user. The building acts as an envelope, creating spaces which allow activities to develop unofficially and spontaneously, while bearing a great sense of formality and certainty. The left-over spaces (voids), between the existing and the designed became the place of potential ‘events’. Events being an ‘indeterminate set of unexpected outcomes’ (Tschumi 1994:13). Events are thus seen as the turning point; neither the beginning nor the end. In addition, the voids provide for a more legible space; one in which the building can be easily read and understood. The building and the spaces it creates, also offers flexibility for a variety of building functions while adhering to existing movement and functions around the site. A program is generated for a building through the superimposition of existing needs and processes experienced by its users on and around the site.
The edge becomes the generator of new events for this part of the city. The development provides urban renewal in an area in need of ‘urgent urban intervention’ (Tshwane ISDF, 2005). The intervention presents solutions for improving the quality of life for the users and visitors of this area and enhances its unique social, cultural and historical attributes. The building becomes a landmark, not only within the precinct by also within the wider context of the city itself, and can therefore become an important destination for tourists, inhabitants and commuters. The proposed intervention will hopefully uplift the area through stimulating commercial activity and encourage future investment. The functional diversity of the facilities, as a gateway for many people into the city, creates an overlay of systems, functions, hierarchy and order.

The edge itself manifests the border, reflecting the process of transition by initiating an alternative urban fabric; one in which the segregation of ‘inside’ and ‘outside’ is being enriched by a third dimension of the ‘in-between.’ The transition from the outside to the inside therefore evolves around being in the beyond, the ‘unfamiliar’, towards that which is known. Besides providing an enclosure, this transition between sidewalk and building acts as a multi layered threshold, introducing a variety of complementary functions. The permeability of the enclosure (structure) provides links with the surrounding fabric and promotes interlocking spaces and interaction between people. The structure varying in physical and visual permeability regulates these levels of interaction. It therefore not only manifests the transition between inside and outside, but also releases the boundaries between public and private to define spaces for this interaction.

Whereas transition, within the context of South Africa today, connotes a shift from political partition to universal acceptance and justice, the author aimed to intricate transition as a culture in its own right, with its own conflict, repressions and unrealised potentials. Within the realm of the ‘beyond’, this culture’s existence is marked by a tenebrous sense of survival; living on the borderlines of the ‘present’. The author concluded that the solution lies in our return to the present, to re-describe our cultural contemporaneity. In that sense then, the intervening space ‘beyond’, becomes a space of intervention in the here and now. The proposed facility demands an encounter with ‘newness’ that is not part of the continuum of past and present. It renews the past, refiguring it as a contingent ‘in-between’ space in constant transition, that innovates and interrupts the performance of the present.


Mabin, A. Globalisation and sub-urbanity: recomposition of space in urban South Africa


Author unknown. http://home.att.net/~allanmcnyc/amobio.html accessed on 4 April 2004
<table>
<thead>
<tr>
<th>Building No</th>
<th>Building Type</th>
<th>Architectural &amp; Technical Description</th>
<th>Typology</th>
<th>Materials</th>
<th>Historical Value</th>
<th>Condition</th>
<th>Orientation</th>
<th>Function</th>
<th>Occupancy</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>house</td>
<td>Single storey house with pointed corn iron roof &amp; veranda supported by square timber poles. Concave folded gable faces the street. Walls are plastered &amp; painted above a dado of red face brick.</td>
<td>timber, plastered walls, corn iron</td>
<td>medium</td>
<td>W</td>
<td>dwelling</td>
<td>yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>house</td>
<td>One of the older dwelling houses in the area, built symmetrically around a central arch entrance. A later added veranda runs along the street facade &amp; side, supported by stone-built pillars. Roof ventilator faces the street. Two impressive, highly suckled timber windows on either side of the entrance to the veranda front.</td>
<td>timber, stone, plastered walls</td>
<td>medium</td>
<td>W</td>
<td>offices</td>
<td>yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>house</td>
<td>Symmetrical dwelling house covered by corn iron roof with central roof vent &amp; ridge finials. The veranda rests on pre-built columns, resting on stone layer, forming part of the balustrade wall.</td>
<td>stone, concrete, corn iron</td>
<td>good</td>
<td>W</td>
<td>dwelling</td>
<td>yes</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Mosque street:** today forms the back side of the U-shaped street with three names running through Riviere. The zoon fence forms the north boundary, on the southern side are two houses which have been changed quite severely.

<table>
<thead>
<tr>
<th>Building No</th>
<th>Building Type</th>
<th>Architectural &amp; Technical Description</th>
<th>Typology</th>
<th>Materials</th>
<th>Historical Value</th>
<th>Condition</th>
<th>Orientation</th>
<th>Function</th>
<th>Occupancy</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 &amp; 5</td>
<td>house</td>
<td>The two houses are linked by a later added addition. The one house is much more recent than the other one. Overall, the houses have been altered a lot over time.</td>
<td>plastered walls, corn iron, timber</td>
<td>good</td>
<td>W &amp; N</td>
<td>hospital/hospital</td>
<td>yes</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Margaret street:** similar to De Waal street in terms of scale and appearance.

<table>
<thead>
<tr>
<th>Building No</th>
<th>Building Type</th>
<th>Architectural &amp; Technical Description</th>
<th>Typology</th>
<th>Materials</th>
<th>Historical Value</th>
<th>Condition</th>
<th>Orientation</th>
<th>Function</th>
<th>Occupancy</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>house</td>
<td>House has undergone many alterations, but is important as a typical dwelling house.</td>
<td>plastered walls, corn iron, timber</td>
<td>good</td>
<td>E</td>
<td>dwelling</td>
<td>yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>house</td>
<td>House has undergone many alterations, but is important as a typical dwelling house.</td>
<td>plastered walls, corn iron, timber</td>
<td>good</td>
<td>E</td>
<td>dwelling</td>
<td>yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>house</td>
<td>Small house, without any well-preserved architectural characteristics.</td>
<td>brick, corn iron, plastered walls</td>
<td>good</td>
<td>E</td>
<td>dwelling</td>
<td>yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>house</td>
<td>Symmetrical, semi-detached house under one uninterrupted corn iron roof. On either end forms a veranda, covered by the same roof. Walls are plastered &amp; painted.</td>
<td>corn iron, plastered walls, timber</td>
<td>good</td>
<td>W</td>
<td>dwelling</td>
<td>yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>house</td>
<td>Small house, without any well-preserved architectural characteristics.</td>
<td>brick, corn iron, plastered walls</td>
<td>good</td>
<td>E</td>
<td>dwelling</td>
<td>yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>house</td>
<td>Scale of the house and appearance resemble House No 35 in De Waal st.</td>
<td>corn iron, plastered walls, timber</td>
<td>good</td>
<td>W</td>
<td>dwelling</td>
<td>yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>house</td>
<td>Small house, without any well-preserved architectural characteristics.</td>
<td>brick, corn iron, plastered walls</td>
<td>good</td>
<td>E</td>
<td>dwelling</td>
<td>yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>house</td>
<td>House with gable facing the street, steep veranda on two sides. Corn iron roof. Veranda rests on pillars that form part of the balustrade wall.</td>
<td>corn iron, plastered walls, timber, concrete</td>
<td>medium</td>
<td>W</td>
<td>women clinic, surgery</td>
<td>yes</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Riversdale Street is a small residential area surrounded by the zoo, Mosca street, the old street wall next to Prinshof, Lewis and Boom street. Because heavy traffic does not pass through the area, the atmosphere is much quieter. It feels like having entered a different world. It was developed independently of the city pattern and thus the streets are smaller and do not line up with the surrounding pattern. Houses are generally small and unpicturesque. The quaintness of the street is striking.

Boompje Street: The northern side of Boompje Street is characterized by open spaces leading through the unchannelled Aplums river and up over Draposq Hill. As the street name indicates it, the street is lined on both sides with big Plantane trees. These trees originally at Von Willich str., through Marabastad and ends at the Du Toit, Blood & Prinshof crossing. The southern street scope is more commercial, while the northern side is quieter, embracing the Zoo, Aplums river, parking etc.

| 15 & 15 house | Two bigger houses, which have been altered substantially and to which ugly additions have been added. Important as remaining witness of scale & age of dwelling houses in Boom str. in comparison to those in Riversdale str. | face brick, iron, plank walls | medium | S | optimist/hotel | yes |

Leids street starts at Boom street and runs to the north. The residential scale is kept along Boom street, but as from Riversdale street bigger buildings and open fields appear next to the road.

| 17 house | Small dwelling house, covered by pointed corrin iron roof. Big, triangular roof ventilators sit on every side of the roof. A veranda, facing the street rests on columns. This house, in spirit & scale, is one of the most important buildings in the area. | corr iron, timber, face brick, plank walls | good | E | dwelling | yes |

| 18 3-storey flat | Three-storey building with courtyard. Exterior walls consist of two colours face brick, corr iron roof. Somwe Arts Dess. & International influence, seen at the heavy roof line which reminds of Frank Lloyd Wright’s Prairie House. Typologically important as human-like & multi-storied dwelling unit in the city. | face brick, corr, steel | good | N | Flats: Flora Court | yes |

Andries street: is a typical one-way street in Pretoria, but has a very important role: the T-junction at Boom street, where the old Museum site next to the zoo. A pity that the importance of the building gets lost. Spaces are determined by the changing context, such that the pedestrian roads change from wide to narrow, tree-lined to open, residential to commercial. Jacarandas line the street up to Vereeniging to soften the street scope.

| 19 house | Simple single storey house with front & back verandas. Front veranda with plastered walls and low wall with added edge strip. Plastered walls with stone plinth, timber windows and floor. | corr, pressed ceiling, plank walls, corr iron | medium/low | N & W | dwelling | yes |

| 20 house | Symmetrical semi-detached house with corr iron roof. Plastered & painted walls on painted face brick plinth. Timber windows, purple steel ceiling. The total house consists of a T-shape. A veranda runs along three sides of the house, supported by pine-butt columns. | face brick, concrete, plank walls, corr iron | good | N & W | dwelling | yes |

<p>| 21 house | Typical Edwardian village house with some exponents in character. Gable wall &amp; ‘eaves’ face the street. Corr iron roof, face brick and painted plastered walls with ledge all on painted stone plinth. Timber windows &amp; louvres. Kinkness brick edging in garden. | face brick, plank walls, corr iron, timber | good | W | dwelling | yes |</p>
<table>
<thead>
<tr>
<th>No.</th>
<th>Building Type</th>
<th>Description</th>
<th>Walls/ROOF</th>
<th>Condition</th>
<th>E</th>
<th>Central BR SA radio league</th>
<th>Preservation</th>
</tr>
</thead>
<tbody>
<tr>
<td>22</td>
<td>House</td>
<td>Single storey dwelling house with corr. iron roof. Gable wall with teler windows facing the street. Verandah with pre-fab columns on square bases and lean-to roof. The verandah shelters from the entrance along the house front &amp; around the corner. The exterior walls consists of plastered strips and face brick (now all painted) on painted stone pilasters. Timber windows with arched stone work as lintels. Late Victorian/Edwardian house with numerous original details. Outdoor building with soft window and double-glazed roof.</td>
<td>plastered walls, corr. iron, timber</td>
<td>medium</td>
<td>E</td>
<td>Centre BR SA radio league</td>
<td>yes</td>
</tr>
<tr>
<td>23</td>
<td>7-storey flat</td>
<td>7-storey flat building. This building places an unsympathetic focus on the way the streets join.</td>
<td>face brick, plastered walls</td>
<td>good</td>
<td>N</td>
<td>Rats</td>
<td>yes</td>
</tr>
<tr>
<td>24</td>
<td>Courtyard bidg</td>
<td>Built ca. 1899. The old museum front is on the property of the zoo. The entrance gate under a semi-round ‘lamp’ of sandstone is in the centre of the symmetrical façade between two richly decorates pavilions stretching high above the lower corr. iron roofs of the museum buildings. Sandstone cut out work appears on the pavilions, at the top cornithian capitals &amp; pillars. Prominent rectangular roof ventilators appear at measured distances on the museum roof. A very important city &amp; landmark.</td>
<td>concrete, corr. iron</td>
<td>low</td>
<td>S</td>
<td>Museum</td>
<td>no</td>
</tr>
<tr>
<td>25</td>
<td>2-storey dwelling</td>
<td>one of the first residential houses next to the zoo. House has interesting cottage-type characteristics, but lacks serious maintenance. Seems fairly unchanged over the years, although a bit all-hoc. The white painted plastered walls are partly covered by a climbing plant.</td>
<td>painted face brick walls, tile roof, timber</td>
<td>medium/low</td>
<td>W</td>
<td>storage</td>
<td>no</td>
</tr>
</tbody>
</table>

Blood street: The corner café at the Boom Blood/Pilimo street crossing is an important architectural appearance and although this example is not very dramatic, it remains important as a typological example of smaller buildings of the bazaar era. Characteristics such as the covered verandah and corner entrances are generally kept in reasonable condition. Blood street is characterized by big Jacaranda trees along side the street sides and low buildings adjacent to the street. Side walls are generally dry and not well looked after, although left. Two unbuilt stands on the northern side of the street result in a big gap in the city’s fabric. Splashes of colour and advertisements on the southern side, confuse to lead the eye to small single- and double storey buildings.
<table>
<thead>
<tr>
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<th>Addr</th>
<th>Photos</th>
<th>Bidg No</th>
<th>Addr</th>
<th>Photos</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>De Vaal st 34, Erf no. 2005</td>
<td>![Image]</td>
<td>1</td>
<td>De Vaal st 34, Erf no. 2005</td>
<td>![Image]</td>
</tr>
<tr>
<td>2</td>
<td>De Vaal st 36, Erf no. 2021</td>
<td>![Image]</td>
<td>2</td>
<td>De Vaal st 36, Erf no. 2021</td>
<td>![Image]</td>
</tr>
<tr>
<td>3</td>
<td>De Vaal st 40, Erf no. 2013</td>
<td>![Image]</td>
<td>3</td>
<td>De Vaal st 40, Erf no. 2013</td>
<td>![Image]</td>
</tr>
<tr>
<td>4 &amp; 5</td>
<td>Margaretha st 27, Erf no. 203</td>
<td>![Image]</td>
<td>4 &amp; 5</td>
<td>Margaretha st 27, Erf no. 203</td>
<td>![Image]</td>
</tr>
</tbody>
</table>
SUSTAINABLE BUILDING ASSESSMENT TOOL (SBAT - P) V1

Social 4.5  Economic 4.2  Environmental 3.0

Overall 3.9
<table>
<thead>
<tr>
<th>Criteria</th>
<th>Indicative performance measure</th>
<th>Measured</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SO 1 Occupant Comfort</strong></td>
<td>Explanatory notes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SO 1.1 Daylighting</td>
<td>% of occupied spaces that are within distance 2H from window, where H is the height of the window or where there is good daylight from skylights</td>
<td>80</td>
<td>0.8</td>
</tr>
<tr>
<td>SO 1.2 Ventilation</td>
<td>% of occupied spaces that are within distance 2H from window, where H is the height of the window or where there is good daylight from skylights</td>
<td>78</td>
<td>0.8</td>
</tr>
<tr>
<td>SO 1.3 Noise</td>
<td>% of occupied spaces that are within distance 2H from window, where H is the height of the window or where there is good daylight from skylights</td>
<td>66</td>
<td>0.7</td>
</tr>
<tr>
<td>SO 1.5 Thermal comfort</td>
<td>Temperature of occupied spaces does not exceed 32°C or go below 18°C for less than 5 days per year (100%)</td>
<td>88</td>
<td>0.9</td>
</tr>
<tr>
<td>SO 1.6 Views</td>
<td>% of occupied spaces that are within distance 2H from an external window (not a skylight) with a view</td>
<td>50</td>
<td>0.9</td>
</tr>
<tr>
<td><strong>SO 2 Inclusive Environments</strong></td>
<td>Explanatory notes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SO 2.1 Public Transport</td>
<td>% of building (s) within 400m of disabled accessible (50%) and affordable (50%) public transport</td>
<td>100</td>
<td>1.0</td>
</tr>
<tr>
<td>SO 2.2 Information</td>
<td>Comprehensive signage provided (50%), Signage high contrast, clear print signage in appropriate locations and language(s) / use of understandable symbols / manned</td>
<td>100</td>
<td>1.0</td>
</tr>
<tr>
<td>SO 2.3 Space</td>
<td>% of occupied spaces that are accessible to ambulant disabled / wheelchair users</td>
<td>100</td>
<td>1.0</td>
</tr>
<tr>
<td>SO 2.4 Toilets</td>
<td>% of occupied spaces with accessible toilets within 50m of easily accessible route</td>
<td>100</td>
<td>1.0</td>
</tr>
<tr>
<td>SO 2.5 Fittings &amp; Furniture</td>
<td>% of commonly used furniture and fittings (reception desk, kitchenette, auditorium) fully accessible</td>
<td>50</td>
<td>0.8</td>
</tr>
<tr>
<td><strong>SO 3 Access to Facilities</strong></td>
<td>Explanatory notes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SO 3.1 Children</td>
<td>All users can walk (100%) / use public transport (50%) to get to their children's schools and creches</td>
<td>100</td>
<td>1.0</td>
</tr>
<tr>
<td>SO 3.2 Banking</td>
<td>All users can walk (100%) / use public transport (50%) to get to banking facilities</td>
<td>100</td>
<td>1.0</td>
</tr>
<tr>
<td>SO 3.3 Retail</td>
<td>All users can walk (100%) / use public transport (50%) to get to food retail</td>
<td>100</td>
<td>1.0</td>
</tr>
<tr>
<td>SO 3.4 Communication</td>
<td>Percentage of inhabitants who walk / use public transport to get to post office / telephone / internet</td>
<td>80</td>
<td>0.8</td>
</tr>
<tr>
<td>SO 3.5 Exercise</td>
<td>All users can walk (100%) / use public transport (50%) to get to recreation/exercise facilities</td>
<td>30</td>
<td>0.3</td>
</tr>
<tr>
<td><strong>SO 4 Participation &amp; Control</strong></td>
<td>Explanatory notes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SO 4.1 Environmental control</td>
<td>% of occupied space able to control their thermal environment (adjacent to operable windows/thermal controls)</td>
<td>80</td>
<td>0.8</td>
</tr>
<tr>
<td>SO 4.2 Lighting control</td>
<td>% of occupied space able to control their light (adjacent to controllable blinds etc/local lighting control)</td>
<td>80</td>
<td>0.8</td>
</tr>
<tr>
<td>SO 4.3 Social spaces</td>
<td>Social informal meeting spaces (bars / staff canteens / cafes) provided locally (within 400m) (100%)</td>
<td>90</td>
<td>0.9</td>
</tr>
<tr>
<td>SO 4.4 Sharing facilities</td>
<td>% or more of facilities shared with other users / organisations on a weekly basis (100%)</td>
<td>100</td>
<td>1.0</td>
</tr>
<tr>
<td>SO 4.5 User group</td>
<td>Users actively involved in the design process (50%) / Active and representative management user group (50%)</td>
<td>70</td>
<td>0.7</td>
</tr>
<tr>
<td><strong>SO 5 Education, Health &amp; Safety</strong></td>
<td>Explanatory notes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SO 5.1 Education</td>
<td>Two per cent or more space/facilities available for education (seminar rooms / reading / libraries) per occupied space (75%), Construction training provided on site</td>
<td>75</td>
<td>0.8</td>
</tr>
<tr>
<td>SO 5.2 Safety</td>
<td>All well used routes in and around building well lit (25%), all routes in and around buildings visually supervised (25%), secure perimeter and access control (50%). No</td>
<td>75</td>
<td>0.8</td>
</tr>
<tr>
<td>SO 5.3 Awareness</td>
<td>% of users who can access information on health &amp; safety issues (e HIV/AIDS) training and employment opportunities easily (posters/personnel/intranet site)</td>
<td>100</td>
<td>1.0</td>
</tr>
<tr>
<td>SO 5.4 Materials</td>
<td>All materials/components used have no negative effects on indoor air quality (100%)</td>
<td>100</td>
<td>1.0</td>
</tr>
<tr>
<td>SO 5.5 Accidents</td>
<td>Process in place for recording all occupational accidents and diseases and addressing these</td>
<td>100</td>
<td>1.0</td>
</tr>
</tbody>
</table>
## Building Performance - Economic

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Indicative performance measure</th>
<th>Measured</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EC 1</strong> Local economy</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EC 1.1 Local contractors</td>
<td>% value of the building constructed by local (within 50km) small (employees&lt;20) contractors</td>
<td>80</td>
<td>0.8</td>
</tr>
<tr>
<td>EC 1.2 Local materials</td>
<td>% of materials (sand, bricks, blocks, roofing material) sourced from within 50km</td>
<td>80</td>
<td>0.8</td>
</tr>
<tr>
<td>EC 1.3 Local components</td>
<td>% of components (windows, doors etc) made locally (in the country)</td>
<td>100</td>
<td>1.0</td>
</tr>
<tr>
<td>EC 1.4 Local furniture/fittings</td>
<td>% of furniture and fittings made locally (in the country)</td>
<td>100</td>
<td>1.0</td>
</tr>
<tr>
<td>EC 1.5 Maintainance</td>
<td>% of maintenance and repairs by value that can, and are undertaken, by local contractors (within 50km)</td>
<td>100</td>
<td>1.0</td>
</tr>
<tr>
<td><strong>EC 2</strong> Efficiency</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EC 2.1 Capacity</td>
<td>% capacity of building used on a daily basis (actual number of users / number of users at full capacity*100)</td>
<td>819</td>
<td>0.9</td>
</tr>
<tr>
<td>EC 2.2 Occupancy</td>
<td>% of time building is occupied and used (actual average number of hours used / all potential hours building could be used (24) *100)</td>
<td>815</td>
<td>0.9</td>
</tr>
<tr>
<td>EC 2.3 Space per occupant</td>
<td>Space provision per user not more than 10% above national average for building type (100%)</td>
<td>80</td>
<td>0.8</td>
</tr>
<tr>
<td>EC 2.4 Communication</td>
<td>Site/building has access to internet and telephone (100%), telephone only (50%)</td>
<td>100</td>
<td>1.0</td>
</tr>
<tr>
<td>EC 2.5 Material &amp; Components</td>
<td>Building design coordinated with material / component sizes in order to minimise wastage. Walls (50%), Roof and floors (50%)</td>
<td>90</td>
<td>0.9</td>
</tr>
<tr>
<td><strong>EC 3</strong> Adaptabley</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EC 3.1 Vertical heights</td>
<td>% of spaces that have a floor to ceiling height of 3000mm or more</td>
<td>75</td>
<td>0.6</td>
</tr>
<tr>
<td>EC 3.2 External space</td>
<td>Design facilitates flexible external space use (100%)</td>
<td>100</td>
<td>1.0</td>
</tr>
<tr>
<td>EC 3.3 Internal partition</td>
<td>Non loadbearing internal partitions that can be easily adapted (loose partitioning (100%), studwall (50%), masonary (25%)</td>
<td>66</td>
<td>0.7</td>
</tr>
<tr>
<td>EC 3.4 Modular planning</td>
<td>Building with modular stucture, envelope (tenestration) &amp; services allowing easily internal adaptation (100%)</td>
<td>100</td>
<td>1.0</td>
</tr>
<tr>
<td>EC 3.5 Furniture</td>
<td>Modular, limited variety furniture - can be easily configured for different uses (100%)</td>
<td>100</td>
<td>1.0</td>
</tr>
<tr>
<td><strong>EC 4</strong> Ongoing costs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EC 4.1 Induction</td>
<td>All new users receive induction training on building systems (50%), Detailed building user manual (50%)</td>
<td>100</td>
<td>1.0</td>
</tr>
<tr>
<td>EC 4.2 Consumption &amp; waste</td>
<td>% of users exposed on a monthly basis to building performance figures [water (25%), electricity (25%), waste (25%), accidents (25%)]</td>
<td>60</td>
<td>0.8</td>
</tr>
<tr>
<td>EC 4.2 Metering</td>
<td>Easily monitored localised metering system for water (50%) and energy (50%)</td>
<td>90</td>
<td>0.9</td>
</tr>
<tr>
<td>EC 4.3 Maintenance &amp; Cleaning</td>
<td>% of building that can be cleaned and maintained easily and safely using simple equipment and local non-hazardous materials</td>
<td>90</td>
<td>0.9</td>
</tr>
<tr>
<td><strong>EC 5</strong> Capital Costs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EC 5.1 Local need</td>
<td>Five percent capital cost allocated to address urgent local issues (employment, training etc) during construction process (100%)</td>
<td>80</td>
<td>0.8</td>
</tr>
<tr>
<td>EC 5.2 Procurement</td>
<td>Tender / construction packaged to ensure involvement of small local contractors / manufacturers (100%)</td>
<td>80</td>
<td>0.8</td>
</tr>
<tr>
<td>EC 5.3 Building costs</td>
<td>Capital cost not more than fifteen % above national average building costs for the building type (100%)</td>
<td>50</td>
<td>0.5</td>
</tr>
<tr>
<td>EC 5.4 Technology</td>
<td>3% or more of capital costs allocated to new sustainable/indigenous technology (100%)</td>
<td>80</td>
<td>0.8</td>
</tr>
<tr>
<td>EC 5.5 Existing Buildings</td>
<td>Existing buildings reused (100%)</td>
<td>20</td>
<td>0.3</td>
</tr>
</tbody>
</table>
## Building Performance - Environmental

<table>
<thead>
<tr>
<th>Criteria</th>
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<tbody>
<tr>
<td><strong>EN 1</strong> Water</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EN 1.1 Rainwater</td>
<td>% of water consumed sourced from rainwater harvested on site</td>
<td>30</td>
<td>0.9</td>
</tr>
<tr>
<td>EN 1.2 Water use</td>
<td>% of equipment (taps, washing machines, urinals, showerheads) that are water efficient</td>
<td>100</td>
<td>1.0</td>
</tr>
<tr>
<td>EN 1.3 Runoff</td>
<td>% of carparking, paths, roads and roofs that have absorbant/semi absorbant/permeable surfaces (grassed/thatched/looselaid paving/absorbant materials)</td>
<td>20</td>
<td>0.3</td>
</tr>
<tr>
<td>EN 1.4 Greywater</td>
<td>% of water from washing relatively clean processes recycled and reused</td>
<td>54</td>
<td>0.5</td>
</tr>
<tr>
<td>EN 1.5 Planting</td>
<td>% of planting (other than food gardens) on site with low / appropriate water requirements</td>
<td>80</td>
<td>0.6</td>
</tr>
<tr>
<td><strong>EN 2</strong> Energy</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EN 2.1 Location</td>
<td>% of users who walk / cycle / use public transport to commute to the building</td>
<td>90</td>
<td>0.9</td>
</tr>
<tr>
<td>EN 2.2 Ventilation</td>
<td>% of building ventilation requirements met through natural / passive ventilation</td>
<td>75</td>
<td>0.8</td>
</tr>
<tr>
<td>EN 2.3 Heating &amp; Cooling</td>
<td>% of occupied space which relies solely on passive environmental control (no or minimal energy consumption)</td>
<td>70</td>
<td>0.7</td>
</tr>
<tr>
<td>EN 2.4 Appliances &amp; fittings</td>
<td>% of appliances / lighting fixtures that are classed as highly energy efficient (i.e. energy star rating)</td>
<td>100</td>
<td>1.0</td>
</tr>
<tr>
<td>EN 2.5 Renewable energy</td>
<td>% of building energy requirements met from renewable sources</td>
<td>53</td>
<td>0.5</td>
</tr>
<tr>
<td><strong>EN 3</strong> Waste</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EN 3.1 Toxic waste</td>
<td>% of toxic waste (batteries, ink cartridges, fluorescent lamps) recycled</td>
<td>80</td>
<td>0.8</td>
</tr>
<tr>
<td>EN 3.2 Organic waste</td>
<td>% of organic waste recycled</td>
<td>83</td>
<td>0.8</td>
</tr>
<tr>
<td>EN 3.3 Inorganic waste</td>
<td>% of inorganic waste recycled</td>
<td>50</td>
<td>0.5</td>
</tr>
<tr>
<td>EN 3.4 Sewage</td>
<td>% of sewage recycled on site</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>EN 3.5 Construction waste</td>
<td>% of damaged building materials / waste developed in construction recycled on site</td>
<td>50</td>
<td>0.5</td>
</tr>
<tr>
<td><strong>EN 4</strong> Site</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EN 4.1 Brownfield site</td>
<td>% of proposed site already disturbed / brownfield (previously developed)</td>
<td>80</td>
<td>0.8</td>
</tr>
<tr>
<td>EN 4.2 Neighbouring buildings</td>
<td>No neighbouring buildings negatively affected (access to sunlight, daylight, ventilation) (100%)</td>
<td>75</td>
<td>0.8</td>
</tr>
<tr>
<td>EN 4.3 Vegetation</td>
<td>% of area of area covered in vegetation (include green roofs, internal planting) relative to whole site</td>
<td>19</td>
<td>0.2</td>
</tr>
<tr>
<td>EN 4.4 Food gardens</td>
<td>Food gardens on site (100%)</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>EN 4.5 Landscape inputs</td>
<td>% of landscape that does not require mechanical equipment (i.e lawn cutting) and or artificial inputs such as weed killers and pesticides</td>
<td>100</td>
<td>1.0</td>
</tr>
<tr>
<td><strong>EN 5</strong> Materials &amp; Components</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EN 5.1 Embodied energy</td>
<td>Materials with high embodied energy (aluminium, plastics) make up less than 1% of weight of building (100%)</td>
<td>100</td>
<td>1.0</td>
</tr>
<tr>
<td>EN 5.2 Material sources</td>
<td>% of materials and components by volume from grown sources (animal/plant)</td>
<td>50</td>
<td>0.5</td>
</tr>
<tr>
<td>EN 5.3 Ozone depletion</td>
<td>No materials and components used requiring ozone depleting processes (100%)</td>
<td>80</td>
<td>0.8</td>
</tr>
<tr>
<td>EN 5.4 Recycled / reuse</td>
<td>% of materials and components (by weight) reused / from recycled sources</td>
<td>50</td>
<td>0.5</td>
</tr>
<tr>
<td>EN 5.5 Construction process</td>
<td>Volume / area of site disturbed during construction less than 2X volume/area of new building (100%)</td>
<td>60</td>
<td>0.6</td>
</tr>
</tbody>
</table>
5.3 Technical Documentation
5.3.1 Drawings

Site Plan Wider Context

Transpace: an architectural intervention for people in transition

Isabel Maklouf 92008943
DT 807 Design Investigation Tredate: Technical Inquiry
Basement Plan

Transpace: an architectural intervention for people in transition
5.3.1 Transfigure_Technical Documentation_Drawings

Second Floor Plan

Transpace: an architectural intervention for people in transition

Technical Wording: 5.1.48
DF 805 Design Investigation: Technical Inquiry
Section D-D

Transfig: an architectural intervention for people in transition
Sectional Elevations
Details showing end plate connection

Scale 1:20

(5.156)
5.3.1 Transfigure_Technical Documentation_Drawings

TYPICAL SUSPENDED CEILING DETAIL
scale 1:5

water spout and backwashed detail
scale 1:20
5.3.1 Transfigure_Technical Documentation_Drawings

**Concrete Roof and Stepped Wall Detail**

- Semi-flexible vinyl floor tiles: 300 x 300 x 2.0mm thick
- TYPICAL THRESHOLD SLATE TILE AND VINYL TILE
- 19mm depth between tiles, fixed as per manufacturer's specifications
- 600 x 600 mm bright white honed slate with 8mm LUGOL A2 Adhesive and 8mm shear grey TAL wall and floor grout with block of cement joints where indicated
- 50mm cement screed on reinforced concrete slab
- SMARTGLASS laminated safety glass balustrade as per manufacturer's specifications
- 25 base plate bolted to concrete upstand
- Five stainless steel fixings to panipit dressed down over concrete floor
- 19mm EVERBOND insulation as per Engineer
- Concrete screed laid to fall
- Reinforced concrete slab as per Engineer
- Reinforced concrete slab to fall
- Balustrade detail
  - Scale 1:20
5.3.1 Transfigure_Technical Documentation_Drawings
3.1 Transfigure Technical Documentation Drawings
5.3.1 Transfiguration Technical Documentation: Drawings
5.3.1 Transfigure_Technical Documentation_Drawings

DETAIL OF selecting and concrete wall connection
scale 1:80

100 x 100 x 4.5mm hollow section to detail: welded to motorised locking and ordered to accommodate

30 x 200 x 4mm rectangular tubing welded to end plate and fixed against baseplate and concrete slab
25mm clear plate fixed to concrete slab with bolts to cast-in thread rods

100mm cast-iron threaded rod

cast iron baseplate with provision for securing corner beads and spacers to take an SS stud, with steel
painted and protected, suited to be covered with Portland cement

protection, secured by a single centre hole tab

galvanised tube to connect with cast-iron plate

from back of concrete wall where rainwater

tubes connect to the roofwater drainage system

Nexus Barrier points ultra

Aluminium straight-edge M, 13mm

Cement should be feathered back

tile with PAVECO 3m from edge to accommodate level change

TYPICAL THRESHOLD SLATE

TYPICAL THRESHOLD CEMENT

TILE AND CARPET

SCREED AND SLATE TILE

50mm cement screed on reinforced concrete slab

50mm cement screed on reinforced concrete slab

Aluminium straight-edge M, 13mm

500 x 500mm black honed slate

Lining on 9mm G60 DSTAR II black adhesive

and 6mm grey TAL wall and floor
glass with black silicon joints where indicated

Aluminium straight-edge M, 13mm

17mm depth between two tiles, fixed as per manufacturer’s specification

500 x 500mm black honed slate

Lining on 9mm G60 DSTAR II black adhesive

and 6mm grey TAL wall and floor
glass with black silicon joints where indicated
5.3.1 Transfigure_Technical Documentation_Drawings
TYPICAL THRESHOLD VINYL FLOOR TILES AND TIMBER FLOOR BOARDS
scale 1:10