2

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 (Madanipour 2003:47).
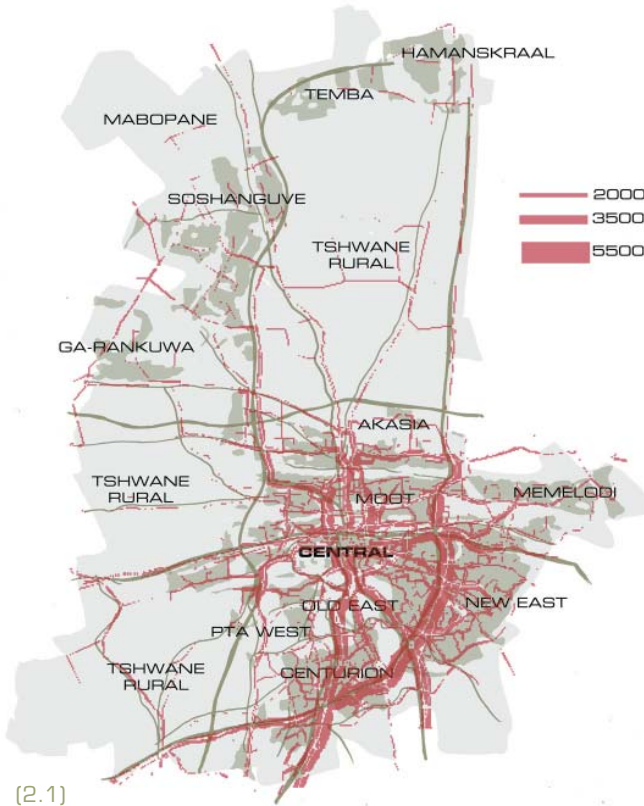
For many, the inner city of Tshwane has become a debased version of an ideal; some perceive the CBD to be a dangerous slum, detached from their suburban utopias. The undoing of Apartheid, especially the spatial segregation of 'races,' brought forth a redefinition of urban culture within this context. 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.
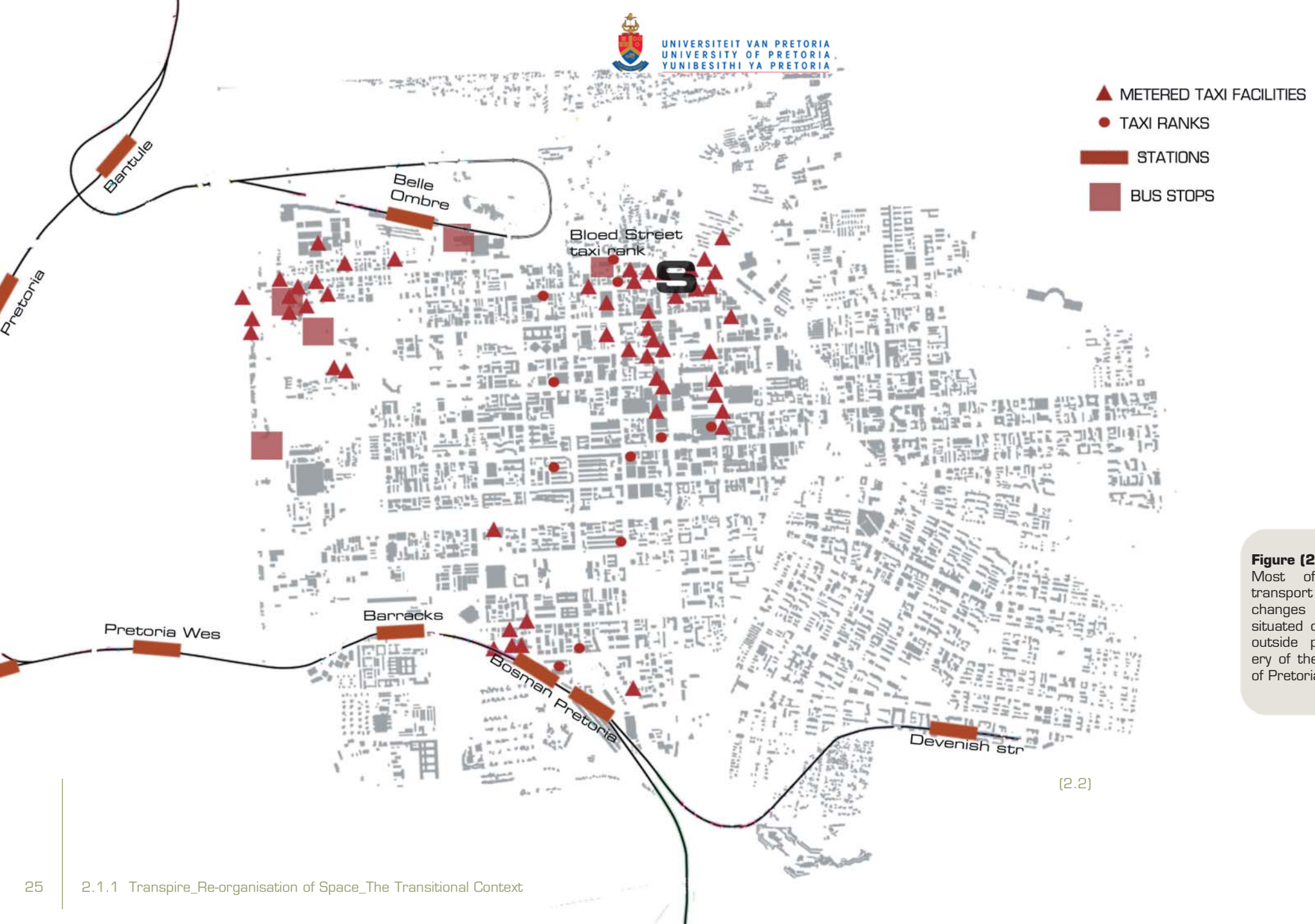
A city contains a great number of places, distributed rather evenly across a two-dimensional sheet. The trips people want to make are typically between two or more points at random on this sheet, whether from home to work, or to alternative destinations within the work environment of the CDB. No one 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.

(2.1)

Figure (2.1):
Peak hour passengers by private vehicles around the inner city of Tshwane

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▲ METERED TAXI FACILITIES

● TAXI RANKS

▬ STATIONS

▬ BUS STOPS

Bantule

Belle Ombre

Pretoria

Bloed Street taxi rank

S

Pretoria Wes

Barracks

Bosman Pretoria

Devenish str

(2.2)

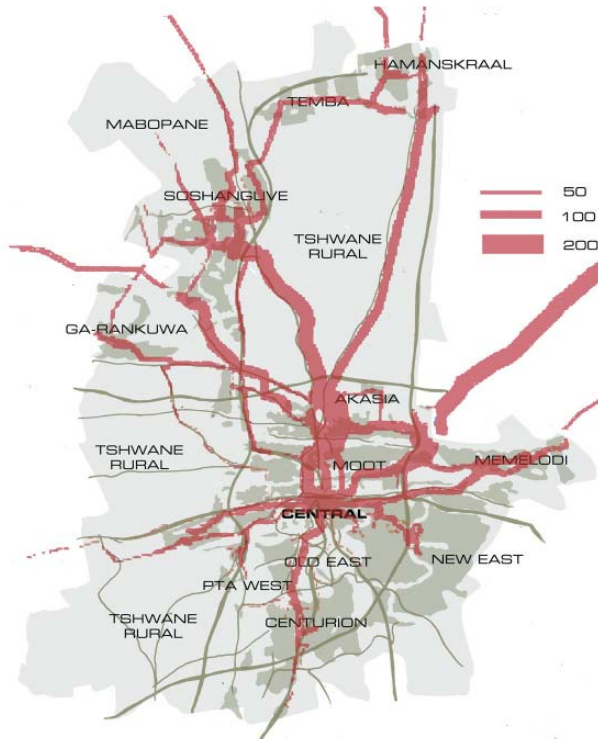**Figure (2.2):** Most of the transport interchanges are situated on the outside periphery of the CBD of Pretoria

Figure (2.3):
Peak hour bus volumes towards the CBD of Pretoria

Figure (2.4):
Peak hour passenger volumes by train
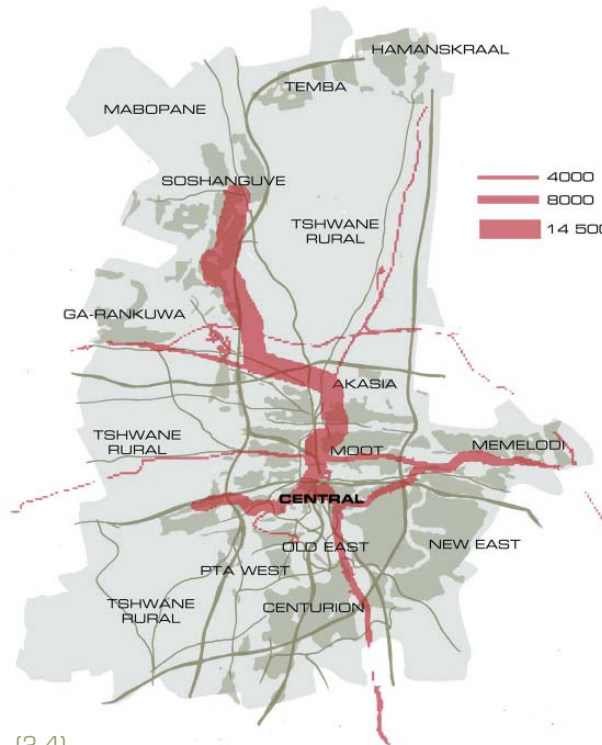
The routine of transition between home and work also exists as a non-linear system. Transportation nodes within the city of Tswhane are mostly located on the periphery, avoiding the congestion of the CBD (figure 2.2). This results in a further transitional line, taking place between the transportation 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.

(2.3)

(2.4)

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.

(2.5)
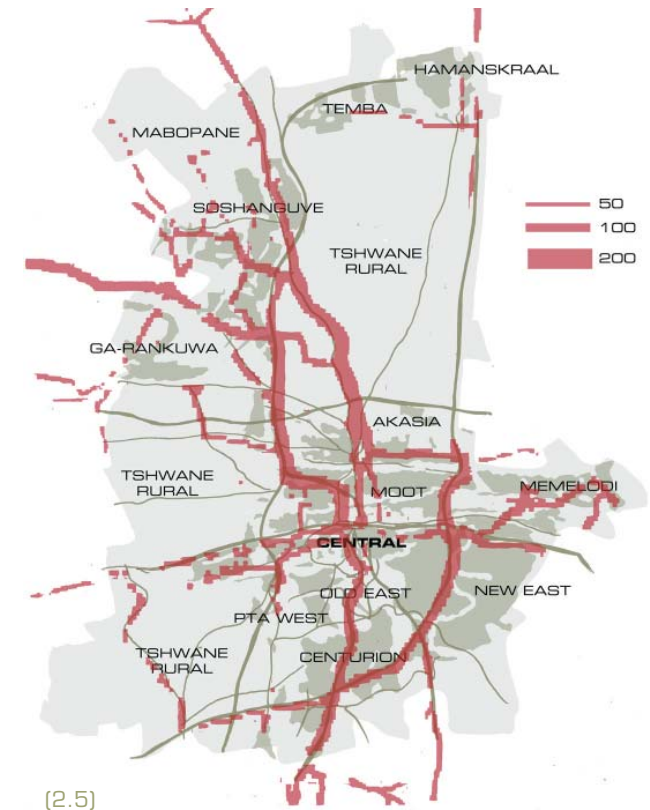
Figure (2.5):
Compared to figure 2.3 and 2.4, it is clear that the main taxi routes to-wards the CBD competes with the main bus- and rail routs

lines

stops

interchanges

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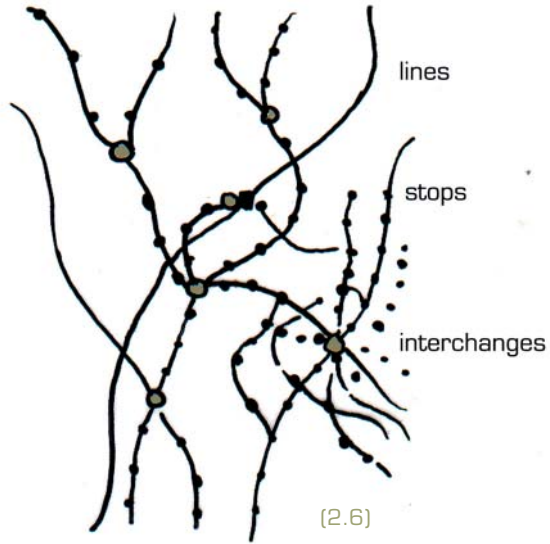
Figure (2.6), (2.7) and (2.8):
Alexander proposes an inverse of the traditional way of looking at public transportation lines

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.

lines being treated as secondary

interchanges being treated as primary

(2.7)
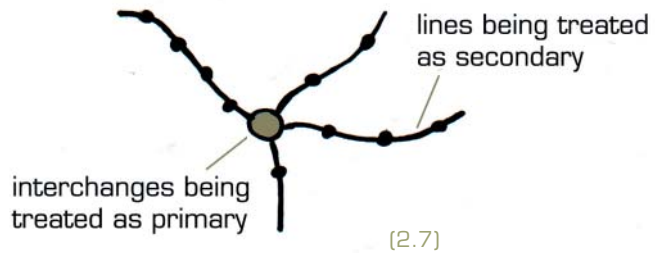
treating the lines along which are travelled as primary, causes trafic congestion
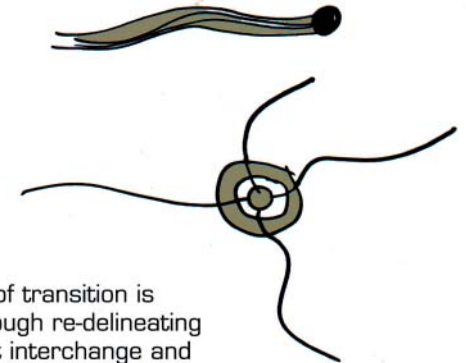
the process of transition is enriched through re-delineating the transport interchange and to promote it as an activity node

(2.8)

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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.
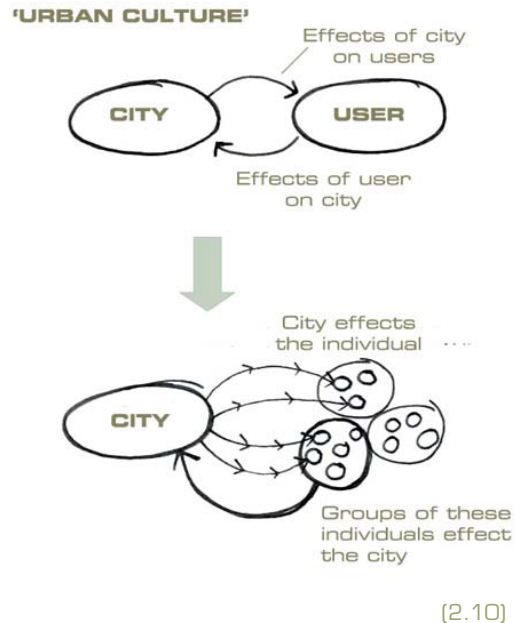
Figure (2.9):
Position of the site in relation to the CBD of Tshwane

(2.9)

2.3.1 The Theoretical Context as Program Generator

'URBAN CULTURE'

Effects of city on users

CITY → USER

Effects of user on city

City effects the individual

CITY

Groups of these individuals effect the city

(2.10)

Figure (2.10):
Sketches illustrating the concept of urban culture

Culture has always been a significant part of what cities are and do. The visual culture expressed in architectural styles, monuments, and the designs of parks as well as the less formal culture offered by street musicians and artists in neighborhood festivals and fairs contribute to how cities feel and are experienced.

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 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.

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.

(2.11)
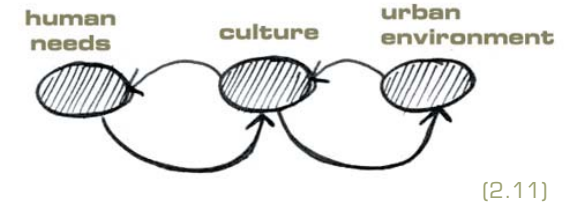
Figure (2.11):
The interdependance of human needs, culture and the urban environment

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 Mycrobacteriology 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:

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Physical human need

BASIC HUMAN NEED

HEALTHCARE

"Centres of Excellence (CoE) are physical or virtual centres of research which concentrate existing capacity and resources to enable researchers to collaborate across disciplines and institutions, on long-term projects that are locally relevant and internationally competitive in order to enhance the pursuit of research excellence and capacity development."

TUBERCULOSIS — As a global problem / As a national health crisis

CBTBR
Center of Excellence for Biomedical Tuberculosis (TB) Research

TRANSFORMATION DIMENSION

Client identified

CENTERS OF EXCELLENCE

DST
Department of Science and Technology
NRF
The National Research Foundation
CHIEF CLIENT

WITS
Molecular Mycobacterialogy Research Unit
UNIVERSITY OF STELLENBOSCH
Division of Molecular Biology and human genetics
MRC
South African Medical Research Council
NHLS
National Health Laboratory Service
ADDITIONAL CLIENTS

AREAS OF DEVELOPMENT

UNIVERSITY OF STELLENBOSCH
Division of Molecular Biology and human genetics

WITS
Molecular Mycobacterialogy Research Unit

RESEARCH   SERVICES   EDUCATION

WITS
...to build on a foundation to promote freedom of enquiry and the search for knowledge and truth, in a way that takes account of its responsibilities **within South Africa today**; and to maintain and enhance its position as a leading university in South Africa, in Africa, and in the world by sustaining globally competitive standards of excellence in **learning, teaching** and research...

"DOTS" Project
(Directly Observed Treatment)

ASPECTS

RESEARCH | IMPLEMENTATION | CLINICAL TRIALS | LOCAL GOVERNMENT | NUTRITION | GENERAL COMMUNITY | EMPOWERMENT | INFORMATIVE COMMUNITY

Research at this Centre includes all aspects of TB diagnosis, testing & treatment. This includes the molecular and clinical point of view as well as genomic and proteomic studies of the TB Bacillus and its interaction with humans

Information on research provided to Government

A principal determinant of mortality from tuberculosis is nutrition. Mortality from T.B. increases considerably as one passes from the economically prosperous to the poor districts of any area

UNIVERSITY OF STELLENBOSCH
...to create and sustain, in commitment to the academic ideal of excellent scholarly and scientific practice, an environment within which knowledge can be discovered, can be shared, and can **be applied to the benefit of the community**...

IMPLIMENTING NEEDS

To have an effect on the current TB situation in South Africa, research without implimentation is futile. An integrated, multidisciplinary approach is thus being adopted for the application of the studies being undertaken within the CBTBR, which involves a combination of 3 general areas of focus: Research, services and education

CLINICAL TESTING SITES | FOOD PROVISION | DIRECTLY OBSERVED TREATMENT | OCCUPATION & CONSULTING

ADDITIONAL CLIENTS
KIWI IntellectuAll
SA Health Info

(2.12)

FUNCTIONS

CLINICAL TESTING & MEDICINE | CAFETERIA AND FACILITIES | PATIENT MONITORING AND SUPPORT | LABOUR MARKET

FACILITIES

TESTING/CONSULTING ROOMS
WAITING AREA
X-RAY ROOMS
DISTRIBUTION LABORATORY
ADMINISTRATION
PHARMACY
ABLUTION FACILITIES

ADDRESSING SOCIAL ISSUES OF AREA

CUSTOMER AREA
KITCHENS
STORAGE
CLEANING

ADDITIONAL CLIENTS
SASPEN
South African Society for Parenteral and Enteral Nutrition
ADSA
Association for Dietetics in South Africa
NSSA
Nutrition Society of South Africa

CONSULTING ROOMS
WAITING AREA
STORAGE - MEDICINE
TRADITIONAL HEALER
PSYCOLOGICAL CONSULTATION

CONSULTATION
OFFICES

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

(2.13)

(2.14)

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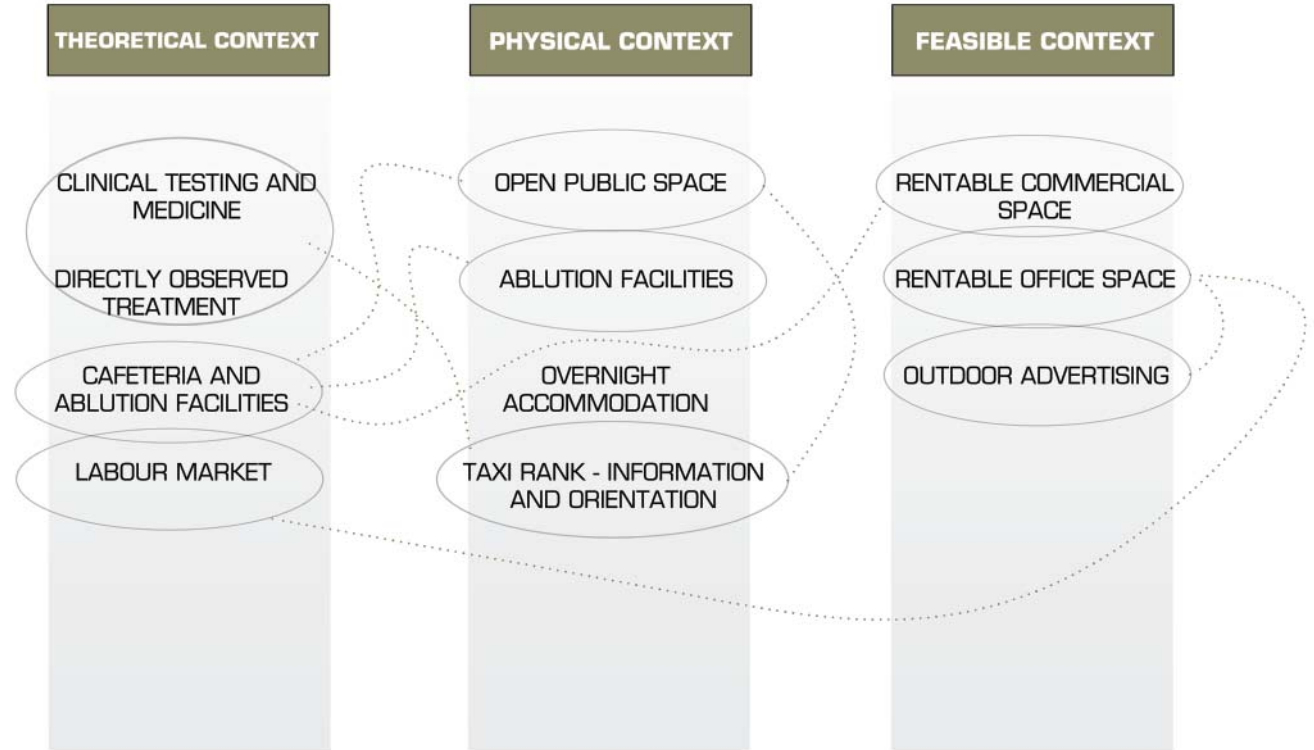
The design should take temporary events as opposed to permanent functions, and merge them in architectural spaces. The physical needs and requirements of the site will be analysed in detail in the next chapter.

Figure (2.13) & (2.14):
Everyday activity on and around the site

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.

THEORETICAL CONTEXT
- CLINICAL TESTING AND MEDICINE
- DIRECTLY OBSERVED TREATMENT
- CAFETERIA AND ABLUTION FACILITIES
- LABOUR MARKET

PHYSICAL CONTEXT
- OPEN PUBLIC SPACE
- ABLUTION FACILITIES
- OVERNIGHT ACCOMMODATION
- TAXI RANK - INFORMATION AND ORIENTATION

FEASIBLE CONTEXT
- RENTABLE COMMERCIAL SPACE
- RENTABLE OFFICE SPACE
- OUTDOOR ADVERTISING

(2.15)

Figure (2.15): Diagrammatic summary of the program, generated from the different contexts