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"The city is the physical domain for the modern development of the commonality; we have to accept that in physical terms the city is the conjunction of its public spaces". [Bohigas 1999:9]

"Space is the medium of the urban experience"… "it provides the sequence between public, semi-public and private domains". [Trancik 1986:100]

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Architecture / Present / Components / City / Urban Environment / Connection

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Norberg-Shultz / Bacon / Dewar + Uyttenboogaardt / Hillier / Righini

'Site'

'Site'

"Imaginative architecture always lift’s man’s soul to new heights and interesting public buildings give constant pleasure to thousands of people". [Fassler 1955:32]
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INTRODUCTION

The following dissertation is based in Pretoria, Gauteng, South Africa and is an attempt to correspond with the future proposals of the Tshwane Inner City Development and Regeneration Strategy of Pretoria, the Gautrain Rapid Rail Link Project and the University of South Africa’s [UNISA’s] 10-15 year Development Programme.

According to the Inner City Strategy, Pretoria is to be promoted as the ‘Capital and Cultural City’ of South Africa. ‘To become the leading International African City of excellence that empowers the community to prosper in a safe and healthy environment’.

- Tshwane City Vision

There is current development with the installation of the Gautrain which will function as a high-speed link between Pretoria and Johannesburg by the year 2010 and in preparation for the Soccer World Cup to be held in South Africa. Bosman Station and Hatfield Station will be the two transport interchange points within the Pretoria zone.

- Gautrain Rapid Rail Link Document, Bombela Civil Works Joint Adventure

UNISA is experiencing a changing student profile whereby originally it was intended as a Long Distance Learning Facility however currently it is experiencing a flux of about 6000 students onto campus every day. As a result new development requires the implementation of a new Information Centre and a revised Entrance scheme in order to accommodate the new needs of the students.

-University of South Africa Property Plan 2005-2015, Development Manuel, Executive Summary

Functioning as a Governmental and Education base for South Africa and as the Administrative Capital Pretoria is an important asset to South Africa. The Tshwane Inner City Strategy is following a similar mindset to most cities in South Africa which is to emphasis a re-ownership of our city centers. A move towards centralization and the concentration of investments, infrastructure, facilities and development within the parameters of the inner city.

The general identity of Pretoria and its reputation nationally and internationally is very much in the public eye due to it’s role as the Administrative Capital for South Africa. As a result Pretoria needs to address this at the same time as evolving as a city in time. Primarily Pretoria is seen as a Governmental and Education base however realizing it’s qualities as a city comes down to its ability to connect and communicate and function as a city and within a country and global context. It’s environment need to be fully connected to it’s users and fully communicate that which it’s users value in order to enhance the city environment and encourage people to start moving back into our inner city. The enhancement of the general picture relies heavily on the ability to define the edges of the city and to communicate a definite transition into the city at entry points on the periphery of the city. Surveillance and people on the street need to be encouraged to reduce crime and provide a people friendly environment.

‘man dwells when he can orientate himself within and identify himself with an environment or in short, when he experiences the environment as meaningful’ [Norberg-Shultz 1980: 1]
The objective of this dissertation is to investigate the concepts of Connection and Communication within the realm of Architecture through an Urban Design Intervention and a Building Design which will address a major entry point into the city of Pretoria.

The Intention is to structure the threshold of entry via the Elandspoort Road into the CBD [Central Building District] of Pretoria, flanked by UNISA, stitching the Urban Fabric to create a sequence of arrival, and a realm in which elements are truly connected and where there is an opportunity for expression to be communicated. See Chapter 3 for geographical information and diagrams for orientation and location of site within the Pretoria context.

'I contend that humans will and can be exercised effectively on our cities now, so that the form they take will be true expressions of the highest aspirations of our civilisations'. [Bacon 1957:13]

The Building Design will address the Urban Design Intervention and provide UNISA with a facility specialising in Media and Image. The intention is to combine the areas of education, production and display in order to create opportunity for individuals to: empower themselves through education, use their skills obtained to produce a product and eventually market themselves within the business world through communicating and displaying to the larger public. This sets the foundation for a well connected marketing network within Pretoria, South Africa and eventually the world.

**Strategies**

> Connection + Communication through Interaction

To define the threshold between movement systems and celebrate it’s existence in order to facilitate interaction.

To allow Pretoria the opportunity to ‘visually’ and ‘audibly’ express itself and promote the idea of a ‘Capital and Cultural City’, creating opportunity for interaction between individuals and the outside world through providing the canvas to express itself in time and a base from which we can work collectively to better connect our society.

> Empowerment through providing opportunity

To provide a facility which individuals can manipulate in order to empower themselves. To provide a facility that directs people into the realm of Media and Image and connects them to markets, thus providing economic opportunity and alleviating ‘poverty’ in alignment with Government initiatives for South Africa and in sync with our current point in digital culture and technology.

‘architecture is the articulation of space so as to produce in the participator a definite space experience in relation to the previous and anticipated space experiences’. [Bacon1957:19]
INTRODUCTION 1/ Problem Statement 1.3/

The existing threshold into the city of Pretoria along Elandspoort Road is one which does not take full advantage of its strategic location as a movement interchange with Mears Train Station on the periphery of the city. It is also the realm which should define the edge of the residential area of Muckleneuk and introduce one to the CBD of Pretoria. It should be seen as an important node between UNISA’s Sunnyside Campus and Main Campus and should cater for the students whom currently migrate between campuses every day.

‘architecture represents a means to give man an existential foothold’ - Norberg-Shultz 1980

The location of this project requires a specific and appropriate response to the surrounding context on many levels. An Urban Design Proposal is imperative and needs to harness concepts of connection and communication directly with Functional, Socio-Economic and Infrastructure responses.

Functional Response: as a threshold for access into Pretoria, a display tunnel through which individuals experience as they move into and out of the city, a space to gather, make use of services and facilities and express the core essence of who we are as individuals.

Education and Production Response: as an Educational Student Facility and gathering space linked with UNISA and an Economic Opportunity Producing Facility linked with the CBD of Pretoria.

Social and Cultural Response: as a Display Board/Case and interactive space sitting on a very prominent transport corridor and acting as a buffering form for the adjacent Residential areas [Sunnyside + Muckleneuk].

Building Design

In following with the Urban Design Proposal a building on such a site would need to have multi tasks and comprise components of Education, Production and Communication/Display. The relationships between the building, the users and the multi layered context ultimately hinges on the concepts of connection and communication; how they interact? how they connect? how they inform each other?

Such a facility requires an understanding of functional requirements in order to accommodate the necessary components such as studying/teaching accommodation, production facilities and display venues and surfaces. Other requirements involve the general functioning of the building in relation to services, vertical and horizontal circulation, security and access to the context surrounding the site such as Mears Train Station, Mears Road, Elandspoort Road and UNISA.

Constants

Society is both an informer and absorber of our environments. Our current life style is one that is ever changing and evolving and one could see it as being in ‘constant motion’. At present great focus is on rapid change, new innovation to facilitate change and so forth and is heavily affected by the ‘giant’ ‘technology’. Our ability to locate ourselves within this fast pace lifestyle is reflective of connections and communications on large scale and through the close interaction with ‘technology’, we form part of the global community and digital culture. We do this through being able to identify and locate ourselves through the definition of ‘where we are at’ which is necessary to differentiate, that from ‘where we are not’.

‘Urban Performance’ can be measured as the creation of opportunity, ‘structural configurations’ generate greater opportunities which enhance living to a greater degree’ [Dewar + Uytenboogaardt, 1991:15]

Illustrations/ 1/013 Elandspoort Road Arrival View [Author] 1/014 Junction of Elandspoort Road + Ridge Road [Author] 1/015 Elandspoort Road looking North East [Author] 1/016 Elandspoort Road Outward Bound [Author]
South Africa is termed a ‘medium to lower human developed country’ still bearing the scars of Apartheid which some consider the reason for a low skilled and uneducated population, a high unemployment rate, a relatively high Gini Coefficient reflecting an uneven distribution of income and a relatively low HDI [Human Development Index]. [Todaro + Smith 2003:201]

South Africa has a uneven distribution of income reflected in a ‘Gini Coefficient’ of 0.593. [Mohr 1998:173] This is displayed in the table below comparing the Gini Coefficients of different countries around the world. The Gini Coefficient is a calculation reflecting the difference between people with money and people with out money reflected in the graph below know as the Lorenz Curve. The line of equality is pinpointed with the least deviation at 0 reflecting the best quality of lifestyle and 1 being the furthest deviation as the lowest quality of lifestyle.

Following in the same category of information the HDI [Human Development Index] for South Africa is 0.666 shown on the table above according to the United Nations Development Programme. This index is obtained through calculations of Longevity [Life Expectancy at birth], Knowledge [a combination of adult literacy compared to combined gross education] and the level of a ‘decent standard of living’ [measured by the Gross Domestic Product per capita]. Norway is considered the most developed with an index of 0.956 and very similar to Australia with an index of 0.946 whilst Sierra Leone is considered the least developed with an index of 2.73 and not far off from Zimbabwe with an index of 0.491. South Africa sits somewhat in-between.

Unemployment/ ‘In September 2004 there was an estimated 29.305 million people in South Africa between the ages of 15 and 65 of whom 15.776 million were economically active. Official unemployment among the economically active population is estimated at 28.2%.’[Ballim 2006:6]

‘the major challenge facing society is in the area of job creation’. [Ballim 2005:10]

Job creation is one strategy to reducing the unemployment rate and elevating poverty. However South Africa is also faced with a situation in which the majority of the population is uneducated and has a low level of skill. This then means that Skills Development is a major factor in the South African context to move towards upliftment. Education and training for the adult sector is thus greatly required.

Education however needs to cater to all people and for South Africa this means as the ‘Rainbow Nation’ and catering for an array of cultures, traditions and 11 Official languages. Our reality involves a multi-cultural approach to everything in order to cater for all and provide for all.
The drivers of structural change in South Africa’s economy is said to include both supply- and demand- side factors. The change in the consumers spending patterns [demand] and the major driver, ‘business process which include restructuring and technological change’. [Ballim 2005:17]

One could conceive our era as a fast pace changing digital society. Technology has enhanced the connection and communication of people around the world with one another. We are able to influence and be influenced globally via technology. Internet, your tool to ‘get connected’ is just one example of connection and communication between individuals around the world at the click of a button. We have the ability to interact purely within a digital world and digital community.

The high-speed train system between Pretoria and Johannesburg, the ‘Gautrain Rapid Rail Link Project’ is all ready in progress and looks to involve an investment of R7 billion. The following dissertation will be affected by the Gautrain running through Mears Train Station on to Hatfield Station situated a further along the line. The influx of activity in preparation for the World Cup and eventually the tourists moving into and out of Pretoria, will have a large impact on all thresholds of the city.

‘Transport—the heart beat of South Africa’s Economy’ - Department of Transport and Infrastructure

Elandsport Road is an important fast moving threshold into the city and thus can not simply become a pedestrian dominated area. The relationship between Pedestrian Movement, Vehicular Movement and Rail Movement needs to involve interaction with each other without reducing the efficiency in functioning of each of these transport systems. The car is still a prominent form of transport in South Africa and Pretoria, resulting in the road network dominating to the extent that other forms of transport especially pedestrian modes are disregarded. The realm outside the car becomes a very sterile and potentially dangerous space in which pedestrians still need to experience at one or other time. The pedestrian link between UNISA’s Sunnyside Campus and it’s Main Campus is greatly utilized but does not cater for the students. The proposal for a New Entrance for UNISA is spurred by the changing student profile of UNISA whereby 60% of students are located in Gauteng and an ‘estimate of 6000 students visit the campus every day’. [University of South Africa New Entrance Proposal Document] Mears Train Station functions as one of the first stations as one enters Pretoria via the Metro Rail from the South and provides the opportunity for Students to arrive by rail relatively close to campuses.

The following thesis will attempt to find a cohesion between these modes of transport in order to provide a threshold interchange which allows for interaction, connection, communication and efficiency and allows for different modes of transport to coexist. The point of change between modes and how the systems mesh will be investigated.

Providing a threshold into the city and defining an edge creates a legibility in the Urban Fabric. UNISA is a dominate landmark in the landscape and ushers individuals into the city, however the Urban fabric lacks continuity, building up scale towards the CBD of Pretoria.

UNISA lacks finer detail in stitching itself to the finer fabric of Muckleneuk. This is currently under development with the official proposal of a new Information Centre and a new Entrance Face for UNISA onto Elandspoort Road.

Providing a buffer for the residential area of Muckleneuk so as to define the threshold of entry between the city and a community within the city is much needed. The intention is to provide a buffer which holds public spaces and green spaces for the residents to make use of and interact with individuals whom stop to experience the interchange on changing modes of transport before continuing on into the CBD of Pretoria.
INTRODUCTION 1/ Precedents 1.5/

Social Spaces

Spaces to gather and make use of facilities are components of a city. This is the very essence of a transport interchange and should be taken advantage of. The intention is to provide the realm for gathering with the opportunity to engage with informal trade and entertainment in the form of big screen display such as an outdoor theatre.

Complexity of Environment 'can be seen to reflect and contribute to the richness of human experience.' [Dewar + Uytenboogaardt, 1991:17]

The following dissertation requires the study of a variety of environments, buildings and design approaches. The precedents are expressive of the conditions challenging the building design of this dissertation and set out to reveal the qualities which the final product should reveal. The precedents are divided into themes including Contextual, Urban Context, Programmatic and Technical Detailing. A number of themes is necessary in carrying out the investigation on multiple levels and showing an understanding of design from Urban Scale to human scale to final detail scale.

Pretoria as a city has a specific function servicing South Africa as the Administrative Capital and holds a number of buildings and historical artifacts. This precedent gives depth to the understanding that a place is also tied to a time context. The city fabric reflects a city developing through the ages, which is evident of social trends, architectural innovation, monumental celebration and climatic response through material availability. As a city Pretoria has a number of different Social Gathering spaces, a definite Street Character and Specific Urban Environment.

City Fabric/Pretoria CBD/UNISA_University of South Africa/

Urban Context

Cities share common attributes creating the environment of the city through different approaches to the relationship between man and his ‘built’ environment. Investigation into the components of an Urban Context, evident in the following dissertation relate to:

Thresholds/Public Spaces/Active Pedestrian Edge/

Programmatic

Response to the programmatic requirements of Education, Production and Display and the kind of programmatic response which would be necessary in a facility which holds these components in an area of investigation should include focus on circulation, security, functions and relationships of components within a facility and are all encompassed in buildings such as:

Educational Facilities/Museums/Centers/

Technical Detailing

Response to Site, Design Parameters and contemporary innovation need to be addressed in relation to technical innovation through the investigation of similar design situations. Our society requires a response to technology in order to be relatable and fully integrated with our digital culture. The power of materials and the advances in surface technology allows for more expression of man’s self than ever before and the ability to truly respond to needs through design. The following dissertation requires a response to:

Materiality + Construction/Form/Envelope + Glass Louvres/Surface Display/

‘Architecture consists of solids and voids and the ‘articulation and differentiation of solids and voids produces a fabric of the city which establishes physical sequences and visual orientation between places.’ [Trancik 1996:100]
The following dissertation incorporates an Urban Design scheme which ideally will connect with the city fabric and the over-all Urban Design scheme for the city. A humanist approach is taken in catering for the needs of the users, through responding to context, programmatic requirements and movement systems. The approach throughout this dissertation is deeply rooted in an understanding of fitting into the South African Context, Pretoria, and Muckleneuk, on Economic, Social and Environmental levels. Transport is very much a part of the South African lifestyle, but our environments do not celebrate this nor take full advantage of the dynamics of movement. Art in Architecture has the potential to find a footing within the realm of environments edging movement systems, and thus the creating of a building which edges a threshold, is the focus for the following dissertation. The search is thus for order, to order our environments to cater for our needs as people, and to redefine the notion of ‘functionalism’ within the realm of ‘social importance of the visual environment’. [Damaz 1956:35]

‘Imaginative architecture always lifts a man’s soul to new heights and interesting public buildings give constant pleasure to thousands of people. [Fassler 1955:32]

The precinct sits on the periphery of the city and functions as a threshold into the city and connects to multiple movement and social systems. The location of the site requires connection with the context in order to facilitate it’s function. These are all aspects which need to be considered in order to fully cater for man’s needs. The approach is that of ‘Centrality’ which involves man at the centre and the understanding of the complex matrix which connects man with his environment. Architecture can be seen as to ‘represent a means to give man an existential foothold’ and involves the ‘concretization of existential space’. [Norberg-Shultz 1980:3]

‘Existential Space’ according to Norberg-Shultz, is that which comprises the ‘basic relationship between man and his environment’. Interaction between these two involves lines of connection which exist on multiple levels and scales. The interpretation of these connections involves the aspect of communication which encompasses, expression and response. This is reflected in the forms of connection, and which is ultimately based on the levels of interaction and experience.

‘through sense of connection with a system greater than himself man achieves aesthetic satisfaction’ [Bacon 1957:15]

The ordering of our environments involves the defining and articulating of spaces and forms. The logic behind sequence involves the breaking down of process and the definition of points such as thresholds, through which one moves. Defining a threshold involves close consideration of form through the response to movement and flow, and space and place. Through formal articulation one can structure the process of experience and create a logical sequence of interaction with the city fabric. Interaction involving the realms of physical and visual interaction through the communication and the interpretation of expression. Surface, form and materiality become the canvas to express and the thread to connect.

‘an expression of philosophical interaction of the forces of mass and space’...‘reflects the relationship between a man and nature and man and the universe’. [Bacon 1957:16]

‘conscious expression of space is essential to the highest expression of architecture’ [Bacon 1957:15]
Technology and our current Digital Culture are directly related to man's existence and thus need to be considered. Movement is geared by the concept of advances of technology and one might see the ability to move and communicate at the same time as eroding our connection to place and thus eliminating the need for order. But our reality needs to keep connected to us in order for our world to make sense. The importance of a transport interchange at this specific location is pertinent to the functioning of the city and through the defining of a place one might be able to reinstall connection to place. The bodily experience at a point of transition at a location involves the interaction with context, the interpretation of edge and the communication of the environment to the individual. Edging defines the space and creates place. Digital Culture relates to media and image and the ability to communicate through the visual realm. Surfaces become information providers on a local scale and radio, television and internet become connectors on a much larger scale.

The process of physical experience involves movement, whereby one moves from one space to another resulting in the ability to compare spaces and thus experience. Orientation involves communication of experience and the understanding of ones environment in time. Architecture has the ability to articulate our environments in order for man to be able to relate and identify with it. This communication allows man to interpret expression and locate value and meaning through experience in interacting with two dimensional surfaces and three dimensional forms. The ordering of form and space dictated by movement creating a sequence along a route which has the potential to accentuate experiences at specific points of importance.

The intention of creating a Centre for Media and Image is greatly a response to our current point in time which is deeply rooted in technology. The building gives the opportunity for current communication tools [Media and Image in digital format], to be incorporated into Architecture. Media and Image can be interpreted as a modern form of art. One level in the flowing dissertation approach is in combining ‘art and architecture’ spoken of by a UNISA Architectural Academic Sabine Marschall discussing the architectural theories of P. Damaz and J. Fassler.

‘Art, for example, can describe a building’s function; it can imbue a space with a spiritual quality; it can visually enlarge a space by creating an illusion; it can confer status; it can demonstrate wealth; it can convert a neutral space into one suited for a particular ritual; it can ascertain claims about a building’s owner or users; it can establish links between cultures or attempt to recover values of the past; in short: art plays a vital role in shaping a building’s identity.’ [Marschall 2003 www.unisa.ac.za/ academic journals]

Architecture needs to be the result of a multitude of approaches which take into consideration a multitude of dynamics, factors and possibilities. This it the design approach for the following dissertation in both the Urban Design and in the Building Design. Dynamics, factors and possibilities need to be acknowledged and used to facilitate a truly livable environment which functions as a connected matrix, experienced and a true expression of our present location in time.

‘space does not reflect society, it expresses it and is a fundamental dimension of society, inseparable from the overall process of social organisation and social change’ [Castellias 2004:83]

‘establish volumes of space that are in scale with the needs of the present time and defined by means which are in harmony with modern technology’. [Bacon 1957:16]