This design discourse is an idealistic attempt to provide a built platform that generates opportunity and allows and accepts expression for all individuals type of research and creative interplay undertaken here, however idealistic, will restore faith in a developing country’s heart enabling it to dwell in the realm of possibility. If no one dwells there, no one will know what can possibly be... so dwell.

“Single fibres are like letters of the alphabet with them one can form words and sentences then create prose and poetry like a single letter a fibre has characteristics which may be sequenced towards an infinity of forms this unlimited potential for interpretation is basic to an artist working in art fabric”
(CONSTANTINE, M & LARSON, J. 1981:7)
The design discourse focuses on a Textile Art Centre proposed for the Tshwane University of Technology site adjacent to Nelson Mandela Drive in Pretoria. The site is underutilized, used only as a parking space when the Breytenbach Theatre is staging shows. The establishment of an active urban node will contribute to the Nelson Mandela Corridor Development, as this site is allocated as a landmark to introduce the southern gateway to the city. It will be a contributing component to the Arts and Culture precinct, connecting the public spaces of Oeverzicht Village with Esselen Street.

The author is of the opinion that the sole purpose of Architecture is to serve. The educational and training centre will accommodate postgraduate students of the Department of Textile Design and Technology as well as community skills development groups that previously had no access to such facilities. It will establish links to enforce human behavioural patterns and strengthen relationships, creating a diverse mixture of vibrant public uses in a culturally interactive space. A place will be created where people from different backgrounds can reflect on their identities and cultures and where individual expression is valued. Textiles exploit these differences, which in the process bring forth many prospects. The centre will indulge the fashion fanatics and educate the uninformed. Any person who strives to learn more and attain a textile-related self-sustaining practice could participate and enrol in the Skills Team’s programmes.

Funding will be obtained from the Tshwane University of Technology (TUT), the Cultural Craft Industries Design Unit of the Council for Scientific and Industrial Research (CSIR) and the Tshwane Municipality. It will also be necessary to obtain financial contributions from private organisations and South African Government Departments. Management and support will be supplied by TUT staff and private individuals.


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The Nelson Mandela Development Corridor (NMDC)
Esselen City Improvement District (ECID)
Department of Trade and Industry (DTI)
Council for Scientific and Industrial Research (CSIR)
African Growth and Opportunity Act (AGOA)
Tshwane University of Technology (TUT)
This section includes all knowledge obtained from listening to various voices of the people of our city.
1. Current Reality: Parameters of the City of Pretoria, Sunnyside and Site

Gauteng is the smallest province of South Africa but forms the core of its economy. Johannesburg and Pretoria are the intersectional nodes of various cultures, backgrounds, industries and businesses, radiating a ceaseless energy for development. Although there is a great need for development in Pretoria, it is mostly pushed aside due to political issues. The Government will rather address rural needs than urban, for the urban demand is so great that initiatives may instigate a war of more demands.

A unique situation exist in Pretoria that contrasts with that of other South African cities. The central business district (CBD) is slowly being drained of all urban energy. Activities such as job and retail opportunities, as well as transport and services, have filtered towards the east, white decentralization takes place to the west. Due to political change, urban nodes on the periphery and residential expansion that took place over an extended period of time, Pretoria has become a stage-dynamic during the day and bare at night. Rem Koolhaas stated:

"It is very difficult to represent diversity. Basically there is the model of the mosaic: a mosaic is a larger whole of what is composed of a series of smaller fragments. But a mosaic in itself is a meaningless thing. A mosaic becomes significant once it represents something, whether it be an idea or value, or at least an image. Perhaps we could compare the European mosaic to a kind of digital screen, which shows incredible tonal richness yet resists congealing or cohering into a single image...I would say it is essential that our generation find a way to address what a European idea could be." (MULTIPLICITY, 2002: 226)

There exists a great necessity to address the African mosaic in all its diversity. We need to understand what we are going to become. South Africa is cluttered with international building styles that have no relation to our unique nationality. Our building aesthetic must be a cultural endorsement of our own identity.

Presently Pretoria is implementing a new building aesthetic by the initiation of the Inner City Spatial Development Framework (ICSDF). The intention is to re-establish the CBD as the heart by plans and policies for management concerning modification and development. With an extensive urban framework programme, the Nelson Mandela Development Corridor (NMDC), is reuniting the eastern residential wing with the CBD. This address the need for densification of the spine and creates a pedestrian friendly environment linked to public interactive space and appealing social activities that are fully functional and supported by a reliable public transport system.
Sunnyside is saturated with disadvantaged individuals. The lack of environmental care and viable urban functions have resulted in vast degradation of this district. Thousands of illegal immigrants infiltrate the porous borders with the inherent mindset that the city will provide the answer to their dreams. These dreams are soon shattered when they are faced with the harsh reality of unemployment. On the street they make a living by selling sweets, guarding cars and begging. The benefits of these activities soon lead to a thrust into the field of drug trafficking and prostitution. Esselen Street finds itself in the centre of this battle. The Rainbow Vice (sex work, drugs and gambling) brings crime and stigma to the area. This results in an avoidance of the neighbourhood where feasible economic and social input are concerned. This result is slowly transformed by the Esselen City Improvement District (ECID), with the constant cleaning and surveying of the streets by the police during the daytime. But at night... it is left to the vagrant.

The chosen area on which the dissertation focuses is the Oeverzicht village. Gerard Moerdyk Street is lined with beautifully renovated historical buildings that reflect the rich heritage of Pretoria. The Breytenbach Theatre and the MOTH Club bring great cultural significance to the area. In the past the area was used by Spoornet to accommodate railway workers. Presently the Council has relaxed the regulations concerning these buildings and new architectural interventions are authorized to promote this Art Village as a revived cultural node. There is a lack of office space, retail, and cultural activities in this area.

2. Problematique:

Statement

In Sunnyside the greatest concern is crime and lack of job opportunities that result in a high unemployment rate. Street children, sex-workers and addicts line its corners. Residential flats and hairdressers are modelled into brothels, cell and pawn shops are drug distribution points, street furniture becomes beds, and parks are playgrounds for sex-offenders. Crime is survival. Fear causes the elderly to isolate themselves from society, and the young resort to self-entertainment such as “sex for support”, in order to provide cash flow for life’s necessities. After school and work, masses of people spill into the streets with no creative form of entertainment, which is a significant requirement for this community.
We as a society must address our own demons. What is preventing skilled individuals to help uplift their own community? The author envisions a society of young individuals at a graduate level infiltrating the streets as part of the completion of their studies. This may include the development of workshops to provide entrepreneurial practice and the training in basic skills in order for the community to become self-supporting.

The Tshwane University of Technology (TUT) has renovated the MOTH Club to house a Film School. The site for this discourse is adjacent to the MOTH Club. Currently the site demands to become a catalyst for development. A building intervention will counteract the backyard quality that is prevalent. Yet urban mass is not purely the solution; it must include a system of educational entertainment that promotes public interaction and appropriate responses to context. This landmark site (as identified by the NMDC) will attract attention to a rich area that has become forgotten. A visual and physical axis will link public spaces to Esselen Street, and the vibrancy that exists there can finally spread.

The Breytenbach Theatre has hosted many functions through the decades. Following this multifunctional sequence, a space that will encourage diverse expressions of South African Culture through permanent and rotating exhibitions, workshops and training programmes of different forms of textile art, will support this idea. A place will be provided where people are encouraged to experiment with new media and find inspiration and stimulation to enforce skills development. A society of people that is committed to get the community involved will be established. The neighbourhood presents promising economic activities with the retail aspect of Sunnypark, the commercial activities in Esselen Street, and the cultural heritage of Oeverzicht. The proximity of all these interactive nodes provides energy that can be channelled to shape a powerful expression.

**Corresponding Components of the Development Problem:**

Address the lost space in Oeverzicht. Assure improved quality of life and economic generation by the advancement of feasible and profitable skills development programmes, social upliftment, cultural identity and job creation. Attend to the exclusion of the natural environment; encourage permeability, courtyards and pocket parks. Crime control; provide activity planning and passive surveillance.
3. Client: The Tshwane University of Technology

According to their official web site www.tut.co.za, TUT’s motto is that they empower people. Their vision is to be the leading higher education institution with an entrepreneurial ethos that promotes knowledge and technology, and provides professional career education of an international standard, which is relevant to the needs and aspirations of Southern Africa’s people.

Their Mission is to create, apply and transfer knowledge and technology of an international standard through cooperative professional career education programmes at undergraduate and postgraduate levels; to serve and empower society by meeting the socio-economic development needs of Southern Africa through the fruits of their teaching and skills of their staff and students; and also to implement one community service or development programme per faculty per annum, based on the teaching and learning of the faculty.

“To deliver competent graduates with an entrepreneurial focus who actively contribute to the economy and society.”

Department of Textile Design and Technology

The Department of Textile Design and Technology provides the pre-graduate level students with specialised training in the concepts and construction of textile design, and their application to meet specific requirements. Students acquire theoretical and technical skills in weaving and silkscreen printing that provides the basics of textile construction. Computer-aided design offers an innovative channel for creating, displaying and reproducing designs. Students discover that this flexible tool enables them to explore various aspects of design in a more efficient and creative way. The fourth year of study allows students to specialise in a field of their choice. This flexible approach gives students opportunities to explore their own aspirations, in order to become independent professionals. New workshops for the students’ entrepreneurial projects at postgraduate level are a basic new requirement.

At present TUT utilizes the African Window Museum as exhibition space for the industry to view their designs. Students and personnel do not find the building appropriate for it cannot accommodate the different installations designed by the students. The ceilings are too high for attaching the products and lighting requirements are inadequate to display to fullest potential.

The Skills Team of the Department of Textile Design and Technology

Their mission statement:

“South Africa is a country of opportunities, yet many members of disadvantaged communities experience poverty and unemployment. The necessity to create employment opportunities is now greater than ever, and it is imperative to provide the unemployed with suitable training. Education and training are universally known to be long term solutions for eradicating income deprivation and for expanding human capabilities.” (TUT 2004)
The Skills Team provides appropriate textile-related training and aids the upliftment of disadvantaged individuals. Their training in skills transfer allows them to take education outside the establishment. The workshop modules adjust to each customer’s needs. They function in the following manner: the needs of the group are established through analysis and evaluation; they revise and upgrade the group’s existing skills and aid in product development strategies to improve the quality of the product. Research on market and current trends enables the development of equitable products. Help is provided with the initiation of new projects. The provision of consultation and subcontractor services facilitates the growth of the projects.
The need exist for a facility that provides the appropriate services in order to assist students to be more successful in the following projects: papermaking, batik and resist methods, embellishment, sewing, embroidery, silkscreen printing workshops, recycling workshops, knitting and weaving. Currently students travel to different places; this will continue, but a permanent base for them is needed. The Sizakele Craft group (trained by the Skills Team) has received a contract from Woolworths to make a thousand bed linen sets at a rate of 100 per month. A Pretoria-based facility will accommodate the group to allow economic expansion.
Resources

Alice Grobler, coinitiator of the Skills Development Team, is currently managing the Sizakele Craft Centre in Cullinan. This small factory is renowned for its batik textiles and contemporary African designs on fabric. The team obtain most of its resources from the surrounding rural areas. A collaborative effort can be made to provide the Textile Art Centre with different sourced materials from rural areas. This will not only utilize the existing links, but will increase the demand on rural production programmes, thus promoting income and job opportunities. Students will have to be responsible for obtaining their own materials, but community projects will have to be funded.

4. Architectural resolve: Strategic aims

The proposed building aims to provide TUT and the community of Sunnyside and the required baseline criteria of an educational facility, and to improve the urban fabric with a new sustainable structure that endorses and enhances skills development. A variety of functions will promote learning and economic growth. The facility will not merely fulfil TUT’s requirements, but can collaborate with local schools and shelters for after-school or weekend classes. A job creation programme will provide local women and men with skills to produce products for the shop, local art village and the Breytenbach Theatre prop-shop on a permanent basis. The exhibition space will place the facility in the public spotlight and encourage participation.
The building will entail the planning of an educational system consisting of:

1. The incorporation of the Oeverzicht Precinct
2. A permanent exhibition component that documents the history of African textile art
3. A rotating exhibition space for travelling exhibits (national and international clients), resident artists, TUT students and the community
4. Studios for graduate students’
5. Workshops and training spaces for weaving and silkscreen printing
6. Conference and class spaces
7. A trade area selling art, bags, clothes, umbrellas and homeware objects created by local artists and the community
8. An coffee shop
9. Office space required by the NMDC

5. Funding Strategy

The Council for Scientific and Industrial Research (CSIR) Craft Development Initiative:

“The Cultural Industries Design Unit strives to create sustainable income for South African SMMEs through design and design-related activities; to preserve and activate heritage skills and indigenous design knowledge for economic gain, and to provide innovation through creative product solutions.” (www.csir.co.za 05/03/05)

The Craft Development Initiative function as a development collaborator with communities to enable their economic empowerment. Suitable technologies are conveyed to improve the use of indigenous knowledge and resources. They promote the production of crafts at a souvenir level, applying local crafting techniques adapted to modern designs. local and international markets are targeted.

Objective: An urban Gauteng initiative

The CSIR started to generate income initiatives in 2000, targeting the industry’s greatest needs. Working together with the Department of Arts and Culture (DAC) and the Department of Science and Technology (DST), it instigated a number of poverty alleviation schemes, amongst them the CSIR Craft Enterprise Development Unit (CEDU).

In 2001 President Thabo Mbeki initiated the Integrated Sustainable Rural Development Programme (ISRDP) and the Urban Renewal Programme (URP). The DST has a Technology for Poverty Reduction Programme that allows the transfer of technologies to address the challenges that unskilled individuals and communities face each day. It assists in the manufacture of products and that provides sustainable sources of income. Independent and self-reliant communities are established to improve food security and enhance quality of life.
The CSIR appointed suitable agents that visited the different South African provinces and local municipalities to identify groups of skilled communities. Designers and trainers collaborated with these communities to enhance their existing skills and create their own initiatives. Five of the projects formed part of the Woolworths design indaba. Woolworths worked in collaboration with Sebastian Conran of the Conran stores in London, New York, Paris and Tokyo. Together they launched a vibrant African Homeware range. This scheme established a link between crafters and the leading retail industries. The Skills Team from TUT and their groups are qualified to be included in this programme. These types of opportunities and methods of exposure will hopefully ensure a working collaborative.
**Investors**

**The Arts and Culture Trust (ACT)**
This is a private sector programme consisting of other donors such as: Business and Arts South Africa (BASA), Department of Arts, Science and Technology (DACST), National Arts Council Lottery Initiative (NACLI), Vodacom and Nedbank. Their aim is to expand the financial support available to artists and craftspeople by means of corporate and international donations, fundraising events, and capital investments in support of novel sustainable projects that contribute to indigenous arts and culture. ACT provides funding for various projects including literature, dance, music, theatre, community art, art management, arts education, museums and heritage.

**The Department of Trade and Industry (DTI) and the National Cooperative Association of South Africa (NCASA)**
This department provides support for cooperatives through a programme that allows training and education in the specific area in which it operates. Cooperatives can be formed in any section of the economy: agriculture, manufacturing, retail, construction, transport, textiles and clothing, information and communication technologies.

**The Tourism Enterprise Programme (TEP)**
This programme provides small, medium or micro enterprises (SMME) involved in tourism to expand through workshops helping them to identify the best business opportunities, connecting them with service providers, and providing access to professional services involving financial, business, technology and market planning. It also shares the costs involved in training and technical assistance.

**Tourism (DEAT)**
This programme was especially developed for youths, women and disabled individuals. It provides the opportunities for the community to set up stalls at information and cultural centres where it can sell crafts and food. A training programme of tourism related jobs provides the people with hospitality, craft manufacturing and tour guiding skills. Waste recycling after cleaning up the areas also provides job opportunities.

**Users**

**The Eskom Due-South Craft Route Project:**
The Due-South Craft Route Project is a nationwide expedition that recognizes and publishes a variety of skills and products produced by South African craftsmen and women. Its aim is to discover and promote the needs of craft communities and create a sustainable market for them. The team personally visited the communities and thereafter compiled a travel map that will provide tourists with a guide to mainstream sites. Its statement is to select projects that respect the environment and prove to be sustainable.

Due-South ‘s offices are currently located at Black Moon, Hatfield. It needs new offices and a small-scale meeting/conference facility.

**Other parties**

- TUT postgraduate students.
- Local Community: Inhabitants of Sunnyside
- CMR Vos Street Community Centre: Its skills training programme presents courses like beadwork, embroidery, curtain making and clothing manufacture, which are at present conducted by the Department of Labour.
- conducted by the Department of Labour.
- There are 24 unemployed individuals that are receiving free training. The current facilities are lacking; a larger well equipped space is desperately needed.
- Criminon New Life Centre; Day-care drug rehabilitation centre for art therapy and income generation.
- Ebenezer Community Aids project for art therapy and income generation.
- UNISA: Khanga project

**Khangas**

A khanga is a rectangular cloth that is wrapped around the body or head. It can also be used as a throw for homeware applications. UNISA’s Unit of Social Behaviour Studies in HIV/AIDS and Health, and the Department of Textile Design and Technology worked together to form a HIV/AIDS awareness program through this fashion accessory.

The U.S Mission’s Khanga exhibition at the Athlone stadium was the main event in the Cape, for the World Aids Day in 2004. The exhibition and fashion show proved to be a great success by creating an uproar in the community. The red and white theme of silkscreen printed pictures is an effective tool to communicate with illiterate people. The pictures tell stories of people attracting the virus and then explain the possible outcomes that exist for their future. It shows that the right treatment can lead to a fulfilling life and not a death sentence. People started talking about how the Khangas got to the heart of the community. They resonate with African styles of sashaying down the street, worn around the waist, head and to carry babies.

UNISA received numerous requests from health workers and organisations for the production and spreading of the Khangas as a more effective way to create awareness of HIV/AIDS. The silkscreen workshop can contribute to this effort and become a production facility for this purpose.

**Recall**

- NMDC is a spine of opportunity and renewal linking the degraded CBD with the residential west.
- Esselen Street’s vibrancy need to spread to the surrounding areas.
- Tshwane University of Technology’s Textile Department needs more space for postgraduate studies and community development projects.
- The Skills Team programme promotes self-sustaining job opportunities that will directly address Sunnyside’s high unemployment rate.
- The CSIR has various programmes of active skills development and educational initiatives over South Africa, and a Gauteng project will strengthen the Urban Renewal Programme.

1. Khanga silkscreen print
This section documents all visible factors of the context.
1. Site information:

- Erf number: R 1340, portion 33/866
- Coverage: 60%
- Height restriction: 22m
- Zoning: residential
- FSR: 2
- Location: Pretoria, Sunnyside

Climate:

Temperature:
- Summer average max: 32°C
- Summer average min: 18°C
- Winter average max: 22°C
- Winter average min: 4°C

Wind:
- Light moderate from a northeasterly direction
- Southern winds in spring and during thunderstorms

Rainfall:
- Mean annual precipitation of 700mm per year
- Summer: 250mm
- Autumn: 100mm
- Winter: 25mm
- Spring: 100mm

Sunshine percentage:
- 60% in summer and 80% in winter
The narrowest portion of the site is situated on its southern boundary, along Jacob Mare Street. A landmark structure, as proposed by the NMDC, is proposed for this portion. Sloping roofs and water collection tanks can represent a definite attempt to harvest water during the rain season. This will aid the textile production process by alleviating water bills. The western façade receives the most sun exposure and heat generated by the road surface of Nelson Mandela drive can cause a hot environment. This façade will need to be passively designed with overhangs and ventilation systems to counteract overheating.
Sun angles

Summer morning 08:00 24°
Summer midday 12:00 89°
Summer afternoon 16:00 9°

Winter morning 08:00 17°
Winter midday 12:00 41°
Winter afternoon 16:00 24°

1: Shadow patterns
The sections through the site indicate the interesting environmental transition from the Apies River to a built-up setting. This transition will need to be designed in order to promote interaction between them. The new building height will provide surveillance of the riverside that has been lacking, consequently making it a very dangerous region. The prominent existing building facades from the MOTH Club and the Breytenbach Theatre will require unobtrusive design solutions for the proposed building.
1: Photomap of region
1: Figure ground

2. Ground figure
2. Urban Design Principles: According to Trancik

Linkage between the following elements and the lost space determined by the figure ground generates a base map for the design process:

**Path:** Locals orientate themselves in terms of experiences along the path; and visitors according to landmarks.

**Edge:** Strongest when not only visually prominent, but also continuous in form and function.

**Node:** Anchor points that need support from surroundings to create sense of place.

**Gateways and Landmarks:** Visual and physical integration of public open spaces into the urban context.

**Streets:** Develop as liveable spaces, where dwellers have rights within protected neighbourhoods. The emphasis lies on two level street systems with slow-speed streets and environments for children. These should not become urban barriers.

By overlaying these identified elements according to the historical and natural context, social and cultural perceptions and existing human needs, a place emerges from the context itself. The following aspects are also important in terms of the building quality that will be generated:
Human Scale: The most functional office depth is 12m. The ratio of elevation to street should be no more than 1:4 or it loses the energy of an active urban environment.

Accessibility: Facilitate ease of movement through the building. All amenities must be within a 5 minute walking distance or 500m radius.

Variety: Different usage zones should be integrated, variety must exist in horizontal and vertical fields and functions. A conscious effort to create mixed use facility must be made.

Robustness: Develop building footprints that can change over time accommodate different uses in the future.

3. The study of place

The Apies River Urban Design Framework

The framework states that the Apies River is a cultural and natural asset of Pretoria and should be visually and physically accessible. It must be designed...

1: Radius map

2: Apies River Framework
and planned so that it serves as a multifunctional civic spine that promotes opportunities for cultural interaction. The discourse site is allocated as part of the Urban Gateway development. Suggestions are made that all developments adjacent to the Apies must be of a multifunctional nature and must prove to be economically sustainable and viable. Business, tourism and socially interactive places must be established in order to address community needs. The developments must provide round-the-clock safe environments for pedestrians and cyclists.

**Nelson Mandela Development Corridor**

The NMDC functions as a bridge between the inner city and the residential areas of Sunnyside and Arcadia. Currently, the land along this spine is underutilized and provides ample development opportunities. A buffer zone exists, with the Apies River running through it, providing a natural resource that allows interesting design responses. The framework identifies the following aspects that need to be addressed:

- Poor links/connections between inner city precincts/neighbourhoods
- Lack of balanced integration of urban users
- Mismanagement and neglect of natural resources
features
- Poor management of the informal economy
- Lack of mixed-use facilities and amenities
- Mono-functional, poorly defined public open spaces
- Ignored historical fabric
- Lack of identity/vision for the precinct

These aspects will be addressed by the NMDC. The context generates the identity that needs to be reshaped in order to create a safe, sustainable environment.

The NMDC’s ideal is to enhance social interchange of users through interactive urban nodes with a broad set of amenities and functions, allowing the market and new development initiatives to generate a healthy economy.

The NMDC is divided into districts; the discourse site is situated in the Arts and Culture Precinct. Esselen Street forms a vital link to the district. A series of public spaces and landscape initiatives links Esselen Street with the Oeverzicht area.

The Arts and Culture Precinct’s plan enables future expansion that will provide offices, apartments and retail facilities. This will promote public interaction with the existing theatres and art village.

The discourse site is assigned to host a landmark. It is suggested that the landmark must form part of the building structure and provide visual orientation.

SITE

“The urban site will always overwhelm as an object of critical and theoretical reflection. With blatant
disregard for designs, orderly presentations, the images and identities of the city remain elusive. This is because the urban site is not a stable place, but instead a transitory and multivalent space - an aggregation of ever shifting scales, programs, and actors, all set within a temporal framework that holds both prior traces and future modifications.” (KAHN 1995:199)

Kahn states that an urban condition is qualified by behaviour that defies simple verification. The method of site construction lifts out the implanted urban values of the site, creating a discernment of various scaled site-specific characters from physical and non-physical qualities.

The urban values of the discourse site are the following:

- The creation of movement patterns will be the primary focus for the site to obtain urban energy
- The physical lifting of the site will allow it to respond to the existing urban fabric
- The site boundaries allow interesting environments to be shaped in response to the surroundings
- The existing green zone is in line with the reactive axis initiated from the NMDC, this will automatically provide a sense of arrival when movement systems are implemented
- A historical sensitivity and response will highlight the rich past that the area hosts.

3. Landuse map

4. Alley between MOTH and residential building.
1. View from southern point of site in northernly direction.

2. Southern view, Meintjies kop.

3. Eastern residential block at gate of site

4. Residential gateway, west of site.

5. Existing building function analysis
6. Eastern entrance to site.

7. Vehicular access to site.

8. Vehicular access from Gerard Moerdyk Street.

9. Vehicular access to Breytenbach Theatre offices.
4. S.W.O.T. ANALYSIS:

Strengths of the site:
- It provides a rich cultural experience along Nelson Mandela drive; buildings of prominent historical significance exist in Oeverzicht.
- New Framework: strong and dense
- Mix of population and languages in region: wide variety of opportunities for tourism and richness.
- Prominent existing pedestrian movement generated by scholars, residents and taxis
- Trading and entertainment opportunities

Weaknesses and Problems:
- Public spaces: very unsafe environment
- Buildings are individually isolated
- Little economic activity
- Community infrastructure: lack of public amenities
- Lack in variety concerning social activities
- Pedestrians secondary to vehicles
- Heritage not priority: absence of preservation zones/few green spaces
- Decentralisation: due to competition from other urban centres on the periphery
- Lowering in the quality of urban life and environment
- Lack of identity

Opportunities:
- Use proposed pedestrian boulevard to fulfil potential of connection with Esselen Street
- Preserve and increase the amount of green space
- Establish green spaces along walkways and cycling routes
- Fulfil the need for public interaction; provide offices, workshops
- Fulfil the need for community empowerment through job creation
- Enhance historic fabric
- Facilitate conditions for pedestrians within the city
- Integrate landmarks and enhance and protect urban heritage
- Realise economical potential
- Encourage mixed uses and tenures

- Create an entrance to the city.
- Achieve a higher quality of living

Threats:
- Disappearing culture
- Drug use and trading among students

Recall:
- Maintain continuity of Nelson Mandela drive with an active western façade
- Respect the existing silhouette of buildings and landscape and the heritage involved
- Prevent scale anomalies of masses due to the response required from the Apies River
- Respect existing rhythms of facades and spatial elements
- Enhance spatial patterns of public space usage
2. Tube weave dress

3. Plastic raincoat
1. sash belts & leather and mink weave
This section examines history and existing physical implementations that address aspects of the vision of the discourse.
1. History of the Breytenbach Theatre

According to the TUT official website www.tut.co.za, the history of the Breytenbach Theatre is as follows:

In 1903 the local German community erected the building. It functioned as a school and gymnasium, but after the outbreak of World War I it was confiscated and released into the hands of the Custodian of Enemy Property.

In 1918 an influenza epidemic seized the area and the building became an emergency hospital. Many deaths followed and it is claimed that a Spirit emerged that apparently still roams the theatre's passageways.

Emily Hobhouse offered revival for war survivors when she initiated learning and application of crafts and skills. Sourced on her travels in England a number of spinning wheels were at their disposal. The Langlaagte Centre was founded where women were trained to spin and weave. General Smuts was one of the first customers to buy the local group's woven products.

At one point the Breytenbach was changed into a sculptor's workshop that housed the work of Gerard Moerdyk and Hennie Potgieter.

Thereafter the Breytenbach became a film studio that documented the life of President Kruger.

In 1955 the National Theatre Organization (NTO) was granted £6 000 with which it bought the property, naming it Harmonie Hall.

1955 to 1980 was an eventful period for the organization. It hosted its first performance in 1958, Voorlopige Vonnis by Jozef van Hoeck. Numerous productions followed and many renowned
actors of today took their first steps on its stage. In 1959 the building developed into the new National Theatre of Pretoria, hosting a training academy for actors and technicians. This became possible through the donation of the adjacent site by Mr. Breytie Breytenbach. The Department of Education, Arts and Science supported the development of a well-resourced 300-seat theatre.

In 1980 the popularity of the theatre was lost with the completion of the State Theatre, with its extensive inclusion of new technologies and effective marketing.

In 1983, the Technikon of Pretoria became the owner of the theatre. Success was soon regained with numerous lunchtime concerts, ballet and opera recitals.

In 1993 the building of a fly-tower provided more space and stage design possibilities, enhancing the theatre’s display capacity.

In 1996 the historical but decrepit cottage adjacent to the Breytenbach Theatre was renovated and converted into a small theatre. Amongst its past functions, it was also known for many years to be a clothing manufacturing shop. Named the Moonbox, the student-fashioned interior can host 65 people. It provides the community with the option to perform inexpensively and gain popularity. It is popular among children for its holiday puppet shows.

4: Breytenbach Theatre; 1980
In 1980 the popularity of the theatre was lost with the completion of the State Theatre, with its extensive inclusion of new technologies and effective marketing.

5: The Moonbox
Currently the Breytenbach Theatre (Breytie) fulfills the following two functions in collaboration with the Tshwane University of Technology (TUT). It functions as a practical platform for students in the discipline of Vocal Art, Drama and Dance. Live shows provide entertainment for the public and experience for performers. The Theatre displays services students can perform as prospective employees. Props and sets are built, sound and lighting techniques are explored, and make-up and costume attempts grace the stage. The second function consist of the hiring of the theatre itself, providing maintenance income and an affordable entertainment venue for the community.

6. Theatre stage

Needs of the Theatre:
Safety, more exposure, covered parking.
2. The History of Textiles

The manufacture of textiles is one of the oldest craft forms. When man initiated the domestication of animals, wool became the first form of fibre to be utilized. Linen was the first form of vegetable fibre and can be traced back to the Egyptians 3500 years BC, and to Swiss Stone Age lake dwellers. Textiles were a popular trade commodity in Biblical times; many slaves were trained in textile manufacture to fulfill demands. Men invented most of the weaving techniques and principles in the early stages of the Christian era.

1760 - 1785 James Hargreaver invented the Spinning Jenny and Sir Richard Arkwright the spinning frame.

But it was during the Industrial Revolution that textiles evolved from a form of handicraft into an industry. The invention of various forms of machines replaced weaving and spinning by hand. The speed of the weaving process was rapidly increased and quantity production became such an easy activity that even children could operate the equipment. The textile factory production system was initiated in England and became established in America.

1900- 2005

The lack of scientific knowledge concerning fibre composition led to a hiatus in technological development. But early in the 19th century, experiments in chemistry concluded that textiles are an outcome of chemical actions during the 20th century new technological engineering concepts of textile production developed simultaneously with the evolution of computers and electronics.

This resulted in the technological progression of new forms of textiles, faster dispensation methods and an extensive diversity of new production techniques.

1: Weaving loom
Modern-day industry

Due to the broad range of uses for textiles, a high degree of specialization is required. The production of fabrics for industrial use is becoming increasingly essential. This results in technicians, engineers, and artists having to perform a high degree of advanced processes. The design of textiles is mainly associated with clothing and furnishings, which form a large portion of the industry.

Textile construction

Yarn textiles: Man-made and natural fibres are spun into yarns and are used for weaving, lace-making, knitting and braiding.

Non-woven textiles: Fibres are not spun into yarns but through the application of heat, moisture and pressure non-woven textiles are formed. Felt is the oldest form of textile produced by this technique. The use of chemicals and adhesives can also produce bonding of various layers of textiles.

Textile processing:

Textiles coming off the loom are known as grey goods due to their grey colour and coarse irregular appearance, which can be changed by the following procedures to smooth and alter the finish:

Bleaching: Whitening goods by means of sunlight or bleaching chemicals.

Printing: After removal of grey, colour can be added by means of block printing. Engraved rollers stamp designs onto fabrics or different-sized linocut blocks can be used for hand printing.

Resist dyeing / screen-printing: is a process where screens are covered with wax paint, except on areas that carry a design. The screen is placed over a cloth which receives the designed portion when colour is applied. This is a very economical process; it also requires only semi-skilled labour and requires little effort to instigate. Natural light and a wet room is essential for the process.

Dyeing: The whole fabric is immersed in a dye bath, but due to the composition of different fibres this may lead to an uneven finish. Solution dyeing is a method...
3. Art Fabric

Recalling our inventive inspiring potential through play.

“Thread is the source of all textile material. In the form of twine, yarn, line, string, cord rope and cable has ways to stir man’s creative urge. Spinning, weaving, knitting and knotting are age old crafts. That is why today, the making of something out of thread can be a most valuable addition to our education - an education which tends in this technological age to place excessive value on intellect and technical ability.” (HARTUNG 1969:3)

The textile and fabric world is so inherently part of our daily lives that we tend to take it for granted. We fashion our daily environment with its variety of forms. It provides protection, allows us to express our individual character and reflects our status. The Art Fabric represents a crucial art form of this epoch. It is a construction, independently fashioned by its artist. It can be woven, knotted, knitted, crochet or manufactured by other techniques.

1: Playing with string

2: Face

3: Papua print

“An Art fabric is conceived and created by one artist whose personal involvements and expressive potentials are integrated with his or her skilful use of techniques and chosen materials.” (CONSTANTINE, M & LARSON, J. 1981:8)
The evolution of the Art Fabric corresponds with that of the visual arts, for they both belong to the world of experimentation, technological invention and material manipulation that inspires new concepts. There is no longer a definite distinction between fine and decorative arts. Painting is not restricted to wood and canvas, or sculpture to stone, wood, casting and modelling. Artists today find liberty in the fibre medium - a metamorphosis of expression, and the option to favour an aesthetic over a utilitarian need. Skill, physical effort and discipline, and the operation of creative and aesthetic factors become the power by which all is considered. The Art Fabric exists in a fluctuating situation; it has no distinct description but assimilates itself with the affluent and multifarious trend of art that goes further than craft.

The endurance of Craft through the ages:

We find ourselves in a world of consumerism. The signifier is preferred over the transcendental signified. Meaning is discarded and we are left with an industrialized mechanistic society. Product is the absolute. How do we as designers redefine the meaning of phenomena into our own living environments? How can we counteract nihilism?

“Craft has always been a supremely messy word. For centuries it was normally used in contexts that had nothing to do with creative artistic practice of any kind, but when it is used in the context of art, its multifarious nomenclatic heritage has rendered it so ambivalent that many who are associated with it consider it a draw-back. Those of us who have spent time in the field are at a stage, I am sure, at which earnest definitions and descriptions of craft as something which is (or is not) art, is (or is not) design, as techno phobia, as an anthropological signifier, as a protector of some traditions, as old (or new) age lifestyle, as patriarchy, as airport trinket, as ethnic iconography, as communist Utopia, as eco-protest, as redundant technology, as aromatherapy, and most emphatically as victim of an unloving world, have ground us all down.” (GREENHALGH 2002:1)

The concept of Art Fabric originated in the 1870’s with William Morris. Morris initiated the movement by the re-introduction of handicraft as a commendable form of art. Industrialization pioneered machine art in the 1900’s. Walter Gropius brought synthesis to the latter by initiating the Weimar Art School, Staatliches Bauhaus in 1914. The school combined an academy of art with a school of arts and crafts. It also contained a laboratory for handicraft and standardization. A union of school and workshop was born. This initiation paved the road for the growth of Art Fabric. During the last three decades Paul Greenhalgh (GREENHALGH 2002:4-16) identified a set of topics in the art world that will affect its inclination:
Classification is the categorizing of dissimilar kinds of practices within the realm of visual art, determined by: craft, art, and design for the economy, institutional and political influence for the profit of the market place, galleries, and government. The craft economy is in an arduous situation; the object must be economically viable. The profit made by selling craft is governed by the exclusiveness of the project or the quantity.

“Straddled between an art and a design economy, craft often gets the worst of both worlds. It occupies an economic space where objects, though individually handmade, sell at mass-production prices. Lacking the prestige of high art or the reproductability of product design - both characteristics economically viable - the crafts person frequently is obliged to sell unique work at mass process.” (GREENHALGH 2002:6)

Amateurism is the production of crafts as a part-time, after-hour hobby. John Ruskin (1819-1900) once stated that any person in a community could achieve identity through the medium of craft. Many people in the industrialised world are on a quest to find the “self” through DIY workshops and TV programs, evening classes of creating decoupage, pottery, paper and embroidery. Poetry is one of the means of expression and is often more written than read; at an amateur endeavour craft institutes this. An essential facet of modern craft is the pronouncement of the process over product. The hands-on engagement with an assortment of media is of crucial significance in a healthy society. It becomes the objectification of individual need.

Technology has been a catalyst for the unravelling of visual culture since the Renaissance. It has been present at all stages of artistic invention; it served as a facilitator in the manner of construction of different phenomena and is responsible for the progress of exclusively innovative practices. Social Luddism was a strong reaction to the development of technology; it presented sightless opposition to the mechanical, electronic and mass production initiative. This anti-technology movement was the promoter of original man made objects and as a consequence, the anti-urban. The etymology of craft relates it to power; to be in control of one’s own time, desires and model of life.

Morality of art suggests that it entails not only a balance of aesthetics and technics, but that the craftsperson, designer or artist engages in a moral dimension prevalent in the modern era. John Ruskin made art a moral reflection of the culture that fashioned it. Purism, De Stijl, Art Nouveau, Constructivism and the Bauhaus and Studio Craft Movement were all changed by the inherent yearning to explore the moral interface. Art can serve as a medium for change. Andy Warholl (1928-1987) addressed the consumerist society by creating awareness of a world drunk with signifiers. The repetition of mundane objects such as dollar bills and soup cans in his prints, absolutises the signifiers as signs. The sign is always the sign of a sign.

Place, Humans have an inherent need to create places or sites that have credence and symbolic significance. Non-places are identified as pass-through spaces of non-psychosomatic affection, such as transport terminals and pit stops. Crafts initialise the concept of portable places that radiate a sense of history, permanence, and symbolism. A space occupied by these concepts has the prospect of becoming a place. Creating permanence is an essential aspect of the formulation of a communal cultural reminiscence.

Domesticity – Technological advancement subverts the external workplace as a requirement; the ratio of population that will not need to leave their home except for social activities will gradually rise. This corollary will redefine the function of the public space.
**Museology.** One can never underestimate the importance of the environmental context to the public display. Artworks establish a relationship between people and objects. If there is no predestined relationship, art will have no significance in that specific community. Crafts need to have a distinct and exclusive presence within its context, for the optimum operation of exhibitions.

**Gender.** Craft is furthermore a tool to explore the gender realm. Artists in the past and presently are using it to address women’s issues. Many craft practices are completely dominated by women all over the globe.

**Quality.** The Enlightenment searched for the absolute truth and value by which all phenomena could be measured to determine aesthetic truth. An assured amount of skill is required to generate quality. Benchmarks and standards are set to promote quality.

When considering the previous aspects affecting the development of craft, one is faced with the reality of possible economic failure. Designing a whole building can be useless if the requirements of context-generated crafts are not addressed. The building will purely exist through the participation of the public.
4. Case Studies

The following places were visited to understand the scope of textile productions and its functions.

**A**rkas Textiles C.C.
Ethnic Design and Printing
Hazyview, Mpumalanga

A**rkas Textiles is a textile-printing factory situated at the Mission End Trading Post in the Hazyview Mountains. Employing many rural inhabitants, it produces silkscreen prints for various products. Company logos and emblems are designed and printed according to specifications. Game lodges and hotels are provided with curtains, bed linen, kitchen and table linen, and furniture covers.

Arthur, the owner of the facility, stated that the development of the factory and its clientele took a period of 15 years. When designing for the community, success and profit is guaranteed by addressing the needs of the area. Silkscreen printing is a safe and easy skill to train people in and the output outweighs the input, making it a feasible income generator.

**3: Workers’ bus**

*Knowledge gained:*

The building and production system must be designed in different phases to enable expansion in cycles of 5 years according to profit made. The functions of the phases will be determined by community needs and the existing frameworks present on site.

**The current market close to the site:**

A large active African community in Oeverzicht village and Esselen Street, provides opportunities to express its identity through the production of individualized textiles for restaurants, entertainment venues and clothing.
The Bus Factory was originally built in the 1930’s. It mainly functioned as a bus depot and mechanical repair workstation until the early 1990’s. From April 2001 until November 2002, Blue IQ and the Gauteng Department of Sports Recreation, Arts and Culture (SRAC) refurbished the Bus Factory for approximately R9.5 million. The Bus factory has emerged...
as a vibrant centre of artistic and cultural activity.

It accommodates the following:
The Craft Council S.A Office, the Visual Arts and Crafts Academy (VACA), an Artist’s proof studio, the Drum café, The Bus Stop café, studios, the Beautiful Things permanent and temporary exhibitions and the Beautiful Things shop.

**Beautiful Things** is an exhibition of crafts from all over South Africa, ranging from usable products to display art. Made by locals using contemporary materials, the range of the products adapts to the local and international markets. Large, flat squares on the ground filled with natural materials such as sand, woodchips, stones and coal become the platforms for the craft installations. These become a metaphor of the dynamic landscapes and peoples of our country.

*Knowledge gained:*

Plentiful of natural light provides good working conditions and lower electricity bills.
A flexible, adaptable exhibition space is provided yet, a lack of defined space can be overwhelming and misleading.
An existing structure and its elements is re-used.
The noise-generating workshops are placed in the basement.
Other commercial ventures like restaurant, cafes and a drum club ensure the continued existence of the exhibition and workshops.
Daliwe
Hand-crafted blinds and crafts
White River, Mpumalanga

The name Daliwe is Xhosa for ‘nature’, and this is a true reflection of what these woven grass designs echo when applied to blinds, ceilings, furniture and architectural finishes. These constructions integrate African impressions with modern design. Situated in the White River district, the workshop was established in 1997 by the Hubert and Zylstra families. Daliwe is a source of pride for the local people, who use the application of their traditional skills to compete in a modern market and to generate job opportunities and sufficient income. Fifty people are permanently employed and two hundred and fifty people are material gatherers on an informal basis.

The waste and noise generating workspaces are outdoors under gum-pole lapas, which are mainly areas for woodwork and the stripping, dyeing and weaving of reeds. In the interior workshop the weaving of the products takes place. The flute reeds used are obtained from the clogged waterways in the area and the wattle from bush-clearing programmes. The following are current projects: Kruger-Mpumalanga Airport, Hans Merensky Golf Club and various luxury lodges.

5: Samples

Knowledge gained:

Environmentally conscious solutions are established through production.
A pyramid system; exists where each employed individual supports 10 others.
Traditional skills can be modified for contemporary relevance.
The use of existing traditional skills in the area, encourages community involvement and participation.
Mpumalanga Provincial Government Complex
Nelspruit, Mpumalanga.
Architects: Meyer Pienaar Tayob Schnepel Architects

“The project challenged all those involved, to explore new approaches to architecture, both in process and product, and give appropriate expression to the aspirations of a rapidly transforming society.” (MPTS 2001:19)

Tracing through the past and present, the designers changed their frames of reference. They wanted to compose a true African building, conveying the nature of a free democratic system. The architecture emerged as a response to examples such as the Union Buildings, the great Zimbabwe ruins and decoration in African vernacular architecture and the local vernacular. The climatic conditions of the region, available materials, and dome structure analysis was translated into modern applications. Using local artistic skills, an identity was woven into the building that will inherently serve the community.

“Louis Kahn’s tenet ‘let the building be what it wants to be’ was perhaps the foremost solution to the building form, with the clues taken from the surrounding environment and the design brief, and developed in an ongoing search for cultural expression.” (MPTS 2001:21)

A site visit allowed the design team to observe and explore every rock, tree and stream. A design concept emerged from the footprint of the site itself. Pavilion-like offices are placed along the natural curve of the land, mimicking existing trees. The dome of the Legislature is a mirror image conceived by inverting the river profile that runs through the site. The layout of the complex as a whole is very flexible and publicly orientated.
Knowledge gained:

On site the author was in awe of the scale of these buildings effortlessly fitting together, allowing a swarm of people to infiltrate them with ease. Walking on the grounds the attempt to commit an illegal activity by taking photos was almost impossible due to the buildings enabling observation of all spaces. This was resolved by drawing the walkways (fig 1) and passive design principles (fig 4), and conclusions on how site and context generated the form. The walkways are not merely movement routes but are designed to offer opportunities to stop, chat, observe or stroll, thus accommodating different movement speeds. This principle allows different experiences to take place.

Passive climate control creates an interesting and varied building façade. Air-conditioning in buildings of such scale is inevitable, yet the emission towers (fig 8 and fig 9) become artistic elements and completely hide the fact that they exist. Throughout the entire building complex, community art is constantly integrated into the built form. Tapestries, paintings and sculptures are placed in spaces designed for the user to observe and enjoy them. Local skills are incorporated into wall finishes projecting an array of textures and colours that express the surrounding environment. The dome mimics the composition of a woven basket, innately becoming art. The endemic trees placed in the landscape are representative of this unique region. A huge grasshopper with luminous wings swiftly reminded of her appointment with Mr Zolile Ngono, Chief of Public Works, who accompanied her into the private sectors of the Legislative building.
5. Paperback Study

Rorke’s Drift

ELC Centre
KwaZulu-Natal

The Evangelical Lutheran Church Art and Craft Centre (ELC) at Rorke’s Drift participated in the training of black artists and the development of South African art in the Apartheid era. Printmaking was their most prominent undertaking due to its economic possibilities, but it was also a means of conveying socio-political messages. Printmaking was a form of empowering expression for its students and the South African art scene.

In 1960, Sweden became aware of South Africa’s racism via the internationally broadcast Sharpeville incident. Post-war reconstruction in Sweden not only allowed redevelopment of the nation itself, but and external international consciousness was promoted concerning underdeveloped countries. Industrial South Africa didn’t qualify as underdeveloped and any development project had to be a private philanthropic undertaking.

Peder and Ulla Gowenius, a married Swedish couple - both educated in textile art, weaving, sculpture and printmaking - were offered a one-year contract by the Swedish Committee under the wing of the Evangelical Lutheran Church. Their aim was to research the material culture of the Rorke’s Drift’s region for the establishment of marketing opportunities of arts and crafts, in order to assist black people. In 1961 they based themselves at the Ceza Mission Hospital, for the access it provided to many different black communities. To counteract depression in patients suffering from tuberculosis and other diseases, a proactive approach was instigated by the couple. They introduced handicrafts to the patients and taught them various skills such as sewing, strip weaving and spinning. They invented ‘occupational therapy’, of which economic upliftment and therapeutic rehabilitation was the outcome.
Their interpreter Allina Ndebele, a trainee-nurse, took time off her studies to assist the Goweniuses to train the patients in craft techniques. She inspired 15 more volunteers and established a vision of a formalised programme.

In 1962 the Umpumulo Art School was opened through the support of the mission and subscribes to the following principles: help the church, hospital and patients by teaching them skills they can continue to use at home; provide young women with independence and increase the understanding of weaving, spinning and craft making and the preservation of old traditions and materials. Many students joined the centre and the success of the workshops and training programmes was established. Allina Ndebele’s weaving workshop became the primary income-generating project. The tapestries attracted attention from all over the country, due to their unique nature and quality. Interest and demand grew along with the demands for printing as a faster form of artistic production.

Peder Gowenius saw the cutting tool as a point of commonality for its ability to translate pre-existing carving skills into a new form of art. Men were offered the opportunity to participate in the linocut workshop. They were encouraged to express their own lives, and the recording of history and present evolved.
“In a 1999 interview Gowenius encapsulated the dilemmas that had emerged about his teaching in question. Should you teach the basics or should you leave them - until their confidence and identity develop? He opted for a strategy to build up confidence by giving positive reinforcement for the design aspects that he thought worked well... they tried to be as non-interventionists as possible and have seen themselves more as facilitators than teachers...” (HOBBS 2003:41)

The increase in participants demanded more space for production and accommodation. The school therefore relocated to Rorke’s Drift in 1967. The name of the school was changed to The Evangelical Lutheran Church Art and Craft Centre (ELC). New aims and objectives were to extend the knowledge of different arts and crafts in the region, train occupational therapists, and train church members in self-sustaining prospects.

The workshops formed the main focus at the centre, generating employment, education and funding. In 1963 an exhibition in Konstfacksskolan in Sweden generated a profit of R6000. Following the news of this success in 1967, the Royal Society of England ordered a tapestry for the Council Chamber in Carlton House, London. The tapestry called “Creation” was and still is a renowned artistic accomplishment. This placed the ELC on the international map.

After the succession of these events Peder Gowenius confirmed the importance of a fine arts school that will provide both men and women with economic independence and add to the value of the centre as a whole. It attracts a wider spectrum of students from all over the country and thus promotes new ideas in art creation. The first certificates of fine art were issued in 1969 and this continued until 1982. The centre was closed down due to a lack of finances and proper marketing.

A collaborative partnership between the communities, the Msinga Local Municipality, the Department of Arts and Culture and the Department of Labour National Skills Fund ensures the continued existence of The Rorke’s Drift workshops today. Training in product development, production, marketing and enterprise development allows sustainable social and economic opportunities for workers. Their exhibition at The Bus Factory reflected the high quality of their products and their unique innovative tapestries.
Knowledge gained

By the provision of employment and occupational therapy, the programme evolved into a successful endeavor promoting community participation. Once a system is proven and successful in the economic realm, people are willing to assist with financial aid. Growth and reduction in spatial requirements occur according to economic status; built space must be rented out for functions in times of lower economic achievement. Setting standards for achievement in the form of an educational system provides a continuous input of new ideas and perceptions; this adaptability is essential to art. The uniqueness of an expressed identity is interesting and intriguing for buyers.

Recall:

- The expansion and reduction of the facility must be allowed for.
- The design of an exquisite space that is rare in the area will promote social interaction.

- The Breytenbach Theatre has a rich history of adapting to community needs; reinforcing this idea will enhance the functionality of the site.
- The Breytenbach Theatre needs a safer environment and more exposure for its productions.
- Textiles are an inherent part of our lives; the production of textiles will provide a viable economic opportunity.
- The response is not merely architectural but also a functional production system.
- An existing social need - dependent on public participation must be addressed.

3: Students and teachers
1. Pleated airbrush-dyed cotton
This section assembles all information gathered to compose a building form.
1. Normative Position

Architecture as a voice.

Expression is a method of uttering or representing an embodiment of thought by an individual voice or gesture. It reveals the innate character and sentiment of an individual. Humans express their emotions through the construct of a phenomenon, be it dialect or object. We create to express this inner voice. In a country with our social and political background and current conditions, we as its people are struggling daily to make this voice heard. Places of expression are needed. Be it open or closed, space will provide a platform for reconstruction.

Architecture shapes the daily world we live in. The daily transformation of architecture confronts the issue of its unchangeable essence and the possibility of expression that is inherently present.

“Expression 1: I have seen how always, in every shape, a certain form, a certain line, repeats itself; how a forehead seems to tally with a knee, a hip with a shoulder; and how the essence of this is the very being and temper of the person, who alone could have such a knee, or shoulder, or forehead. And this too, I have noted, which I saw one night, as I helped a woman bear a child: that the sharpest pain and sweetest pleasure seem to have almost one expression.” (O.M.A, KOOLHAAS, R & MAU, B 1995:390).

My ideal would be “The almost one expression”, so that architecture in its fundamental nature can become one with its users and be the direct expression of them. Thus all becomes signified, the whole hierarchical pyramid of significance becomes an even plane. The mundane, in this instance, the masses of people in Sunnyside who have merely become numbers, will become significant in order to construct an individualized architecture.

Afro-centric:

The author was raised in a westernised world colliding with an African society. When attempting “The almost one expression”, culture and its social context must be investigated as collaborating influences. Exploring the realms of African culture and how local people feel about community and their relationship towards it, Afro-centrism will augment the actual performance and pragmatics of a facility promoting the expression of culture and identity.
Culture allows humans to shape their own natural and physical environment. When culture is passive in a community there is a lack of expression and a steady loss of identity. Culture should not be interpreted as a different aspect of everyday life. People have a tendency to modify it into events and social interactions, a tradable commodity imported and exported to museums and galleries. Culture becomes mute, numb and inanimate. According to Van der Walt (1997:5-35) five cohesive components of culture are the following:

1. Religious aspect: personal religion
2. World view: values, norms of life
3. Social: language, institutions, laws, economic relationships
4. Material: tools, machines and buildings
5. Behavioural: habits and customs

These aspects can be seen as layers: religion at the core and behaviour at the periphery. The outer layers change more easily than the core, for example even though there is a vast presence of different Muslim, Hindu and Christian denominations in Sunnyside, one rarely sees them wearing their traditional clothes. Thus behavioural patterns are the most flexible aspects of renewing culture. If a building can possibly become a medium by which behaviour is changed, one is a step closer to redefining the community’s culture.

Manuel Castells constructed a project identity, occurring when social actors, on the basis of whichever cultural materials are available to them, build a new identity that redefines their position in society, by doing so, seek the transformation of overall social structure. Multi-culturalism in an area such as Sunnyside is subsequently the most relevant construction.

“We know of no people without names, no languages or cultures in which some manner of distinctions between self and other, we and they are not made…. self-knowledge - always a construction no matter how much it feels like a discovery — is never altogether separable from claims to be known in specific ways of others.” (CALHOUN 1994: 9-10)

When disregarding the value of all variants in life, no meaning is left to define life and thus to express it. We are neglecting the tragedy of the loss of identity across all cultural groups in South Africa, before or after Apartheid. The returning to basic human tradition - to create - neutralizes this loss.

The unified expression of the life of man = culture. Expression is the in-between of Identity and Culture.

Identity +Culture = Reality.
(Expression)

Therefore we have the power to change this current reality by becoming Afro-centric: Stripping off all preconceived ideals, becoming aware and moulding ourselves into the environment and becoming part of it.

Non-interventionist approach: Formulate strategies of urban action that match the intricacy and recurrent evolution of the existing environment.

2. Architectural development:

Copy, paste and change.

Introducing a new urban form into another by inserting transient, persistently changing elements that mix together territories, objects, people and signs, propagates the concept of constant progression. There is a prominent axis of movement through the site. Taking pedestrian and vehicular movement as primary initiation and constructing built form along this axis will ensure the effective use of the site in terms of social and functional interaction.

“Architecture is often seen as an expression of the society and culture from which it was created. The range of influences that inform an architectural design are complex. Some are clear rational decisions made in response to aspects such as functionality, structural logic or environmental conditions, while others may be more subtle and may impact the design consciously or sub-consciously. These could range from historical precedents, stylistic references, or a particular awareness of the world, of society or culture, to elusive notions of spirituality and unconscious forms of artistic expression.” (MPTS 2001:15)
The building requires three layers of functional participation: public, semi-public and private. When zoning these layers onto the movement axis, the site generates a form.

“The arts and their exhibition continue to provide one of the most exciting areas for the development of high quality contemporary architecture. For those who are only moderately interested in the ideas of “virtual” museums, art and art museums constitute one of the few areas where a certain durability and immutability are considered appropriate.” (JODIDIO 2001:13)

The NMDC requires a continuous street façade on Nelson Mandela Drive. This will enhance the urban form that has degraded into a parking space. Parking will remain a functional issue in the design, but it will become an unseen element hidden from the street. A transparent, visually interactive façade will enhance the pedestrian, cycling and vehicular experience. The design must respond to different speeds of movement and promote communication with each type. The proposed permanent and rotating exhibition spaces can provide the most effective response.
The picture plane is subdivided in a highly inventive way, usually based on symmetrically arranged geometric fields but avoiding repetitive zones. The fields are differentiated from each other not by dividing borders so much as by internal configurations of applied linear pattern.” (HOBBS 2003: 39)

By studying each movement axis of the site on section, a linear pattern emerges as a reaction to each. (Fig 1) The building becomes a tapestry. The western façade becomes a narrative platform for discovery that will attract viewers with art displays and silkscreen printing and weaving workshops (Fig 2). A long, transparent building serves as a facilitator for expression and guides the user and viewer to the different stages of production. The architecture permits art works to speak for themselves (Fig 3).
3. Architectural assembly:

The architecture must be viewed in multiple ways and must be flexible to accommodate change. Transparency from Nelson Mandela drive through to a small pocket park between the Breytenbach Theatre and the new building will allow interaction with the environment. The building generates three layers:

- Inner area walled in – shielded from daylight
- Outside area walled in glass - natural light for viewing
- Outer area delineated by passive climate - controlled arcades - flooded by light

The building becomes history as it represents the passing of art from one generation to another.

**General design principles**

**Educational space according to Tutt and Adler (1998:254-260)**

Flexibility in use is the most important factor in designing such a facility. There are a number of diverse activities (noisy, messy, clean) which must co-exist in varying proportions throughout the training day. Additional specialists, teachers, parents and students may need to be accommodated so as to make the most of the space. In practical terms flexibility of use can be considered on the following levels:

*Long term use:* This is inherent in the original design. It is dependent on the basic structure, the relationship of open and closed spaces together with specialized facilities, the pattern of circulation and shared facilities and environmental servicing.

*Medium and short term use:* The response to the changing patterns of teaching from week to week and month to month is related to the changes in group size and organization, staffing and general educational needs. Given a particular design, such changes can often be achieved by modifications in the layout of the furniture such as divider units and display screens. Certain basic provisions in the design will encourage or hinder the development of a wide range of day-to-day activities. For example the choice of flooring materials will welcome some activities and discourage others. The use of teaching aids often requires special storage provision, together with suitable services at the potential points of use.

**Workshop space according to Tutt and Adler (1998:81-87)**

A printing station has a complex network of functions, including material storage, component manufacture, assembly, inter-process storage, packaging, despatch and transport interface, all of which must work together.

Design for change: The workshop usually has to change all or part of its use several times during the payback period. Apart from alterations within the envelope, there may also be requirements for extension. The design should anticipate this possibility.
Linear assembly is the basic method of weaving and silkscreen production: In this method machines are arranged along work travel routes. At each station components are added, until the work has been completely assembled and finished. Supplies of components and materials are needed at each station and waste must be removed.

The workshop requirements of postgraduate students are far too greater to accommodate into an existing facility. The requirements for production will require a new building intervention. The MOTH club is being restored for a new studio for the TUT Film School. The following functions can be shared with the Textile Art Centre: food facility, social gathering space, lecture facilities, and parking.
4. Accommodation schedule

EXHIBITION

<table>
<thead>
<tr>
<th>Description</th>
<th>Rotating exhibition space</th>
</tr>
</thead>
<tbody>
<tr>
<td>Projected uses</td>
<td>Artists' and TUT student exhibition space, performance space</td>
</tr>
<tr>
<td>Light level</td>
<td>200 lux SABS 0114: Part I - 1973</td>
</tr>
<tr>
<td>Standard area per person</td>
<td>3 sqm x 40 students, accommodate 200 people</td>
</tr>
<tr>
<td>Area</td>
<td>250 sqm</td>
</tr>
<tr>
<td>Critical aspects</td>
<td>Multi-functional space. Sliding doors. Overflow space from inside to outside. Public viewing without physical entrance from west. Disabled access. Minimum head space of 4080 mm. Light fittings - adjustable lighting levels</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Description</th>
<th>Storage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Projected uses</td>
<td>Display panel storage</td>
</tr>
<tr>
<td>Area</td>
<td>40 sqm</td>
</tr>
<tr>
<td>Light level</td>
<td>100 lux SABS 0114: Part I - 1973</td>
</tr>
<tr>
<td>Critical aspects</td>
<td>Connect to exhibition space</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Description</th>
<th>Public ablutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disabled</td>
<td>1 WC, 1 HWB</td>
</tr>
<tr>
<td>Ladies</td>
<td>4 WC's, 3 HWB</td>
</tr>
<tr>
<td>Gentlemen</td>
<td>2 urinals, 1 WC, 2 HWB</td>
</tr>
<tr>
<td>Area</td>
<td>40 sqm</td>
</tr>
<tr>
<td>Critical aspects</td>
<td>Accessible form both exhibition and lecture facility</td>
</tr>
</tbody>
</table>

VISITORS’ SERVICES

<table>
<thead>
<tr>
<th>Description</th>
<th>Reception / Info desk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Projected uses</td>
<td>Entrance to Centre, waiting space, small display</td>
</tr>
<tr>
<td>Light level</td>
<td>250 lux SABS 0114: Part I - 1973</td>
</tr>
<tr>
<td>Area</td>
<td>50 sqm</td>
</tr>
<tr>
<td>Critical aspects</td>
<td>Visually stimulating textures and art to entice viewer to explore.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Description</th>
<th>Shops</th>
</tr>
</thead>
<tbody>
<tr>
<td>Projected uses</td>
<td>Display, storage</td>
</tr>
<tr>
<td>Area</td>
<td>392 sqm</td>
</tr>
<tr>
<td>Light level</td>
<td>250 lux SABS 0114: Part I - 1973</td>
</tr>
<tr>
<td>Critical aspects</td>
<td>On main pedestrian circulation routes</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Description</th>
<th>Coffee shop</th>
</tr>
</thead>
<tbody>
<tr>
<td>Projected uses</td>
<td>Public facility, food supply for students and workers</td>
</tr>
<tr>
<td>Area</td>
<td>95 sqm</td>
</tr>
<tr>
<td>Light level</td>
<td>250 lux SABS 0114: Part I - 1973</td>
</tr>
<tr>
<td>Critical aspects</td>
<td>On main pedestrian circulation routes</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Description</th>
<th>Kitchen</th>
</tr>
</thead>
<tbody>
<tr>
<td>Projected uses</td>
<td>Work area, cold room, scullery, indoor and outdoor waste</td>
</tr>
<tr>
<td>Area</td>
<td>35 sqm</td>
</tr>
<tr>
<td>Light level</td>
<td>200 lux SABS 0114: Part I - 1973</td>
</tr>
<tr>
<td>Critical aspects</td>
<td>Part of refuse circulation route, Ventilation, hygiene, storage and delivery access</td>
</tr>
</tbody>
</table>
## EDUCATION

<table>
<thead>
<tr>
<th>Description</th>
<th>Lecture theatre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Projected uses</td>
<td>Group lectures, seminar board room</td>
</tr>
<tr>
<td>Population</td>
<td>48 people</td>
</tr>
<tr>
<td>Area</td>
<td>91.5 sqm</td>
</tr>
<tr>
<td>Light level</td>
<td>500 lux SABS 0114:Part I- 1973</td>
</tr>
<tr>
<td>Critical aspects</td>
<td>Adequate ventilation, glare prevention, low noise level</td>
</tr>
<tr>
<td></td>
<td>Fire escape routes, disabled access</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Description</th>
<th>Silkscreen workshop</th>
</tr>
</thead>
<tbody>
<tr>
<td>Projected uses</td>
<td>Skills development education</td>
</tr>
<tr>
<td>Population</td>
<td>120 - groups of 40 x 0.65 msq per student</td>
</tr>
<tr>
<td>Area</td>
<td>390 sqm</td>
</tr>
<tr>
<td>Light level</td>
<td>400 lux SABS 0114:Part I- 1973</td>
</tr>
<tr>
<td>Critical aspects</td>
<td>Wash-up area, natural Light, flexible furniture for group and individual seating, high noise level, adequate ventilation</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Description</th>
<th>Dark room</th>
</tr>
</thead>
<tbody>
<tr>
<td>Projected uses</td>
<td>Silkscreen exposure</td>
</tr>
<tr>
<td>Light level</td>
<td>100 lux</td>
</tr>
<tr>
<td>Critical aspects</td>
<td>Entrance foyer to avoid natural light from entering, Mechanical ventilation</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Description</th>
<th>Blaster room</th>
</tr>
</thead>
<tbody>
<tr>
<td>Projected uses</td>
<td>Silkscreen cleaning</td>
</tr>
<tr>
<td>Light level</td>
<td>100 lux</td>
</tr>
<tr>
<td>Critical aspects</td>
<td>Floor sinks</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Description</th>
<th>Lecturers’ offices</th>
</tr>
</thead>
<tbody>
<tr>
<td>Projected uses</td>
<td>Office and consultations</td>
</tr>
<tr>
<td>Area</td>
<td>90 sqm</td>
</tr>
<tr>
<td>Light level</td>
<td>500 lux SABS 0114:Part I- 1973</td>
</tr>
<tr>
<td>Critical aspects</td>
<td>Office space must accommodate tutorial space</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Description</th>
<th>Media research lab</th>
</tr>
</thead>
<tbody>
<tr>
<td>Projected uses</td>
<td>Computer services and reading research facilities</td>
</tr>
<tr>
<td>Population</td>
<td>40</td>
</tr>
<tr>
<td>Standard Area per person</td>
<td>2.3 sqm</td>
</tr>
<tr>
<td>Critical aspects</td>
<td>Low noise level, comfortable environment, library, archive, internet</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Description</th>
<th>Design Studios</th>
</tr>
</thead>
<tbody>
<tr>
<td>Projected uses</td>
<td>Entrepreneurial design/working space</td>
</tr>
<tr>
<td>Population</td>
<td>40 people = 295 sqm available</td>
</tr>
<tr>
<td>Standard area per person</td>
<td>4.6 sqm per person</td>
</tr>
<tr>
<td>Sanitary fixtures</td>
<td>Sink</td>
</tr>
<tr>
<td>Critical aspects</td>
<td>Link to research lab and lecturers’ offices</td>
</tr>
</tbody>
</table>
Recall

- Architecture provides a voice for people to express their culture and identity.
- The site has generated a form responsive to the context.
- Design intervention in Pretoria will require an Afro-centric approach resulting from studying existing successful buildings.
- The general requirements for the building type are fixed.
1: Heavy linen elephant crepe
This section entails the study of architectural precedents, both international and local, the exploration of design influences when composing a building form; design style, material usage and detailed elements.
1. Idols of Implementation:

When researching all aspects concerning the placing of a building system into the prescribed context, various issues arise that do not necessarily pertain to the physical construction of the building itself. Subjects such as marketing initiatives, resources, accommodation of different users, safety, maintenance, and community participation are but a few that need to be addressed. Mere analysis of an aesthetically pleasing architecture does not allow for the exploration and understanding the realities.

Determining the actual challenges of the design execution will lead to a successful application. The following aspects will influence choices:

- Creating a building that becomes a play of light, texture and movement that will invite the public to interact with it.
- Creating a sense of place of definite cultural significance in a decayed urban region.
- Defining space and controlling movement, for ultimate access and participation.
- Designing thresholds between the historical significant and the vibrant new.
- Re-establishing meaning, identity and value in the Oeverzicht village.
- Providing a suitable response to the historical, cultural, social, economic and physical context.
- Redefining the pedestrian street to river to building relationship.
- Accommodating a network of activities spilling into and out of the building.
- Providing flexible spaces to accommodate user needs.
- Using textiles and crafts in architecture.
- Creating a sustainable eco-building model.

Expertex Textile Centrum, Enschede, eastern Netherlands.

Architects: Brookes Stacy Randall and IAA Architecten
Client: Twents Textiel en Confectiecentrum.
Relevance: Textile school with coinciding functions and heritage context.

1: Perspective of new addition and old factory
The Expertex Textile Centrum was first established as the De Maere Textile School in 1928. Art and craft classrooms surrounded a demonstration factory space for training factory members of the Dutch Textile Industry. After the refurbishment and repair of the school in 2000, the demonstration area was converted into a museum displaying antique machinery. The rest of the building hosts IT-based textile production and processes. A restaurant next to the museum allows users to connect with their heritage through glazed interiors that allow the observation surrounding of elements and movement patterns. A new wing was added to accommodate additional research labs and facilities.
The modern addition to the historic building is proficient in a plain and elegant manner. A glazed wall functions as a link connecting old and new. It consists of a steel structure and load bearing concrete, supplying a robust environment for research experimentation. Walls are clad with matching coloured square pavers applied to the existing brick finish. Concrete cowls repeat the existing rhythm of windows on the eastern façade and present passive sun control. The new southern façade is fixed with a steel mesh, in keeping with the textile theme, and serving as a screen hiding the incoherent interior layouts of the workshop environment. The simplistic nature of the addition is deserving of merit.

Knowledge gained:
- Historic sensitivity.
- Repetition of existing rhythms in new manner.
- Movement past glazed barriers allows continuous interaction.
- Public spaces are centrally orientated, with semi public to private spaces located on the periphery of movement corridors, therefore creating a core of activity.
- Visual and physical interactiveness.

**Kunsthal, Rotterdam, 1992.**

**Architects:** Rem Koolhaas and Fuminin Hoshiro.
**Client:** Unknown
**Relevance:** Connects pedestrian route from freeway to Museum Park. Rotating exhibition space.

The architecture museum is a study of weight that floats above the park at the level of the dike. The luminous beacon situated next to the Maas Boulevard attracts people with its varying lightened textures.

The building concept is based on a disjointed spiral linking four different squares by ramps escalating in juxtaposition to different views and experiences. The museum becomes a journey of exploration of different conditions by the application of different materials, varied lighting and interior and exterior spaces. The three-exhibition halls have dissimilar atmospheres responding to a prescribed theme.
The 60 by 60 meter square envelope hosts 3 major exhibition spaces, an auditorium and a public restaurant. Its southern façade connects to Maas Boulevard with a ramp leading to the public entrance. The ramp connects with a public pedestrian route progressing down to Museum Park. The square is thus split by this north south-axis. The pedestrian route has parallel glass facades on its adjacent sides, involving The user with the interior spaces of the museum and providing entrances to the restaurant and exhibition hall.
Museum Park is a serene green space connecting the Kunsthall with the Podium, which receives travelling shows and circuses. The park consists of a lush environment of beautiful trees with a variety of shrubs, flowers and creepers. The natural context next to the Kunsthall inspired the informal nature of its design. The ramp entrance has a variety of different structural beams positioned at various angles. They accentuate the entrance and reflect the random condition of nature. The grid panels on the surface of the ramp are unevenly lit adding to the informal atmosphere.

A northern glass façade links the auditorium and restaurant with the park. The natural wooden floors and tilted concrete columns imitate the landscape outside. The stone cladding of the upper northern façade echos the colour prevalent in the pebbled stones in the park.

**Knowledge gained:**
- Users are enticed to explore the site.
- A variety of materials connects in a fashion that is not consistent.
- The building is a link for pedestrians.
- Interactive public functions exists on the movement route.

Architects: Abalos and Herreros
Client: Municipality of Colmenarejo
Relevance: Movement links and flexible spaces for workshops.

“This building, in a small town on the outskirts of Madrid, is a hall which can be used by the townspeople in a variety of ways. Additionally, the glass paneled doors on its principal façade can be opened up entirely to form an open wall.” (RILEY, T. 2002: 8-9)

The Abalos and Herreros architecture of exemplifies the two-fold character of design in a capital city impinged on by newfound political freedoms. Pretoria is faced with the same phenomenon: designers are faced with a new context and culturally sensitive design procedures. The proposed project reflects local and national influences, but with a universal awareness of the evolution of architectural urbanism.

3: Closed facade

4: Semi-open facade

5: Open facade

6: Plan analysis
The multi-functional intervention slots in between two existing buildings which form part of a prominent rhythmic street façade. Traditional tiled roofs and gray natural stone form part of the town’s existing building material applications. The Lounge effortlessly and lightly fills the space, repeating the existing horizontal and vertical rhythms on its façade. It can be accessed from both street entrances, allowing a perpendicular link between parallel street movements routes.

Light, colour and texture plays an important role in the building’s night to day transformation. The construction consists of a white steel frame with transparent glass-rib cladding on the facades and rotating-sliding doors. The doors provide users with the freedom to change the space and vary openings according to light and climate. Reed and cork cladding on interior walls provides insulation as well as a penetrable, textured interactive street frontage at night when large fluorescent lights highlight the installations. A small mezzanine level supplies the community with a platform for lectures, ablutions and kitchen facilities.

Knowledge gained:

- Adaptability of space, yet implication of borders to host different activities.
- Interactive and inviting nature of light and texture.
- Scale is relevant to existing buildings.
- Building becomes a node of activity by linking movement streams.
The Menil Gallery

Architects: Piano and Fitzgerald, Houston, U.S.A.
Client: Dominique de Menil
Relevance: Exhibition space with adjoining maintenance workshops.

5: Elevation

"The Menil...is a study center for an established private collection, with public but quietly contemplative galleries for a rotating selection of these works." (BUCHANAN 2000:140)

John and Dominique de Menil started collecting art in the 1930’s. The collection of 10 000 pieces consists of modern art, African art, pieces from the Cyclodean period and oceanic art. After the death of her husband, Dominique and Renzo Piano encountered and started a design exploration that resulted in a cool, natural building solution. The new museum fits effortlessly into the local conditions and radiates a calm maturity.

The building consists of three contrasting layers:
- The Basement: containing all service rooms for air-conditioning, electricity, boiler and sewage and different storage spaces.
- Ground floor: Galleries, short, rotating and visiting exhibitions, library and laboratories.
- First floor: Art storage and offices.
The client and architect embraced the concept of the village museum, a place where the functions of a museum interact with public exhibitions for the enlightenment of viewers concerning the processes involved. A long plan of arranged activities spill into a longitudinal movement corridor. Parallel to these public activities, the following functions are arranged to promote knowledge for the viewer: an art library and framing and conservation labs with public seating for observation. The main requirement for the museum was that natural light would assist in the display of the artworks. Light in its varying conditions from day to night and season-to-season brings the art works to life. Cast ferro-cement light-diffusing leaves connect to roof trusses of the gallery roof, allowing natural light to penetrate the exhibition space. The interior walls of the gallery can be adjusted to vary spatial divisions.

1: Zone analysis: ground floor

2: Zone analysis: basement

The public entrance, accentuated by a set-back with green courtyards adjacent to it, breaks the long monumental promenade resultant from the rectangular nature of the plan. Renzo Piano reinforces the contextual connection by looking for clues in the surroundings to provide formal and intangible foundations for design decisions. The steel frame structure echoes the nearby Phillip Johnson buildings and the St Thomas University. The colonnade suggest suburban verandas and the application of clapboarding echoes with the surrounding houses.
Knowledge gained:
- Simplistic movement-based forms achieve optimal function.
- Use of local materials and climatic design strategies do not affect the project’s ability to be contemporary and new.
- Time zones of light affect the acuity of display.

4: Section

Drill Hall, Johannesburg CBD.

Client: Johannesburg Development Agency
Architects: Michael Hart Architects.
Relevance: Historic context and urban intervention.

According to Darrol (2005:26-31) the Drill Hall is situated in an active but dilapidated and hostile area of the inner city. In close proximity to the residential area of Joubert Park, the railway lines and the Jack Mincer taxi rank that supports 6000 taxis daily, the site is exposed to chaotic traffic, street traders and retail displays from the Ster Kinekor City on its eastern boundary. The challenges faced by the design group for renewal:
- To change a military facility into a public, interactive space.
- New building functions had to be relative to its present and past public nature.
- To rebuild what was there adding clear visual and physical links to its surroundings.

5: Perspective
In 1904 the Headquarters for the Transvaal Volunteers was built, and became known as the Drill Hall. The double storey twin-gabled hipped roof with distinctive arcade façade served as recreational facility and a practise hall for military drills.

1914 An underground rifle range was built.

1920: New buildings were constructed along Plein and De Villiers Street.

1922: During strikes the building hosted the troops that controlled the riots.

1930 to 1970: Served as gathering and dispatch venue for vitreous of the two world wars. New Years Eve dance parties launched hundreds of people into their New Year till the 1970's.

1956 to 1957: Hall used for Treason Trial investing of the majority of the African National Congress members, for conspiracy to overthrow the government.


1992 to 2000: Owned by the Department of Public Works. Invaded by squatters of the poor and homeless.

June 2001: Fire destroyed western wing and 7 people died.

April 2002: Fire destroyed Drill Hall and claimed 5 more lives. Johannesburg City Council grants R10 m to SAHRA to restore the Drill Hall as a public open space of historical significance, to provide recreational opportunities and form part of the cultural tourism trail.

2004 June: Renewed Drill Hall opened on dates of its centenary.
The Public Space:

A fire destroyed the original Drill Hall. It has now been converted into an open, paved public space. The eastern building was demolished to create a forecourt. Robust red brick benches and Celtis Africana trees provide a comfortable seating area for the public. These are surrounded by concrete display panels conveying the site’s history. Excavated guns and ammunition cast into a concrete panel portray the site’s military significance. New duplicates of the original concrete columns are placed in their historical positions, enclosing the main square. They bear the 156 names of the accused from the Treason Trial. The underground rifle range which was previously reached by a trap door in the Hall has been replaced by a curved memorial wall and podium for military address by the Rand Light Infantry. The military zone is provided with separate access points and circulation routes to the public spaces.

Western portion:

The JPP (artists’ group) and the Community Chest are non-profit, community-orientated groups occupying the west building. The fire destroyed the original eastern façade. The new intervention includes:
- New steel structures with pitched, corrugated iron roofs reflecting the historic gables that overlooked the square. These are very transparent and host the new art gallery while promoting visual links with the public space.
- The Community Chest is located on the ground floor in new offices refurbished with existing materials and fittings.

Southern portion:

The one-storey red brick building was built in 1920. It served as a prosthetic limb factory and provided medical services for soldiers injured in the World Wars. The Johannesburg Child Welfare Society currently occupies the building and the following alterations have been made:
- The building and roof have been restored
- Skills training workshops occupy former technical rooms. Sewing, hairdressing and computer training take place in these facilities.
- Showers and a kitchen are available for future use, providing food and ablutions to the homeless.
- A New walkway cuts through the building to link the street to the public space.
Northern portion:

The double-storey building has been rehabilitated for the Defence Force and hosts the Rand Light Infantry. The building has been completely restored and a new roof was fitted. A great attempt was made to retain the original finishes and fittings.

The Drill Hall conserves the rich and diverse cultural heritage of the site by retaining most of the existing buildings and encouraging awareness through the addition of historic information displays on artworks and the built environment.

Limitations:

- Due to the existence of security fences and the presence of the military, the space is not always perceived as public.
- Natural ventilation is unsuccessful due to air pollution and a high noise rate.
- Functions do not spill into the central space.
- Although the public space is historically significant, it is not very inviting, especially for other activities.
- There is a lack of public amenities promote use of the public space.
- There is a lack of shelter against wind, rain and sun.

Knowledge gained:

- The building works in its urban context, relating to the upgrading programme and tourism routes.
- Design is contextual. It addresses the three most relevant subjects: cultural, political and military.
- Adaptive re-use of the buildings was achieved.

1: Infantry building

- Relevant users occupy buildings that promote the activities desired on site.
- New building interventions are Light and unobtrusive.
- Historic significance does not undermine the potential of a modern interpretation with contemporary building solutions.
- Impressive use of ordinary materials: brick, galvanized steel s-rib roofing and concrete.

2: Eastern building- pedestrian link
Department of Trade and Industry (DTI) Campus

Client: Department of Trade and Industry (DTI)
Relevance: Part of Nelson Mandela Development Corridor within the 250m designated radius from the proposed site and urban heritage sites.

The DTI Campus is situated on the corner of Esselen Street and Nelson Mandela Drive. It has become one of Pretoria’s building landmarks due to its vibrant and varied style. The planning of the scheme confronts the colonial and Apartheid framework by mingling public and private space, and avoiding cultural boundaries. The seven different buildings have four levels each that are linked by a covered public pedestrian route.

The designers drew on a Mapungubwe influence for the spatial organization and themes is present in the architecture. That society’s trade relations, sacred leadership and class distinctions conjure the themes of royalty, industriousness, administration as machine for business, assembly of nations, people and labour, and the future.

3: Esselen entrance

4: Main axis
The phased development allowed buildings to be occupied in stages, thus making the venture economically feasible. An unrestrictive design framework accommodates adjustment and includes changing technologies. The historical structures close to the Apies River bordering the site has been revamped and retained for the Theosophical Society.

The northern orientation of the buildings and the use of evaporative cooling provides ideal climatic conditions. The eastern and western facades control the climate by using interesting detailed fixtures. The signature colour is orange mixed with brick and stone finishes portraying a vibrant African architectural language. The flowing interwoven lines of the landscape, interior design, signage and winding path mirror the Mapungubwe Rivers that represent life.

Limitations:
- Relevance of Mapungubwe historical context to Pretoria context can be questioned.
- The design is very prominent, and different thus limiting the style of extension.
- The scale of interior pedestrian route is exaggerated to such an extent that intimacy is lost.
- Building entrances are unresponsive for safety reasons.

1: Atrium detail
Knowledge gained:

- Incorporation of art into building.
- Highly responsive exterior facades and spaces.
- Vibrant environment with pedestrian seats, walkways, display and water features.
- Interactive quality continues in interior.
- Interesting design detail solutions to climatic control.
- Architectural language repeated in various forms.
Pretoria CBD:

The author explored the streets of the CBD of Pretoria to develop an architecturally sound contextual design language for the Textile Art Centre. Pretoria has various international building styles and influences. The elements captured are personally significant visual magnetisms, whether good or bad.

“Pretoria Regionalism, the Third Vernacular, reflects a particular response to nature and landscape through the economical use of naturally available and industrially produced materials with an empirical response to climate, all of which tempered the emergent tenets of the modern.” (FISHER 1998: 123)
Norman Eaton’s architectural approach is greatly imprinted in my frame of reference. The author documents various different projects of Eaton’s work in the archive, the following features of his architecture exemplify Pretoria Regionalism according to FISHER et al (1998: 125):

- Rustic brick / clinker and plastered walls
- Whitewashed stock bricks
- Low-pitched corrugated iron roofs
- Thatched roofs
- Deep shaded eaves and verandahs
- North facing living spaces with window fronts and climatic responses
- Cross ventilation by top-hung windows and sliding doors
- Brick pavers and planters
- Sensitivity to landscape and land features
A model investigation of the characteristic traits from the sketches of Pretoria allowed detailed features of the context to materialize.
2. Design Influences
The pictures highlight specific detailing and aspects of design that will influence the building. When dealing with a facility that will house a combination of different activities, the design details and style must guide the user to utilize the building. The building will have to speak / express itself in order to control circulation and access as determined by private, semi-public and public environments. Natural light must be provided for workspaces and to facilitate the comfortable viewing of exhibits. Different textures in the form of materials used in the building composition will create interactive spaces and provide barriers for suggested movement and viewing.
1. Double knit nylon mesh coat
This section contains the concept proposals for the architectural development.
1. Design Development

The development of the project was dynamic and sporadic. Various aspects influenced it simultaneously, however the following categories determined the design decisions made.

Movement

The location of the site is subject to different types of movement patterns: vehicular, pedestrian and cycling. The movement required through the site connecting it with the Oeverzicht Art Village must become an activity within a socially interactive space.

Movement models:

The conception of these models were aimed at bringing dimension to the existing movement patterns on site.

Model 1: Explores the existing vehicular and pedestrian movement patterns on site

Model 2: Explores the rhythm of movement at different speeds. Increments of 15m were chosen for cars to view the building, 10m increments for cyclists and 5m increments for pedestrians. The various tempos from the patterns were the first aspects influencing the form of the design.

Axes

The desired movement routes provide axes of development. A definite spatial character will evolve primarily from these axes. To promote design unity, building functions will latch on to the different axes. Enough space should be allowed for other types of demands to be met, for example outdoor exhibition, meeting and seating spaces, and a market space. These activities emphasise the necessity of a planned heart space. The heart space will allow activities in the building to spill out into an outdoor experience available to the public. Along the axes, clear hierarchical dimensions and lines of sight must be established. Level changes, soft and hard spaces, textures and focal points will guide pedestrians and drivers to different
Three axes are essential for establishing successful movement patterns on site:

- **1**: The Nelson Mandela Drive / Oeverzicht axis (Public)
- **2**: The Textile Art Centre / MOTH Club axis (Semi-public)
- **3**: The Textile Art Centre / Breytenbach Theatre axis (Public)
Programme

The specific spatial requirements of and relationships between the different building functions will inherently shape the built form. (fig 1). This will be demonstrated later in this document. Mass is focused on the Nelson Mandela Development Corridor (fig 2) on the Nelson Mandela Drive, MOTH Club and Breytenbach Theatre facades, and will include an internal courtyard (fig 3).

On the ground floor, the western portion contains public functions: shops and flexible, permanent and rotating exhibition spaces. This relates to the Nelson Mandela Drive pedestrian route and the market space parallel to the development proposed by the Apies River Urban Design Framework. The first and second floor plan contain rental office spaces, with additional mezzanine levels.

The northern portion consists of administration and lecture facilities on the ground floor, shared with the Film Studio (MOTH Club). The first floor contains a research lab and design studio. The second floor contains a multipurpose space for weaving, papermaking and batik, and overlooks the heart space. This is connected to the silkscreen workshop, to share wet facilities and storage.
Establishing visual links is a primary requirement for designing an interactive environment. As the multi-storey buildings overlook the heart space, the facade and sectional development will determine the manner in which these links are created. However, before starting the design process, and keeping the above in mind, a study of the complete built form and the aesthetic feeling it conveys, was done. The following four models are radically different, yet each contains prominent aspects that will determine the final design.

**Proposal 1:**
Mass was explored mainly on the western façade connecting with three north-facing elements. The façade does not
communicate the suggested movement through the site. The transparent protruding western façade, interacting with the street and the sectioned roofs allowing natural light into the spaces, is a valuable idea to retain in the final design. Private courtyards spill into a larger green space that becomes the main movement axis. Lack of form in this space causes it to be undefined and unresponsive to the public. The landmark placed on the southern entrance of the site becomes a freestanding element that does not relate to the rest of the buildings, and the façade towards the residential block promotes no interaction.

Proposal 2:
The landmark element is placed in the centre of the site and becomes part of the built form. Thus, the building itself becomes the landmark. Its diagonal placement promotes movement onto the site. The western façade is a...
Proposal 3:
The buildings mimic the shape of the site. A strong, robust façade faces the MOTH Club. It overlooks a green space connecting with the existing green space in front of the Club. A prominent mass runs parallel to the movement axis and opposite, a semi-covered space progresses towards an open green space with existing trees. The orientation of the buildings, structures the intended movement through the site. Textures and the play of shadows are explored on the façades. The eastern façade becomes an important announcement for attracting movement from Oeverzicht.

huge billboard and forms most of the mass. The movement route progresses through a semi-built environment. A concrete skin wraps the soft space and connects to the western façade. Two facing buildings become an arcade that progresses towards the Oeverzicht connection. A lack of exterior interactive spaces makes the architecture gloomy and austere.
Proposal 4:
Three buildings of varying heights propose mass to the back of the site. Their orientation determines a movement route. A separate gallery runs along the western façade with a semi-covered public green space adjacent to it. A strong landmark announces arrival at the site. A covered walkway connects to the parking area of the Breytenbach Theatre. Covered areas, but not enclosed spaces, are explored.
2. Urbanism and community

In the essay, “Whatever happened to Urbanism?” by Rem Koolhaas, the redefinition of urbanism is discussed. Society is faced with the lack and ignorance of sustainable and appropriate urban intervention.

“Now we are left with a world without urbanism, only architecture, ever more architecture. The neatness of architecture is its seduction; it defines, excludes, limits, separates from the “rest” - but it also consumes. It exploits and exhausts the potentials that can be generated finally only by urbanism, and that only the specific imagination of urbanism can invent and renew. The death of urbanism - our refuge in the parasitic security of architecture - creates imminent disaster: more and more substance is grafted on starving roots.” (Koolhaas et al, 1994: 967)

The rest

High residential developments and a high population characterize Sunnyside. The majority of people, singles, marrieds and the elderly live in flats. The transient community fluctuates with people constantly moving in and out the area. Markets and on street trading brands this area as one of the most culturally diverse places in Pretoria. The community desires relaxing, safe pedestrian environments with entrepreneurial opportunities in public flea markets as well as skills development workshops. Amenities and green space closer to the flats are also requirements. The Tshwane University of Pretoria will manage the Textile Art Centre, but community interaction will provide vibrancy and exposure of textile production as a self-sufficient job opportunity.

Dewar suggests that education creates environments which promote learning. Formal and informal education is important; informal referring to exposing people daily to a wide range of activities and experiences. The Textile Art Centre must relate to existing places of intense activity. It must be seen as an institution that serves the broader community. Adult education must be integrated in evening sessions, and the design of the building must in general enable conversion into shops and other facilities if there is a demand. Communal education facilities such as exhibition halls, libraries, workshops, laboratories, and audiovisual teaching resource centres must serve the community as a whole. These facilities must be located close to continuous routes that carry public transportation. (Dewar, D and Uytenbogaardt, R.S. 1994: 49)

Meeting spaces: Open and closed gathering places are important components of social infrastructure. Events should be able to spill out of places to accommodate weather changes and the number of people attending. Halls should be associated with other public facilities such as markets. The location of facilities must create forums that over time assume a symbolic significance their outweighs the purely functional role. Spaces must be carefully designed to create adaptable, non-specific areas which can meet a wide range of demands and which offer a choice of space types. (ibid: 50)
According to Dewar, urban markets provide the following advantages of physical agglomeration to a large number of traders in a space (ibid: 53):

1. Small operators gain access to viable locations
2. The concentration of large numbers of traders increases their drawing capacity and enables them to compete with larger, formal operators
3. The physical proximity of large concentrations establishes the potential for other forms of mutually advantageous co-operation, such as delivery of bulk supplies from wholesalers and collective use of vehicles.
4. Markets in low-income areas can provide an important service to consumers due to the variety of choices offered and not having to travel large distances.
5. Potential conflicts such as impairment of movement flows, hygiene and unfair competition with formal traders is resolved.

“Since urban is now pervasive, urbanism will never again be about the ‘new’, only about the ‘more’ and the ‘modified’. It will not be about the civilized, but about the underdevelopment. Since it is out of control, the urban is about to become a major vector of imagination. Redefined, urbanism will not only, or mostly, be a profession, but a way of thinking, an ideology: to accept what exists. We are making sand castles. Now we swim in the sea that swept them away.” (O.M.A, KOOLHAAS, R & MAU, B 1994:970-971)

The design implementation should redefine the relationship of architecture to the city. It must become its subject and supporter. How can this be achieved?

**Pluralistic community**

A pluralistic community is a community that contains more than one designation. The social standing of Sunnyside is already multi-variant. The economic, environmental and cultural aspects need to adjust to this fact. Marie-Ange Brayer from Archilab, an international society of architects, supports this view:

“There are urban and architectural strategies now taking shape that are designed to cope with the complexities and constant changes of our environment, which are having a profound effect on the conceptual reasoning that relates to ‘new territories’. (BRAYER, M & SIMONOT, B 2003:10)

Archilab identified the following crucial strategies for new design interventions: rebuilding the unity of the world, reinventing the landscape, making and creating new territories, conceiving, constructing and dealing with all aspects of the place. The society suggests the following for the establishment of a pluralistic community:

1. Sketch : Sunnyside street market
"It is a matter of continually devising pluralistic solutions that will lead to positive development, to a dynamic flowering as opposed to the prevailing homogenisation and standardization. In this way architecture does not merely accompany the turbulence of our modern world, but instead becomes an active force of revelation and challenge, generating a pluralistic community that can defy the synthetic system developed by globalisation." (BRAYER, M & SIMONOT, B 2003:11)

The streets of Sunnyside form a territory for many different groups of people. The drug and sex issue has been a prolonged problem in the area (fig 2). The Textile Art Centre provides job opportunities and healthy pastimes that will counteract and distract the people from these types of social behaviours.

Social organizations in the area (fig 3) can collaborate with the Centre to better outcomes for the persistent problems. Nearby day care facilities can aid parents attending the workshops. Awareness is the main constraint acting against the upliftment of the area. The residents are not conscious of the organizations available. The art created at the Centre must be mounted on billboards along pedestrian walkways to inform people of the outcomes available.
3. The Building concept

The following pictures are a diagrammatic exploration of the physical building concept.

1: Shopfront development  
2: Breytenbach facade proposal

3: Section development  
5: Poster at TUT
4: Western facade development

6: Site plan
1: Exhibition detailing

2: Ground floor plan

3: Basement

4: Shop section and arcade detail

5: Western facade

6: Exhibition walkway

7: Textile hanging art

8: Ramp proposal
Concept Model

Offices

Exhibition

Weaving workshop

Coffee shop

Heart space

Heart space
Display entrance to heart space

Responsive western facade

South-western perspective

South-western arcade
1: West - east section, visual links

2: South - north section, visual links
4. Pluralistic solutions

According to “Creating vibrant urban places to live: a primer” (Dewar, D and Uytenbogaardt, R.S. 1994: 16-22), the following aspects provide solutions to the application of urbanism.

Settlement making:

Non-pragmatic settlements are concerned with the quality of the whole rather than the parts. The making of place is most important. The accommodation of growth is also very important and it must be noted that this system does not rely on certain forms or buildings. The aim is towards achieving a timeless quality and the integration of a wider range of opportunities.

Elements of structure:

Programmatic environments have function-specific elements. Non-programmatic environments are generic and consist of four aspects: space, place, connection and public institutions.

Space: is very important in terms of movement for it has to provide a place that people find easy and desirable to use. Public space is social space and should enhance and give dignity to the activities taking place there. Public space is influenced by:

- **Multi-functionality:** Public spaces should be able to generously accommodate a wide range of activities and should seldom house only one activity.
- **Scale:** Spaces should be humanly scaled in the vertical as well as the horizontal. Spaces should not be too big or too crowded and should not overwhelm vertically.
- **Clarity of role and definition:** Spaces should be easily readable and there should be a clear distinction between public and private space.
- **Enclosure:** Positive urban spaces are well defined and have a good sense of enclosure.
- **Comfort:** Protection from or exposure to natural elements must be provided.

Place: Natural features need to be enhanced. This will improve diversity and uniqueness and provide opportunities for recreation. Public spaces should be memorable and leave a lasting impression on visitors by staging events or containing landmarks.
Connections:

The movement web is a tracery of spaces through which people move in various ways. It is also in this web where the public life of a community takes place. The web has structural significance in that it provides a pattern of accessibility. This pattern then influences choices and opportunities.

Institutions:

Universities, hospitals, etc, have always been pivotal elements in society. The placement of these elements resulted from their own set of requirements and the relationships between them. The placement of these elements in relation to others is also very important in terms of movement patterns and accessibility. Nearby public spaces are often called upon to house activities held in these elements and thus inherit some of the element-specific character.

Conclusion

By investigating the different proposals 1-4 and studying of the concept model and plans, it has become clear that the architecture will become the solution, therefore becoming a ‘parasitic security’. As part of this attempt, an adapted form of urbanism needs to deal with the site and its functions. Incorporating the ideals of Dewar, the design focus will adhere to the following:

- Extending spaces with potential: The workshops, commercial shops, exhibition and coffee shop must extend into the heart space to produce an urban activity spine. A defined yet multi-functional exterior space becomes a stage for onlookers.
- Accommodating undefined processes: The building must adapt to future change. The offices must be flexible to become home office spaces. The structure of the larger spaces must be flexible in order to create smaller spaces. The skin of the building must be removable and alterable to accommodate new technologies and fashions.
- Expanding boundaries: The Breytenbach Theatre can be penetrated to promote easy movement to Gerard Moerdyk Street. The MOTH Club (Film school) can be bridged to the Textile Art Centre for sharing of facilities and access to the heart space.
- Discovering fused entities: formalising the links that exist between spaces, and shaping them into focal points and design elements.
- Manipulating the existing infrastructure: strengthen, expand and reallocate functions.
This section contains the technical aspects considered in the design execution.
Technical Progression Report

Site: Erf 33/866 and Portion R/1340.

The site is located between the Breytenbach Theatre and Nelson Mandela Drive. The following issues were dealt with:

1. Structure

Vehicular access is allowed from Gerard Moerdyk Street, due to traffic legislation preventing it from Nelson Mandela Drive and Jacob Mare Street. The parking basement is situated underground. Access to the basement is by means of a ramp (1:8 gradient) with a 6.4 radius semi-turn circle placed on the northern border of the site, at the back of the MOTH Club. Due to the ramp having a head clearance of 2980 mm, it is the only space capable of housing the ramp due to the western border having been designated for mass development and the eastern border functioning as a public space.

The basement grid of 5600 mm centres as chosen to ensure adequate parking space, with 7500mm circulation routes. Reinforced concrete columns (330x330) are placed on the grid. The structure of the building consists of 3 storeys of extruded columns with 170mm reinforced concrete slabs every 2890mm. Thus the basement structure partially determines the design of the upper levels. Two fire staircases are provided in the basement with one fireman’s lift (2400 x 2200). Parking for the disabled is located close to lift, and ablutions are available for workers. The sewage from the basement level is pumped to connect with the plumbing grid under the slab. A 150 mm sewage pipe runs at 1:60 fall connecting to the municipal connection at the MOTH Club boundary. Mechanical ventilation is used along the southern border of the basement, where air is released via a duct. Natural ventilation is used along the northern border. Honeycomb brick bond is used on walls at levels 97 0450 up to 99 830.

Movement joints are provided on the following grids: C,F,L,O, 3 and 5. Flax rope made from waste linen fibres can be used instead of polyutherane in the joints of the building. Cavity walls, concrete columns, slabs and beams provide thermal mass. Non-load bearing brick is used for 270 cavity walls. The walls and concrete heat up slowly and retain heat releasing it overnight. During the evening, windows and vents are kept open to cool the mass of the building.

2. Water

Rainwater is collected in a segmented water tank, supported by a strengthened slab on 3rd floor roof level. Planters are irrigated by a pressured drip system. Grey water will be available from the silkscreen workshop and wash hand basins. The water needs to be filtered and treated to avoid plumbing blockages. It can be used in conjunction with municipal water to flush the toilets. A mechanical in-door filtration system is installed in the basement, pumping water back up to

1: Column structure: exposed concrete
2: Indoor gray water filter
the ablution facilities.

3. Orientation

The bulk of the building faces west. This is determined by the Nelson Mandela Urban Design Framework to promote mass along the street façade. This however allows little consideration in climatic control and energy efficiency of buildings placed facing this direction. Freedom of design was limited and placement of functions were categorised according to the needs of the different facilities. The coffee shop, lecture hall, research and weaving facility face north. A spill space for warm winter sun allows a comfortable place for students to gather. The western built mass is designed with facing windows to facilitate cross ventilation, directing eastern summer winds through the building.

Cooling is promoted by the reduction of direct solar gain by the building. The western facades make use of deep overhangs, brises-soleil and covered walkways. Architectural stainless steel mesh, Alnet aluminium polypropylene cloth, and white-plastered wall finishes reduce the amount of heated absorbed. A heart space for the community provides a cooling aid for cross-ventilation between the buildings. Trees along the eastern border and in the heart space also promote cool shadows on the buildings and paving. Deciduous trees will allow winter sun to filter through for a comfortable public environment in front of the coffee shop.

A stainless steel grid structure provides a growth screen for the eastern façade. A concrete ledge of 700mm allows pruning of plants and passive design control for direct solar gain.

3: Eastern elevation
4. Materials

According to Elizabeth Wilhide (WILHIDE.E.2002: 126-149), the following qualities of the different material applications in the building will have a great impact on the environment due to aspects of it’s embodied energy, recycling and re-use.

**Insulation:**
Cellulose insulation made of recycled newspapers and magazines and mixed with additives such as borax for fire resistance, has a U-value similar to mineral wool. Cellulose panels are fixed to the roof structure.

**Wood:**
This is a renewable resource, has low embodied energy and is recyclable. It is used for the timber walkways. Large plywood panels used as wall cladding in offices provide a smooth warm interior surface.

**Non-structural straw ceiling panels** and particleboards can be used for interior applications. Straw is compressed between heavy paper sheets at high temperatures.

**Woven paper flooring** can be used in areas of low circulation. It offers a variety of different weaves for a textured look.

**A cork floor** in the lecture facility supplies high sound absorption and insulation.

**Linoleum** flooring used in the design studio and research lab, is a completely natural product that is ideal for hygienic applications and for low maintenance. It repels dust and is durable. It strengthens with age. It is available in a wide variety of colours, patterns and textures.

**Recycled rubber** is strong, highly slip and weather resistant and ideal for application in the silkscreen workshop, weaving and clothing manufacture facilities. It is inexpensive, tough and available in a wide variety of patterns and colours.
Salvaged rock:
Salvaged rock from site excavations can be applied as textured cladding. It is very durable and reuse is a sustainable solution. Rocks can be grinded to achieve a smooth surface.

Brick:
Brick applications are essential for the Pretoria vernacular. It provides high thermal mass and enables a variety of applications. The western façade consists of plastered stock brick with a protruding brick coarse every 510mm. The proposed brick pattern on the southern and northern façades brings warmth and movement to the building.

Concrete:
Provides high thermal mass to the building. 25 percent of Portland cement is to be replaced with fly ash for floors and foundations according to engineer’s specifications.

3: Linoleum flooring

4: Rubber flooring

5: Brick

6: Concrete
Steel:
Structurally light sections are used, bolted to facilitate re-use. Metal reflects the heat of the sun and the roof covering promote maximum run-off for water harvesting. Steel can be recycled up to 90% and is locally available. A rigid steel structure is used for the walkway on the western shop front façade and a woven shading device is used in front of the design and silkscreen workshops. Klip-lock roof sheeting is used on the west-facing buildings. A flat concrete roof is used for the north facing building block. The angled-steel frame roof structure is more durable than common wood applications.

5. Solar energy
Due to the vast extent of the building exposed to the western façade, the utilization of solar energy will be an effective way to save costs. Photovoltaics produce direct-current electricity that needs to be converted into alternating-current electricity. By installing an inverter this change can take place. The system can be connected to the national grid and used as storage. Due to the 10-year life span of shading cloth in the detailed application of the western facade, its future replacement can consist of flexible thin photovoltaic film (fig 2) which is laminated to a woven polyester cloth coated with pvc and can be wrapped around the steel structure to form a loom effect. Research in this field is still advancing but no projects are commercially available yet for application.

6. Climate control
Cross ventilation is promoted by facing windows in all building sections. Overhangs of 500mm on northern sections and 1200 on western sections provide passive climatic sun control for the buildings. Direct solar gain is limited. Double-glazing and textile sunscreens on the western and eastern facades prevent direct solar radiation in summer. If necessary console air-conditioning units can be installed on the eastern office façade. A wall offset of 1m from the eastern boundary line is provided and units will go unnoticed, hidden by the growth screen.
Stainless steel mesh is a highly durable and resistant material. Stainless steel becomes resistant to corrosion and weathering by the reaction between its chrome content and oxygen. It is low-maintenance and has good acoustic values. The mesh diffuses and reflects solar rays. Due to its permeability, cross-ventilation is still possible when applying it as a sunscreen in front of the office block (fig 6). The Futura (fig 3) and Zambezi (fig 4) types mesh are used due to their high transparency levels. Their textures are also more prominent, thus the varying rotated applications in a steel frame (fig 7) of the two types provides a patterned façade.
1: Loom detail

Alnet shading loom detail:

Cooltone UV Ultra Block Shade Cloth is available in a wide range of options (fig 4), which provides fashionable and durable protection against the sun and elements. The cloth allows heat to escape while blocking harmful UV rays. The cloth is silkscreen printed to present the pedestrian and vehicular routes with an interesting interactive façade (fig 1&2). It can be dismounted and replaced by new more fashionable options. It is mounted to the loom structure (fig 3).

A wide variety of polypropylene ropes (fig 5) are available and can provide an insightful platform for the weaving facility. The weavers can make colourful textile sunscreens that can be used for the building itself and be sold for financial gain.

3: Loom effect

4: Shading cloths

5: Synthetic ropes
7. Recycling:

“Japanese born architect Toshiko Mori has challenged the barriers that divide art from architecture from the real world. Her WOVEN INHABITATION, presented at the Artists’ Space in New York in 1999, seeks to offer a simple, elegant solution to the vast problem of providing temporary housing to the refugees or victims of natural disasters. Her concept is to make use of ‘the woven remnants of revolutionary industrial fabrics already utilized by aerospace, medical and fashion industries but never developed as an architectural building product.’ Mori proposes an elegant, inexpensive solution to a vast problem.” (JODIDIO.P. 2001: 394).

6: Woven scrap material

Woven scraps and silkscreen cut offs can be used by the workshops for a woven inhabitation project (fig 6). The panels are inserted into the sliding doors of the exhibition gallery. Panels (fig 8) can be used for home partitions and as insulating cladding for squatter camps in cold environments. All waste products that cannot be salvaged for this purpose can be woven into floor rugs. Waste from the coffee shop will be separated in the refuse quarters into the following categories; glass, metal, organic and paper. A composter for organic waste will be located in the basement and can provide fertilizer for the gardens on the premises.

7: Construction of panel: strips stitched to rope woven to chicken wire
Fire strategy: 1:600
8. **Fire strategy: according to SABS 0400-1990 Part T: 157-221**

NBR TT16.2 Provision of escape routes where the travel distance is less than 45m in any building three storeys in height, and emergency route shall not be required. Any door opening in the path of travel along a feeder route shall be a double swing door constructed of non-combustible material (TT18.1-2). See (fig 1).

TT21.2 states that the width of any escape route shall be determined according to the population of the room. A maximum of 120 people will have a minimum width of 1100mm.

TT23.8 The distance between any change in floor level and the centre line of a doorway in an emergency route shall not be less than 1.5m.

TT31.3 A manually activated audible fire detection and alarm system shall be installed throughout the building.

TT35.1 Hydrants in position subject to direction by the local authority shall be provided, with 30m length fire hose.

TT36.1 An approved sprinkler system shall be installed in any storey that exceeds 500m² of total floor area.

<table>
<thead>
<tr>
<th>Occupancy type (A20)</th>
<th>Structural stability (TT7)</th>
<th>Portable Fire Extinguishers (TT37.4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A3: Places of instruction</td>
<td>90 min</td>
<td>1 per 200m²</td>
</tr>
<tr>
<td>C1: Exhibition hall</td>
<td>120 min</td>
<td>1 per 200m²</td>
</tr>
<tr>
<td>B3: Low risk commercial</td>
<td>90 min</td>
<td>1 per 400m²</td>
</tr>
<tr>
<td>service</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D3: Low risk industrial</td>
<td>60 min</td>
<td>1 per 200m²</td>
</tr>
<tr>
<td>F3: Small shop</td>
<td>120 min</td>
<td>1 per 200m²</td>
</tr>
<tr>
<td>G1: Offices</td>
<td>60 min</td>
<td>1 per 200m²</td>
</tr>
<tr>
<td>J2: Moderate risk storage</td>
<td>90 min</td>
<td>1 per 100m²</td>
</tr>
<tr>
<td>J4: Parking garage</td>
<td>60 min</td>
<td>1 per 400m²</td>
</tr>
</tbody>
</table>

Exposed structural steel elements (interior and exterior) are painted with a thin film of intumescent mastic coating. A topcoat of non-combustible acrylic paint for a matt silver finish matching natural anodized aluminium must be applied. For connection points of steel and concrete, the steel will be cast in-situ.

9. **Inclusive environments: according to SABS O400-1990 Part S**

The building mass of the Textile Art centre frames the pedestrian public route to Oeverzicht village, therefore it is essential that the space it contains is accessible to all people. Stramps (1:12 gradient) descend into the heart space of the building complex, allowing easy pedestrian access for walkers and disabled people. Textile stainless steel mesh light columns will provide diffused light in the evenings on all movement routes. A ramp descends into the exhibition space, and level changes into the shops on ground level are a maximum of 30mm. A lift is provided for the disabled access from basement up to second floor level. A toilet for the disabled is provided on every level. One parking space close to the lift on basement level is allocated for the disabled.
Northern Elevation  1:200
50 dia galvanised mild steel round with flattened ends fixed to columns with M20 bolts.

Locknut 10 dia

M10 eye bolt

50x50x3 galvanised steel angle frame.

5mm round bar resting on M10 bolts.

Welded wrap cables connect mesh to bar.

50x3 flat steel plate

Architectural stainless steel wire mesh: Futura

22x14 laminated soft wood floor panels with 5mm gaps fixed to slats with 25x25 angle brackets with counter sunk M10 bolts @ 400 centres.

50 x 50 galvanised steel channel welded to structural angle column @ 900mm above wooden deck.

White tinted 10 mm thick safety glass plane.

50x 114 laminated saligna slats (Preservation according to SABS 460) fixed to I beam with 114x25 purpose made steel channel brackets every 1000mm.

Purpose made galvanised mild steel connector clamp bent to bubble radius of 90 degrees, welded to steel beam.

90x90x10 galvanised steel angled bracket fixed to beam and column to with M20 chemical bolts.

100x53 I section steel beam with thin film intumescent mastic coating.

150x150x18 equal angle leg steel columns welded thin film intumescent coating and bolted with M35 chemical bolts @ 1000 centres.

125 x 300 x 10 steel flat bar bracket welded to base plate.

125 x 20 steel base plate placed on non-shrink grout.

Galvanised steel bolt cage according to engineer specifications.

Brick pavers sloping 1 degree to Nelson Mandela Drive on 150 concrete surface bed on 0.35 polyolefin DPC.

30 dia round flat (10 mm thick) polysulphide spacer.

Timber walkway

Brick paved walkway

site boundary line

Detail 2 Architectural

Mesh 1:30

600 x 900 concrete ground beam

1200x1200 concrete
Purpose made 200 x 150 galvanized mild steel gutter welded to cantilever steel roof beam.
70x70x6 galvanized angle steel slats welded to extruded roof beam for sun protection.

Aluminium sliding window

Stainless steel spacer 50 dia: holding horizontal steel rods 3.7 dia and steel rope

Stainless steel rope 4 dia

Stainless steel spacer bracket with a clearance of 216mm fixed to slab with M20 chemical bolts

170 reinforced cantilever slab for 768mm

Detail 3_Growth screen 1:20

Interior staircase handrail_1:30
Four 1250 x 3000 x 4515 galvanized steel frames are purpose made with 50x50x2 angles in factory. Braced with 25 x 35 x 2 angles welded to frame.

Galvanized perforated steel plate welded to angled frame
Perforations: 150x150 @ 220mm centres

Serrated puzzle fit edges of the different frames allow top and bottom frames to be fixed to hook bolts.

Detail 7_disc
curtain 1:60
Detail 7 disc curtain 1:10

- 25 x 25 x 2 galvanised steel angles welded to frame as bracing
- 50 x 50 x 2 galvanised steel frame
- 10mm thick galvanised steel plate
- 10 dia galvanised hook bolt casted (in situ @ 500mm centres)
- Perforated steel plate
- Cross attack over connecting frames to create unison in the facade

- 5mm thick 200 dia stainless steel plate
- 5mm thick 200 dia copper plate
- 5 dia galvanised steel hook welded to steel plate @ 200 centres

Nicola Kortenhoeven

University of Pretoria etd-Kortenhoeven,N (2005)
The Design Journey

1. Movement route 1:

Heading south in your car, high-rise residential blocks and dense Jacaranda trees frame Gerard Moerdyk Street. In the distance at the T-junction, you see the informal taxi rank and the lines of school children heading home. Passing the Oeverzicht Art Village on your right, you smell smoke from lunches at the various pubs and restaurants opening onto the street. You put on your indicator and park your car in one of the on street parking spaces provided. On foot, you head south to Jacob Mare Street. Lush green plants capture your attention to the right and allow your eyes to focus on the protruding gable of the Breytenbach Theatre.

Turning right, you walk down the pedestrian route towards the white edge of the MOTH Club. The line of sight follows a road descending into the basement. A building link in the distance extends from the Textile Art Centre’s first floor level to the MOTH Club creating definite horizontal lines. On the roof balcony on top of the link, people are drying silkscreen prints. Wattle steel-framed brises-soleil curl around the link shading the east facing windows. Next to you, mosaic covered bollards guide your path of travel. Trees, seats, and display panels to your left enliven the back of the Breytenbach buildings. You reach a pedestrian crossing; a patterned paved speed bump provides a safe route to avoid the refuse truck closing in from the left.

While you cross, coffee shop noises draw your attention to the left. Steel mesh hangs from the roof structure facing east, slowly moving in the wind. Trees frame people sitting at tables and a north-facing balcony extending over the seating area. Movement of people in the clothing manufacturing room above the coffee shop is visible. Reaching the end of the crossing, you are faced with two possibilities. Turning left, you will pass the public phones to your right and the rotating billboard, and enter the heart space. A rising ramp lures you forward. To your right, planters and seats slowly rise to the spill space ahead. You pass the lecture facility to your left. **(position 1)**. Looking up, extended concrete beams carry the balcony overhead. Stepping into the open, a prominent face-brick corner is wrapped with a concrete seat. The transparent façade of the foyer to your left allows you to view the coffee shop and trees of the heart space. Proceeding with the final ramp, it brings you to an intersection. To your left the corridor directs you south towards the bottle wall of the office block, passing the exhibition gallery on your right. To your right, a path descends right into the green to find the original entrance to the MOTH Club.
2. Movement route 2:

A row of trees with a parallel green spine separated by a concrete walkway strip provides a trouble-free pedestrian route as you are walking down Nelson Mandela Drive towards bustling Esselen Street. Children’s laughter from Oost-Eind primary school collides with noise from the oncoming traffic. Residential high-rise brick buildings stagger out above the tree line. You reach the Jacob Mare Street crossing. To your left, taxis and cars are parked at the fuel stop where markets spill onto the street. To your right, a purple meandering line of Jacaranda trees street your eye. You gaze across the street to capture the faint orange tint of the DTI Campus. White walls with rhythmic red brick lines intrigue you to gaze to your right. Perforated steel plates tinkle in the wind as you look up at a descending staircase. A Celtis africana tree provides a cool corner. Taxis hoot and wait for the people to get up and seize a ride.

Walking further down the tree-lined route, shop-fronts of captivating textures lure you towards them. Displays spill out onto the shaded walkway. As you explore the materials at hand, a glance to the left causes your interest to dwell. Walking towards a transparent glass façade, stainless steel mesh columns maintain your rhythm. Descending with a ramp you arrive at a clearing where you gaze into the exhibition hall to feed your artistic appetite. Looking back towards the south, a diagonal line of a steel mesh patterned façade lures you to notice the Freedom Park monument on Salvokop in the distance.

A noise rises above the adjacent traffic. A smell of fresh coffee and food invites you to move right into the heart space. Rhythmic columns direct your view down a corridor. Hanging textile art steers your sight to glimpse the corner of the white MOTH Club. Walking towards the coffee shop, soft grid-like shadows change your environment. Steps on a wooden walkway cause you to glance up and explore the supple mesh structure slowly moving in the wind. Textile art hangs from the structure, causing you to pause.

Red and green tones move your eyes downwards to view the patterned bottle wall of the foyer. A textile-art display panel lures you to touch and explore the realms of decoration. Talking people pass behind you and you follow. Descending into the heart space of patterned paving you notice the coffee shop seats spilling out onto the square. A student sits to your left, having lunch on her lap, confiding her thoughts to her book in the shade of the trees.

In the centre of the square, ascending stairs attract your attention to an entrance to your left (position 2). Transparent glass invites you to see right through to the other side of the building where students are taking a break after a lecture. The white MOTH Club resonates in the background. A colourful wave pattern causes you to look back up and indulge in a loom of textile patterns. A steel structure protrudes above it with transparent roof sheeting framing the blue sky. A reflection of green causes you to spin around and look onto the back façade of the Breytenbach Theatre. A projection screen makes you wonder what activities take place at night. A rotating cylinder makes your eyes wander to the left. Moving closer, you view the agenda of the next couple of weeks: The workshops offer Zulu weaving and bed linen silkscreen printing courses. Oeverzicht art village has an African dance night and the exhibition gallery currently hosts the works of international textile artist Jorge Pardo. The rotating billboard steers your line of sight to a pedestrian route running parallel to the MOTH Club connecting to the historical railway houses of the Oeverzicht art village. Another open space pulls you closer to Esselen Street.
1: Map of position 2
2: Perspective of position 2
3: Map of position 3
4: Perspective of position 3
1: Map of position 4
2: Perspective of position 4
3: Map of position 5
4: Perspective of position 5
3. Movement route 3

Cycling south on a paved walkway you pass the Apies River channel on your left. A vast green field accentuates the whiteness of the MOTH Club. Lined trees determine your cycling tempo. A huge tree keeps your attention on the left as your eyes follow the slope down to the sunken level. The walkway widens and a shaded seat and a triple volume window cause you to slow down and stop (position 3). You notice the protruding textile shading loom hosting interesting silkscreen printing motifs. Walking towards the window, movement captures your attention on the second and third floor. People are washing and cutting materials in the workshops and studios. Standing in front of the window, you gaze down into the exhibition space. You turn around the corner and slowly walk past the exhibition window facades hosting a variety of interesting art works. Movement causes you to look beyond the art. You see people walking and further away trees, coffee shop tables and seats. Circular patterns of light on the paving project your interest forward. Looking up, holes in a concrete cantilever slab allow you to see the silkscreen motifs highlighted by the western sun. A steel roof truss and sheeting protrude past the cantilever which, along with the adjacent trees, provides sufficient shade against the radiating heat from Nelson Mandela Drive.

Steps descend to your left to a pause area in front of the exhibition space (position 4). Having seen the art, a protruding textured box from the first level captures your interest. Looking at it, you notice the name of the building complex: TEX-ART. Descending down to the corridor on your left which you viewed from above, you lock your bicycle to a waving steel pipe profile provided next to the steel mesh columns. Sliding doors with inserted woven panels project again your interest to the gallery (position 5). You smile as you see people noticing you, now on the other side. Voices draw your attention right down the corridor. Seats with people frame the entrance to the building on the your right. A permeable panel allows you to follow the movement on the ascending stairs. The glass door invites you in the bustling noise of people in front of the lecture hall.

However, the reflection of the white wall to your left intrigues you more. You step into a widened clearing. The contrasting red brick lines push you closer to the MOTH Club. You notice a lush green path descending in front of you. To the right a glass door enters into the film studios of the MOTH Club. Seats and planters supply a pause space underneath the balcony and walkway that links to the club on first floor level. Exposed concrete beams with brown-stained wattle-clad ceilings give a warm feeling to the space. The noise from the coffee shop lures you back down the corridor to the heart space.
4. Closing statement

The building responds to the goals set out in the previous chapters by the following responses:

- The site itself has generated the built form required to encourage movement through the site and respond to the contextual needs.
- The building design promotes movement and interaction throughout the site to connect with the adjoining public spaces of the Nelson Mandela Development Corridor.
- Vibrant educational and community activities promote interaction with and awareness for the public.
- TUT’s Textile Design and Technology Department and the CSIR have sufficient space and services available to promote the growth of entrepreneurial opportunities and skills development workshops pertaining to the Urban Renewal Programme.
- After the completion of the financial feasibility study, it became clear that a phased development would not provide the return necessary to maintain the building. Thus, the complete building must be built to enable the coffee shop, exhibition gallery, workshops, lecture facilities and rentable offices to generate income.
- The building provides a platform for educational self-sustaining techniques applicable to the needs of the Sunnyside region.
- The western façade promote continuity of the Nelson Mandela Drive for the NMDC proposal.
- The Breytenbach Theatre and the MOTH Club are accentuated by the design intervention, highlighting their historical importance.
- Movement routes and existing contextual rhythms are reflected in the facades of the buildings, which interact with the users.
- The parking basement and the connection to the theatre promotes a safer environment in the evenings.
- The heart space is the core of the public activity. Radiating outwards the semi-public and private spaces are located on its periphery.
- Transparent and permeable facades allow visual links and encourage the interest of the public to promote interaction.
- Textile art display panels and hanging forms allow exploration by the user. A variety of building details are available and are consistently repeated to create unity.
- At night the building becomes a tapestry of different textures, patterns and colours.
- The column grid of spaces is of such a nature that the building can be adapted to a new use. Ordinary contextual materials can still be applied in a manner that will attain new contemporary design solutions.
- The building becomes the artwork and thus the landmark.
- The coffee shop, lecture hall and exhibition gallery is accessible from the heart space. Permeable barriers, that allow multifunctional use, define the space.
- The skin of the building can change according to the times. New modern silkscreen prints and materials can replace the existing applications.
- The Textile Art Centre is linked to the MOTH Club on the first floor level and to the Breytenbach Theatre on the basement level, extending the boundaries of the development.
- Visual links focusing on the detailed design invite exploration of building.
- The drastic functional alteration of the existing sunken parking lot into a public movement route structured with built form is a plausible manipulation to enhance and expand the surrounding environment.
5. ACKNOWLEDGEMENTS

To all those who came to my rescue ...
“When you pass through the waters, I will be with you, and through the rivers, they will not overwhelm you. When you walk through fire, you will not be burned or scorched, nor will the flame kindle upon you.” ... I am the Lord your God. Isaiah 43:2

Firstly and utmost
To Father God for the opportunity, the grace and the abundance in love
To the Son for the sacrifice, the freedom and being the bearer of all
To the Spirit for council, intercession, strength and guidance

To my parents for your unconditional love, care and assistance throughout my entire life. I love you both with all I am. May our father bless you with prosperous, healthy years in your dream-seaside home

Thank you to the following people in alphabetical order for there is no hierarchy to every contribution:

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