Conclusion

*Architecture is not all about the design of the building and nothing else, it is also about the cultural setting and the ambience, the whole affair* (Michael Graves)

The theoretical argument sought to create a heightened awareness of the sensory properties of architecture.

It can be concluded from this dissertation that the sensory aspects of architecture cannot be abstracted to a checklist format that will ensure a sensory experience, but the approach as to how the design problem is addressed, should be a collective approach, allowing individuals to experience space for themselves, through the enhanced awareness of sensory stimulants and encounters that have been formed within and by the design intervention. The proposed cultural centre embraces this approach, by creating an environment that does not try to artificially stimulate each of the individual senses, but rather create spaces and emotional connections that stimulate the complete spectrum of human experiences.

The dissertation has met the intentions and requirements set out in the initial design brief. It is believed that the cultural centre and public activity square are to be a vibrant space that allows humans to interact with the place, stimulating real sensory experience.

In conclusion, it has been determined, that without the human dimension and the vibrant energy human beings bring to the sense of place, all attempts at the creation of a sensory architecture would fail.
Bibliography


- Frameworks

- Websites
Appendices

- Mandela Development Corridor group urban design framework
- Design presentation drawings
- Model
Appendix 1:

Nelson Mandela Corridor
Group urban design framework
INTRODUCTION

The study area in question is the Nelson Mandela Corridor, the gateway into the city from the North and the South. A very important spine running along the Apies River feeding the city's East/West orientated streets. It is the opinion of this group that Nelson Mandela Avenue represents a rip in the urban fabric of the city and this group proposes that this rip be repaired by adding buttons, or nodes along the affected area, thus “buttoning up” the urban fabric but still providing enough play for the corridor to develop through a natural process. Four nodes are proposed, namely; Cultural; Business; active Recreational and passive Recreational nodes – placed on strategic crossings along Nelson Mandela Avenue.

Lize Gerneke, Chris Sparks, Gys Immelman, Tienie Van Rooyen, Lourette van der Westhuizen, Tobias Mahne, Colin Seak Lai
Ward 58 is located in the central part of the city of Tshwane.

54.0% Black
39.0% White
4.0% Coloured
3.0% Asian
31% Afrikaans
17% English
11% Sepedi
11% Setswana
47% Male
53% Female

Environmental Vulnerability
The environmental vulnerability in Ward 58 is generally low, with high environmental vulnerability found in the east, north-east, south-west and north-west. These areas correlate with mountain slopes, degraded veld, woodlands and grasslands.

Floodline Priority
This ward has a low floodline priority, occurring along the Vaal River in the western and southern parts of the ward. Currently these areas are not inhabited, which limits the amount of people or infrastructure at risk. However, future development along the floodline priority could increase the flood risk to the ward.

Industry of Employment
Community, social and personal services (18.0%), financial, insurance, real estate and business services (11.0%), wholesale and retail trade (7.0%)

Income
Moderate

Ward 59 is located in central part of the City of Tshwane, south of the city centre, amongst the Kwaggasrand Mountains. Various tributaries of the Vaal River flow through this area. The geology in the southern part of the ward is characterised by the presence of dolomite.

56.0% Black
39.0% White
5.0% Coloured
2.0% Asian
33% Afrikaans
22% English
13% Sepedi
13% Setswana
47% Male
53% Female

Environmental Vulnerability
Low levels of environmental vulnerability are located in the northern part of the ward containing significantly higher levels. The level of environmental vulnerability correlates with areas of degraded veld, grass and woodlands. The topography along the slopes of the ridges combined with the presence of water flow from rivers can also increase the environmental vulnerability of the area.

Floodline Priority
A low floodline priority can be found along the banks of the Vaal River. In the northern region, residential areas are located in close proximity to floodline priority areas which should be monitored.

Geology
Dolomite can be found in the south of Ward 59 which poses a significant risk of sinkhole formation in developed areas. Water infiltrating dolomite could cause instability and subsequent sinkholes. However, from land-use maps, it appears that development in this area is limited. Future development should be undertaken with care.

Ward 60 is situated in the central part of the City of Tshwane.

70.0% Black
24.0% White
5.0% Coloured
1.0% Asian
50% Afrikaans
29% Sepedi
22% Setswana
61% Male
39% Female

Environmental Vulnerability
The environmental vulnerability in the majority of the ward is moderate. However, high levels of environmental vulnerability are located in southern and northern parts of the ward which to a large extent correlates with open spaces, degraded veld, wood and grasslands.

Floodline Priority
A low level of floodline priority is located in the north section of the ward. This area is a highly developed area and development in floodline priority areas should be monitored.

Income
Income levels in Ward 60 are relatively high with 70.0% earning more than R1 600 per month and 45.0% of individuals earning more than R3 200 per month.

Industry of Employment
Community, social and personal services (15.0%), financial, insurance, real estate and business services (9.0%), as well as wholesale and retail trade (8.0%)
Integrated Development Plan & RSDF
- Environmental Sustainability
- Increased Accessibility
- Economic Growth
- Tshwane Kopanong/Crossing: Vibrant public square, establishing a growth node between Hatfield and CBD while revitalizing Sunnyside (also residential)
- Centre remains a critical asset
- To enhance Tshwane's national status as the capital of South Africa

Inner City Strategy
- Focus Area IV: Celebrating the National Capital and Repositioning the Inner City as a vibrant cultural and government centre
- To enhance Tshwane's national status as the capital of South Africa

Re Kgabisa Tshwane Programme
- Environmental Sustainability
- Increased Accessibility
- Economic Growth
- Exploring African-ness: Giving content to the notion of an African City using urban art as a metaphor for social dialogue & reclaim public space
- Investing in and management of public space, 24h City - vibrancy
- City Living Initiative: Focused at young people and Economically mobile families, Quality public amenities,
- Tshwane CBD with explicit view of consolidating image of SA capital
- Repositories of national culture eg. Freedom Park,
- Places of assembly for national celebration(s)

(Capital Alliance Conference; October, 2005)

MSDF
Inner City has been demarcated as the Capital Core

GOVERNMENT STRATEGIES

- Being the leading governance city in Africa
- Being the embodiment of what it means to be (South) African
- Being the prime urban working and living centre in Tshwane

The Functional and Symbolic Heart of the Capital City of South Africa and Africa

The Capital of Culture in Africa, where all aspects of being (South) African can be celebrated

Announcing the destination: Cultural circle - Capital precinct - MDC and Aries River Promenade - Tswane crossing - Regeneration - Movement - Exceptional public
VISION

- The Functional and Symbolic **Heart of the Capital City of South Africa and Africa**
- The **Centre of Culture in Africa**, where all aspects of being (South) African can be celebrated.
- “Celebrating the National Capital and Repositioning the Inner City as a **vibrant cultural** and government centre”
- The Inner City must provide tourism, entertainment and recreational opportunities, for residents and visitors
- The Inner City must be made pedestrian friendly

**TSWANE INNER CITY DEVELOPMENT AND REGENERATION STRATEGY 2006**

Any capital city needs to also be the cultural centre of that country, which showcases the national culture to the outside world.

The Tshwane Inner City is a place of strategic significance, not only in the city, but also from a national and international perspective. However, it is generally acknowledged that the Inner City is currently not functioning as it should from an environmental, economic and social point of view. The City Development Strategy, the IDP and the Metropolitan Spatial Development Framework have all identified the inner city, together with its important role within the Capital City vision, as a strategic focus area. The Tshwane City Vision, namely “to become the leading international African capital city of excellence that empowers the community to prosper in a safe and healthy environment”, clearly sets out the development goal of becoming the African Capital City of Excellence. H
Identified nodes are to act as catalysts which will promote positive, future developments. This catalytic development is aimed to progress in a East - West direction and not in a North - South orientation. The aim is to allow for the integration of the CBD towards the Eastern residential area which at the moment lack social development. This will be achieved through creating precinct which will promote the social / cultural, environmental and economic concerns of the area.

Social:
The integration of the East with the West.
Providing environments for activities which promote social integration.

Environmental:
The upgrading of the Apies river which will act as a spine for the creation of parks and public spaces into a social gathering and recreational hot spot. The emphasis will be on the historical and cultural heritage of the area and the biodiversity, which includes water quality and quantity of the river will also play an important factor in the development.

Economic:
The transformation of current land banking hot spot into a socially and more economic use. Currently lots of potential spaces has been lost due to the accommodation of garages due to the automotive industry, which do not promote for the social or economic issues of the area.
The job creation through potential hot spots via the social integration and gathering of people. As more people will occupy the area, naturally this will create more potential business opportunities which will be needed to cater for the incline of people.
A River Reborn – Los Angeles River Framework

The Los Angeles River has been canalised and misused, but interested and affected parties started to take action to improve the function and aesthetics of the river.

The importance of rivers:
River greenways are one of the most important open space resources. A river in an urban setting should be the spine for an open space system that includes parks and public squares.

Olmstead (1930) said that rivers’ edges should “…become pleasure ways – greatly elongated parks [with a] variety of scenic effects.”

Strategy:
• Reclaim land along river for parks and wildlife sanctuaries
• Divide park into sections and plan catalyst projects that gives identity
• Increase public awareness
• Address streetscape issues, bikeways, parks, wildlife viewing and public access
• Turn buildings to face the river or live unto river
• Protect river as a flyway for birds

This can be achieved by:
• Assessing all riverside properties that has no buildings or has abandoned buildings and reclaim these to form a network of open spaces
• Including floodplains, power line and railroad servitudes and schoolyards in the network
• Involve the public in decision making processes
• Where possible, removing engineered structures to restore natural floodplains
• Retrofitting canals (restoration is impossible) to a more natural state
• Doing biological studies to inform decisions
• Start demonstration catalyst projects that educates and informs the public
Improve microclimate

Landmarks and transport

Widened river channel

Improve bio-diversity

Informal trading

Wide Road Servitude
Great potential in the wide road servitudes to create vibrant interactive spaces which links the different zones and hot spots together.

Gateways and Landmarks into the city
Creating a local identity which adheres to that specific area and creating a sense of place.

Apies river and green pockets
The river is in a upset state and reacational areas along it has not been looked after or put to good use. Ideal opportunity to uplift the current state and introduce new interventions to promote the area into a positive and socially populated space.

Social and Cultural heritage
Vast amount of social and cultural heritage exists in the area and these aspects must be brought out and form part of the whole identity of the area.

Pedestrian lines
Pedestrian access must connect to different spaces, espically between the east and west.
Neglected buildings

**OPPORTUNITIES**

**Land Banking**
Land banking entails hoarding of land for future development and using it low value entities. To transform these areas into more social and economically promoting use. Current landbanking includes parking lots and motor retail showrooms.
The Nelson Mandela Corridor is currently seen as an urban wasteland, a defragmenting agent between the East and the West, acting as a physical buffer between the city's two halves. The links and connections between the city and its surrounding neighbourhoods are very poor and needs addressing. Pedestrian integration along Nelson Mandela Avenue is also in a state of neglect – sidewalks are used as refuse depots, street furniture needs upgrading, shade is in short supply, etc. The natural features along the river are unmaintained. There is no informal economy, the buildings are all monofunctional. In short the Nelson Mandela Corridor is lacking an identity.
Proposed spatial properties for the framework

- Promotion and celebration of regional connections
- Upgrading and creation of local area connections
- Promotion of east/west connection
- Promotion of urban integration
- Rejuvenation and upgrading of existing green spaces
- Promotion and celebration of prominent public space
- Creation of new public spaces within the new nodes
- Rejuvenation and upgrading of existing public spaces such as DTI, Overzicht Village and the banks of the Apies River

Movement Network
- Connections to important nodes of the city
- Promotion of pedestrian routes
- Celebration of the built fabric and the promotion of the identity of the proposed nodal interventions
- Creation of a sense of arrival into the city - Nelson Mandela Development Corridor as the Gateway into the city
- Celebration and connection to existing and proposed landmarks within the precinct
Rejuvenation and upliftment of the Apies River
Integration of existing Apies River Development Framework with the Nelson Mandela Development framework

All Green space must conform to the following criteria:

- Accessible to the public
- Safe and create a sense of security
- Low maintenance
- Vibrant catalysts for social interaction
- Creation of a pedestrian-friendly link through the city
- River becomes a spine, linking all the green spaces
- Green space and Apies river upgrade link all the nodes and spaces
- Focus on interaction and blurred lines between the built environment, public spaces, and open green spaces
The study area in question is the Nelson Mandela Corridor, the gateway into the city from the North and the South. A very important spine running along the Apies River feeding the city’s East/West orientated streets. It is the opinion of this group that Nelson Mandela Avenue represents a rip in the urban fabric of the city and this group proposes that this rip be repaired by adding buttons, or nodes along the affected area, thus “buttoning up” the urban fabric but still providing enough play for the corridor to develop through a natural process. Four nodes are proposed, namely; Cultural; Business; active Recreational and passive Recreational nodes – placed on strategic crossings along Nelson Mandela Avenue.
The Apies River is a prime location within our city and has been underutilised in the past. This group feels that the Apies needs to be celebrated — by the buildings along it, the people who use it, informal traders, and tourists etc. The Apies River needs "branded" and added to the Proudly South African campaign. This will result in the river being managed and maintained properly, uplifting the surrounding area and its population — making Apies River a landmark the city can be proud of.
GUIDELINES

Build-to-lines

Pedestrian Integration

Sightlines

Scale of open space

General access and entrances –
• No service entrances on Nelson Mandela Avenue
• Encourage basement parking
• Formalised street drop-offs
• Orientation of entrances according to individual building

Build-to-linelines and height restrictions –
Build-to-lines
• 5m setback from street kerb
• 7m setback from river edge (100 year flood line)
Height
• Arts and culture precinct – 4 storeys
• Government and business precinct – 7 storeys
• Active recreation precinct – 4 storeys
• Passive recreation precinct – 4 storeys
7 guiding principles of successful places (CABE: 2006:5)

Character – a sense of place and history
Character is how we distinguish one place from the next. It is about place-making (Manifesto for change, 1991:2). It reflects local culture, tradition and context. It establishes recognisable patterns through the use of natural features, distinctive landscapes, diverse spaces, and physical and psychological clues that are imbedded in a spatial identity, the blueprint of that place. It enables environment, encapsulating timeless qualities in space.

Continuity and enclosure – clarity of form
What should be open what should be closed? Who should have access and who should not? Good public space has a clear hierarchy and definition between public and private space. Positive urban environments require freedom and constraint, setting preconditions for activities and growth to occur (Manifesto for change, 1991:23). Deliberate/purposeful articulation of urban space therefore ensures the development of healthy ownership roles and public care. Definition should occur by means of buildings that define these spaces at a scale that responds to character of the place and that feels

Quality of public realm – sense of wellbeing and amenity
The public realm is the zones of greatest interaction, and therefore the areas of greatest opportunity (Manifesto for change, 1991:17); it is the setting for the formation of social networks and public life (Manifesto for change, 1991:18). These spaces usually have distinct and clear routes and a good sense of safety and security, provide equal access to public amenities, and are detailed with good lighting, urban greenery, street furniture and public art. These spaces are structured to respond and adapt to the needs of everyone.

Ease of movement – connectivity and permeability
Movement is vital in our daily ritual of life, for it is the method by which we get from one place to the next. Therefore, the urban fabric should be developed to improve ease of movement with a choice of safe, high-quality connector routes. Roads, footpaths and public spaces should be well connected and provide high accessibility to public transport systems.

Legibility – ease of understanding
Places should have focal points, landmarks, distinct views and gateways that act as points of reference, provide visual order and guide passage through space. Good articulation of built form, adequate lighting, signage and creative way-markers provide the basis for a good sense of direction and provide the clues needed to equip the user to navigate public space.

Adaptability – ease of change
Spaces that can only be used for a single purpose, remain empty most of the time. Therefore it is essential for spaces to have flexible uses, and to be adaptable to current and future spatial requirements. Adaptive re-use of buildings with historic value also improves the quality of the public realm and enhances the character and legibility of a space.

Diversity – ease of choice
Monotony is the enemy. Diversity increases the range of choices that people are exposed to (Manifesto for change, 1991:17). Places should be multifunctional and provide for a mix of compatible uses and programmes. These spaces should cater for the diverse communities and cultures and offer a wide spectrum of activities and communal functions. Spaces that possess a healthy diversity of people, culture and architecture are the groundwork for positive social interaction and expression.

What makes a good urban space?
There are no predesigned solutions to creating a successful urban space. Each scenario has its own inherent spatial, cultural and contextual aspects it needs to respond to, in order for the intervention to be regionally responsive. However, there are guiding principles present in every successful urban place that can be adopted and adapted to guide the urban development.
The goal of the proposed framework for the Nelson Mandela Development Corridor is to spatially integrate the MDC into the greater Tshwane inner city.

The proposed framework aims to develop the MDC to act as a gateway into the Tshwane Inner City, where visitors and residents are greeted with a sense of arrival celebrating the identity of the greater Tshwane context. The idea is to encourage the MDC as a destination point and not have it act just as a crossing or thoroughfare.

Through the framework the aim is to develop a cultural and civic strip where pedestrianisation, social interaction and green open spaces are encouraged and to promote Tshwane as South Africa's Cultural Capitol. The aim is to create vibrant spaces and activity nodes along the corridor and give identity to the currently dilapidated and underutilized area, primarily to create spaces for people.

The primary intention of the MDC framework is to repair the tear/rip in the urban fabric left as a result of previous inadequate planning decisions. We wish to stitch back the cultural and historical identity into the area and create a sense of place and space for future generations to appreciate.
Appendix 2:

Design Presentation
'Genius Loci' A cultural centre for the visual and performing arts

Study Area - Mandela Development Corridor

Transportation

Land Use

Activity Nodes

Chosen Site

Legal Context

Site analysis

Existing buildings on site

Conclusion

Appendix
Light

Materiality

Spatiality

Massing

**Problem statement**

In our society that is invaded with images, light is often the only sense that is ever sought to be elevated. It is essential in the construction of an environment. As the light is naturally always available, the quality and the quantity of light is seen as one of the key design parameters that are used to enhance the quality of the built environment. This is so because light is a key sensory phenomenon, where people should experience structural spaces through all of the senses.

**Research questions**

1. What is the architecture influenced by the perception of space through the stimulation of the senses?
2. Do specific combinations of material elements relate to specific feelings or provide clear spatial identity to the environment?
3. The role of light and light sensitive materials is usually associated with some specific qualities.
4. Can the use of light and light sensitive materials improve the experience of space?
5. Can light and light sensitive materials improve the experience of space?
6. Can light and light sensitive materials improve the experience of space?

**Client**

*Arts and culture*

*City property*

**Design brief**

It is always the architect's goal to use all available artistic options in an innovative contemporary centre for the performing arts. The brief is to create an environment that is visually, acoustically, and experientially open to the community. The design should be flexible, adaptable, and open to change. The building should be designed to accommodate various performance and exhibition spaces. The design should also take into account the needs of the users, including the audience, performers, and administrative staff.

**Theoretical premise**

This project is an exploration of the effects of light and materiality on the human experience. The project aims to create a space that is both visually and experientially stimulating, while also providing a functional and practical environment. The design should take into account the needs of the users, including the audience, performers, and administrative staff.

**Light**

Light is an essential component of any architectural design. It can be used to create a sense of depth, to highlight certain features of a space, and to evoke a particular mood or emotion. The use of light can also be used to create a sense of connection between the interior and the exterior of a building.

**Materiality**

Materiality is a key aspect of any architectural design. It can be used to create a sense of texture, to highlight certain features of a space, and to evoke a particular mood or emotion. The use of materiality can also be used to create a sense of connection between the interior and the exterior of a building.

**Spaciality**

Spaciality is a key aspect of any architectural design. It can be used to create a sense of depth, to highlight certain features of a space, and to evoke a particular mood or emotion. The use of spaciality can also be used to create a sense of connection between the interior and the exterior of a building.

**Massing**

Massing is a key aspect of any architectural design. It can be used to create a sense of depth, to highlight certain features of a space, and to evoke a particular mood or emotion. The use of massing can also be used to create a sense of connection between the interior and the exterior of a building.

**Design development and planning**

**Conceptual approach**

The building will be designed to be a flexible and adaptable space that can be used for a variety of purposes. The design will take into account the needs of the users, including the audience, performers, and administrative staff. The building will be designed to be energy efficient and sustainable, using the latest in green building technologies.

**Design process**

The process of design involves a number of different steps, including the identification of the design brief, the development of a design concept, the creation of a design document, and the construction of the building. Each step of the process is carefully planned and executed, in order to ensure the success of the final product.

**Planning**

The planning process involves the coordination of various disciplines, including the architects, engineers, and contractors. The planning process involves the development of a detailed plan, including the budget, schedule, and construction plan. The planning process is critical in ensuring the success of the final product.
Design solution

Perspective looking at artist studios: mechanically operated aluminium shutters

Perspective of restaurants alongside Axley River Channel

Multi-purpose exhibition space: treatment of corner of Nelson Mandela Drive and Asiaa Street

Eastern Section

3d perspective of development from south-west corner

3d perspective of development from north-west corner
Technical investigation

Back

Copper cladding

Rain water Calculations

Roofing systems

Acoustics

Redbrick screens

The advantages of these screens in terms of aesthetic are obvious, they also have a functional benefit. In the winter months, the screens will act as a thermal buffer to reduce the amount of energy needed to heat the buildings. In the summer months, they will provide shade and reduce the amount of energy needed to cool the buildings.

Curtain walls and curtain glazing

Curtain walls and curtain glazing are a great way to create a modern, contemporary look for a building. They are also energy efficient, as they can be outfitted with high-performance glazing that reduces heat gain in the summer and provides insulation in the winter. Additionally, curtain walls can be designed to allow for natural light and ventilation, which can improve indoor air quality and reduce energy costs.

Roofing systems

The roofing systems we have chosen are designed to be durable and energy efficient. They are made of materials that are lightweight and have a low embodied energy, which helps to reduce the carbon footprint of the building. Additionally, the roofing systems we have selected are designed to be easy to maintain, which will help to reduce the long-term costs of owning and operating the building.

Floor finishes

Concrete finishes

Concrete finishes offer a range of aesthetic possibilities and are durable and easy to maintain. They can be customized with various finishes, such as texture and color, to create a unique look for each space. Concrete is also a cost-effective material, as it is widely available and can be poured in place. Additionally, concrete is a sustainable material, as it is made from natural resources that are locally available.

Metal finishes

Metal finishes offer a modern, sleek look that is both durable and energy efficient. They are made from materials that are lightweight and have a low embodied energy, which helps to reduce the carbon footprint of the building. Additionally, metal finishes are easy to maintain, as they can be cleaned with a simple soap and water solution.

Glass finishes

Glass finishes are a great way to create a modern, contemporary look for a building. They are also energy efficient, as they can be outfitted with high-performance glazing that reduces heat gain in the summer and provides insulation in the winter. Additionally, glass finishes can be designed to allow for natural light and ventilation, which can improve indoor air quality and reduce energy costs.
Appendix 3: Model