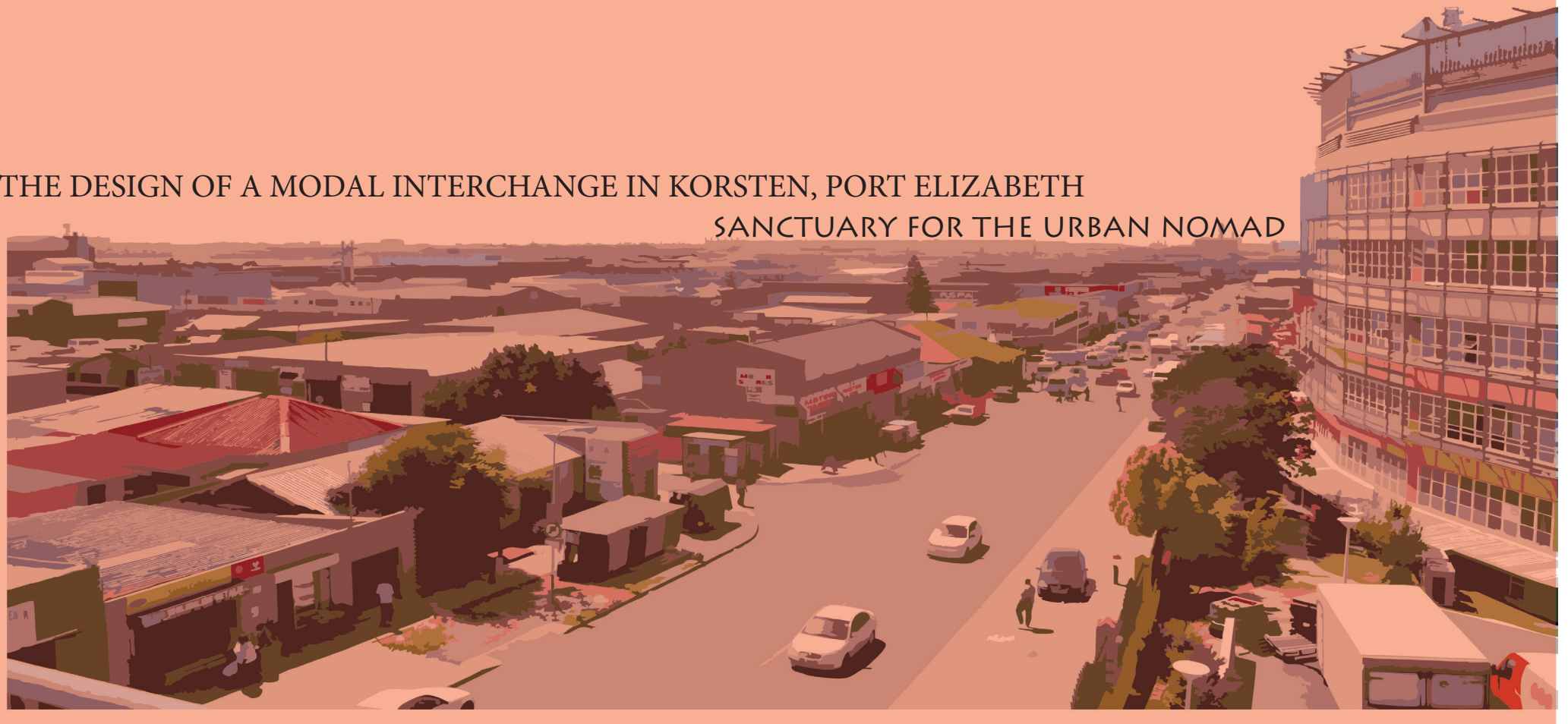


THE DESIGN OF A MODAL INTERCHANGE IN KORSTEN, PORT ELIZABETH  
SANCTUARY FOR THE URBAN NOMAD





“Because architecture is felt by many but spoken by few, it needs to  
resonate within the majority and not the minority.”  
Mpho Magwabeni

# The design of a modal interchange in Korsten, Port Elizabeth

SANCTUARY FOR THE URBAN NOMAD

A treatise submitted in partial fulfilment of the requirements for  
the degree of Master of Architecture (Professional)  
Faculty of Art, Nelson Mandela Metropolitan University,  
Port Elizabeth

Mpho Magwabeni  
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“With men this is impossible, but with God all things are possible” Matthew 19 :26 (KJB)

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Nicola Pannel - Lecturer

My friends and family for their continues love and support.

My mother, not only is she beautiful and full of love but for planting a seed in me which is the fear of the Lord, no words can every truly express my love for you, love you ma'am.  
Mashudu Magwabeni.

To my father who showed me that nothing is impossible and that time spent dreaming is not time wasted, no words can ever express my love and respect for you. Thank you for encouraging me to dream,  
my father; my role model and my friend ,love you baba.  
George Magwabeni.

-Because impossible is nothing, the only real limitations in men reside  
in their mind and in the own perception of themselves.-  
Mpho Magwabeni

# Content

## Part 1 - Research

Identifying the issues

Exploring possible responses

Precedent analysis

## Part 2 - Design

Design exploration

Final design

Bibliography

## Contents Page

|                                                                              |     |
|------------------------------------------------------------------------------|-----|
| Introduction                                                                 | i   |
| Problem statement - Factors influencing the urban structure of South Africa. | ii  |
| Motivation                                                                   | iii |
| Aim and objective                                                            | iv  |
| Methodology                                                                  | v   |
| <br>Part 1: Research                                                         |     |
| 1. South African urban morphology                                            |     |
| 1.1 Modernism, apartheid and post-apartheid cities                           |     |
| <br>1.2 Introduction to Port Elizabeth                                       |     |
| – Social          – Political          – Economical          – Environmental |     |
| 1.2.2 The morphology of the spatial segregation of Port Elizabeth            |     |
| 1.2.3 - Introduction                                                         |     |
| 1.2.4 The morphology of Port Elizabeth                                       |     |
| 1.2.5 Korsten as area of focus                                               |     |
| 1.2.6 Conclusion                                                             |     |
| <br>1.3 Public transport in the Port Elizabeth Metropolitan region           |     |
| 1.3.2 The South African Metro-rail Commuter Corporation                      |     |
| 1.3.3 The Algoa Bus Company                                                  |     |
| 1.3.4 Combi-taxi industry                                                    |     |
| 1.3.5 The Khulani corridor                                                   |     |
| 1.3.6 Conclusion                                                             |     |
| <br>1.4 The history of the taxi industry and its impact on public transport  |     |
| 1.4.1 Understanding the nature of the space                                  |     |
| 1.4.2 The Taxi Recapitalisation Programme                                    |     |
| 1.4.3 What is a transport interchange?                                       |     |
| 1.4.3 Investigating the typology                                             |     |
| 1.4.3.1 Architectural issues                                                 |     |
| 1.4.3.2 Spatial and physical                                                 |     |

- 1.5 Understanding the Nature of the modal interchange (The concept of a taxi rank)
  - 1.5.1 Metro Mall Transport Facility and Traders Market
  - 1.5.2 Baragwanath Transport Interchange
  - 1.5.3 Conclusion
  - 1.5.4 Precedent study
    - The Alexandra interpretation Centre in Johannesburg (by Peter Rich Architects)
    - Faraday Market and transport interchange in Johannesburg CBD (by MMA Architects)

- 1.6 Conclusion to research

## 2. Exploring the context

- 2.1 Theoretical position
  - 2.1.2 Understanding the nature of the context
- 2.2 Introduction
  - 2.2.1 Metropolitan (conditions of an environment for the intervention)
  - 2.2.2 Environment for intervention
- 2.3 Sub-metro
  - 2.3.1 Defining the problem
  - 2.3.2 Defining the context
  - 2.3.3 Spatial framework
  - 2.3.4 Precinct
  - 2.3.5 Conclusion of the contextual issues
- 2.4 Conclusion to content

## Part two: Design

- 3.1 Design premise
- 3.2 Design development
- 3.3 Final design

## List of figures

|                                                                                                                                                           |         |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| Fig 1. Informal taxi node located on Attwell Street on Cottrell Street (source: Google earth)                                                             | ii      |
| Fig 2. Info graphical representation of urbanization : (source: <a href="http://www.wearethepractitioners.com">www.wearethepractitioners.com</a> )        | iii     |
| Fig 3. Info graphical representation of urbanization : (source: <a href="http://www.wearethepractitioners.com">www.wearethepractitioners.com</a> )        | iii     |
| Fig 4. Diagram illustrating the character of the urban condition in South Africa ( source: author)                                                        | page 1  |
| Fig 5. Diagram of the urban condition in South Africa after the Group act ( source: author)                                                               | page 1  |
| Fig 6. Illustration of the disconnected city to the township condition in Port Elizabeth ( source: author)                                                | page 1  |
| Fig 7. Illustration of the disconnected city to the township condition in Cape town ( source: author)                                                     | page 1  |
| Fig 8. Illustration of the disconnected city to the township condition in Durban ( source: author)                                                        | page 1  |
| Fig 9. Illustration of the segregation of different racial groups after the Group act ( source: author)                                                   | page 3  |
| Fig 10. Image of the Three Magnets, ( <a href="http://www.litverse.com">www.litverse.com</a> )                                                            | page 3  |
| Fig 11. Image of the Garden city, ( <a href="http://www.litverse.com">www.litverse.com</a> )                                                              | page 3  |
| Fig 12. Image of the Neighbourhood Unit Model, ( <a href="http://www.litverse.com">www.litverse.com</a> )                                                 | page 3  |
| Fig 13. Diagram illustrating the growth pattern of Port Elizabeth over the past 50 years ( source: author)                                                | page 4  |
| Fig 14. Diagram of Port Elizabeth in the early 1800s - 1900s ( source: author)                                                                            | page 5  |
| Fig 15. Diagram of Port Elizabeth in the early 1900s - 1950s ( source: author)                                                                            | page 5  |
| Fig 16. Diagram of Port Elizabeth in the early 1950s - 1975s ( source: author)                                                                            | page 6  |
| Fig 17. Diagram of Port Elizabeth in the early 1975s - 2008 ( source: author)                                                                             | page 6  |
| Fig 18. Diagram of Port Elizabeth with Korsten as the area of focus ( source: author)                                                                     | page 7  |
| Fig 19. The map illustrates the location that different racial groups were forcible removed to during the 1950's group act.                               | page 8  |
| Fig 20. The illustrates the Public Transport System (PTP) - (source NMBM PTP 2006)                                                                        | page 12 |
| Fig 21. The map illustrates the PTP (Public Transport Plan) for the Metro (NMBM, 2006) (source : author)                                                  | page 13 |
| Fig 22. The map illustrates the PTP (Public Transport Plan) for the for the bus and train in the Metro (NMBM, 2006) (source : author)                     | page 14 |
| Fig 23. The map illustrates the PTP (Public Transport Plan) for the for the taxi routes in the Metro (NMBM, 2006) (source : author)                       | page 15 |
| Fig 24. The map illustrates the PTP (Public Transport Plan) for the Khulani corridor {NMBM, 2006} (source : author)                                       | page 16 |
| Fig 25. Old taxi vehicles (source : <a href="http://www.oldtaxivehicle.co.za">www.oldtaxivehicle.co.za</a> )                                              | page 19 |
| Fig 26. New taxi vehicles (source : <a href="http://www.imperialtoyta.co.za">www.imperialtoyta.co.za</a> )                                                | page 21 |
| Fig 27. Mobility diagram around the Interchange as envisaged by Fiona Scott as part of her PhD thesis at the Royal College of Art in London               | page 23 |
| Fig 28. Diagram illustrating the physical connectivity one space can exert to another across different domains of space (source: author)                  | page 25 |
| Fig 29. Diagram illustrating the connectivity one space can exert on another across different domains that are connected in a linear form(source: author) | page 25 |
| Fig 30. Diagram illustrating integrated environments (source: author)                                                                                     | page 27 |
| Fig 31. Image of portal frame structure (source: <a href="http://gjconstruction.uk.com">gjconstruction.uk.com</a> )                                       |         |
| Fig 31.1 Diagram illustrating portal frame structure (source: author)                                                                                     |         |
| Fig 32. Diagram illustrating lattice girder structure (source: author)                                                                                    |         |
| Fig 33. Diagram illustrating high tech structure (source: author)                                                                                         |         |
| Fig 33. 1 Image of the Pompidou Centre (source: <a href="http://www.haribololz.wordpress.com">www.haribololz.wordpress.com</a> )                          | page 27 |
| Fig 34. Foreground buildings (source: author)                                                                                                             | page 28 |
| Fig 35. Background building with foreground moments (source: author)                                                                                      |         |
| Fig 36. Background building                                                                                                                               | page 28 |
| Fig 37. Diagram illustrating the principles of Pass by spaces(source: author)                                                                             | page 29 |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |         |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| Fig 38. Diagram illustrating the principles of Pass through spaces(source: author)                                                                                                                                                                                                                                                                                                                                                                                                       |         |
| Fig 39. Diagram illustrating the principles of Terminate in a space(source: author)                                                                                                                                                                                                                                                                                                                                                                                                      | page 29 |
| Fig 40. Diagram illustrating the spatial flow principles that govern how modal interchange work (source: author)                                                                                                                                                                                                                                                                                                                                                                         | page 30 |
| Fig 41. Space requirements for people (source: Neufert 3rd Edition, 2000)                                                                                                                                                                                                                                                                                                                                                                                                                | page 31 |
| Fig 42. Requirements for rail infrastructure (source: Neufert 3rd Edition, 2000)                                                                                                                                                                                                                                                                                                                                                                                                         | page 31 |
| Fig 43. Examples of rail building goods shelters (source: Neufert 3rd Edition,2000)                                                                                                                                                                                                                                                                                                                                                                                                      | page 31 |
| Fig 44. Turning data for taxis (source: Engineering Advice and Services)                                                                                                                                                                                                                                                                                                                                                                                                                 |         |
| Fig 45. Minimum dimension requirements for Loading and Queueing lanes (source: Engineering Advice and Services)                                                                                                                                                                                                                                                                                                                                                                          | page 32 |
| Fig 46. Minimum dimension requirements for commuter facilities (source: Engineering Advice and Services)                                                                                                                                                                                                                                                                                                                                                                                 | page 32 |
| Fig 47. Bus types and dimensions (source : Neufert 3rd Edition,2000)                                                                                                                                                                                                                                                                                                                                                                                                                     | page 33 |
| Fig 48. Minimum design requirements for loading and drop off berths (source: Neufert 3rd Edition,2000)                                                                                                                                                                                                                                                                                                                                                                                   | page 33 |
| Fig 49. Minimum design turning circle for buses at crawling speeds (source: Neufert 3rd Edition,2000)                                                                                                                                                                                                                                                                                                                                                                                    | page 33 |
| Fig 50. Potential locations for good accessibility of Transport Interchanges (source: Design Guidelines for Public Transport Facilities)                                                                                                                                                                                                                                                                                                                                                 | page 36 |
| Fig 51. Illustration of the Metro Mall Transport Facility and Traders Market (source: author)                                                                                                                                                                                                                                                                                                                                                                                            | page 37 |
| Fig 52. Illustration of the Baragwanath Transport interchange (source: author)                                                                                                                                                                                                                                                                                                                                                                                                           | page 37 |
| Fig 53. Illustration of the Internal and external circulation: types of concourse in the building (source: 10 Years,100 Buildings,2009)                                                                                                                                                                                                                                                                                                                                                  | page 38 |
| Fig 54. Illustration of the Internal and external circulation: (source: Baragwanath Transport interchange )                                                                                                                                                                                                                                                                                                                                                                              | page 39 |
| Fig 55. Illustration of the Alexandra Interpretation Centre street view : (source: author)                                                                                                                                                                                                                                                                                                                                                                                               | page 43 |
| Fig 56. Illustration of the Alexandra Interpretation Centre site plan: (source: author)                                                                                                                                                                                                                                                                                                                                                                                                  | page 43 |
| Fig 57. Illustration of the site plan of the Faraday Market and transport interchange in Johannesburg CBD : (source: 10 Years,100 Buildings,2009)                                                                                                                                                                                                                                                                                                                                        | page 44 |
| Fig 58. Illustration of the Faraday Market and transport interchange in Johannesburg CBD street view : (source: 10 Years,100 Buildings,2009)                                                                                                                                                                                                                                                                                                                                             | page 44 |
| Fig 59. List of the core dimensions of publicness as identified by Madanipour, 1999; Kohn, 2004; Nemeth & Schmidt, 2011 and Varna & Tiesdell 2010                                                                                                                                                                                                                                                                                                                                        | page 46 |
| Fig 60. Illustration of the two southern and northern sphere of Port Elizabeth : (source: author)                                                                                                                                                                                                                                                                                                                                                                                        | page 50 |
| Fig 61. The diagram illustrates the proposed connection from the city centre, Central through to the Nelson Mandela Bay Stadium and terminating at the Civic centre of Korsten.<br>The strategy is to concentrate movement and activity from the city centre through into the Korsten precinct, this will effectively strengthen the commercial corridor between the node. By creating a node at the Civic centre of Korsten efficiently connecting Gelvandale to the activity corridor. | page 54 |
| Fig 62. The illustration shows the natural elements and specifically the catchment area of Korsten, which runs straight through the middle of Durban Road and goes through to the Dry Lake at the bottom of the industrial area.                                                                                                                                                                                                                                                         | page 56 |
| Fig 63. The map illustrates the different intensities of energy present within different natures of activities and zones within Korsten.                                                                                                                                                                                                                                                                                                                                                 | page 58 |
| Fig 64. The map illustrates primary and secondary connections that exist internally and to the rest of the Metro. The streets that will be analysed will be as follows :<br>At the head of Korsten , Cotterell Road will be the area of focus, which will progress into the nature of Durban Road. Newell Street will be the next area of focus leading to the termination at Thorogood Street and Ableet Street.                                                                        | page 59 |
| Fig 65. The diagrams illustrate the three different models that pertain to connectivity to an environment : (source : author)                                                                                                                                                                                                                                                                                                                                                            | page 65 |
| Fig 66. The diagrams illustrate the proposed precinct design, the civic nature on the precinct has been developed from an understanding of the existing footprint that is on the site but strengthened by concentrating the cluster and providing public open space as termination to the precinct : (source: author)                                                                                                                                                                    | page 66 |
| Fig 67. The diagram illustrates the Density and mixed-use facilities: (source :author)                                                                                                                                                                                                                                                                                                                                                                                                   | page 68 |
| Fig 68. The diagram illustrates the centres condition employed to the Korsten precinct: (source: author)                                                                                                                                                                                                                                                                                                                                                                                 | page 68 |
| Fig 69. The diagram illustrates the Movement patterns employed to the Korsten precinct: (source :author)                                                                                                                                                                                                                                                                                                                                                                                 | page 69 |
| Fig 70. The diagram illustrates the Hierarchy of public space articulated to the Korsten precinct: (source :author)                                                                                                                                                                                                                                                                                                                                                                      | page 69 |
| Fig 71. The diagram illustrates the Transition zone and open space network articulated to the Korsten precinct: (source :author)                                                                                                                                                                                                                                                                                                                                                         | page 70 |
| Fig 72. The diagram illustrates the Civic structure articulated to the Korsten precinct: (source :author)                                                                                                                                                                                                                                                                                                                                                                                | page 70 |
| Fig 73. The diagram illustrates the Transport network routes articulated to the Korsten precinct: (source :author)                                                                                                                                                                                                                                                                                                                                                                       | page 71 |
| Fig 74. The diagram illustrates the Landmarks and focal points articulated to the Korsten precinct: (source :author)                                                                                                                                                                                                                                                                                                                                                                     | page 71 |

|                                                                                                                                                                                                                                                                                                                                                                                                |         |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| Fig 75. The diagrams illustrate the models to be employed that pertain to connectivity to the Korsten environment : (source : author)                                                                                                                                                                                                                                                          | page 72 |
| Fig 76. The diagrams illustrate the urban setting of the Parc La Vilette.                                                                                                                                                                                                                                                                                                                      |         |
| Fig 77. The diagrams illustrate the plan for Parc La Vilette.                                                                                                                                                                                                                                                                                                                                  | page 79 |
| Fig 78. The diagrams illustrate the external routes, internal routes and cultural history of Parc La Vilette.                                                                                                                                                                                                                                                                                  | page 80 |
| Fig 79. The diagrams illustrate the program, fixed form and structure of Parc La Vilette.                                                                                                                                                                                                                                                                                                      | page 80 |
| Fig 80. The diagrams illustrate the nature of taxis in the urban realm functioning as connectors and extenders of the public realm.                                                                                                                                                                                                                                                            | page 81 |
| Fig 81. The diagrams illustrate the lines that are formed by movement and linear forces projected through the site. (source : author)                                                                                                                                                                                                                                                          | page 82 |
| Fig 82. The diagrams shows that integration of different programmes and natures in spaces being connected on a mutual plane. (source : author)                                                                                                                                                                                                                                                 | page 83 |
| Fig 83. The diagrams shows the different levels of connectivity that existing in separate entities in space and how continuity can be achieved without fusing elements.                                                                                                                                                                                                                        | page 84 |
| Fig 84. The diagrams shows the knots in the network of the arterial and pedestrian routes (source : author).                                                                                                                                                                                                                                                                                   | page 85 |
| Fig 85. The diagram illustrates the proposed connection that bind the different domains on the precinct and the understanding of there nature in space.<br>The taxi rank forms the line of threshold between the different areas and an understanding needs to be developed as to allowing the ‘in-between space’ to<br>function as a mediator between the different realms (source : author). | page 86 |

## Introduction

The urban landscape is formed by its relationship with various activities and energies that transpire between urban nomads and the urban condition of the place. This marriage between the urban nomads and the urban space can be defined as the city; however one of these elements cannot exist without the other. For the purpose of this treatise the term '*urban nomad*' has been defined as a small, diverse section of society that lives and works in an urban area, yet does not dwell permanently within the given urban fabric, but contributes to the socio-economic aspect of the area. The term nomad refers to a chosen lifestyle as opposed to a 'refugee' condition, and also suggests that the nomad has a home as opposed to being homeless.

Mr Abdulah Mohamed Omar (Department of Transport, 1999) states that in order to ensure sustainable urban environments, public transportation needs to be the preferred mode of motorised transportation in our cities.

This position of favouring public transport is taken by Vuchic (2000), who highlights basic features of public transport, clearly signifying that it should be seen as a solution to urban transport problems rather than a contributor:

"-... As a public system, transit (public transport) is open and available to most of the population..." (Vuchic, 2000:37)

In the current economic conditions in South Africa, particularly in the Nelson Mandela Metropolitan Municipality, a large number of the population uses public transport as a primary mode of transportation. This interaction and flow of energy between the urban nomad and the city enables economic and social participation within the city. A definite need therefore exists for a well-organised facility to house public transportation system.

Korsten is identified by its vibrant nature within the city scape. The highly energetic street condition that defines the area's DNA often exudes a character of chaos which may cause the urban nomad to feel endangered but never-the-less all these facets contribute to the heart beat of Korsten. The lies between this very critical relationship between the urban nomad and the urban landscape is a phenomenon that has fascinated societies for centuries, -transportation; how they experience interaction through social activities and in the extended public realm of public transport.

This treatise seeks to explore and uncover the public realm of Korsten rather than public spaces that are formed in the area. The notion of 'public and private space' is rather defined as the platform for social interaction, which is often misinterpreted as the public realm. The project seeks to define space that becomes a cultural and social meeting place in which the nomad works, plays and moves around; furthermore, to unravel the relationship between architecture and travel by understanding the elements that shape the particular environment.

The project also aims to reinforce the current context by exploring the urban landscape and implementing designs that could compliment the public realm and consolidate the urban fabric of Korsten, and explores the possibilities of an integrated, vibrant and sustainable community. The relationship between place-making and publicness will be uncovered and the design of a modal interchange will be realised in Korsten/Port Elizabeth.

## Problem statement

The inception of this treatise is derived simply from the identification of the current inefficient public transportation facilities in Nelson Mandela Bay. This is especially experienced in the Korsten precinct as there is a scattering of transport nodes and none of them can be particularly identified as the key transport node in the fabric.

With the 2010 World Cup behind us and many infrastructures such as the Nelson Mandela Bay Stadium working as urban anchor of activity, the question still at hand is how the issue of integration between commuters and transportation can be addressed. This sets the scene for the application of an architectural resolution through the design of a transport interchange of the Korsten region.

At present there are two functional informal taxi ranks that service the commuters of Korsten; the primary informal taxi node located on Attwell Street and the secondary informal taxi node on Cottrell Street. Currently they operate independently providing a service to people from different destinations, for instance Kleiner and Kempton Park.

The first concern that arises is the proximity of the two taxi ranks in respect of the surrounding urban landscape. For these taxi nodes to be of service to the urban nomad they must be positioned in a more concentrated location to integrate efficiently with the urban fabric.

Secondly, a thorough investigation into the informal trade is necessary to ascertain how it can enhance the street life and keep the edges activated and integrated.

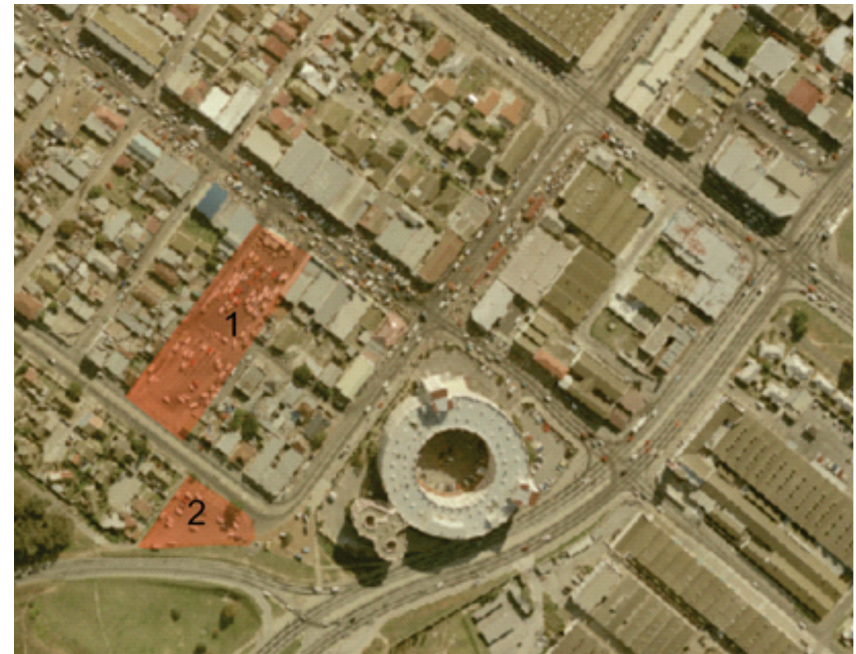
This treatise proposes the integration of the two independent taxi nodes with the proposed BRT system that has been implemented by the NMBM. This amalgamation would strengthen the urban landscape and create a place for the urban nomad.

According to an article by Ian Ollis (2013) there is a dire need for accessible, affordable mass transport across South Africa. The bus rapid transit system was supposed to cure this woe, but implementation has been slow and mismanaged, especially in municipalities like Nelson Mandela Bay.

This treatise acknowledges that the BRT system in and around the Bay area has been temporarily halted due to the challenges:

- There is a need for more buy-in customers to use the system, especially private car users.
- It is challenging to develop a robust business and financial model for continual maintenance of the existing system.
- There is a need for continuous skills training so that the owners and operators can maintain the success of the system.
- The inter-modal coordination/network is poor.
- There is no Automatic Vehicle Location (AVL) connected to the control room, which helps with updated schedules both inside the bus and station.
- The operation in mixed-flow traffic lanes is a major problem. No provision has been made for commuter seating - bicycle parking or private car lots at any of the stations (Adewumi & Allopi 2014:4).

Fig 1. Informal taxi node located on Attwell Street on Cottrell Street  
(source: Google earth)



## Motivation

### Growth of public transportation in South Africa

The aim of this section of study is to gain an understand of the relationship between the growing urban environment and the public transport that operates in this urban landscape. Urbanisation has brought about a population shift from the rural environment to the urban environment. The ever-growing number of people living in urban areas has a direct implication on the urban environment and this predominantly results in the physical growth of the area, whether it is horizontal or vertical.

Katherine Purvis, a South African journalist; working on the Global Development Professionals Network and Guardian Sustainable Business, stated the following “ Today 54% of the world’s population is living in urban areas, but by 2050 the urban population is expected to rise to 62% in Africa, to 65% in Asia, and to 90% in Latin America.” The question therefore is: What impact does this increased population have on the public transport sector and on the lives of people living in cities?

For this study to be completed Stead et al ( 2000) and (Stead (2001) mention that a number of issues must be taken into account, including the strength of the evidence, the transferability of the findings (whether findings in one country apply to another for example), the scale of analysis (regional, urban or neighbourhood, and so on), the causality of relationship, the interaction between socio-economic factors, urban form and travel characteristics. In order to bring about an understanding of the urban spatial history of the area in question (Port Elizabeth), it is necessary to conduct a study of the transport connectivity of the area; however this investigated in further sections of this treatise. Stead (1999; 2000) furthermore states that urban planning is well placed to co-ordinate the variety of factors that are individually and collectively able to influence a more sustainable travel pattern.

## Urbanization

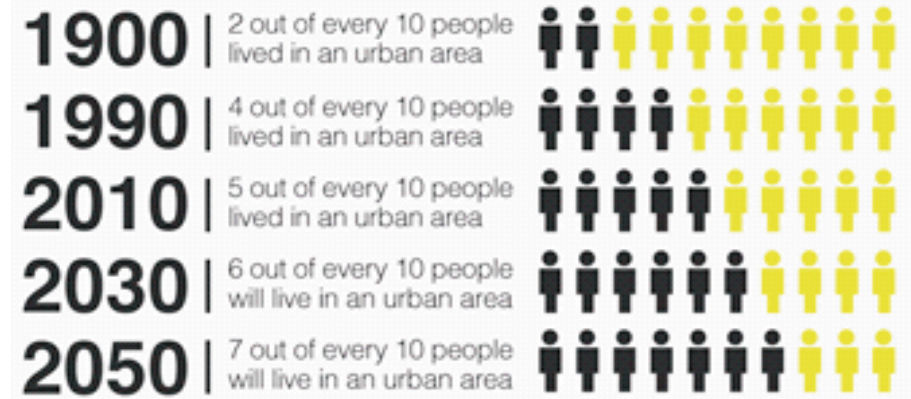


Fig 2. Info graphical representation of urbanization :  
(source: [www.wearethepractitioners.com](http://www.wearethepractitioners.com))

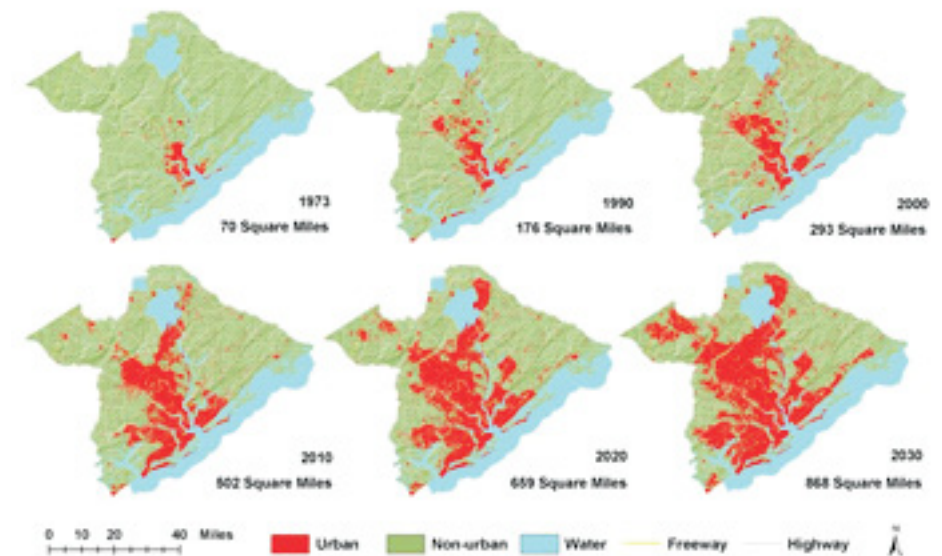


Fig 3. Info graphical representation of urbanization :  
(source: [www.wearethepractitioners.com](http://www.wearethepractitioners.com))

## An overview of the growth of South African Public Transport

This section will provide an overview of the vision of the Department of Transport conducted through the National Household Travel Survey (released in 2005). The survey was aimed at improving the different levels of public transport services in the urban and rural context, thereby enabling South Africans to enjoy greater mobility and to provide the present scenario for public transport in South Africa:

1. There are approximately 3.9 million public transport commuters. The 2.5million taxi commuters account for over 63% of the public transport work trips, bus services account for 22% of the public transport commuters and the balance are transported to work by train. In addition to the 2.5 million commuters who use mini-bus-taxis as the main mode of travel, there are another 325 000 commuters who use taxis either as a feeder mode to other public transport.
2. The total number of minibus taxi trips as informal transport system amounts to 67.9% of of public transport commuters. This highlights the important role that a well-managed minibus taxi system can play as the core focus of public transportation, and the government's new transportation subsidy regime is shifting in this direction to support this sector.

To summarise these findings by the National Household Travel Survey we can conclude that over the past ten years there has been a tremendous increase in the number of commuters using public transport, and the necessary infrastructure supporting this growth is crucial in capitalising on this relationship between urban growth and the public transport infrastructure.

## Bus Rapid Transit (BRT) System Upgrade

In addition to the upgrade of the Port Elizabeth public road, considerable attention was paid to the bus system that connected the city, and the BRT was set in motion to service the 2010 FIFA World Cup and beyond.

The general term BRT is used to describe a variety of transportation systems that facilitate to transport infrastructure, an attempt to provide a better bus service for commuters. There are different requirements for specific BRT systems and many BRT systems use different means of improvements to assist in enhancing the quality of travel for commuters by essentially improvements which are shared by different BRT systems.

The main BRT feature is to have designated bus lanes operating separately from all other transport modes.

- Such right of way may be elevated; on rare occasions, right of way may be a modified rail right of way.
- A bus street or transit mall can be created in an urban centre by dedicating all lanes of a city street for the exclusive use of buses.
- Low-cost infrastructure elements can increase the speed and reliability of bus services including bus turnouts, bus boarding islands and curb realignments.

### Bus priority

If the bus system has preference at interchanges this will increase the extension of green time or actuation of the green light at signalised intersections upon detection of an approaching bus.

### Off-bus fare collection

The boarding process is slowed down by the conventional 'pay as you enter the bus' method and particularly when fares are collected for different destinations and classes of passengers.

Collection of fares upon entering an enclosed bus station would be an alternative method, similar to how fares are collected at a kiosk before entering a subway system.

### Level boarding

The majority of BRT systems use low-floor buses (or level platforms with level-floor buses) to ease the passenger boarding and enhance accessibility.

### Stations

BRT systems also feature enclosed structures that incorporate sliding glass doors, staffed ticket and information booths, and other more standard features listed here, such as off-bus fare collection (sometimes through turnstiles), and level boarding. This style of station is particularly prevalent in Latin American, while most North America systems tend to use open-platform stops, or shelter-style platform stops.

## Aims and Objective

This treatise primarily aims to provide an appropriate response to the design of a taxi rank with insights that are relative to the Port Elizabeth context.

- The treatise aims to investigate issues relating to the design of a formal modal interchange and trader's market for Korsten in Port Elizabeth, South Africa.
- The treatise aims to establish a link to other formal modal interchange services around Port Elizabeth

Secondarily, the treatise aims to look at transport interchange development as an urban module to consolidate, integrate and rejuvenate the decaying state of Korsten. The challenge has two fundamental tasks:

- To get to grips with the social construct behind the public realm in terms of the social interaction and vibrant nature within the African context; and
- Recognising the nature of interchange, and identifying the need of this intervention in Korsten.

## Methodology

The methodology for this treatise will consist of three components.

The first component will define the problem or challenge which will be determined through careful analysis of relevant source material (such as public report published concerning public transport, internet paper reviews and literature reviews concerning to the related topic of the treatise). Once the major issue has been identified they will be explored in more detail through a focused lens which will bring about a consultation of appropriate literature and the analysis of the context through spatial diagrams.

The second component will research building typologies, possible solutions, approaches and technical data required for the resolution of the problem. This information will determine and substantiate the fundamental design issues and the decisions made within this treatise.

The third component will implement the different aspects of the information rendered by the research and analysis in the form of design principles which will form the basis for the design. The actual design and resolution of the building will be resolved through 'crit sessions', model exploration and drawings.

The final presentation of the design will be presented in the form of scaled models, drawings and a document.