THRESHOLD BETWEEN LAND AND SEA

New Waterborne Transport Node for the City of Maputo
Submitted in partial fulfilment of the requirements for the degree of Magister of Architecture, MArch (Prof), the Faculty of Engineering, Built Environment and Information Technology at the University of Pretoria.

November 2011

STUDENT: Catherine Dale Deacon

STUDY LEADER: Prof. Karel Bakker

COURSE CO-ORDINATOR: Jacques Laubsher

GUIDANCE: Edna Peres
For Mom and Dad,
I could not have done it without you

Thank you to Jacques, Prof Bakker and Edna

Thank you to my sisters, brothers and friends for all your help, encouragement and support.

And to my God, who makes it all possible

“For I know the plans I have for you,” declares the Lord, “plans to prosper you and not to harm you, plans to give you hope and a future.”  –Jeremiah 29:11 (NIV)
## CONTENTS

| PREFACE | xi |
| ABSTRACT | xv |
| SAMEVATTING | xvii |

### 01_DISSERTATION INTENTION
- 1.1 Introduction
- 1.2 Aim of the Chapter
- 1.3 The Need for Water Transport in the Bay of Maputo
  - 1.3.1 Current situation
  - 1.3.2 Development and its influence on the need for increased water transport
  - 1.3.3 Conclusions
- 1.4 Urban Intention
  - 1.4.1 Connection to the wider bay context
  - 1.4.2 Connection to the Baixa
- 1.5 Client
  - 1.5.1 Brief
  - 1.5.2 Program
- 1.6 Project Aims and Objectives
  - 1.6.1 Maputo’s water-borne transport infrastructure
  - 1.6.2 Linking the bay with the rest of the city
  - 1.6.3 Contextual design
- 1.7 Design Challenges
- 1.8 Design Approach
- 1.9 Research Methodology
- 1.10 Delimitations and Assumptions

### 02_SITE LOCATION AND CONTEXT
- 2.1 Introduction
- 2.2 Aim of the Chapter
- 2.3 Geographic Context
- 2.4 Historic Context
  - 2.4.1 A brief history of Mozambique
  - 2.4.2 A synopsis of recent history
  - 2.4.3 Historic context of Maputo
- 2.5 Social Context
- 2.6 Precinct Context
  - 2.6.1 Site location
  - 2.6.2 Baixa character
  - 2.6.3 Transport within the Baixa precinct
- 2.7 Site Context
  - 2.7.1 Site plan showing immediate context
- 2.8 Environmental Context
  - 2.8.1 City climate
  - 2.8.2 Tidal range
- 2.9 Architectural Response

### 03_URBAN DESIGN
- 3.1 Introduction
- 3.2 Aim of the Chapter
- 3.3 Past and Present Planning Frameworks
- 3.4 Proposed Baixa Urban Master Plan Considerations
- 3.5 Objectives of the Proposed Urban Master Plan
  - 3.5.1 Connection of open space networks
  - 3.5.2 Define transport interchanges as connective nodes
  - 3.5.3 Use streets as connectors
- 3.6 Proposed Baixa Urban Master Plan
- 3.7 Objectives of the Proposed Waterfront Precinct Spatial Development Framework
- 3.8 Urban scale precedent study
  - 3.8.1 Darling harbour, Sydney
  - 3.8.2 Victoria and Alfred Waterfront, Cape Town
- 3.9 Waterfront Opportunities
- 3.10 Harbour Study
- 3.11 Proposed Waterfront Precinct Spatial Development Framework
- 3.12 Detailed Urban Intention for the Site
“Buildings, in their simplest form, are made of vectors and envelopes. How one enters a building and moves through it constitutes the vectors. What keeps out the rain, cold, heat, noise and burglars constitutes the envelope. **Vectors activate; envelopes define.**

Vectors typically are related to **program**. Envelopes usually respond to **context**, whether social, cultural, political or geographic. Together, vectors, envelopes, programs and contexts are the basic terms of the **architectural equation** - a simple proposition that centuries of art and architectural history somehow have obscured. **Materials**, of course, are another important factor: architecture is the materialisation of ideas or concepts. But materials can also be understood as part of the sociocultural, political or geographic context.”

- Bernard Tschumi (2003:64)
PREFACE

The Maputo Masters studio originated from an international co-operation involving the University of Pretoria, Eduardo Mondlane University in Maputo, and Technical University Delft in the Netherlands. The studio focus was on contextual design, with the revitalisation of Maputo’s historic Baixa being the topic of study.

Initial Fieldwork

Initial fieldwork began during the June recess in 2010, when a group of Pretoria Honours students participated in a workshop in Maputo with students from Eduardo Mondlane University. The focus of the fieldwork was a Quickscan of Maputo’s downtown Baixa district, under the guidance of Dr Jean Paul Corten of The Netherlands Cultural
Heritage Agency. The Quickscan method involves analyzing a defined area according to certain criteria, based on the analyzing team’s first impression. The findings are not intended to be scientific, but are used as a tool to gain an understanding of the context.

The goal of the Quickscan was to get a foundational impression of the state of the Baixa, based on three criteria; firstly Historical Identity of each building, secondly the State of Maintenance and finally the Current Program. The resultant data became the first indicator of the Baixa’s development potential.

The results of the Quickscan revealed the Baixa’s core to be a legible precinct within a vibrant African metropolis that distinguishes itself from the latter by its modesty, particularly in urban fabric, architecture and infrastructure. (Corten, 2010:4)

The scan further showed that vehicular borders separate the fine grain Baixa from large-scale Maputo. The Baixa is nevertheless well connected to the expanding city through vehicular connectors from the north, and the precinct’s two main squares serve to extend the historical Baixa into the surrounding city.

The Quickscan exercise concluded that the Baixa is both the historic and geographic centre of the city. It is well served by rail, road and water transport, but is in need of revitalisation. The strategic geographic position is a positive and strong driver for future development, with the historic legibility a valuable asset to revitalisation.

Further Research
In February of 2011 a second workshop and on-site research took place in Maputo. This time it included students from all three universities participating in the contextual studio. This workshop focused on creating a vision for the revitalisation of the Baixa as a primary goal from which to work further.

Experiencing the city as a pedestrian led to the formation of responses and impressions of the city.
A profound initial impression was the immense influence the sea has on Maputo as a city, while the proximity of the sea is barely perceived in the Baixa. A second impression was that the commercial port, fishing harbour, water transport and leisure did not translate into the language of the city core. These impressions exist mainly because the sea is not accessible to the public from the Baixa. The ocean, the lifeblood of Maputo, is completely disconnected from the downtown.

A strong and consistent view from all workshop groups was thus that the revitalisation of the waterfront and the reconnection of the bay with the city would have a positive effect on the revitalisation of the Baixa.
The chosen project stems from the broader context of Maputo as waterfront city. Increased industrial privatisation of the harbour strip adjacent to the city’s historic Baixa district led to the relocation of public functions, away from the downtown water’s edge and so disconnecting city life from the water. The potential of the city reconnecting to the water is thus latent.

The dissertation responds to this potential by reintroducing a public program to the waterfront site. The building integrates with a greater urban vision for the precinct, whereby the industrial waterfront strip is reprogrammed with a layer of mixed use functions.

A water-borne public transport node is the architectural typology to be explored. The architectural study aims to investigate the consolidation of currently fragmented water transport modes in one facility and so promote integration between different users and the public. Exploration also includes investigation of dualities and contrasts. Interaction between formal and informal trade, water and land transport, and international trends versus local influences are explored.

The projected growth of the city further necessitates the expansion and improvement of water transport infrastructure. The proposed interchange connects all public water-borne modes of transport in Maputo, additionally establishing the link between the city and the water, and subsequently the downtown area with satellite suburbs around Maputo Bay.

The design acknowledges the historic nature of the site and context, and adds an additional layer whilst responding to the richness of the existing in an environmentally sensitive manner.

The social context of Maputo as a capital city in a developing country is another important consideration. The informal, public, transient nature of the context informs the design, juxtaposed against a first world, international business and tourism centre.

The facility will aid in the reintegration of the waterfront with the city, effectively connecting it to other modes of transport.
SAMEVATTING

Die gekose projek spruit voort uit die breë konteks van Maputo as ’n waterkant stad. Toenemende industriële privatisering van die hawe strook aangrensend aan die stad se historiese Baixa distrik het daar toe geleë dat publiekfunksies weg van die middestad waterkant hervestig is en so doende dié stads lewe van die water geskei het. Die potensiaal om die stad weer by die water aan te sluijt is dus latent.

Die verhandeling reageer op hierdie moontlikheid deur die herinvoering van ’n openbare program in die waterkant buurt. Die gebou integreer met ’n groter stedelike visie vir dié buurt waar die industriële waterkant herprogrammeer word met ’n laag van gemengde gebruikery funksies.

’n Openbare watervervoer knooppunt is die argitektoniese tipologie wat ondersoek word. Die argitektoniese studie het ten doel om die huidige gefragmenteerde maniere van watervervoer te ondersoek en hulle in een fasilititeit te konsolideer en sodoende die integrasie van die verskillende watervervoer gebruikery en die publiek te bevorder.

Navorsing sluit ook die ondersoek van dualiteite en kontraste in. Interaksie tussen formele en informele handel dryf, water en land vervoer en internasionale tendense teenoor plaaslike invloede word ondersoek.

Die geprojekteerde groei van die stad noodsak die uitbreiding en verbetering van die watervervoer infrastruktury. Die voorgestelde reëlings verbind alle openbare vorme van vervoer in Maputo, asook verbindtenssis tussen die stad en die water, en daarna dié middestad gebied met satelliet voorstede rondom Maputobaai.

Die ontwerp erken die konteks en historiese aard van die terrein en voeg ’n ekstra laag by, terwyl dit op die rykdom van die bestaande in’n omgewingssensitiewe wyse reageer.

Die sosiale konteks van Maputo as die hoofstad van ’n ontwikkelende land is nog ’n belangrike oorweging. Die uiteenlopende informele, publiek en verbygaande aard teenoor ’n eerste wêreld internasionale sake-en toerisme-sentrum beïnfluë die ontwerp.

Die fasilititeit sal dié herintegrasie van die waterkant en die stad steun en die verbind van die ander vorme van vervoer daar stel.