

Context: Durban South Africa

Architecture is about creating an experience for people using buildings. In the case of this project architecture is about creating a unique experience for the cruise ship passenger and the observer. This concept becomes the primary vehicle behind the design process.

There are various methods to explore the world, be it flight, motor vehicle, hitchhiking or a planned package. The passengers of a cruise ship deserve a unique experience, a true experience of Durban South Africa. Durban needs to be marketed within the global arena as the African city it is, not an attempt at imitating Sydney or Dubai. In the same way the citizens of Durban hold the right to be portrayed in a true light, as an African city.

>> Through the architecture the project strives to create this sole experience of exploring Durban.

Durban is a multi-cultural, vibrant city with a rich history. Once one of the greatest wetland systems between Cape Town and Cairo, vegetation flourishes everywhere. The Port is the country's premier gateway, strategically positioned on the eastern seaboard of South Africa, with the container terminal being the primary source of income. "Rotterdam in Africa" [Harber, 2005]. A component of the project strives to explore Durban, to recognise and respond to the unique qualities of the city in Africa and to anticipate the future.

The major problems faced by South Africa as a country at this present time include: HIV/AIDS, low levels of literacy and skills development, unemployment, poverty and

a high crime rate. These challenges set the backdrop for all architectural projects undertaken in South Africa. As does the problem of our cities, their spatial form is characterised by sprawl and fragmentation brought about as a result of changing social and economic forces and the legacy of apartheid. Any project should be a response to these major social and economic challenges. The project should address at least one of these themes, as well as addressing the major brief. Architects have a social responsibility, and therefore the needs of the community should be on their agenda. The idea that architecture needs to be appropriate to the local context and function according to the required brief is no doubt also very important, and should form the basis of all projects.

I feel the project should be approached in terms of time as well as space. In order to be sustainable the building needs to have the ability to transform and evolve accordingly. The original brief may become obsolete within a short period of time. The project needs to be able to change to take on new programs. This theme falls within the greater theme of "green architecture". All buildings need to be sustainable in terms of social, economic and environmental factors. "Green architecture" is very relevant to the world at this time and should be explored.

As Architects have a social responsibility they also have an environmental responsibility. If not more in Africa than anywhere else in the world.

"Africa reflects a veritable web of ecological interactions

in which the opportunities and potentials for diversity in the living system are more dynamically expressed than anywhere else on earth. More plant species, more animal species, more diversity and more total biomass per unit area, with materials moving through the system at an unparalleled rate. This is the environment in which humanity evolved". *Nomico, 2000, ACBD workshop report.*

Architects have been placed in a position where they are able to address environmental problems through appropriate architecture. This opportunity should not be wasted. Buildings and the construction process are major contributors to unsustainable development and energy waste. Projects must adhere to "good practice", while doing so educating and creating awareness within the general public.

To conclude, architects have a social as well as an environmental responsibility and the major concept is designing an experience for the user. In this case the exploration of Durban as an African city.

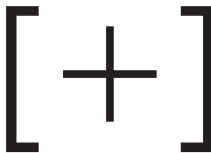


fig. 2.1 Battery Bay

Durban South Africa



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N-Shed Passenger Cruise Terminal

N-Shed is presently the passenger cruise terminal situated on T-Jetty within the heart of the harbour. Access is through working areas of the harbour posing a security and danger risk, this being a high priority on the Port Authorities list of things to change.

A Passenger's first experience of Durban is a basic shed structure with very few facilities. Once off the ship, passengers enter a large open space where luggage collected. They proceed through customs, and into the second space of the shed, where family or friends may be waiting on odd plastic garden furniture. This space houses a make-shift market and a basic kiosk. Once through this space passengers exit the building and are confronted by a group of taxi and bus drivers hustling for business. At no point along this journey is the passenger provided with information about Durban and surrounding tourist attractions. A similar process is experienced when boarding a cruise ship, be it local or international.

Friends and family who wish to bid farewell or greet passengers have a very limited experience. A temporary two meter high fence along the wharf prevents any interaction with the passengers on the ship. It is not possible to take photographs due to this same fence. Once in the building, two small port-hole windows offer a very limited view of the cruise ship. Over and above all these barriers, many people are present to watch the arrival and departure of ships. This experience can and needs to be enhanced with consideration to security and safety.



Client

Portnet and eThekweni Municipality have been identified as the principle clients. Portnet have been interested in developing a passenger cruise terminal for a number of years, while the city sees the project as an opportunity to develop an urban catalyst to upgrade the Victoria Embankment precinct and strengthen the link between the harbour and the city.

Client Requirements

Portnet requires a building to receive and dispatch cruise ship passengers, the building must compete with world class standards. The project will need to accommodate arrivals and departure halls, customs facilities, luggage facilities, viewing areas, a restaurant, tourism information desk and public toilets.

Due to the nature of the cruise ship industry, the building will be used intensely for short periods of time, and therefore an additional function will need to be identified. This function will need to occupy the vacuum created when cruise ships are not present, maintaining the human energy within the building. A possible function may be Port Authority offices, an exhibition space, entertainment area or restaurant.

In terms of the city's requirements, an urban intervention that will stimulate development in and around the Victoria Embankment precinct is required. As mentioned the project needs to strengthen the link between the harbour and the city, by reclaiming sectors of the water-edge.

fig.2.2 model of city

The major goals of the project have been identified:

1. Design of a passenger cruise terminal to international standards, that will boost the KwaZulu-Natal tourism industry.
2. Encourage Cruise ship passengers to explore Durban, while offering them the opportunity to experience the City of Durban as a true African City.
3. Aid in the upgrade and development of the Victoria Embankment precinct and consequently Durban city as a whole, through the spatial framework and townscape.
4. Establish links between cruise ship authorities and the rural tourism projects and encourage tourists to not only go to mainstream tourist attractions. By so doing improve the living standards of rural communities.
5. Design a positive experience for cruise ship passengers and viewers that will encourage them to revisit.
6. Design a building and public space that merges with the city and is part of the everyday life of the Durban community, not simply a destination building.
7. Establish a building that emphasises the Genius loci of Durban and Durban's history.
8. Ensure "good practice" is incorporated from the initial concepts of the building, embracing issues of the environment and its protection.
9. Link the project to the proposed transport systems to allow effective accessibility to the intervention.



3.0 Context Analysis



3.1 Introduction

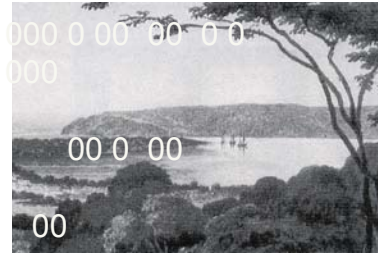


fig. 3.1

Durban has grown from an initial settlement of hunters and frontiersmen, to one of the most important cities in South Africa. Situated on the eastern seaboard, the port has served as the premier gateway to much of the country through-out the history of the country. It played a major role as the gateway for the British during the Anglo-Boer War

and continues to exist as an important hub port for much of Southern Africa. To add to this, the city and surrounding areas, with its sub tropical climate, are major role players within the national and international tourism market. Durban has a rich history, multi-cultural diversity and unique character. This being primarily due to its initial

colonial beginnings and its global position on the Indian ocean with links to Asia, while situated around an African bay and being African in terms of climate, vegetation and people.

1800

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C10 000BC Bay of Natal inhabited by stone age people.

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1497 Coast of Natal is sighted by Vasco da Gama on Christmas day, naming it *terra de Natal*.

1497-1800 The only European visitors to Natal between 1497 and 1800 are the crews and passengers of shipwrecked vessels, and no permanent settlements are established.

1826 Farewell commences the building of a fort at The Point

1835 On the 23 June a meeting is held for selecting the site for a new town. The town is named *Durban*, after the governor of the Cape colony.

1837 Piet Retief arrives at Port Natal.

1838 July - the decision is made to establish Pietermaritzburg Dec- The Battle of Blood River, first British occupation of Natal.

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1843 Sir George Napier announces to the Legislative Council of the Cape that the Queen would take the inhabitants of Natal under her protection.

1842 Second British occupation of Natal.

1845 William Bell becomes the first port captain.

1848 The main body of Trekkers leave Natal. Those that remain are settled in Pietermaritzburg, Weenen and the Klip River and Umvoti districts.

1848 5 000 English and Scots arrive in Natal, due to the potato blight and population explosion in England.

1860 Labourers from India arrive.
1860 The first railway line is built between The Point and the town.

1880 Zulu War

1899 First action of the Anglo-Boer War at Kraaipan.

1902 Vereeniging peace conference, and peace treaty signed.

1904 Maydon Wharf built.

1970 Pier no. 1 is built due to demand for containerisation.

1976 Pier no.2 is built, the current container terminal.

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3.3 *Historical Context*

Water flowed from the small river, Cato Creek, through the wetland and into the bay. Wildlife flourished, mangrove forests were the habitat of vast amounts of birdlife, antelope and monkeys. Their root systems formed fish nurseries and were home to hundreds of species of molluscs and crustaceans. Fish and crocodiles were in abundance and a jungle environment dominated.

Cato Creek gave birth to the bay, the harbour developed due to the bay and in turn the city grew from the harbour.

The Bay of Natal was first inhabited by Stone Age people who followed the migratory routes of animals from the Drakensberg Mountains. Later there were

various other migrations and the ancestors of the Nguni people arrived and settled around the bay. As recently as 1865 their fish kraals and traps could still be seen in the Lagoon.

Vasco da Gama sighted the Bluff in 1497, naming it *terra de Natal*, because it was on Christ's birthday, or Christ's *natal* day. In later years James Saunders King set out by boat from Cape Town to explore the Zululand coast. He sailed over the sand bar into the Bay of Natal, and built the first settlement. Furthermore he drew up the first chart of the bay. Captain William Bell became the first port captain in 1845 and resided in Signal Station.

The onset of the Zulu War spurred harbour development. The British troops had to land at a single

jetty, forcing most horses to swim from the ships to the beach. Consequently, soon after the war, construction of wharves commenced. The year of 1860 saw the first railway line in South Africa linking the Point to the town. This developed further so goods could be transported to the interior of the country.

Durban played a major role in the Anglo-Boer War. Between 1899 and 1902 it acted as the major gateway for the British into South Africa.

During 1957 to 1962 the passenger cruise terminal was built. The development included a huge reception hall, an extensive pre-cooling plant for fruit, a ten-storey administration block and general cargo sheds on the ground floor. Sanctions, as a result of

apartheid, lead to the last passenger ship to berth in 1977. The Ocean terminal building stood empty for a number of years, until it was converted into the present day Port Authority offices. A mezzanine level was introduced minimizing the large open spaces.

With the lifting of sanctions, the need for a passenger cruise terminal arose. A make-shift tent structure was used for a few months before N-shed on T-jetty was half-heartedly converted to house the processes involved with the arrivals and departure of cruise ships. At present N-shed is being used, although not an adequate structure to receive international and local tourists to Durban. These problems will be discussed in detail at a later stage. [Portnet Museum]



fig.3.2 The Natal one penny stamp symbolising the rule of Queen Victoria

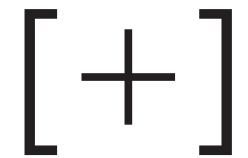


fig.3.3



[landscape]

The line of palms along the esplanade is an icon many people associate with Durban.



3.4 Global Context

Situated on the east coast of South Africa, Durban is well positioned to serve the economic links between South Africa and the Asia Pacific Region.

3.4.1 Durban in the Global Tourism Market

The cruise ship industry is booming. Cruise ships are no more simply for the super rich. Many ports are building new cruise terminals, such as the Prince Rashid in Dubai, the Mayflower in Southampton or Port Kelang in Kuala Lumpur. Small islands in the Caribbean are opening up their harbours to accommodate large cruise ships.

“Themed cruises are becoming very popular, with the emphasis on historic sites and culture, wildlife watching (flying fish, whales, penguins, sharks, dolphins....) or shopping because, depend on it, where there’s a port you’ll find a warm welcome at a mall or a market not far way. There are even wedding, golf, gay pride and gambling cruises.” (Nivison, 2005 p. 10)

3.4.2 Foreign Tourism

Approximately 1.2 million tourists visit KwaZulu-Natal annually, spending approximately R6 500 per visitor. The average length of stay is thirteen nights with

the main source markets being the UK, Germany, USA and Canada, France and Netherlands. The major purpose of visits to KwaZulu-Natal are holiday 69 percent, business 16 percent, visit friends and relatives 11 percent and other 5 percent. (SAT 2004)

3.4.3 Durban Harbour

Situated on the eastern seaboard of Southern Africa, Durban harbour is South Africa’s premier harbour gateway. Projects such as the ‘Millenium Tower’, the port control tower, the widening of the entrance channel, the construction of new deep-water berths at the Point, the conversion of Pier

1 to the container handling and the expansion of the Durban Car Terminal will ensure the Port of Durban remains the busiest port on the African continent. To add to this, Durban Port is an employer to approximately 1 400 people. However another 35 000 people are dependent on the port.

The port covers a land area of 1 854ha, comprising its total land and water area, with a total distance around its shoreline of 21km.

There are 57 berths and 302km of rail track linked to the national rail network, which guarantees the rapid movement of import and export cargo. The port’s major strength is the Durban Container Terminal (DCT) which moves between 80 000 to 90 000 containers per month. This is more than 65 percent of South Africa’s containerised traffic. (The South African Ports Yearbook 2004)

Durban south africa

“Durban is strategically placed as an all-year-round port on the southern Indian Ocean cruise routes and getaway to the major tourist destinations in KwaZulu-Natal province. As such, it is a regular port of call for many leading cruise ships, with some fifty visits annually to the dedicated passenger handling facilities of N-Shed, T-Jetty.” The South African Ports Yearbook 2004

fig.3.4 global location



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fig.3.5 fig.3.6

fig.3.7

fig.3.8

fig.3.9

fig.3.10

fig.3.11

fig.3.12

fig.3.13

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Left to Right: BAT Centre, Durban City Hall, ICC, ICC, Memorial, Nedbank designed by Norman Eaton, Vasco da Gama memorial, Sugar terminal buildings, Yacht mole.

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3.6 National Context

Durban has always served as a major gateway to the interior of the country, linking the Reef to the rest of the world. This link is vital for the economics of the country.

3.6.1 Domestic Tourism

The annual pilgrimage of tourists from the interior to Durban during the December holidays is a key contribution to the finance of the city.

Approximately 13.9 million visitors each spending an average of R1 000. The average length of stay is 7.5 nights with the major source markets being other parts of KwaZulu-Natal, Gauteng and the Eastern Cape. The purpose of visits to KwaZulu-Natal includes VRF [visit relatives and friends] 75 percent, Holiday 10 percent, Business 6 percent and other 9 percent.

3.7 Regional Context

3.7.1 The eThekweni Municipal Area

Durban falls within the eThekweni Municipal Area [EMA], within the province of KwaZulu Natal and covers an area of 2 297 square kilometers. While the total of the EMA is only 1.4% of the total area of the province, it contains just over a third of the population of KwaZulu Natal and 60% of its economic activity. Only 35% of the EMA area is predominantly urban in character, with over 80% of its population living in these areas. The majority of the densely populated informal housing is located within this area.

3.7.2 Key challenges

Key challenges facing the city according to the eThekweni Municipality Revised Integrated Development Plan 2003-2005:

- + Low economic growth and unemployment.
- + Poor access to basic household services.
- + High levels of poverty.
- + Low levels of literacy and skills development.
- + Sick and dying population affected by HIV/Aids
- + Exposure to unacceptably high levels of crime and risk.
- + Unsustainable development practices.
- + Ineffective, inefficient, inward-looking local government.

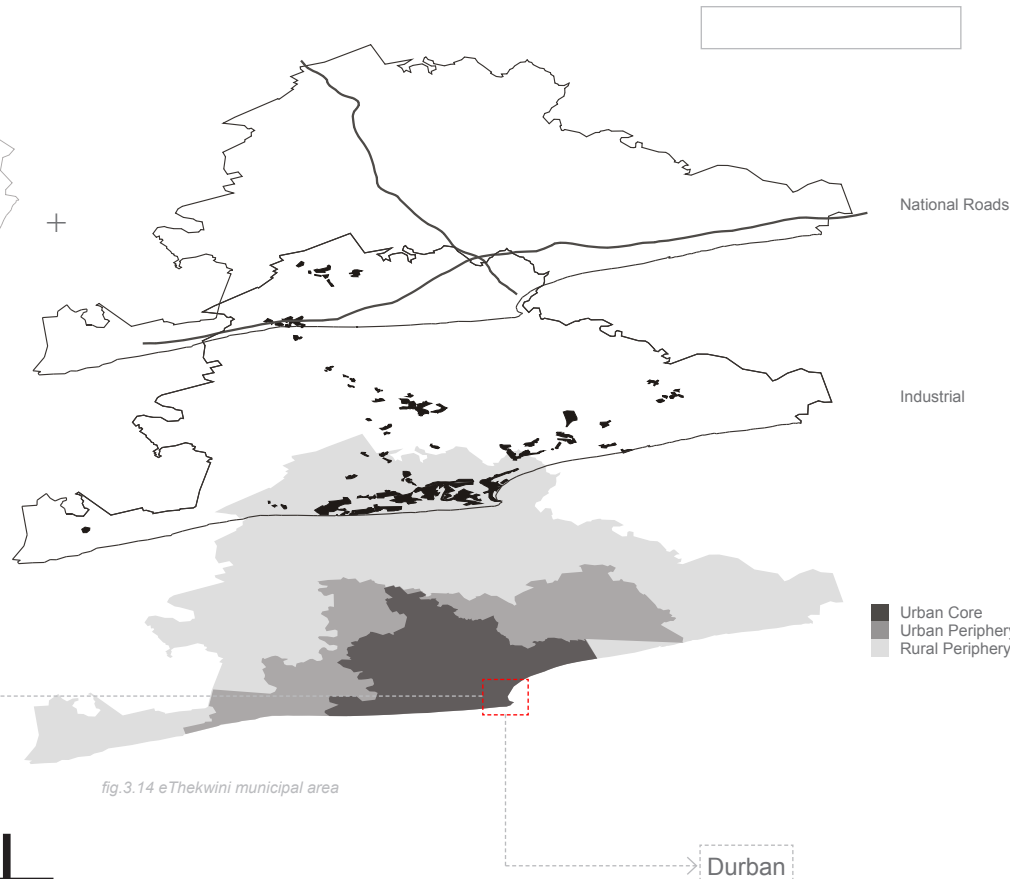


fig.3.14 eThekweni municipal area

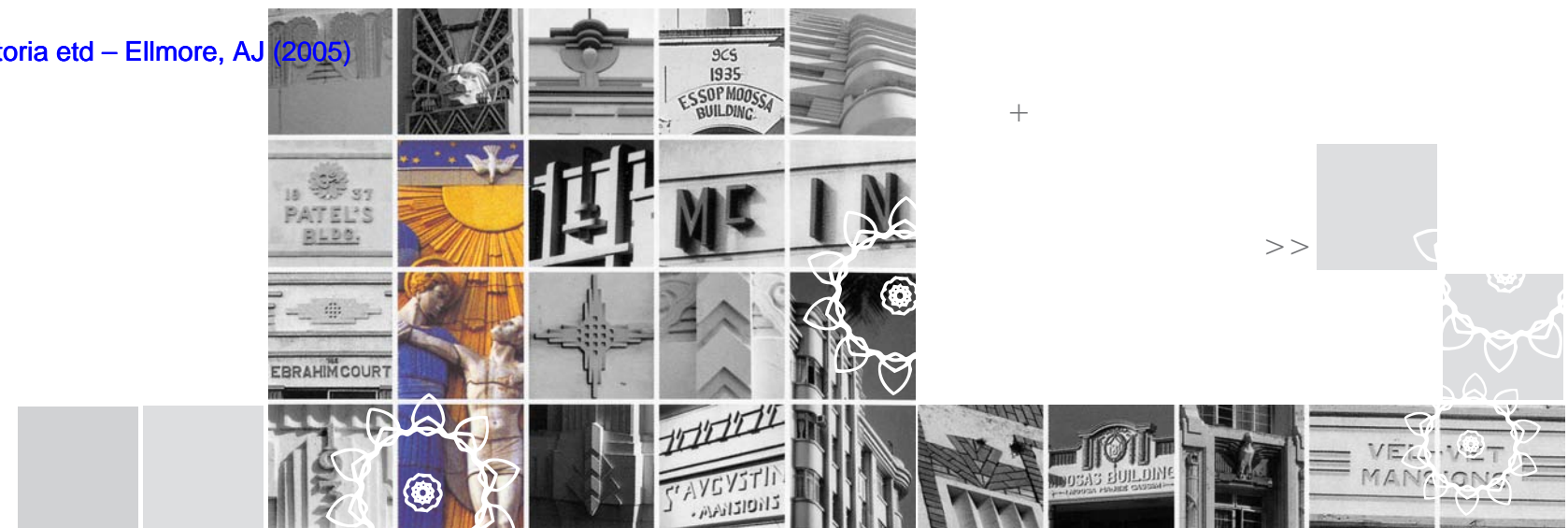


fig.3.15 Art Deco

3.8 Art Deco

The collection of over one hundred Art Deco buildings through-out Durban attaches a unique character to the city. These ornate buildings were add a decorative flourish to the previously conservative colonial town.

“Durban’s architectural response to the Art Deco movement was rich with idiosyncrasies and touches of the region. These were eloquently demonstrated in details and adornments.”
[Art Deco – Durban City Architects Guide]



fig.03

University of Pretoria et al – Kromore, AJ (2005)



fig.3.16 aerial photo

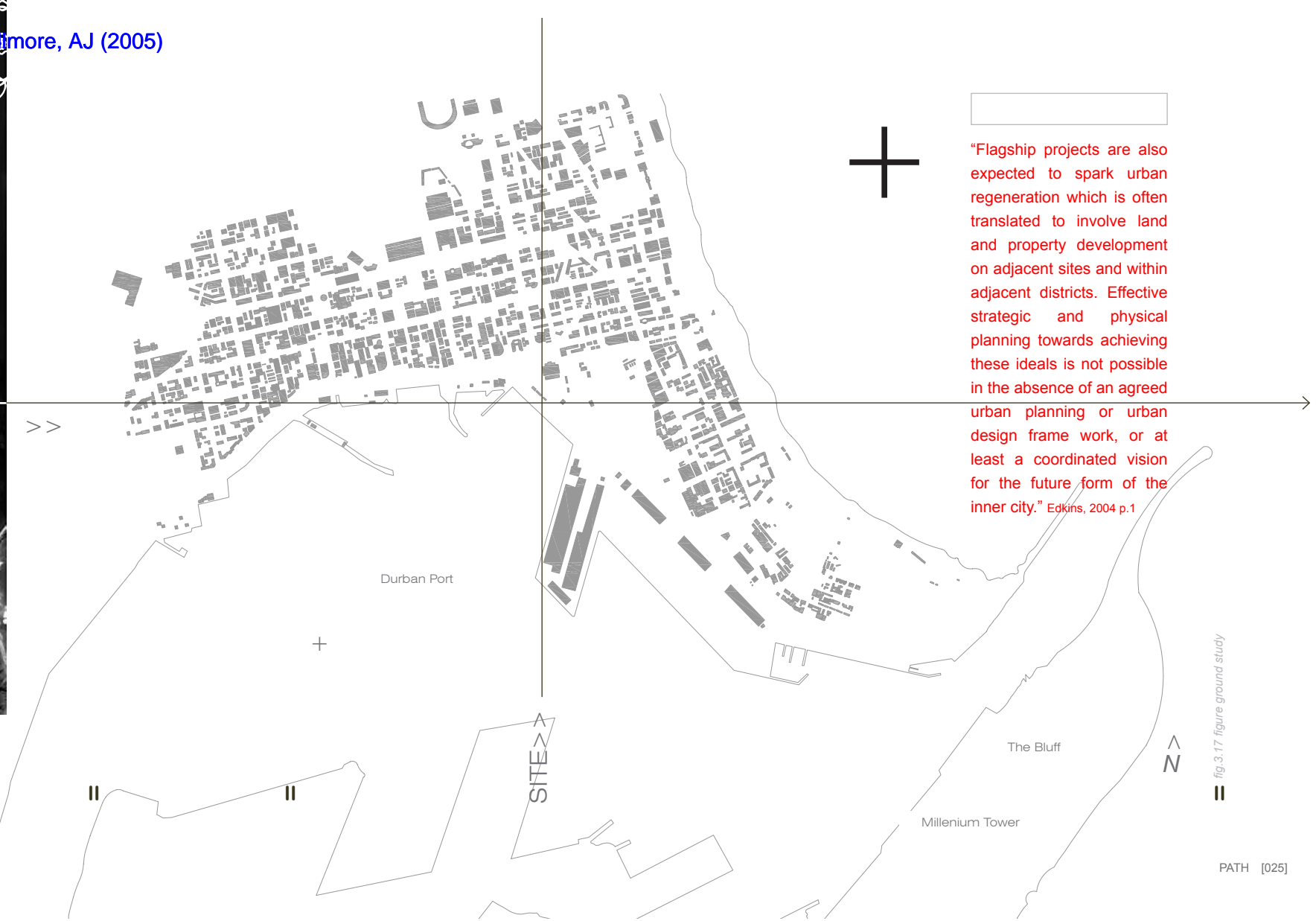


fig.3.17 figure ground study



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3.9 City Wide Context

Through the development of a passenger cruise terminal in Durban harbour the project strives to provide a platform through tourism to upgrade the living standards of surrounding communities. The project needs to plug into the proposed urban framework for the Victorian Embankment precinct. The ability of the building to transform and meet future needs becomes an important theme within the project. The building may need to evolve to meet the requirements of such events as the 2010 Soccer World Cup to be held in South Africa and by so doing enhance the opportunities for Durban to accommodate as much of the event as possible.

3.9.1 Urban Decline
 Vision for Durban: To arrest the urban decline of Durban CBD and to ensure its position as the most advanced commercial and port city as well as convention and tourist city in Africa. The Durban CBD is in a process of decline. Business is moving out of the city centre to decentralised office parks such as Westway in Westville, La Lucia Ridge and Umhlanga Rocks. If the situation is not dealt with soon the CBD will degenerate. This phenomenon is not unique to Durban. The CBD of Johannesburg has been abandoned as a commercial centre, and business has relocated to peripheral centres such as Sandton.

In order to address this problem an urban design framework has been drafted. This design framework identifies eight districts, including Kings Park district, Umgeni corridor district, Beachfront district, CBD district, Victoria embankment district and Albert Park district.

3.9.2 Master Plan Proposals
 The master plan proposes the following:
 + A comprehensible structure plan discernible to all people. Through the development of a plan that can be easily understood by the layperson, the scheme can be more easily supported.

+ A land-use plan which recognises cultural and social diversity. Although

the integration of all races is the aim in South Africa, the identification of districts illustrating various cultures is sought.

+ A transport plan which is legible and safe, connecting the major nodes and attractions of Durban CBD.

+ An open space plan which enriches the city for sustainability and attractiveness. Open space should be reserved for recreation and conservation use.

+ A pedestrian network linking places and spaces of interest. These networks allow pedestrians to explore the cities streets and spaces, and allow accessibility.

+ Precincts of opportunity and diversity. The uniqueness of districts needs to be emphasised, helping to

identify local interest groups and ownership.
 + A safe city. Safety is a fundamental right to every citizen, and only once citizens feel safe within their own city will tourists feel the same way.
 + A city of accessibility. Through the development of the public transport system the stress on the road system will be calmed.

+ A tourist friendly city. Tourism is a key income generator to Durban and therefore should be valued.

+ A sports and outdoor leisure city capable of staging major international sporting events. Durban can be marketed through the exposure created by such events as the soccer world cup 2010.

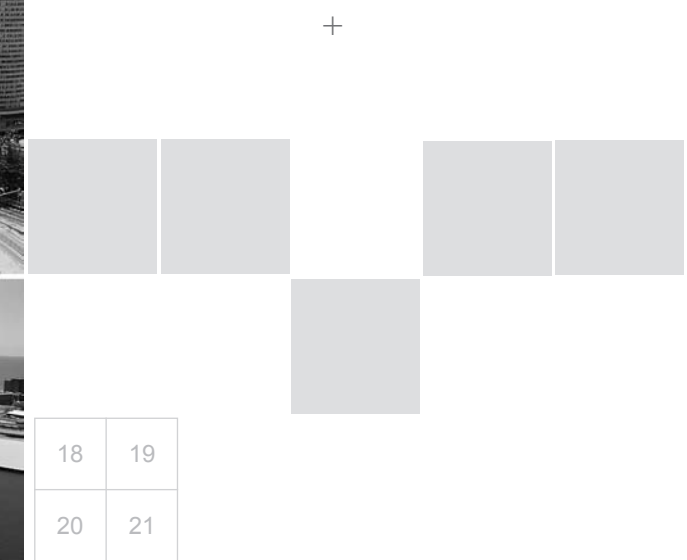
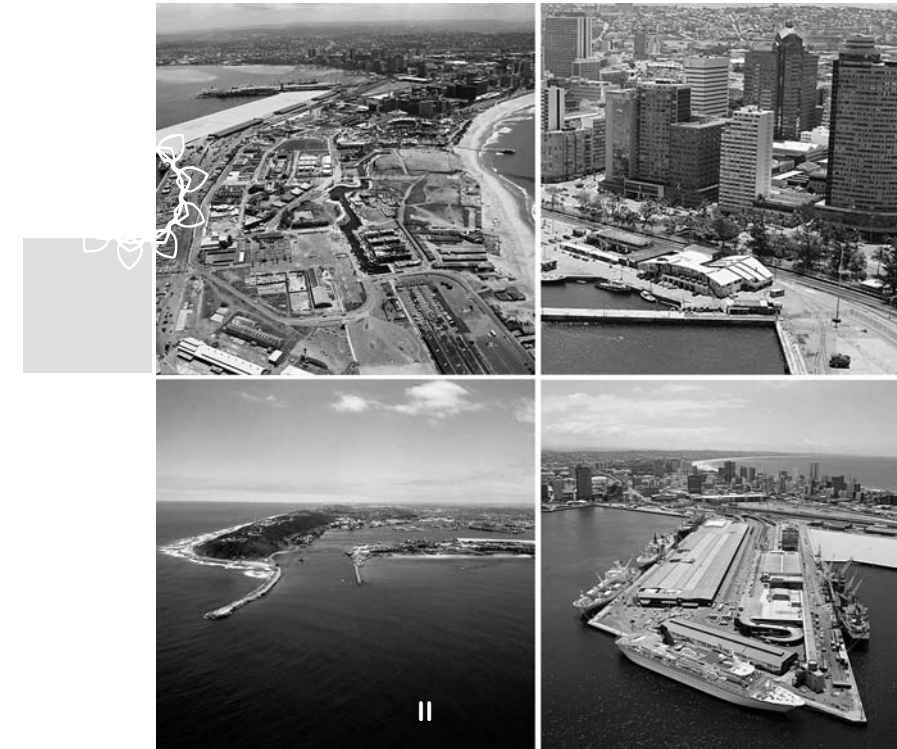


fig.3.18 Point Development under construction
 fig.3.19 BAT centre and city edge
 fig.3.20 harbour entrance
 fig.3.21 T-jetty

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Fig. 3.22 aerial photograph of site and surrounding landscape



- Albert Park
- Wilson's Wharf Shopping Centre
- Sports Hall
- Entrance
- Yacht Club
- Yacht Moie
- Esplanade Green Space
- Green Space
- Maritime Museum
- Small Craft Harbour
- BAT Centre
- SITE**
- Old Customs House
- Harbour Entrance
- T Jetty

--- railway line
 esplanade road

3.10 Study Area Context

3.10.1 Victoria Embankment Precinct

The proposed development urban design framework for the Victoria Embankment precinct has been adopted to guide the project. The proposed site falls on the periphery of this district. The Victoria Embankment is located within the Durban harbour. It is situated on the north shore of the bay. The precinct is separated into two distinct halves by a double railway line, running in an east west direction, which serves the harbour functions at T-Jetty and The Point. On the northern side of the railway line is The Esplanade, one of the busiest roads in the city. The land use in this area is largely high rise residential, the view of the yacht club changing to high rise commercial as one moves north into the CBD.

On the southern side of the railway line towards the waters edge, one finds the yacht basin, Wilson's Wharf and the small craft harbour. This strip is primarily occupied by various

water-sport organizations as leasehold tenants. The entire area has a degraded appearance and has been earmarked for future development. Access is through a level crossing off Victoria Embankment road, which is at present at its peak operational capacity. Access is being upgraded to handle the proposed development.

"The entire area has a substantial degraded appearance, and reflects the occupational disadvantage the stakeholders are at present confronted with. Public access is fairly restrictive, and movement along the waters edge is severely restricted. There are no public facilities in the entire basin, and no provision is made at present for adequate public participation. Major aspects, such as the waters edges are in an extremely poor condition and remedial work needs to be put in place as a matter of urgency. The area abounds with inappropriate structures and restrictive barriers. The time for a major re-development initiative

has clearly arrived." Urban Design And Development Framework Plan For The Victoria Embankment Yacht Basin – Durban, Presentation 2005.

The proposed site is situated to the east of the small craft harbour at Q-wharf. Bordered on the north by the railway line and The Esplanade, on the northeast by the harbour entrance flyover and to the south the waters edge.

"The harbour (Victoria Embankment precinct) in Durban is its life blood. It represents the commercial reality of the city and is one of the oldest and most important districts for living and relaxation yet is the most underutilized." ICC Durban Arena Urban Design Context

3.10.2 Vision for Victoria Embankment

The Victoria Embankment precinct has the potential to be a key tourist attraction and leisure space within the city due to the possibilities created by the harbour, such as sailing, motor crafts and water-sports. The development

framework for this precinct stresses the need to address working parts of the harbour that impinge on the expansion of the city towards the water edge. Alternative sites for harbour functions should be seriously considered. This will allow for the desired linkage between the city centre and the harbour. The existing railway line has been acknowledged as an obstruction preventing waterfront access, and needs to be dealt with. The possibility for a tourist opportunity, providing people with an entertainment ride should be considered.

3.10.3 Recommendations for Victoria Embankment Precinct

- + The removal of unnecessary barriers, while still considering public safety
- + Views from the city towards The Bluff need to be enhanced. The landscaping of the harbour can be used to achieve this.
- + Proposals for the new marina area and residential areas should be considered. The scale of the project should be appropriate and parking hidden.

- + The removal of harbour activities from the city side of the port should be taken into account.
- + The railway line needs to be addressed and may perhaps be used to transport people.
- + A heritage board walk along the waterfront celebrating its development history from the oldest beach and swimming area through to the development of the heavy industrial port to its new tourist face once again connecting the harbour to the city.
- + Retain and celebrate the legal district with the supreme courts along with the other significant buildings to create a heritage trail that connects back to the city.

ICC Durban Arena Urban Design Context

3.11 Bio-physical context

This topic is guided by Dieter Holm's Manual for Energy Conscious Design Document (Holm 1996)

3.11.1 Climate Zone

Durban falls within a coastal region, characterized by high temperatures and high humidity levels. The daily temperature variation is small. The climate is the closest to an equatorial hot humid climate that is to be found in Southern Africa.



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Temperature

The maximum diurnal variation occurs in June. The average monthly diurnal variation is 9K.

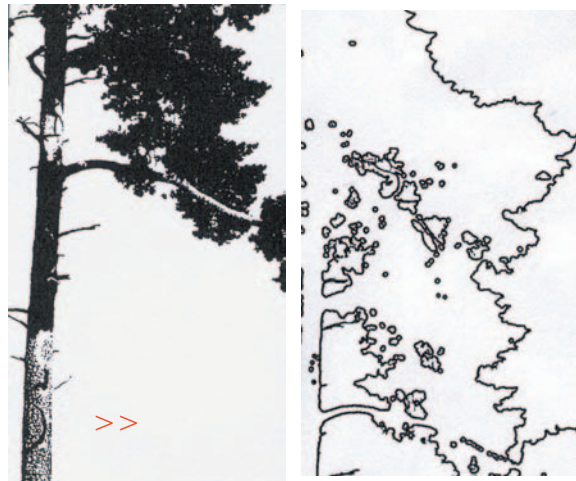
Summer temperatures extend approximately 5K above the comfort zone. Winter temperatures are 10K below the comfort zone.

Humidity

The average monthly relative humidity is 70%. These high levels are problematic and need to be designed for.

Wind

Summer winds originate from the south-west and north-east. Winter winds are predominantly south-westerly.



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fig.3.23

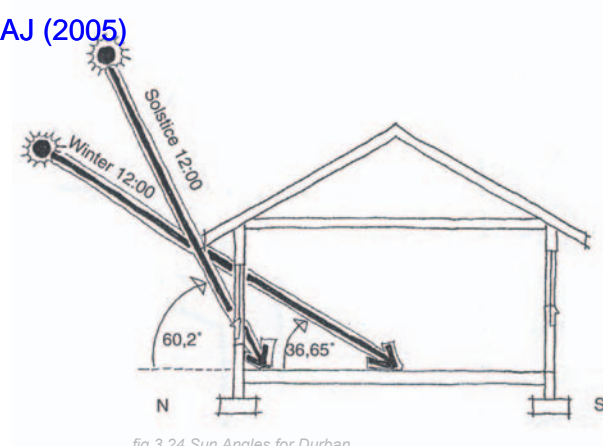


fig.3.24 Sun Angles for Durban

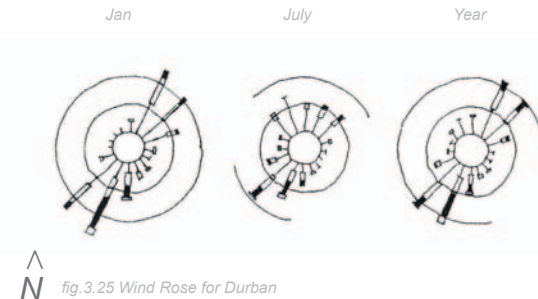


fig.3.25 Wind Rose for Durban

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Plan Form

A narrow plan shape with a single row of rooms allows for effective cross ventilation. The north-south sides being the longest.

Rain Protection

Traditionally buildings in the region are designed with wide verandas around the entire perimeter of the building. This structure shades the exterior walls and protects the outdoor living and circulation spaces from rain.

Solar Control

Summer sun is screened while winter sun is allowed to penetrate into the building.

Ventilation

Through good design natural ventilation can remove excess humidity and provide thermal comfort. Large openings should be provided for maximum penetration of wind.

Materials

Roofs should be reflective to avoid heat gain. The harsh ocean environment should be taken into consideration in terms of material selection. Resistant materials that will not corrode should be specified.

Design Consideration

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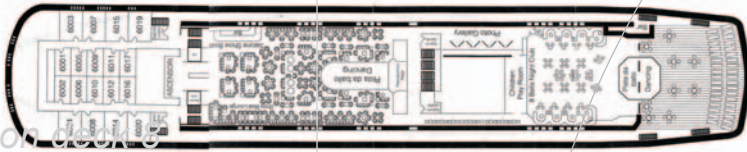
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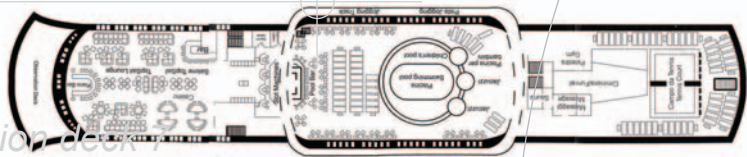
elevation



recreation deck e



recreation deck



>B

fig.3.26 msc Rhapsody

MSC Rhapsody

- > A Length: 163m
- > B Beam: 22.8m
- > C Draft: 5.82m
- > D Cruising Speed: 18 Knots
- > E Bow Thruster
- > F Two Propellers
- > G Fin Stabilizers
- > H 4 Diesel Motor Engines: 19 HP
- > I Gross Registered Tonnage: 17.095 Tons
- > J Passenger Capacity: 850
- > K Total Cabins: 382
- > L Turning Circle: 400m

The MSC Rhapsody is the scale of a typical cruise ship that the Durban passenger cruise terminal will accommodate. At present the MSC Rhapsody frequents Durban approximately thirty five times a season.

>L

400m turning circle

