DESERT ROSE: PORTAL SUBMISSION DOCUMENT LIST

EMP SECTION

NO.	DOCUMENT NAME
12.	Appendix I: Environmental Management Programme
13.	Appendix J: Desert Rose Planning Report
14.	Appendix K: Impact on Traffic
15.	Appendix L: Macroeconomic Assessment of the proposed Desert Rose development in Swakopmund
16.	Appendix M: High-Level Feasibility Paper on the Namibia International Convention Centre - Swakopmund

12.

APPENDIX I:

ENVIRONMENTAL MANAGEMENT PROGRAMME

If you can't measure it
You can't control it

FINAL ENVIRONMENTAL MANAGEMENT PLAN

SAND ROSE INVESTMENTS (PTY) LTD

Applicant: **Sand Rose Investments (Pty) Ltd**
P. O. Box 2707
WALVIS BAY
NAMIBIA

Tel: +264-64-207 688
Fax: +264-64-220 909
E-mail: info@kbarchitects.com

Building towards better Safety Health Environment Quality

Approved Inspection Authority

CI 057 OH
P. O. Box 2477
Brits
0250
S.A.

Tel: +27 82 514 1532
Fax: +27 86 515 5972

AIA 14/50
P. O. Box 8416
Swakopmund
Namibia

Tel: +264 64 - 404 146
Fax: +264 64 -404 179

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ENVIRONMENTAL MANAGEMENT PROGRAMME
PROPOSED ESTABLISHMENT OF THE NAMIBIA INTERNATIONAL CONVENTION AND EXHIBITION CENTRE: DESERT ROSE

1. INTRODUCTION

The purpose of an Environmental Management Plan (EMP) is to guide the planning and design, construction and operational phases of a proposed development. This Final EMP has been developed in parallel with the planning and design phase, which enables environmental guidelines and criteria to be incorporated into the detailed design. This is done to eliminate or mitigate the various possible risks to the environment and its surrounding inhabitants during the planning and pre-construction phase. And it will subsequently ensure that minimal damage will occur to these areas during the construction and operational phases of the proposed project, based on the mitigation measures identified for inclusion in the EMP as a result of the EIA environmental process. This EMP and associated annexures must be read in conjunction with the Final EIA Report.

1.1 Locality

The location of the site is best appreciated in the figures below:

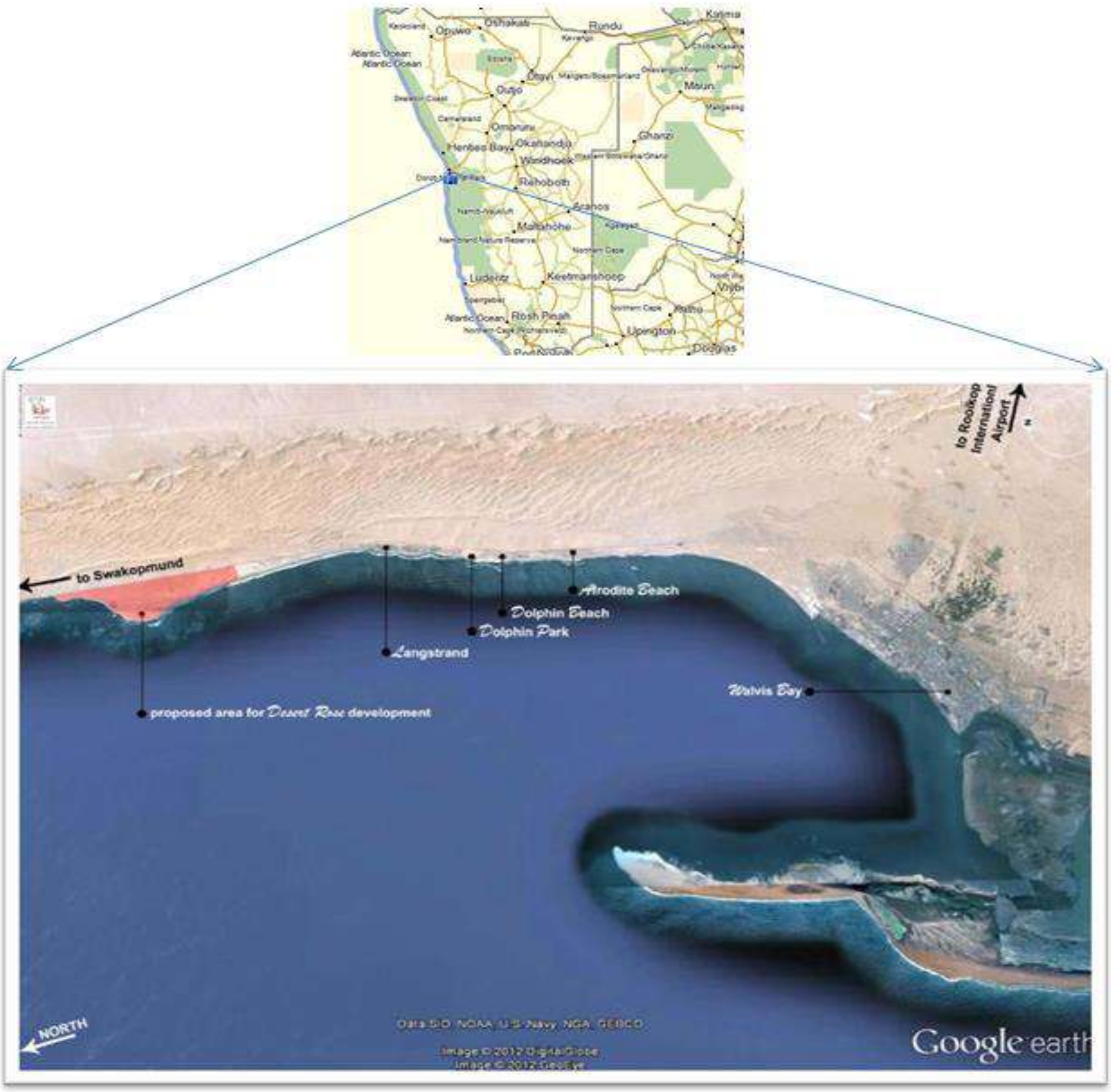

Figure 1: Project Site Location

1.2 Background

National Environmental Health Consultants, as independent environmental consultants have been appointed by Sand Rose Investments (Pty) Ltd to compile the Environmental Management Programme (EMPr), required for the proposed Establishment of the Namibia International Convention and Exhibition Centre: Desert Rose /Sand Rose is to be developed on approximately 418ha of land with some mining / excavation activities as well as hosting the old railway line connecting Swakopmund with Walvis Bay to mention two, located between Walvis Bay and Swakopmund, approximately 24 km to the north of Walvis Bay and some 7 km to the south of Swakopmund as travelling along the B2 road connecting these two coastal towns.

The Convention and Exhibition Centre will be supported by many facilities in order to make it both feasible and user friendly, such as more hotels and entertainment activities, shopping centre, office parks, restaurants, low and high density accommodation, residential properties, golf course, public beaches and more.

Namibia is currently one of the most favourable destinations in Africa, if not the world, on many levels. Today many countries (cities) in the world are recognized by iconic buildings or structures in these modern times. Currently Africa does not really share in this phenomenon, even though our natural inheritance is internationally known. The time has come for Africa, more specifically Namibia, to contribute to international architecture, even though we are a small nation. Namibia has already since independence proven that we can compete with the best in world on all levels of society. As Frank Lloyd Wright rightfully stated, “without architecture of our own we have no soul of our own civilization.” Even though this statement can be interpreted in many ways, it can just as well be applicable to Namibia. Iconic architecture has through the ages been the reflection of successful nations and their accomplishments. It is for this reason that the proposed Desert Rose – Namibia International Convention and Exhibition Centre (NICC) and village project at the coast between Swakopmund and Walvis Bay has been identified as the ideal platform to introduce Namibia to the rest of the world. The harmony between the Namib Desert and the Atlantic Ocean is probably the most published and sought after natural feature of Namibia and also represent the natural essence of the our country the best. The proposed site is unique in the sense that it does not only have both these natural components, but are complimented by the required infra-structure, such as bulk services, all types of transport networks, commercial and social functions, economical importance etc., necessary to sustain such a project. The Convention and Exhibition Centre with hotel will be an iconic building representing Namibia on an international level, of which the concept is unique to our country. The concept has been derived from the Namib Desert Rose, a calcite crystal that is found in the Namib Desert only and unique to this environment. These crystals have grown over many years under very rare and hares conditions to form the most beautiful structures, as Namibia's success has also been born from hardship and long fought battles. The Convention and Exhibition Centre will be supported by many facilities in order to make it both feasible and user friendly, such as more hotels and entertainment activities, shopping centre, office parks, restaurants, low and high density accommodation, residential properties, golf course, public beaches and more. This project should be a project for Namibians, unifying everyone as a nation who conquered. This project should be the gateway to the Southern Africa and the symbol of a successful democratic nation that prospered from its own socio-economic evolvement. It should be an example to other developing countries all over the world of what is possible. It is for this reason that local authorities, regional councils, ministries, government, institutions, the private sector and the public should join hands to make this project a success story. Namibia, land of the brave, willing to dare.

This Environmental Management Plan (EMP) addresses the management of environmental Impacts related to the new proposed township establishment. The documents should be used for managing, mitigating and monitoring the environmental impacts associated with decommissioning the site as identified during the EIA conducted on the site. The EIA Report will be valuable as a reference source for understanding this EMP and for placing it into perspective.

1.3 LIST OF ACRONYMS

CEs Consulting Engineers
ECO Environmental Control Officer
EIA Environmental Impact Assessment
EMP Environmental Management Plan
ELO Environmental Liaison Officer
PM Project Manager (Developer Representative)
RA Resident Architect
RE Resident Engineer

1.4 OBJECTIVES

The primary objectives of the EMP are as follows:

- To describe action plans for achieving the mitigation measures described in the EIA report;
- To indicate responsibilities regarding the implementation of these action plans.
- Ensure that the project complies with the goals of the Namibian Environmental Management Act (No. 7 of 2007) and the 2012 Environmental Impact Assessment Regulations, this proposal triggers the Environmental Impact Assessment (EIA) process.
- Clarify and specify the roles and responsibilities of various stakeholders responsible for implementing the EMP and ensuring its effectiveness.
- Specify clear environmental management actions to ensure that the negative environmental impacts predicted through the EIA process are prevented or, where impacts occur, that the severity of impacts is minimised. Where positive impacts are anticipated, the objective of the EMP is to ensure that these are enhanced and maximised.
- Develop a framework for the development of Method Statements and Environmental Sub-Plans (by sub-contractors), and Management Plans (by The Contractor) to detail how management actions included in the EMP shall be implemented during the construction phase to achieve specified objectives.

1.5 KEY CHARACTERISTICS OF THE PROJECT

Table 1 provides an overview of the project:

Element	Description
Proponent	Sand Rose Investments (Pty) Ltd (Reg. No. 2013/0641)
Property Description	Establishment of the Namibia International Convention and Exhibition Centre: Desert Rose
Site Coordinates	$S22^{o}43'592^{0}$ $E14^{o}31'372^{0}$ $S22^{o}43'598^{0}$ $E14^{o}3'825^{0}$ $S22^{o}46'342^{0}$ $E14^{o}32'242^{0}$ $S22^{o}46'404^{0}$ $E14^{o}323'128^{0}$
Site Location	The project site is located about 8km south of Swakopmund between the Atlantic Ocean and the B2 national road. The project site identified for this development is located in an area that is currently used as a conservation area. The area is fenced with cable fences and it serves as the main breeding area for the Damara Tern.
Extent of the site	The total size of the property is 418 Ha, the actual footprint of the development will be 322 Ha.

Element	Description
General	The proposed Desert Rose development would be one of the largest single developments in Namibia in recent times. It would, in essence be a small town. As a result it would require all the support services that would be found in a small town including retail, entertainment, health and education services and business. The intention is to develop an iconic mixed-use development that would showcase the region to the world. It would, in consequence, also make a major economic contribution to the Namibian economy.

1.6 COMPLIANCE TO REGULATIONS

The Proposed Establishment of the Namibia International Convention and Exhibition Centre: Desert Rose will need to comply with the following legislation:

Policy and statutory framework for the Government of the Republic of Namibia
The Constitution of the Republic of Namibia (1990) Article 95 (1) AND Article 101
The Environmental Management Act (EMA) No.7 of 2007
Environmental Assessment Policy for Sustainable Development and Environmental Conservation (1995) set the guiding policy/ legal framework for environmental management in Namibia. Activity is listed under the EMA regulation of 2012. Section 5 LAND USE DEVELOPMENT ACTIVITIES
National Policies In 1992, Namibia's Green Plan The Green Plan led to Namibia's 12-Point Plan for Integrated and Sustainable Environmental Management in 1993, which was incorporated into the first 5-year National Development Plan (NDP1), 1994/5 – 1999/2000.
Vision 2030: Third National Development Plan of Namibia, 2006/7 – 20011/12 President Hifikepunye Pohamba launched the ambitious Third National Development Plan (NDP3) on 26 November 2008,
Environmental Assessment Policy, 1995
Green Paper: Coastal Policy for Namibia (Feb 2009)
Draft Wetland Policy of 2003 Aquaculture Act 18 of 2002, Inland Fisheries Resources Act 1 of 2003, the Water Resources Management Act 24 of 2004, the Environmental Management Act of 2007, the Parks and Wildlife Management Bill, and the Ramsar Convention.
The Wetland Policy of 2003
The National Environmental Health Policy
National statutes
Environmental Management Act 7 of 2007
The Water Resources Management Act 24 of 2004 Department of Water Affairs, Ministry of Agriculture, Water and Forestry (MAWF)
Marine Resources Act 27 of 2000 It replaces the Sea Fisheries Act 29 of 1992, which in turn replaced the Sea Fisheries Act 58 of 1973. It also replaces the Sea Birds and Seals Protection Act 46 of 1973. The Act commenced on 1 August 2001. Regulations made under previous legislation remain in force, in terms of section 64(2) of the Act.
Labour Act of 1992: Regulations for the Health and Safety of Employees at Work The Regulations relating to Health and Safety at the Workplace in terms of the Labour Act 6 of 1992 ***The new Labour Act 11 of 2007 commenced on 31 December 2007.***
Nature Conservation Ordinance 4 of 1975 (as amended 1996)

Atmospheric Pollution Prevention Ordinance 11 of 1976 Part IV
Petroleum Products and Energy Amendment Act of 2000
Legislation related to soil conservation Part II,
Legislation related to effluent and waste water disposal Model Drainage Regulations, 1996, which states the following: *Connection to public sewer* *Sewage or other prohibited discharges not to enter storm water drains or roads* *Control of industrial effluents*
Legislation related to water quality and resources The Water Resources Management Act (Act 24 of 2004)
Hazardous Substances Ordinance 14 of 1974, and amendments
Draft Pollution Control and Waste Management Bill (1999) Nature Conservation Ordinance No.4 of 1975, the Sea Fisheries Act 29 of 1992, the Sea Birds and Seals Protection Act 46 of 1973, Seashore Ordinance No. 37 of 1958, Hazardous Substances Ordinance No. 14 of 1974 and amendments, the Namibia Ports Authority Act 2 of 1994, and the Atmospheric Pollution Prevention Ordinance No. 11 of 1976.
International Conventions and Protocols
The Stockholm Declaration on the Human Environment, Stockholm 1972
Convention on Biological Diversity, Rio de Janeiro, 1992 Convention on Biological Diversity (CBD) on 12 June 1992
Ramsar Convention (1971)

1.7 RESPONSIBLE PARTIES

There are several role players participating in the environmental management of the site, namely:

1.7.1 Project Manager (PM) (Developer Representative)

- The PM will be responsible for overseeing the contract from initiation to completion of construction on the site.
- The PM will appoint a team of contractors, which will be responsible for the construction of the entire project.
- The PM will be responsible for ensuring that the development is implemented according to the requirements as set out in the EMP.
- The PM should ensure that sufficient resources are available to the other role players to efficiently perform their tasks in terms of the EMP.
- The PM must appoint an independent Environmental Control Officer (ECO) to ensure strict adherence to the EMP.

1.7.2 Resident Architect (RA)

Only architects approved by the PM will be allowed to work on the project and will oversee the individual contracts between the owners of the entire site or portions thereof and the contractors.

1.7.3 Environmental Control Officer (ECO)

The ECO will be appointed at the start of the construction phase and is mandated to do the following:

- Ensure that all contractors/subcontractors/employees are fully aware of their environmental responsibilities. This will take the form of an initial environmental awareness-training program in which the requirements of this document will be explained.
- Any damage to the environment must be repaired as soon as possible after consultation between the ECO, the Consulting Engineer and relevant contractors.
- The ECO shall monitor their actions to ensure that the developer and/or contractor are adhering to all stipulations of the EMP.
- The ECO shall be responsible for monitoring the construction activities throughout the project by means of site visits and meetings. This should be documented as part of the site meeting minutes.
- The ECO must sign off and the PM must certify that all clean-up and rehabilitation, or any remedial action required, are completed prior to transfer of properties.
- A post-construction environmental audit is to be conducted to ensure that all conditions in the EMP have been adhered to.

1.7.4 Auditing / Inspections

- The appointed ECO on a regular basis should inspect the site where necessary.
- The PM or the contractor's representative will accompany the ECO onsite inspections.
- The contractor will use the formats presented in this EMP to report to the PM in terms of compliance to this document.
- When, in the opinion of the ECO, a construction activity will result in environmental damage, the ECO will issue instructions to the contractor or PM, who will in turn order the contractor, to halt the activity. Spot fines or penalties may be levied for non-compliance.

1.7.5 Method Statements

Construction method statements from the contractor will be required for specific activities in sensitive environments on request of the Authorities or the ECO. All method statements will form part of the EMP documentation and are subject to all terms and conditions contained within the EMP document. For each instance wherein it is requested that the contractor submit a method statement to the satisfaction of ECO, the format should clearly indicate the following:

- What - a brief description of the work to be undertaken;
- How - a detailed description of the process of work, methods and materials;
- Where - a description / sketch map of the locality of work; and
- When - the sequencing (phases) of actions with commencement date and completion date estimates.

The contractor must submit the method statement before any particular construction activity is due to start. Work may not commence until the method statement has been approved by the ECO.

1.7.6 Record Keeping

All records related to the implementation of this management plan (e.g. site instruction book, ECO diary, methods statements etc.) must be kept together in an office where it is safe. Records should be kept for two years and be available at any time for scrutiny by any relevant Authority.

1.7.7 Resident Engineer (RE)

A resident engineer acts as a direct, on-site resource for all technical aspects related to the development. He/she is available on the construction site at all times, overseeing all phases of the construction activities. He/she will liaise with the ECO where required to ensure EMP implementation.

1.7.8 Consulting Engineers (CEs)

The engineers involved during the planning, design and construction period. They are not available on site at all times, but are part of the specialist team during the final design and construction stages to advise on appropriate environmental management and mitigation.

This EMP must be attached as an Appendix to service provider tender documents and referred to in the tender documents as *special conditions of tender.*

Ultimate responsibility for implementation of the EMP lies with Desert Rose Investments (Pty) Ltd - Establishment of the Namibia International Convention and Exhibition Centre: Desert Rose. This responsibility, in some instances may be delegated to contractors in the employ of Desert Rose Investments (Pty) Ltd - Establishment of the Namibia International Convention and Exhibition Centre: Desert Rose for practical purposes, but Desert Rose Investments (Pty) Ltd - Establishment of the Namibia International Convention and Exhibition Centre: Desert Rose will retain legal accountability. In that capacity, Desert Rose Investments (Pty) Ltd - Establishment of the Namibia International Convention and Exhibition Centre: Desert Rose should delegate suitably qualified person(s) with the responsibility to ensure the implementation of the EMP, and who will:

- Know the contents and implications of the EIA and monitor the implementations of the EIA findings using the EMP;
- Guide, advise, and consult the contractors on environmental issues during decommissioning of the service station;
- Revise the EMP as required and inform relevant parties of the changes;
- Protect the environment.

Responsibility of the Service Providers and Contractors during the decommissioning of the service station is to:

- Ensure that all requirements of the EMP are communicated to, understood and followed by all persons working on the project who may have an impact on the environment;
- Ensure that a procedure exists for reporting incidents and resolving any problems rapidly;
- Keep good records relating to the compliance/non-compliance with the conditions of the

authorisation. These records must be made available to the relevant authority within seven days of a written request.

2. PHASES OF THE PROJECT

The aim of this EMPr is to derive mitigation measures that should be made binding on all contractors during the construction phase as well as measures that should be implemented during the operational phase.

The purpose of the EMPr is to provide solutions to problems before they occur. If adhered to this EMPr it should limit corrective measures required during the construction and operational phases of the development.

Further mitigation measures will be implemented throughout the different phases of the upgrades if necessary and required.

The EMPr deals with the following phases as detailed below:

2.1 The Planning Phase

The EMPr renders a fair opportunity to incorporate pro-active environmental management measures in order to achieve sustainable development. A proactive environmental measure reduces the risk of impacts occurring during the construction and operational phase. However, a chance of accidental impacts taking place still does exist; this can be countered against through the incorporation of contingency plans (e.g. this EMPr) during the planning phase. Necessary corrective action can be taken to further limit potential impacts that occur during the construction and operation phases.

2.2 Pre-construction Phase

Pro-active planning prior to commencement of the construction phase minimizes the chances of impacts occurring during the construction and operational phases. Actions relating to the pre-construction phase include:

- Appointment of Environmental Control Officer (ECO) and Environmental Liaison Officer (ELO);
- Planning and on-site briefing sessions between the Developer/, Contractors, Sub-contractors, ECO and ELO. A copy of the EMPr to be handed to the Contractor for compliance during construction; and
- Active delineation of areas to be avoided and/or protected during construction, which includes:
  - Active identification of areas to be used for establishment of the construction camp and Lay-down areas (e.g. stockpiling); and
  - Marking of features outside of delineated areas that must be retained.

2.3 The Construction Phase

The majority of the impacts during this phase will have a direct and immediate effect (e.g. pollution, noise and dust). Continual monitoring of the site during the construction phase will help in identifying impacts as they occur. These impacts can then be mitigated through the contingency plans identified in the planning phase.

2.4 The Operational Phase

Potential environmental impacts arising during the operational phase can be minimized, by taking proactive measures during the planning and construction phases, by doing this the risk of incidents can be minimized and monitoring can be reduced but not exempt.

3. ANTICIPATED ENVIRONMENTAL IMPACTS

The anticipated adverse impacts requiring mitigation relating to the biophysical and socio economic environment for both the construction and operational phases of the proposed development are listed below:

3.1 Construction Phase - Adverse Impacts

- Visual Intrusion & Light Pollution
- Noise Pollution
- Safety & Security
- Possible damage/loss of subterranean artifacts
- Heavy vehicle traffic increase that could impact negatively on existing infrastructure
- Soil Erosion
- Soil and Ground Water Pollution
- Destruction of Flora & Fauna
- Waste management
- Increased hard surfaces & storm water run-off

3.2 Operational Phase - Adverse Impacts

- Visual Intrusion & Light Pollution
- Traffic
- Noise
- Safety & Security
- Soil & Groundwater Contamination
- Destruction of Flora & Fauna
- Subsurface leaks (lines, tanks)
- Waste Generation & Disposal

3.3 Specialist Input

Table 2 Specialist Input

EIA PROJECT MANAGEMENT TEAM		
Team member	***Role***	***Organisation***
Johan Cornelissen	Project manager	National Environmental Health Consultants
	Manager, EIA process	
SPECIALISTS		
Specialist environmental studies		
Peter Cunningham	Biophysical Assessment (Vertebrate Fauna & Flora): Desert Rose Development in Swakopmund /Walvis Bay Area	Environment & Wildlife Consulting
G Stubenrauch	Desert Rose Planning report (An innovation and premier urban development initiative	Stubenrauch Planning Consultants cc
	Engineering services report	Windhoek Consulting Engineers (Pty) Ltd
Namibia Roads Authority	Impact on traffic	Roads Authority

SPECIALISTS		
Specialist environmental studies		
Barry Standish Antony Boting	Macroeconomic Assessment of the proposed Desert Rose Development in Swakopmund	Strategic Economic Solutions
	High level Feasibility Paper on the Namibia International Convention Centre (NICC) Swakopmund	Convention Industry Consultants (Pty) Ltd Cape Town
Piet Steenkamp	Soils –Soil and Land use	Rehab Green
Braam van Wyk	Hydrology Surface H_2O	SLR Environmental Consulting
Herta Kolberg	Vegetation Baseline Survey for Desert Rose Development	Herta Kolberg Botanical Consulting

4. EMP OBJECTIVES

This EMP must be used during the pre-construction, construction and operational phases of the proposed project.

The objectives of this plan are to:
- Ensure all environmental safeguards are carried out correctly.
- Manage site activities effectively and coordinate with other players in the project.
- Minimise adverse impacts on the environment.
- Ensure that environmental mitigation measures are in place from the start of the project.
- Minimize disruption to fauna and flora and neighboring landowners / communities.
- Monitor the project.
- Clarify and specify the roles and responsibilities of various stakeholders responsible for implementing the EMP and ensuring its effectiveness.
- Specify clear environmental management actions to ensure that the negative environmental impacts predicted through the EIA process are prevented or, where impacts occur, that the severity of impacts is minimized. Where positive impacts are anticipated, the objective of the EMP is to ensure that these are enhanced and maximized.
- Develop a framework for the development of Method Statements and Environmental Sub-Plans (by sub-contractors), and Management Plans (by The Contractor) to detail how management actions included in the EMP shall be implemented during the construction phase to achieve specified objectives.
- Recognize health and safety issues associated with the project.
- Develop a framework for regular monitoring and reporting of impacts and management actions in order to test and verify assumptions contained in the EIA.
- Develop a framework for undertaking regular auditing and management reviews to ensure continuous improvement.

5. EMP CONTEXT

This EMP fits into the overall planning process of the project and should be implemented by the developer as soon as the Authorities have approved it. A copy of the EMP should always be available on site. All contractors and sub-contractors are to be familiar with the EMP and its contents.

6. ENVIRONMENTAL MANAGEMENT PROGRAMME

The following tables form the core of this EMPr for the construction and operational phases of the development. This table should be used as a checklist on site, especially during the construction phase. Compliance with this EMPr must be audited monthly during the construction phase and once immediately following completion of construction.

6.1. PLANNING AND FINAL DESIGN

Table 3

POSSIBLE IMPACT	MITIGATION MEASURES	APPLICABLE PHASES				RESPONSIBLE PERSON	FREQUENCY	COMPLIANT	
		DS	***CO***	***OP***	***DE***			***YES***	***NO***
Review and approval of EMPr	**Objective:** To ensure sound environmental management on site. **ACTION REQUIRED:** The EMPr must be reviewed and approved by the deciding authority and any considerations deemed necessary by the said authority must be included.	X				MET	Once-off		
Duties of the Developer	**OBJECTIVE:** The developer remains ultimately responsible for ensuring that the development proceed according to the requirements of the EMPr. **ACTION REQUIRED:** Include the EMPr in the tender documentation so that the appointed contractor is bound to the conditions of the EMPr.	X				DEVELOPER	Once-off		

POSSIBLE IMPACT	MITIGATION MEASURES	APPLICABLE PHASES				RESPONSIBLE PERSON	FREQUENCY	COMPLIANT	
		DS	*CO*	*OP*	*DE*			*YES*	*NO*
Duties of the Developer	Take responsibility and the necessary actions required for restoring the environment in the event of negligence leading to damage of the environment. Appoint an independent Environmental Control Officer (ECO) during the pre-construction phase to oversee all the environmental aspects relating to the development from pre-construction until completion of construction. Provide the ECO with all reasonable assistance to facilitate effective monitoring.								
Appointment and duties of Environmental Control Officer (ECO)	**Objective:** To ensure monitoring and implementation of the EMPr, by an independent third party. To report on the developer's compliance with the EMPr. **ACTION REQUIRED:** The Developer must appoint an independent Environmental Control Officer (ECO) who must monitor the developer and contractor's compliance with the EMPr on a continuous basis. The ECO shall report on the findings of monitoring to the MET on a monthly basis during the construction phase. The ECO shall report on the findings of monitoring to the MET on a quarterly basis during the operational phase. The developer must provide all contractors and subcontractors with a copy of the EMPr. The ECO must attend all relevant project meetings on a continuous basis. Prior to the commencing of activities on site, the contractors must ensure that the construction crew attends an environmental briefing and training session with respect to guidelines outlined in this EMPr.	X	X	X		DEVELOPER, CONTRACTOR, ECO	Continuous		

POSSIBLE IMPACT	MITIGATION MEASURES	APPLICABLE PHASES				RESPONSIBLE PERSON	FREQUENCY	COMPLIANT	
		DS	*CO*	*OP*	*DE*			*YES*	*NO*
Appointment and duties of the Environmental Liaison Officer (ELO)	**OBJECTIVE:** To ensure day to day monitoring of construction activities on site, compliance and co-operation of all personnel. **ACTION REQUIRED:** The contractor must appoint an Environmental Liaison Officer (ELO). The ELO must preferably be fluent in the languages of the work crew.	X				CONTRACTOR	Once-off		
Review of the Contractor's Health and Safety Plan	**OBJECTIVE:** To ensure compliance with the regulations of the Labour Act, (Act 11 of 2007). To ensure a construction site that is safe not only to workers, but also to the surrounding properties and the owners/residents. **ACTION REQUIRED:** The contractor must at all times comply with the requirements of the Labour Act, (Act 11 of 2007) and the regulations under this Act. The contractor must prepare and submit a Health and Safety Plan that addresses all aspects related to maintaining a safe and healthy environment, as per the requirements of the Labour Act, (Act 11 of 2007), including the Construction Regulations under this act. The safety plan must include a method statement, stipulating requirements in terms of fire control and procedures to be followed in the event of fire, including firefighting and fire training.	X	X	X	X	CONTRACTOR, ECO, ELO	Continuous		

POSSIBLE IMPACT	MITIGATION MEASURES	APPLICABLE PHASES				RESPONSIBLE PERSON	FREQUENCY	COMPLIANT	
		DS	*CO*	*OP*	*DE*			*YES*	*NO*
Review of the Contractor's Health and Safety Plan	Emergency procedures must be produced and communicated to all employees on site. This will ensure that accidents are responded to appropriately and the impacts thereof are minimized. This will also ensure that potential liabilities and damage to the environment and lives are avoided. The nearest emergency service provider must be identified as well as its capacity and the magnitude of accidents it will be able to handle. The contact details of this emergency Centre, as well as the police and ambulance service must be available at a prominent location at the construction site and the construction crew camp. The contractor must have a basic spill control kit available at the construction camp and around the construction site. These kits must include absorptive material that can handle all forms of hydrocarbon. The contractor shall ensure that at least the site foreman and the ELO have received formal training in the use of the spill control kit.								
The EMPr	**OBJECTIVE:** To ensure effective environmental management on site during construction and operation. **ACTION REQUIRED:** This EMPr must be made binding to the main contractor as well as individual subcontractors and must be included in tender documentation for the construction contract. Contract with contractor to include penalties in the event of non-compliance with this EMPr. A penalty system will be devised prior to commencement of construction, during the planning phase.	X	X	X	X	CONTRACTOR, ECO, ELO	Continuous		

POSSIBLE IMPACT	MITIGATION MEASURES	APPLICABLE PHASES				RESPONSIBLE PERSON	FREQUENCY	COMPLIANT	
		DS	CO	OP	DE			YES	NO
Awareness of the workforce	**OBJECTIVE:** To ensure effective environmental management on site during construction and operation. **ACTION REQUIRED:** It is the contractor's responsibility to ensure that the workforce is aware of and conforms to the environmental guidelines that are applicable in this EMPr.	X	X	X		DEVELOPER, CONTRACTOR, ECO, ELO	Continuous		
Record of environmental incidents	**OBJECTIVE:** To ensure that incidents are recorded and remedial action is taken that would restore the environment to acceptable conditions. To ensure quick and appropriate response to environmental incidents. To ensure adequate recordings of environmental incidents. To prevent recurrence of similar incidents. **ACTION REQUIRED:** The contractor shall take corrective action to mitigate an incident appropriate to the nature and scale of the incident, immediately after the occurrence of the incident. Residual environmental damage that remains after having taken corrective action shall be rehabilitated. Change operating procedures where necessary to prevent recurrence of similar accident. Record all incidents on an Environmental Incident. Report, within 24 hours of the incident occurring.	X	X	X		CONTRACTOR, ELO, ECO, PROJECT ENGINEER	Continuous		

POSSIBLE IMPACT	MITIGATION MEASURES	APPLICABLE PHASES				RESPONSIBLE PERSON	FREQUENCY	COMPLIANT	
		DS	CO	OP	DE			YES	NO
Record of environmental incidents	Additional documents, including photos shall be appended to the incident report to provide a comprehensive record of the incident and the corrective and preventative action taken. Failure to do so shall result in a penalty. All incidents will be investigated in collaboration with the ECO. The focus of these investigations shall not be to apportion blame to specific employees, but to ascertain the root cause of the incident and to prevent a recurrence of similar incidents.	X	X	X					
Rehabilitation planning	**OBJECTIVE:** To limit disturbed areas to the minimum. **ACTION REQUIRED:** The developer and contractor shall liaise with the ECO during the pre-construction phase to agree on acceptable limits of disturbance. A Landscape Master Plan is to indicate areas where rehabilitation is required as well as rehabilitation specifications.	X	X	X	X	DEVELOPER, CONTRACTOR, ECO	Continuous		
Planning and Design	**OBJECTIVE:** To mitigate the potential visual impact through the appropriate application of form, scale, materials and finishes. To ensure minimal negative impact to the natural environment, fauna and flora. **ACTION REQUIRED:** The Site Development Plan is to be amended to the Local Authorities approval. The relevant application on the property known as the proposed Establishment of the Namibia International Convention and Exhibition Centre: Desert Rose /Sand Rose is to be developed on approximately 418ha of virgin land located between Walvis Bay and	X				DEVELOPER, ARCHITECT, TOWN PLANNER, PROJECT ENGINEER, ECO	Pre-construction, design and planning phases		

POSSIBLE IMPACT	MITIGATION MEASURES	APPLICABLE PHASES				RESPONSIBLE PERSON	FREQUENCY	COMPLIANT	
		DS	CO	OP	DE			YES	NO
Planning and Design	Swakopmund, approximately 24 km to the north of Walvis Bay and some 7 km to the south of Swakopmund as travelling along the B2 road connecting these two coastal towns, must be approved by the competent authority.								
Implementation of Sustainable Design Principles	**OBJECTIVE:** To ensure the development is undertaken in a harmonious manner with regards to the environment. **ACTION REQUIRED:** Avoid use of energy intensive, environmentally damaging, waste producing, and/or hazardous materials **Climate:** • apply natural conditioning techniques to effect • appropriate comfort levels for human activities. • Avoid overdependence on mechanical systems to alter the climate (such dependency signifies inappropriate design, disassociation from the environment. • , and no sustainable use of resources). **Temperature (When climate is predominantly too hot for comfort):** • minimize solid enclosure and thermal mass • maximize roof ventilation • use elongated or fractured floor plans to minimize internal heat gain and maximize exposure for ventilation	X				DEVELOPER, ARCHITECT, TOWN PLANNER, PROJECT ENGINEER	Pre-construction, design and planning phases		

POSSIBLE IMPACT	MITIGATION MEASURES	APPLICABLE PHASES				RESPONSIBLE PERSON	FREQUENCY	COMPLIANT	
		DS	CO	OP	DE			YES	NO
Implementation of Sustainable Design Principles	• separate rooms and functions with covered breezeways to maximize wall shading and induce ventilation **Sun:** • sun can be an asset in cool and cold climates to provide passive heating • design must reflect seasonal variations in solar intensity • when solar gain causes conditions too hot for comfort use overhangs to shade walls and openings • use shading devices such as louvers, covered porches, and trellises with natural vines to block sun without blocking out breezes and natural light use lighter-colored wall and roofing material to reflect solar radiation (be sensitive to resulting glare and impact on natural/cultural setting. • standards of reduced general lighting with task lighting and highlighting for specific functional considerations. **Waste prevention:** • use products that minimize waste and are nontoxic. • promote recycling and re-use. **Site design considerations:** • Plan landscape development according to the surrounding context rather than by overlaying familiar patterns and solutions.								

POSSIBLE IMPACT	MITIGATION MEASURES	APPLICABLE PHASES				RESPONSIBLE PERSON	FREQUENCY	COMPLIANT	
		DS	CO	OP	DE			YES	NO
Implementation of Sustainable Design Principles	• Locate structures to take maximum advantage of passive energy technologies to provide for human comfort. **Wind (wind can be an asset in hot, humid climates to provide natural ventilation):** • Use natural ventilation wherever feasible; limit air-conditioning to areas requiring special humidity or temperature control. **Lighting:** • Natural lighting should be used wherever possible. **Waste:** • Provide space for processing all wastes created onsite (collection/recycling facilities, etc.) so that no hazardous or destructive wastes will be released into the environment. • Develop facilities to integrate selected maintenance functions such as energy conservation, waste reduction, recycling, and resource conservation **Visual Character:** • Natural vistas should be used in design whenever possible. • Creating onsite visual intrusions (road cuts, utilities, etc.) should be avoided, and views of offsite intrusions carefully controlled. • A natural look can be maintained by using native building material, and working with the topography.								

POSSIBLE IMPACT	MITIGATION MEASURES	APPLICABLE PHASES				RESPONSIBLE PERSON	FREQUENCY	COMPLIANT	
		DS	CO	OP	DE			YES	NO
Implementation of Sustainable Design Principles	• Creating onsite visual intrusions (road cuts, utilities, etc.) should be avoided, and views of offsite intrusions carefully controlled. • A natural look can be maintained by using native building material, and working with the topography.								
Energy consumption	Energy efficiency/saving measures should be considered in the final design phase, along with other "Green Building" aspects.	X				PROJECT MANAGER, CONTRACTOR	Once-off		
Visual	The slope of the land shall be used to "soften" the visual impact of the conference center, Hotels, residential apartments and other structures on the surrounding environment.	X				PROJECT MANAGER, CONTRACTOR RESIDENT ARCHITECT	Once-off		
Services	The final design of services (roads, water/sewer, stormwater, electricity and waste management) should take cognisance of this EMP and the specialist reports in the EIA report.	X	X	X		PROJECT MANAGER, CONTRACTOR RESIDENT ENGINEER	Once-off		
Fauna	**Description:** Faunal loss/disturbance will vary depending on the scale/intensity of the development operation and associated and inevitable infrastructure. The impacts would be contained and/or limited depending on the various proposed developments envisaged. Each development would have to be assessed individually to ascertain the scale of impact.	X	X	X		PROJECT MANAGER, ECO, CONTRACTOR	Continuous		
	Extent: Localised disruption/destruction of the habitat and thus consequently fauna associated directly with this habitat and the actual development sites. This however, would be limited to the development area with localised implications. Further developments – e.g. industry, road construction, etc. – throughout the general area would however increase the extent of impact.	X	X	X		PROJECT MANAGER, ECO, CONTRACTOR	Continuous		

POSSIBLE IMPACT	MITIGATION MEASURES	APPLICABLE PHASES				RESPONSIBLE PERSON	FREQUENCY	COMPLIANT	
		DS	CO	OP	DE			YES	NO
Fauna	**Duration:** The duration of the impact is expected to be permanent over most of the proposed development sites once established. Most fauna species (especially species associated with the vegetated dune hummocks – e.g. various reptiles and small mammals – and birds breeding in the area – e.g. Damara tern) are not expected to re-colonise the area after completion of the development(s) – i.e. duration viewed as permanent. Disturbances to larger mammals, not viewed as sedentary and/or permanently associated with the area, would not be affected as severely as these species are not permanently associated with the area – i.e. duration viewed as short to medium term. This however, would be limited to the development area with localised implications.	X	X	X		PROJECT MANAGER, ECO, CONTRACTOR	Continuous		
	Intensity: The actual development site would be permanently altered with the intensity of faunal loss/disturbance depending on the species involved – e.g. slow moving and sedentary species will succumb to development while the more mobile species are expected to vacate the area. Implications are expected to be localised, depending on the scale of developments. The areas adjacent the development site should not be significantly affected. This, however, would depend on the proposed development, but should be limited to localised implications.								

POSSIBLE IMPACT	MITIGATION MEASURES	APPLICABLE PHASES				RESPONSIBLE PERSON	FREQUENCY	COMPLIANT	
		DS	CO	OP	DE			YES	NO
Fauna	Areas not directly affected by the development, although within the immediate vicinity, would be affected minimally. This would include dust, noise and other associated disturbances mainly associated with the construction phase(s). The effect that a variety of developments may have on the fauna is difficult to determine beforehand although increased disturbance associated with increased activities are expected. This would however be limited to the actual areas affected.	X	X	X		PROJECT MANAGER, ECO, CONTRACTOR	Continuous		
	Mitigation: The proposed Desert Rose development is expected to severely and permanently alter the current habitat. The most important fauna issue would be the Damara tern breeding colony at Caution Reef – currently fenced off for protection. The proposed development is expected to destroy the Caution Reef Damara tern breeding colony habitat. These birds are not expected to re-colonise the area – i.e. breed on envisaged open areas such as golf greens, open space, etc. – as they require specific habitat and little disturbance. It is unknown if the Caution Reef Damara tern population would breed elsewhere once disturbed, as these is no scientific evidence therefore at present.	X	X	X		PROJECT MANAGER, ECO, CONTRACTOR	Continuous		
	Main recommendations: **1.** Avoid development and associated infrastructure in sensitive areas – e.g. Damara Tern breeding areas and vegetated dune hummocks (reptile habitat – e.g. Bitis peringueyi and Meroles sp. and small mammal habitat – e.g. dune hairy-footed gerbils). As the Caution Reef area is one of the largest (and best studied) Damara tern colonies, this development is expected to negatively impact on the overall population dynamics of this species	X	X	X		PROJECT MANAGER, ECO, CONTRACTOR	Continuous		

POSSIBLE IMPACT	MITIGATION MEASURES	APPLICABLE PHASES				RESPONSIBLE PERSON	FREQUENCY	COMPLIANT	
		DS	CO	OP	DE			YES	NO
Fauna	**2.** Initiate a thorough survey of Damara tern breeding activity at the Caution Reef area. This data could be used to verify the latest breeding status at the colony and identify the most important part of the colony utilised by the terns. MET officials; ornithologists (scientists, including previous researchers) and resident birders should be use prior commencement of the proposed project. **Alternative recommendations should development proceed:** **3.** Initiate an intensive Damara tern ringing programme prior to breeding (i.e. before the peak expected during December/January) at the Caution Reef colony. Attempt to capture (net) and ring as many birds as possible and include a specific Caution Reef colour coded ring combination for future visual identification. **4.** Initiate a long term study on Damara tern re-location and alternative breeding attempts/areas/success – using coded colour ring combination data. This would indicate if the birds breed elsewhere – e.g. Horses Graveyard, etc. – or not at all. Such scientific data could assist with future developments expected to occur in other Damara tern breeding colonies along the coast. **5.** Capture and relocate as many of the important reptiles – especially the endemic and unique Bitis peringueyi – and small mammals – e.g. dune hairy-footed gerbils – from the vegetated dune hummocks, as possible. **6.** Relocation should be to similar undisturbed habitats not expected to be developed along the coast – e.g. vegetated Kuiseb River mouth area south of Walvis Bay.	X	X	X		PROJECT MANAGER, ECO, CONTRACTOR	Continuous		

POSSIBLE IMPACT	MITIGATION MEASURES	APPLICABLE PHASES				RESPONSIBLE PERSON	FREQUENCY	COMPLIANT	
		DS	CO	OP	DE			YES	NO
Fauna	**7.** Protect the most important part of the Damara tern breeding colony – i.e. area with highest density of nests – and incorporate this into the overall planning and design of the development (e.g. open space or conservation area, etc.). This area should be fully protected – fenced – and out of bounds for all activities. **8.** Actively promote Damara tern awareness – e.g. information centre and displays. **9.** Avoid construction activities during the Damara tern breeding season – i.e. September-April with a peak between December/January. In the FIRST year of construction. **10.** Implement and maintain track discipline limited to pre-determined tracks with maximum speed limits (e.g. 30km/h) as this would result in fewer faunal road mortalities and overall destruction of vegetated areas which serve as habitat to a variety of fauna. **11.** Avoid off road driving in areas prone to scarring (e.g. gypsum/gravel plains). Nocturnal driving should also be avoided as this result in the destruction of slow moving fauna – e.g. various reptiles and other nocturnal species. **12.** Avoid and/or limit the use of lights during nocturnal activities as this influence and/or affects various nocturnal species – e.g. especially migrating Palaearctic birds, bats, owls, etc. and contribute to “light pollution”. Use focused lighting for least effect. **13.** Prevent overnight activities during the construction phase(s). This could result in pollution; killing of perceived dangerous nocturnal species (e.g. snakes, etc.); illegal collection of species for the pet industry (e.g. chameleons), etc.	X	X	X		PROJECT MANAGER, ECO, CONTRACTOR	Continuous		

POSSIBLE IMPACT	MITIGATION MEASURES	APPLICABLE PHASES				RESPONSIBLE PERSON	FREQUENCY	COMPLIANT	
		DS	CO	OP	DE			YES	NO
Fauna	**General recommendations:** **14.** Prevent and discourage any form of poaching, illegal collecting of veld foods (e.g. bird eggs, etc.), indiscriminate killing of perceived dangerous species (e.g. snakes, etc.), and the collection of wood (what little there is) as this would diminish and negatively affect the local fauna – especially during the construction phase(s). **15.** Initiate a suitable and appropriate refuse removal policy during the construction phase(s) as littering could result in certain animals becoming accustomed to humans and associated activity and result in typical problem animal scenarios – e.g. black-backed jackal, crows, gulls, etc. **16.** Include patches of well vegetated dune hummock areas into the overall landscaping (i.e. green/open spaces) during developments (including the development of access routes) as these serve as habitat for a myriad of fauna in an otherwise marginal area. **17.** Rehabilitation of the disturbed areas – i.e. initial development access route "scars" and associated tracks, as well as temporary accommodation sites. Preferably workers should be transported in/out to the construction sites on a daily basis to avoid excess damage to the local environment (e.g. pollution, poaching, etc.). Such rehabilitation would not only confirm the various construction companies' environmental integrity, but also show true local commitment to the environment. **18.** Prevent (do not allow) domestic pets – e.g. cats and dogs – accompanying the workers during the construction phase as pets can cause considerable damage to the local fauna and would contribute to the plight of the Damara terns in the general area. The indiscriminate and wanton killing of the local fauna by such pets should be avoided at all cost.	X	X	X		PROJECT MANAGER, ECO, CONTRACTOR	Continuous		

POSSIBLE IMPACT	MITIGATION MEASURES	APPLICABLE PHASES				RESPONSIBLE PERSON	FREQUENCY	COMPLIANT	
		DS	CO	OP	DE			YES	NO
Fauna	**19.** Educate/inform contractors and staff on dangerous and protected species to avoid and the consequences of illegal collection of such species. Liaise with MET to provide this service as the area falls within the Dorob National Park **20.** Investigate the idea of employing a qualified environmental officer (EO) during the construction phase to ensure the appropriate management of the wildlife and ecological processes. This would ensure proper management.								
	Frequency of occurrence: Expected to be "once off" and only affecting the selected site(s).								
	Probability: Definite (100%) negative impact on fauna – especially the important Damara tern breeding colony at Caution Reef – is expected in the various development areas as well as the access route construction sites including the future (i.e. planned) developments. Highly Probable (75%) negative impact on fauna is expected in the general areas as a result of noise, increased activities, etc. Probable (50%) negative impact on fauna is expected from the infrastructure (roads/tracks). Precautionary principle (e.g. avoid unique habitat features as well as adhering to the proposed mitigating measures would minimise this) would decrease the significance of these potential impacts.	X	X	X		PROJECT MANAGER, ECO, CONTRACTOR	Continuous		
	Significance: Before mitigation: **High** After mitigation: **Medium** to **Low**	X	X	X		PROJECT MANAGER, ECO, CONTRACTOR	Continuous		

POSSIBLE IMPACT	MITIGATION MEASURES	APPLICABLE PHASES				RESPONSIBLE PERSON	FREQUENCY	COMPLIANT	
		DS	CO	OP	DE			YES	NO
Fauna	**Status of the impact:** Negative Localised unique habitats (e.g. Damara tern breeding habitats, vegetated dune hummocks, etc.) with associated fauna would bear the brunt of this proposed development, but be limited in extent and only permanent at the actual development sites and access routes.	X	X	X		PROJECT MANAGER, ECO, CONTRACTOR	Continuous		
	Legal requirements: Fauna related: Nature Conservation Ordinance No. 4 of 1975, CITES, IUCN and SARDB Habitat – Flora related: Preservation of Trees and Forests Ordinance No. 37 of 1952, Forest Act No. 72 of 1968, Nature Conservation Ordinance No. 4 of 1975, CITES	X	X	X		PROJECT MANAGER, ECO, CONTRACTOR	Continuous		
	Degree of confidence in predictions: As an ecologist I am sure of the above-mentioned predictions made and would suggest that the mitigation measures be implemented to minimise potentially negative aspects regarding the local fauna in the area.	X	X	X		PROJECT MANAGER, ECO, CONTRACTOR	Continuous		
Flora	**Description:** Floral loss/disturbance will vary depending on the scale/intensity of the development operation and associated and inevitable infrastructure. The impacts would be contained and/or limited depending on the various proposed developments envisaged. Each development would have to be assessed individually to ascertain the scale of impact.	X	X	X		PROJECT MANAGER, ECO, CONTRACTOR	Continuous		
	Extent: Localised disruption/destruction of the habitat and thus consequently flora associated directly with this habitat and the actual development sites. This however, would be limited to the development area with localised implications.	X	X	X		PROJECT MANAGER, ECO, CONTRACTOR	Continuous		

POSSIBLE IMPACT	MITIGATION MEASURES	APPLICABLE PHASES				RESPONSIBLE PERSON	FREQUENCY	COMPLIANT	
		DS	CO	OP	DE			YES	NO
Flora	Further developments – e.g. industry, road construction, etc. – throughout the area would however increase the extent of impact.								
	Duration: The duration of the impact is expected to be permanent over most of the proposed development sites once established. Most species, especially annuals, are expected to re-colonise open areas after completion of the development(s) – i.e. duration viewed as short to medium term. This however, would be limited to the development area with localised implications.	X	X	X		PROJECT MANAGER, ECO, CONTRACTOR	Continuous		
Flora	**Intensity:** The actual development sites would be permanently altered with the intensity of floral loss depending on the species involved – e.g. slow growing species will be affected most. Implications are expected to be localised, depending on the scale of developments. The areas adjacent the development sites should not be significantly affected. This, however, would depend on the proposed development, but should be limited to localised implications. Areas not directly affected by the development, although within the immediate vicinity, would be affected minimally. The effect that a variety of developments may have on the flora is difficult to determine beforehand as this is dependent on the type of developments. This would however be limited to the actual areas affected.	X	X	X		PROJECT MANAGER, ECO, CONTRACTOR	Continuous		

POSSIBLE IMPACT	MITIGATION MEASURES	APPLICABLE PHASES				RESPONSIBLE PERSON	FREQUENCY	COMPLIANT	
		DS	CO	OP	DE			YES	NO
Flora	**Mitigation:** **1.** Avoid development and associated infrastructure in sensitive areas – e.g. vegetated dune hummocks. This would minimise the negative effect on the local environment especially unique features serving as habitat to various species. **2.** Identify protected and unique species associated with the vegetated dune hummocks before the commencement of development activities in areas where these occur and avoid. **3.** Prevent and discourage the collecting of firewood (what little there is) as dead wood has an important ecological role – e.g. nutrient cycling; soil fertility; habitat to vertebrates and invertebrates, etc.	X	X	X		PROJECT MANAGER, ECO, CONTRACTOR	Continuous		
Flora	**4.** Prevent the planting of potentially alien invasive plant species (e.g. Pennisetum setaceum, etc.) for ornamental purposes as part of the landscaping at the various developments, should these be approved – e.g. golf course, green/open areas, etc. Alien species often "escape" and become invasive causing further ecological damage. **5.** Incorporate the natural vegetation – especially vegetated dune hummocks – into the overall landscaping. This would require less maintenance (e.g. water) than alternative vegetation as well as support the natural ambiance of the area. **6.** Rehabilitation of the disturbed areas – i.e. initial development access route "scars" and associated tracks, as well as temporary accommodation sites. Preferably workers should be transported in/out to the construction sites on a daily basis to avoid excess damage to the local environment (e.g. wood and plant collection, etc.). Such rehabilitation would not only confirm the various development companies' environmental integrity, but also show true local commitment to the environment. **7.** Educate/inform contractors and staff of the importance of coastal vegetation, especially vegetated dune								

POSSIBLE IMPACT	MITIGATION MEASURES	APPLICABLE PHASES				RESPONSIBLE PERSON	FREQUENCY	COMPLIANT	
		DS	CO	OP	DE			YES	NO
Flora	hummocks and the consequences of damaging these areas as well as the illegal collection of wood. Liaise with MET to provide this service as the area falls within the Dorob National Park **8.** Investigate the idea of employing a qualified environmental officer (EO) during the construction phase to ensure the appropriate management of the flora and ecological processes. This would ensure proper management.								
	Frequency of occurrence: Expected to be a "once off" issue affecting the selected site(s).	X	X	X		PROJECT MANAGER, ECO, CONTRACTOR	Continuous		
Flora	**Probability:** Definite (100%) negative impact on flora is expected in the actual development areas as well as the access route construction sites. This however, would be much localised and cover limited areas. Highly Probable (75%) negative impact on flora is expected from the infrastructure (roads/tracks). Precautionary principle (e.g. avoid unique habitat features as well as adhering to the proposed mitigating measures would minimise this) would decrease the significance of these potential impacts.	X	X	X		PROJECT MANAGER, ECO, CONTRACTOR	Continuous		
	Significance: Before mitigation: **High** After mitigation: **Medium** to **Low**	X	X	X		PROJECT MANAGER, ECO, CONTRACTOR	Continuous		
	Status of the impact: Negative Localised unique habitats (e.g. vegetated dune hummocks, etc.) with associated flora would bear the brunt of this proposed development, but be limited in extent and only permanent at the actual development sites and access routes.	X	X	X		PROJECT MANAGER, ECO, CONTRACTOR	Continuous		

POSSIBLE IMPACT	MITIGATION MEASURES	APPLICABLE PHASES				RESPONSIBLE PERSON	FREQUENCY	COMPLIANT	
		DS	CO	OP	DE			YES	NO
Flora	**Legal requirements:** Flora related: Preservation of Trees and Forests Ordinance No. 37 of 1952, Forest Act No. 72 of 1968, Nature Conservation Ordinance No. 4 of 1975, CITES	X	X	X		PROJECT MANAGER, ECO, CONTRACTOR	Continuous		
	Degree of confidence in predictions: As an ecologist I am sure of the above mentioned predictions made and would suggest that the mitigation measures be implemented to minimise potentially negative aspects regarding the local flora in the area.	X	X	X		PROJECT MANAGER, ECO, CONTRACTOR	Continuous		
Biodiversity	The site that is earmarked for this development is regarded as a sensitive biodiversity area and is currently zoned as a conservation area. **Potential Mitigatory Measures for initial identified impacts :** Large sections of open spaces, which will be fenced off, will be incorporated into the layout of the development to ensure some of the natural features of the site are maintained.	X	X	X		PROJECT MANAGER, ECO, CONTRACTOR	Continuous		
	The coastline along the project site is regarded as one of the richest in terms of shoreline and seabird density in Southern Africa. **Potential Mitigatory Measures for initial identified impacts :** The layout of the development will planned to ensure vehicle access to the beaches and shoreline is restricted and controlled. This will ensure beaches and the shoreline are protected. Furthermore, a survey was conducted to determine the highest Spring Tides along the project site coastline to ensure all infrastructures within the development will be located at a safe distance from the shoreline. This will also ensure that biodiversity of the intertidal zone is not affected.	X	X	X		PROJECT MANAGER, ECO, CONTRACTOR	Continuous		

POSSIBLE IMPACT	MITIGATION MEASURES	APPLICABLE PHASES				RESPONSIBLE PERSON	FREQUENCY	COMPLIANT	
		DS	CO	OP	DE			YES	NO
Biodiversity	The entire project area is currently fenced and during summer, when bird numbers are the highest, it helps to protect the breeding and roosting birds from off-road vehicular traffic. The area also supports a large colony of Damara Terns.	X	X	X		PROJECT MANAGER, ECO, CONTRACTOR	Continuous		
	The site that is earmarked for this development is regarded as a sensitive biodiversity area and is currently zoned as a conservation area. **Potential Mitigatory Measures for initial identified impacts :** Large sections of open spaces, which will be fenced off, will be incorporated into the layout of the development to ensure some of the natural features of the site are maintained.	X	X	X		PROJECT MANAGER, ECO, CONTRACTOR	Continuous		
	Potential Mitigatory Measures for initial identified impacts : Damara Tern breeding data obtained from the MET indicated that there are larger breeding colonies located towards the north east of the project area, at the "Horses Graveyard site". The introduction of open spaces at strategic location within the development to create flight paths to the "Horses Graveyard site" has been incorporated into the design.	X	X	X		PROJECT MANAGER, ECO, CONTRACTOR	Continuous		
	The vegetation of the project is not unique to this area but is does support a wide variety of species. The species that may be affected will require further assessment. **Potential Mitigatory Measures for initial identified impacts :** A large section of the development will be allocated to a golf course that will primarily consist of indigenous vegetation. It is envisaged that all the all species found within the project area should be present within the area allocated to the golf course.	X	X	X		PROJECT MANAGER, ECO, CONTRACTOR	Continuous		

POSSIBLE IMPACT	MITIGATION MEASURES	APPLICABLE PHASES				RESPONSIBLE PERSON	FREQUENC Y	COMPLIANT	
		DS	CO	OP	DE			YES	NO
Water Supply	**Potential Mitigatory Measures for initial identified impacts :** There is a potable water pipeline along the eastern section of the project site but it needs to be upgraded to cater for the requirements of the envisaged development. The routing options for a new water pipeline will require further assessment to ensure minimum impact to the surrounding environment. Waste water from the development will primarily be of a domestic nature since no industrial activities will be permitted. Waste water / sewage treatment technologies will also require further assessment to ensure the best options are implemented to prevention pollution.	X	X	X		PROJECT MANAGER, RESIDENT ENGINEER, ECO, CONTRACTOR	Continuous		
Energy Supply	**Potential Mitigatory Measures for initial identified impacts :** The nearest power line infrastructure is at Swakopmund. Power lines to the project site will be required. The route for a power line and the associated impacts will require further assessment. Alternative "green" technologies, like solar, will also be considered for specific activities and processes at the development.	X	X	X		PROJECT MANAGER, ECO, CONTRACTOR, RESIDENT ENGINEER	Ones off		
Access routes	**Potential Mitigatory Measures for initial identified impacts :** Access to the development will be from the B2 national road. The location of the access roads will be done in consultation with the Roads Authority. Vehicular traffic from the development to the beach areas will not be considered in the road layout plans.	X	X	X		PROJECT MANAGER, ECO, CONTRACTOR, RESIDENT ENGINEER, RESIDENT ARCHITECT	Ones off		
Construction and Operation	**Potential Mitigatory Measures for initial identified impacts :** Certain areas within the intended development area will be left undisturbed to serve as conservation areas within the development. The conceptual layout plan developed by the proponent will require further review with the Ministry of Environment and Tourism	X	X	X		PROJECT MANAGER, ECO, CONTRACTOR, RESIDENT ENGINEER, RESIDENT ARCHITECT	Ones off		

POSSIBLE IMPACT	MITIGATION MEASURES	APPLICABLE PHASES				RESPONSIBLE PERSON	FREQUENCY	COMPLIANT	
		DS	CO	OP	DE			YES	NO
Socio-economic	**OBJECTIVE:** Job Opportunities and Economic Upliftment. Advantages for local previously disadvantaged communities in terms of employment, empowerment and socio-economic upliftment. Increased economic opportunities for local communities	X	X	X	X	DEVELOPER	Continuous		
	ACTION REQUIRED: Constructing the proposed development will result in direct jobs being created for the construction of the facility. Indirectly, jobs are also created in industries that provide goods, materials and services. For example, an additional amount of goods used in construction will be required from business and industries related to the construction sector. The proposed development will increase skills development and also local employment in the area. Both short-term and long-term employment will be created in this case. The development will lead to the increase in the number of convenience facilities in the primary market area. As far as reasonably possible people from surrounding communities must be employed by the building contractor and sub-contractors. This should be included in the contract upon appointment of successful tendered.	X	X	X	X				
Contribute to upgrading of existing infrastructure	**OBJECTIVE:** Improved municipal services. **ACTION REQUIRED:** All recommendations made by the civil, traffic and electrical engineer and approved by the Municipality must be installed as per standard specifications.		X	X		DEVELOPER, TRAFFIC ENGINEER, ENGINEER, ECO	Continuous		

6.2. CONSTRUCTION PHASE

Table 4

POSSIBLE IMPACT	MITIGATION MEASURES	APPLICABLE PHASES				RESPONSIBLE PERSON	FREQUENCY	COMPLIANT	
		DS	CO	OP	DE			YES	NO
6.2.1 SOILS									
Geotechnical Recommendations	**OBJECTIVE:** Minimize risks related to soil instability on site. **ACTION REQUIRED:** It is recommended that the structural engineers calculate the best economical foundation option for the proposed development based on the type of structure, the different available construction methods and the specific foundation conditions in the footprint area of the proposed structures. Good site drainage will be necessary to prevent water infiltration that may cause seasonal perched water tables or wet soil profile conditions. The saturation of the soil profile will also need special site drainage precautions as this may lead to additional collapse settlements under load. Due to the pollution potential from surface fuel spills the surface drainage and prevention of perching will need special attention. Special measures will be needed to prevent any spillage into the drainage canal if such an event occurs. The soils are expected to be highly corrosive and it will be good practice to use plastic pipes rather than steel pipes for services and to supply cathodic protection where necessary.	X	X			DEVELOPER, ENGINEER, MANAGEMENT, ECO	Continuous		

POSSIBLE IMPACT	MITIGATION MEASURES	APPLICABLE PHASES				RESPONSIBLE PERSON	FREQUENCY	COMPLIANT	
		DS	CO	OP	DE			YES	NO
6.2.1 SOILS									
Designated Routes	Designated routes shall be determined for the construction vehicles and designated areas for storage of equipment. These areas shall preferably be already disturbed.	X	X			PROJECT MANAGER, ECO, CONTRACTOR	Once-off		
Compacted areas	All areas that are compacted by machinery shall be ripped prior to them being rehabilitated with topsoil.		X			CONTRACTOR	Continuous		
Access points & routes	Clearly mark the site access points and routes on site to be used by construction vehicles, workers and pedestrians. Provide an access map to all contractors whom in turn must provide copies to the construction workers. Instruct all drivers to use demarcated access points and routes.	X	X			PROJECT MANAGER, ECO, CONTRACTOR	Once-off		
Vehicular fences	Fence off areas which are off limits to vehicles.	X	X			ECO, CONTRACTOR	Once-off		
Excavated areas	Mark out the areas to be excavated to ensure that only necessary areas are excavated.	X	X			ECO, CONTRACTOR	Once-off		
Erosion									
Soil Erosion	**OBJECTIVE:** Limit loss of soil. **ACTION REQUIRED:** Slopes with a gradient exceeding 1:3 should be avoided. In cases where width is not sufficient, retaining walls should be designed by the consulting engineer in consultation with the landscape architect, in order to ensure that walls are softened by planting. Preference should be given to gabions and natural stone walls. Appropriate erosion and storm water management structures must be installed around the construction site.		X			DEVELOPER, ECO, CONTRACTOR, PROJECT ENGINEER	Continuous		

POSSIBLE IMPACT	MITIGATION MEASURES	APPLICABLE PHASES				RESPONSIBLE PERSON	FREQUENCY	COMPLIANT	
		DS	CO	OP	DE			YES	NO
	Erosion								
Soil Erosion	Storm water control measures on site could include: • berms; • energy dissipating structures; • vegetation Contracts with contractors to include penalties related to environmental damage caused by such contractors. Construction schedules to indicate which areas can be cleared for construction work. Regular inspections by Environmental Control Officer to ensure compliance with these requirements. Construction programme to indicate when specific areas may be cleared.								
Erosion prevention	All surface run-off shall be managed in such a way so as to ensure erosion of soil does not occur. All surfaces that are susceptible to erosion shall be covered with a suitable vegetative cover as soon as construction is completed. Or where storm water erosion may potentially occur, energy dissipaters such as gravel beds must be installed to prevent erosion.	X	X			PROJECT MANAGER, ECO, CONTRACTOR	Continuous		
Surface cladding	All surfaces that are susceptible to erosion, shall be protected either by cladding with biodegradable material or with the top layer of soil being seeded with grass or seeded/planted with a suitable groundcover.	X	X			ECO, CONTRACTOR	Once-off		
Wet areas	No vehicles whatsoever are allowed to move across any wet areas (drainage line), other than those specifically required to for construction purposes. This is to prevent erosion, scouring and compaction.		X			CONTRACTOR	Continuous		
Swales	Erosion caused by construction methods or unusually heavy coastal impacts must be prevented and managed by building retention swales and cut-off swales to direct the water to shallow, slow flowing slopes and areas.		X			CONTRACTOR	Continuous		

POSSIBLE IMPACT	MITIGATION MEASURES	APPLICABLE PHASES				RESPONSIBLE PERSON	FREQUENCY	COMPLIANT	
		DS	CO	OP	DE			YES	NO
Topsoil Management									
Stripping of topsoil	The topsoil layer of all areas to be excavated for the purposes of construction shall be stripped and stockpiled in areas where this material will not be damaged, removed or compacted.	X				CONTRACTOR	Continuous		
Storing	In order to minimize erosion and siltation, and disturbance to existing vegetation, it is recommended that stockpiling be done/ equipment be stored in already disturbed/exposed areas.	X				CONTRACTOR	Continuous		
Top layer	The top layer (±150mm) of all areas to be excavated for the purpose of construction must be stripped and stockpiled in areas where this material will not be damaged, removed or compacted. This stockpiled material shall be used for the rehabilitation of the site and for landscaping purposes once construction is complete.		X			CONTRACTOR RESIDENT ENGINEER	Continuous		
Infrastructure	During the laying of pipes or infrastructure (on or adjacent to the site) topsoil shall be kept aside to cover the disturbed areas immediately after such activities are completed. Measures should be taken to ensure that no rocks or any other materials are placed on this top layer.		X			CONTRACTOR RESIDENT ENGINEER	Continuous		
Designated areas	Stockpiling will only be carried out in designated places where it will not interfere with the natural drainage paths in the environment.	X	X			ENGINEER, ECO, CONTRACTOR	Continuous		
Flood line areas	No stockpiling shall be allowed below the 1:100 yr flood line/within the transitional zone of drainage lines.	X	X			ECO, CONTRACTOR	Once-off		
Stockpile covering	Cover stockpiles and surrounding downhill sides with a sediment fence to stop material washing away.		X			CONTRACTOR	Continuous		
Runoff prevention	Care must be taken to prevent the runoff of silt from open soil and stockpiles into sensitive areas (e.g. watercourses).		X			CONTRACTOR	Once-off		
Removal areas	Remove vegetation only in areas designated during the planning stage.	X	X			CONTRACTOR	Continuous		
Stockpile footprint	Strip topsoil at start of works and store in stockpiles no more than 2m high (and 4m^2 footprint) in a designated materials storage area.		X			CONTRACTOR	Continuous		
Traversing topsoil	No vehicles should be allowed to traverse the stock piled topsoil.		X			CONTRACTOR	Continuous		

POSSIBLE IMPACT	MITIGATION MEASURES	APPLICABLE PHASES				RESPONSIBLE PERSON	FREQUENCY	COMPLIANT	
		DS	CO	OP	DE			YES	NO
				Groundwater					
Groundwater contamination from chemicals used for general construction activities EXCEPT the handling and storage of fuel	**Severity and scale.** Relates to chemicals such as paint, sewage, battery acid, lubricants (oil/grease), cleaners, etc. Accidents that can potentially cause spillage to occur are considered small scale (i.e. in comparison to long term discharge such as undetected leak) and it is likely to be localized. Chemicals entering the groundwater systems however are considered a serious incident. The severity of the impact is considered medium and the scale localised. **Duration:** Impacts reversible and possible to rehabilitate with in the life of project. **Probability:** Considering the scale of the project accidental spillages are possible, and it considered possible that seepage can reach the groundwater table due the high infiltration capacity of the sand cover and the very shallow water table. **Consequence:** Medium **Significance:** Low **Objective:** (i)To ensure that substances classified as hazardous are dealt with in a lawful manner (ii) that correct actions/procedures are taken when accidental spillages of chemicals occur. **Action plan:** (i) Compliance with the Labour Act (Government Gazette of the Republic of Namibia, 1992) that relates to the use, handling, storage and transport of hazardous substances. (ii) When construction commences, the contractor (s) should provide a schedule of all the chemicals that will be used on site for the purpose categorizing and identifying the need of any special	X	X	X		PROJECT MANAGER, RESIDENT ENGINEER, ECO, CONTRACTOR	Continuous		

POSSIBLE IMPACT	MITIGATION MEASURES	APPLICABLE PHASES				RESPONSIBLE PERSON	FREQUENCY	COMPLIANT	
		DS	CO	OP	DE			YES	NO
Groundwater									
	arrangements that might be required to arrange for the a particular chemical/substance (iii) Developing of a "Groundwater protection plan for construction" that (a) lists actions to be taken in the event of emergency/spillage and which is in accordance to the law (d) provides a list of authorities to be contacted in the event of a spillage. **Duration:** Low **Probability:** Low **Consequence:** Low **Significance:** Low								
Groundwater contamination from construction activities due to the spillage of fuel or other hydrocarbon products.	**Severity and scale.** Fuels or any other hydrocarbon product that reaches the groundwater are considered as incident with a high severity since it is difficult to reinstate the groundwater system to its original state. Accidents related to spillage are considered to have a localized impact. A major spill is regarded more than 200 liters (Government Notice: Ministry of Mines and Energy, 2000). **Duration:** Impact not reversible and long term. **Probability:** Considering the scale of the project accidental spillages are possible, and it considered possible that seepage from a major spill can reach the groundwater table due the high infiltration capacity of the sand cover and the very shallow water table. **Consequence:** High	X	X	X		PROJECT MANAGER, RESIDENT ENGINEER, ECO, CONTRACTOR	Continuous		

POSSIBLE IMPACT	MITIGATION MEASURES	APPLICABLE PHASES				RESPONSIBLE PERSON	FREQUENCY	COMPLIANT	
		DS	CO	OP	DE			YES	NO
Groundwater									
Groundwater contamination from construction activities due to the spillage of fuel or other hydrocarbon products.	**Significance:** High **Objective:** To accomplish spillage control for the storage and handling of fuel during construction. **Action plan:** (i) Application of "petroleum best practices" that relates to temporary storage and the handling of fuel products during construction. (ii) Compliance to Petroleum Products Act of 2000 (Government Notice: Ministry of Mines and Energy, 2000), (iii) Compliance to SABS standards regarding to the handling and storage of fuel products as published per Government Gazette (Government Gazette:, 2003) that relates to storage and handling of fuel products. (iv) On-site servicing and maintenance of construction vehicles must not be allowed. **Duration:** Low **Probability:** Low **Consequence:** Low **Significance:** Low								

POSSIBLE IMPACT	MITIGATION MEASURES	APPLICABLE PHASES				RESPONSIBLE PERSON	FREQUENCY	COMPLIANT	
		DS	CO	OP	DE			YES	NO
Groundwater									
Groundwater contamination from sewage	**Severity and scale:** Sewage treatment works will be constructed to purify the sewage water for water re-use application on the golf course. The capacity and type of the treatment works have not been indicated yet, but it was mentioned that trickle filter technology might be used. The annual average daily flow for sewage has been estimated at 2500m3/day (≈900,000 m3/a) (Windhoek Consulting Engineers (Pty) Ltd, 2013). Severity of sewage pollution coming as a result of a "once off" accidental release is considered low. The severity of long term leakage as a result of inadequate design and construction is considered medium, while impacts can be beyond the site boundary. **Duration:** Groundwater contamination coming from sewage will be reversible in the long term. **Probability:** Probable that in an illegal, inadequately designed/constructed scenario that long term release into the environment is possible. **Consequence:** Medium **Significance:** Medium	X	X	X		PROJECT MANAGER, RESIDENT ENGINEER, ECO, CONTRACTOR	Continuous		

POSSIBLE IMPACT	MITIGATION MEASURES	APPLICABLE PHASES				RESPONSIBLE PERSON	FREQUENCY	COMPLIANT	
		DS	CO	OP	DE			YES	NO
Groundwater									
Groundwater contamination from sewage	**Objective:** (i) To prevent sewage seeping into the groundwater system(s) though adequate design and construction to achieve 100% containment of the sewage effluent. Action Plan: (i) The Water Management Act (2013) with particular reference to effluent discharge standards must be complied with (Government Gazette, 2004) (ii) The design of the sewer system and the sewage treatment plant must be able to cope with peak flows. (iii) The design shall provide the facilities necessary to prevent discharge into storm water drains. (iv) If evaporation ponds are considered for the facility then, (a) it must be lined, (b) a leak detection system must be in place through the drilling of dedicated monitoring boreholes and (c) a groundwater monitoring plan must be considered **Duration:** Low **Probability:** Low **Consequence:** Low **Significance:** Low								

POSSIBLE IMPACT	MITIGATION MEASURES	APPLICABLE PHASES				RESPONSIBLE PERSON	FREQUENCY	COMPLIANT	
		DS	CO	OP	DE			YES	NO
6.2.2.WASTE MANAGEMENT									
	Construction Waste								
Waste management	**OBJECTIVE:** To minimize/prevent impact on soil & water bodies. To ensure the responsible disposal of waste generated by the contractor and to prevent the accumulation of litter and waste on site and in the surrounding area. **ACTION REQUIRED:** The contractor shall provide sufficient closed containers on site, as well as waste skips, which must be placed in the crew camp, to handle the amount of litter, wastes, and builder's wastes generated on site. Waste skips to be fitted with lids to prevent littering. Containers shall be emptied once weekly by a licensed waste contractor and disposed of at a municipal waste site. No solid waste or any materials used may be disposed of on site. Solid construction waste not posing a pollution hazard should be used on site as a filling material. Should no filling material be required, this waste should be disposed along with domestic waste. No rubble or discarded building material may remain on site for more than one week.		X	X		CONTRACTOR, ECO			

POSSIBLE IMPACT	MITIGATION MEASURES	APPLICABLE PHASES				RESPONSIBLE PERSON	FREQUENCY	COMPLIANT	
		DS	CO	OP	DE			YES	NO
Construction Waste									
Waste management	No waste material may be burnt on-site. Liquid waste consists mainly of used oil, contaminated fuel, and lubricants, as well as waste paint etc. Liquid wastes to be collected in original containers.								
Planning	Plan the site before starting - for access, deliveries, construction areas, wash-down area, waste area, stockpiles, and chemicals storage etc.	X				PROJECT MANAGER, ECO, CONTRACTOR	Once-off		
Storage	Temporary waste storage points on site shall be determined. These storage points shall be accessible by waste removal trucks and these points should not be located in areas highly visible from the main road leading past the site. The storage of solid waste on site, until such time that it may be disposed of, must be in the manner acceptable to the Local Authority.	X	X			PROJECT MANAGER, ECO, CONTRACTOR	Continuous		
Waste Plan	Prepare a Waste Management Plan. Coordinate with other contractors on site for potential reuse or 'waste exchange'. Coordinate with other contractors working on site regarding: site management, timing of works and waste management (recycling and reuse potential).	X				CONSULTANT, ECO, CONTRACTOR	Once-off		
Disposal	Solid waste shall be disposed of in a manner approved by the Local Authority. All solid waste must be removed and transported to a recognized waste disposal site on a regular basis.	X	X			CONTRACTOR	Continuous		
Record keeping	Keep records of waste reuse, recycling and disposal for future reference. Provide information to ECO.		X			CONTRACTOR	Continuous		
Cleaning/clearing	Avoid the cleaning of the site camp or paved surfaces with a hose pipe and soap. All roads should be cleared of any obstruction and should be swept clean with a broom, as to avoid the waste from entering the sea or underground water systems.		X	X		CONTRACTOR	Continuous		

POSSIBLE IMPACT	MITIGATION MEASURES	APPLICABLE PHASES				RESPONSIBLE PERSON	FREQUENCY	COMPLIANT	
		DS	CO	OP	DE			YES	NO
Construction Waste									
Waste removal	On completion of works, the contractors shall clear away and remove from the site all construction paint, surplus material, foundations, plumbing and other fixtures of every kind. Areas thus cleared shall be graded and scarified to restore the ground as near as possible to its original profile.			X		CONTRACTOR	Once-off		
Household waste									
Storage	Temporary waste storage points on the site should be determined. These storage points should be accessible by waste removal trucks and these points should not be located in ecologically sensitive areas /areas highly visible from the main road and where the wind direction will carry bad odours across to sensitive receptors.	X	X			PROJECT MANAGER, CONTRACTOR	Continuous		
Disposal	No waste materials shall at any stage be disposed of in the open veld of adjacent properties, where the wind direction will carry bad odours across the properties of adjacent tenants or landowners. The temporary stockpiling of any material that could rot and release unpleasant smells into the air will not be permitted. Burning of waste is not permitted. Spot fines of up to N$1000 may be administered if the employees are found to be polluting the area in any way.		X			ECO	Continuous		
Waste Bins	Waste bins with lids shall be provided on site for all waste pertaining to food and drinks. These shall be supplied in close proximity to the area where the workers eat.		X			CONTRACTOR	Continuous		
Removal	The waste bins shall be cleared by a waste truck on a weekly basis.		X			CONTRACTOR	Continuous		
Chemical Waste									
Design	Design the site in such a manner that chemical wastes are not located in close proximity to any permitted fire making area. These areas shall be predetermined and located in areas that are already disturbed. These areas shall not be within 100 m from any 1:100 yr flood line or drainage lines. This area should be on a concrete base to avoid any possible seepage into the soil. The storage area should be locked and access controlled. Appropriate signage shall be displayed.	X				PROJECT MANAGER, CONTRACTOR ECO	Once-off		

POSSIBLE IMPACT	MITIGATION MEASURES	APPLICABLE PHASES				RESPONSIBLE PERSON	FREQUENCY	COMPLIANT	
		DS	CO	OP	DE			YES	NO
Chemical Waste									
Contamination	Cover any wastes that are likely to wash away or contaminate the sea or underground water. Build a bund around the waste storage area to stop overflow into the sensitive surrounding water system.		X			CONTRACTOR	Continuous		
Containers	All used hazardous waste (fuel, lubricants, chemicals, diesel, etc) shall be placed in specifically designed containers and closed-up.		X			CONTRACTOR	Continuous		
Collection	All containers shall be collected on a regular basis by certified chemical removal companies.		X			CONTRACTOR	Continuous		
Disposal	All chemical waste shall be disposed of at a certified waste disposal site and proof of this disposal shall be sent to the contractor and ECO.		X			CONTRACTOR	Continuous		
6.2.3.FUEL, FUELLING AND MAINTENANCE									
Fuel storage									
Storage	No storage of any fuel will be allowed on site, other than what is approved by MET or other legislation. Such an area should be sealed off and access controlled. Appropriate signage shall be displayed.	X	X			ENGINEER, CONTRACTOR	Once-off		
Fuelling									
Re-fuelling	Fuelling will be done off-site or in bunded areas on site.	X	X			ENGINEER, CONTRACTOR	Continuous		
Spill kits	Spill kits must be available in all vehicles that transport hydrocarbons for dispensing to other vehicles on the site. The dispensing devices (pump heads) must be compatible with the vehicles to which they are dispensing. In addition the dispensing devices must be fitted with the necessary valves/ apparatus that will ensure that the nozzles do not drip fuel after pumping has stopped.		X			ECO, CONTRACTOR	Continuous		
Fuelling									
Decontamination	In the event of spills from vehicles, the area should be cleaned immediately using a bioremediation product, such as Petro-Clean TM. The absorbent and soil must be placed in a bin and removed from the site by a certified company and disposed of as a hazardous waste at a licensed commercial facility.		X			CONTRACTOR	Continuous		

POSSIBLE IMPACT	MITIGATION MEASURES	APPLICABLE PHASES				RESPONSIBLE PERSON	FREQUENCY	COMPLIANT	
		DS	CO	OP	DE			YES	NO
Maintenance									
Design	The vehicle maintenance yard and secured storage area will be established as far as is practicable, outside 1:100 year flood line and buffer area around drainage/stormwater channels. The maintenance yard should be indicated on the layout plan of the site.	X				PROJECT MANAGER, CONTRACTOR	Once-off		
Maintenance area	The maintenance of vehicles and equipment used for any purpose during the development will take place only in the maintenance yard.		X			ENGINEER, ECO, CONTRACTOR	Continuous		
Equipment	Equipment used in the development process must be adequately maintained so that during operations it does not spill oil, diesel, fuel, or hydraulic fluid.		X			ENGINEER, CONTRACTOR	Continuous		
Fuel storage									
Machinery	Machinery or equipment used on the site must not constitute a pollution hazard in respect of the above substances. The main contractor or ECO shall order such equipment to be repaired or withdrawn from use if he or she considers the equipment or machinery to be polluting and irreparable.		X			ENGINEER, CONTRACTOR	Continuous		
6.2.4.AIR POLLUTION									
Atmospheric Pollution & Odours	**OBJECTIVE:** Minimize atmospheric pollution and odours Minimize atmospheric pollution and odours.		X	X		DEVELOPER, CONTRACTOR, MANAGEMENT	Construction and operational phases		
Dust control									
Water dampening	The liberation of dust into the surrounding environment shall be effectively controlled by the use of, inter alia, water spraying and/or other dust-allaying agents, such as dust nets. Regular and effective damping down of working areas (especially during dry and windy periods) must be carried out to avoid dust pollution that will have a negative impact on the surrounding environment and committees. When necessary, these working areas should be damped down every 3 - 4 hours.		X			CONTRACTOR	Continuous		
Speed of trucks	The speed of haul trucks and other vehicles must be strictly controlled to avoid dangerous conditions and excessive dust. Preferably trucks should not exceed a speed of 20km/hr.		X			CONTRACTOR	Continuous		

POSSIBLE IMPACT	MITIGATION MEASURES	APPLICABLE PHASES				RESPONSIBLE PERSON	FREQUENCY	COMPLIANT	
		DS	CO	OP	DE			YES	NO
Fire									
Fires on site	A designated area shall be assigned for fire making, if necessary, by the construction workers. This will also reduce air pollution by excessive smoke.	X	X			CONTRACTOR	Once-off		
Machinery									
Exhaust fumes	Machinery or equipment used on the site must not constitute a pollution hazard in respect of air pollution via excessive exhaust fumes. Such machinery shall be inspected regularly by the contractor and rectified immediately, if necessary.		X			CONTRACTOR	Continuous		
6.2.5.NOISE POLLUTION									
Noise	**OBJECTIVE:** To minimize impact of noise on surrounding properties and environment **ACTION REQUIRED:** Noise levels shall be kept within acceptable limits, and forecourt staff must abide by National Noise Laws and local by-laws regarding noise. Equipment such as mechanical equipment, extraction fans, refrigerators that are fitted with noise reduction facilities (e.g. side flaps, silencers etc.) must be used as per operating instructions and maintained properly. Noise levels should comply with the SANS Code of Practice 100103-0994 (recommended noise levels).	X	X	X		DEVELOPER, CONTRACTOR, MANAGEMENT, ECO	Construction and operational phases		
Working hours									
Normal working hours	Construction should be limited to normal working hours, which is stipulated to be from 06h00 to 18h00, Mondays to Fridays and Saturday from 06h00 to 15h00. No work should be allowed on Sundays and Public Holidays, except in extreme emergencies and with the prior approval of the Project Manager and ECO and with notification to the surrounding landowners.	X	X			PROJECT MANAGER, ECO, CONTRACTOR	Continuous		

POSSIBLE IMPACT	MITIGATION MEASURES	APPLICABLE PHASES				RESPONSIBLE PERSON	FREQUENCY	COMPLIANT	
		DS	CO	OP	DE			YES	NO
Staying on site									
Construction workers	Except for 24-hour security guards, no workforce for any of the contractors, nor their family and friends, are allowed to stay on the site.		X			CONTRACTOR	Continuous		
Accommodation	Alternative accommodation shall be arranged for construction workers by the contractors, should they be too far from their permanent residence, and need accommodation closer to the site.	X	X			CONTRACTOR	Continuous		
Noise Regulations	Contactors and site workers must comply with the Namibia Labour Act Regulations for noise requirements. The contractor is required to adhere to SABS 1200 and ISO 9000 safety measures during construction on the entire site.		X			CONTRACTOR	Continuous		
6.2.6.SAFETY AND SECURITY									
Safety									
Informal settlement	No informal settlement will be allowed on the premises or on the access roads leading to the construction site.	X				CONTRACTOR	Continuous		
Informal trading	No casual or informal trading will be allowed at the entrances to the property, or the access roads. It is the responsibility of the contractor to remove any informal traders and discourage the workers from using these informal traders. If the need occurs for vendors, it should be arranged by the PM to have the vendors inside the main contractor work camp.	X				CONTRACTOR	Continuous		
Dangerous areas	All dangerous areas and deep excavations should be barrier taped to ensure visibility of these areas.	X				CONTRACTOR	Continuous		
Sign boards	Clear sign boards should be erected at the entrance to the site to indicate that a construction site is being entered and that certain safety precautions should be followed (hard hats, boots, etc.).	X				CONTRACTOR	Continuous		
Fire extinguisher	Fires are restricted to certain areas to ensure safety on site. A fire extinguisher should be accessible at the site camp and the site personnel should receive training in the use of a fire extinguisher.	X	X			CONTRACTOR	Continuous		
Emergency numbers	A list with all the relevant emergency telephone numbers shall be pasted up in the site office (hospital, fire department, police, ambulance, etc.) for easy access in the event of an accident.	X	X			CONTRACTOR	Continuous		

POSSIBLE IMPACT	MITIGATION MEASURES	APPLICABLE PHASES				RESPONSIBLE PERSON	FREQUENCY	COMPLIANT	
		DS	CO	OP	DE			YES	NO
	Security								
Safety & Security	**OBJECTIVE:** Ensure safety and security of staff and users of the facility **ACTION REQUIRED:** Appropriate measures should be in place for the correct storage and handling of fuel as well as the procedures for dealing with dangerous situations. Staff should be adequately trained with respect to dealing with crime. Equipment and materials must be handled by staff that have been supervised and adequately trained. Staff must be regularly updated about the safety procedures. Emergency facilities must be available and adequately supplied for use by staff and customers. Emergency contact details for the police, Security Company and fire department must be readily available.		X	X		DEVELOPER, CONTRACTOR, MANAGEMENT.	Construction and operational phases		
Security guards	Due to the requirement for security, the construction teams will not be housed on site, and will have to travel to/from site. However, security officers will remain on site for the purposes of guarding the equipment.	X	X			CONTRACTOR	Continuous		
Access control	A system must be implemented where all staff will carry ID. Access control should be enforced. MET or Local Authority officials should be allowed access to site at any time of the day for inspection purpose.	X	X			CONTRACTOR	Continuous		
Fencing	Fencing is required during the construction phase of the project to demarcate the boundaries of the construction site and work camp. Erection of the fence must occur with minimal impact on the natural environment. The fence will ensure that access to and from the site will be restricted to staff only.		X			CONTRACTOR	Once-off		

POSSIBLE IMPACT	MITIGATION MEASURES	APPLICABLE PHASES				RESPONSIBLE PERSON	FREQUENCY	COMPLIANT	
		DS	CO	OP	DE			YES	NO
Security									
Casual access	No casual access to other areas other than the work camp, and the individual construction site will be allowed.		X			CONTRACTOR	Continuous		
Fence rehabilitation	All negative effects caused by the erection of any temporary fences must be rehabilitated after construction is complete.			X		CONTRACTOR	Once-off		
Blasting									
Magazine area	The ECO, Contractor and Safety Officer will earmark a suitable area on site for a temporary storage magazine for the duration of the construction. This magazine however will only be used to store the daily stock and not for stock to be stored for a long period.	X	X			ECO, SAFETY OFFICER, CONTRACTOR	Once-off		
Blasting times	Blasting will only take place after confirmation between the ECO and Contractor. If or when needed.		X			ECO, CONTRACTOR	Continuous		
Notification	Blasting shall be limited to specific, pre-agreed periods of the day so as to minimize disturbance and shall be agreed with the ECO. The ECO shall be notified in writing 3 days in advance with a two weekly daily schedule when blasting operations will take place and where, so that he/she can notify surrounding residents of each blasting event in writing, 24 hours in advance before blasting events will take place.		X			ECO, CONTRACTOR	Continuous		
Safety precautions	Where services run through rocky areas, blasting will be avoided as far as possible - if blasting is required, it should be protected blasting with the necessary Safety precautions of Red flags, a Siren and Safety signs. Where blasting will be near a road, the Metro Police must be notified to control traffic for the duration of blasting operations.		X			ECO, CONTRACTOR	Continuous		
6.2.7.HEALTH									
Chemical toilets									
Number of toilets	One (1) portable chemical toilet for every 10 workers should be provided on site (not all in the contractor's camp, but where the workers are working).	X	X			CONTRACTOR	Continuous		

POSSIBLE IMPACT	MITIGATION MEASURES	APPLICABLE PHASES				RESPONSIBLE PERSON	FREQUENCY	COMPLIANT	
		DS	CO	OP	DE			YES	NO
Location	Chemical toilets shall not be in close proximity to any natural drainage channels or wetlands. Chemical toilets shall not be within 100 m of the 1:100 yr flood line. It is important, however, that toilets be placed in areas where the largest number of workers is active on a daily basis.	X	X			ECO, CONTRACTOR	Continuous		
French drains	No French drain systems may be installed.	X				ENGINEER, CONTRACTOR	Continuous		
Usage	No person is allowed to use any other area than chemical toilets.		X			SITE WORKER, CONTRACTOR	Continuous		
Inspections	Regular inspections shall be carried out to ensure that toilets are kept in a hygienic state.		X			CONTRACTOR	Continuous		
Toilet paper	Toilet paper shall be supplied to all toilets.		X			CONTRACTOR	Continuous		
Cleaning	Toilets shall be cleaned by a certified company on a regular basis.		X			CONTRACTOR	Continuous		
Locking	Toilets must be secured to ground so they cannot be overturned, and have a sufficient locking mechanism operational at all times.		X			CONTRACTOR	Continuous		
6.2.8.FAUNA									
Regulations	All activities on site must comply with the regulations of the Nature Conservation Ordinance 4 of 1975 (as amended 1996).		X			CONTRACTOR	Continuous		
Sensitive areas	All environmentally sensitive areas must be fenced off before construction commences and indicated as "no-go" areas.	X	X			CONTRACTOR	Continuous		
Snaring/hunting	Snaring and hunting of fauna by construction workers on or adjacent to the study area is strictly prohibited. It should also be a condition of employment that any employees/worker caught poaching will be dismissed.		X			CONTRACTOR	Continuous		
Training	Workers must be trained on how to deal with fauna species as intentional killing will not be tolerated.		X			ECO, CONTRACTOR	Continuous		
Loss of habitat	During the CONSTRUCTION phase, workers must be limited to areas under construction and access to the undeveloped areas must be strictly regulated ("no-go" areas during construction activities). The entire site should be fenced or cordoned off prior to construction activities. Provision of adequate toilet facilities must be implemented to prevent the possible contamination of ground (borehole) water in the area. All temporary								

POSSIBLE IMPACT	MITIGATION MEASURES	APPLICABLE PHASES				RESPONSIBLE PERSON	FREQUENCY	COMPLIANT	
		DS	CO	OP	DE			YES	NO
6.2.8.FAUNA									
Loss of habitat	stockpile areas, litter and dumped material and rubble must be removed on completion of construction. All alien invasive plant and tree species should be removed from the site to prevent further invasion. No quad-bikes, motorcycles or off road vehicles and illegal hunting should be permitted. Vegetation clearance should be restricted to the areas under construction allowing remaining animals opportunity to move away from the disturbance.		X			ECO, CONTRACTOR	Continuous		
Killing of Fauna	No animals should be intentionally killed or destroyed and poaching and hunting should not be permitted on the site. No hunting with firearms (shotguns, air rifles or pellet guns) or catapults should be permitted on the property as well as neighbouring areas.		X			ECO, CONTRACTOR	Continuous		
Migratory routes (Fencing)	As the site is already fenced, detailed planning must be done to determine Damara Tern breeding spots to ensure as far as reasonably practicable that migratory habitat remains and therefore may require that additional fences may be erected.	X	X			ECO, CONTRACTOR	Continuous		
Artificial lighting	During the construction phase, artificial lighting must be restricted to areas under construction and not directed towards the neighbouring areas in order to minimize the potential negative effects of the lights on the natural nocturnal species. Where lighting is required for safety or security reasons, this should be targeted at the areas requiring attention. Yellow sodium lights should be prescribed as they do not attract as many invertebrates (insects) at night and will not disturb the existing wildlife. Sodium lamps require a third less energy than conventional light bulbs.		X			ECO, CONTRACTOR	Continuous		
Horticultural activities	Landscaped areas around the proposed development should be planted with indigenous (preferably using endemic or local species from the area), which are water wise and require minimal horticultural practices. A species list of suitable species should be compiled for future property owners.		X	X		ECO, CONTRACTOR	Continuous	X	

POSSIBLE IMPACT	MITIGATION MEASURES	APPLICABLE PHASES				RESPONSIBLE PERSON	FREQUENCY	COMPLIANT	
		DS	CO	OP	DE			YES	NO
6.2.8.FAUNA									
Horticultural activities	A Re-vegetation and Rehabilitation Manual should be prepared for the use of contractors, landscape architects and grounds men. Where herbicides are used to clear vegetation, specimen-specific chemicals should be applied to individual plants only. General spraying should be prohibited. Horticultural activities such as fertilisers, herbicide and pesticide runoff, increase in alien vegetation and weedy species, and dumping of refuse and building material must be strictly managed, be environmentally sensitive and should meet the following requirements: ➢ Limited to building environs and the areas of the proposed development. ➢ Limited irrigation by water-wise gardening (use local plants adapted to local conditions). ➢ Strict fertiliser, pesticide and herbicide control (limited usage). ➢ Invertebrate pests on the site should be controlled in the following manner: • The least environmentally damaging insecticides must be applied. Pyrethroids and Phenylpyrazoles are preferable to Acetylcholines. Use insecticides that are specific to the pest (species specific) in question. The lowest effective dosages must be applied. The supplier's advice should always be sought. Do not irrigate for 24 hours after applying insecticides in areas where there is a chance of contaminating water-courses or dams-fungal pathogens should be used in preference to chemical insecticides. • Reduction of weed infestation and erosion by minimum tillage gardening practices (groundcovers and mulching better in all respects).								

POSSIBLE IMPACT	MITIGATION MEASURES	APPLICABLE PHASES				RESPONSIBLE PERSON	FREQUENCY	COMPLIANT	
		DS	CO	OP	DE			YES	NO
6.2.8.FAUNA									
Horticultural activities	• No dumping of any materials in undeveloped open areas and neighbouring properties. • Activities in the surrounding open undeveloped areas must be strictly regulated and managed								
6.2.9.FLORA									
Site inspection	Refer to specialist report on Flora before any vegetation is removed and if any flora species could be transplanted to other similar/ suitable areas it must be pursued.	X	X			FLORA SPECIALIST, ECO, CONTRACTOR	Once-off		
Sensitive flora	Any sensitive flora that will have to be removed shall be removed by a suitably qualified specialist and relocated.	X				FLORA SPECIALIST, ECO	Once-off		
Fencing	Flora assets that will be utilized by the Landscaping Designer will be clearly identified. These stipulated areas must be fenced off so there is strictly no unauthorised access, land clearing, construction activities, vehicular traffic of any kind, pedestrian traffic or fires.	X	X			ECO, CONTRACTOR	Continuous		
Flood lines	As far as reasonably practicable no clearing of vegetation will be allowed within any 1:100 year flood line or wetland areas.	X	X			ECO, CONTRACTOR	Continuous		
Exotic / invader species	All invader or exotic plant species must be removed from the site and disposed of at a landfill site.		X			FLORA SPECIALIST, CONTRACTOR			
Landscaping	The use of indigenous vegetation should be optimised during the landscaping of the development.			X		FLORA SPECIALIST, LANDSCAPING DESIGNER	Once-off		
Retaining flora	On site floral assets shall be identified and retained where possible. Floral assets intended to be retained shall be clearly marked on site and be fenced off.	X	X			FLORA SPECIALIST, ECO, CONTRACTOR	Continuous		

POSSIBLE IMPACT	MITIGATION MEASURES	APPLICABLE PHASES				RESPONSIBLE PERSON	FREQUENCY	COMPLIANT	
		DS	CO	OP	DE			YES	NO
6.2.10.STORM WATER									
Covering of waste	Cover any wastes that are likely to wash away or contaminate coastal water.		X			ECO, CONTRACTOR	Continuous		
Bunded area	Build a bund around waste storage areas to prevent overflows into coastal water systems.		X			CONTRACTOR	Once-off		
Natural flow	Natural storm water must flow freely to allow for infiltration and retention. Natural habitas must be left undisturbed as far as possible, to allow natural drainage.		X			ENGINEER, CONTRACTOR	Continuous		
Piping of flow	Natural storm water must not be piped other than in areas where it runs perpendicularly cross a roadway.		X			ENGINEER, CONTRACTOR	Continuous		
Drainage channels	Drainage channels must be constructed along access roads every 50m to divert runoff during construction period.	X	X			ENGINEER, CONTRACTOR	Continuous		
Engineering report	The Engineers service reports will also specifically address storm water to the satisfaction of the Local Council. This report should be finalised once the development has been approved. The storm water design for all hard surfaces will ensure that proper management and precautionary measures are taken into account.	X	X			ENGINEER	Once-off		
Maintenance of swale	Maintenance of the swale should include periodic mowing of the grass (never shorter than the design flow depth of the channel). Bare areas should be re-seeded and debris and blockages regularly removed. Sediment depositions should be regularly removed from the swale, to prevent pollution of the runoff from contaminants contained therein.		X			CONTRACTOR	Continuous		
Wetland	Storm water outflows will not enter directly into any drainage line or coastal water.	X				ENGINEER	Continuous		
Erosion and surface runoff	Vegetation plays a critical role in the hydrological cycle by influencing both the quantity and quality of surface run-off. It influences the quantity of run-off by intercepting rainfall, promoting infiltration and thus decreasing run-off. Vegetation can influence water quality in two ways: by binding soils thus protecting the surface layer, and by intercepting surface run-off. When the speed of the run-off is reduced, suspended particles can settle out and dissolved substances, such as nutrients, can be assimilated by plants. The vegetation	X	X			ECO, CONTRACTOR	Continuous		

POSSIBLE IMPACT	MITIGATION MEASURES	APPLICABLE PHASES				RESPONSIBLE PERSON	FREQUENCY	COMPLIANT	
		DS	CO	OP	DE			YES	NO
6.2.10.STORM WATER									
Erosion and surface runoff	has a filtering effect. Storm-water and runoff should be channeled through natural buffer areas by reducing the erosional force and the potential risk of further disturbance to any existing habitats.								
6.2.11 TRAFFIC									
Traffic	**OBJECTIVE:** Possible increased pedestrian hazard and increased road damage. **ACTION REQUIRED:** Access to the site is from provincial road B2 (between Swakopmund and Walvis Bay). Road surfaces in the immediate vicinity of the site should be monitored. If the road is damaged the relevant authority must be notified. Access to and from the site must not have a negatively impact on the traffic on the B2. All requirements by the Traffic engineer and Provincial and Local Traffic Department must be adhered to.	X	X	X		DEVELOPER AND TRAFFIC ENGINEER	Continuous		
Departmental requirements	All requirements from the provincial and local roads and traffic departments must be adhered to and precautionary measures taken to provide safe and effective traffic management.	X	X	X		ENGINEER	Once-off		
Delivery trucks	Deliveries by large construction vehicles may only take place during weekdays and pre-warning of at least one day prior to delivery must be given to the ECO.		X			CONTRACTOR	Continuous		
Site access	The access of large trucks will be investigated by the PM to provide a suitable access route that does not become a nuisance to existing residents. Only a specified number off trucks at any one time will be allowed onto the property as agreed to between the PM and the ECO based on the capacity of the site to carry vehicles.		X			ENGINEER, CONTRACTOR	Continuous		
Wheel wash	Establish an all-weather site access and wheel wash or shake down and prevent soil and materials being tracked onto the surrounding road system.					CONTRACTOR	Continuous		

POSSIBLE IMPACT	MITIGATION MEASURES	APPLICABLE PHASES				RESPONSIBLE PERSON	FREQUENCY	COMPLIANT	
		DS	CO	OP	DE			YES	NO
6.2.11 TRAFFIC									
Peak traffic hours	Construction vehicles and activities should avoid peak hour traffic times (weekdays 7-8am and 5-6pm).					CONTRACTOR	Continuous		
Legislation	Access roads and traffic planning will adhere to all provincial and local government requirements and laws.					ENGINEER	Once-off		
Established tracks	Access and travelling on the construction site must follow established or demarcated tracks only.					CONTRACTOR	Continuous		
6.2.12.SENSITIVE AREAS									
Flood Line and Coastal Water									
Flood line area	No activities may be allowed below the 1:100 year flood line.	X	X			CONTRACTOR	Continuous		
Fencing of flood line area	During construction work that does not intrude on areas below the flood line, the drainage feature and the 1:100 yr floodplain must be fenced off. The fence must be erected on a conservation line determined by the ECO and the involved contractors.	X				CONTRACTOR	Once-off		
No dumping	No dumping will be allowed within the 1:100 year flood line area. And no bins shall be located within 50m of the flood line.		X			CONTRACTOR	Continuous		
No toilets	No chemical toilets shall be situated within 50m from the 1:100 year flood line.		X			CONTRACTOR	Continuous		
Surface runoff	All surface runoff shall be managed in such a way as to ensure that erosion of soil does not occur.	X	X			ENGINEER, CONTRACTOR	Continuous		
Flood Line and Coastal Water									
No vehicles	No vehicles what so ever are allowed to move across sensitive areas, which could cause erosion scouring and compaction.		X			CONTRACTOR	Continuous		
No stockpiling	No stockpiling shall be allowed below the 1:100 year flood line/ within the transitional zone.		X			CONTRACTOR	Continuous		
No bathing	No bathing will be allowed in coastal water.		X			CONTRACTOR	Continuous		
No washing	No washing of clothes will be allowed in coastal water.		X			CONTRACTOR	Continuous		
No urinating	No urinating will be allowed in coastal water and this should result in an immediate fine.		X			CONTRACTOR	Continuous		
Heritage/Cultural/Archaeological Sites									
Discovery of artifacts	Should any Cultural / Archaeological artefacts be discovered during construction activities, construction shall immediately cease and the National, Cultural and History Museum shall be contacted for investigation. The area must be barrier taped immediately until the		X			CONTRACTOR, HERITAGE SPECIALIST, ECO	Continuous		

POSSIBLE IMPACT	MITIGATION MEASURES	APPLICABLE PHASES				RESPONSIBLE PERSON	FREQUENCY	COMPLIANT	
		DS	CO	OP	DE			YES	NO
Heritage/Cultural/Archaeological Sites									
Discovery of artifacts	ECO can communicate appropriate methods of protection to the Contactors.								
Fencing	If any archaeological sites be located on the site, it shall be fenced and at least 5 meters around it should be safeguarded from development.	X	X			CONTRACTOR	Once-off		
Suspicious artifacts	The ECO will be notified of any suspicious artifacts prior to them being moved or removed.		X			CONTRACTOR			
6.2.13.SERVICES									
Disruption of services									
Informing ECO	If any disruption in services (electricity, water, sewage) is foreseen, the Contractor must inform the ECO at least 4 days prior to these activities, to enable the ECO to inform the surrounding land owners of such possible disruptions.		X			CONTRACTOR	Continuous		
Installation of services									
Requirements	The service systems are to be designed according to the minimum requirements of, and submitted to, the Local Authority for approval. Thus no construction activities must commence on site prior to obtaining the necessary approval.	X	X			ENGINEER, CONTRACTOR	Once-off		
Installation of services									
Trenches	Excavate, close and rehabilitate trenches as soon as possible after site services pipes are installed. Avoid open trenches for any extended period of time.		X			CONTRACTOR	Continuous		
6.2.14. CONTRACTOR'S SITE CAMP									
Establishment of site camp	A work site will be established and maintained for storing construction equipment in a non-sensitive area to be agreed upon by the ECO and Contractor.		X			CONTRACTOR, ECO	Continuous		
Fencing	The site camp shall be fenced and all materials shall be stored within this camp.		X			CONTRACTOR	Once-off		
Camp location	The site camp shall not be situated within a natural drainage line or within 50m from a wetland or stream.		X			CONTRACTOR	Once-off		
Rehabilitation of camp	The area where the camp was established must (after the construction period) be rehabilitated according to guidelines in this document.		X			CONTRACTOR	Once-off		

POSSIBLE IMPACT	MITIGATION MEASURES	APPLICABLE PHASES				RESPONSIBLE PERSON	FREQUENCY	COMPLIANT	
		DS	CO	OP	DE			YES	NO
6.2.15.ENVIRONMENTAL AWARENESS TRAINING									
Training program	An environmental awareness training program must be organized as part of the EMP to ensure that each employee knows his/her responsibilities regarding the EMP and the environment in general.	X	X			CONTRACTOR, ECO	Once-off		
Appropriate activities	The employees, construction workers and maintenance crews will receive instruction in the appropriate activities that could take place among the natural resources of the area.		X			ECO	Once-off		
6.2.16.REHABILITATION AND LANDSCAPING									
Master Plan	A Landscaping Plan should be prepared that stipulates that the existing indigenous vegetation must be retained on site. This plan should be strictly adhered to.	X				LANDSCAPE ARCHITECT	Once-off		
Compacted areas	All compacted areas should be ripped prior to them being rehabilitated.		X			LANDSCAPE ARCHITECT,	Continuous		
Reseeding	Stored topsoil and reseeding must be used to rehabilitate all open soil areas after construction.		X			LANDSCAPE ARCHITECT	Once-off		
Time frame	Rehabilitation/ landscaping are to be done immediately after the involved works are completed.		X			LANDSCAPE ARCHITECT	Once-off		
Sub-contractors	Contractor is responsible for the actions and works of the subcontractors and is required to complete the rehabilitation work if the sub-contractor fails to do so. Payment may be withheld from the sub-contractor in the event that the work must be completed by the main Contractor.					CONTRACTOR	Continuous		
Completion of work	On completion of works, the Contractor shall clear away and remove from the site all construction paint, surplus materials, foundations, plumbing and other fixtures, rubbish and temporary works of every kind. Areas thus cleared shall be graded and scarified to restore the ground to its original profile as near as practicable before topsoil placement.		X			CONTRACTOR	Once-off		
Cement mixing	Cement mixing shall be done only at specifically selected sites. After construction activities end any remaining cement shall be crushed and removed from the site. This mixing area shall then be ripped and rehabilitated.		X			CONTRACTOR	Continuous		
Natural features	The natural features of the site should be managed in a holistic manner	X				LANDSCAPE ARCHITECT	Continuous		

POSSIBLE IMPACT	MITIGATION MEASURES	APPLICABLE PHASES				RESPONSIBLE PERSON	FREQUENCY	COMPLIANT	
		DS	CO	OP	DE			YES	NO
6.2.16.REHABILITATION AND LANDSCAPING									
Parking bays	Trees can be planted according to the Landscaping Plan.	X				LANDSCAPE ARCHITECT	Continuous		
Trees on lawn/paved area	Trees in lawn and paved areas can be provided with a concrete tree ring of no less than 1m in diameter and can be covered with a grid if such tree is closer than 3m from a pedestrian walkway.	X				LANDSCAPE ARCHITECT	Continuous		
Trees along roads	Trees can be planted at an interval of 15m on both sides of any road longer than 30m to a residential development (unless otherwise indicated by the approved Landscape Development Plan).	X				LANDSCAPE ARCHITECT	Continuous		
6.2.17.ADVERTISING									
Design	A graphic design of any advertisement shall be subject to the approval of the relevant Authorities.	X				ARCHITECT	Once-off		
Requirements	Advertisements should not obstruct the traffic view, movement of pedestrians, cause visual pollution or appear to be unsightly. It should be tastefully low key, as defined by the Municipality and will not unrightfully interfere with other existing advertising rights.	X		X		ARCHITECT	Continuous		
Lease	If applicable the lease of the advertising space will be valid for a set period after which the applicant can request for renewal.	X		X		ARCHITECT	Continuous		
6.2.18.PENALITIES									
Payment of penalties	Any person who contravenes any of the provisions of the laws and bylaws will be guilty of an offence and on conviction liable to a fine.	X	X	X		DEVELOPER, ENGINEER, CONTRACTOR, ARCHITECT, ECO	Continuous		
6.2.19 Visual Intrusion & Light Pollution									
Visual Intrusion & Light Pollution	**OBJECTIVE:** To mitigate the potential negative impact on "genius loci" and visual impact, should architecture not be in line with natural character of area, through the appropriate application of form, scale, materials and finishes. **ACTION REQUIRED:** Light pollution should be minimized.	X	X	X		DEVELOPER, ARCHITECT, LANDSCAPE ARCHITECT, ECO	Continuous		

POSSIBLE IMPACT	MITIGATION MEASURES	APPLICABLE PHASES				RESPONSIBLE PERSON	FREQUENCY	COMPLIANT	
		DS	CO	OP	DE			YES	NO
6.2.19 Visual Intrusion & Light Pollution									
	Indigenous plants or trees should be planted next to buildings to break the lines of the buildings making them less visually intrusive. Advertising signs should blend in with the environment. Construction/management activities must be limited to daylight hours between 7:00am and 5:30pm weekdays; 7:00am and 1:30pm on Saturdays. The construction foot print must be minimized. Should overtime/night work be authorized, the Contractor shall be responsible to ensure that lighting does not cause undue disturbance to receiving environment. In this situation low flux and frequency lighting shall be utilized.								

6.3 OPERATIONAL PHASE

Table 5

POSSIBLE IMPACT	MITIGATION MEASURES	APPLICABLE PHASES				RESPONSIBLE PERSON	FREQUENCY	COMPLIANT	
		DS	CO	OP	DE			YES	NO
6.3.1.PHASE OF THE DEVELOPMENT									
Maintenance	All applicable standards, legislation, policies and procedures must be adhered to during operation. Regular inspection of the development must take place to monitor its status.			X		DEVELOPER	Continuous		
Resources	Efforts to reduce consumption of non-renewable resources (energy, water etc) should continue along the recycling of waste.			X		DEVELOPER	Continuous		
Impact on the local aquifers due to the increased water demand.	**Severity and scale:** The engineering report (Windhoek Consulting Engineers (Pty) Ltd, 2013) indicated an Average Annual Daily Potable water demand of 2,950 m3/day (about 1Mm3/a). This will add additional pressure on the	X	X	X		PROJECT MANAGER, RESIDENT ENGINEER, ECO, CONTRACTOR	Continuous		

POSSIBLE IMPACT	MITIGATION MEASURES	APPLICABLE PHASES				RESPONSIBLE PERSON	FREQUENCY	COMPLIANT	
		DS	CO	OP	DE			YES	NO
6.3.1.PHASE OF THE DEVELOPMENT									
Impact on the local aquifers due to the increased water demand.	Groundwater resources (Omdel & Kuiseb) that supply the coastal towns if the additional demand is not planned for. **Duration:** Impacts due to the depletion on the groundwater resources are reversible over the life of the project. **Probability:** The aquifers will be impacted. In this sense it should be noted that the construction of more desalination plants, additional to the Areva Plant, are planned for future coastal water supply that might lower the probability. **Consequence:** Medium **Significance:** Medium (Note: It must be noted that an analysis of the sustainable abstraction, and the impact of increased abstraction falls beyond the scope of the work and has not been done in this study) **Objective:** (i) To ensure the efficient use of groundwater resources. **Action Plan:** (i) Compilation of a water conservation program and the (ii) Implementation of best practices in water conservation in the planning, construction and operational phases (iii) A water balance of the entire system should be done (iv) Find uses/users/customers for the surplus water from the sewage treatment plant.								

POSSIBLE IMPACT	MITIGATION MEASURES	APPLICABLE PHASES				RESPONSIBLE PERSON	FREQUENCY	COMPLIANT	
		DS	CO	OP	DE			YES	NO
6.3.1.PHASE OF THE DEVELOPMENT									
Impact on the local aquifers due to the increased water demand.	**Duration:** Medium **Probability:** Low **Consequence:** Low **Significance:** Low								
Groundwater contamination coming from "water treatment plant sludge"	**Severity and scale**: The method of sludge disposal or recirculation/re-use was not addressed in this stage of the project. The severity of groundwater contamination coming from sewage sludge that typically contains heavy metals and pathogens is considered medium. The spatial scale depends on where the sludge will be disposed. **Duration:** Groundwater contamination coming from the from sewage sludge are possible to be long term. Probability: If sewage sludge is incorrectly disposed of, then it is possible that groundwater contamination can occur. **Consequence:** Medium **Significance:** Medium **Objective:** (i) To prevent groundwater contamination from sludge disposal	X	X	X		PROJECT MANAGER, RESIDENT ENGINEER, ECO, CONTRACTOR	Continuous		

POSSIBLE IMPACT	MITIGATION MEASURES	APPLICABLE PHASES				RESPONSIBLE PERSON	FREQUENCY	COMPLIANT	
		DS	CO	OP	DE			YES	NO
6.3.1.PHASE OF THE DEVELOPMENT									
Groundwater contamination coming from "water treatment plant sludge"	**Action Plan:** (i) The sludge should not be allowed to accumulate or to be disposed on site. (ii) It should be removed to a landfill site with the correct certification for sewage sludge disposal. **Duration:** Low **Probability:** Low **Consequence:** Low **Significance:** Low								
Groundwater contamination from fuel station(s)	**Severity and scale.** The client has indicated the possibly of fuel stations for vehicles. It is also inferred that a fuel station will be constructed for the marina for the re-fuelling of yachts/motorised boats. Fuels or any other hydrocarbon product that reaches the groundwater is considered severe since it is difficult / impossible to reinstate the groundwater system to its original state. Accidental release relating to spillage is considered to have a localized impact. Long term releases due to leaking systems (i.e tanks, pipes, and pumps) can have an impact beyond the site boundary. **Duration:** Impact not reversible and long term. **Probability:** In inadequately designed – and/or poorly managed scenarios the probability of accidental release term leakage is possible.	X	X	X		PROJECT MANAGER, RESIDENT ENGINEER, ECO, CONTRACTOR	Continuous		

POSSIBLE IMPACT	MITIGATION MEASURES	APPLICABLE PHASES				RESPONSIBLE PERSON	FREQUENCY	COMPLIANT	
		DS	CO	OP	DE			YES	NO
6.3.1.PHASE OF THE DEVELOPMENT									
Groundwater contamination from fuel station(s)	**Consequence:** High **Significance:** High **Objective:** (i) 100% containment of the product, (ii) to accomplish spillage control and (iii) to establish a leak detection system. Action Plan: (i) Compliance to Petroleum Products Act of 2000 (Government Notice: Ministry of Mines and Energy, 2000) and the SABS standards as published per government gazette (Government Gazette: 2003) regarding the installation, handling and storage of fuel products and spillage control. (ii) Drilling and equipping of dedicated monitoring boreholes (iii) Regular sampling and testing for volatiles and hydrocarbon compounds for leak detection (iv) Application of “best practices in the petroleum industry” (v) Conduction of scheduled leak tests on the storage tanks and related infrastructure. **Duration:** Low **Probability:** Low **Consequence:** Low **Significance:** Low								

POSSIBLE IMPACT	MITIGATION MEASURES	APPLICABLE PHASES				RESPONSIBLE PERSON	FREQUENCY	COMPLIANT	
		DS	CO	OP	DE			YES	NO
6.3.1.PHASE OF THE DEVELOPMENT									
Groundwater impacts from landscape - and golf course irrigation	**Severity and scale.** The irrigation water for golf course will be around 800 m3/day (≈300,000 m^3/a). Water not taken up in evapotranspiration and evaporative processes, will result in seepage that recharge to the shallow water table. The impact can be twofold: (i) Groundwater contamination can occur from untreated pathogens, nutrients and salts – depending on the level of treatment and (ii) excessive irrigation might cause a rise in the water table to near surface with impacts related to soil degradation and seepage of groundwater into low lying depressions. The severity is considered medium, while the impact is considered reversible over the life of the project. **Duration:** Medium **Probability:** It's possible, with incorrect irrigation practices (too much irrigation). **Consequence:** Medium **Significance:** Medium **Objective:** (i) Creating landscapes that are well designed and "water smart" from the start and (ii) to create and maintain water efficient irrigation. **Action Plan:** (i) The developing of estate rules for landscape design so that it is applicable to water scarce and desert environment	X	X	X		PROJECT MANAGER, RESIDENT ENGINEER, ECO, CONTRACTOR	Continuous		

POSSIBLE IMPACT	MITIGATION MEASURES	APPLICABLE PHASES				RESPONSIBLE PERSON	FREQUENCY	COMPLIANT	
		DS	CO	OP	DE			YES	NO
6.3.1.PHASE OF THE DEVELOPMENT									
Groundwater impacts from landscape - and golf course irrigation	(ii) compile and monitor landscape water budgets (iii) installation and maintain water efficient irrigation systems (iv) the application of a water conservation program. (v) drilling of dedicated monitoring boreholes that monitor the water table and groundwater quality. **Duration:** Low **Probability:** Low **Consequence:** Low **Significance:** Low								
Surface water contamination from the Marina	**Severity and scale.** The Marina will have the potential to contaminate the sea with fuel coming from the fuel station, yachts/motorised boats, various kinds of soaps/detergents as result of washing of the boats, chemicals as a result of servicing and maintenance of the boats, disposal of domestic waste and (accidental) the release of sewage from the holding tanks of the boats. This severity is considered high since it might impact various kinds of marine - and bird life and human health. The scale is beyond the project boundary. **Duration:** If rectified, the situation is medium term and reversible. **Probability:** This kind of contamination is possible/frequent	X	X	X		PROJECT MANAGER, RESIDENT ENGINEER, ECO, CONTRACTOR	Continuous		

POSSIBLE IMPACT	MITIGATION MEASURES	APPLICABLE PHASES				RESPONSIBLE PERSON	FREQUENCY	COMPLIANT	
		DS	CO	OP	DE			YES	NO
6.3.1.PHASE OF THE DEVELOPMENT									
Surface water contamination from the Marina	**Consequence**: High **Significance:** High **Objective:** (i) 100% containment of fuel and fuel products from the fuel station (ii) prevention of the release of chemicals harmful to entire the environment (iii) prevention of the release of sewage into the marine environment (iv) to ensure that correct actions can be taken during an emergency related to chemical spillage. **Action Plan:** (i) Compliance with Namibian Water Resources Management Act of 2013 regarding to discharge of effluent (Government Gazette, 2004) (ii) Compliance with the Petroleum Products Act of 2000 regarding the storage and handling of fuel products (Government Notice: Ministry of Mines and Energy, 2000) and the sub regulations as published per government gazette (Government Gazette:, 2003). (iii) Application of best management practices for marinas that relates fuel management, facility cleaning and maintenance, boat maintenance, storm water practices, waste management, water efficiency, etc. (iv) The Marina must have a facility for the discharge of sewage from the boats, from where it is pumped to the sewage treatment plant. (v) A set of rules for boaters must be instituted that addresses all the issues related to contamination including boat repair activities, the in-water scraping of the boat hulls, and the washing of the boats (i.e. only environmental								

POSSIBLE IMPACT	MITIGATION MEASURES	APPLICABLE PHASES				RESPONSIBLE PERSON	FREQUENCY	COMPLIANT	
		DS	CO	OP	DE			YES	NO
6.3.1.PHASE OF THE DEVELOPMENT									
Surface water contamination from the Marina	(vi) friendly and biodegradable cleaners must be used) (vii) An emergency plan must be developed that details the actions that must be taken in the case of an accidental release of fuel or chemicals and the clean-up procedures. **Duration:** Low **Probability:** Low **Consequence:** Low **Significance:** (viii) Low								
Surface water and groundwater contamination from storm water drainage.	**Severity and scale.** The engineering report indicated (Windhoek Consulting Engineers (Pty) Ltd, 2013) the importance of the provision of proper storm water drainage. Storm water run-off has a high potential to contaminate groundwater and surface water resources. Storm water in urban areas is related to heavy metals, salts, pesticides, nutrients, and hydrocarbon compounds. The severity of storm water allowed entering into groundwater and surface water resources (such as at the Marina) are high, and while the scale is considered to be localised. **Duration:** Reversible over the life of the project – medium term. **Probability:** Possible with an adequately designed system **Consequence:** Medium	X	X	X		PROJECT MANAGER, RESIDENT ENGINEER, ECO, CONTRACTOR	Continuous		

POSSIBLE IMPACT	MITIGATION MEASURES	APPLICABLE PHASES				RESPONSIBLE PERSON	FREQUENCY	COMPLIANT	
		DS	CO	OP	DE			YES	NO
6.3.1.PHASE OF THE DEVELOPMENT									
Surface water and groundwater contamination from storm water drainage.	**Significance:** Medium **Objective:** To prevent storm water run-off to discharge onto surface- or groundwater environments. **Action Plan:** (i) Compliance to the Water Resources Management Act of 2013 with regard to the effluent discharge (ii) The storm water system must be adequate to handle peak flows. (iii) Under no circumstances should the storm water be allowed to discharge freely into land or marine environment(s). (iv) In the case of evaporation pond groundwater monitoring boreholes must be drilled for leak detection (v) the marina must be protected from surface water run-off. **Duration:** Low **Probability:** Low **Consequence:** Low **Significance:** Low								

6.4 DECOMMISSIONING PHASE

Table 6

POSSIBLE IMPACT	MITIGATION MEASURES	APPLICABLE PHASES				RESPONSIBLE PERSON	FREQUENCY	COMPLIANT	
		DS	CO	OP	DE			YES	NO
6.4.1. CONSTRUCTION SITE DECOMMISSIONING									
Removal of equipment	All structures comprising the construction camp are to be removed from site. The area that previously housed the construction camp is to be checked for spills of substances such as oil, paint, etc, and these shall be cleaned up. All hardened surfaces within the construction camp area should be ripped, all imported materials removed, and the area shall be top soiled and rehabilitated.				X	DEVELOPER, CONTRACTOR, ECO	Once-off		
Temporary services	The Contractor must arrange the cancellation of all temporary services. Temporary roads must be closed and access across these, blocked. All areas where temporary services were installed are to be rehabilitated to the satisfaction of the ECO.				X		Once-off		
Associated infrastructure	Surfaces are to be checked for waste products from activities such as concreting and these surfaces are to be cleared in a manner approved by the site Engineer. All surfaces hardened due to construction activities are to be ripped and imported materials thereon are to be removed. All rubble is to be removed from the site to an approved disposal site as approved by the ECO. Burying of rubble on site is prohibited. The site is to be cleared of all litter. The Contractor is to check that all watercourses are free from building rubble, spoil materials and waste materials. Fences, barriers and demarcations associated with the construction phase are to be removed from the site unless stipulated otherwise by the ECO. All residual stockpiles must be removed to spoil or spread on site as directed by the ECO. All leftover building materials must be returned to the depot or removed from the site.				X	DEVELOPER, CONTRACTOR, ECO	Once-off		

POSSIBLE IMPACT	MITIGATION MEASURES	APPLICABLE PHASES				RESPONSIBLE PERSON	FREQUENCY	COMPLIANT	
		DS	CO	OP	DE			YES	NO
6.4.1. CONSTRUCTION SITE DECOMMISSIONING									
Associated infrastructure	The Contractor must repair any damage that the upgrade works has caused to neighboring properties, specifically, but not limited to, damage caused by poor storm water management.				X	DEVELOPER, CONTRACTOR, ECO	Once-off		
6.4.2. DECOMMISSIONING OF THE DEVELOPMENT									
Removal of equipment	All structures comprising the residential, retail, office and other components of the development are to be removed from site. The area that was developed should be checked for spills of substances and these shall be cleaned up. The guidelines mentioned above in the EMP apply also to the decommissioning phase, where appropriate. All rubble is to be removed from the site to an approved disposal site as approved by the ECO. Burying of rubble on site is prohibited. All other necessary rehabilitation measures must be applied to minimise the environmental impacts and these must be done to the satisfaction of the ECO.				X	DEVELOPER, CONTRACTOR, ECO	Once-off		

APPENDIX A: *ENVIRONMENTAL INCIDENT LOG*

Date	Incident	Comments (Include any possible explanations for current condition and possible responsible parties. Include photographs, records etc. if available)	Mitigation Measure (Give details and attach documentation as far as possible)	ECO Signature

APPENDIX B: COMPLAINTS RECORD SHEET

RECORD OF COMPLAINTS	**PAGE OF**	**DATE: / /**
Complainant:		
Capacity of complainant:		
Complaint recorded by:		
Complaint:		
Corrective measure:		
ECO: Date:		
Notes by ECO:		

APPENDIX C: EMERGENCY RESPONSE

The development and operation of a filling station requires installation of equipment that will house and contain hazardous substances. At the same time, the transport of dangerous goods will form an integral part of the operation of such a development.

Accidents such as fire, explosion, spills or release of hazardous materials endanger life, property and the environment.

Emergency Planning:

- Emergency procedures must be produced and communicated to all the employees on site. This will ensure that accidents are responded to appropriately and the impacts thereof are minimized. This will also ensure that potential liabilities and damage to life and the environment are avoided.
- Adequate emergency facilities must be provided for the treatment of any emergency on the site,
- The nearest emergency service provider must be identified during all phases of the project as well as its capacity and the magnitude of accidents it will be able to handle.
- Emergency contact numbers are to be displayed conspicuously at prominent locations around the construction site and the construction crew camps at all times.
- All employees must receive documented initial training and annual refresher training on the facility's Fire
- Emergency Plan and Evacuation Plan.

Management of Fire Risks:

- "No Smoking" and "No Open Flame" signs to be prominently displayed.
- The Risk Controller is responsible for ensuring that fire risks are surveyed, documented and assessed. Adequate numbers of the correct equipment have been installed.
- Equipment must comply with the Automatic Sprinkler inspection Bureau (ASIB), insurance and local Fire
- Department requirements and recommendations. The Risk Controller must monitor and ensure that the standards are complied with.
- Departmental Managers are responsible for ensuring that the requirements of this standard are adhered to within their respective area of responsibility. They must ensure that equipment is operational, kept clean, not damaged and is refilled immediately after use.
- The maintenance, repair or replacement of any item of fire equipment is the responsibility of the Emergency coordinator, in liaison with departmental managers. Risk Controller to assist

Incident Reporting:

- The contractor shall take corrective action to mitigate an incident appropriate to the nature and scale of the incident, immediately after the occurrence of the incident.
- Residual environmental damage that remains after having taken corrective action shall be rehabilitated,
- Change operating procedures where necessary to prevent recurrence of similar accident,

- Record all incidents on an Environmental Incident Report, within 24 hours of the incident occurring. Additional documents, including photos shall be appended to the incident report to provide a comprehensive record of the incident and the corrective and preventative action taken. Failure to do so shall result in a penalty.

- All incidents will be investigated in collaboration with the ECO. The focus of these investigations shall not be to apportion blame to specific employees, but to ascertain the root cause of the incident and to prevent a recurrence of similar incidents.

A full concise Emergency Response Plan must be developed and submitted to the MET for before commencement of construction of the proposed project.

APPENDIX D: *SPILL CONTINGENCY*

It is important that the responsible party shall adhere to National emergency response procedures. All officials of the responsible organ are required to adopt these standards that include spill and leak detection and management.

The Material Safety Data Sheets for the material and emergency response will be stored on site. The MSDS indicate the relevant actions to be taken should certain incidents (spills/exposure) occur with raw materials/products.

Customer Spill and Leak Procedure

The avoidance of spills and leaks is especially important from a safety and legal point of view. Spills or leaks can be dangerous as they can cause a fire or explosion and may involve high cleaning costs when natural resources are contaminated. Installations are designed and built to limit the possibility of product spills and leaks. Within your premises you are responsible for environmental control and must ensure that pollution near tank systems is avoided at all times. If the Stock Monitoring and Control Procedures are used properly, it will be possible to detect a leak at an early stage. Damage to the environment and cleaning costs will then be minimized.

Spill and Leak Prevention

- All personnel who have anything to do with fuel or oil use and tank systems should know their individual responsibilities for controlling and/or reducing pollution. Employees should be well informed and apply the appropriate techniques.

- All employees involved in spillages and leaks must be informed about the spill/leak emergency response plan and must know how to act in the event of a spillage or leak.

- Equipment installed or used to avoid pollution should be operated efficiently and well maintained,

- Spill cleanup equipment, like absorbing fibres (Drizit), squeeges, sandbags, etc. should be located in a clean, dry and easily accessible storage facility.

- Spill fighting material should be kept near places where spills and leaks are most likely to occur, i.e. near pumps. Customers should have materials like absorbing fibres (Drizit) and sandbags in place. **The proposed procedure**:
    - Place two 2 000 liter waste bins at each area.
    - One bin to be used for storage of unused fibers (e.g. unused Drizit) and one bin to be used for receiving the used fibers (e.g. used Drizit).
    - Apply the fibers (Drizit) as per the instructions as soon as the spill occurs. Used fibers (Drizit) should be disposed of in an environmentally friendly way by either burning or dispatching to a class 1 waste dump, using companies such as Waste-tech.
    - Ensure that Emergency Spill/Leak Response Plans and the necessary associated equipment are appropriate for your operation and are the subject of regular exercises, where possible in conjunction with the industry and/or local authorities.
    - Provide regular training for key response employees in dealing with emergencies.

Spill Response

It is not possible to give detailed recommendations on how to clean up specific kinds of spillages as the method and materials used will depend on the type of product handled, the amount involved, the wind, weather, equipment available, etc. However, all spills, minor or major, should be cleaned up as soon as they occur. Whatever the spill, there are five basic steps in dealing with spillages:

- Limit the spillage;
- Contain the spillage;

- Remove the spilled product;
- Final clean up and soil rehabilitation; and
- Complete spillage report.

Containment of the oil near the point of spillage localizes the problem, minimizes pollution and makes it easier to remove the pollution. Cleaning of the spill depends on whether there is a major spill and whether there is a spill on paving or on soil. A major spill is any spill where more than 200 litres of product is involved.

<u>Minor Spills</u>
Minor spills (less than 200 liters) should be treated as follows:
Soak up the spill with unused fibers (e.g. unused Drizit) from the waste bin. If the spill has soaked into the ground, the soil should be ploughed to allow aeration. Water can then be used to bring the oil spill to the surface and mopped up immediately with absorbent fibers (Drizit). Collect the used fibers (used Drizit) in the bin for used fibers.

<u>Major Spills</u>
Spills less than 200 liters but threatening to streams, rivers, water supply, etc. and incidents of lesser magnitude that have or might attract public, press or authoritative attention have to considered as major spills. Major spills of oil or fuel on paving or <u>non-permeable</u> surfaces should be treated as follows:

- Wherever possible, try to limit the spillage by turning of all activities that caused the spill, i.e. closing a valve that has been accidentally opened, plugging the hole where the product is leaking or stop pumping through a ruptured pipeline, hose or overflowing tank.

- Contain spill immediately with absorbing fibers (e.g. Drizit), sandbags, sand or soil.

- Prevent any of the spilt oil substances from entering your drain, storm water systems, septic tanks or from contaminating any natural water systems by forming a barrier from soil, sand, sandbags or absorbing materials. If any of the spill should enter the storm water system, the flow must be intercepted before it can contaminate other environments.

- If natural water systems are contaminated, use straw bales, absorbent booms and sandbag dams for containment and absorption.

- Mop up as much of the spillage as possible by using absorbing materials,

- Contact your field manager and ask for support.

Major spillage of oil or fuel on soil or <u>permeable</u> surface should be treated as follows:

- Wherever possible, limit the spillage by turning off all activities that causes the spill. Close all applicable valves, plug the hole where the product is leaking or stop pumping through a ruptured pipeline, hose or overflowing tank.

- Contain the spill and prevent spread of the substance by using sandbags, sand or soil, absorbent booms or planking to divert flow.

- Prevent any of the oil substances from entering your drains, storm water systems or septic tanks, or from contaminating any natural water systems by forming a barrier from soil, sand, sandbags or absorbing materials.

- Prevent any of the oil substances from contaminating groundwater. It may be necessary to remove contaminated soil for disposal or rehabilitation.

- Remove or mop up as much of the spill as possible by using spill fighting materials. Water the soil to bring oil to the surface and "mop up" with absorbent material such as Drizit.

- Plough soil for aeration and apply fertilizer/suitable neutralizing chemicals if viable (not Detergents).

- Contact your field manager and ask for support.

- All contaminated spill prevention material (such as fibers, Drizit, soils, sandbags etc.) have to be disposed of in an environmentally acceptable way, e.g. by using Waste-tech.

Spill Reporting

The MET, external auditor, fuel suppliers and local protection services should be notified whenever:

- A spill in excess of 200 liters occurs. For oil spill incidents of lesser magnitude with impact on water sources, rivers, streams, etc., or that are likely to attract public or press attention, the supplier should be notified.

- For every major spill (over 200 liters of product) that occurs, the Incident Report Form must Be completed. Investigate spill cause and implement recommendations for preventing re-occurrence.

- If watercourses and ground water are contaminated, then the MET and NAM WATER must be notified.

Customer Inspection

Site operating staff should check regularly if the tank system, pipe-work and equipment are in good condition. For example, a dirty pump or weathered hose or tube might need maintenance. A spillage resulting from malfunctioning equipment might be prevented. Inform fuel supplier when tank systems, pipe-work or equipment need maintenance.

Leak Reporting Procedure

- Notify the supplier immediately of any suspected leaks in a tank system or malfunctioning of equipment.

- Any loss or suspected loss must be confirmed in writing.

- For every suspected leak in aboveground or underground tanks the Incident Report Form has to be completed.

- Investigate leak cause (in co-operation with supplier) and implement recommendations for preventing reoccurrence.

A full concise Spill Contingency Plan must be developed and submitted to the MET for approval before commencement of construction of the facility.

13.

APPENDIX J:

DESERT ROSE PLANNING REPORT

APPENDIX J:

DESERT ROSE PLANNING REPORT

DOCUMENT LIST

NO.	DOCUMENT NAME	PAGE NUMBER IN DOCUMENT
13.1.	Desert Rose Town Planning Report	3 – 28
13.2.	Site Indication	29 – 30
13.3.	Site Layout	31 – 37
13.4.	Desert Rose Presentation	38 – 40
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13.1.

DESERT ROSE TOWN PLANNING REPORT

DESERT ROSE PLANNING REPORT

An innovative and premier urban development initiative

ABSTRACT

"Desert Rose" the name chosen for this development, is the colloquial name given to rosette formations of crystal clusters of gypsum or baryte which contain abundant included sand grains. (Wikipedia)

These individually formed and unique rosettes are found in arid and sandy conditions commonly found along Namibia's shoreline. The desert rose urban development is to capture, express and symbolise the beauty of the individually formed rosettes, the composition and shape of the urban form and the buildings to be developed reflecting the form and uniquely structured elements of the desert rose.

Prepared by:	Prepared for:
Stubenrauch Planning Consultants cc	Desert Rose Pty

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1. INTRODUCTION TO DESERT ROSE DEVELOPMENT

The opportunity to develop a world class convention centre between Namibia's premier coastal resorts of Walvis Bay and Swakopmund is not only to be an urban integrator but is to express Namibia's positive and engaging will and competence to become a leading role-player in the Sub-Saharan region. The need to stage world class international events has long been identified to be a key contributor to realising this dream.

The Desert Rose urban area, which is to be strategically located between Walvis Bay and Swakopmund, is not to mirror image existing urban forms found within the country but is to be based on contemporary planning approaches where environmental, engineering, architectural, urban design and land ownership inputs are integrated into the urban planning process.

The layout planning undertaken for the desert Rose development resultantly is responsive to various inputs obtained from the subject specialists as well as the latest Government directives on planning guidelines to be considered during new layout designs and has attempted to carefully factor-in the individual requirements and development parameters (constraints and opportunities) in the layout design.

2. LOCALITY

The Desert Rose urban node is to be developed on approximately 322ha of virgin land located between Walvis Bay and Swakopmund, approximately 24 km to the north of Walvis Bay and some 7 km to the south of Swakopmund as travelling along the B2 road connecting these two coastal towns.

As the urban nodes of Afrodite Beach, Namib Eco-Village, Dolphin Beach and Long Beach the Desert Rose development is to be located between the B2 and the area generally 100 metres inland of the high water mark of the Atlantic Ocean.

Although being located some distance away from the existing urban areas Desert Rose is conveniently located in terms of connectivity to the Rooikop International Airport, the Walvis Bay harbour or the rail stations of either Walvis Bay or Swakopmund. Motorists having desert Rose as their destination can easily reach the development by either making use of a number of good and scenic roads, some of which include the B2 leading to the site from Namibia's capital City, Windhoek, the coastal road connecting the development via Henties Bay with Namibia's north-western regions or the road leading through the Namib Naukluft nature reserve to Namibia's popular tourist destinations located within the countries south-western area.

3. SITE ATTRIBUTES AND INFORMANTS

The specialist reports such as the environmental or the engineering report prepared in support of the desert Rose development provide more site specific conditions and attributes. The findings of these reports informed the layout design.

The following section provides a high level summary and overview of the major attributes to be considered by the layout design:

- **Topography**: While the central part of the site is characterised by a moderate east to west downward slope the southern and northern areas are relatively flat. The natural slope of the site offers the opportunity to grant non-seafront propertied a view onto the Atlantic Ocean.

- **Natural soils**: The site chosen for the Desert Rose development is characterised by the sandy soil conditions generally occurring between Walvis Bay and Swakopmund.

- **Vegetation**: Where possible the natural vegetation should be respected in the layout design and during construction. The use of plants requiring excessive watering needs to be limited while the use of semi-purified water for gardening purposes is encouraged.

- **Prevailing winds**: The south-westerly prevailing wind conditions as well as the strong east winds (bergwinds) conditions are to be considered in layout planning and building design.

- **Damara tern breeding area**: The area forms part of the larger area identified as a Damara tern breeding site. The intended urban development needs to be mindful of the seasonal breeding habits and flying patterns of these birds (see Environmental report).

- **Dune belt**: The scenic dune belt located to the east of the B2 not only offers the opportunity in terms of urban design but needs to be respected as the area is forms part of the gateway and setting of the Desert Rose development while also serving as a breeding area for damara tern. The area also is of touristic value.

- **Shoreline**: The area shoreline along the development area forms a high value feeding area for seabirds. A distance of 100metres from the high water mark and the urban edge should maintained, this only to be relaxed at the area where the boat launching area or the marina is to be developed.

- Disturbed areas: The old quarry site may have the potential to be developed into an inland marina or yacht basin. The old railway line embankment needs to be properly cleaned up.

4. LAND OWNERSHIP AND ADMINISTRATION

It should be noted that the necessary statutory approvals for the need and desirability for township establishment and layout approval by Townships Board for the Desert Rose development are still outstanding. These can only be obtained once clarity on land ownership, responsibility and the functioning of the administrative authority responsible for the day to day administration of the Desert Rose development has been agreed upon by the various role players.

The layout design prepared for the Desert Rose Development indicates the development holds the potential to formalize approximately 582 erven. In line with the Namibian planning policies these erven are to be formalized by creating two new township extensions.

The Desert Rose development is located within the Dorob National Park which can be described as a conservation area of larger national importance. The development of an urban node in a national park is normally not in line with the general land uses of a national park and as such support for such development needs to be obtained from the Ministry of Environment and Tourism. As freehold title is to be made available to investors (thus selling of land) the entire development is to be de-proclaimed out of the national park prior to township establishment taking place.

The Desert Rose development falls within the 'former Walvis Bay Enclave' area the general administration of which was entrusted by the Namibian Government onto the Walvis Bay Municipality although not forming part of the municipal area of Walvis Bay. As such the administration and control of the new urban node is to be entrusted as a satellite urban node onto the Walvis Bay Municipal Council by including this development into the municipal area and placing it under the development control of the Walvis Bay Municipality rather than to establish a new local authority for the area in terms of the Local Authorities Act (Act 23 of 1992).

The township establishment will have a cross-sectorial impact on planning restrictions and on utility providers and the support of other Line Ministries and Parastatal organisations must be solicited prior to submitting the final approval for the development in terms of the Namibian Planning and Environmental legal frame. The following key stakeholders need to be formally approached prior to submitting the application for township establishment and layout approval with Nampab and Townships Board respectively:

- Ministry of Environment and Tourism (Environmental Commissioner)
- Erongo Regional Council

- Ministry of Lands and Resettlement
- Ministry of Regional Government Housing and Rural Development
- Ministry of Fisheries and Marine Resources
- Ministry of Works and Transport (Roads Authority)
- Municipality of Walvis Bay
- Nacoma
- Namwater
- ErongoRed

After the Ministry of Environment and Tourism has formally endorsed the idea that the area required for the Desert Rose development is to be de-proclaimed from the Dorob National Park the township establishment process may be initiated. The following actions and approvals need to be completed:

(a) Erongo Regional Council and Walvis Bay Municipal Council support for the development of the Desert Rose development as a satellite urban node.

(b) Ministry of Lands and Resettlement approval for the survey and creation of a new "Farm" within the Dorob Park area and ownership transfer thereof to the Walvis Bay Municipality, or then the developer of Desert Rose.

(c) Approval of layout by developer and Walvis Bay Municipal Council. This includes the provision of bulk services to the Desert Rose development as well as agreements for service delivery, the land use requirements for the local authority and Government purposes as well as any other restrictions to be registered against the development.

(d) Inclusion of the area into the local authority area of Walvis Bay in terms of Section 4 of the Local Authorities Act (Act 23 of 1992).

(e) Approval for 'Need and Desirability for Township establishment on the newly created farm portion by the Namibian Planning Advisory Board (Nampab) This submission is to be made in accordance with the Townships and Division of Lands Ordinance (Ordinance 11 of 1963, as amended).

(f) Formal environmental clearance for the development by the Environmental Commissioner is to be obtained in according to the Environmental Management Act (Act 7 of 2007).

(g) Township establishment and layout approval for the new urban area by Townships Board.

(h) Inclusion of the Desert Rose township area into the Walvis Bay Town Planning Scheme in terms of the Town Planning Ordinance (Ordinance 18 of 1954 as amended).

(i) Survey and approval of General Plan by the office if the Surveyor General which resorts under the Ministry of Lands and Resettlement.

(j) Promulgation of new township in Government Gazette and opening of Deeds Registry.

Once the above statutory requirements have been met the developer can commence with the bulk infrastructure provision as well as the installation of municipal services (to satisfaction of Walvis Bay Municipal Council) whereafter the serviced land may be developed or sold.

Barring the time it takes to de-proclaim the development area out of the Dorob National Park (project steps (a) and (b) above) the time required for obtaining the necessary statutory approvals as set out under project steps (c) to (j) may take between 24 to 30 months to complete. The servicing of the individual properties can be initiated, this process to be driven by the demand for serviced land.

5. LAYOUT DESIGN

The layout design strongly hinges on the acceptance that the Desert Rose international convention centre is top form the heart of the development. This iconic building complex is to send a strong signal out to visitors to the area that Namibia has the will and capacity to become a leading nation in terms of hosting international conventions and events. As such the Desert Rose Convention Centre is to dominantly present itself standing taller and raising out above the remaining buildings to be erected within the Desert Rose urban node. The buildings of the convention centre should form a prominent skyline and viewing corridors onto the centre form a major feature in the layout design.

The general planning approach adopted is highlighted in the following section. More detailed design information are highlighted in the sections referring to the various precinct plans developed in support of the layout plan prepared for the desert Rode development.

5.1 General planning approach

The following design elements are built into the layout design:

(a) ***Viewing corridors onto conference centre:*** The iconic convention centre is to be the main structural element of the development. As such the high-rise buildings of the centre should be clearly visible to passing motorists. The alignment of the B2 will enable motorists approaching the Desert Rose development from either direction (from Walvis Bay or from Swakopmund) to obtain unobstructed views onto the development from a distance away. To be able to see the centre from the B2 in passing the development building height restriction of the buildings to be erected along the B2 will be enforced, use of the difference in elevation will be made of while special viewing corridors have been introduced in the layout design.

(b) ***Entrance gateways:*** Three entrances to the Desert Rose development from the B2 are to be provided for. Although the southern and northern entrances are of lesser importance than the central access point these two entrances announce the beginning (or end) of the Desert Rose development and as such need to be treated accordingly. The B2 road section between the southern and northern access points should ideally be upgraded into a dual carriageway.

The central entrance, which is considered to be the main access to the development, is to be celebrated by constructing a large circle at the B2 which will guide motorists into the main internal avenue leading towards the convention centre. To reflect the theme of the development this circle is to be landscaped by introducing a low maintenance desert garden with an iconic feature centrally located.

(c) ***Central Precinct:*** The central road leading from the B2 to the convention centre is to form the retail and public lifeline of the development. The curved alignment of the road encourages lower traffic speeds and a sense of arrival. The wider road reserve encourages the development of a dual carriageway road with sufficient space for off-street parking and landscaping. The road also offers motorists a spectacular view onto the public node and convention centre from the higher lying area to the east of the development. A larger site for the development of a shopping centre as well as a petrol filling station are provided for at the intersection of the main road with the B2, these two developments not only serve the Desert Rose development but providing shopping and refuelling experiences to passing trade in general.

(d) ***Convention Centre Precinct:*** The Desert Rose convention centre precinct which is positioned to have direct access to the beach area, is to be centrally located within the larger development and as such will form the fulcrum of the development. The convention centre, which is to overlook the marina wharf development, can be accessed by either the main road or then, alternatively by making use of the beachfront boulevard which follows the shoreline.

(e) ***Northern Precinct:*** A key requirement to be considered during the layout planning is the maintenance of public access to the beach, especially the area towards the northern part of the development from the rocky bay to the Desert Rose convention centre. This relatively narrow stretch of land between the shoreline and the B2 is to be developed into a “water world” public node where recreational and entertainment facilities are to be developed. The development of hotels, restaurants, tourism orientated activities, medium rise apartment buildings and the public amenities along the beach road is encouraged as the stretch between the water world and the convention centre is to be developed into an activity spine where day and night-time activities are to be encouraged.

(f) ***Southern precinct:*** The development area to the south of the Desert Rose convention centre is to accommodate recreational (beach area, golf course, play parks, conservation area) and residential (free standing, semi-attached, sectional title) land uses, these to be supported by two lower order public activity nodes. The area is further supported by a school, old age home and church site.

(g) ***Viewing Corridors:*** To celebrate the Desert Rose convention centre viewing corridors are introduced in the layout design. These corridors are to be kept void of any structures or obstructing elements, effectively encouraging birds to make use of these corridors to fly to the dune belt area located to the east of the B2. Low key public gardens can however be developed within these corridors.

(h) ***Golf course:*** A large area central to the development is reserved for the development of a 9-hole golf course. As this area is also to serve as a resting place for birds the area is to be fenced-off.

(i) ***Natural topography:*** maximum use is made of the natural east to west downward slope (especially in the central area) to obtain maximum sea view exposure to the non-sea fronting properties.

(j) ***Street reserves:*** To reflect the space of the Namib Desert use has been made to provide wide street reserves which will significantly contribute towards the creation of a sense of space while also permitting the development of landscaped and tree lined streetscapes.

(k) ***Residential property sizes:*** Use is made of residential properties generally being above 900m². This permits the development of stately homesteads with sufficient open spaces surrounding the buildings and as such creating openness in terms of residential massing.

(l) ***Cadastral boundaries:*** Where appropriate use was made of a staggered mid-block residential property configuration and in so doing create viewing corridors for the second row properties along the side boundary building line servitudes applicable to residential developments.

(m) ***Site orientation:*** The design focusses on maximising views onto either the Atlantic Ocean to than the dune belt. Where possible properties were designed in such way that use can be made of north facing building designs. The east-west street orientation of the shorter access streets will mitigate the effect the prevailing onshore winds do have on coastal living conditions.

(n) ***Beach road:*** The scenic beach road, which connects the various activity nodes with one another, follows a gentle curved road alignment which has the aim to introduce a scenic route through the Desert Rose development. The road however is not to form an alternate route to the B2 and heavy traffic movement along this route is to be discouraged by the design and the time required driving along this road. By introducing landscaping and street furniture the street will effectively encourage slower traffic movement to take place and thus increasing pedestrian and cycle movement along this route.

(o) ***Beach area:*** In line with normal Namibian planning guidelines a 100 metre set-back line from high watermark to the urban edge is provided for. It is envisaged that no vehicles are to be permitted to drive along between the shoreline and the urban edge and that this area it to be considered as a conservation area where birds can rest. Pedestrian access, inclusive of fishing, will however not be restricted within this area.

(p) ***Traffic circles:*** Traffic circles are to celebrate the most important intersections and arrival points within the development. These circles should be landscaped to reflect the theme of the development.

(q) ***Beach walk:*** The western urban edge is to be defined by developing a landscaped pedestrian walkway which is to stretch all along the Desert Rose development. This design feature is not only to prevent motor vehicles from accessing the beach area in front of the Desert Rose development but is also to be raised to a height which will protect the development against potential high water occurrences. The walkway is to include children play areas, cycle lanes, public gardens, public seating and appropriate lighting.

(r) ***Pedestrian friendliness***: Care has been taken in the layout design to facilitate easy and landscaped pedestrian access to the beach as well as to the public nodes created. Pedestrian and cycle routes are to be developed and thereby dividing these from the motorized traffic. The pedestrian and cycle lanes are to be developed as part of the overall urban design concept of the Desert Rose development.

(s) ***Social amenities***: Provision has been made for a primary school site, an old age home as well as a church site. Facilities such as a local authority building, public library, clinic or medical centre can be accommodated on the sites provided for within the Central Precinct area where additional public parking space has been provided within the widened street reserve.

(t) ***Density***: The urban form of the Desert Rose development is determined by the residential densities or the bulk factor (floor area ratio) allocated to each site. The highest densities are found along both sides of the main road crossing the Central Precinct, the properties located within the Convention Centre Precinct as well as the three activity nodes located along the beach road.

(u) ***Building heights***: The height of the buildings within the Desert Rose development is to be regulated. The objective of introducing such a restriction is to ensure maximum visibility onto the convention centre, to maximise sea views and to create sense of place.

It is recommended that a design guideline manual will be compiled for the development and that all properties are to be subjected to these guidelines. The conditions of the guidelines are to be enshrined within the Title Deeds of the properties for generations to come. This will assure that the Desert Rose development will remain a world class development which will do Namibia proud.

5.2 Precinct Plans

Although the Desert Rose development is considered to be an integrated and multi-functional urban area the development has four areas each of which has a specific role to play in the development. These functioning of these areas is summarised below.

5.2.1 Convention Centre Precinct

Central to the development is the desert Rose Convention Centre. Strategically placed within the development and overlooking a large public and beach area the convention centre is to be linked to a public domain dominated by tourism and smaller retail facilities. Restaurants, curio shops, accommodation facilities, public squares and entertainment facilities are to support the Convention Centre.

A site for the development of a lighthouse restaurant has been provided for where a public viewing area can be integrated into the design of the lighthouse in the form of an oyster bar and viewing area from where visitors can see the convention centre from another angle with the scenic dune belt as backdrop.

Convenient access to the beach is considered to be important and to form an integral part of the convention centre. As such this development to developed closer to the high water mark than the rest of the Desert Rose development where the 100metre beach area is to be respected.

The Convention Center is positioned just north of the redundant gravel pit currently scarring the area. It needs to be pointed out that it is envisaged to develop an inland yacht harbour by properly excavating the gravel pit and extend a quay into the sea to form a harbour; the technical constraints and feasibility of this option however still to be investigated. As such the following three development scenarios were developed for the disturbed area which is to be turned into the common attractor of the development:

(a) Convention square: The gravel pit area can rehabilitated and a town square be developed on the rehabilitated area. This area can accommodate landscaped gardens, kiosks, outdoor entertainment or recreation facilities as well as having the opportunity to introduce a prominent statue or focal point.

(b) Marina basin plaza: The existing gravel pit can be filled with water and safe swimming and recreational water activities can be offered to visitors. The edges of the basin plaza can be utilized for tourism related activities.

(c) Marina and yacht harbour: The gravel pit area can be integrated into yacht harbour opening into the Atlantic Ocean. This is the most desirable development option as such yacht harbour can become an international attraction while also enabling local tour operators to offer daily boat cruises to visitors.

5.2.2 Central Precinct

The area between the central access point from the B2 and the convention centre is considered to be the Central Precinct area. This are is to be developed into a mixed-use activity spine where retail, office, residential, institutional and social activities flank both sided of the main road leading to the convention centre. The wide street reserve encourages the development of a dual road with dedicated public parking, landscaping and pedestrian walks to be introduced. The buildings flanking the main road are ideally to be developed on the 0metre street building line and as such enhance the sense of space.

Central to the southern development area of the precinct a pedestrian walk and public square has been introduced and the development of open air activities within this wind sheltered and car free zone needs to be encouraged.

A section of the northern street section has been widened for the purpose of additional public parking in support of social amenities such as a local authority office, public library, medical centre, corporate offices or retail outlets.

The development of apartments above first floor within this node is encouraged.

A regional shopping centre and a filling station site have been introduced at the main entrance to the development as these two facilities are dependent on high volume customer frequency. As such this centre is to be considered to be of regional nature rather than of local nature.

5.2.3 Northern precinct

The Northern precinct area accommodated the public world. Tourism accommodation, restaurants, beach related activities such an annual craft markets, entertainment facilities and a range of smaller retail shops accommodated within the buildings overlooking the beach road and beach area need to be encouraged.

The beach walk area is to be wide, effectively enabling the development of pockets of public gardens, play areas, beach related sport activities (i.e. beach volleyballs etc.), dedicated area for non-permanent kiosks and public amenities and spaces for informal beach bars or restaurants which can be rented to the public at large during the holiday season. As such it is to be accepted that this becomes the vibrant zone where social interaction between all walks of life is to take place.

5.2.4 Southern Precinct

The Southern precinct is of more quiet and residential orientated nature. The public interaction is to concentrate at the two smaller public nodes introduced, these in turn to be tied together by the public walk introduced all along the shoreline. Public surveillance and security along the beach area is largely obtained by developing residential and public facilities along the western urban edge.

The most southern activity node is to terminate the Desert Rose development. From there unrestricted access to the beach between the Desert Rose development and the Long Beach resort area can be obtained, this area being a popular informal recreational area, the status of which should be maintained.

6. SPECIALIST STUDIES

The layout design prepared for the Desert Rose development has been undertaken in close consultation with the project architect, engineer and environmentalist. The layout prepared for the Desert Rose development informs overall report as prepared by the project architect.

A freestanding report on the installation of the engineering services in support of the Desert Rose development has been compiled. The findings of this report should be read together with the planning report.

A freestanding environmental report on the Desert Rose development has been compiled. The findings of this report should be read together with the planning report.

7. SUMMARY OF LAND USE PROVISION

The following table summarises the number of properties to be provided within the Desert Rose development.

Development potential

LAND USE	NUMBER OF ERVEN
Residential	492
General Residential	33
Business	31
Institutional	3
Public Open Space	8
Conservation	6
Special	9

8. ANNEXURES

The following maps are attached in support of this report:

- Locality map
- Informants map
- Layout map
- Land use map
- Density map
- Convention Centre Precinct
- Central Precinct
- Northern Precinct
- Southern precinct

Qualifying note:

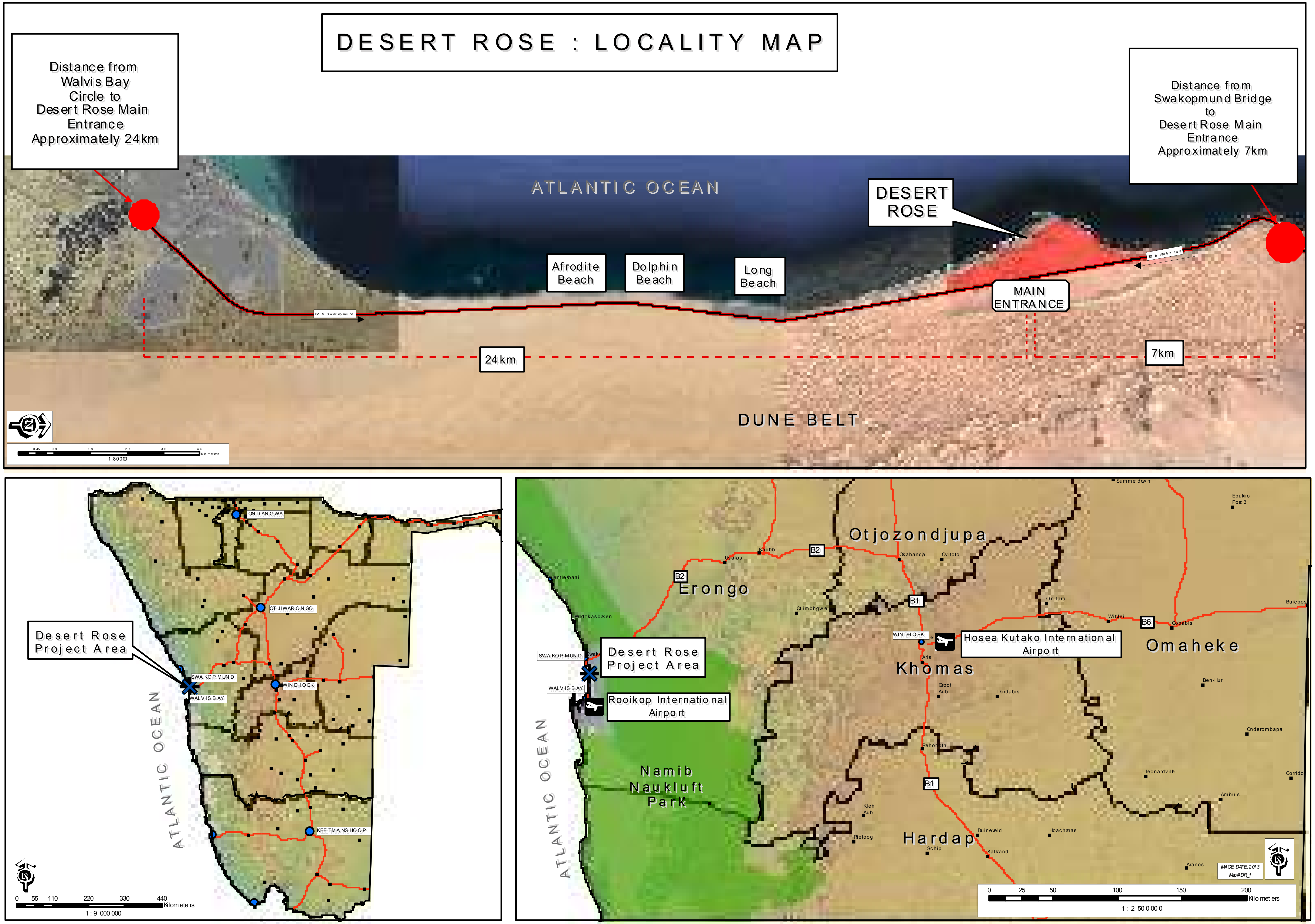
This report was compiled in support of the layout design proposal prepared for the proposed Desert Rose development. It is acknowledged that the layout prepared may require some adjustments to be introduced as the environmental clearance and final engineering inputs are still outstanding. As such the report does not have the purpose to obtain statutory (or public) support for the layout prepared.

The report was compiled by Stubenrauch Planning Consultants cc for Desert Rose PTY.

The information contained herein is confidential and may not be used by any third party without written authorization by the author of the report.

Signed at Windhoek on 11 September 2013 for Stubenrauch Planning Consultants by:

G Stubenrauch



DESERT ROSE : LOCALITY MAP
Distance from Walvis Bay Circle to Desert Rose Main Entrance Approximately 24km
Distance from Swakopmund Bridge to Desert Rose Main Entrance Approximately 7km
ATLANTIC OCEAN
DESERT ROSE
Afrodite Beach
Dolphin Beach
Long Beach
MAIN ENTRANCE
24km
7km
DUNE BELT
1:80000
Desert Rose Project Area
ONDANGWA
OTJIWARONGO
SWAKOPMUND
WINDHOEK
WALVIS BAY
KEETMANSHOOP
ATLANTIC OCEAN
0 55 110 220 330 440 Kilometers
1 : 9 000 000
Otjozondjupa
Erongo
Omaheke
Khomas
Hardap
Namib Naukluft Park
Desert Rose Project Area
Hosea Kutako International Airport
Rooikop International Airport
SWAKOPMUND
WALVIS BAY
WINDHOEK
B1
B2
B6
Okahandja
Usakos
Karibib
Omitara
Witvlei
Gobabis
Rehoboth
Dordabis
Groot Aub
Leonardville
Aminuis
Kalkrand
Duineveld
Hoachanas
Rietoog
Solitaire
Aranos
Klein Aub
0 25 50 100 150 200 Kilometers
1 : 2 500 000

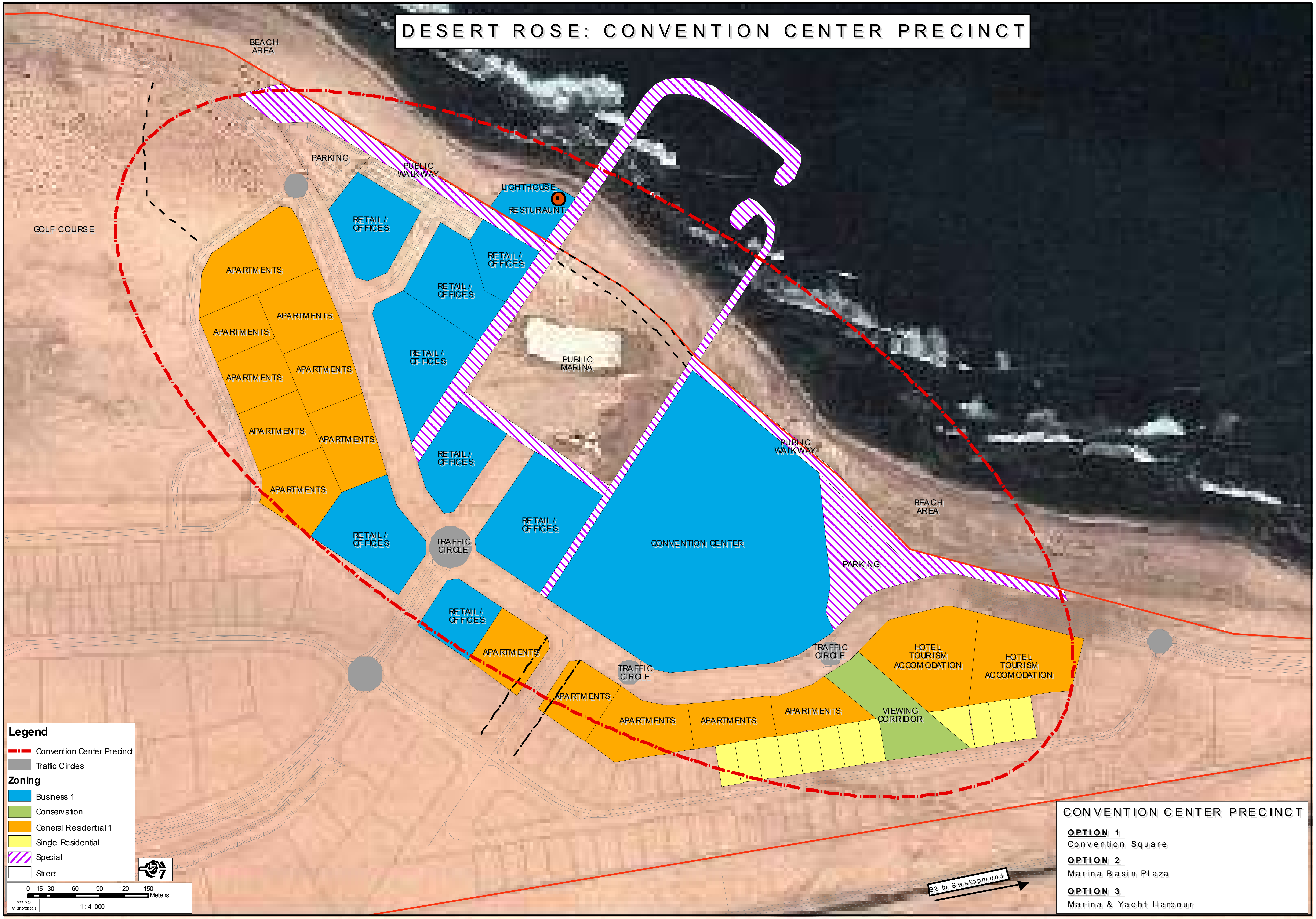
DESERT ROSE - INFORMANTS

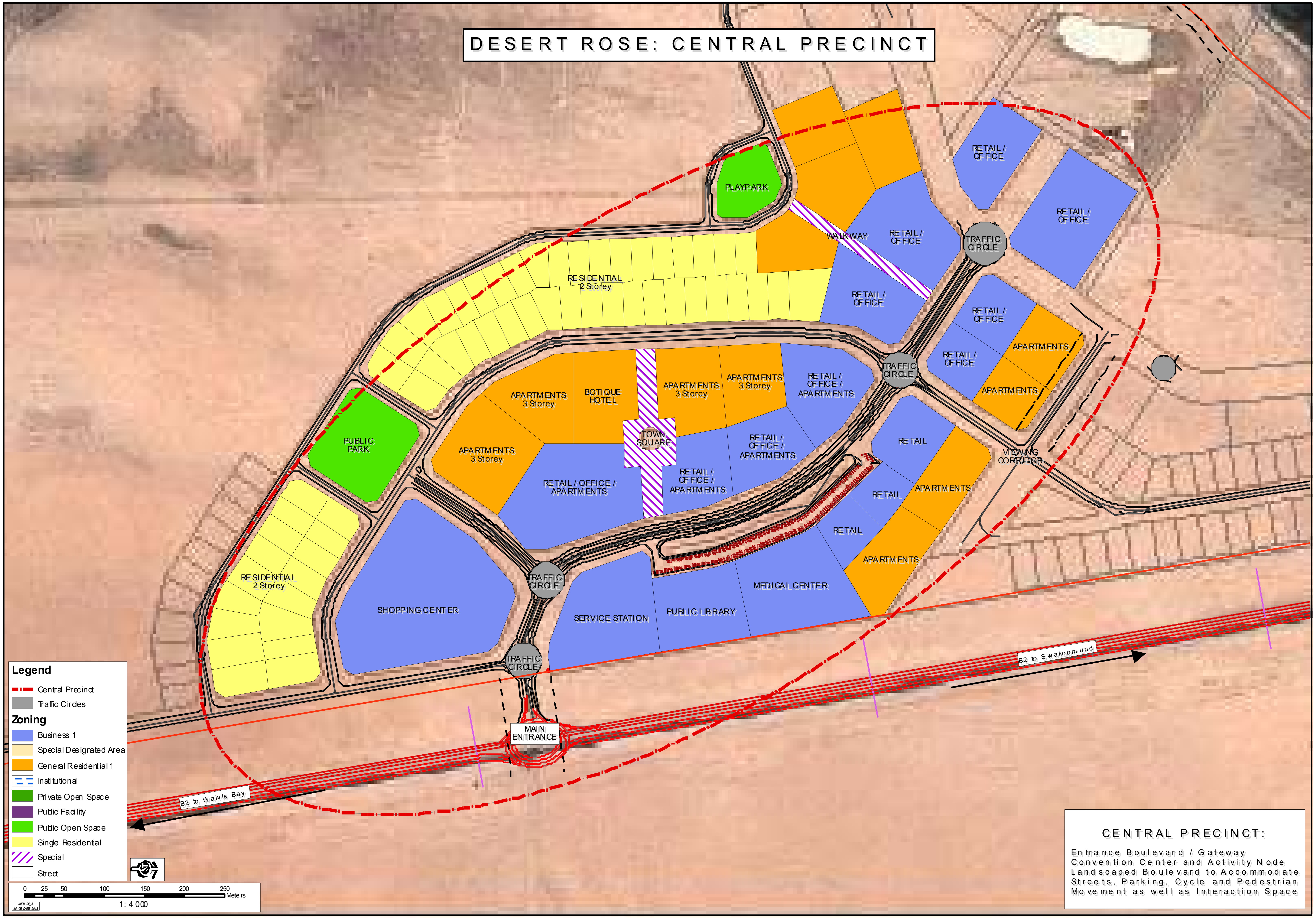
DESERT ROSE - LAYOUT

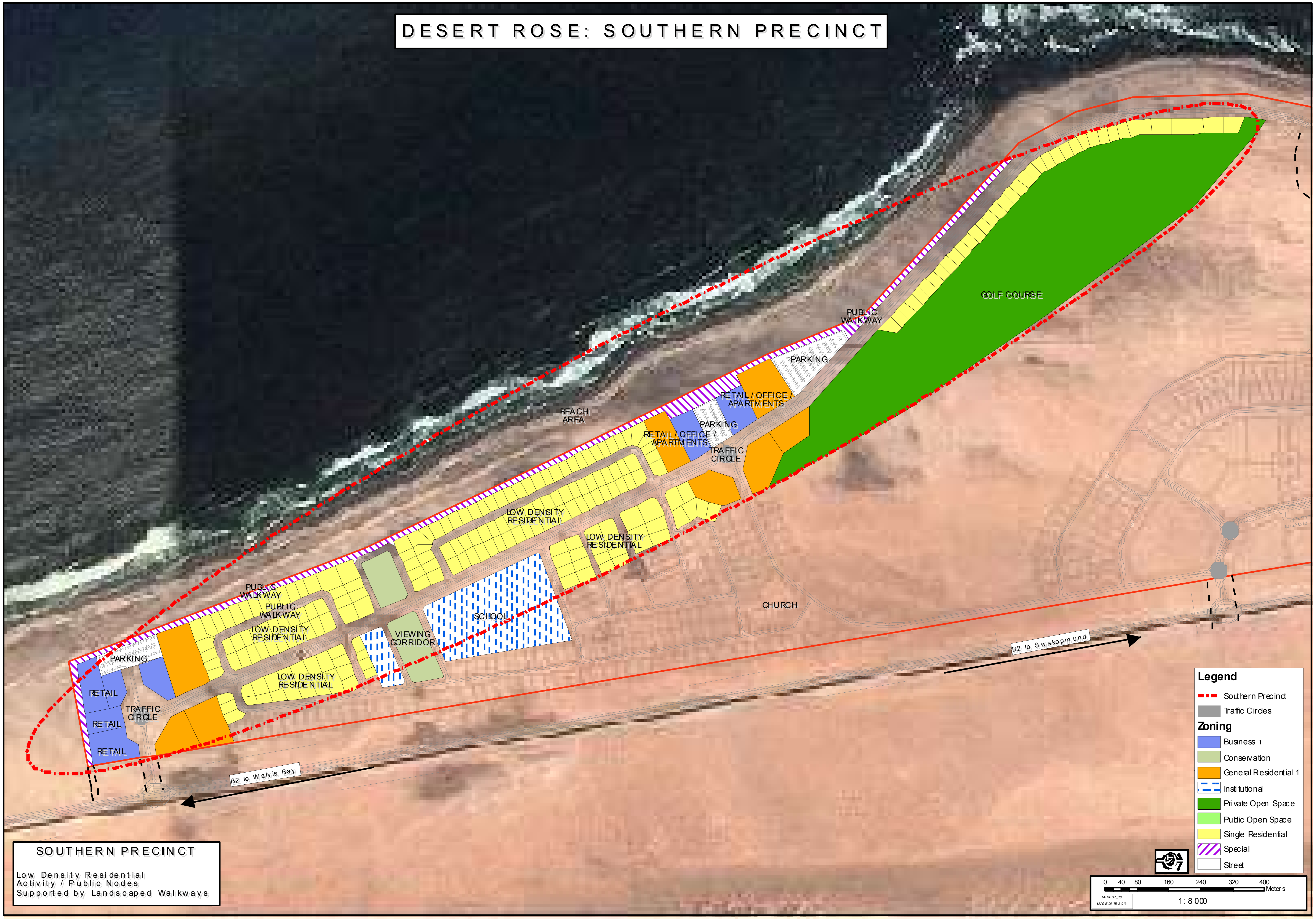
DESERT ROSE: ZONING MAP

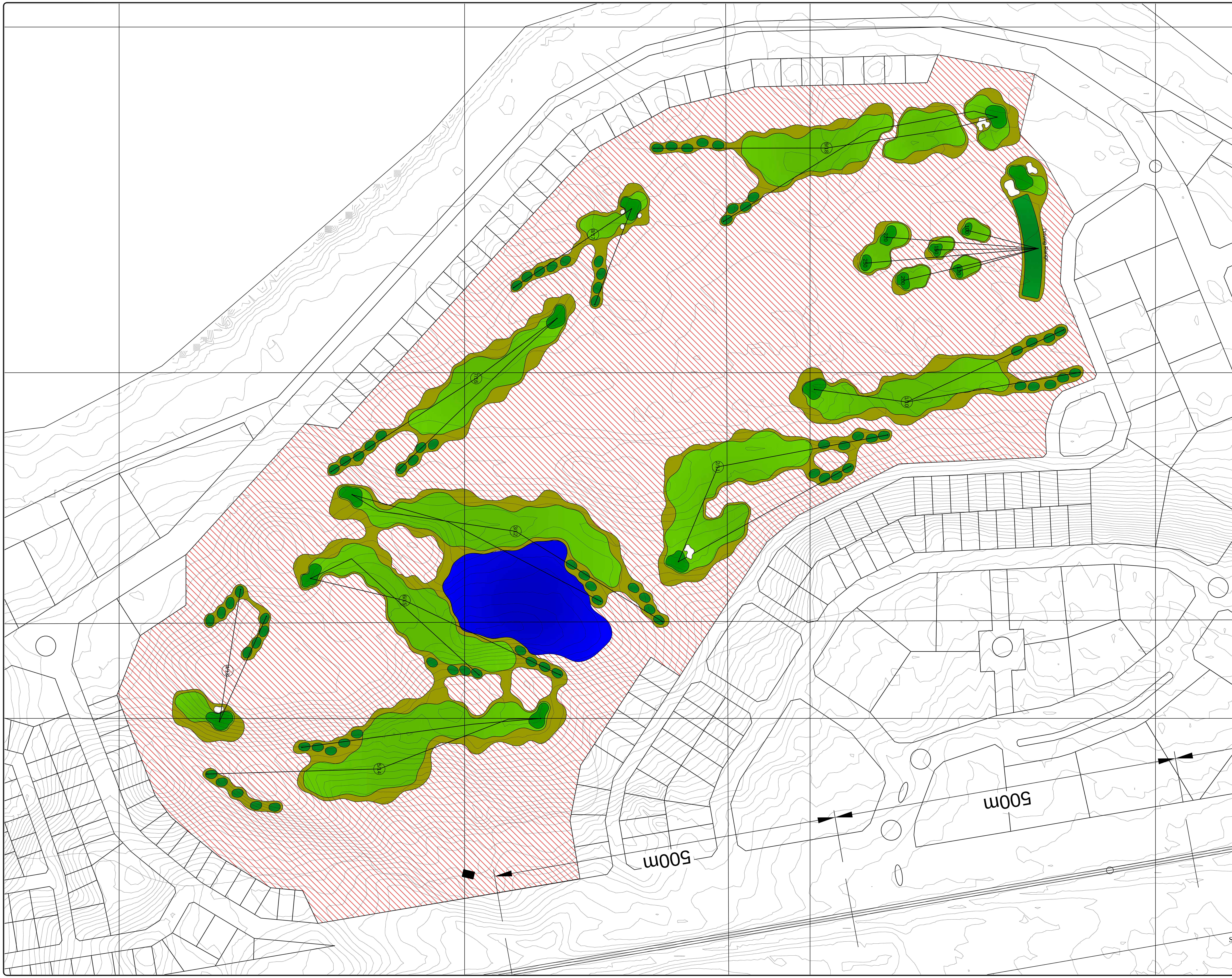
DESERT ROSE: DENSITY MAP

DESERT ROSE: BULK MAP


DESERT ROSE: CONVENTION CENTER PRECINCT
BEACH AREA
PARKING
PUBLIC WALKWAY
LIGHTHOUSE
RESTURAUNT
GOLF COURSE
RETAIL / OFFICES
APARTMENTS
PUBLIC MARINA
CONVENTION CENTER
BEACH AREA
PARKING
TRAFFIC CIRCLE
HOTEL TOURISM ACCOMODATION
VIEWING CORRIDOR
Legend
Convention Center Precinct
Traffic Circles
Zoning
Business 1
Conservation
General Residential 1
Single Residential
Special
Street
0 15 30 60 90 120 150 Meters
1 : 4 000
CONVENTION CENTER PRECINCT
OPTION 1
Convention Square
OPTION 2
Marina Basin Plaza
OPTION 3
Marina & Yacht Harbour
B2 to Swakopmund


DESERT ROSE: CENTRAL PRECINCT
PLAYPARK
RETAIL / OFFICE
RETAIL / OFFICE
WALKWAY
RETAIL / OFFICE
TRAFFIC CIRCLE
RESIDENTIAL 2 Storey
RETAIL / OFFICE
RETAIL / OFFICE
APARTMENTS
RETAIL / OFFICE
TRAFFIC CIRCLE
APARTMENTS 3 Storey
BOTIQUE HOTEL
APARTMENTS 3 Storey
APARTMENTS 3 Storey
RETAIL / OFFICE / APARTMENTS
APARTMENTS
PUBLIC PARK
TOWN SQUARE
APARTMENTS 3 Storey
RETAIL / OFFICE / APARTMENTS
RETAIL
RETAIL / OFFICE / APARTMENTS
VIEWING CORRIDOR
RETAIL / OFFICE / APARTMENTS
RETAIL
APARTMENTS
RETAIL
APARTMENTS
RESIDENTIAL 2 Storey
TRAFFIC CIRCLE
MEDICAL CENTER
SHOPPING CENTER
SERVICE STATION
PUBLIC LIBRARY
TRAFFIC CIRCLE
B2 to Swakopmund
MAIN ENTRANCE
B2 to Walvis Bay
Legend
Central Precinct
Traffic Circles
Zoning
Business 1
Special Designated Area
General Residential 1
Institutional
Private Open Space
Public Facility
Public Open Space
Single Residential
Special
Street
0 25 50 100 150 200 250 Meters
1: 4 000
CENTRAL PRECINCT:
Entrance Boulevard / Gateway
Convention Center and Activity Node
Landscaped Boulevard to Accommodate
Streets, Parking, Cycle and Pedestrian
Movement as well as Interaction Space


DESERT ROSE: SOUTHERN PRECINCT
GOLF COURSE
PUBLIC WALKWAY
PARKING
RETAIL / OFFICE / APARTMENTS
BEACH AREA
RETAIL / OFFICE / APARTMENTS
PARKING
TRAFFIC CIRCLE
LOW DENSITY RESIDENTIAL
LOW DENSITY RESIDENTIAL
PUBLIC WALKWAY
PUBLIC WALKWAY
LOW DENSITY RESIDENTIAL
VIEWING CORRIDOR
SCHOOL
CHURCH
LOW DENSITY RESIDENTIAL
PARKING
RETAIL
TRAFFIC CIRCLE
RETAIL
RETAIL
B2 to Swakopmund
B2 to Walvis Bay
Legend
Southern Precinct
Traffic Circles
Zoning
Business 1
Conservation
General Residential 1
Institutional
Private Open Space
Public Open Space
Single Residential
Special
Street
0 40 80 160 240 320 400 Meters
1: 8 000
SOUTHERN PRECINCT
Low Density Residential
Activity / Public Nodes
Supported by Landscaped Walkways



Hole	Meters	Par
1	384	4
2	285	4
3	495	5
4	193	3
5	348	4
6	389	4
7	317	4
8	148	3
9	500	5
Out	3059	36

Hole	Meters	Par
10	388	4
11	398	4
12	393	4
13	167	3
14	497	5
15	315	4
16	395	4
17	205	3
18	456	5
In	3214	36
Out	3059	36
Total	6273	72

DATE	REVISION	NO.

PROJECT
Desert Rose

DRAWING
Golf course Layout

DDV
DESIGN GROUP - GOLF

LANDSCAPE ARCHITECTS
GOLF COURSE ARCHITECTS
URBAN DESIGNERS

P.O. BOX 486 RUIMSIG 1732
TEL: (011) 958-0110
FAX: (011) 958-0115
212 RUIMSIG BOULEVARD SHOPPING CENTRE
CNR. HENDRIK POTGIETER DR. & DOREEN RD
RUIMSIG
Email Address : ddvland@mweb.co.za

DRAWING NO.

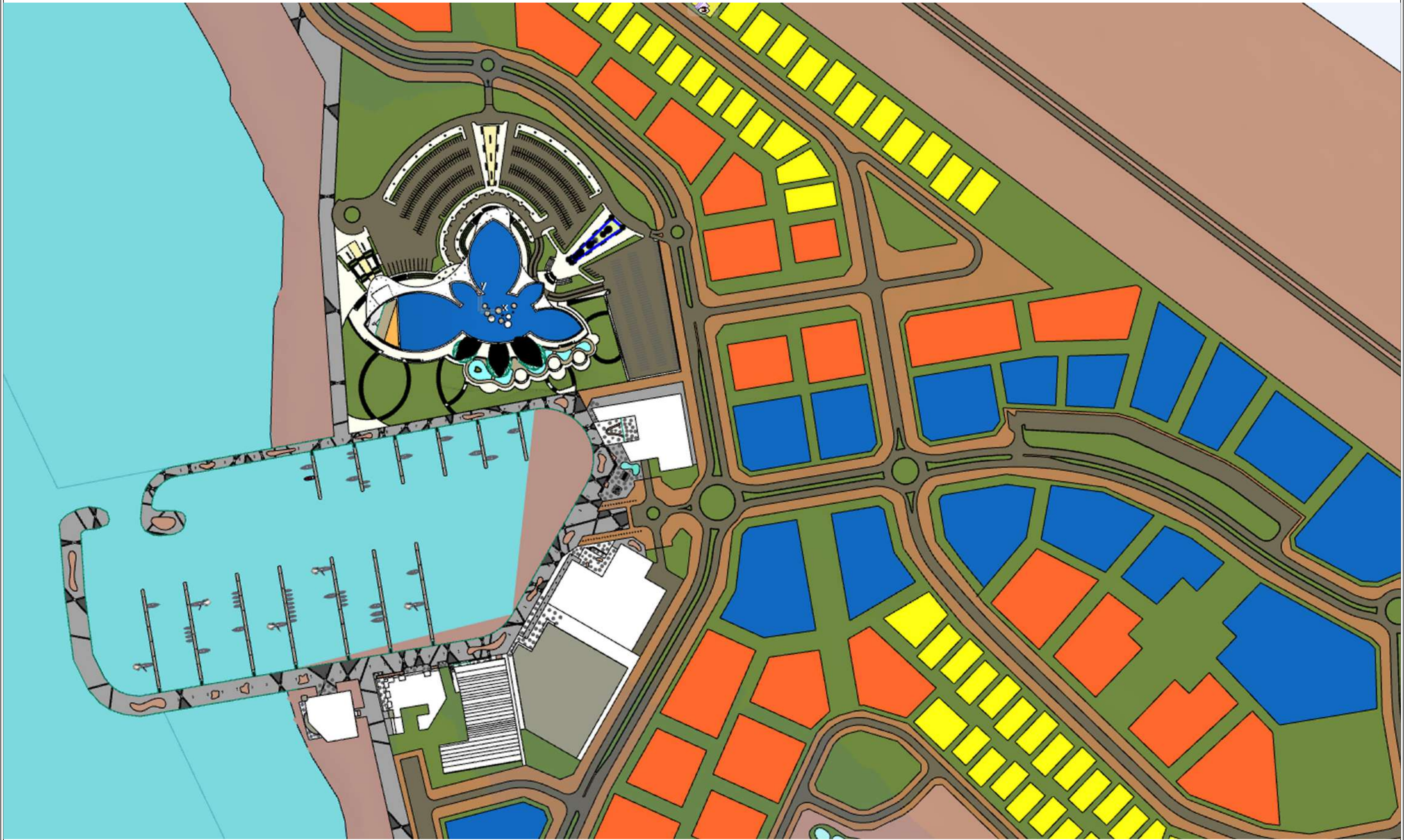
DATE :	DRAWN :	L.ARCHITECT :	NORTH
September 2013	DvdmJnr	Dvdm	
SCALE : 1:2500	ARCHITECT :	OTHER :	

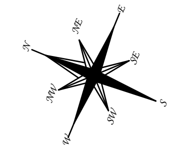
13.2.

SITE INDICATION

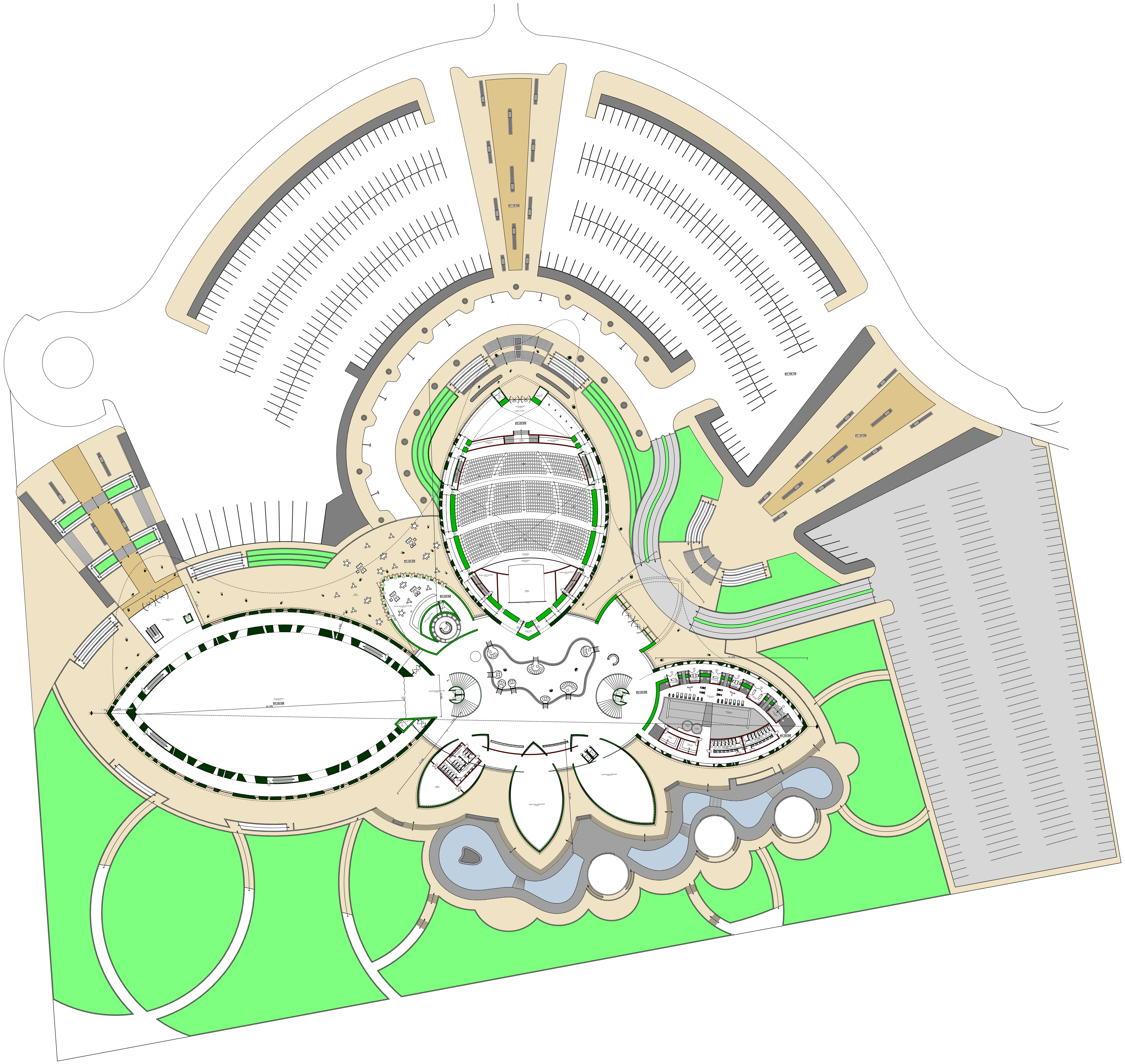
13.3.

SITE LAYOUT





NAMIBIA INTERNATIONAL CONVENTION AND EXHIBITION CENTRE_CONCEPT LAYOUT



SITE LAYOUT
SCALE 1:500

kb designs
architect& associates

Namibia International Convention and Exhibition Centre_Concept Layout

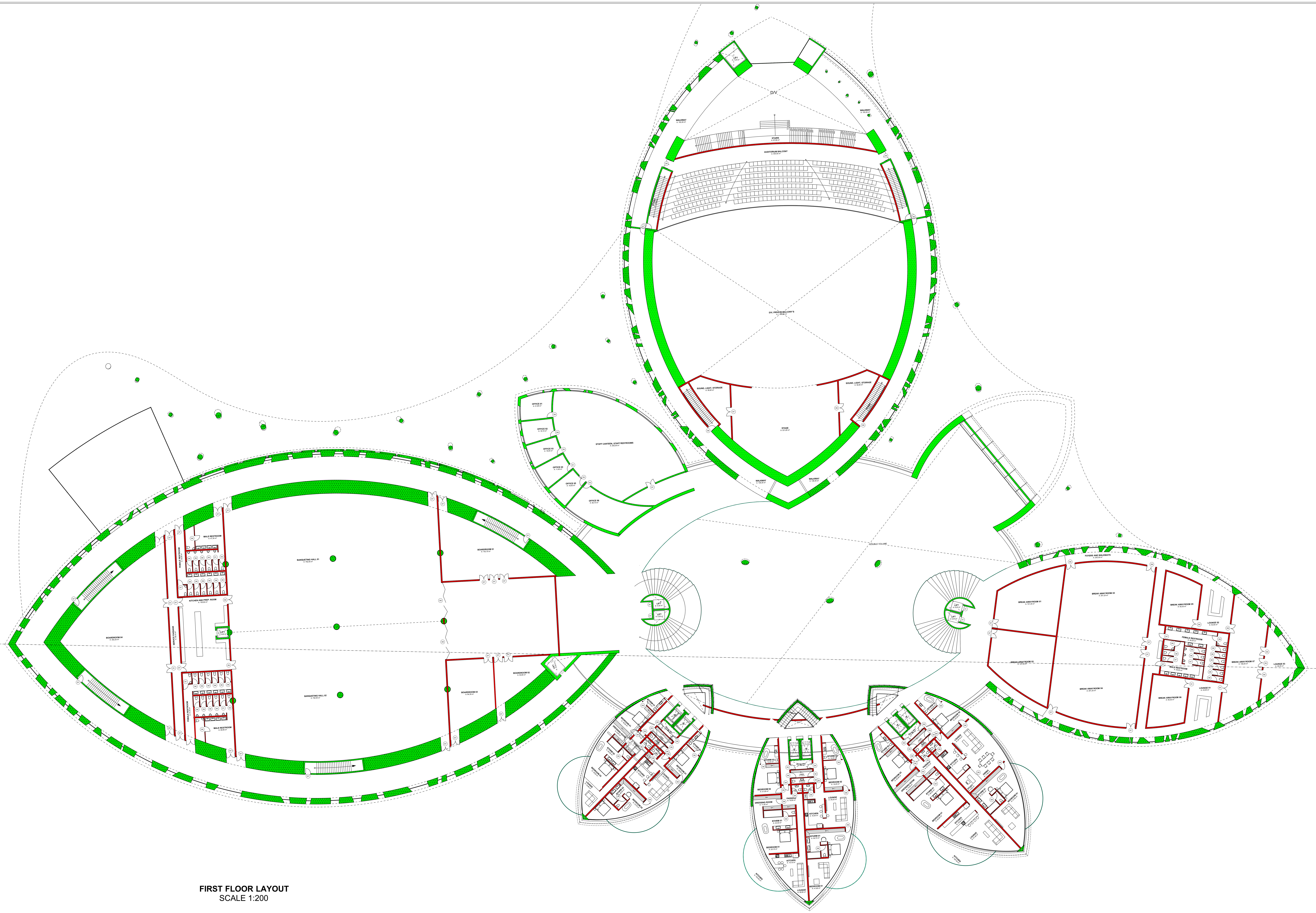
BASEMENT FLOOR LAYOUT
SCALE 1:200

kb designs architect& associates

Namibia International Convention and Exhibition Centre_Concept Layout

kb designs architects & associates

Namibia International Convention and Exhibition Centre_Concept Layout



FIRST FLOOR LAYOUT
SCALE 1:200

kb designs architect& associates

Namibia International Convention and Exhibition Centre_Concept Layout

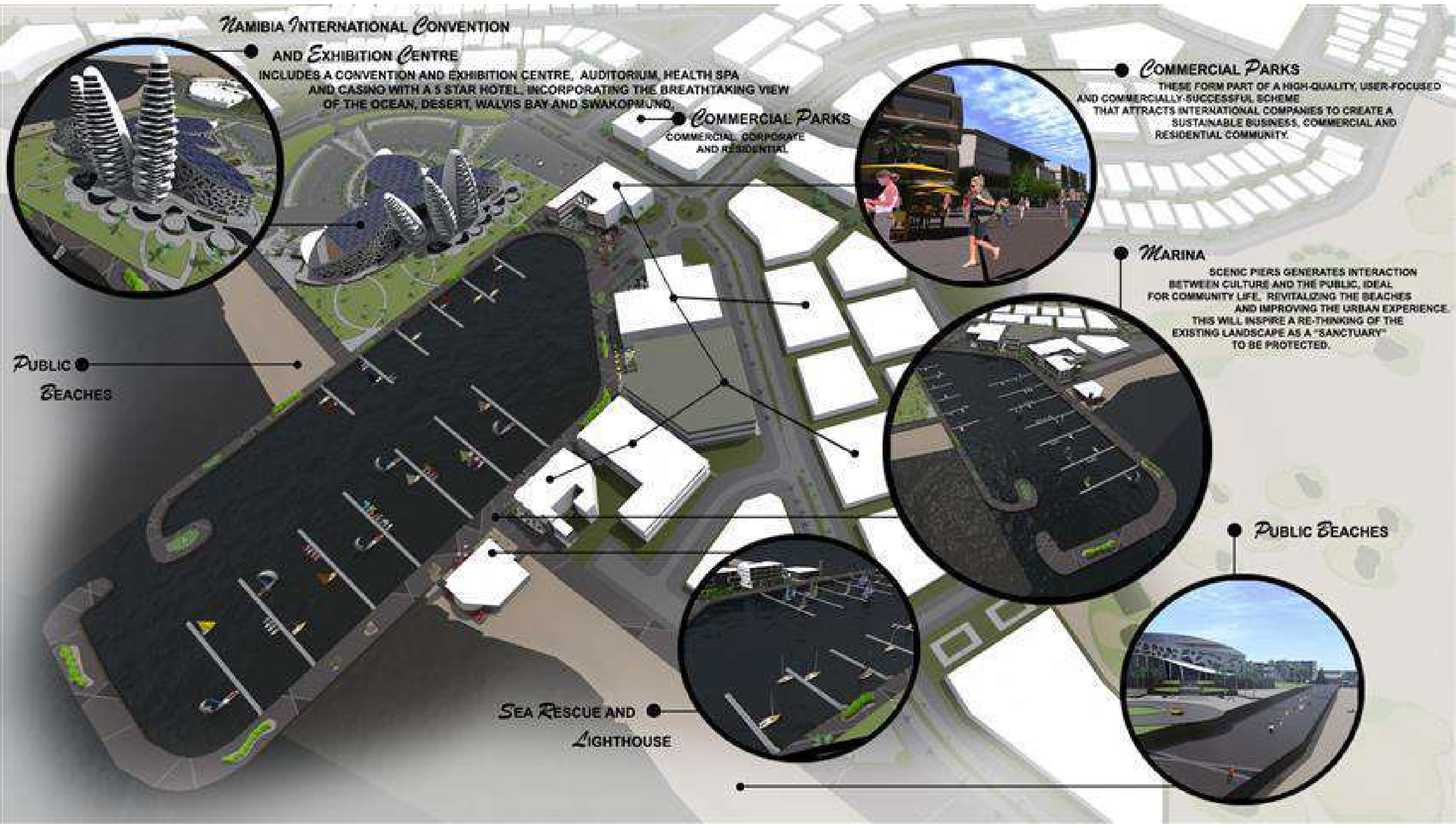
SECOND FLOOR LAYOUT
SCALE 1:200

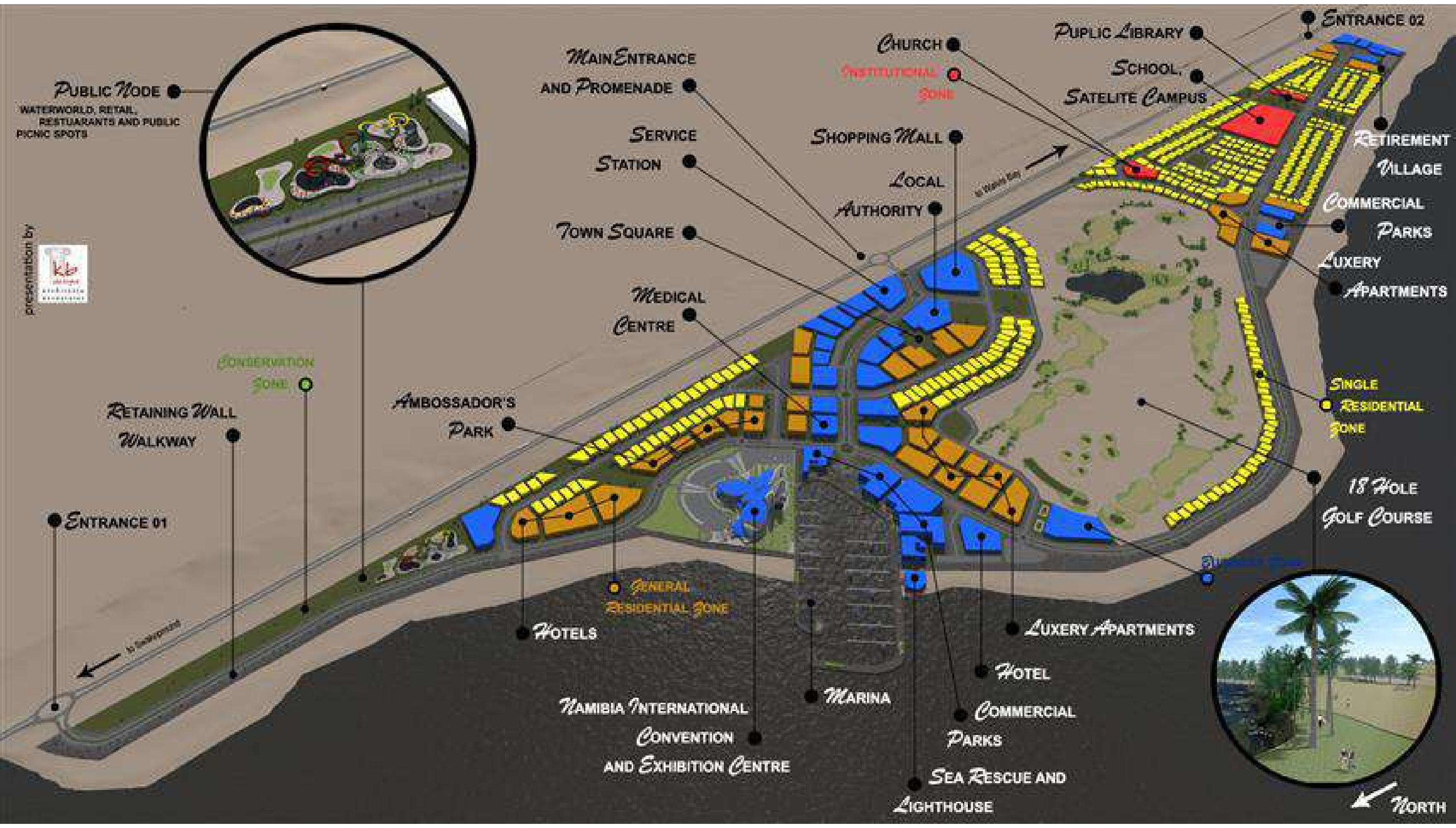
kb designs
architect& associates

Namibia International Convention and Exhibition Centre_Concept Layout

13.4.

DESERT ROSE PRESENTATION

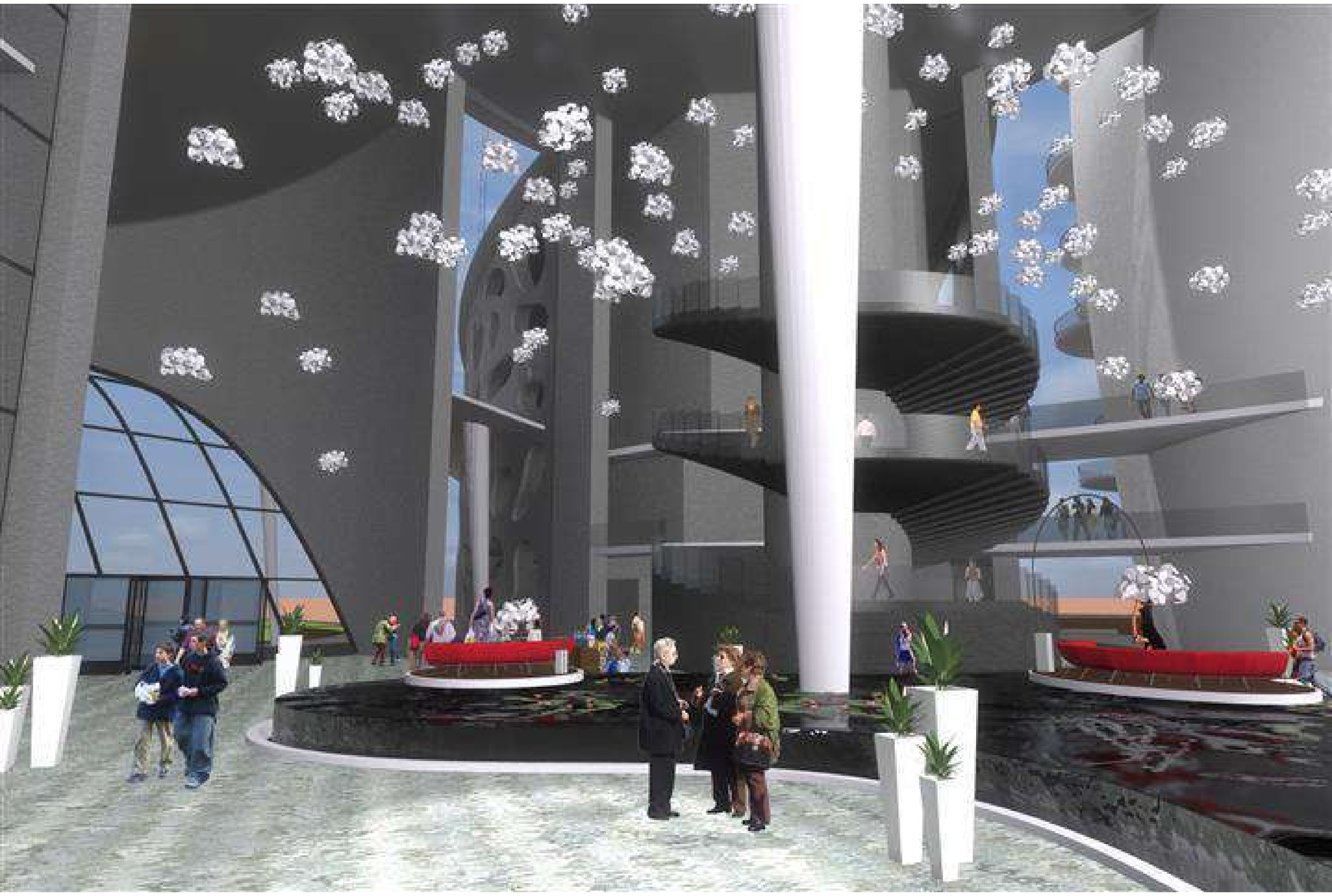

NAMIBIA INTERNATIONAL CONVENTION
AND EXHIBITION CENTRE
INCLUDES A CONVENTION AND EXHIBITION CENTRE, AUDITORIUM, HEALTH SPA
AND CASINO WITH A 5 STAR HOTEL, INCORPORATING THE BREATHTAKING VIEW
OF THE OCEAN, DESERT, WALVIS BAY AND SWAKOPMUND.
COMMERCIAL PARKS
COMMERCIAL, CORPORATE
AND RESIDENTIAL
COMMERCIAL PARKS
THESE FORM PART OF A HIGH-QUALITY, USER-FOCUSED
AND COMMERCIALLY-SUCCESSFUL SCHEME
THAT ATTRACTS INTERNATIONAL COMPANIES TO CREATE A
SUSTAINABLE BUSINESS, COMMERCIAL AND
RESIDENTIAL COMMUNITY.
MARINA
SCENIC PIERS GENERATES INTERACTION
BETWEEN CULTURE AND THE PUBLIC, IDEAL
FOR COMMUNITY LIFE, REVITALIZING THE BEACHES
AND IMPROVING THE URBAN EXPERIENCE.
THIS WILL INSPIRE A RE-THINKING OF THE
EXISTING LANDSCAPE AS A "SANCTUARY"
TO BE PROTECTED.
PUBLIC
BEACHES
PUBLIC BEACHES
SEA RESCUE AND
LIGHTHOUSE

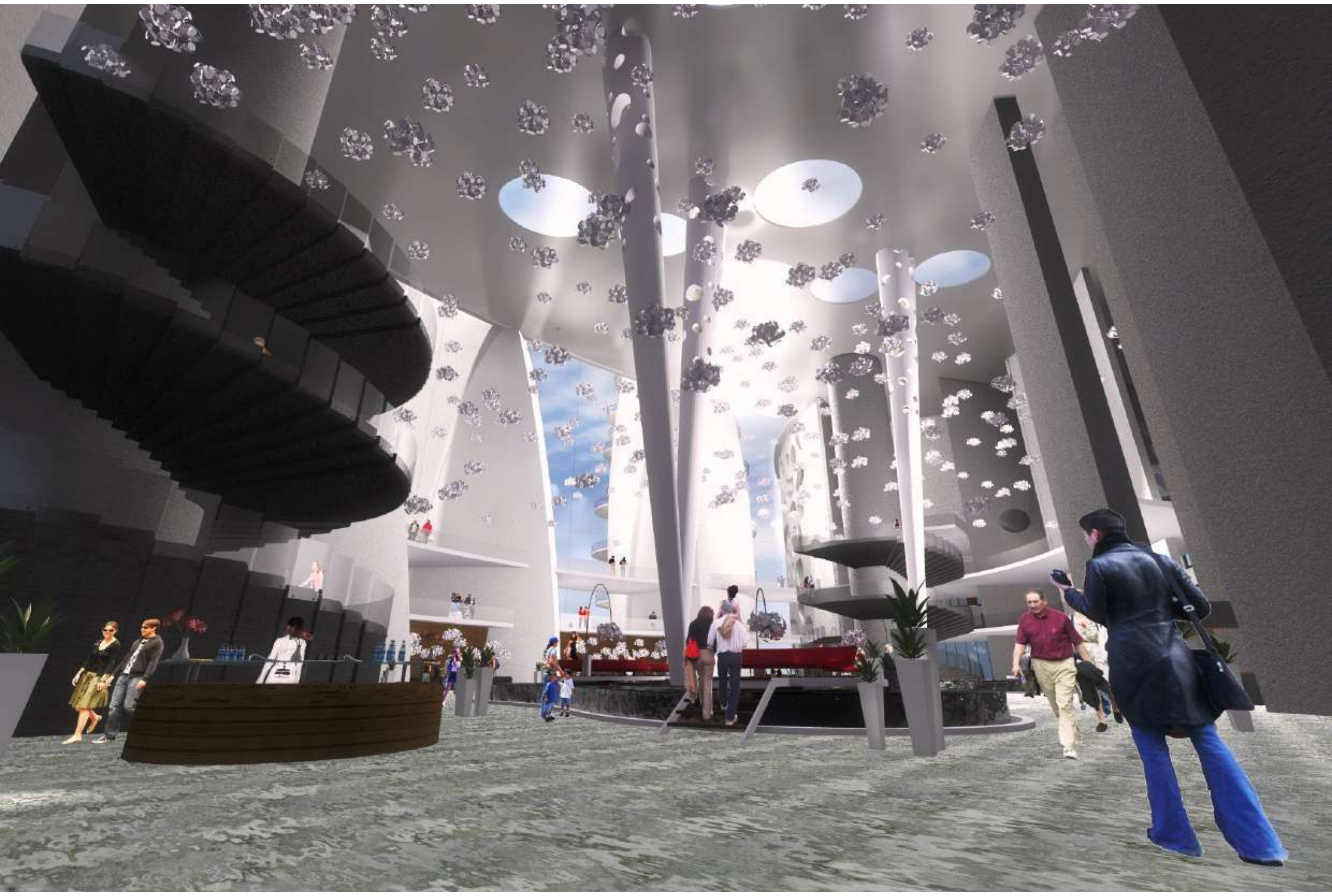


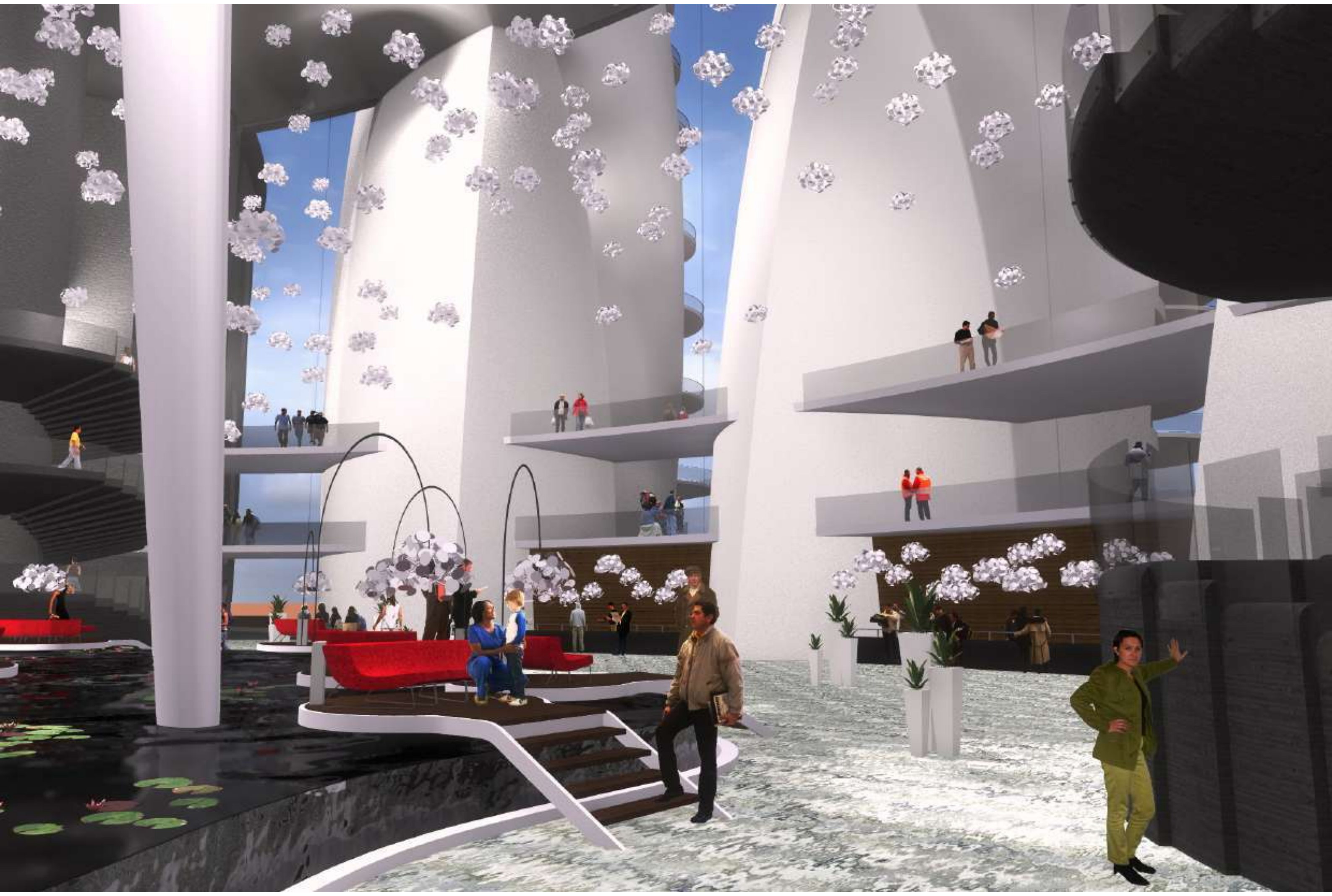
Public Node
WATERWORLD, RETAIL, RESTUARANTS AND PUBLIC PICNIC SPOTS
presentation by
Main Entrance and Promenade
Service Station
Town Square
Medical Centre
Ambossador's Park
Conservation Zone
Retaining Wall Walkway
Entrance 01
Church
Institutional Zone
Shopping Mall
Local Authority
Puplic Library
School, Satelite Campus
Entrance 02
Retirement Village
Commercial Parks
Luxery Apartments
Single Residential Zone
18 Hole Golf Course
General Residential Zone
Hotels
Namibia International Convention and Exhibition Centre
Marina
Luxery Apartments
Hotel
Commercial Parks
Sea Rescue and Lighthouse
North

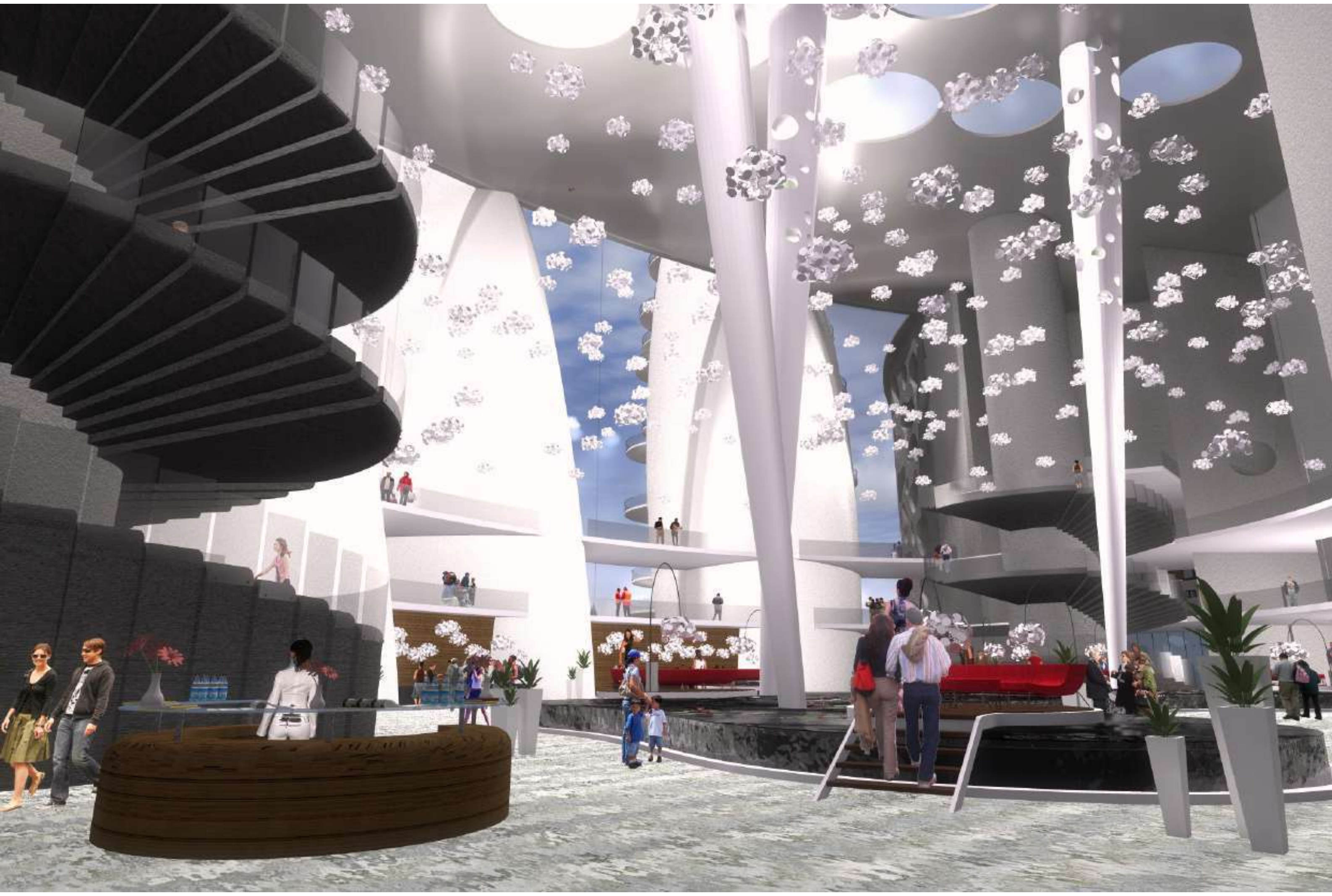
13.5.

GRAPHIC REPRESENTATION









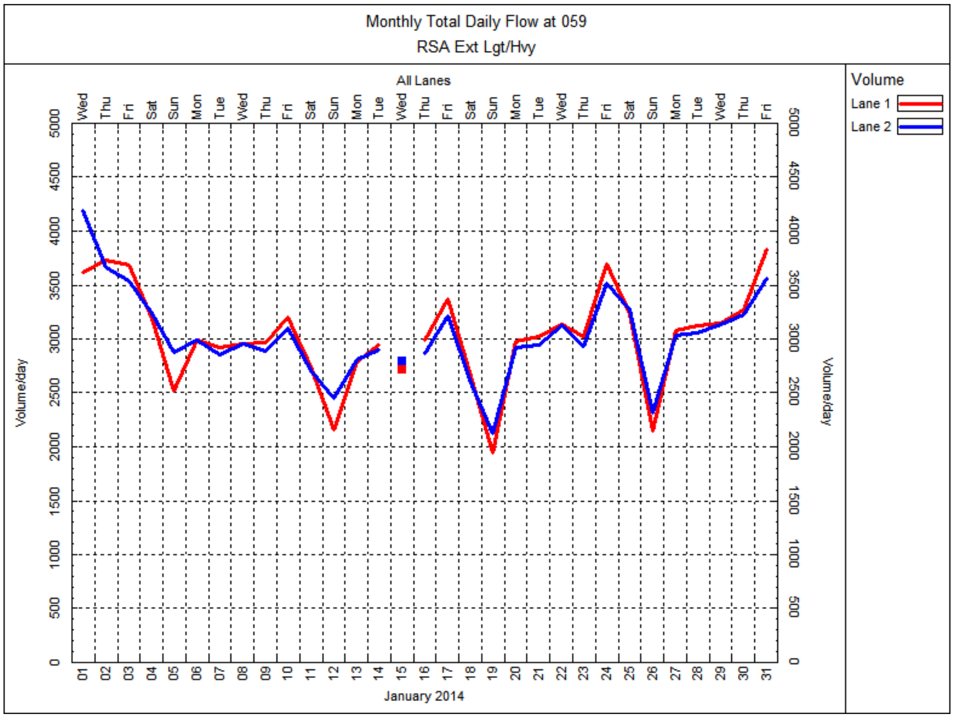
14.

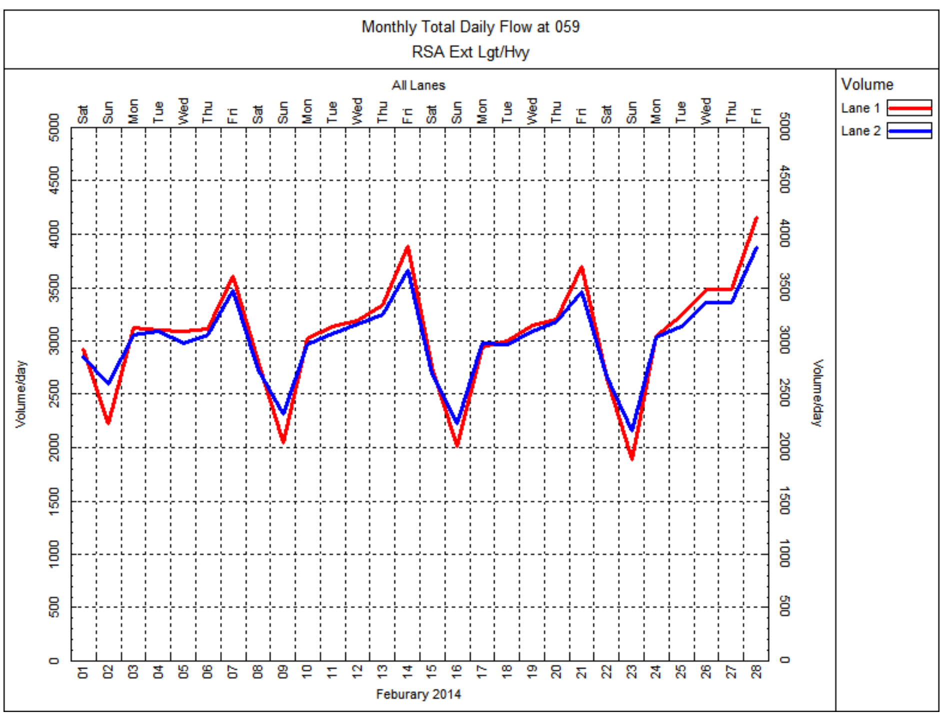
APPENDIX K:

IMPACT ON TRAFFIC

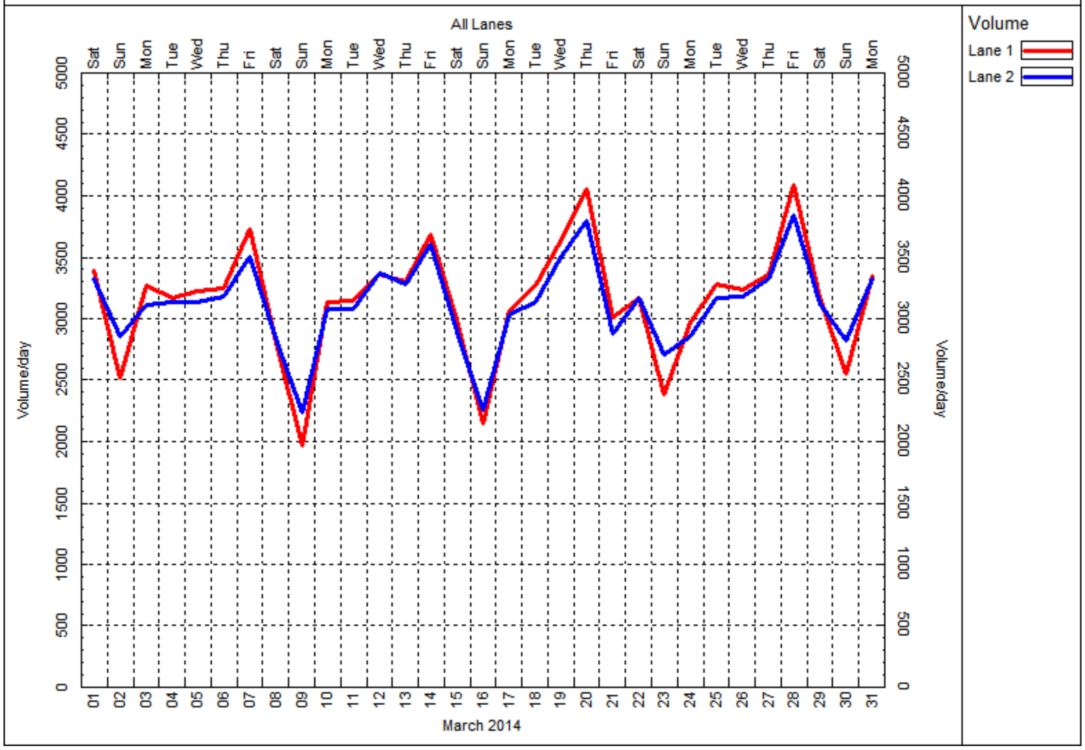
Lane 1: Walvis Bay to Swakop mund

Lane 2: Swakopmund to Walvis Bay

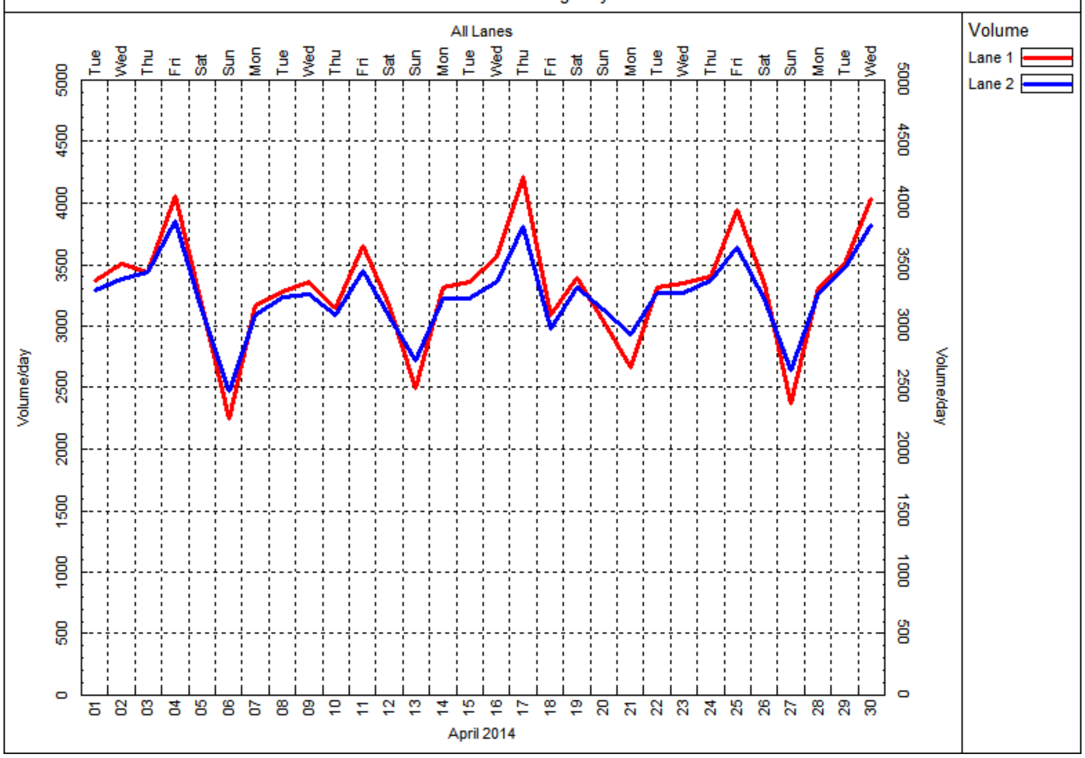


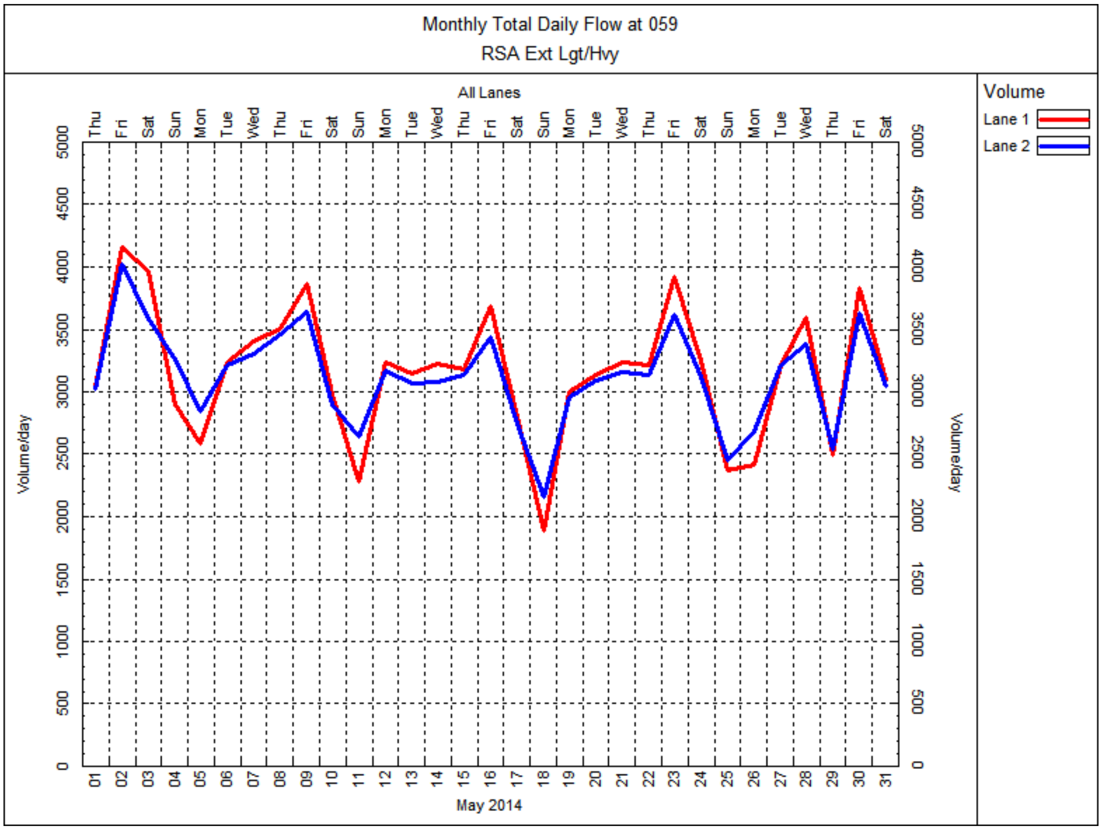


Monthly Total Daily Flow at 059
RSA Ext Lgt/Hvy

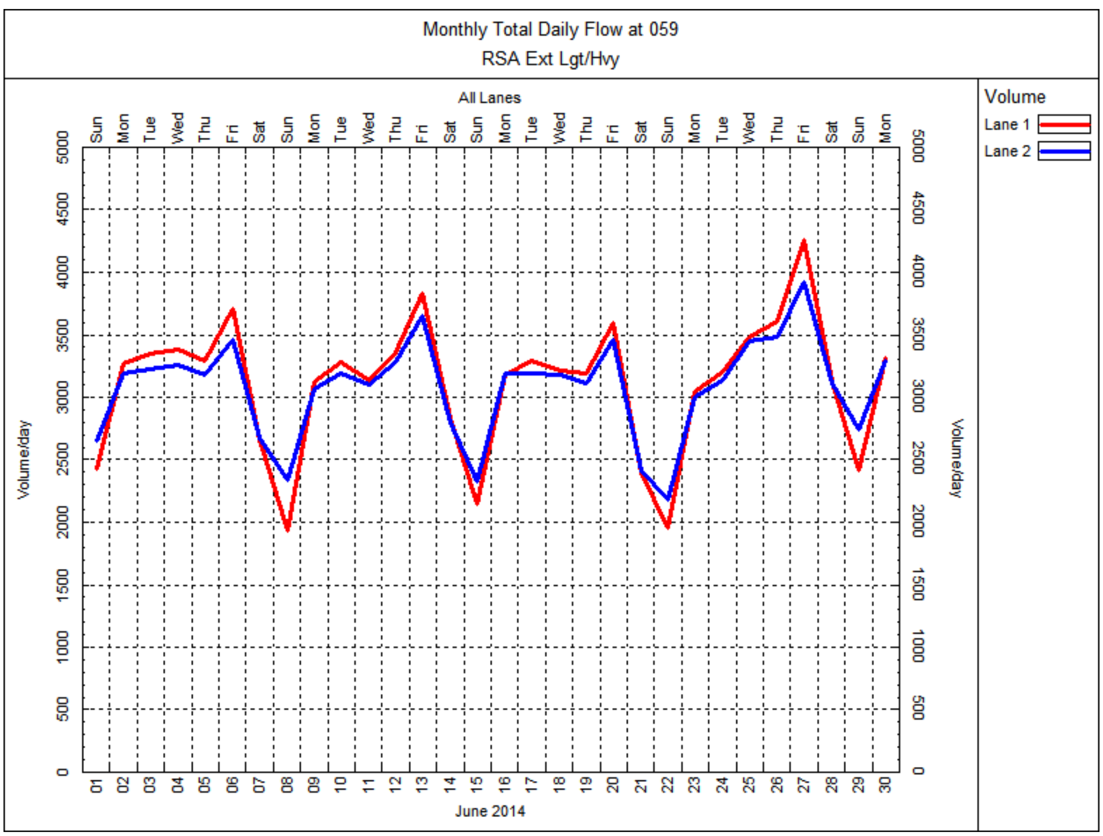


Monthly Total Daily Flow at 059
RSA Ext Lgt/Hvy

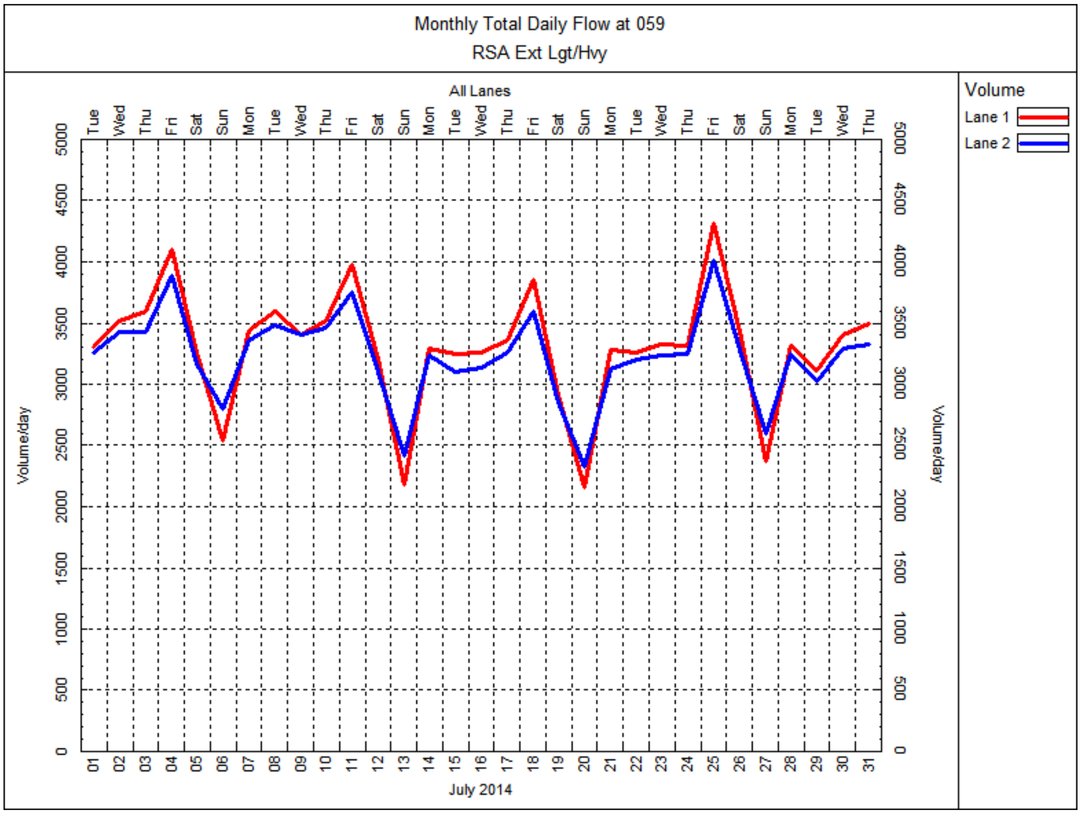


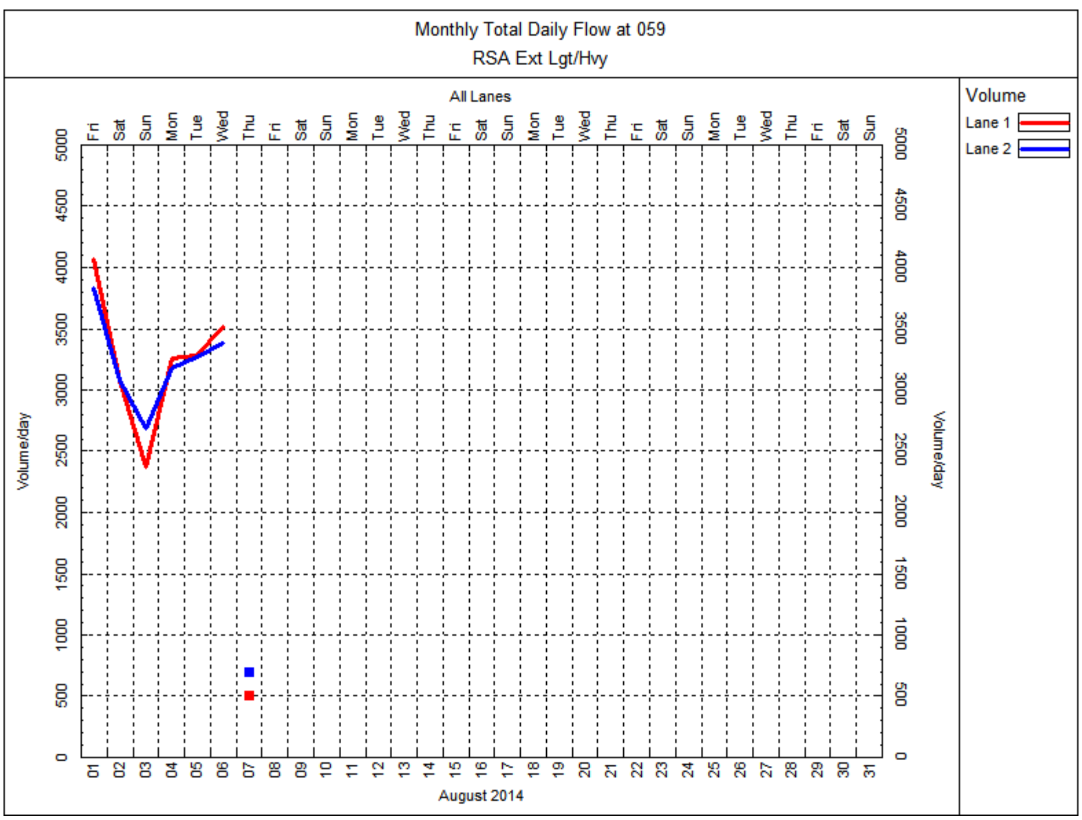


Monthly Total Daily Flow at 059
RSA Ext Lgt/Hvy
All Lanes
Volume
Lane 1
Lane 2
Volume/day
May 2014



Monthly Total Daily Flow at 059
RSA Ext Lgt/Hvy
All Lanes
Volume
Lane 1
Lane 2
Volume/day
June 2014


Monthly Total Daily Flow at 059
RSA Ext Lgt/Hvy
All Lanes
Volume
Lane 1
Lane 2
Volume/day
July 2014


Monthly Total Daily Flow at 059
RSA Ext Lgt/Hvy
All Lanes
Volume
Lane 1
Lane 2
Volume/day
August 2014

15.

APPENDIX L:

MACROECONOMIC ASSESSMENT OF THE PROPOSED DESERT ROSE DEVELOPMENT IN SWAKOPMUND

Economic Assessment of the Proposed Namibia International Convention Centre in Swakopmund

Prepared for:

Conference Link and D F Malherbe & Partners

Prepared by

Barry Standish

Antony Boting

September 2013

Contact:

3 Avery Avenue

Constantia 7806

021 794 9406 / 083 320 8670

antony@stratecon.co.za / barry@stratecon.co.za

Executive Summary

The government of Namibia is considering funding an international convention centre located in Swakopmund. Initially the convention centre was to be located in Windhoek and in 2011 Strategic Economic Solutions (SES) undertook a feasibility analysis of that centre. The results indicated that the centre was economically beneficial and would bring significant benefits to Windhoek and Namibia. The proposed relocation of the international convention centre to Swakopmund means a reduction the scale of the project and the number of events. This report presents the results of a convention centre located in Swakopmund. SES has extensive experience in the economic assessment of conventions and convention centres. This experience has been used in the economic assessment of the proposed Namibian International Convention Centre (NICC).

Conventions, Exhibitions and Economic Benefits

There are many economic benefits that can be generated by a successful convention centre. These include:

Construction Benefits

There are clear benefits to the construction industry during the time that the convention centre is constructed. The benefit to the construction and material supplies industries continues after construction. This occurs from on-going maintenance of the centre as well as the building of stands that would be used for the various exhibitions and trade fairs that would be held at the centre.

Delegate Spending

The second benefit is from the spending by delegates over and above spending at congresses or exhibitions. These would include accommodation, travel, sightseeing, buying meals, souvenirs, etc. In addition there is anecdotal evidence that many delegates from other countries in Africa attending conventions spend large sums of money on consumer durables.

Induced Tourism

One of the most important economic benefits that can be generated by some convention centres is that of induced tourism. Induced tourism takes two forms. The first is when some delegates return with their family as tourists. The second is where some of these tourists become regular visitors to the country. The latter is particularly important because it generates on-going and incremental growth in the tourism industry. Over time more and more international delegates attending conventions at the NICC would be drawn to the natural beauty and other attractions of Namibia.

We are of the opinion that the NICC has the potential to generate such benefits given the extraordinary beauty of Namibia and the diverse offerings it has for tourism. A careful strategy would need to be developed to ensure that international delegates are made aware of and, preferably, sample some of the tourism offerings of Namibia. This is important because it is a key and long lasting economic benefit that can be leveraged off the NICC. One of the advantages of locating the international convention centre in Swakopmund is both the natural beauty of the area and that most delegates would also visit Windhoek.

Growing Business

One of the potential benefits of the NICC would be its contribution to growing business in Namibia. Durban, for example, hosts the famous Tourism Indaba which attracts delegates from around the world and is used to showcase the tourism offerings in the region and country. The Design Indaba hosted in March each year at the CTICC attracts hundreds of international buyers and showcases the design industry of the Western Cape with some exhibitors coming from other parts of South Africa. An analysis of the types and mix of conventions and exhibitions planned for the NICC indicates that Namibia has the potential to leverage such successes.

Government Conventions

The NICC could play host to important government conventions. The three most important are Heads of State conventions, the hosting of bilateral agreements and various humanitarian and environmental conventions. There is little doubt that these conventions would have occurred even in the absence of the NICC and therefore one cannot ascribe greater economic impacts. However it can be argued that the glamour associated with the NICC would add lustre to these events that would have been absent had these events been hosted elsewhere in Namibia.

Displacement Effects

It is important in all of the estimates of expenditure benefits to be cognisant of and take account of displacement effects. Displacement occurs when spending takes place at the expense of other forms of business and spending.

Delegate, Visitor and Tourist Days

The NICC would contribute in part to the national economy by attracting local and international delegates and visitors to Swakopmund. Total delegate and visitor numbers are expected to increase from 20 610 in 2017 to 31 530 by 2021. Of the 20 610 people expected in 2017 around 83% (17 171) are from Namibia and 17% (3 439) are international visitors. These proportions are expected to remain relatively constant over time although the actual numbers are expected to increase in line with the increase in the number of events hosted at the NICC. In 2021, five years after opening, it is expected that 24 778 people from Namibia and 6 753 international visitors would be attending events at the NICC.

Between 2017 and 2021 the number of delegate and visitor days is expected to grow steadily from 77 365 to 128 278. This stabilises after that as the NICC reaches capacity. The number of international tourist days begins to grow from 2020 as some international delegates return to Namibia as tourists. This effect gradually increases as some of these tourists become regular visitors to Namibia.

The analysis also makes two other findings. The first is that congresses are expected to generate more visitor days than exhibitions and other events. The second is that exhibitions and other events are subject to less displacement effects.

- It is expected that a total of 41 681 days would be generated by congresses during 2017 and 35 684 by exhibitions and other events.
- This is expected to increase to 79 055 and 49 222 respectively by 2021.
- Slightly less than half the congress days (43% to 49%) are by international delegates.
- International visitors account for very few exhibitions days. In 2017 they account for only 2% of the exhibition days with this rising to 13% by 2021.
- It is anticipated that the NICC would generate about 12 000 days of international tourism in 2020 with this rising to 13 000 the following year.
- Tourists who become repeat visitors result in an on-going increase in the number of international tourist days. By 2026, ten years after opening, it is expected that

international tourists who had originally been introduced to Namibia because of the NICC would spend 33 000 days in the country.

Results of the Cost Benefit Analysis

From a national perspective the convention centre would have economic costs with a present value (PV) of N$1.10bn and economic benefits of N$1.45bn. This results in a net economic benefit, or project NPV, of N$350m. The associated BCR is 1.32 and the IRR is 17%. These results indicate that, since the benefits outweigh the costs, the project is economically efficient and it would be desirable from an economic perspective for Namibia to construct and operate the NICC. However, since the BCR is only slightly higher than 1.0 the results should be considered as marginal. Due to the number of assumptions made in this analysis greater comfort would be taken from a BCR closer to 2.0.

The initial capital costs are the largest costs with a PV of N$506m. These are followed by the NICC operating costs with a PV of N$239m and Namibian exhibitor costs of N$144m. Namibian organiser costs have a PV of N$128m, while international organiser costs have a PV of N$18m. The latter is the profit that international organisers would take out of the Namibian economy (once they have received payment from delegates). Lastly, it is anticipated that Namibian imports would increase from the orders placed with international exhibitors at Trade Fairs. This has an estimated PV of N$4.5m. Land value of N$68m has been included in the cost benefit analysis. Although the land would be donated by the Government of Namibia free of charge, the opportunity cost of using this land needs to accounted for in the Cost Benefit Analysis.

On the benefit side the largest benefit is the spending by international exhibitors at the consumer expos and trade fairs, with a PV of N$659m. This is then followed by international delegates attending conferences, exhibitions and events with a PV of N$542m. This is followed by induced tourism (N$180m) and then increases in orders for Namibian products (N$73m).

A sensitivity analysis was performed on key assumptions to determine how sensitive the overall results are to variations in these assumptions. These are:

1. Variations in the initial construction costs. It was found that the results are sensitive to changes in the initial construction costs and it would require a 73% increase in construction costs to make the project economically inefficient.

2. Deviation from the anticipated business plan for the number of events. It was found that the convention centre remains economically efficient for the smallest number of events in the CIC business plan.
3. The number and proportion of international exhibitors at national trade fairs and all other consumer expos and trade fairs. It was found that the results are sensitive to the number of international exhibitors at these events.
4. Delegate spending in Swakopmund relative to delegate spending in Cape Town. It was found that the results are not very sensitive to realistic changes in this assumption.
5. The willingness of international delegates to return as tourists. It was found that while it does have an effect on the economic results it does not undermine the economic efficiency of the proposed centre.
6. An economic cost benefit analysis requires that the opportunity cost of this land be included even though the land is being donated. Excluding the cost of the land from the analysis increases the BCR from 1.32 to 1.40.

Following this analysis a final sensitivity analysis was performed, combining the worst cases of six of the above variables. This resulted in the BCR falling from its base case value of 1.32 to 0.64. This means that the project is now economically inefficient.

As a result of this a more realistic 'worst case' mix of assumptions was tested. This returned a BCR of 0.90, which indicates that the project is still inefficient.

The overall conclusion is that the project is marginally efficient on the baseline set of assumptions. Under a worst case scenario the project would be economically inefficient.

Results of the Macroeconomic Analysis

Contribution to Gross Domestic Product (GDP)

Gross Domestic Product (GDP) is the total value of all final goods and services produced in Namibia. It is a fundamental measure of the economic quality of life of all people in the country. It is also the most important and all-encompassing measure of the macroeconomic effect of the NICC.

- It is estimated that the NICC would contribute N$171m to GDP in 2014, N$419m in 2015 and N$601m in 2016 as a result of the construction of the centre.

- In 2017, the first year of operations, it is expected that the NICC would contribute N$455m to GDP, increasing to over N$1.0bn by 2021. This increase is due to both inflation as well as increased operations at the centre.
- At N$240m delegate spending (both national and international delegates and visitors) would be the largest contributor in 2017. This is followed by exhibitor expenditure at N$102m.
- In 2021 delegate spending is still the largest contributor at N$520m. This is followed by exhibitor spending at N$225m and NICC operational expenditure at N$96m.
- In real terms the contribution to GDP is expected to nearly double from the N$355m in the first year of operations in 2017 to the N$635m in 2021.
- In 2017, the first year of operations, the contribution to GDP is expected to equal 0.3% of estimated Namibian GDP, increasing to 0.4% by 2018.
- GDP is important not just because it is income but also because income has the capacity to add to wealth. Based on expected projections the NICC is expected to add a total of over N$4.8bn to Namibian GDP by 2021. By 2026 the cumulative contribution to GDP is expected to exceed N$11bn.

Job Creation

The development and operation of the NICC would result in changes to two types of jobs. The first are the direct jobs that would be created over the project period. These are jobs directly on the construction of the facilities and operating expenditure at the NICC as well as the expenditure of delegates attending events, delegates returning as tourists and the increased business orders that are generated from trade fairs. The second are the so-called indirect jobs that are due to multiplier effects of this expenditure.

Direct jobs:

- It is anticipated that as many as 211 people could be directly employed as a result of the construction of the NICC during 2014 to 2016.
- Once operations begin in 2017 it is estimated that 437 people would owe their employment directly to the NICC.
- In 2017 the majority of employment would be due to delegate spending.
- The number of direct jobs is set to increase to 794 by 2021. From here onwards most of the job numbers are expected to remain constant because operational maturity would have been reached. However, the number of jobs directly created because of induced tourism would increase slightly each year as an increasing number of tourists become regular visitors to the country.

- It will be recognised that while the 437 jobs in 2017 are new jobs, the 456 in 2018 would incorporate the 437 from the previous year. This means that between 2017 and 2018 19 new jobs would be created while 437 would be sustained from the previous year.

Indirect jobs:

- The number of indirect jobs during the construction of the NICC is estimated at 162 in 2014, at 375 in 2015 and 505 in 2016.
- The number of indirect jobs is then set to increase from 447 during the first year of operations in 2017 to 823 by 2021.

Total jobs (direct plus indirect jobs):

- The total number of jobs created during the construction of the centre would amount to 230 in 2014, 531 in 2015 and 715 in 2013.
- When operations begin in 2017 the total jobs created throughout the country would be 884. This increases to 1 617 by 2021.
- The number of total jobs after 2021 would remain constant, except for induced tourism which should increase year on year as more tourists become regular visitors to Namibia. What this means is that the jobs that are created as a result of the NICC are sustainable jobs.

Foreign Exchange Earnings

One of the key macroeconomic benefits of the NICC is that while it draws in visitors and creates jobs, it also makes an important contribution to foreign exchange earnings. It will of course also be realised that the NICC would use foreign exchange during construction as much of the electronic fittings, lifts, escalators, etc, would be imported. The NICC would continue to use some foreign exchange as tourists and delegates consume some imported food and are moved around in buses running on imported fuels, etc.

- By 2021 it is estimated that total foreign exchange earnings would amount to R324m, while foreign exchange usage (i.e. imports) would amount to N$317m. The net effect is that N$7m in foreign exchange would be generated by the NICC in that year.
- The NICC is expected to become a net earner of foreign exchange in 2020 and to pay for all previous foreign exchange usage by 2035, after 19 years of operations.

Contribution to Taxes

- It is estimated that N$33m, N$80m and N$114m in various forms of taxes would be generated from construction in 2014, 2015 and 2016 respectively.
- In 2017, the first year of operations, it is expected that N$55m in tax would be generated. This is set to increase to N$126m by 2021.
- The cumulative contribution to taxes is set to exceed N$663m by 2021.

Indirect Household Income

- During construction between 2014 and 2016 it is estimated that indirect household income would increase by N$227m over the three years.
- In 2017 alone indirect household income would increase by N$99m. This is then estimated to increase to N$227m by 2021.
- Cumulatively by the end of 2021 it is expected that over N$1.0bn would have been generated as indirect household income.

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List of Abbreviations

BCR	Benefit cost ratio
CBA	Cost Benefit Analysis
CIC	Convention Industry Consultants
CTICC	Cape Town International Convention Centre
GDP	Gross Domestic Product
IRR	Internal Rate of Return
NICC	Namibian International Convention Centre
NPV	Net Present Value
PV	Present Value
SAM	Social Accounting Matrix
SCC	Sandton Convention Centre
SES	Strategic Economic Solutions

Introduction

The government of Namibia is considering funding an international convention centre located in Swakopmund. The convention centre was initially meant to be located in Windhoek and an economic feasibility analysis commissioned two years ago indicated that the centre was economically feasible and would bring about significant economic benefits to the city and Namibia. The proposed relocation of the international convention centre to Swakopmund means a reduction the scale of the project and the number of events. This report presents the results of a convention centre located in Swakopmund.

Strategic Economic Solutions (SES) has extensive experience in the economic assessment of conventions and convention centres. It compiled the original economic assessment for the Cape Town International Convention Centre (CTICC); and has assessed various convention centre plans for the CTICC. It also performed the initial feasibility analysis of the NICC in Windhoek in 2011. The company produces annual economic assessments for the CTICC, International Convention Centre Durban and occasional economic assessments for the Sandton Convention Centre (SCC). It makes an annual assessment of the economic contribution of the internationally renowned Design Indaba that is hosted at the CTICC each year and attracts buyers from around the world. This experience has been used in the economic assessment of the proposed Namibian International Convention Centre (NICC).

The report has six sections:

- It starts with a description of the types of economic benefits that convention centres can bring to a city or country.
- Section 2 describes the types of economic analysis that have been applied to the proposed convention centre and how to interpret the results.
- Section 3 gives a description of the types and number of conventions and exhibitions that the centre is expected to attract and the numbers of people who would attend each event type.
- Section 4 reports the results of the economic analysis.
- Section 5 describes the methodology that was used in the analysis.
- Section 6 concludes the report.

1 Conventions, Exhibitions and Economic Benefits

This section describes the economic benefits that successful convention centres can generate. Some of the benefits are obvious while others are based on conclusions that SES has drawn from its analysis of the three large South African convention centres.

1.1 Construction and Exhibitions

There are clear benefits to the construction industry during the time that the convention centre is constructed. While it is a temporary stimulus it would nevertheless create jobs and generate income in the construction sector and material supplies industries. The benefit to the construction and material supplies industries does however continue after construction. This occurs from on-going maintenance of the centre as well as the building of stands that would be used for exhibitions and trade fairs that would be held at the centre.

1.2 Delegate spending

The second economic benefit is from the spending by delegates over and above spending at congresses or exhibitions. These would include accommodation, travel, sightseeing, buying meals, souvenirs, etc. In addition to this there is anecdotal evidence from the SCC that many international delegates from other countries in Africa attending conventions at the SCC spend large sums of money on the purchase of various items like consumer durables. This is certainly the case at the Hosea Kutako airport where visitors from other African countries purchase consumer durables like electronic equipment. This indicates that this is a strategic opportunity that should be explored.

1.3 Induced Tourism

One of the most important economic benefits that can be generated by some convention centres is that of induced tourism. Induced tourism takes two forms. The first is when some delegates return with their family as tourists at some time in the future. The second is that some of these tourists become regular visitors to the country. The latter is particularly important because it generates on-going and incremental growth in the tourism industry. Over time more and more international delegates attending conventions at the NICC would be drawn to the natural beauty and other attractions of Namibia.

Induced tourism has been one of the outstanding successes of the CTICC and, to a slightly lesser extent, the Durban ICC. We are of the opinion that the NICC has the potential to generate similar successes given the extraordinary beauty of Namibia and the diverse offerings it has for tourism. A careful strategy would need to be developed to ensure that international delegates are made aware of and, preferably, sample some of the tourism offerings of Namibia. This is important because it is a key and long lasting economic benefit that can be leveraged off the NICC. One of the advantages of locating the international convention centre in Swakopmund is both the natural beauty of the area and that most delegates would also visit Windhoek.

1.4 Growing Business

One of the potential benefits of the NICC would be its contribution to growing business in Namibia. (Experience has shown that while this type of benefit can be described it is difficult to measure with any degree of accuracy). Durban, for example, hosts the famous Tourism Indaba which attracts delegates from around the world and is used to showcase the tourism offerings in the region and country. The Design Indaba hosted in March each year at the CTICC attracts hundreds of international buyers and showcases the design industry of the Western Cape with some exhibitors coming from other parts of South Africa. An analysis of the types and mix of conventions and exhibitions planned for the NICC indicates that Namibia has the potential to leverage such successes.

The actual nature of the benefits is dependent on the type of congress or event. To this end it is possible to disaggregate such conventions and exhibitions into the following types:

1.4.1 Business to Business

Business to business conventions and exhibitions are a key meeting place for agreement to be reached on a wide range of different types of potential business relationships. These can be orders, cooperation agreements, foreign direct investment and so on.

1.4.2 New Business Development

Conventions and exhibitions that facilitate the establishment of new businesses are important because they generate income and create jobs. One example of this type of convention is the one which is held at the SCC and hosted by the Franchise Association of South Africa (FASA). Here a variety of franchise offers are on display. Potential applicants are taken through the process of running a franchise and, where appropriate, are then introduced to the investment and commercial banks that are also part of the convention.

1.4.3 SMME Business Development

Small business development is a key component of any poverty alleviation policies. SMMEs offer a way out of poverty through economic empowerment that is far more efficient than reliance on hand-outs.

1.5 Government Conventions

The NICC could play host to important government conventions. The three most important of these are Heads of State conventions, the hosting of bilateral agreements and various humanitarian and environmental conventions. There is little doubt that these conventions would have occurred even in the absence of the NICC and therefore one cannot ascribe greater economic impacts. However it can be argued that the glamour associated with the NICC would add lustre to these events that would have been absent had these events been hosted elsewhere in Namibia.

1.6 Displacement Effects

It is important in all of the estimates of expenditure benefits to be cognisant of and take account of displacement effects. Displacement occurs when spending takes place at the expense of other forms of business and spending. For instance, if somebody from Swakopmund sets up a stand at a lifestyle exhibition then that spending is probably at the expense of forms of promotion and advertising. Hence there is no net overall change in spending within the town. If on the other hand the spending on the exhibition was at the expense of an exhibition being held in Cape Town, for example, then there is a net change in spending in Namibia. Similarly, if a convention brings in delegates from other countries then the whole country benefits and there are no national displacement effects. While the analysis takes displacement effects of events into account it does not take into account potential displacement of local people attending events. In other words, it does not allow for the possibility that people from Swakopmund attending an event might have spent their money on something else like eating out in a restaurant, for instance.

2 Making Sense of the Economic Analysis

The purpose of this section is to explain what the economic analysis attempts to do and how to interpret the results of the analysis. There are a variety of different types of economic analysis, some of which can be quantified and some of which cannot. The analyses that can be quantified include cost benefit analysis, microeconomic costs and benefits, and macroeconomic analysis.

For the purposes of undertaking an economic analysis of the NICC the macroeconomic and cost benefit analyses are the appropriate tools.

2.1 Economic Cost Benefit Analysis

Cost Benefit Analysis (CBA) treats the national economy as an entity in and of itself. It assumes, with some important caveats, that what is demonstrably good for the economy as a whole is a reasonable approximation of what would be good for the majority of the people living and working in that area.

When large infrastructure investments like the proposed NICC are contemplated, decision makers need to know what impact the new, or improved, infrastructure would have on the economy as a whole and hence how much benefit can be assumed to accrue to the people of Namibia. The main linkage is through the changes in international spending in Namibia that occurs as a result of the NICC. These transmit changes in the level of economic activity in areas benefiting from the convention centre.

The outcome of the analysis is the reporting of a net present value (NPV), a benefit cost ratio (BCR) and an internal rate of return (IRR) for those cases where the project is compared to a do minimum alternative. A NPV shows the total value of future costs and benefits reduced to a present day value by using a social discount rate of 8%. The BCR measures the changes in benefits and costs that would result from an investment. BCRs are typically used when there are many competing alternatives and projects need to be funded from a limited set of resources. Finally, the IRR is the discount rate that returns a NPV of zero and shows the likely economic returns to society of a project in relation to other investment opportunities.

If the evaluated benefits of a project are indeed greater than the overall project costs then the BCR would be greater than 1. A BCR greater than 1 indicates that the completed project would constitute an economic asset. A BCR less than 1 implies that the project would be an economic liability. The higher the BCR the less risk there is that the proposed investment could turn out to be less than beneficial economically. Low BCR's, even if greater than 1, provide a warning that a project could be risky and may turn out to be an economic liability rather than an asset.

A high BCR is usually a good indicator that it would be possible to raise finance to implement a project. In the case of a private sector investment the good BCR would be part of the business case to funders. If it is a public infrastructure project, a high BCR should give confidence that it is worth funding the project directly from its Treasury or, alternatively, to make suitable institutional arrangements for the involvement of the private sector in the project's funding.

An economic analysis includes all costs to society. This is done by adjusting for shadow prices and wages and removing the distortions caused by taxes and subsidies.

The cost benefit analysis focuses purely on direct costs and benefits and does not take any indirect costs and benefits into account. Indirect costs and benefits would include those costs and benefits obtained through multiplier effects. For example, the construction of a building would have spin off effects for the construction industry and the building materials supply industries. These, in turn, would have backward linkages with other commodity suppliers and retail industries. These lie in the realm of macroeconomic analysis, described in the next section.

2.2 Macroeconomic Analysis

The size of a national or regional economy is measured in terms of the total of all economic activities taking place within the area concerned, both in the public and private sectors. For countries like Namibia, this necessarily includes measures of informal sector activity as well. The name given to the measure of the size of the economy is Gross Domestic Product (GDP).

While there are a number of different types of macroeconomic effects, the two most important are contribution to gross domestic product (GDP) and creation of jobs. The importance of job creation is obvious. Increases in GDP are synonymous with increases in peoples' economic standards of living. Increased GDP – i.e. increased production – is experienced in the form of more jobs, higher wages and reduced economic hardship. It is clearly an important measure.

The effects of any infrastructure project on the size of the GDP arise as a result of the myriad ways in which businesses, public service providers and ordinary people find their normal daily activities affected, hopefully for the better, by the changes brought about by the new infrastructure.

The actual task of calculating the macroeconomic impact of the proposed project demands a detailed and multifaceted approach not least because of the so-called multiplier effects. It is well recognised that the simple act of spending – constructing a building, for example, -leads to other economic effects. Demand for steel and cement can lead to increased production in those industries. Increased demand for steel and cement, in turn, leads to increased demand for mining output which uses wood, water, electricity and so on. These are the so-called multiplier effects. While this process unfolds, each industry employs people and pays wages. Employees, in turn, spend their wages and cause further multiplier effects through the economy. Measuring this is further complicated by the fact that different industries demand different types of skills. This leads to different wage structures across the various industries. People earning different wages have different spending patterns. Thus, the change in overall spending patterns is dependent on which industries are affected.

3 Delegate, Visitor and Tourist Days

The NICC would contribute in part to the national economy by attracting local and international delegates and visitors to Swakopmund. A key part of this analysis is to estimate how many people would come to the NICC and how much they would spend. A brief outline of the approach is given below and a more detailed explanation in Section 5:

- The starting point of the analysis is to estimate the number of days that visitors, delegates and tourists spend in the country.
- This takes displacement effects into account as described in Section 1.6.
- It is necessary to determine how long such visitors would stay in the country. This needs to take account of:
  - The number of days for different congresses and events.
  - People coming to Namibia to attend congresses are, on average, expected to stay one and a half days before and/or after the congress.
  - Some delegates are accompanied by friends and family.
- In addition there is likely to be induced tourism. This means that:
  - Some delegates are likely to return as tourists.
  - Some of these tourists are likely to become repeat visitors to Namibia.
- The different spending patterns of the different types of visitors is estimated to determine the overall change in spending that would occur in Namibia.

These visitors and visitor days are reported in Table 1 and illustrated in Figure 1. Table 1 presents this for the first five years while Figure 1 does it for the first ten years. The latter is in order to illustrate the contribution that can be made by tourism.

The total delegate and visitor numbers (as illustrated by the numbers in the first block in the table) are expected to increase from 20 610 in 2017 to 31 530 by 2021. Of the 20 610 people expected in 2017 the majority (around 83% or 17 171) are from Namibia while the rest (17% or 3 439) are international visitors. These proportions are expected to change slightly over time and from 2019 onwards 79% of the delegates are estimated to originate from Namibia while 21% are international delegates. In 2021 it is estimated that out of the 31 530 expected delegates, 24 778 would come from Namibia while 6 753 would be international delegates.

Table 1: Delegate, Visitor and Tourist Days

Total Number of Delegate, Visitor and Tourist Days					
Financial Year	**2017**	**2018**	**2019**	**2020**	**2021**
Delegates and Visitors					
Namibia	17 171	16 533	20 962	22 210	24 778
International	3 439	3 755	5 643	5 903	6 753
Total Delegates and Visitors	**20 610**	**20 288**	**26 605**	**28 113**	**31 530**
Congress Delegate Days					
Namibia	21 138	27 705	35 691	38 900	44 611
International	20 543	22 208	28 639	29 873	34 444
Total Delegate Days	**41 681**	**49 914**	**64 331**	**68 773**	**79 055**
Exhibitions and Other Events Visitor Days					
Namibia	34 818	29 636	37 986	39 075	42 689
International	866	872	6 336	6 308	6 534
Total Visitor Days	**35 684**	**30 508**	**44 322**	**45 382**	**49 222**
Total Delegate and Visitor Days					
Namibia	55 956	57 341	73 677	77 975	87 300
International	21 410	23 081	34 976	36 181	40 978
Total Delegate & Visitor Days	**77 365**	**80 422**	**108 653**	**114 156**	**128 278**
International Tourist Days	0	0	0	11 985	13 086
Total International Visitor Days	21 410	23 081	34 976	48 166	54 064

Between 2017 and 2021 the number of delegate and visitor days grows steadily from 77 365 to 128 278. It stabilises as the NICC reaches capacity. It is also apparent from Figure 1 that the number of international tourist days (shown by the purple column) begins to grow from 2020 as some international delegates return to Namibia as tourists. This effect is gradually magnified as some of these visitors return to Namibia as repeat tourists.

In Figure 2 the visitor days are illustrated from a different perspective. This figure separates out the number of visitor days for congresses and exhibitions, on the one hand, and shows how displacement effects change the results if they had not been specifically excluded. The results are shown for 2017, the first year of operations.

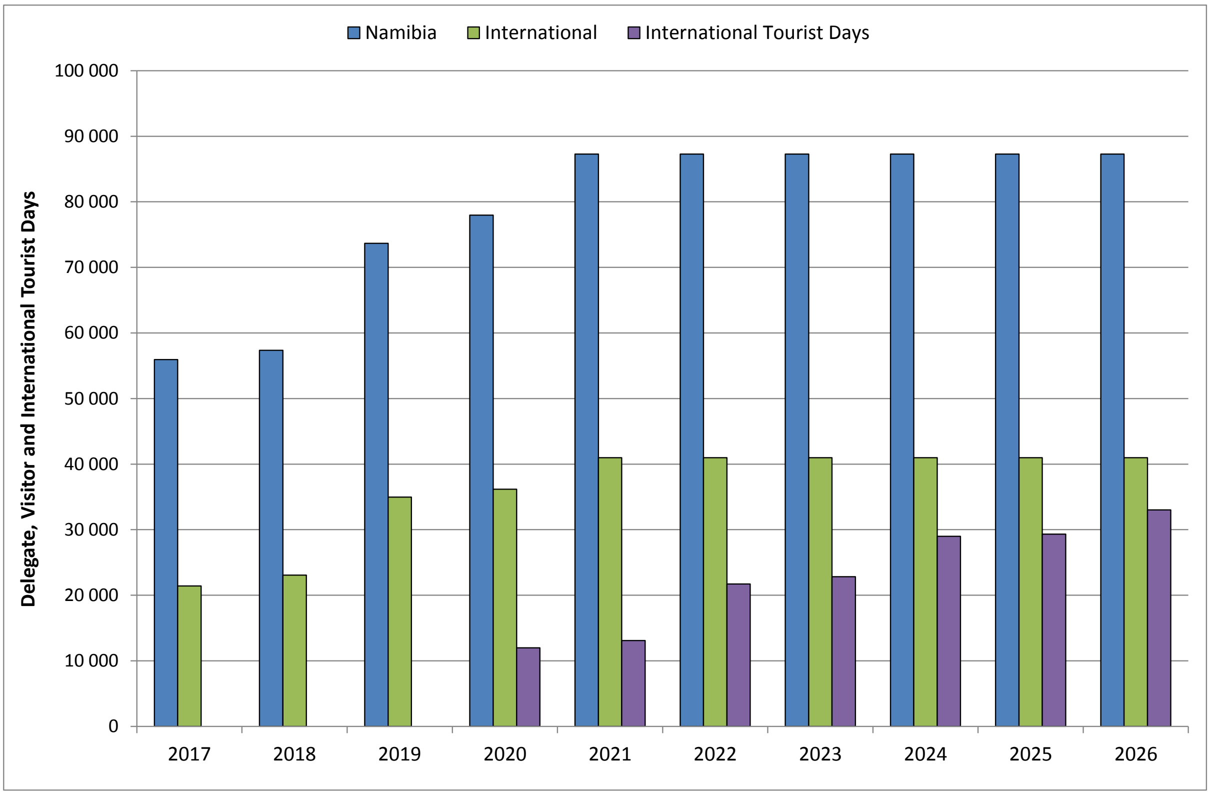

Figure 1: Delegate and Visitor Days

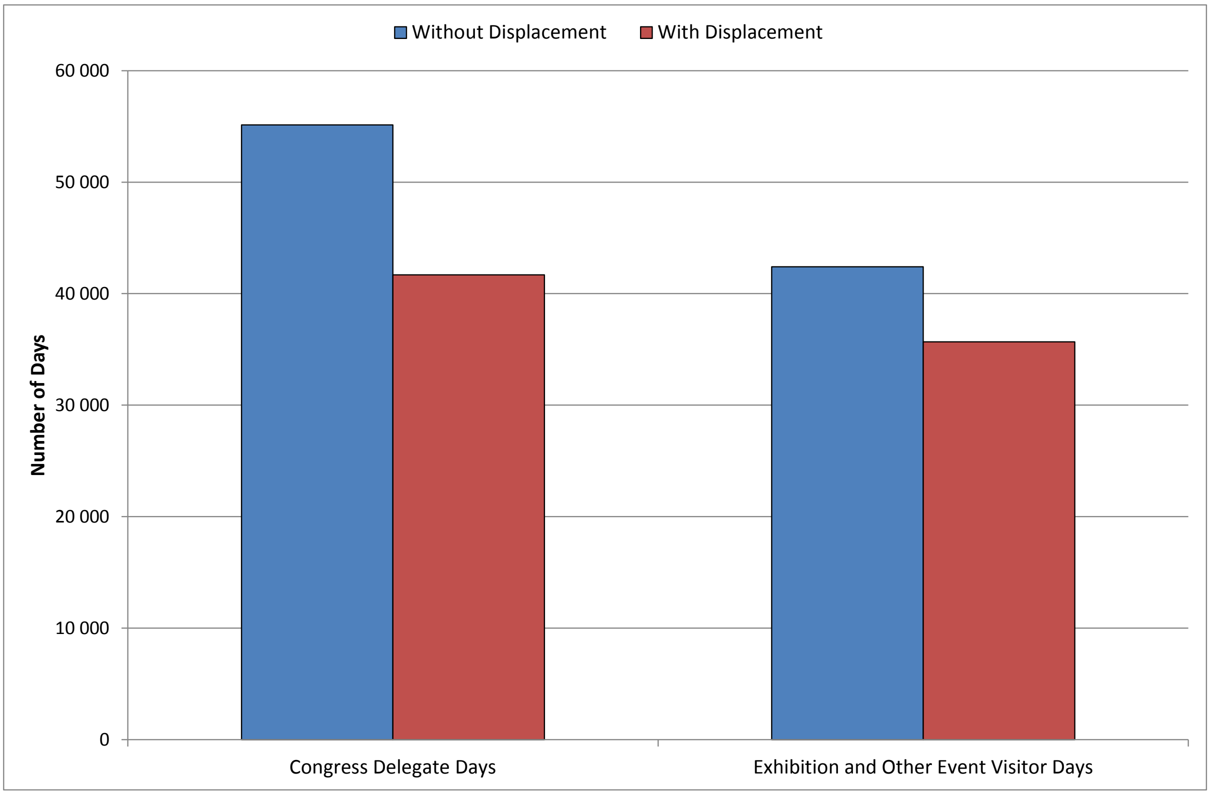

Figure 2: Delegate and Visitor Days in 2017 with and without Displacement

Two factors are apparent from Figure 2. The first is that congresses are expected to generate more visitor days than exhibitions and other events. This is due to the fact that the majority of delegates attending congresses are international while more locals attend exhibitions and other events. The second is that congresses have a higher displacement effect than exhibitions and other events. In 2017 it is expected that there would be 55 132 congress days and 42 415 exhibition days if displacement effects are ignored and 41 681 congress days and 35 684 exhibition days with displacement effects.

3.1 Congresses

- It is expected that a total of 41 681 days would be generated by congresses during 2017.
- This is expected to increase to 79 055 days in 2021.
- Slightly less than half of these congress days (44%) are by international delegates in 2021.

3.2 Exhibitions and Other Events

- A total of 35 684 days are expected to be generated by exhibitions and other events in 2017.
- This is expected to increase annually to reach 49 222 days by 2021.
- The majority of the exhibition days are from Namibians. In 2017 international visitors make up 2% of exhibitions days rising to 13% by 2021.

3.3 Total Days for All Events

This is the sum of congress, exhibition and other event days reported in sections 3.1 and 3.2.

- Total days for all events are expected to amount to 77 365 in 2017.
- The total days for all events are expected to increase to 128 278 by 2021.
- Between 28% and 32% of these days would be from international visitors.

3.4 International Tourists and Induced Tourism

- It is anticipated that the NICC would generate approximately 12 000 days of international tourism in 2020 with this rising to over 13 000 the following year.

- The reason that induced tourism days increase from zero in 2019 to 11 985 in 2020 is due to the structure of the survey on which this part of the analysis is based rather than some sudden change of heart on the part of the tourist. In the survey delegates are asked if they intend to return as tourists in 'the next five years'. Hence some delegates from 2017 would return in three years' time (taken as the median for the next five years) in 2020. In reality of course there would be a gradual build-up of induced tourism rather than the pattern suggested by the data.

- The effect of repeat tourism starting in 2022 is clearly apparent in Figure 1. Tourists who become repeat visitors result in an on-going increase in the number of international tourist days. By 2026, ten years after opening, it is expected that international tourists who had originally been introduced to Namibia because of the NICC would spend 33 000 days in the country. This is nearly three times more than in 2020.

4 Results of the Analysis

This section reports the results of the cost benefit analysis and macroeconomic analysis.

4.1 Cost Benefit Analysis

The economic costs and benefits are shown in Table 2. All Present Value (PV) amounts are given in millions of Namibian dollars and in 2013 prices. Only the convention centre is taken into account in the analysis. It is understood that a dedicated hotel and spa would need to be constructed adjacent to the convention centre to provide accommodation. These have not been included in the analysis because of a lack of information.

Table 2: CBA results (N$m)

N$m, 2013 prices	**PV**
Capital Expenditure	506.1
Land Acquisition	63.0
Operating Expenditure	239.1
Local Organiser Expenditure	127.7
International Organisers	18.2
Namibian Exhibitors	144.2
Namibian Business Imports	4.5
Total Costs	**1 102.7**
International Exhibitors	659.1
International Delegates	541.5
Induced Tourism	179.9
International Business Orders	72.5
Total Benefits	**1 453.0**
Net Benefits	350.2
NPV	350.2
BCR	1.32
IRR	17%
Breakeven - All Costs	10.1 Yrs
Breakeven - Capex Only	7.5 Yrs

From a national perspective the convention centre would have economic costs with a present value (PV) of N$1.10bn and economic benefits of N$1.45bn. This results in a net economic benefit, or project NPV, of N$350m. The associated BCR is 1.32 and the IRR is 17%. These results indicate that, since the benefits outweigh the costs, the project is economically efficient and it would be desirable from an economic perspective for Namibia to construct and operate the NICC.

These results and conclusion are subjected to a sensitivity analysis and the results are reported in Section 4.1.1.

The initial capital costs are the largest costs with a PV of N$506m. These are followed by the NICC operating costs with a PV of N$239m and Namibian exhibitor costs of N$144m. Namibian organiser costs have a PV of N$128m, while international organiser costs have a PV of N$18m. The latter is the profit that international organisers would repatriate. Lastly, it is anticipated that there would be some increase in imports as a result of orders placed with international exhibitors at Trade Fairs. This has an estimated PV of N$4.5m. Land value of N$68m has been included in the cost benefit analysis (it returns a PV of N$63m). The opportunity cost of using this land needs to accounted for in the Cost Benefit Analysis even though the land would be donated by the Government of Namibia.

On the benefit side the largest benefit is the spending by international exhibitors at the consumer expos and trade fairs, with a PV of N$659m. This is followed by international delegates attending conferences, exhibitions and events with a PV of N$542m. This is followed by induced tourism (N$180m) and then increased sales of Namibian products (N$73m).

The last two rows in Table 2 show the economic breakeven period for the NICC. This takes 10.1 years when all costs are taken into account and 7.5 years when only capital expenditure is considered.

4.1.1 Sensitivity Analysis

In the course of the analysis a number of key assumptions were made. A sensitivity analysis was performed to determine how sensitive the overall results are to variations in the assumptions. Six assumptions were tested. In addition the inclusion of the land value was tested. They assumptions tested are:

1. Variations in the initial construction costs;
2. Deviation from the anticipated business plan for the number of events;
3. The number and composition of exhibitors at the consumer expos and trade fairs;
4. Delegate spending in Swakopmund relative to delegate spending in Cape Town;
5. Tourist spending in Namibia relative to tourist spending in South Africa;
6. The willingness of international delegates to return as tourists.
7. Including the cost of the land.

The six assumptions are subjected to a further test which is a combined sensitivity analysis.

4.1.1.1 Initial Construction Costs

Construction costs have fluctuated significantly in recent years. The effect of potential variations in construction costs is shown in Table 3.

The importance of this sensitivity analysis is to determine if variations in construction costs could undermine the economic efficiency of the proposed convention centre. It was found that if construction costs increased by 25% (to 1.25 times) the BCR would fall to 1.19. If the construction costs were 50% higher (1.50 times) the BCR would fall to 1.08.

Table 3: Change in construction costs

Construction Costs	BCR
0.75x	1.48
1.00x	**1.32**
1.25x	1.19
1.50x	1.08

This analysis was extended to determine by how much the construction costs would have to increase to result in a BCR of one – the so-called switching value. The switching value for the BCR is an increase in construction costs of 73%. In other words, if the construction costs of the NICC were to increase by between by more than 73% then the centre would no longer be economically viable.

The conclusion is that the results are sensitive to changes in the initial construction costs, although the convention centre remains economically efficient in the range test. It would not require a dramatic increase in construction costs to reverse this conclusion.

4.1.1.2 Number of events

The cost benefit analysis was done on the basis of the expected number of events in the REAL business plan (i.e. the most likely) developed by CIC. This sensitivity analysis explores what happens if the events of the WORST and BEST business cases are used and the results are shown in Table 4. A schedule of the events for each of the business cases is presented in Table 23 in section 5.1.2.

Table 4: Change in Number of Events

Business Case Events	BCR
WORST	1.07
REAL	**1.32**
BEST	1.56

If the events of the WORST business plan materialise then the BCR decreases from 1.32 to 1.07. On the other hand, if the events of the BEST business plan materialise then the BCR would increase from 1.32 to 1.56. The proposed convention centre remains economically efficient in the face of the WORST business plan – although it is now very marginal. It goes without saying that the centre needs effective marketing and proper utilisation to maximise potential economic benefits and to increase events that would attract international delegates.

4.1.1.3 Number and composition of exhibitors

A key assumption is about the number of international exhibitors that exhibit at the Consumer Expos and Trade Fairs. This is because their expenditure is a foreign currency inflow. This sensitivity analysis tests the number of foreign exhibitors at national trade fairs. In the base case analysis it has been assumed that there are on average 120 exhibitors at each national trade fair, of which half (60) are Namibian and half are international. The effect of varying this assumption is shown in Table 5.

Table 5: Change in Number and Origin of Exhibitors at National Trade Fairs

Exhibitors	BCR
30 Namibian, 30 International	1.17
90 Namibian, 30 International	1.14
60 Namibian, 60 International	**1.32**
30 Namibian, 90 International	1.51
90 Namibian, 90 International	1.45

The BCR reduces in line with a reduction in the proportion of international exhibitors. If the composition of the 120 exhibitors at an average national trade fair had to change from half to only a quarter (from 60 international exhibitors down to 30) then the BCR would reduce from 1.32 to 1.14. Conversely, if the proportion of international exhibitors were to increase from half to three-quarters then the BCR would increase to 1.51.

A similar trend is found if the total number of exhibitors were to reduce but the proportion of half Namibian half international remains the same. Here the impact is more muted and the results are not as sensitive as the proportion of exhibitors changing. For example, if the total number of exhibitors were to reduce from 120 to 60 (and 30 were to be Namibian and 30 international) then the BCR would only reduce to 1.17. Conversely, if the number of exhibitors were to double then the BCR would increase to 1.45.

The conclusion is that the results of the cost benefit analysis are sensitive to changes in the number of exhibitors at the national trade fairs and more sensitive to the proportion of international exhibitors. Although the sensitivity analysis was only performed for national trade fairs the same conclusion can be made for all other trade fairs and consumer expos. Any operating strategy should therefore target international exhibitors for expos and trade fairs.

4.1.1.4 Value of Delegate Spending

Delegates spend on accommodation, eating out, entertainment and tours when attending congresses. There are currently no surveys of international delegates in Windhoek or Swakopmund. As a result delegate spending patterns for Cape Town have been used but adjusted for price differences. An assumption was made that the cost of staying in Swakopmund would be 75% of the Cape Town equivalent. The sensitivity analysis varied this from a low of 60% and an, unlikely, high of 125%. The results are given in Table 6.

Table 6: Value of Delegate Spending

Delegate Spending	BCR
60%	1.30
75%	**1.32**
100%	1.36
125%	1.39

The BCR falls from 1.32 to 1.30m if the cost of a staying in Swakopmund is 60% of the Cape Town equivalent. The BCR increases to 1.36 if Swakopmund prices are equal to those of Cape Town and increases to 1.39 if they are 25% higher.

The conclusion is that the results are not sensitive to the price differential between Swakopmund and Cape Town.

4.1.1.5 Value of International Tourist Spending

No Namibian data could be sourced about the spending patterns and length of stay of international tourists. As a result two assumptions were made. The first was that spending by international tourists would be 85% of the South African equivalent. This is because the costs to tourists are lower in Namibia. The second was that their length of stay would be the same as in South Africa. The results of varying the assumption about spending from 60% to 125% are shown in Table 7.

Table 7: Value of International Tourist Spending

Tourism Spending	BCR
60%	1.25
85%	**1.32**
100%	1.36
125%	1.42

The BCR decreases from1.32 to 1.25 if tourist spending in Namibia is 60% of the South Africa equivalent. The BCR increases to 1.36 if it is the same (i.e. 100%) and increases to 1.42 if it is 25% higher.

The conclusion is that the impact on the BCR is not great for a realistic range of the cost to tourists.

4.1.1.6 Willingness to Return to Namibia

The final variable to be tested was the assumption about the willingness of international delegates to return as a tourist. Delegate surveys at the CTICC indicated that 27% would return within five years while similar surveys at the ICC Durban indicated that about 20% would return. The more conservative 20% assumption was used for the NICC. In the sensitivity analysis this figure is varied between 10% and 27%. These results are shown in Table 8 with the base case assumption of 20% highlighted in bold.

The BCR reduces to 1.23 if 10% of international delegates return to Namibia within five years of attending a congress. The BCR increases to 1.37 if the proportion is the same as Cape Town. The BCR would be 1.36 if the proportion who return was between Durban and Cape Town (25% for example).

Table 8: Desire of International Delegates to return to Namibia

Desire to Return	BCR
10%	1.23
20% (Durban)	**1.32**
25%	1.36
27% (Cape Town)	1.37

The conclusion for this variable is that while it does have an effect on the economic results it does not undermine the economic efficiency of the proposed centre.

4.1.1.7 Value of the Land

The rules on economic cost benefit analysis state that the opportunity cost of all variables must be included in the analysis. The land on which the NICC would be located belongs to the Government of Namibia and would be donated free of charge for this development. It has been valued at N$68m and included in the analysis. The effect of excluding the cost of the land is shown in Table 9.

Table 9: Impact of Value of Land

Value of Land	BCR
Included	**1.32**
Excluded	1.40

Excluding the value of land from the cost of the project improves the BCR marginally, from 1.32 to 1.40.

4.1.1.8 Multiple Sensitivities

For each of the sensitivity analyses performed above none of the results switched from being economically efficient to inefficient for the range of variation in assumptions. However, many of the results came close to the breakeven value of 1.0 and it could be possible that combining two or more of the variables could result in the project being economically inefficient. This is done by constructing a worst case (and a best case) of all the assumptions to determine the potential impact on the BCR. The combination of assumptions for the worst and the best case are shown in Table 10.

Table 10: Combination of Worst and Best Assumptions

Variable	Worst	Baseline	Best
Construction Costs	1.5x	1.0x	0.9x
Number of Events	WORST	REALISTIC	BEST
% International Exhibitors	40%	50%	60%
Delegate Spending	60%	75%	100%
Tourism Spending	60%	85%	100%
Desire to Return	10%	20%	27%

The worst case is based on:

- Initial construction costs 50% higher than currently estimated;
- The WORST case business plan;
- 40% of all exhibitors at national trade fairs are international, down from the 50% assumed in the base case;
- Delegate and tourist spending at 60% of the Cape Town and South African equivalent;
- 10% of international delegates return as tourists.

The best case is based on:

- Initial construction costs 10% lower than expected;
- The BEST case business plan;

- 60% of all exhibitors at national trade fairs being international;
- Delegate and tourist spending to be 100% (i.e. equal) to the Cape Town and South African equivalent;
- 27% of international delegates return as tourists, the same as for the CTICC.

The results of these two cases are presented in Table 11.

Table 11: Results of combining sensitivities

Combination	BCR
Worst	0.64
Mixed Case	0.90
Base Case	**1.32**
Best	1.85

The worst case mixture of assumptions results in the BCR falling from its base case value of 1.32 to 0.64. This means that the project is now economically inefficient by a substantial margin. On the other hand, the best case mixture of assumptions results in the BCR increasing to 1.85.

As a result of this a more realistic 'worst case' mix of assumptions was tested and is called the 'mixed case' in the table. This is based on:

- Initial construction costs 25% more than expected;
- The WORST case business plan;
- 40% of the exhibitors at the national trade fairs being international;
- Delegate spending is 75% of the Cape Town equivalent;
- Tourist spending is 85% of the South African equivalent;
- 20% of international delegates return as tourists (which is the same as the base case).

The result of combining these variables is that the BCR is now 0.90, which indicates that the project is still economically inefficient.

The overall conclusion is that the project is marginally efficient on the baseline set of assumptions. Under a worst case scenario the project would be economically inefficient.

4.2 Macroeconomic Contribution

This section reports on the major macroeconomic contribution of the proposed convention centre (excluding the hotel and spa). It starts by reporting on the expected direct spending before giving the macroeconomic effects of this direct spending.

The NICC business plan currently projects for the first five years of operation. As a result the report is able to analyse the three year construction and planning period and the first five years of operations. The estimated amount of direct spending over the next eight years as a result of the convention centre is given in Table 12. All costs are presented in nominal values.

The construction during 2014, 2015 and 2016 would provide a direct boost to the Namibian economy by injecting over N$800m into it. Opening in 2017, delegate spending then takes over as the largest contribution to direct spending in Namibia. This includes spending on accommodation, restaurants, pre- and post-convention tours and souvenirs. It excludes convention fees (these are included in the Hosts & Exhibitors spending) and international flights.

Table 12: Direct Spending Due to Convention centre

Direct Spending **N$ million, nominal prices** **Financial Year**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**
NICC Capital Expenditure	117.8	289.2	414.6	0.0	2.5	5.0	7.5	8.0
NICC Operational Expenditure				30.5	34.2	38.7	42.5	46.8
Host / Organiser Expenditure				24.1	32.7	44.5	50.9	62.3
Exhibitor Expenditure				62.5	67.6	103.2	109.8	138.4
Delegate Expenditure				114.6	125.5	185.0	206.0	246.0
Induced Tourism							18.5	21.5
Business Orders				7.2	7.7	20.8	22.2	31.7
Total Direct Spending	**117.8**	**289.2**	**414.6**	**239.0**	**270.2**	**397.3**	**457.4**	**554.6**
Cumulative Contribution	117.8	407.0	821.6	1 060.6	1 330.8	1 728.1	2 185.6	2 740.1

Induced tourism from the expanded facilities would start making a contribution in 2020. As mentioned earlier, the reason that induced tourism moves from zero in 2019 to N$18.5m the next year is due to the nature of the survey questions asked of delegates. In the on-going surveys delegates are asked if they intend to return as tourists in ‘the next five years’. Hence some delegates from a 2017 congress would return in three years’ time (taken as the median for the next five years) i.e. in 2020. In reality of course there would be a gradual build-up of induced tourism.

Total new spending in Namibia as a result of the convention centre is estimated to total over N$2.7bn over eight years.

4.2.1 Contribution to Gross Domestic Product (GDP)

Gross Domestic Product (GDP) is the total value of all final goods and services produced in the country. It is a fundamental measure of the economic quality of life of all people in the country. It is also the most important and all-encompassing measure of the macroeconomic effect of the NICC.

Table 13: Contribution to Gross Domestic Product

Contribution to Namibia Gross Domestic Product N$ million, nominal prices Financial Year	2014	2015	2016	2017	2018	2019	2020	2021
NICC Capital Expenditure	170.6	419.0	600.7	0.0	2.1	4.2	6.4	6.8
NICC Operational Expenditure				61.6	69.3	78.8	86.6	95.5
Host / Organiser Expenditure				39.0	49.5	66.8	76.7	93.8
Exhibitor Expenditure				101.9	110.1	168.1	178.8	225.3
Delegate Expenditure				239.8	265.9	390.0	434.6	519.8
Induced Tourism							40.1	46.6
Business Orders				12.8	13.6	36.8	39.2	55.9
Total Contribution to GDP	**170.6**	**419.0**	**600.7**	**455.1**	**510.5**	**744.7**	**862.4**	**1 043.8**
Cumulative Contribution	170.6	589.6	1 190.3	1 645.4	2 155.9	2 900.6	3 763.0	4 806.8
Contrib as % of Namibia GGP	0.1%	0.3%	0.4%	0.3%	0.3%	0.4%	0.4%	0.4%
Real Contribution - 2013 Prices	160.4	370.1	498.7	355.1	374.4	513.3	558.6	635.4
Real Contribution, excl Capex	0.0	0.0	0.0	355.1	372.8	510.3	554.5	631.3

Table 13 and Figure 3 report on the contribution to GDP. They indicate the composition of this contribution and report all amounts in nominal prices. The last two rows in the table report the overall contribution to GDP in real terms (2013 prices) as well as the real contribution less capital expenditure. Multiplier and displacement effects have also been taken into account.

- It is estimated that the NICC would contribute N$171m to GDP in 2014, N$419m in 2015 and N$601m in 2016 as a result of the construction of the centre.
- In 2017, the first year of operations, it is expected that the NICC would contribute N$455m to GDP, increasing to over N$1.0bn by 2021. This increase is due to both inflation as well as increased operations at the centre.
- At N$240m delegate spending (both national and international delegates and visitors) would be the largest contributor in 2017. This is followed by exhibitor expenditure at N$102m.
- In 2021 delegate spending is still the largest contributor at N$520m. This is followed by exhibitor spending at N$225m and NICC operational expenditure at N$96m.
- In real terms the contribution to GDP is expected to nearly double from the N$355m in the first year of operations in 2017 to the N$635 in 2021.

- In 2017, the first year of operations, the contribution to GDP is expected to equal 0.3% of estimated Namibian GDP, increasing to 0.4% by 2018.

The detailed contributions to GDP are illustrated in Figure 3 and projected for ten years of operations. The contribution of the capital expenditure in the early years can be seen in the figure, as well as the major contribution that is made by delegate expenditure relative to other forms of spending once the centre becomes operational.

Induced tourism starts to make a contribution from 2020. Although it is modest in the diagram it is one of the faster growing categories. The black line in Figure 3 indicates the real contribution to GDP (i.e. the effect of inflation is removed). This allows one to compare successive years. The increase in real contribution to GDP during the first five years of operations (2017 to 2021) as operations increase can be seen from the steeper slope of the line. Thereafter the increase in real contribution tapers off, but it still grows slightly as repeat tourism makes more of a contribution. The contribution of the operational phase relative to that of the initial construction can also be seen.

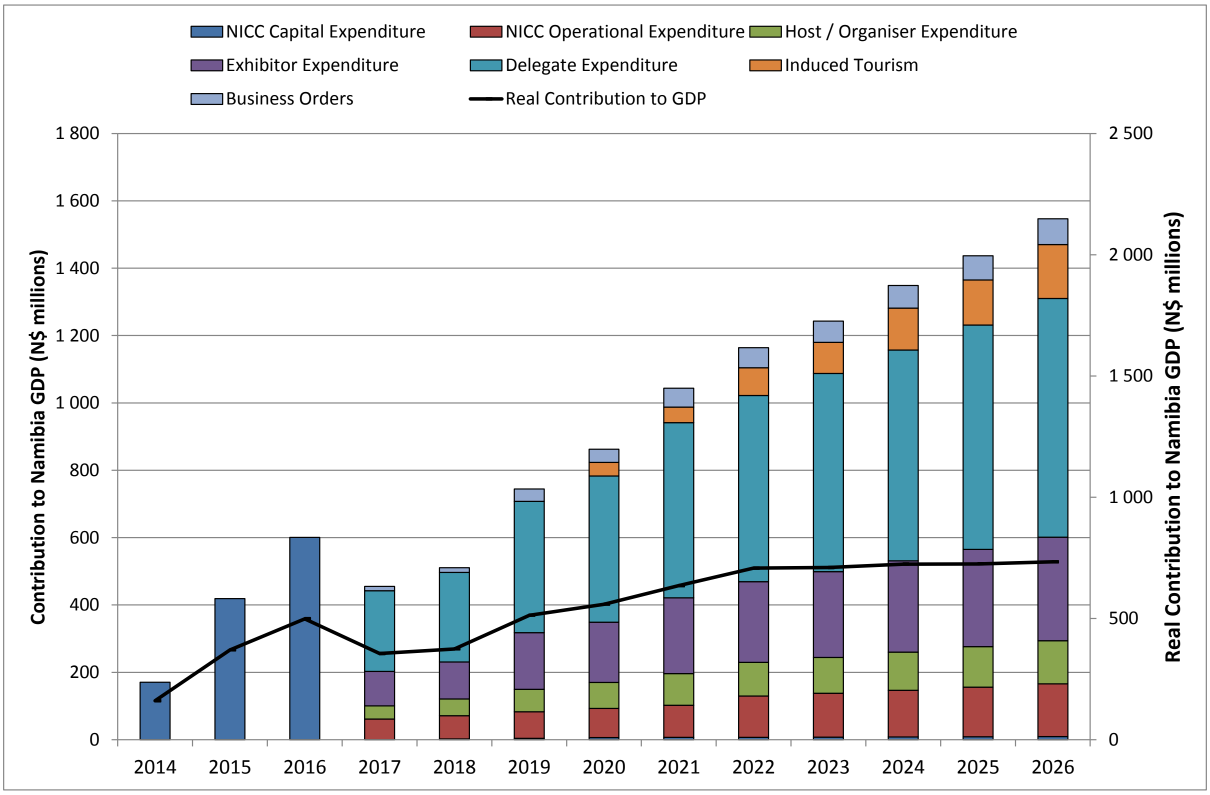

Figure 3: Detailed contribution to GDP

GDP is important not just because it is income but also because income has the capacity to add to wealth. Based on expected projections the NICC is expected to add a total of

N$4.8bn to Namibian GDP by 2021. By 2026 the cumulative contribution to GDP is expected to exceed N$11bn.

4.2.2 Job Creation

The development and operation of the NICC would result in changes to two types of jobs. The first are the direct jobs that would be created over the project period. These are jobs directly on the construction of the facilities and operating expenditure at the NICC as well as the expenditure of delegates attending events, delegates returning as tourists and the increased business orders that are generated from trade fairs. The second are the so-called indirect jobs that are due to multiplier effects of this expenditure.

4.2.2.1 Direct Job Creation

Table 14 reports on the total number of direct jobs created in the country. As before displacement effects are taken into account so these are a net increase in jobs.

Table 14: Direct jobs in Namibia

Contribution to Direct Jobs								
Financial Year	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**
NICC Capital Expenditure	68	156	211	0	1	2	2	2
NICC Operational Expenditure				36	36	36	36	36
Host / Organiser Expenditure				42	50	64	69	79
Exhibitor Expenditure				120	122	175	175	207
Delegate Expenditure				223	231	319	333	375
Induced Tourism							35	39
Business Orders				17	17	43	43	57
Total Direct Jobs	**68**	**156**	**211**	**437**	**456**	**637**	**693**	**794**

- It is anticipated that as many as 211 people could be directly employed as a result of the construction of the NICC during 2014 to 2016.
- Once operations begin in 2017 it is estimated that 437 people would owe their employment directly to the NICC.
- In 2017 the majority of employment would be due to delegate spending.
- The number of direct jobs is set to increase to 794 by 2021. From here onwards most of the job numbers are expected to remain constant because operational maturity would have been reached. However, the number of jobs directly created because of induced tourism would increase slightly each year as an increasing number of tourists become regular visitors to the country.
- It will be recognised that while the 437 jobs in 2017 are new jobs, the 456 in 2018 would incorporate the 437 from the previous year. This means that between 2017

and 2018 19 new jobs would be created while 437 would be sustained from the previous year.

4.2.2.2 Indirect Job Creation

The NICC would also create indirect jobs country-wide and these are reported in Table 15.

Table 15: Indirect job creation in Namibia

Contribution to Indirect Jobs								
Financial Year	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**
NICC Capital Expenditure	162	375	505	0	2	3	4	4
NICC Operational Expenditure				64	72	82	88	93
Host / Organiser Expenditure				32	40	50	54	62
Exhibitor Expenditure				86	87	125	125	148
Delegate Expenditure				249	261	359	376	423
Induced Tourism							35	38
Business Orders				16	16	41	41	55
Total Indirect Jobs	**162**	**375**	**505**	**447**	**477**	**659**	**722**	**823**

- The number of indirect jobs during the construction of the NICC is estimated at 162 in 2014, at 375 in 2015 and 505 in 2016.
- The number of indirect jobs is then set to increase from 447 during the first year of operations in 2017 to 823 by 2021.
- Once again operational maturity would have been reached in 2021 and they should remain constant in the years thereafter, with the only slight increase occurring due to induced and repeat tourism.

4.2.2.3 Total Jobs

Total jobs, which are the sum of the direct and indirect jobs reported above, are presented in Table 16.

Table 16: Total (direct plus indirect jobs)

Contribution to Total Jobs								
Financial Year	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**
NICC Capital Expenditure	230	531	715	0	2	5	6	6
NICC Operational Expenditure				100	108	118	124	129
Host / Organiser Expenditure				74	90	113	123	141
Exhibitor Expenditure				205	209	299	299	354
Delegate Expenditure				472	492	677	709	797
Induced Tourism							70	77
Business Orders				33	33	83	83	112
Total Direct and Indirect Jobs	**230**	**531**	**715**	**884**	**933**	**1 296**	**1 415**	**1 617**

- The total number of jobs created during the construction of the centre would amount to 230 in 2014, 531 in 2015 and 715 in 2013.

- When operations begin in 2017 the total jobs created throughout the country would be 884. This increases to 1 617 by 2021.
- The number of total jobs after 2021 would remain constant, except for induced tourism which should increase year on year as more tourists become regular visitors to Namibia. What this means is that the jobs that are created as a result of the NICC are sustainable jobs.

4.2.3 Foreign Exchange Earnings

One of the key macroeconomic benefits of the NICC is that while it draws in visitors and creates jobs, it also makes an important contribution to foreign exchange earnings. It will of course also be realised that the NICC would use foreign exchange during construction as much of the electronic fittings, lifts, escalators, etc., would be imported. The NICC would continue to use some foreign exchange as tourists and delegates consume some imported food and are moved around in buses running on imported fuels, etc.

Table 17 indicates the estimated foreign exchange use and earnings. The final row in the table is a cumulative total of foreign exchange use and earnings, i.e. net foreign exchange earnings.

Table 17: Net Foreign Exchange Earnings

Foreign Exchange Earnings - Namibia								
N$ million, nominal prices								
Financial Year	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**
Foreign Exchange Earnings								
International Exhibitors				75.6	80.3	122.0	129.8	164.1
International Delegates				54.9	63.0	99.5	109.6	132.3
Induced Tourism							18.5	21.5
International Business Orders				0.3	0.4	4.4	4.7	6.0
Total Forex Earnings	**0.0**	**0.0**	**0.0**	**130.9**	**143.7**	**225.9**	**262.6**	**323.9**
Foreign Exchange Use								
NICC Capital Expenditure	64.7	158.9	227.8	0.0	2.0	3.9	5.9	6.3
NICC Operational Expenditure				15.7	17.6	19.9	21.8	24.0
Host / Organiser Expenditure				15.3	21.7	29.5	33.7	41.2
Exhibitor Expenditure				40.1	43.5	66.4	70.6	88.9
All Delegate Expenditure				58.7	63.4	94.0	104.5	124.6
Induced Tourism							9.8	11.3
Business Orders				4.7	5.0	13.5	14.4	20.5
Total Imports	**64.7**	**158.9**	**227.8**	**134.5**	**153.1**	**227.2**	**260.7**	**316.9**
Net Forex Earnings	**-64.7**	**-158.9**	**-227.8**	**-3.6**	**-9.4**	**-1.3**	**2.0**	**7.0**
Cumulative Total	-64.7	-223.6	-451.4	-455.1	-464.5	-465.8	-463.8	-456.8

- It is expected that as much as N$227m would be used on imports during construction of the NICC between 2014 and 2016. It needs to be recognised that these imports includes inputs into NICC as well as imports resulting from the multiplier effects (construction workers buying imported clothing, for example).

- The amount spent on imports is then expected to drop off as operations begin in 2017. In that year it is estimated that N$135m would be spent on imports.
- This amount is then set to increase to N$317m in 2021.
- On the other hand, international delegates and exhibitors would bring considerable amounts of foreign exchange into the country. It is estimated that international delegates would bring N$55m into the country, international exhibitors N$76m and international business orders R0.3m in 2017.
- The total foreign exchange earnings for 2017 is N$131m, meaning that the NICC would still be a net user of foreign exchange to the value of N$3.6m for that year.
- Induced tourism starting in 2020 would make a further contribution to foreign exchange. Although international tourists do contribute to an increase in imports this is more than offset by the foreign exchange that they bring directly into the country. The contribution from induced tourism switches the NICC from being a net user of foreign exchange to a net generator and in 2020 the NICC generates a modest N2m in foreign exchange.
- In 2021 it is estimated that total foreign exchange earnings would amount to R324m, while foreign exchange usage (i.e. imports) would amount to N$317m. The net effect is that N$7m in foreign exchange would be generated by the NICC.
- As induced tourism increases slowly so the amount of net foreign exchange earnings increases.

The NICC is expected to become a net earner of foreign exchange in 2020 and to pay for all previous foreign exchange usage by 2035, after 19 years of operations.

4.2.4 Other Macroeconomic Effects

Apart from the key macroeconomic effects discussed above, there are many other macroeconomic effects that flow from the NICC. These include the generation of tax and contribution to indirect household income.

4.2.4.1 Taxes

Table 18 reports on total income tax generated.

Table 18: Contribution to Taxes

Contribution to Taxes N$ million, nominal prices Financial Year	2014	2015	2016	2017	2018	2019	2020	2021
NICC Capital Expenditure	32.5	79.8	114.4	0.0	0.3	0.6	0.9	1.0
NICC Operational Expenditure				6.3	7.1	8.2	9.0	10.0
Host / Organiser Expenditure				4.8	6.0	8.1	9.3	11.4
Exhibitor Expenditure				12.0	13.0	19.8	21.1	26.5
Delegate Expenditure				30.5	33.9	49.6	55.3	66.2
Induced Tourism							4.7	5.4
Business Orders				1.2	1.3	3.6	3.8	5.5
Total Contribution to Taxes	**32.5**	**79.8**	**114.4**	**54.8**	**61.6**	**89.9**	**104.2**	**126.0**
Cumulative Contribution	32.5	112.3	226.7	281.5	343.0	433.0	537.1	663.1

- It is estimated that N$33m, N$80m and N$114m in various forms of taxes would be generated from construction in 2014, 2015 and 2016 respectively.
- In 2017, the first year of operations, it is expected that N$55m in tax would be generated. This is set to increase to N$126m by 2021.
- The cumulative contribution to taxes is set to exceed N$663m by 2021.

4.2.4.2 Indirect Household Income

Table 19 reports on the contribution of the NICC to indirect household income.

Table 19: Contribution to Indirect Household Income

Contribution to Indirect Household Income N$ million, nominal prices Financial Year	2014	2015	2016	2017	2018	2019	2020	2021
NICC Capital Expenditure	32.5	79.9	114.6	0.0	0.4	0.8	1.2	1.3
NICC Operational Expenditure				13.1	14.8	17.0	18.8	20.8
Host / Organiser Expenditure				8.6	11.0	14.8	17.0	20.8
Exhibitor Expenditure				23.0	24.9	38.0	40.4	50.9
Delegate Expenditure				50.7	56.2	82.4	91.8	109.8
Induced Tourism							9.0	10.5
Business Orders				3.1	3.2	8.8	9.4	13.4
Total Contribution	**32.5**	**79.9**	**114.6**	**98.5**	**110.6**	**161.8**	**187.6**	**227.4**
Cumulative Contribution	32.5	112.5	227.0	325.5	436.1	597.9	785.5	1 012.9

- During construction between 2014 and 2016 it is estimated that indirect household income would increase by N$227m over the three years.
- In 2017 alone indirect household income would increase by N$99m. This is then estimated to increase to N$227m by 2021.
- Cumulatively by the end of 2021 it is expected that over N$1.0bn would have been generated as indirect household income.

5 Methodology

This section outlines the methodology of the cost benefit and macroeconomic analysis that was undertaken for the proposed convention centre in Swakopmund.

5.1 Cost Benefit Analysis

The CBA was developed based on international best practice. The CBA makes use of the Net Present Value method of discounting all costs and benefits as a means for comparing the various options. Only directly affected parties and first round impacts, as dictated for CBA analysis, are analysed.

It was important to determine the degree of business displacement (or degree of new business to the country) before the CBA analysis could be performed. This included business that could have taken place in other centres. Cognisance was taken of the fact that even though events may have taken place elsewhere in the country they could now be larger if hosted at the NICC.

Key costs and benefits were identified, and where possible, quantified. Costs include:

- The initial construction costs which amounted to N$710m in 2013 prices. The construction period was assumed to occur over three years from 2014 to 2016 and the costs were shared between those three years in accordance with the cash flow drawdown calculated by the Architects. Overall project management costs equalling 2.0% to 2.2% (the mean of 2.1% was used) of the project costs[1]. This amounts to N$12.7m.
- Land acquisition costs of N$68m were included in the cost benefit analysis. For the purposes of the cost benefit analysis a market related opportunity cost of the land has to be recognised. The cost of the land was not included in the macroeconomic analysis because the actual purchasing of the land did not take place.
- NICC operational costs. These were based on the REAL business case (i.e. most likely to occur) presented by CIC.
- Local event organiser costs.

[1] *Information supplied by a leading Cape Town project management company.*

- The profit that international organisers would repatriate back to their countries. This is based on the difference between what delegates would pay as convention fees and the costs going into hosting an event.
- Local exhibitor costs. (International exhibitor costs are treated as a benefit because this is money that is brought into Namibia by these exhibitors).
- International business orders that are generated at Trade Fairs by Namibian businesses. However, not the full extent of the business orders are treated as imports but only the portion that has been adjudged to be new business orders. Those business orders that displace existing imports are not taken into account.

Benefits include:

- International exhibitor spending, because this is foreign exchange that is brought into the Namibian economy.
- International delegate spending.
- Induced tourism income from delegates who return as tourists. This return tourism is called induced tourism and represents one of the major benefits of convention centres such as the NICC. Included in the induced tourism spending are tourists who would return to Namibia on a regular basis.
- International business orders by international buyers attending the consumer expos and trade fairs. The value of these business orders are based on statistics determined from similar events, but scaled down for size, at the CTICC.

It has been assumed that construction commences in 2014 and that the NICC is completed in 2016. Operations would then commence in 2017. The Business Plan provided by the NICC only has the first five years of operations. Because a meaningful cost benefit analysis needs at least twenty five years of costs and benefits the centre is assumed to have reached operational maturity in year 5 and the events of that year have been used for all years after that.

5.1.1 Conversion of Financial Costs to Economic Costs

Financial costs and benefits were converted to economic costs and benefits by allowing for VAT, company taxes, shadow pricing and subsidies. As a result, the actual cost to society is determined. The following shadow prices were used in the analysis and were sourced from, amongst others, Conningarth Economists (2007):

- Shadow wages were used for unskilled labour (pay-classes were specified). Current salary scales were used for all other pay-classes.
- Shadow fuel price for petrol and diesel.
- A shadow electricity price index.
- Real discount rate: a real discount rate of 8% was used. All costs used in the Cost Benefit Analysis were reduced to 2013 values by removing the effect of inflation.
- Indirect taxes and subsidies were taken into account in the CBA model.

The proportion of spending on fuel, electricity, wages and indirect taxes and subsidies was determined from a 2004 Social Accounting Matrix for Namibia.

5.1.2 Assumptions

Table 20 to Table 22 below contain the assumptions that were used in the CBA model.

Table 20: General assumptions

Ratio of Swakopmund Prices to Cape Town Prices	75%	*Switch - varied in analysis*
Ratio of Namibia Tourism to South Africa Tourism	85%	*Switch - varied in analysis*
Social Discount Rate	8%	*Conningarth Consultants*
Change in Namibian Business Order Imports	5%	*Switch - varied in analysis*
VAT	15%	

Table 20 lists the general assumptions that are used in the CBA. The source behind the assumption or the rationale for the value is explained in the text to the right of the table.

Table 21 below shows some of the shadow prices that have been used but for the purposes of this report are only shown for the period 2013 to 2018.

Table 21: Shadow pricing over time

Shadow Pricing	2013	2014	2015	2016	2017	2018
Real effective exchange rate	100.00	100.00	100.00	100.00	100.00	100.00
Diesel Shadow Factor	0.788	0.788	0.788	0.788	0.788	0.788
Electricity Shadow Index	147.93	164.20	180.62	198.68	206.63	214.90

Table 22 shows the labour categories that are used in the analysis and the average salaries in 2013 prices for each category.

Table 22: Labour categories

Labour category	Ave wage	
Skilled	364 838	*Determined from Namibian SAM*
Unskilled	38 920	*Source: LaRRI - minimum wage of N$26,033.15 in 2007*
Mixed Income	34 911	*Determined from Namibian SAM*

Unskilled wages were determined from LaRRI (2009). Skilled and Mixed Income wages were then determined by using the relative labour remuneration proportions presented in the Namibian SAM.

The event numbers are based on the business plan developed by CIC. The REAL business case was used for the base case and the WORST and BEST cases were used as part of the sensitivity analysis. The event numbers for each of these business plans is shown in Table 23.

Table 23: Events numbers from business plans

	WORST CASE			REAL CASE			BEST CASE		
Type of Event	2014	2016	2018	2014	2016	2018	2014	2016	2018
International Association	4	5	6	5	6	7	6	8	10
International Corporate	4	6	8	6	9	12	8	12	16
International Government	1	1	1	1	2	2	1	2	2
National Association	6	8	10	8	10	12	10	13	15
National Corporate	0	0	0	0	0	0	0	0	0
National Government	3	4	5	4	5	5	6	7	7
Consumer Exhibition	0	1	2	0	2	2	0	2	3
International Trade Fair	0	0	1	0	1	1	0	1	1
National Trade Fair	4	4	4	4	5	6	4	6	8
Banquet	15	20	20	20	25	30	30	40	50
Special Event	5	5	5	10	10	10	10	15	15
Other Meeting	25	35	50	40	50	75	60	75	90
Nat. Congress Exhibition	2	2	3	2	3	4	2	3	4

The following delegate spending has been assumed and is based on 75% of the spending by delegates that attend events at the CTICC (all prices are given in 2013 prices):

- Domestic Congress Delegates (excluding delegates from Swakopmund):
  - The average total expenditure per person per day is N$2 245. This includes accommodation, convention fees, car rental, pre and post convention tours and souvenirs.
  - Their average length of stay in Swakopmund is 4.36 days.
  - The average expenditure per person per day for delegates from Swakopmund is N$1 140. The majority of this is spent on convention fees.
- International Congress Delegates:
  - The average total expenditure per person per day is N$2 358.

  - Their average length of stay in Namibia is 4.67 days.
- Domestic Exhibition and Other Event Visitors (excluding visitors from Swakopmund):
  - The average total expenditure per person per day is N$1 464.
  - Their average length of stay is 3.16 days.
  - The average expenditure per person per day for visitors from Swakopmund is N$424. This includes entrance fees and purchasing exhibits.
- International Exhibition and Other Event Visitors:
  - The average total expenditure per person per day is N$1 983.
  - Their average length of stay in Namibia is 4.82 days.

The following assumptions have been made regarding international tourist expenditure and are based on 85% of the spending by international tourists to South Africa:

- The total spending per person per day (in 2013 prices) is N$1 002. This includes accommodation, transport, eating out and all other expenses, but excludes the cost of the international flight to get to Namibia.
- The average duration of stay in Namibia is 7.5 days.
- The average size of a returning party is 2.3 people.
- Of those international delegates that return to Namibia as tourists, 17.2% are assumed to become regular visitors and to return to Namibia once every two years.

5.2 Macroeconomic Analysis

Input-output analysis was used for the macroeconomic analysis of the proposed convention centre. This approach demands that all expenditure in and around the project be identified and estimated. This expenditure, in turn, needs to be linked to the Standard Industrial Classification of all Economic Activity (SIC codes). In addition, if employment is part of the expenditure then estimates must be made of the likely items of expenditure as a result of wage payments. Allowances must also be made for the fact that workers at different income levels have different spending patterns.

The expenditure areas that were identified are:

- The cost of construction;
- The operating costs of the NICC;
- Spending by event organisers;
- Spending by the exhibitors including their travel and accommodation costs if not from Swakopmund;

- Spending by convention delegates and exhibition visitors on hotels, travel, gifts, etc;
- Spending by delegates and their families who return as tourists to Namibia;
- The value of business orders generated at Trade Fairs.

Five steps are required to measure the overall economic impact of expenditure items.

- First, to identify appropriate costs. These costs are based on surveys of events staged at the CTICC, the ICC Durban, the Design Indaba and from CIC.
- Second, to determine the relative proportions of profit, labour, plant and material for each cost line item.
- Third, to assign each item of material and plant to the appropriate economic sector as identified in the Namibian social accounting matrix (SAM).
- Fourth, to decompose labour and profit into income categories and apportion the total wages and profits to each income category. Following this, estimates of expenditure patterns by income category are used to determine total spending patterns.
- Finally, all the SAM coded items are brought together. The total multiplier effect is calculated as the aggregate product SAM coded spending on plant and material, as well as SAM coded spending by workers multiplied through the national multipliers. The national multipliers are known through the SAM.

Therefore the macroeconomic estimates that are made in this report relate directly to the actual cost of building the convention centre; hosting congresses and exhibitions, the spending by delegates and visitors to the events and induced tourism and the value of business generated at some of the Trade Fairs. Included in the macroeconomic calculations are all the backward economic linkages for the event and the forward economic linkages where workers spend their salaries.

Direct jobs are calculated with the use of the Namibian SAM. The SAM gives both the average salary that is paid in any one sector and the proportion of salaries to overall turnover in that sector. From this one is able to calculate direct jobs using the amount of spending in each economic sector resulting from the spending associated with the NICC and its events.

Indirect jobs are determined through a similar process as the calculation for GDP described above, and makes use of input output multipliers.

6 Conclusion

The NICC would contribute in part to the national economy by attracting local and international delegates and visitors to Swakopmund. Total delegate and visitor numbers are expected to increase from 20 610 in 2017 to 31 530 by 2021. Of the 20 610 people expected in 2017 around 83% (17 171) are from Namibia and 17% (3 439) are international visitors. These proportions are expected to remain relatively constant over time although the actual numbers are expected to increase in line with the increase in the number of events hosted at the NICC. In 2021, five years after opening, it is expected that 24 778 people from Namibia and 6 753 international visitors would be attending events at the NICC.

Between 2017 and 2021 the number of delegate and visitor days is expected to grow steadily from 77 365 to 128 278. This stabilises after that as the NICC reaches capacity. The number of international tourist days begins to grow from 2020 as some international delegates return to Namibia as tourists. This effect gradually increases as some of these tourists become regular visitors to Namibia.

The analysis also makes two other findings. The first is that congresses are expected to generate more visitor days than exhibitions and other events. The second is that exhibitions and other events are subject to less displacement effects.

- It is expected that a total of 41 681 days would be generated by congresses during 2017 and 35 684 by exhibitions and other events.
- This is expected to increase to 79 055 and 49 222 respectively by 2021.
- Slightly less than half the congress days (43% to 49%) are by international delegates.
- International visitors account for very few exhibitions days. In 2017 they account for only 2% of the exhibition days with this rising to 13% by 2021.
- It is anticipated that the NICC would generate about 12 000 days of international tourism in 2020 with this rising to 13 000 the following year.
- Tourists who become repeat visitors result in an on-going increase in the number of international tourist days. By 2026, ten years after opening, it is expected that international tourists who had originally been introduced to Namibia because of the NICC would spend 33 000 days in the country.

Results of the Cost Benefit Analysis

From a national perspective the convention centre would have economic costs with a present value (PV) of N$1.10bn and economic benefits of N$1.45bn. This results in a net economic benefit, or project NPV, of N$350m. The associated BCR is 1.32 and the IRR is 17%. These results indicate that, since the benefits outweigh the costs, the project is economically efficient and it would be desirable from an economic perspective for Namibia to construct and operate the NICC. However, since the BCR is only slightly higher than 1.0 the results should be considered as marginal. Due to the number of assumptions made in this analysis greater comfort would be taken from a BCR closer to 2.0.

The initial capital costs are the largest costs with a PV of N$506m. These are followed by the NICC operating costs with a PV of N$239m and Namibian exhibitor costs of N$144m. Namibian organiser costs have a PV of N$128m, while international organiser costs have a PV of N$18m. The latter is the profit that international organisers would take out of the Namibian economy (once they have received payment from delegates). Lastly, it is anticipated that Namibian imports would increase from the orders placed with international exhibitors at Trade Fairs. This has an estimated PV of N$4.5m. Land value of N$68m has been included in the cost benefit analysis. Although the land would be donated by the Government of Namibia free of charge, the opportunity cost of using this land needs to accounted for in the Cost Benefit Analysis.

On the benefit side the largest benefit is the spending by international exhibitors at the consumer expos and trade fairs, with a PV of N$659m. This is then followed by international delegates attending conferences, exhibitions and events with a PV of N$542m. This is followed by induced tourism (N$180m) and then increases in orders for Namibian products (N$73m).

A sensitivity analysis was performed on key assumptions to determine how sensitive the overall results are to variations in these assumptions. These are:

7. Variations in the initial construction costs. It was found that the results are sensitive to changes in the initial construction costs and it would require a 73% increase in construction costs to make the project economically inefficient.
8. Deviation from the anticipated business plan for the number of events. It was found that the convention centre remains economically efficient for the smallest number of events in the CIC business plan.
9. The number and proportion of international exhibitors at national trade fairs and all other consumer expos and trade fairs. It was found that the results are sensitive to the number of international exhibitors at these events.

10. Delegate spending in Swakopmund relative to delegate spending in Cape Town. It was found that the results are not very sensitive to realistic changes in this assumption.
11. The willingness of international delegates to return as tourists. It was found that while it does have an effect on the economic results it does not undermine the economic efficiency of the proposed centre.
12. An economic cost benefit analysis requires that the opportunity cost of this land be included even though the land is being donated. Excluding the cost of the land from the analysis increases the BCR from 1.32 to 1.40.

Following this analysis a final sensitivity analysis was performed, combining the worst cases of six of the above variables. This resulted in the BCR falling from its base case value of 1.32 to 0.64. This means that the project is now economically inefficient.

As a result of this a more realistic ‘worst case’ mix of assumptions was tested. This returned a BCR of 0.90, which indicates that the project is still inefficient.

The overall conclusion is that the project is marginally efficient on the baseline set of assumptions. Under a worst case scenario the project would be economically inefficient.

Results of the Macroeconomic Analysis

Contribution to Gross Domestic Product (GDP)

Gross Domestic Product (GDP) is the total value of all final goods and services produced in Namibia. It is a fundamental measure of the economic quality of life of all people in the country. It is also the most important and all-encompassing measure of the macroeconomic effect of the NICC.

- It is estimated that the NICC would contribute N$171m to GDP in 2014, N$419m in 2015 and N$601m in 2016 as a result of the construction of the centre.
- In 2017, the first year of operations, it is expected that the NICC would contribute N$455m to GDP, increasing to over N$1.0bn by 2021. This increase is due to both inflation as well as increased operations at the centre.
- At N$240m delegate spending (both national and international delegates and visitors) would be the largest contributor in 2017. This is followed by exhibitor expenditure at N$102m.
- In 2021 delegate spending is still the largest contributor at N$520m. This is followed by exhibitor spending at N$225m and NICC operational expenditure at N$96m.

- In real terms the contribution to GDP is expected to nearly double from the N$355m in the first year of operations in 2017 to the N$635m in 2021.
- In 2017, the first year of operations, the contribution to GDP is expected to equal 0.3% of estimated Namibian GDP, increasing to 0.4% by 2018.
- GDP is important not just because it is income but also because income has the capacity to add to wealth. Based on expected projections the NICC is expected to add a total of over N$4.8bn to Namibian GDP by 2021. By 2026 the cumulative contribution to GDP is expected to exceed N$11bn.

Job Creation

The development and operation of the NICC would result in changes to two types of jobs. The first are the direct jobs that would be created over the project period. These are jobs directly on the construction of the facilities and operating expenditure at the NICC as well as the expenditure of delegates attending events, delegates returning as tourists and the increased business orders that are generated from trade fairs. The second are the so-called indirect jobs that are due to multiplier effects of this expenditure.

Direct jobs:

- It is anticipated that as many as 211 people could be directly employed as a result of the construction of the NICC during 2014 to 2016.
- Once operations begin in 2017 it is estimated that 437 people would owe their employment directly to the NICC.
- In 2017 the majority of employment would be due to delegate spending.
- The number of direct jobs is set to increase to 794 by 2021. From here onwards most of the job numbers are expected to remain constant because operational maturity would have been reached. However, the number of jobs directly created because of induced tourism would increase slightly each year as an increasing number of tourists become regular visitors to the country.
- It will be recognised that while the 437 jobs in 2017 are new jobs, the 456 in 2018 would incorporate the 437 from the previous year. This means that between 2017 and 2018 19 new jobs would be created while 437 would be sustained from the previous year.

Indirect jobs:

- The number of indirect jobs during the construction of the NICC is estimated at 162 in 2014, at 375 in 2015 and 505 in 2016.
- The number of indirect jobs is then set to increase from 447 during the first year of operations in 2017 to 823 by 2021.

Total jobs (direct plus indirect jobs):

- The total number of jobs created during the construction of the centre would amount to 230 in 2014, 531 in 2015 and 715 in 2013.
- When operations begin in 2017 the total jobs created throughout the country would be 884. This increases to 1 617 by 2021.
- The number of total jobs after 2021 would remain constant, except for induced tourism which should increase year on year as more tourists become regular visitors to Namibia. What this means is that the jobs that are created as a result of the NICC are sustainable jobs.

Foreign Exchange Earnings

One of the key macroeconomic benefits of the NICC is that while it draws in visitors and creates jobs, it also makes an important contribution to foreign exchange earnings. It will of course also be realised that the NICC would use foreign exchange during construction as much of the electronic fittings, lifts, escalators, etc, would be imported. The NICC would continue to use some foreign exchange as tourists and delegates consume some imported food and are moved around in buses running on imported fuels, etc.

- By 2021 it is estimated that total foreign exchange earnings would amount to R324m, while foreign exchange usage (i.e. imports) would amount to N$317m. The net effect is that N$7m in foreign exchange would be generated by the NICC in that year.
- The NICC is expected to become a net earner of foreign exchange in 2020 and to pay for all previous foreign exchange usage by 2035, after 19 years of operations.

Contribution to Taxes

- It is estimated that N$33m, N$80m and N$114m in various forms of taxes would be generated from construction in 2014, 2015 and 2016 respectively.
- In 2017, the first year of operations, it is expected that N$55m in tax would be generated. This is set to increase to N$126m by 2021.
- The cumulative contribution to taxes is set to exceed N$663m by 2021.

Indirect Household Income

- During construction between 2014 and 2016 it is estimated that indirect household income would increase by N$227m over the three years.
- In 2017 alone indirect household income would increase by N$99m. This is then estimated to increase to N$227m by 2021.
- Cumulatively by the end of 2021 it is expected that over N$1.0bn would have been generated as indirect household income.

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16.

APPENDIX M:

HIGH-LEVEL FEASIBILITY PAPER ON THE NAMIBIA INTERNATION CONVENTION CENTRE - SWAKOPMUND

Namibia International Convention Centre (NICC)

Swakopmund

High level Feasibility Paper

Convention Industry Consultants (Pty) ltd
Cape Town, 30 September 2013
(In cooperation with Conference Link Namibia)

Contents

1. Introduction

Already for quite some time interested parties in Namibia as well as the government of the country are considering the development of a dedicated international convention centre.

It was observed that in several African countries and particularly in South Africa the (international) convention business had started to flourish. National and particularly international conventions and trade fairs contribute substantially to the economy of the cities and countries where they are hosted, as well to the growth of leisure tourism. These are important reasons to find out if an International Convention Centre in Namibia would be feasible.

Most convention centres in the world are not or hardly profitable. However, these centres are practically always developed because of the considerable contribution to the GDP of a country as well as their ability to create a significant amount of jobs.

Recently the initiative was taken to investigate if a dedicated Namibia International Convention Centre (NICC) could be developed in Swakopmund in the Erongo region. The project has the firm support both from the Regional Governor of the Erongo region, the Honourable C.J. Mutjavikua as well as from Councillor J. Kambueshe, Mayor of Swakopmond. The developers of the project, Sand Rose Investments (Pty) Ltd in Swakopmund have asked Convention Industry Consultants to prepare a high level feasibility paper for this proposed development.

This high level feasibility paper has been prepared after substantial l desk research complemented with limited additional field research. In the process of finalizing this feasibility paper role players in the Southern African meeting industry were interviewed during the annual conferences of SAACI (Southern African Association for the Congress Industry) and AIPC (Alliance Internationale des Palais de Congres). Extensive use has been made from research material provided by ICCA (International Congress and Convention Association) as well as from AIPC.

2. Management Summary

Although this document can be read on its own it is recommended that also the findings of a Feasibility Study prepared for a similar project that in 2011 was proposed for Windhoek are taken into account because many of these findings are also relevant for the NICC Swakopmund development.

For this feasibility paper it was firstly important to make the best possible assumptions with regard to the expected sorts and numbers of events, as well as with regard to the average numbers of participants. Based on interviews with relevant stake holders in Southern Africa, knowledge of market trends in the regional and international meeting business and based on the daily experience in the Namibian meeting market of PCO Conference Link these assumptions were made, and revenue models for the NICC Swakopmund could be developed.

An overview of relevant trends in the meeting industry can be found in chapter 3 of this feasibility paper. In the next chapter questions about the qualification of Swakopmund as meeting destination of choice for national, regional and international (African) meetings are being answered. The result is a clear picture of the strengths and weaknesses of the destination, where the accessibility of Swakopmund arises as one of the most important concerns.

In chapter 6 the most important future user groups/clients of the new NICC have been identified as International Association Congresses, International Trade Fairs, International and National Government meetings as well as International and National Corporate meetings. Particularly the client groups of Government and Corporate meetings are being singled out and recommendations are being given to make the NICC particularly suitable for the use by these two groups.

Based on best international practises as well as on the expected future use of the NICC design, suggestions for the centre are being made in chapter 7. This chapter also contains some observations regarding the concept design for the centre that at this stage has been prepared already.

Chapters 8 and 9 of this feasibility paper are probably the most relevant ones. They form the heart of the business case and conclude with the fact that the NICC Swakopmund seems to be viable, also from a financial point of view. Although it is not very likely that the new centre will become profitable enough to pay back for its initial investment, it looks as if the centre at least operationally can be run on a cash-positive basis.

In order to make the NICC operation also financially successful, it is of course necessary to manage the new facility as professional as possible. In chapter 10 of this feasibility paper some of the management challenges and opportunities have been highlighted. It makes sense to pay serious attention to how synergy can be achieved by integrating some parts of the management and operation of the Convention Centre with the management of other parts of the: "Desert Rose" complex.

The last chapter of this feasibility paper (chapter 11) deals with the economic spin off that can be expected from the future NICC operation. The centre will generate a substantial number of new direct and indirect job opportunities for the region and will also become a significant contributor to the Namibia GDP. Much more detailed information about the economic contribution of the NICC can be found in a separate study prepared by econometrists Strategic Economic Solutions (see chapter 11).

3. Actual trends in the international meeting industry

Various recent trade publications are giving a good insight in the actual trends for the international meeting industry. Industry experts agree that the meeting sector is slowly but steadily recovering from the economic recession of the past couple of years. Even in the United States and in Europe, where the local economies are still relatively flat, all sectors of the meeting industry as well as business travel in general are showing a positive growth. Africa and China are increasing mutual government and business relations, which will result in opportunities for the meeting industry in Africa. Less traditional markets have started to increase their participation in congresses and other business events.

3.1 International Exhibitions and Trade Fairs

The most positive signs are registered in the developing economies. Particularly international exhibition and trade fair organising companies such as Tarsus, Reed Exhibitions and UBM Live Events, all based in London, are publicly stating that they expect their future growth to be realised predominantly in these developing economies. Show organiser Tarsus already a year ago achieved its target that was set for the end of this year: to realise 50% of their turnover in developing countries. The interest of international exhibition organisers was until now mainly focused on China and India, to a lesser extent on Russia and Turkey. New international exhibition 'hotspots' are however countries like Thailand, Malaysia, Indonesia, Brazil and also Africa. Proof of this development is that Reed Exhibitions, the largest organiser of tradeshows in the world, very recently acquired a majority share in one of South Africa's leading exhibition organising companies. Montgomery Exhibitions, also from the UK, acquired recently a stake in an East African exhibition organising company in Kenya.

The increased international attention for trade fairs and exhibitions in Africa will most probably have the effect of a wake-up-call for the local exhibition organisers. They have not been very innovative and are in general not prepared to develop a long term vision by investing in new events that are expected to only become profitable after a few years. This increased interest of international exhibition organisers for Africa will most probably not immediately affect the exhibition and trade fair business in Namibia, but for particular sectors of the economy such as mining, fishing, oil and gas and tourism there might be opportunities for new trade fairs and congresses on the horizon.

3.2 International Association Congresses

Africa is not growing very fast as an international meeting destination. The total number of international congresses per year fluctuates around 300; almost one third of the number of these meetings on the African continent is hosted in South Africa. Africa attracts less than 3% of the global meeting business according to ICCA in Amsterdam. This percentage could easily increase, because more than 4600 international association meetings rotate around the globe or within Africa (Source: ICCA statistics 2012). The relatively small market share of Africa is to a large extent related to the availability or rather lack of suitable congress venues, but also to the fact that professional organisations in Africa are far less developed than in other continents.

Almost 55% of all international congresses – particularly those with smaller delegate numbers - take place in hotels and approximately one third in dedicated convention centres. The average seize of international meetings in 2011 was 535 delegates. Although this average delegate number decreases slowly from year to year, the total number of international meetings is still increasing: in just a decade with 81% from 6 155 in 2002 to 11 156 in 2012 (Source: ICCA statistics 2012).

Commercial (sponsor-) exhibitions have become more important as income source for congress organisers. Demands of sponsors and exhibitors are being taken much more seriously. Also delegates are becoming more demanding; they expect more benefits out of attending meetings. Meeting concepts are changing with more need for interaction. Convention centres that offer different, creative room set-ups and are able to work together with event organisers and that anticipate on frequent changes will be the popular venues of the future.

Congress organisers have also become less protective and are willing to share more content with non-participants. As a result of this open door policy of the organisers event streaming and hybrid events are becoming more and more popular. Some new venues such as the Adelaide Convention Centre in Australia respond to this trend with particularly for this purpose built-in video camera equipment in each of their meeting- and break away rooms. Conference delegates want to be connected permanently with the outside world. Not only free Wi-Fi for organisers and delegates has become the norm for successful venues, also the availability of huge bandwidth capacities, necessary when thousand or more delegates all at the same time reach for their i-pads in the tea break. And one more time a delegate number trend: Where world meetings are becoming shorter and attract less delegates, regional meetings are becoming more important and more popular.

Namibia is not yet very popular as a destination for international meetings, although ICCA registered in 2012 five of these events in the country; all these registered international events took place in Windhoek. That gave Namibia on the global ranking list of international convention destinations position 104. Windhoek was the 13th most popular destination in Africa. Number 1 was Cape Town (38 meetings), number 2 Nairobi (28 meetings), number 3 Johannesburg (16 meetings), number 4 Durban (15 meetings) and number 5 Accra (9 meetings).

3.3 (African) Associations

The ICCA African chapter, Head Quarter Magazine in Brussels and the South African National Convention Bureau pay a lot of attention to the development of professional and scientific African associations (NGO's). ICCA has recognized only 115 associations in their database with a head office in Africa, whilst HQ Magazine identified already over 700. Clearly the number of international congresses with a rotation in Africa will grow as soon as the number of African professional associations is increasing. An active participation of African professional associations in Global Associations will in all likelihood also have a very positive effect on the number of international (global) conferences that will be hosted on the African continent.

International Associations experience difficult times. Because of the international economic crisis their membership numbers are under pressure. Many international organisations have identified the developing countries as a source for potential new members. According to the United Nations not only seven of the ten fastest developing economies of the world can be found in Africa, also the total population numbers are sharply increasing. Where the population of Europe and the United States already has reached a point of no further growth, it is forecasted that Africa will be home to 24.5% of the global population in 2030 (now 14%) and in that year will produce a GDP equal to the GDP of Europe. International professional organisations are very much aware of these developments.

3.4 Incentives and Corporate Meetings

Although professional meeting organisations in the past couple of years observed a trend of fewer incentives and other costly corporate events (affecting events like product launches etc.) also incentive organisers seem to be convinced that significant changes in client behaviour have become noticeable. SITE, the global trade association for incentive organisers, presented in May 2013 the SITE Index and found that incentive and corporate travel is increasing again. Last year the outbound incentive market in the USA grew with 10%. Half of the clients are looking for attractive offerings in second tier destinations, particularly clients with their head offices in such second tier cities. Particularly this trend might be very important for the development of the NICC in Swakopmund as a venue of choice for corporate meetings and incentives. Traditional incentive destinations like Paris and Rome are still struggling because of their average price levels. Two third of the organisers is looking for competitive bids. The level of service provided to corporate meetings is extremely important. Incentive organisers are not loyal; 72% will bring their clients to another destination if they expect a better service, and 44% will make such a decision if they expect lower venue and accommodation rates. (Source: Site Index 2013)

3.5 International Convention Centres

The International Association of Conference Centres (IACC)'s 2013 edition of 'Trends in the Conference Centre Industry'-report shows clear signs of recovery in centres' business "outperforming the broader hotel sector in relation to occupancies and profitability". Also the AIPC (Alliance Internationale des Palais de Congres) identified a similar trend in its membership survey earlier this year. The survey found that while the general sense in most parts of the world was that prospects for recovery were still elusive (and actually declining in some areas), centres were still achieving an average 5.7 % growth in gross revenue achieved in 2011 and 6.7% in 2012. For AIPC member venues in Africa these percentages were even an impressive 36% in 2011 and 22% in 2012!

Demand for conference centres grew in 2012, according to the report, produced for IACC by PKF Hospitality Research, along with average rates. Executive style conference centres performed better than average, with an Average Delegate Rate increase of five per cent over the previous year. Occupancy in executive conference centres grew 7.3 per cent over 2012.
Interesting is that 45% of all AIPC members have developed new revenue streams in 2012. Popular new business developments are centres that now organise their own events (trade fairs, exhibitions, special events), manage parking facilities, receive revenues out of sponsoring and advertising as well as from the provision of more exhibition and event services. On average 45% of the income of congress centres was generated by venue hire and 24% by the provision of F&B services. In Swakopmund however we expect these

percentages to be slightly different, more in line with for instance the CTICC in Cape Town. Meeting venues seem to be inconsistent with regard to insourcing versus outsourcing strategies (service suppliers, PCO-services, housing services). New business models of convention centres are increasingly attendee focused. (Source: AIPC congress July 2013). According to the trade organisation AIPC as well as the Union des Foires Internationale (UFI) new exhibition and congress facilities will focus more on customized needs for clients, including multi-functional lounges and less fixed seating in conference rooms. Information technology needs to be state of the art; there will be a growing demand for impeccable and free Wi-Fi connections throughout a venue. 'Bleisure' is the combination of business and leisure and can become a unique selling point for long haul destinations for European and US companies. More new venues will try to be part of a total package where business and leisure objectives both can be met. CSR is key issue: more attention to the "Social legacy", giving back to the local community. New business models will attract new (generations Y and Z) delegates and involve more interaction, sharing, instant access and authenticity. And also more technology, mobile content, social media, audio-visuals in 3D, holograms and apps. Sustainability will be the defining issue of coming years; as governments and associations adopt rules and regulations concerning green meetings, procurement and carbon footprints, venues will have to follow suit (or lose business).

More than ever before venue managers experience serious price (rental rates, banqueting prices) negotiations with all categories of clients. The competition has definitely become more price-focussed. International conferences also take more and more for granted a certain support of the hosting city or from other government departments.

More centres are now engaged in renovations of existing facilities than pursuing expansions or new builds, reversing a multi-year trend and illustrating the challenges of finding major project funding in many areas, an AIPC survey at the end of 2012 found. Because international meeting organisers traditionally are very interested in new conference facilities this creates interesting opportunities for the new convention centres that are presently under construction or will be developed in the near future. AIPC members did observe however that the development of new hotels no longer seems to be on hold.

3.6 Meeting planners

According to the global trade organisation Meeting Planners International (MPI) meeting planners around the world experience that the economic uncertainty of the last couple of years slowly starts to have less effect on the number of business events. The economic uncertainty of the past five years however has resulted in much shorter lead times for events, which MPI predicts will become the new norm. The rapid technological developments of the past couple of years have had a serious effect on the design of meetings.

A noticeable trend is that F&B budgets of congresses are under pressure, but that a higher portion of the budget seems to be available for technical support. Because of the tighter budgets there is more attention for budget control than in the past and less money is being spend on 'frills' at meetings. Many meeting planners have become 'food-experts' in their own right (thanks to the amount of television food shows). They have high expectations with regard to menu choices, menu tastings, chefs' tables etc.

4. The Qualification of Swakopmund

The intention to develop the new Namibia International Convention Centre in Swakopmund raises the question what potentially would be the factors that could contribute to the success of Swakopmund as host destination for (international) business events. Swakopmund is not the capital of Namibia and located at quite a distance from Windhoek. One could ask the question what the effect would be of the rather decentralized location of Swakopmund in Namibia on the future event portfolio of the NICC.

After interviewing a variety of interested parties such as exhibition- trade fair, incentive and congress organisers in Southern Africa, but also members of the hospitality and tourism industry in general one has to conclude that the location and characteristics of Swakopmund will have both positive and less positive effects on the marketability of the destination.

In general it is expected that the distance from Windhoek and the more complicated accessibility of the destination will most probably have an effect on the events that can be expected to take place at the NICC Swakopmund.

In general it is expected that the NICC Swakopmund will attract slightly less but also smaller international and national events, except for corporate events and incentives where one – because of the attractiveness of Swakopmund – can expect even more events than the case would be in Windhoek. Also national and international (SADC) political meetings will not very much be affected by the more remote location of the NICC.

All these considerations have been taken into account in the drafting of the business model for the NICC Swakopmund, as can be found in the chapters 8 and 9 of this feasibility paper.

A recent survey involving 69 million (!) participants attending conferences and congresses in Europe revealed the following interesting results for 'reasons of attendance', at least as far as the destination was concerned. The subject of the meeting is of course the most important reason why delegates decide to attend. But in case the subject of the meeting is interesting enough to consider making the effort to attend, the following criteria seem to be important for potential delegates to decide in favour of registering or staying at home:

Criteria	Percentage
Image of the destination	50%
Accessibility; good transport links	44%
Tourist attractions	23%
Affordability of destination	18%
Charming Surroundings	18%
Rest and relaxation	10%
Good shopping opportunities	9%

(Source: Dudovskiy, 2012)

Also the Alliance International de Palais de Congres (AIPC) in Brussels, the leading global organisation of convention centres, has recently asked its members in a survey to comment on what in their opinion would be the most decisive arguments for meeting planners to choose a particular destination or a particular convention centre. The most significant outcomes of this study were:

Critical Success Factors Destination	**Critical Success Factors Convention Centre**
Good (international) Accessibility	Design and functionality
Surrounding transport networks	Infrastructure (Physical, Electronic and service suppliers)
Variety of event and function venues	Operational excellence
Value for money	Superior client services
Quality of local amenities and ancillary facilities	Technology
Local expertise in key economic and/or scientific sectors	Flexibility
Commitment to green initiatives	Value for money offering
Strategic Marketing Alliances	Marketing
Destination Marketing	
Strong and Active Convention Bureau	
Differentiated offering	
Surrounding transport networks	

4.1 Success factors

With regard to the more immediate requirements and success factors the study shows that the top drivers in selecting a meeting location are the following:

4.1.1 Accessibility

At destination level accessibility refers to air and road connectivity to the convention city. In the case of Swakopmund, the connectivity to global capitals and other destinations is very limited. Also local transport to and from Windhoek is not very frequent. One of the most important activities to be undertaken in order to make the NICC Swakopmund successful is therefore to work on more direct flights from Johannesburg and Cape Town to Walvisbay, as well as to improve the airlift as well as ground transport between Windhoek and its airport and Swakopmund.

4.1.2 Infrastructure

A city's infrastructure plays a critical role in attracting and hosting business events, especially conventions and exhibitions. Today, this extends beyond the mere physical infrastructure to matters such as broadband and wireless internet access within the city and its meetings spaces. Namibia's infrastructure is internationally acceptable, and in this regard the same holds for the city of Swakopmund, but it would be an advantage if for instance free Wi-Fi and reasonable bandwidth could be made available throughout the destination

4.1.3 Surrounding transport links/networks

Surrounding transport links in and around the city and to the meeting venue(s) are also critical success factors for the conventions industry. This speaks to the need not only to access the NICC but other ancillary facilities in and within the city, and even in Walvisbay. Ease of getting around is a major factor in convention city selection and success.

4.1.4 Variety of accommodation and event venues

Greater choice of event venues is another critical consideration and success factor for any city wishing to be a major (international) event location. Therefore an ICC location should take into account the variety of event venues not only within the centre itself but also those provided by the surrounding areas. Some larger conventions do require more break away spaces and/or need additional venues for satellite events.

4.1.5 Value for money

Meeting planners and delegates alike are increasingly becoming conscious of the need for value for money in location selection. Thus the price: quality ratio plays an important role in making a city and its ICC successful. In large part the value for money also comes from the service orientation, the quality standards and the level of cooperation between the tourism and hospitality role players in a destination, both in good and bad economic times. An excellent collaboration and cooperation between industry role-players in Swakopmund and Walvisbay is therefore an important success factor for the proposed NICC; particularly if they want to realise increased accompanying persons figures and repeat visits.

4.1.6 Quality of local amenities and ancillary facilities

Availability and quality of local amenities and ancillary facilities such as museums, galleries, iconic monuments, restaurants, shops and other amenities enhance a cities chance of securing events and ensure its attractiveness to convention delegates. Swakopmund can use it's variety of city attractions and its reputation as holiday resort as tools in promoting the city as congress destination. One should however also be careful promoting the destination too much as a holiday place, because since the introduction of the so called "Pharma Code" medical congresses will no longer receive (financial) support from the pharmaceutical industry if they are being hosted in a destination that concentrates more on 'leisure' than on 'work'.

5. Supply and Demand Analysis

The building of the new Namibia International Convention Centre (NICC) in Swakopmund will of course have an effect on the existing conference industry in the country. The new NICC will host approximately 200 events per year of which many are not taking place in Namibia at this moment because of a lack of the right facilities. It is interesting to assess what the effect of the NICC will be on the existing conference infrastructure in the Erongo region and in the rest of the country, based on experiences with the opening of new convention facilities in other cities.

5.1 Existing and future meeting facilities and service suppliers in Namibia

At the end of this chapter some observations with regard to the existing meeting space in the Erongo region have been included, based on observations by Conference Link. Conference Link found that Namibia annually hosts many hundreds of meetings, events, exhibitions, trade fairs and congresses. Most events are of a relatively modest size with an average participation of 100 to 200 delegates. Most exhibitions are also relatively small because they frequently take place in hotels, multi-functional community centres etc. and not in purpose built centres like the NICC.

The opening of a purpose built convention centre in Namibia will of course have a positive effect on the number of international congresses in the country. The NICC will have a professional marketing department, and will hopefully be supported by the promotion and marketing efforts of a National Convention and Visitors Bureau (CVB). Africa is very much underrepresented in the world of international congresses and many international meeting planners – particularly planners of corporate meetings and incentives - look for new exciting destinations where they can expect excellent service levels at affordable rates. Swakopmund of course is clearly such a destination.

The occasional international congress that comes now to Namibia takes place in either the Windhoek Safari hotel or the Windhoek Country Club. All the new marketing effort of the NICC and the CVB will effectively result in a serious increase in interest for the destination Namibia, both from international as well as from more regional meeting planners.
Not all their meetings need to take place in the NICC, so it can be expected that other venues in Namibia will also benefit from this increased marketing activity.

Pre- and post congress satellite meetings, for instance those sponsored by pharmaceutical companies, will preferably take place in excellent quality smaller venues such as bush lodges or hotels. Board and committee meetings, sub conferences etc. also normally look for alternative venues in the same country.

The new activities taking place in the NICC will have a noticeable effect on the demand for hotel rooms in the Erongo region. This demand will seriously increase in all categories, predominantly though in the three and four star accommodations. Without any doubt the centre will draw the attention of investors and hotel management companies and when the centre realises its targets new hotel projects will very likely be initiated. The NICC will not permanently fill the capacity of all the existing and new hotels, which means that hotel capacity will become available for individual travellers and tourists. Existing and new hotels will increase their own advertising and marketing activities, for instance by cooperating with internet booking sites, which again will put Namibia in a positive daylight and which will stimulate individual tourism.

The typical service suppliers for the exhibition and congress industry are presently not very well represented in Namibia. The country for instance has only a hand full of professional organisers, and the new NICC most probably will have a serious effect on the growth of these related industries. Until now we experience often that suppliers from abroad, mainly from South Africa, are involved with the hosting of larger events in Namibia. The NICC will make it interesting for Namibian entrepreneurs to start or grow their own businesses, because for the first time there will be every year again a sufficient critical number of clients to work for.

With new event organisers in the country, who organise larger congresses and events with more international visitors than ever before, the whole industry will benefit from a move towards greater professionalism. That is good for Namibia in general and for its important tourism industry in particular.

5.2 Demand and potential demand, a gap analysis

It is estimated that there are approximately 21,000 different association meetings organised on a regular basis. Many of those meetings do not rotate or stay in one particular continent. Of the 9 944 international meetings that the International Congress and Convention Association (ICCA) analysed in 2011, no less than 5 622 have a rotation pattern that can include an African destination. This number excludes international corporate meetings and international government meetings, because ICCA specializes in international associations. According to the 2012 ICCA statistics only 302 congresses took place in Africa. 34 of the 53 African countries benefitted from these 302 meetings, with South Africa, Kenya and Morocco on top of the list with respectively 97, 29 and 23 meetings.

Namibia ranked number 15 in Africa (from # 22 in 2011) with five meetings. On the international ranking list Namibia reached position 105, shared with Benin, Barbados, El Salvador, Jamaica and the Netherlands Antilles. In Africa Uganda, Algeria, Ethiopia, Ivory Coast, Mauritius and Zambia are just some of the countries that performed better than Namibia. There is however no good reason why Namibia would not be able to achieve a bigger market share. Namibia is a political stable country with an excellent university and a good tourism infrastructure. The main reason why Namibia is not interesting enough as a destination for international meetings is clearly the fact that the country lacks a large purpose built facility to host a proper international congress with accompanying exhibitions. Of course also the fact that there is no coordinated promotion effort to market Namibia as congress destination does not really help.

5.3 Effect of a new convention centre on existing venues and the accommodation sector

Based on experiences abroad one can expect changing business patterns after the opening of the NICC. Many meetings will have a preference for the new, prestigious NICC meeting facility. But the marketing for the new NICC will work as a catalyst on the rest of the meeting facilities and the meeting industry in general. Locally and internationally there will be a growing interest in meeting in Namibia, which will have a positive effect on all venues. Particularly those venues that make sure that their facilities are timeously upgraded, in order to being able to continue to compete in the international arena of interesting events.

The NICC and more the marketing for the destination in general will have a positive effect on the meeting sector in the country and even more on the accommodation and restaurant sector. Surveys in South Africa have indicated that about 25% of all international conference delegates book a pre or post tour in combination with their congress, while another 25% decide to come back within a few years for a family holiday. That illustrates that not only the convention industry will benefit from the building of the NICC and a move towards a more professional service delivery, but that eventually the full tourism industry of the country will reap the benefits!

5.4 Swakopmund specific

Conference Link Namibia recently interviewed a representative selection of venues and organisers in Walvisbay and Swakopmund to try and assess the local industry perspective on the NICC development in Swakopmund.

At the coast organisers presently prefer to have their events at the Swakopmund Sea Side Hotel. It is a new venue with relatively good banqueting facilities. The events being organised vary between 20 and 300 participants. The local organisers actually seem to specialize in these relatively small meetings. Not one of the organisers could claim any experience with meetings exceeding 300 delegates. All events organised by local organisers were also of a local nature; they have no experience yet with the organisation of national, let alone international events. The corporate events being organised by the local organisers were relatively small with hardly more than 100 participants. Encouraging though was the fact that two of the local organisers mentioned that they were convinced that as soon as larger meeting facilities would be available in Swakopmund, for instance large enough to accommodate groups of 500 delegates, they would be able to attract these larger meetings.
Conference Link recently organised some business events at the coast with four groups between 400 and 4500 participants (the latter being a sport event).

Because presently the business events in Swakopmund and Walvisbay seem to be relatively small, there are not many challenges. Parking for instance never seems to be a problem. It also seems not to be problematic to move these smaller groups around with busses etc. However, as soon as the destination would attract more frequently also larger groups of delegates the local transport of these delegates to and from social functions and to and from their hotel accommodation could become more of a challenge.

According to the local organisers the local culture and the coastal experience are the most important unique selling propositions in marketing Swakopmund as a meeting destination of choice. Government event organisers presently perceive a daily delegate conference rate of N$ 1500 (including conference venue and accommodation) as reasonable. The months March to June and August to November are the most popular meeting periods.

Organisers expect from a new facility: being more innovative, assisting the organisers with the 'architecture' of the event. More creative and hands on! In summary: a more client focused relationship would be appreciated.

6. The Concept of the NICC Swakopmund

Plans to develop a dedicated exhibition and congress centre or International Convention Centre for Namibia have been under discussion for at least the past ten to 15 years. The government of Namibia funded a pre-feasibility study in 2010 and a full Feasibility Study in 2011. The study had a positive outcome with as main conclusion that Namibia would benefit much more from the growing market of international meetings, trade fairs and other events if the country would have a proper facility available to host these events.

More recently the initiative was taken to develop the Namibia International Convention Centre as part of a spectacular "Desert Rose" mixed use development in Swakopmund. Because of its relative remote location and limited accessibility the NICC Swakopmund will in all likelihood attract a limited number of international association congresses and national trade fairs and exhibitions. However it is predicted that the centre in Swakopmund will be very attractive for meeting segments like International as well as national corporate events and incentives. The NICC Swakopmund will also be very attractive for national and international government and government related meetings.

The mixed use development in Swakopmund will include two apartment towers which also will be suitable for short stay, a casino and a secure residential complex preliminary aiming at senior government officials and politicians as well as the international Corps Diplomatique based in Namibia. Their presence in Swakopmund obviously will be attractive for the organisers of meetings that are looking for government and political interest in their meetings.

6.1 Primary user groups

The table in chapter 9.2 illustrates that international association (NGO) congresses, international and national corporate meetings and incentives, international government meetings and International Trade Fairs will contribute more to the financial success of the NICC than any other event. Because of reasons referred to above it will not be easy to attract many more international association congresses, neither more international Trade Fairs than is assumed in the occupancy tables in chapter 8. But there are actually no limitations in the success rate that the NICC can achieve in the markets for national and international corporate meetings and incentives, as well as for international government meetings. For this reason it is extremely important that particularly these two groups of meetings feel welcome in the NICC and that the congress centre will be designed particularly with these two groups of users in mind.

For international government meetings specific requirements are important:

- A safe environment
- More than one entrance, one particularly for VIP's
- Luxury finished public spaces for receptions, welcome desks etc.
- Sufficient on-site or nearby 4 and 5 star hotel accommodation
- Large flat floor meeting space where if necessary parliamentary seating configuration (hollow square, semi-circle) can be arranged
- Auditorium for large plenary sessions, political meetings etc.
- Many smaller committee rooms, also to be used as VIP offices
- Dedicated banqueting facilities with top culinary offering
- Excellent communication facilities (free Wi-Fi and sufficient bandwidth)
- Under cover or shaded VIP parking facilities

For corporate meetings and incentives other specific requirements are important:

- Multi-functional hall space for product presentations and shows. Halls to be equipped with basic sound and light and intelligent ceiling system to allow easy build up with high end congress technique (A/V, light etc.). Minimum height of the halls 8 to 9 meters, preferably though 10 to 12 meters.
- Restaurant or banqueting hall with a kitchen with excellent reputation
- Immediately adjacent to the multifunctional hall dedicated meeting space for 100 to 300 guests for product lectures etc. For instance a small auditorium with a well-equipped stage. Preferably even with side stages for performances.
- Many multifunctional meeting spaces (formal and informal)
- Easy access to the multi-functional hall as well as to the stages of the auditoria with heavy duty transport vehicles
- 4 and 5 star hotel accommodation nearby or preferably on site
- Entertainment facilities (restaurants, special venues) in the vicinity

7. The NICC Swakopmund Venue Specifications and Concept Design

Important considerations to arrive at recommended venue specifications have amongst others been that the venue in Swakopmund would most probably attract a limited number of national and international trade fairs. However it will be possible to attract some national trade fairs because there seems to be a growing trade fair calendar in all regions in Namibia. Currently Erongo has four trade fairs per year already. Small, regional fairs will need a maximum of 1000 to 1500 sqm gross for between 30 – 60 exhibition stands. They also will have some congress components.

Other considerations were that the Swakopmund centre will probably accommodate not so many, but also not so large international association congresses. There are however relatively high expectations with regard to the numbers of (international) government related meetings and the numbers of national and SADC congresses.

The NICC in Swakopmund will even be more successful if the venue can be developed with high security standards. The so called 'Ambassadors Park' that will form part of the same development will also need a high level of security. When these security measures are in place the centre will be very well suited to host a variety of high level government meetings, both national as well as international.

A meeting segment that in all likelihood will show high numbers is the segment of corporate meetings and product launches, particularly those with an incentive character.

This expected occupancy has resulted in a requirement for exhibition space of approximately 3 000 sqm. In Swakopmund this exhibition space effectively will primarily be used to support congresses with an expo component and occasionally for trade fairs, local events and corporate events that need more space than the ball room.

The number and capacity of the break-away rooms has been defined to suit the expected size of the meetings in Swakopmund. However, an important trend in the international meeting world is that organizers are looking more and more for flexible meeting space for meetings of smaller groups of 10 to 30 participants and even for one-on-one meetings This requirement of the market will have to be served with numerous more and less formal flexible meeting spaces, both in closed smaller rooms as well as in foyers and lounges.

7.1 Venue Specifications

1. Entrance hall with reception and congress registration foyer/facility, completely separated from Casino entrance
2. Column free, covered exhibition space: 3 000 sqm gross; sub-dividable in two or preferably even three smaller halls of approximately 1 000 sqm each; height at least 8 meter, better 10 to 12 meter high. Floor load up to 30 KN/sqm for heavy machinery exhibitions. At least though the floor should be able to carry 15kN/sqm. Pattern of trenches for water, power, three phase power, data and telecommunication: every 4.5 meter. Basic sound system. Two satellite kitchens or catering outlets. (One in the halls, the other in the pre-function circulation space) Exhibition space directly and internally linked to meeting spaces.
3. Marshalling yard and goods delivery area of approximately 1 500 sqm. (Can include kitchen goods delivery) Accessibility for vans and trucks etc. to exhibition halls for stand building purposes via a large door in every hall.
4. One fixed auditorium of 800-850 seats. Perhaps a second auditorium with 350 seats. Although many congresses would be equally happy with a multifunctional a flat floor area, the availability of an Auditorium remains an explicit wish of many (international) associations so it is highly recommendable to provide such a venue. The large 800 seat Auditorium can also very well be used for concerts and other cultural and community events.
5. Ten to twelve smaller flat floor meeting rooms (break away rooms, committee rooms, etc.) some of them potentially to be combined. Suggestion for sizes: three rooms of 200 sqm each that can be subdivided into six rooms of 100 sqm each. Four syndicate rooms of 50 sqm each. One of them a luxury version to be used as VIP or board room as well as a specific luxury board room of approximately 70 sqm with a board table for 35 delegates, fitted out with state of the art equipment.
6. A separate secure luxury VIP holding room suite of approximately 70 sqm, also to be used as presidential office/secretariat/restroom.

7. Auditoria and larger rooms equipped with technical facilities, projection rooms and eight interpreter booths (only in large Auditorium). If budget allows Auditoria to be equipped with video cameras for internet streaming.
8. Lounges and foyers; sufficient public circulation space also to be used for catering purposes as well as informal and slightly more formal smaller meeting spaces for 1-on-1 meetings and smaller group get-together's.
9. Banqueting hall or ball room of approximately 1000 sqm, seating 650 dinner guests. Sub-dividable in two. Alternatively one of the three exhibition halls could be provided with more luxurious finishes (carpet, finished ceiling, and various lighting options) and this hall could become a multi-functional hall, primarily for banquets and product launches, but occasionally as exhibition space.
10. Central kitchen facility (cold, larder, hot, pastry and scullery), located in close proximity to ball room
11. Satellite kitchens throughout the building
12. Coffee shop, business centre/travel desk, ticket desk, cloak room, perhaps a-la-carte restaurant. Some or all of these facilities to be shared with Casino operation.
13. Sufficient toilet facilities; disabled toilet in each location
14. Storage space (at least 500 sqm, for many different use)
15. Building management systems and 24h-control room
16. Parking for 400 cars (number to be further investigated), to be shared with Casino
17. Dedicated outside smoking areas
18. Bus and car drop off and taxi facilities

With these facilities the NICC Swakopmund will be very flexible and capable to host a variety of meetings, such as for instance:

a. Medium sized (International) congress, up to 800 delegates plenary, three break away sessions of 200, 300 and 400, commercial expo of 1 500 sqm (up to 70 3x3 m stands) as well as 500 sqm space for poster exhibitions, ***(Main venues: 800 auditorium,, two expo halls, small auditorium and one breakaway room)***

b. Small (international) congress 300-400 delegates. ***(Main venues: large or small auditorium, one or two breakaway rooms)***

c. Product-launch 500 delegates. ***(Main venues: Ball room and one of the expo halls, large auditorium, all smaller rooms)***

d. Political or religious rally, 3000 delegates ***(Main venues: all three halls combined with loose seating)***

e. Cultural performance in tourism season ***(Main venue: large auditorium)***

f. Shareholder meeting or other corporate event 200 participants ***(Main venue: Small auditorium or one of the combined breakaway rooms)***
g. Incentive 500 participants ***(Main venue: ball room for lunches and dinners, rest probably outdoor)***
h. Community and social events such as weddings , school meetings , parent meetings etc. ***(Main venue: ball room or combination of breakaway rooms)***
i. Music concerts. ***(Main venue: Auditorium and combination of exhibition halls)***

7.2 Design and design revue

The preliminary design for the NICC Swakopmund provides almost all venues as specified above. The design shows an integrated meeting and leisure complex. Important though is that both functions are as much as possible separated. The exhibition halls should preferably be accessible both from the main foyer of the congress centre as well as directly from outside (for consumer exhibitions and other public events). It will definitely be regarded as a great advantage that the NICC Swakopmund will be able to offer hotel and self-catering apartment accommodation directly connected to the convention facilities.

7.2.1 Design Revue

* Exhibition hall should be sub-dividable into two halls of 1 400 sqm each with ceiling high sliding wall. Exhibition hall should have an entrance lobby directly accessible from the parking (in case the halls are being used without any other parts of the centre, e.g. for exhibitions)
* Exhibition hall should be at least 8 meter high, but preferably 10 to 12 meter high; although no elevations were reviewed it looks as if the exhibition halls are lower
* Exhibition hall should be accessible from 'marshalling yard'. Large doors – preferably one for every hall – should allow access to the halls for large vehicles during build up and break down
* Exhibition hall floor should at least be able to carry 15 KN/sqm
* Exhibition hall floor should have trenches with access to power, three phase power, water, data and telecommunication
* Catering outlet required in both exhibition halls or in the entrance lobby
* Ballroom sub-dividable in smaller units
* Ballroom preferably with a view! Perhaps on the Marina and/or the sea? Windows with shutters or blinds
* Ballroom floor should at least be able to carry 5 KN/sqm
* Auditorium: capacity too large. Take top sections (balcony?) away. Remaining capacity of 974 seats still relatively high.

* Auditorium seats with tables in armrest or alternative provision to create table/chair configuration
* Auditorium: stage must be accessible for vans or larger vehicles (stage sets etc.)
* Circulation spaces: create informal smaller meeting spaces and consider bringing in day light
* Board room: 350 sqm is good size for second largest meeting room. This could be a luxury flat floor configuration or a small auditorium with fixed seating and fixed stage
* Smaller meeting rooms: interesting mixture of various seizes that can work very well. Investigate possibility of bringing in daylight in (some of the) smaller meeting rooms

7.3 Trends in convention centre design

The Alliance Internationale des Palais de Congres (AIPC), the global trade association of convention centres, awards every two years a convention centre with the AIPC World's Best Convention Centre Award. The list of the ten last winners of this award – interesting perhaps as benchmark projects – is attached to this feasibility paper in ***Annexure C***. Some of the common features which characterise these world class winning convention centres are:

- Impressive design without losing sight on the functionality
- Operational excellence
- Superior client services
- State of the art technology
- Flexibility in the use of meeting spaces
- Green and environmental policies and practices

Recently the AIPC also performed a survey amongst its members to identify important present and expected future trends in the use of congress centres. The survey has been undertaken to assist AIPC members with plans for refurbishments and the development of new centres. Some of the trends that have been identified are also important for the new NICC in Swakopmund.

7.3.1 AIPC trend survey (2013)

In order of importance AIPC members have indicated which convention centre trends will play a role in the use, so also in the design, of congress centres in the future.

Wireless internet access	71%
Higher quality, high-tech meeting rooms	67%
Environment conditions (A/C, lighting, etc.)	60%
Multi-function space suitable for local community, corporate events and national trade shows	57%
Unique overall ambience, aesthetics	55%
Better signage and way-finding	54%
High quality exhibit space	50%
Efficient transportation options (to the venue)	49%
Higher-quality food	49%
High-tech, divisible lecture halls	49%
High-tech auditoriums	48%
Customer friendly food service	42%
Portable equipment (stages, risers, lighting systems on wheels)	31%
Minimized walking distances (e.g. exhibit hall to meeting rooms or food service areas)	29%
Large ballrooms with upscale finishes	24%
Increased 'food court' and/or restaurant space	20%
Ample storage areas	19%
Increased retail space	15%
Movable sidewalks (*travelators*) at the venue	11%
Increased kitchen space	9%
Additional dock space	9%
Dedicated crate storage on-site	4%

8. Portfolio of Events and occupancy calculations

8.1 Portfolio of events

For the NICC Swakopmund three occupancy scenarios were developed. The tables hereafter show these three scenarios (Real Case occupancy, Best Case occupancy and Worst Case occupancy).

In the **Real Case Scenario** it is expected that the NICC Swakopmund, from the fifth year after the opening onwards, annually will attract 186 different events.

	# Events					Real Case Scenario
	y1 WHK	**y1 SWK**	*y3 WHK*	**y3 SWK**	*y5 WHK*	**y5 SWK**
Int Association congresses	*10*	**5**	*13*	**6**	*17*	**7**
Int. Corporate mtgs & Incentives	*3*	**6**	*5*	**9**	*6*	**12**
(Int) Government meetings	*5*	**5**	*7*	**7**	*7*	**7**
National and SADC	*12*	**8**	*15*	**10**	*18*	**12**
of which with expo	*3*	**2**	*4*	**3**	*6*	**4**
Int Trade fairs	*1*	**0**	*2*	**1**	*3*	**1**
of which with mtgs	*1*	**0**	*2*	**1**	*3*	**1**
Namibia trade fairs	*2*	**4**	*3*	**5**	*4*	**6**
of which with mtgs	*2*	**2**	*3*	**3**	*4*	**4**
Consumer expos's	*4*	**0**	*6*	**2**	*7*	**2**
Banquets+weddings	*25*	**20**	*30*	**25**	*40*	**30**
Special Events	*10*	**10**	*15*	**10**	*15*	**10**
Other meetings	*75*	**40**	*100*	**50**	*125*	**75**
Nat. Corporate mtgs & Incentives	*0*	**5**	*0*	**10**	*0*	**15**
Total Events	*153*	**107**	*205*	**142**	*255*	**186**

In the **Best Case Scenario** it is expected that the NICC Swakopmund, from the fifth year after the opening onwards, annually will attract 246 different events.

# Events						Best Case Scenario
	y1 WHK	**y1 SWK**	*y3 WHK*	**y3 SWK**	*y5 WHK*	**y5 SWK**
Int Association congresses	*12*	**6**	*15*	**8**	*20*	**10**
Int. Corporate mtgs & Incentives	*4*	**8**	*6*	**12**	*8*	**16**
(Int) Government meetings	*7*	**7**	*9*	**9**	*9*	**9**
National and SADC	*15*	**10**	*18*	**13**	*22*	**15**
of which with expo	*4*	**2**	*5*	**3**	*7*	**4**
Int Trade fairs	*2*	**0**	*2*	**1**	*3*	**1**
of which with mtgs	*2*	**0**	*2*	**1**	*3*	**1**
Namibia trade fairs	*3*	**4**	*4*	**6**	*6*	**8**
of which with mtgs	*3*	**2**	*4*	**3**	*6*	**4**
Consumer expos's	*5*	**0**	*8*	**2**	*10*	**3**
Banquets+weddings	*35*	**30**	*40*	**40**	*50*	**50**
Special Events	*15*	**10**	*20*	**15**	*20*	**15**
Other meetings	*75*	**60**	*100*	**75**	*125*	**90**
Nat. Corporate mtgs & Incentives	*0*	**10**	*0*	**15**	*0*	**20**
Total Events	*182*	**149**	*233*	**203**	*289*	**246**

In the extremely conservative **Worst Case Scenario** it is expected that the NICC Swakopmund, from the fifth year after the opening onwards, annually will attract 126 different events, approximately 50% of the number of events in the Best Case Scenario

	# Events					Worst Case Scenario
	y1 WHK	**y1 SWK**	*y3 WHK*	**y3 SWK**	*y5 WHK*	**y5 SWK**
Int Association congresses	*7*	**4**	*10*	**5**	*12*	**6**
Int. Corporate mtgs & Incentives	*2*	**4**	*4*	**6**	*4*	**8**
(Int) Government meetings	*3*	**4**	*5*	**5**	*5*	**6**
National and SADC	*8*	**6**	*11*	**8**	*14*	**10**
of which with expo	*2*	**2**	*3*	**2**	*4*	**3**
Int Trade fairs	*0*	**0**	*1*	**0**	*2*	**1**
of which with mtgs	*0*	**0**	*1*	**0**	*2*	**1**
Namibia trade fairs	*1*	**4**	*2*	**4**	*3*	**4**
of which with mtgs	*1*	**2**	*2*	**2**	*3*	**2**
Consumer expos's	*3*	**0**	*4*	**1**	*5*	**2**
Banquets+weddings	*15*	**15**	*20*	**20**	*25*	**20**
Special Events	*5*	**5**	*10*	**5**	*10*	**5**
Other meetings	*50*	**25**	*70*	**35**	*90*	**50**
Nat. Corporate mtgs & Incentives	*0*	**3**	*0*	**6**	*0*	**8**
Total Events	*97*	**74**	*143*	**99**	*179*	**126**

8.2 Occupancy calculation

Based on these three different scenarios a calculation has been made of the expected occupancy of the various venues that according to the most recent architectural design for the NICC will form part of the venue.

Occupancy percentages	Expo hall	Auditorium	Board rm	Ballroom	200	100	combi	50
Real Case scenario								
year 1	16.6	13.3	27.1	27.0	7.2	17.6	24.8	20.7
year 3	27.6	18.2	39.5	37.8	10.2	24.5	34.7	28.9
year 5	33.8	22.1	50.2	47.5	12.1	30.6	42.6	34.7

Occupancy percentages	Expo hall	Auditorium	Boardrm	Ballroom	200	100	combi	50
Best Case scenario								
year 1	21.5	18.2	38.2	38.6	10.0	23.4	33.3	28.3
year 3	35.3	25.4	53.9	53.8	13.6	32.5	46.1	38.4
year 5	44.8	29.9	66.4	67.8	15.8	39.9	55.7	44.9

Occupancy percentages	Expo Hall	Auditorium	Board rm	Ballroom	200	100	combi	50
Worst Case scenario								
year 1	12.8	9.2	19.0	19.6	5.5	13.0	18.5	15.5
year 3	17.5	12.5	27.4	27.5	7.4	17.7	25.1	20.7
year 5	24.2	15.2	34.8	32.9	9.4	22.6	32.0	26.3

The tables above indicate that the Ball room and the small auditorium (or Board room of 350 sqm) will become the most popular venues of the NICC Swakopmund. The two exhibition halls will achieve an occupancy of 34% in the Real Case scenario, in the Best Case scenario this percentage increases to almost 45%. This is an important observation because in the international exhibition industry an occupancy of 50% to 55% already indicates a maximum use. The occupancy figures above indicate that the proposed configuration of the NICC will not provide a lot of growth potential (at least for exhibitions and trade fairs) beyond the level of the Best Case scenario.

A final observation should be made with regard to the large Auditorium (with almost 1000 seats). Although it is tempting because of its relatively low occupancy to consider developing a convention centre without a fixed Auditorium/Theatre, one should not forget that for many (international) organisers the presence of such an Auditorium is regarded as very important. It supports the more traditional meeting formats. The management of the Sandton Convention Centre in South Africa admits that the fact that the SCC does not have such an Auditorium is regarded as the biggest 'miss' of this centre! In Cape Town, where the CTICC has an Auditorium with 1500 seats, this room is regarded as one of the premier venues, with an annual occupancy of around 30%

9. Business Case for the NICC and Financial Forecasts

From the overviews of expected events in a Real Case, Best Case and Worst Case Scenario (see previous chapter) as well as from the Supply and Demand analysis (see chapter 5) one can conclude that in the eyes of industry experts there seems to be an interesting demand for upmarket meeting space in Namibia.
In global terms the demand for meeting space continues to grow. In a much more reduced way in the traditional markets of Europe and the United States, but in the last 10 to 15 years many new convention centres have been built in developing parts of the world, mainly in Asia. The exhibition and congress industry role players expect that for the future the growth of their industry will take place in other developing parts of the world such as Russia, Brazil and Africa.

According to the World Bank seven of the ten fastest growing economies of the world are in Africa. In 15 years' time the size of the collective economies of Africa measured in GDP will surpass the GDP of Europe. The expected growth of Africa will be fast based on the extremely young population of our continent with a median age of only 19 against the rest of the world at a median age of 34 years old.

Although - seen in the African context - Namibia's economy is relatively small, without any doubt also Namibia will benefit from these macro-economic developments. At this moment Namibia has no suitable accommodation to host medium seize national or international meetings with 300 or more attendees and exhibitions of 1000 sqm or more. More and more of these events are taking place in Africa, mainly in South Africa. Without exception all international conferences that took place in Africa in the past decade or so have been very successful. This stimulates the meeting industry to investigate other meeting options the continent has to offer.

Also the Namibian domestic economy is growing and will continue to do so in the foreseeable future. That means that also Namibian NGO organisations, companies, government departments and many more will be looking for appropriate meeting space to convene with members, launch products, train sales teams and have politically inspired debates. These meetings will to a large extent become the future clients of the NICC in Swakopmund.

9.1 Financial Forecasts

The financial paragraphs below prove that the NICC project in Swakopmund has enormous potential and that the project also from a financial perspective can be regarded as viable. This projection however is based upon the assumption that the Namibian and/or regional government will make the land for the project available at no cost and also will subsidize the capital investment in the convention centre for 100%.

In the Real Case Scenario the NICC Swakopmund will reach an operational break-even situation in the third year of its operation. In year five of its operation the centre will achieve an EBITDA of N$ 8.9 Million. In the years thereafter this result will increase from year to year with the annual inflation, because it is expected that the centre by that time will have reached a 'stable' portfolio of events. However, the occupancy statistics (see previous chapter) demonstrate that in year five and thereafter there is technically still space for growth, and it very much depends on the quality of management and of the effectiveness of the marketing for the centre if and to what extent this additional growth capacity will be used to further improve the results.

9.2 Tables

The first two tables below give an indication of the sort of events that will take place at the NICC Swakopmund. The first table shows the average numbers of participants and visitors, and – in case of exhibitions and trade fairs – also of exhibitors. The second table shows how much use the various events will make of the various venues of the NICC Swakopmund.

Mix of events at the NICC Swakopmund and their average duration							
		average delegates	average stand staff	average gross sqm	event duration days	build up & break days	total hire period
Int Association		**400**	**50**	**1400**	**4.2**	**1**	**5.2**
Int. Corp + Incentive		**250**	**50**	**500**	**3**	**1.5**	**4.5**
(Int) Government		**350**	**25**	**400**	**5**	**1**	**6**
National and SADC		**300**			**3**		**3**
	with expo		**50**	**1400**	**3**	**0.5**	**3.5**
Int Trade fairs		**1000**	**100**	**2800**	**3**	**4**	**7**
	sessions	**300**			**3**		
Namibia trade fairs		**750**	**75**	**2100**	**2**	**2**	**4**
	sessions	**100**			**2**		
Consumer expos's		**2000**	**100**	**2800**	**2**	**2**	**4**
Banquets		**300**			**1**	**0.5**	**1.5**
Special Events		**500**	**15**	**1400**	**1**	**1**	**2**
Other meetings		**40**			**1**		**1**
Nat.Corp + Incentive		**350**	**50**	**500**	**2**	**1.5**	**3.5**

Mix of events at the NICC Swakopmund and their use of various venues

	Days 1400 sqm	Days Audi 974	Days 350 sqm or small Audi	Days Ball-room	Days 200 seats	Days 100 seats	Days 50 seats
Int Association	**5.2**	**2.1**	**2.1**	**3.5**	**4**	**8**	**12**
Int. Corp + Incentive	**4.5**		**4.5**	**4.5**		**9**	**6**
(Int) Government	**2**	**2**	**3**	**2**	**5**	**5**	**20**
National and SADC		**1**	**3**	**0.5**	**3**	**6**	**6**
with expo	**3.5**						
Int Trade fairs	**14**						
sessions					**3**	**3**	**6**
Namibia trade fairs	**6**						
sessions						**3**	**4**
Consumer expos's	**8**						
Banquets				**1.5**			
Special Events	**1**	**1**	**0.5**				
Other meetings						**0.25**	**0.75**
Nat.Corp + Incentives	**3.5**	**2**	**3.5**	**2**	**2**	**2**	**4**

The tables on the next page illustrate the average daily rental rates (price level 2013) that are expected to be charged for the various venues at the NICC Swakopmund, and the average total venue hire that will be generated by the different sorts of events.

Venue rental per venue per day, base year 2013, in Namibia dollars	
NICC Swakopmund venues	**Daily rental rates**
1400 sqm expo hall	**18 500**
Audi 974 seats	**29 500**
Half ballroom or 353 sqm	**15 000**
Ball room 1600 m2	**22 000**
200 seater room (300 m2)	**10 000**
100 seater room (150 m2)	**5 500**
50 seater room (75 m2)	**2 750**
syndicate room (32 m2)	**1 400**
DCP only for 'other meetings'	**375**

Venue hire generated per event	
Events at the NICC	**Total venue hire per event in N$**
Int Association Congresses	443,500
Int Corporate Mtgs + incentives	387,750
(Int) Government meetings	351,000
National and SADC congresses	175,000
(extra for those with expo)	77,000
Int Trade fairs	308,000
extra for those with sessions	63,000
Namibia Trade fairs	132,000
extra for those with sessions	27,500
Consumer expo's	176,000
Banquets and weddings	49,500
Special Events	59,750
Other meetings	3,484
Nat Corporate events + Incentive	301,750

This second table clearly demonstrates the importance of the International Association (NGO) congresses, the International and national Corporate Meetings and Incentives, the International Government Meetings and of International Trade Fairs that normally will be accompanied by some meetings or congresses. Three more or less of any of these events will affect the bottom line of the NICC organisation either in a positive way or a negative way with an amount of approximately N$ 1 Million.

9.3 Pro Forma Financials

Based on the information above and on a bench mark comparison of average operational cost levels Pro Forma Financials have been prepared for the various scenarios. On the next page the Pro Forma Financials for the Real Case Scenario have been printed. The spread sheet illustrates that in the third year of operation a break even result can be achieved.

A summary of the expected staffing of the NICC Swakopmund as well as the expected level of remuneration can be found in ***Annexure B***.

Pro Forma Financials REAL Case Scenario NICC Swakopmund

Total Revenue	**year 1**	**year 3**	**year 5**
Venue hire	11,669,750	17,078,625	21,114,063
Food and beverage	9,335,800	13,662,900	16,891,250
Ancillary income incl syndicate rooms	2,333,950	3,415,725	4,222,813
Total Revenues base level 2013	23,339,500	34,157,250	42,228,125
Total revenues after 5% annual inflation correction	*28,369,308*	*45,773,982*	*62,390,173*
Direct Costs			
Direct cost F&B materials (30% F&B turnover)	2,800,740	4,098,870	5,067,375
Direct cost F&B casual staff (14% F&B turnover)	1,307,012	1,912,806	2,364,775
Direct cost ancillary inome (10% Ancillary turnover)	233,395	341,573	422,281
Total Direct cost base level 2013	4,341,147	6,353,249	7,854,431
Total direct cost after 5% annual inflation correction	*5,276,691*	*8,513,961*	*11,604,572*
Gross Margin	18,998,353	27,804,002	34,373,694
Gross margin after 5% annual inflation correction	*23,092,617*	*37,260,021*	*50,785,601*
Indirect Costs			
Personnel (salaries etc.)	8,342,000	8,342,000	8,342,000
Personnel other cost (10% of salary cost)	834,200	834,200	834,200
Operations general expenses	650,000	650,000	650,000
Utility costs	4,000,000	4,000,000	4,000,000
Maintenance, as % of investment of N$ 700 Million	1,400,000	2,800,000	3,500,000
Building costs (cleaning, security etc.)	3,750,000	3,750,000	3,750,000
Office costs	1,700,000	1,700,000	1,700,000
IT and telecomunication	1,450,000	1,450,000	1,450,000
Travel and entertainment	1,000,000	1,000,000	1,000,000
Marketing, PR, Promotion	2,500,000	2,500,000	2,500,000
Consultants	200,000	200,000	200,000
Bad debts (1% of total turnover)	233,395	341,573	422,281
Total Indirect Costs base level 2013	26,059,595	27,567,773	28,348,481
Total Indirect costs after 5% annual inflation correction	*31,675,601*	*36,943,452*	*41,883,618*
EBITDA REAL CASE SCENARIO	**-7,061,242**	**236,229**	**6,025,213**
EBITDA after 5% annual inflation correction	*-8,582,984*	*316,569*	*8,901,983*
Depreciation	-	-	-
Interest	-	-	-
Rates	-	-	-
Taxes	-	-	-
Net Result REAL CASE SCENARIO	**-7,061,242**	**236,229**	**6,025,213**
Net result after 5% annual inflation correction	*-8,582,984*	*316,569*	*8,901,983*

The last table of this chapter is a comparison of the EBITDA's for the Real Case Scenario for the first, third and fifth year of operation with the Best Case and the Worst Case Scenario's:

Pro Forma EBITDA NICC Swakopmund - Real Case, Best Case and Worst Case scenario's			
	Year 1	**Year 3**	**Year 5**
EBITDA REAL CASE SCENARIO	**-7,061,242**	**236,229**	**6,025,213**
EBITDA after 5% annual inflation correction	*-8,582,984*	*316,569*	*8,901,983*
EBITDA BEST CASE SCENARIO	-76,894	9,956,891	17,920,493
EBITDA after 5% annual inflation correction	*-93,465*	*13,343,186*	*26,476,730*
EBITDA WORST CASE SCENARIO	-12,080,313	-8,201,048	-3,756,955
EBITDA after 5% annual inflation correction	*-14,683,695*	*-10,990,188*	*-5,550,734*

10. Management and Operations

Because the NICC operation in Swakopmund will be compact and most probably several responsibilities can be shared with the casino- and with the hotel operation, it is recommendable to investigate if the following suggestions can be implemented:

* Appoint a central management team for the Desert Rose complex with a CEO, a Company Secretary, a Financial Manager, an HR manager, an Operations & Facilities manager, an Executive Chef and a GM Food and beverage services.
* Once this central management team is in place the 'top' structure of the organogram above can be simplified. The CEO becomes a GM, the FM becomes an accountant for the convention centre, the GM F&B services becomes a F&B manager for the convention centre and the positions of GM Operations and Facilities as well as of the HR Manager and the Company Secretary disappear completely because these functions will be absorbed by the central management team.
* It needs to be decided where the technical/maintenance executive department and where the F&B executive department should be positioned. It makes of course sense to centralize these services and to position the responsibility in the most appropriate business unit. That could very well be the convention centre, at least for the F&B department. The technical/maintenance department could be positioned in either the casino or in the convention centre or even in the hotel business unit. All three business units will eventually be a 24/7 operation.

After implementation of these synergy suggestions the actual convention centre operation will be very much slimmed down to a commercial business unit where the positions of Marketing and Sales manager (National) and the position of PR and Promotion Manager can be filled with employees at junior to middle management level because of a direct involvement in the commercial process by the General Manager Commercial Affairs. Recruiting the right candidates for this last position as well as for the GM position for the business unit will be crucial for the success of the NICC Swakopmund.

Annexure B includes a draft personnel and salary cost specification for the NICC Swakopmund operation. A provision has been made for four middle managers which could be the Banqueting Manager at the F&B department, the International Marketing and Sales Manager at the Commercial department and at the O&F department the Head Duty Management and the Manager IT, Facilities and Telecom.

11. Economic Impact and Cost-Benefit Analysis

The economic research and modelling company Strategic Economic Solutions (SES) has been asked to investigate the economic relevance of the NICC in Swakopmund. They will present their report in conjunction with this feasibility paper.

More than 80% of the international convention centres in the world have been funded completely or at least to a large extent by governments or government agencies. The reason for this government involvement is the fact that congress centres in itself are very seldom profitable entities, but most of the time they are being built because of their considerable spin-off effects.

International convention centres attract international delegates, visitors and exhibitors, and various tourism studies around the world have proven that these convention centre visitors spend approximately three times more during their stay in a destination than 'normal' leisure tourists would do. That alone is already a good reason to develop an international convention centre but there are several more important justifications to invest tax- and rate payers money in a convention centre facility.

Convention centres are known for their considerable contribution to the local, regional and national economy of a destination. This contribution to the GDP is in most cases the most important justification to build a convention centre. But also the creation of numerous low- and high end jobs as well as the generation of substantial tax contributions are normally taken into account when governments are asked to invest in a convention centre facility. Last but not at all least should be taken into consideration that an international convention centre also has the possibility to 'put a destination on the map', generating positive (international) media attention for events happening in the destination.

Strategic Economic Solutions focussed their study for the NICC Swakopmund primarily on the determination of the economic efficiency of the proposed international convention centre by means of an economic cost benefit analysis; the determination of the return on investment to the investors as a subset of this cost benefit analysis and the determination of the wider economic benefits by means of a macroeconomic analysis.

12. Conclusions and Recommendations

The development of the Namibia International Convention centre In Swakopmund will not be a project without any challenges, but they do not make the project unviable. The realistic Real Case scenario of future events that will take place in the NICC (see chapter 8) shows that a financial break-even performance can be achieved in the third year of operation of the NICC (see chapter 9) and that by year 4 the losses of the first and second operational year will have been earned back.

This Real Case scenario is based on the expectation that the centre will host almost 200 different events annually, including approximately 25 international events. However, although these forecasts are based on expert expectations, very much depends of course on the quality of the marketing and sales activities for the NICC.

The table in chapter 9.2 indicates which events will be important in terms of generating maximum revenues for the NICC: international Association Congresses, national and international Corporate meetings and national and international Government meetings. Because of the geographical position of Swakopmund (limited accessibility, relatively far from major cities in Africa) it will not be easy to improve on the expectations for International Association Congresses, but with a thorough marketing and sales effort it should be possible to achieve higher numbers in corporate and government events. An increase in these numbers can capacity-wise be absorbed by the NICC in its proposed design because the expected occupancy levels of the most popular venues will at this time not yet exceed 50% (see chapter 8.2). Such an increase will automatically have a substantial positive effect on the bottom line results of the centre.

Chapter 3 of this feasibility paper highlights some international trends in the meeting industry. It is encouraging to note that the international meeting planners are more and more interested in Africa, and that also the number of African meetings is increasing and will continue to do so. Against this perspective it makes sense that many more African countries will try and get their fair share out of this sector of the economy. There are no reasons to believe that congresses and other business events in Namibia would not be successful.

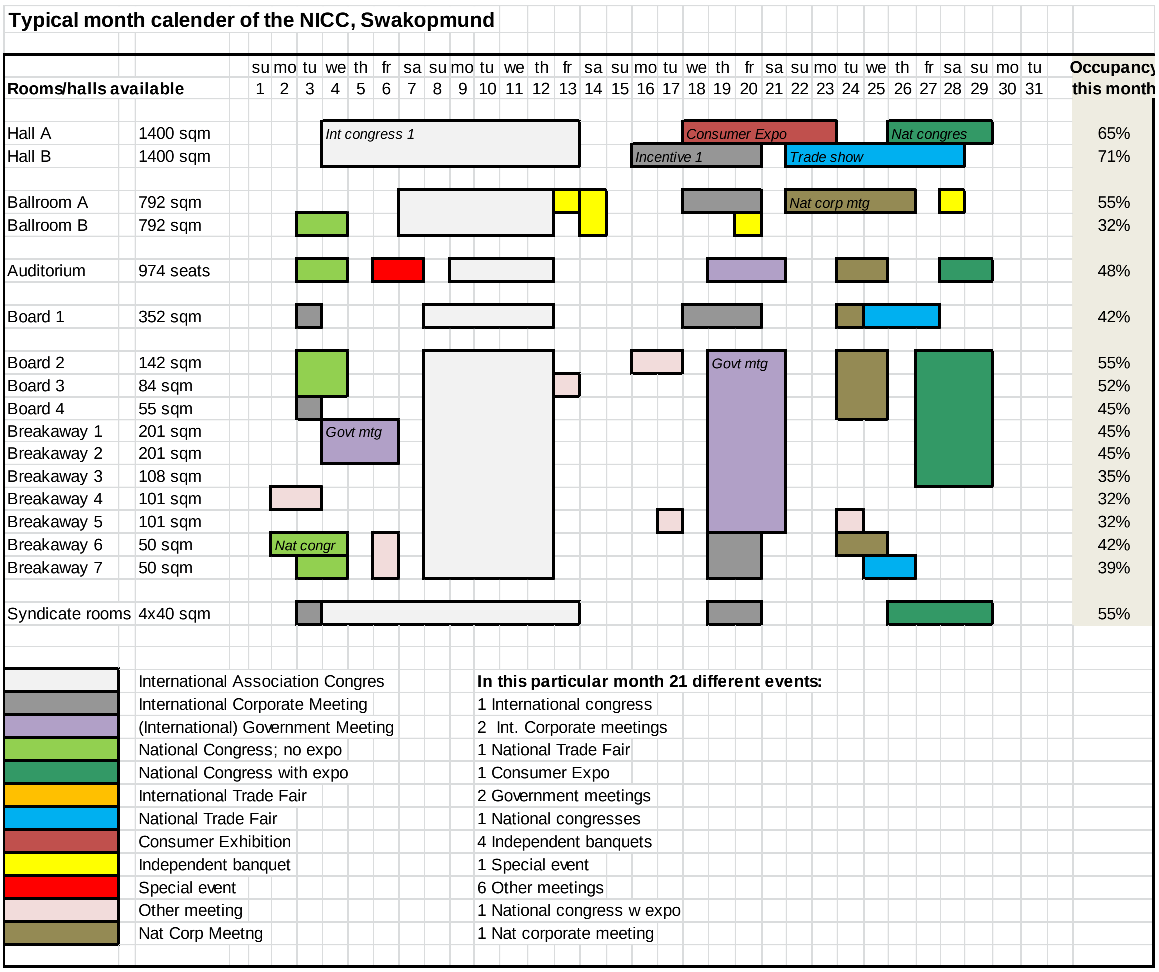
There will be many different considerations contributing to the decision to develop the new Namibia International Convention Centre in Swakopmund. The financial viability of the convention centre project is just one of those. For the government partners in the project it is probably even more relevant that the new centre will create a significant number of new direct and indirect job opportunities, that it will be responsible for a substantial contribution to the GDP and that it will help to level the typical 'seasonality' in the flow of tourists to the Namibian coast (see chapter 11 as well as the separate SES report). And finally, another important government consideration for the development of an International Congress Centre is that attracting important business events to the destination (national as well as international) will potentially 'put the destination on the map'. Important events will always attract attention of the media which can have a substantial positive spin-off effect for the destination.

Last but not least is the NICC of course important as part of the "Desert Rose" development. The convention centre will be the catalyst for the development of other parts of "Desert Rose" like the apartment and hotel accommodation, the casino as well as the recreational facilities and the residential components.

The Namibia International Convention Centre in Swakopmund will, without any doubt, experience serious competition from other (new) convention centres that are presently on the drawing board or in some cases already under construction. Some of these new convention centres are being considered for other attractive destinations in Africa. The limited accessibility of Swakopmund will be the biggest challenge in the future marketing of the new centre. In order to overcome this disadvantage as much as possible it makes sense to design the NICC in such a way that the centre's primary client groups will get a feeling as if the centre as it were has been custom made, meeting all their specific requirements! The chapters 6.1, 7.2 and 7.3 of this feasibility paper give quite a few useful recommendations in this respect.

Annexure A

Example of a future month calendar of events for NICC Swakopmund



Annexure B

Proposed staffing and remuneration for NICC Swakopmund

Personnel salary cost specification (base year 2013) NICC Swakopmund

	# Employees	monthly salaries/year	Month	Year	Total
General Manager	1	14	75,000	1,050,000	1,050,000
SeniorManagers (a)	3	14	40,000	560,000	1,680,000
Senior Managers (b)	3	14	30,000	420,000	1,260,000
Middle Managers	4	14	22,000	308,000	1,232,000
Experienced staff	10	13	9,000	117,000	1,170,000
Inexperienced staff	25	13	6,000	78,000	1,950,000
Total salary cost	**46**				**8,342,000**

(a): Commercial manager; F&B/Operations manager; Management accountant

(b) 50/50 shared with Casino: Financial Manager; HR Manager; Exec Chef

Annexure C

List of recent winners of the AIPC World's Best Convention Centre Award

Best Convention Centres 2000-2012

The following convention centres were the winners of the AIPC World's Best Convention Centre Award over the past ten years:

Year	Convention Centre
2012	Royal College of Physicians, United Kingdom
2011	Valencia Conference Centre, Spain
2010	Vancouver Convention Centre, Canada
2008	Quebec Convention Centre, Canada
2006	Congress Centre De Sofia, National Palace of Culture, Bulgaria
2004	Cairns Convention Centre, Australia
2003	Bilbao Convention Centre, Spain
2002	Vancouver Convention Centre, Canada
2001	Congress Messe Innsbruck, Austria
2000	Melbourne Convention Centre, Australia

(Source: AIPC)