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## **BASIC ASSESSMENT REPORT**

Residential Development within the  
Beachwood Golf Course Precinct



JANUARY 2014

Draft Report: Version 3.0



### **Marine and Estuarine Research**

Environmental Assessments, Biomonitoring, Research, Management & Forensic Ecology

Head Office: Office Suite 3a, 27 Moreland Drive, La Lucia Ridge

Satellite office: Suite 134, The Business Centre, Umhlanga

Postal: P.O. Box 417, Hyper by the Sea, 4053

ph: +27 (0) 31 572 2705

cell: +27 (0)82 451 8078

fax: +27 (0) 86 609 0162



marine\_estuarine\_research\_sa

Prepared by:

Marine & Estuarine Research

For

DURBAN COUNTRY CLUB TRUST

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Prepared by:

**MARINE & ESTUARINE RESEARCH**



P.O. Box 417  
Hyper-By-The- Sea  
4053

Head Office  
Office Suite 3a  
27 Moreland Drive  
La Lucia Ridge

Satellite Office:  
The Business Centre  
Suite 134  
Umhlanga Ridge

ph: (031) 572 2705  
Fax: (086) 609 0162  
cell: (082) 451 8078  
email: info@mer.co.za

## REPORT DETAILS

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Nicolette Forbes

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Appendix C: Architectural diagrams and guidelines

Appendix D (sections 1 – 4): Environmental Specialist Reports, namely:

- Appendix D1: Geotechnical report
- Appendix D2: Wetland Assessment Report
- Appendix D3: Vegetation Report
- Appendix D4: Ecological Review of the Dune Cordon Associated with the Beachwood Golf Course, Durban

Appendix E: Public Participation Report

Appendix G: Additional supporting documents (sections 1 – 6), namely:

- Appendix G1: Alternatives Report
- Appendix G2: Services Report
- Appendix G3: Stormwater Management Plan
- Appendix G4: Golf Course Layout Plan
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agriculture, environmental affairs  
& rural development

Department:  
Agriculture, Environmental Affairs  
& Rural Development  
**PROVINCE OF KWAZULU-NATAL**

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**Basic Assessment Report  
in terms of the  
Environmental Impact Assessment Regulations, 2010  
promulgated in terms of the  
National Environmental Management Act, 1998 (Act No. 107 of 1998)**

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**Kindly note that:**

1. This **basic assessment report** meets the requirements of the EIA Regulations, 2010 and is meant to streamline applications. This report is the format prescribed by the KZN Department of Agriculture, Environmental Affairs and Rural Development. Please make sure that this is the latest version.
2. The report must be typed within the spaces provided in the form. The size of the spaces provided is not indicative of the amount of information to be provided. The report is in the form of a table that can extend itself as each space is filled with text.
3. Where required, place a cross in the box you select.
4. An incomplete report will be returned to the applicant for revision.
5. The use of "not applicable" in the report must be done with circumspection because if it is used in respect of material information that is required by the competent authority for assessing the application, it will result in the rejection of the application as provided for in the regulations.
6. No faxed or e-mailed reports will be accepted.
7. The report must be compiled by an independent environmental assessment practitioner ("EAP").
8. Unless protected by law, all information in the report will become public information on receipt by the competent authority. Any interested and affected party should be provided with the information contained in this report on request, during any stage of the application process.
9. The KZN Department of Agriculture, Environmental Affairs and Rural Development may require that for specified types of activities in defined situations only parts of this report need to be completed.
10. The EAP must submit this basic assessment report for comment to all relevant State departments that administer a law relating to a matter affecting the environment. This provision is in accordance with Section 24 O (2) of the National Environmental Management Act 1998 (Act 107 of 1998) and such comments must be submitted within 40 days of such a request.
11. **Please note that this report must be handed in or posted to the District Office of the KZN Department of Agriculture, Environmental Affairs and Rural Development to which the application has been allocated (please refer to the details provided in the letter of acknowledgement for this application).**

## SECTION A: DETAILS OF THE ENVIRONMENTAL ASSESSMENT PRACTITIONER AND SPECIALISTS

### 1 NAME AND CONTACT DETAILS OF ENVIRONMENTAL ASSESSMENT PRACTITIONER (EAP)

Name and contact details of the EAP who prepared this report:

Business name of EAP:	Marine and Estuarine Research		
Physical address:	Head Office: Office Suite 3a, 27 Moreland Drive, La Lucia Ridge Satellite Office: Office 134, The Business Centre, 2 Ncondo Place, Ridgeside, Umhlanga Rocks		
Postal address:	P.O. Box 417, Hyper by the Sea		
Postal code:	4053	Cell:	082 451 8078
Telephone:	031 572 2705 / 031 830 5221	Fax:	086 609 0162
E-mail:	info@mer.co.za		

### 2 NAMES AND EXPERTISE OF REPRESENTATIVES OF THE EAP

Names and details of the expertise of each representative of the EAP involved in the preparation of this report:

Name of representative of the EAP	Education qualifications	Professional affiliations	Experience at environmental assessments (yrs)
Nicolette Tracy Forbes	M.Sc.	Zoological Society of South Africa, South African Society for Aquatic Scientists, International Society for Ecological Restoration, CERM, PFDA,	22 years
Bianca McKelvey Morgan	B.Sc. (Hons)		8 years



### 3 NAMES AND EXPERTISE OF SPECIALISTS

Names and details of the expertise of each specialist that has contributed to this report:

<b>Name of specialist</b>	<b>Education qualifications</b>	<b>Field of expertise</b>	<b>Section/s contributed to in this Basic Assessment Report</b>	<b>Title of specialist report/ s as attached in Appendix D</b>
Prof Anthony Forbes <i>Professor University of KwaZulu-Natal; Marine &amp; Estuarine Research</i>	Ph.D.	Aquatic Ecology	Sections 2.1.6, 2.1.8, 2.1.13, 2.1.14, 2.2.6, 2.2.8, 2.2.10, 2.2.11, 2.3.12	N/A
Mike Hadlow <i>Drennan Maud &amp; Partners</i>	B.Sc. (Hons)	Geotechnical investigation	Sections 2.1.2, 2.2.4	Appendix D1:
Ryan Edwards <i>GCS-SA</i>	M.Sc.	Wetland assessment	Sections 2.1.6, 2.2.2,	Appendix D2: Wetland Assessment Report
David Styles		Botany	Sections 2.1.7,2.2.9, 2.3.10	Appendix D3: Vegetation Report
Simon Bundy <i>Sustainable Development Projects</i>	M.Sc.	Coastal assessment with particular expertise in dune dynamics	Sections C6, E2.1.4, 2.1.5, 2.3.10	Appendix D4: Ecological Review of the Dune Cordon Associated with the Beachwood Golf Course, Durban
Gary Visser <i>Sivest</i>	B.Sc. Civ Eng	Civil engineering	Sections 2.2.7, 2.3.2, 2.3.3,	Appendix G2: Services Report; Appendix G3: Stormwater Management Plan
George Elphick <i>Elphick Proome Architects</i>	B.Arch	Architecture	Sections 2.3.1	Appendix G4:
Peter Matkovich <i>Golf Course Design</i>		Golf course design	Sections 2.1.1, 2.2.1,	Appendix G5: Proposed Golf Course Layout
Charles van der Spuy <i>machoy Consulting Engineers</i>	B.Eng (Hons)	Acoustic impact assessment	Sections 2.1.12	Appendix G6: Noise Impact Assessment

## SECTION B: ACTIVITY INFORMATION

### 1 PROJECT TITLE

Describe the project title as provided on the application form for environmental authorization:

Residential Development within the Beachwood Golf Course Precinct

### 2 PROJECT DESCRIPTION

Provide a detailed description of the project:

#### Project Description

The Durban Country Club, through the Durban Country Club Trust, is proposing to develop residential sites within an estate on a portion of the Beachwood Golf Course. The development comprises low density, freehold plots in the vicinity of the existing clubhouse. The residential estate is proposed to consist of:

- 18 Freehold residential sites, supporting 20 residential units on erf 3485. This erf is currently zoned Private Open Space (existing golf course);
- Realignment of existing golf course tees;
- Support services, including electricity, sewage and stormwater reticulation infrastructure;
- Internal road network and lighting;
- and will incorporate:
  - Restoration of wetland habitats;
  - Rehabilitation of vegetation pockets on the existing land;
  - Restoration of dunes damaged by existing infrastructure and use.

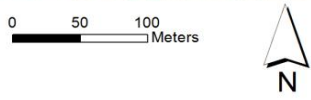
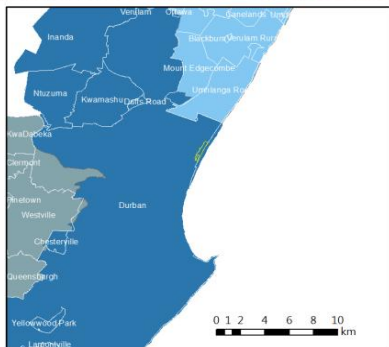
#### Project Background

The project has been proposed by the Durban Country Club Trust as a means to discharge some of its current liabilities, and thereby protect the medium- to long-term sustainability of the Beachwood Golf Course, and the contribution this makes to Durban's tourism and sporting attractions. It should be noted that maintenance and management of the golf course is linked to the management of a number of sensitive natural and semi-natural habitats on the property while the golf course functions as an open space buffer to the adjacent Beachwood Mangroves Nature Reserve.

**Location**

The proposed site is located within the Beachwood Golf Course precinct in Durban North. The proposed development involves a single property, being on a portion of the golf course property rem of Erf 3485, currently zoned Private Open Space.

**Geographic location of Beachwood Golf Course and proposed area of residential development**



**Marine and Estuarine Research**  
 Postal address:  
 PO Box 417, Hyper-by-the-sea, 4053  
 Ph: +27 31 572 2705  
 Fax: +27 86 609 0162  
 Email: coast@mer.co.za

**Legend**

- Proposed new residential plots
- Proposed Gatehouse
- Proposed changes to golf course
- Proposed dam
- Existing golf course layout
- Non-building servitude
- Area for dune restoration
- Beachwood Golf course boundary
- Boundary encroachment
- Existing Beachwood Club buildings
- Existing properties along Fairway
- Existing pond
- Existing roads

**Figure 1: Locality Map**

The proposed site is situated adjacent to sensitive environments and therefore a number of specialist reports have been developed to provide more detailed information on potential environmental impacts here.

Additional documents included in support of this document are

Appendix A: Site plans

Appendix B: Photos from the centre of the site and other relevant pictures

Appendix C: Architectural diagrams and guidelines

Appendix D (sections 1 – 4): Environmental Specialist Reports, namely:

- Geotechnical report (Appendix D1)
- Wetland Assessment Report (Appendix D2)
- Vegetation Report (Appendix D3)
- Ecological Review of the Dune Cordon Associated with the Beachwood Golf Course, Durban (Appendix D4)

Appendix E: Public Participation Report

Appendix G: Additional supporting documents (sections 1 – 6), namely:

- Alternatives Report (Appendix G1)
- Services Report (Appendix G2)
- Stormwater Management Plan (Appendix G3)
- Golf Course Layout Plan (Appendix G4)
- Acoustics Report (Appendix G5)

Appendix F: Environmental Management Plan

### 3 ACTIVITY DESCRIPTION

Describe each listed activity in Listing Notice 1 (GNR 544, 18 June 2010) or Listing Notice 3 (GNR 546, 18 June 2010) which is being applied for as per the project description:

Basic Assessment Report

<p>GN No. R544 18 June 2010</p>	<p>11</p>	<p><i>The construction of: (x) buildings exceeding 50 square metres in size; or (xi) Infrastructure or structures covering 50 square meters or more Where such construction occurs within a watercourse or within 32 metres of a watercourse, measured from the edge of the watercourse, excluding where such construction will occur behind the development setback line.</i></p> <p><b>A portion of the proposed development will be constructed within 32 metres of a watercourse. The buildings have a footprint which exceeds 50 m<sup>2</sup>. In addition, proposed sewer reticulation pipelines may cross watercourses at points along its route, requiring construction activities within watercourses and within 32 metres of watercourses.</b></p>
<p>GN No. R544 18 June 2010</p>	<p>18</p>	<p><i>The infilling or depositing of any material of more than 5 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 5 cubic metres from:</i></p> <p><i>(ii) A watercourse</i></p> <p><i>But excluding where such infilling, depositing, dredging, excavation, removal or moving</i></p> <p><b>There is the potential that in excess of 5m<sup>3</sup> of soil will be disturbed as part of this residential development and that this may be situated within 32 m of a watercourse.</b></p>
<p>GN No. R544 18 June 2010</p>	<p>24</p>	<p><i>The transformation of land bigger than 1000 square metres in size, to residential, retail, commercial, industrial or institutional use, where, at the time of the coming into effect of this Schedule <u>or thereafter</u> such land was zoned open space, conservation or had an equivalent zoning.</i></p> <p><b>The golf club and course is zoned private open space and the proposal requires an area in excess of 1000 m<sup>2</sup> to be rezoned and transformed</b></p>
<p>GN No. R546 18 June 2010 (corrected notice GN R 1159 of 10 December 2010)</p>	<p>24</p>	<p><i>The expansion of</i></p> <p><i>(c) buildings where the buildings will be expanded by 10 square metres or more in size; or</i></p> <p><i>(d) infrastructure where the infrastructure will be expanded by 10 square metres or more where such construction occurs within a watercourse or within 32 metres of a watercourse, measured from the edge of a watercourse, excluding where such construction will occur behind the development setback line.</i></p> <p><i>In KwaZulu-Natal:</i></p> <p><i>iii. Inside urban areas:</i></p> <p><i>(aa) Areas zoned for use as open space;</i></p> <p><i>(bb) Areas designated for conservation use in Spatial Development Frameworks adopted by the competent authority or zoned for a conservation purpose.</i></p> <p><b>The proposed development will consist of 16 detached freehold residences and 2 maisonette freehold plots (18 plots and 20 residence) on an area currently zoned as Private Open Space and designated for conservation as part of eThekweni Municipality's D'MOSS system.</b></p>

#### 4 FEASIBLE AND REASONABLE ALTERNATIVES

**“alternatives”**, in relation to a proposed activity, means different means of meeting the general purpose and requirements of the activity, which may include alternatives to—

- (a) the property on which or location where it is proposed to undertake the activity;
- (b) the type of activity to be undertaken;
- (c) the design or layout of the activity;
- (d) the technology to be used in the activity;
- (e) the operational aspects of the activity; and
- (f) the option of not implementing the activity.

Describe alternatives that are considered in this report. Alternatives should include a consideration of all possible means by which the purpose and need of the proposed activity could be accomplished in the specific instance taking account of the interest of the applicant in the activity. The no-go alternative must in all cases be included in the assessment phase as the baseline against which the impacts of the other alternatives are assessed. The determination of whether site or activity (including different processes etc.) or both is appropriate needs to be informed by the specific circumstances of the activity and its environment. After receipt of this report the competent authority may also request the applicant to assess additional alternatives that could possibly accomplish the purpose and need of the proposed activity if it is clear that realistic alternatives have not been considered to a reasonable extent.

[See Appendix G1 for Alternatives Report.](#)

Sections B : 5 – 15 below should be completed for each alternative.

## 5 ACTIVITY POSITION

Indicate the position of the activity using the latitude and longitude of the centre point of the site for each alternative site. The co-ordinates should be in degrees, minutes and seconds. List alternative sites where applicable.

Alternative:	Latitude (S):			Longitude (E):		
	°	'	"	°	'	"
Alternative S1 (preferred or only site alternative)	29°	46'	55.8"	31°	03'	00.5"

For route alternatives that are longer than 500m, please provide an addendum with coordinates taken every 500m along the route for each alternative alignment.

## 6 PHYSICAL SIZE OF THE ACTIVITY

Indicate the physical size of the preferred activity/technology as well as alternative activities/technologies (footprints):

Alternative:	Size of the activity:
Alternative A1 (preferred or only site alternative)	24 460 m <sup>2</sup>

Indicate the size of the alternative sites or servitudes (within which the above footprints will occur):

Alternative:	Size of the Site/servitude:
Alternative A1 (preferred activity alternative)	430 330 m <sup>2</sup>

## 7 SITE ACCESS

Does ready access to the site exist?

YES	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

If "NO", what is the distance over which a new access road will be built

### Describe the type of access road planned:

The proposed site can easily be accessed from the existing road infrastructure in the area, and is most usually approached from the M4 between Durban and Umhlanga (off exit 4 to Broadway/Durban North). However, the proposed development will require the development internal roads (approximate total length of 260 m), across previously transformed areas, through the proposed development. The roads within the proposed development will be 5 m wide, with a 1.5 m grassed verge, (total road servitude 8 m), and surfaced with a block or cobble paving. The road design includes appropriate stormwater control measures. A description of the typical road design specifications for the proposed development can be found in the Services Report (Appendix G2).

Include the position of the access road on the site plan and required map, as well as an indication of the road in relation to the site.

See attached map in Appendix A, and road design specifications in the Services Report (Appendix G2).

## 8 SITE OR ROUTE PLAN

A detailed site or route plan(s) must be prepared for each alternative site or alternative activity. It must be attached as Appendix A to this report.

The site or route plans must indicate the following:

- 8.1. the scale of the plan which must be at least a scale of 1:500;
- 8.2. the property boundaries and numbers/ erf/ farm numbers of all adjoining properties of the site;
- 8.3. the current land use as well as the land use zoning of each of the properties adjoining the site or sites;
- 8.4. the exact position of each element of the application as well as any other structures on the site;
- 8.5. the position of services, including electricity supply cables (indicate above or underground), water supply pipelines, boreholes, street lights, sewage pipelines, storm water infrastructure and telecommunication infrastructure;
- 8.6. walls and fencing including details of the height and construction material;
- 8.7. servitudes indicating the purpose of the servitude;
- 8.8. sensitive environmental elements within 100 metres of the site or sites including (but not limited thereto):
  - rivers, streams, drainage lines or wetlands;
  - the 1:100 year flood line (where available or where it is required by DWA);
  - ridges;
  - cultural and historical features;
  - areas with indigenous vegetation including protected plant species (even if it is degraded or infested with alien species);
- 8.9. for gentle slopes the 1 metre contour intervals must be indicated on the plan and whenever the slope of the site exceeds 1:10, the 500mm contours must be indicated on the plan; and
- 8.10. the positions from where photographs of the site were taken.

See attached map in Appendix A

## 9 SITE PHOTOGRAPHS

Colour photographs from the centre of the site must be taken in at least the eight major compass directions with a description of each photograph. Photographs must be attached under Appendix B to this report. It must be supplemented with additional photographs of relevant features on the site, if applicable.

Appendix B contains photos from the centre of the site as well as other relevant photographs.



## 10 FACILITY ILLUSTRATION

A detailed illustration of the facility must be provided at a scale of 1:200 and attached to this report as Appendix C. The illustrations must be to scale and must represent a realistic image of the planned activity/ies.

Appendix C contains the architectural diagrams and a full description of the architectural details are included in the Architectural Report (Appendix G4).

## 11 ACTIVITY MOTIVATION

### 11.1 Socio-economic value of the activity

What is the expected capital value of the activity on completion ?	R 35,000,000.00
What is the expected yearly income that will be generated by or as a result of the activity?	R 2,120,000.00
Will the activity contribute to service infrastructure?	YES
Is the activity a public amenity?	NO
How many new employment opportunities will be created in the development phase of the activity?	100
What is the expected value of the employment opportunities during the development phase?	Approximately 20% of the capital value
What percentage of this will accrue to previously disadvantaged individuals ?	80 %
How many permanent new employment opportunities will be created during the operational phase of the activity?	35
What is the expected current value of the employment opportunities during the first 10 years?	Approximately 20% of the capital value plus 15% for maintenance
What percentage of this will accrue to previously disadvantaged individuals?	80 %

## 11.2 Need and desirability of the activity

**Motivate and explain the need and desirability of the activity (including demand for the activity):**

### Development motivation

The no-go alternative presents the environmental baseline against which the potential impacts of the proposed development can be measured in order to determine their significance, and therefore the desirability of the proposed development.

No residential development on the golf course would have significant negative consequences for the Durban Country Club that relates directly to the ability of the Club to discharge its current liabilities. This would place the medium to long-term survival of the existing Beachwood Golf Course and the Durban Country Club at risk (both of these are significant components of Durban's tourism and sporting attractions). Should the Durban Country Club be unable to proceed with the proposal on the Beachwood Golf Course, the Club would in all likelihood have to sell the entire property to begin discharging the current debt. There is then the potential for a complete loss of the entire open space, golf course facility and natural areas on the property. In addition to avoiding any potential impacts from the proposed development, such as the loss of open space, this option would also negate the opportunities for rehabilitation of natural habitats that have been identified through the project.

**Indicate any benefits that the activity will have for society in general:**

There would be a small amount of job creation within the core city environment by both the building phase and operational phase, rehabilitation of some habitats will contribute to the biodiversity value of the DMOSS system and the ongoing survival of the Durban Country Club and its facilities which include the Beachwood Course.

**Indicate any benefits that the activity will have for the local communities where the activity will be located:**

- Provide additional property ownership in an area which appears to be in demand,
- Incorporation of the existing houses into a larger secure estate.

## 12 APPLICABLE LEGISLATION, POLICIES AND/OR GUIDELINES

List all legislation, policies and/or guidelines of any sphere of government that are relevant to the application as contemplated in the EIA regulations, if applicable:

<b>Title of legislation, policy or guideline:</b>	<b>Administering authority:</b>	<b>Date:</b>
National Environmental Management Act No. 107 of 1998 (NEMA)	DAEA	2010
National Environmental Management: Integrated	DAEA	2008

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Coastal Management Act No. 24 of 2008		
National Forest Act No. 84 of 1998	DAFF	1998
Policy Principles and Guidelines for Co-operative Control of Development Affecting Natural Forests in KwaZulu-Natal	DAFF-DAEA-Ezemvelo KZN Wildlife	2009
Guideline: Biodiversity Impact Assessment in KwaZulu-Natal (Ezemvelo KZN Wildlife, 2013)	Ezemvelo KZN Wildlife	2013
Occupational Health and Safety Act		
South African National Heritage Resources Act No. 25 of 1999	Amafa KwaZulu-Natali	1999
National Water Act No. 36 of 1998	Department of Water Affairs	1998
All relevant provincial and municipal bylaws		

### 13 WASTE, EFFLUENT, EMISSION AND NOISE MANAGEMENT

#### 13.1 Solid waste management

Will the activity produce solid construction waste during the construction/initiation phase?

YES

If "YES", what estimated quantity will be produced per month?

8 – 16 m<sup>3</sup>

How will the construction solid waste be disposed of? (describe)

All construction related waste materials will be taken to an approved disposal site, as approved by eThekweni Municipality.

Where will the construction solid waste be disposed of? (provide details of landfill site)

Only permitted sites will be used for the disposal of solid waste generated during the construction phase. General waste will most likely be disposed of at the Bisasar Road site in Springfield with alternative sites being Buffelsdraai, La Mercy, or Mariannahill. Any low hazardous waste generated during construction will be disposed of at the Shongweni site. Rubble from the construction and post-construction rehabilitation phase may also be disposed of at the Shallcross site (near Chatsworth). Any hazardous waste would need to be disposed of at the KwaDukuza landfill site (DCLM).

Will the activity produce solid waste during its operational phase?

YES

If "YES", what estimated quantity will be produced per month?

17.3 m<sup>3</sup>

How will the solid waste be disposed of? (provide details of landfill site)

Solid waste will be collected by the Durban Solid Waste to be disposed of at the designated landfill site. eThekweni Municipality provides a solid waste removal service in the adjacent residential areas that can be extended to included the proposed development. The proposed development will have a designated refuse collection site which will accommodate typical municipal refuse collection trucks. Services Report (Appendix G2).

Where will the solid waste be disposed if it does not feed into a municipal waste stream (describe)?

N/A

If the solid waste (construction or operational phases) will not be disposed of in a registered landfill site or be taken up in a municipal waste stream, then the applicant should consult with the competent authority to determine the further requirements of the application.

Can any part of the solid waste be classified as hazardous in terms of the relevant legislation?

NO

**If "YES", contact the KZN Department of Agriculture, Environmental Affairs and Rural Development to obtain clarity regarding the process requirements for your application.**

Is the activity that is being applied for a solid waste handling or treatment

NO

facility?

**If "YES", contact the KZN Department of Agriculture, Environmental Affairs and Rural Development to obtain clarity regarding the process requirements for your application.**

**13.2 Liquid effluent**

Will the activity produce effluent, other than normal sewage, that will be disposed of in a municipal sewage system?

	NO

If "YES", what estimated quantity will be produced per month?

Will the activity produce any effluent that will be treated and/or disposed of on site?

	NO
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**If "YES", contact the KZN Department of Agriculture, Environmental Affairs and Rural Development to obtain clarity regarding the process requirements for your application.**

Will the activity produce effluent that will be treated and/or disposed of at another facility?

	NO
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If "YES", provide the particulars of the facility:

Facility name:  
Contact person:  
Postal address:  
Postal code:  
Telephone:  
E-mail:

	Cell:
	Fax:

Describe the measures that will be taken to ensure the optimal reuse or recycling of waste water, if any:

**13.3 Emissions into the atmosphere**

Will the activity release emissions into the atmosphere?

YES	
	NO

If "YES", is it controlled by any legislation of any sphere of government?

**If "YES", contact the KZN Department of Agriculture, Environmental Affairs and Rural Development to obtain clarity regarding the process requirements for your application.**

If "NO", describe the emissions in terms of type and concentration:

The construction phase of the proposed development will potentially result in short-term, local impacts on air quality, as a result of dust, and construction vehicle emissions. A

number of mitigatory measures have been included in the Environmental Management Programme (Appendix F) to minimize these potential impacts.

### 13.4 Generation of noise

Will the activity generate noise?

YES

If "YES", is it controlled by any legislation of any sphere of government?

NO

**If "YES", the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.**

If "NO", describe the noise in terms of type and level:

The site preparation and construction related activities are likely to produce some noise for the duration of this phase of the proposed development. However, this noise impact is anticipated to be short term, and mitigatory measures can be applied to minimise potential impacts.

## 14 WATER USE

Please indicate the source(s) of water that will be used for the activity by ticking the appropriate box(es):

municipal

If water is to be extracted from groundwater, river, stream, dam, lake or any other natural feature, please indicate the volume that will be extracted per month:

Does the activity require a water use permit from the Department of Water Affairs?

NO

If "YES", please submit the necessary application to the Department of Water Affairs and attach proof thereof to this report.

## 15 ENERGY EFFICIENCY

Describe the design measures, if any, that have been taken to ensure that the activity is energy efficient:

As per the architectural guidelines for the proposed development (Appendix C), the principle of energy consumption reduction and water conservation necessarily require integration into the design of the houses in this residential estate. The following considerations are to be applied in each house:

- The use of concealed water tanks collecting rain water from all roofs and potentially hardened surfaces for reuse as landscaping irrigation;
- The use of grey water from sanitary fittings and Heating, Ventilation and Air Conditioning (HVAC) units for reuse as landscaping irrigation;
- The application of insulated roofs to reduce consumption of electricity in HVAC installations;
- The application of sun control to reduce passive thermal gain to fenestration.

Describe how alternative energy sources have been taken into account or been built into the design of the activity, if any:

As per the architectural guidelines for the proposed development (Appendix C), heat pumps will be used to provide at least half of the hot water requirements for each house.

## SECTION C: SITE / AREA / PROPERTY DESCRIPTION

**Important notes:**

For linear activities (pipelines, etc) as well as activities that cover very large sites, it may be necessary to complete this section for each part of the site that has a significantly different environment. In such cases please complete copies of Section C and indicate the area, which is covered by each copy No. on the Site Plan.

### 1 GRADIENT OF THE SITE

Indicate the general gradient of the site.

**Alternative S1:**

Flat	
------	--

### 2 LOCATION IN LANDSCAPE

Indicate the landform(s) that best describes the site **(Please cross the appropriate box)**.

**Alternative S1 (preferred site):**

	Undulating plain/low hills	Dune	
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**3 GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE**

Has a specialist been consulted for the completion of this section? YES

If "YES", please complete the following:

Name of the specialist	Mike Hadlow of Drennan, Maud & Partners, Consulting Civil Engineers and Engineering Geologists		
Qualification(s) of the specialist:	B.Sc (Hons)		
Postal address:	PO Box 30464, Mayville		
Postal code:	4058		
Telephone	031 201 8992	Cell:	
Email	dmp@iafrica.com	Fax:	031 201 7920

Are there any rare or endangered flora or fauna species (including red data species) present on any of the alternative sites? NO

If "YES", specify and explain:

Are there any special or sensitive habitats or other natural features present on any of the alternative sites? YES

If "YES", specify and explain:

Are any further specialist studies recommended by the specialist? NO

If "YES", specify:

If "YES", is such a report(s) attached in Appendix D1? YES

Signature of specialist:  Date:

Is the site(s) located on any of the following (cross the appropriate boxes)?

	Alternative S1:	
Shallow water table (less than 1.5m deep)	YES <input type="checkbox"/>	<input type="checkbox"/>
Dolomite, sinkhole or doline areas	<input type="checkbox"/>	NO <input type="checkbox"/>
Seasonally wet soils (often close to water bodies)	YES <input type="checkbox"/>	<input type="checkbox"/>
Unstable rocky slopes or steep slopes with loose soil	<input type="checkbox"/>	NO <input type="checkbox"/>
Dispersive soils (soils that dissolve in water)	<input type="checkbox"/>	NO <input type="checkbox"/>
Soils with high clay content (clay fraction more than 40%)	<input type="checkbox"/>	NO <input type="checkbox"/>
Any other unstable soil or geological feature	<input type="checkbox"/>	NO <input type="checkbox"/>
An area sensitive to erosion	YES <input type="checkbox"/>	<input type="checkbox"/>

If you are unsure about any of the above or if you are concerned that any of the above aspects may be an issue of concern in the application, an appropriate specialist should be appointed to assist in the completion of this section. (Information in respect of the above will often be available as part of the project information or at the planning sections of local authorities. Where it exists, the 1:50 000 scale Regional Geotechnical Maps prepared by the Council for Geo Science may also be consulted).

#### 4 WETLANDS

Has a specialist been consulted for the completion of this section?  YES

If "YES", please complete the following:

Name of the specialist	Ryan Edwards		
Qualification(s) of the specialist:	M.Sc. (Environmental Science)		
Postal address:	P.O. Box 819, Gillitts		
Postal code:	3603		
Telephone	031 764 7130	Cell:	
Email	ryane@gcs-sa.biz	Fax:	031 764 7140

Are there any rare or endangered flora or fauna species (including red data species) present on any of the alternative sites?  YES

If "YES", specify and explain:

Are there any special or sensitive habitats or other natural features present on any of the alternative sites?  YES

If "YES", specify and explain:

Are any further specialist studies recommended by the specialist?  NO

If "YES", specify:

If "YES", is such a report(s) attached in Appendix D2  YES

Signature of specialist:  Date:

The location of all identified rare or endangered species or other elements should be accurately indicated on the site plan(s).

Natural veld - good condition <sup>E</sup>	Natural veld with scattered aliens <sup>E</sup>	Natural veld with heavy alien infestation <sup>E</sup>	Veld dominated by alien species <sup>E</sup>	Gardens
Sport field	<input checked="" type="checkbox"/>	Paved surface	Building or other structure	Bare soil

If any of the boxes marked with an "E" is ticked, please consult an appropriate specialist to assist in the completion of this section if the environmental assessment practitioner doesn't have the necessary expertise.

**5 VEGETATION**

Has a specialist been consulted for the completion of this section?

YES

If "YES", please complete the following:

Name of the specialist	David Styles		
Qualification(s) of the specialist:			
Postal address:	PO Box 5003, Musgrave		
Postal code:	4062		
Telephone		Cell:	082 555 8649
Email	davidstyles@vodamail.co.za	Fax:	082 131 555 8649

Are there any rare or endangered flora or fauna species (including red data species) present on any of the alternative sites?

YES

If "YES", specify and explain:

Three species occur within the footprint of the preferred site and at a number of other locations, which are on the National Protected Tree Species List namely:  
*Mimusops caffra*  
*Sideroxylon inerme*  
*Barringtonia racemosa*

Are there any special or sensitive habitats or other natural features present on any of the alternative sites

YES

If "YES", specify and explain:

Delineation of the wetlands revealed functional systems within the footprint of the proposed site.

Signature of specialist:



Date:

20/12/2013

The location of all identified rare or endangered species or other elements should be accurately indicated on the site plan(s).

Natural veld - good condition <sup>E</sup>	Natural veld with scattered aliens <sup>E</sup>	Natural veld with heavy alien infestation <sup>E</sup>	Veld dominated by alien species <sup>E</sup>	Gardens
Sport field		Paved surface	Building or other structure	Bare soil

If any of the boxes marked with an "E" is ticked, please consult an appropriate specialist to assist in the completion of this section if the environmental assessment practitioner doesn't have the necessary expertise.

**6 DUNE CORDON**

Has a specialist been consulted for the completion of this section?  YES

If "YES", please complete the following:

Name of the specialist	Simon Bundy		
Qualification(s) of the specialist:	MSc		
Postal address:	P O Box 1016, Ballito		
Postal code:	4420		
Telephone	032 9460685	Cell:	082 446 4847
Email	simon@ecocoast.co.za	Fax:	032 946 0784

Are there any rare or endangered flora or fauna species (including red data species) present on any of the alternative sites?  NO

If "YES", specify and explain:

Are there any special or sensitive habitats or other natural features present on any of the alternative sites?  NO

If "YES", specify and explain:

Are any further specialist studies recommended by the specialist?  NO

If "YES", specify:

If "YES", is such a report(s) attached in Appendix D?  NO

Signature of specialist:   
Date:

The location of all identified rare or endangered species or other elements should be accurately indicated on the site plan(s).

Natural veld - good condition <sup>E</sup>	Natural veld with scattered aliens <sup>E</sup>	Natural veld with heavy alien infestation <sup>E</sup>	Veld dominated by alien species <sup>E</sup>	Gardens
Sport field	<input checked="" type="checkbox"/>	Paved surface	Building or other structure	Bare soil

If any of the boxes marked with an "E" is ticked, please consult an appropriate specialist to assist in the completion of this section if the environmental assessment practitioner doesn't have the necessary expertise.

**7 ZOOLOGIST AND MANGROVE SPECIALIST**

Has a specialist been consulted for the completion of this section?  YES

If "YES", please complete the following:

Name of the specialist	ANTHONY		
Qualification(s) of the specialist:	Ph.D.		
Postal address:	P O Box 417, Hyper by the Sea		
Postal code:	4420		
Telephone	031 572 2705	Cell:	082 451 8078
Email	ticky@mer.co.za	Fax:	086 609 0162

Are there any rare or endangered flora or fauna species (including red data species) present on any of the alternative sites?  YES  NO

If "YES", specify and explain:  YES  NO  
 Mangrove tree *Bruguiera gymnorhiza* found on the larger golf course property

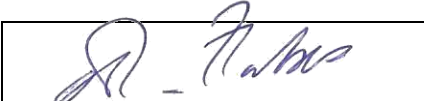
Are there any special or sensitive habitats or other natural features present on any of the alternative sites?  YES  NO

If "YES", specify and explain:  YES  NO

Are any further specialist studies recommended by the specialist?  YES  NO

If "YES", specify:  YES  NO

If "YES", is such a report(s) attached in Appendix D?  YES  NO

Signature of specialist:  Date: 20/12/2013

The location of all identified rare or endangered species or other elements should be accurately indicated on the site plan(s).

Natural veld - good condition <sup>E</sup>	Natural veld with scattered aliens <sup>E</sup>	Natural veld with heavy alien infestation <sup>E</sup>	Veld dominated by alien species <sup>E</sup>	Gardens
Sport field	<input checked="" type="checkbox"/>	Paved surface	Building or other structure	Bare soil

If any of the boxes marked with an "E" is ticked, please consult an appropriate specialist to assist in the completion of this section if the environmental assessment practitioner doesn't have the necessary expertise.

## 8 LAND USE CHARACTER OF SURROUNDING AREA

Cross the land uses and/or prominent features that currently occur within a 500m radius of the site and give a description of how this influences the application or may be impacted upon by the application:

Land use character			Description
Natural area	YES		The proposed site includes areas of natural and semi-natural vegetation, and the golf course is adjacent to both the Beachwood Mangroves Nature Reserve (a proclaimed protected area), and the beach, which includes natural dune vegetation.
Low density residential	YES		The proposed site is located within a low density residential area, with a large number of residential units currently sharing a common boundary with the Beachwood Golf Course.
Medium density residential		NO	
High density residential		NO	
Informal residential		NO	
Retail commercial & warehousing		NO	
Light industrial		NO	
Medium industrial		NO	
Heavy industrial		NO	
Power station		NO	
Office/consulting room	YES		A number of adjacent properties support commercial businesses.
Military or police base/station/compound	YES		The Durban North police station is within 500m of the site.
Spoil heap or slimes dam		NO	
Quarry, sand or borrow pit		NO	
Dam or reservoir	YES		There are a number of dams on the Beachwood Golf Course, established to manage irrigation and stormwater runoff from the site, as well as being incorporated in the design of the golf course.
Hospital/medical centre		NO	
School/ creche	YES		There are several primary and secondary schools in the area, the closest being Northlands Primary and Pre-primary School, Durban North Junior Primary, Knightsbridge Collegiate primary school, and Oaklands

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			College.
Tertiary education facility		NO	
Church		NO	
Old age home		NO	
Sewage treatment plant		NO	
Train station or shunting yard		NO	
Railway line		NO	
Major road (4 lanes or more)	YES		The proposed site is in close proximity to and is easily accessed off the M4 highway.
Airport		NO	Although the proposed site is not located within 500m of an airport, the property on which the proposed site is located (Erf 3485) shares a boundary (in the north) with the Virginia Airport.
Harbour		NO	
Sport facilities	YES		Golf course; parkland in Fairway; uMngeni Estuary; Model Yacht Pond
Golf course	YES		Beachwood Golf Course
Polo fields		NO	
Filling station		NO	
Landfill or waste treatment site		NO	
Plantation		NO	
Agriculture		NO	
River, stream or wetland	YES		The golf course on which the proposed site is located shares a boundary with the Beachwood Mangroves Nature Reserve, which is an integral part of the uMngeni Estuary. The proposed development site is not immediately adjacent to the mangroves or estuary, and falls well outside the delineated estuarine footprint as mapped by eThekweni Municipality and SANBI.
Nature conservation area	YES		The property on which the proposed site is located shares a boundary with the Beachwood Mangroves Nature Reserve, a proclaimed provincial protected area. The Reserve is also included in the eThekweni Municipality's Durban Metropolitan Open Space System, as is the adjacent golf course property including the proposed site.
Mountain, hill or ridge		NO	
Museum		NO	
Historical building		NO	
Protected Area	YES		The property on which the proposed site is

			located shares a boundary with the Beachwood Mangroves Nature Reserve, a proclaimed provincial protected area.
Graveyard		NO	
Archaeological site		NO	The proposal has been registered with Amafa KwaZulu-Natali and comment has been requested .
Other land uses (describe)		NO	

## 9 CULTURAL/ HISTORICAL FEATURES

Are there any signs of culturally or historically significant elements, as defined in section 2 of the National Heritage Resources Act, 1999, (Act No. 25 of 1999), including archaeological or palaeontological sites, on or within 20 m of the site?

	NO
--	----

If "YES", contact a specialist recommended by AMAFA to conduct a heritage impact assessment. The heritage impact assessment must be attached as an appendix to this report.

Briefly explain the recommendations of the specialist:

--

Will any building or structure older than 60 years be affected in any way?

	NO
--	----

Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999) ?

	NO
--	----

If "YES", please submit the necessary application to AMAFA and attach proof thereof to this report.

Please note that an application for comment by Amafa KwaZulu-Natali has been made via the SAHRIS on-line application process, in order to confirm that there are no cultural/historical features of potential concern that may be affected by the proposed development.



## SECTION D: PUBLIC PARTICIPATION

### 1 ADVERTISEMENT

The person conducting a public participation process must take into account any guidelines applicable to public participation as contemplated in section 24J of the Act and must give notice to all potential interested and affected parties of the application which is subjected to public participation by—

- (a) fixing a notice board (of a size at least 60cm by 42cm; and must display the required information in lettering and in a format as may be determined by the competent authority) at a place conspicuous to the public at the boundary or on the fence of—
  - (i) the site where the activity to which the application relates is or is to be undertaken; and
  - (ii) any alternative site mentioned in the application;
- (b) giving written notice to—
  - (i) the owner or person in control of that land if the applicant is not the owner or person in control of the land;
  - (ii) the occupiers of the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken;
  - (iii) owners and occupiers of land adjacent to the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken;
  - (iv) the municipal councillor of the ward in which the site or alternative site is situated and any organisation of ratepayers that represent the community in the area;
  - (v) the local and district municipality which has jurisdiction in the area;
  - (vi) any organ of state having jurisdiction in respect of any aspect of the activity (as identified in the application form for the environmental authorization of this project); and
  - (vii) any other party as required by the competent authority;
- (c) placing an advertisement in—
  - (i) one local newspaper; or
  - (ii) any official *Gazette* that is published specifically for the purpose of providing public notice of applications or other submissions made in terms of these Regulations;
- (d) placing an advertisement in at least one provincial newspaper or national newspaper, if the activity has or may have an impact that extends beyond the boundaries of the metropolitan or district municipality in which it is or will be undertaken: Provided that this paragraph need not be complied with if an advertisement has been placed in an official *Gazette* referred to in subregulation 54(c)(ii); and
- (e) using reasonable alternative methods, as agreed to by the competent authority, in those instances where a person is desiring of but unable to participate in the process due to—
  - (i) illiteracy;
  - (ii) disability; or
  - (iii) any other disadvantage.

## 2 CONTENT OF ADVERTISEMENTS AND NOTICES

A notice board, advertisement or notices must:

- (a) indicate the details of the application which is subjected to public participation; and
- (b) state—
  - (i) that an application for environmental authorization has been submitted to the KZN Department of Agriculture, Environmental Affairs and Rural Development in terms of the EIA Regulations, 2010;
  - (ii) a brief project description that includes the nature and location of the activity to which the application relates;
  - (iii) where further information on the application can be obtained; and
  - (iv) the manner in which and the person to whom representations in respect of the application may be made.

## 3 PLACEMENT OF ADVERTISEMENTS AND NOTICES

Where the proposed activity may have impacts that extend beyond the municipal area where it is located, a notice must be placed in at least one provincial newspaper or national newspaper, indicating that an application will be submitted to the competent authority in terms of these regulations, the nature and location of the activity, where further information on the proposed activity can be obtained and the manner in which representations in respect of the application can be made, unless a notice has been placed in any *Gazette* that is published specifically for the purpose of providing notice to the public of applications made in terms of the EIA regulations.

Advertisements and notices must make provision for all alternatives.

## 4 DETERMINATION OF APPROPRIATE PROCESS

The EAP must ensure that the public participation process is according to that prescribed in regulation 54 of the EIA Regulations, 2010, but may deviate from the requirements of subregulation 54(2) in the manner agreed by the KZN Department of Agriculture, Environmental Affairs and Rural Development as appropriate for this application. Special attention should be given to the involvement of local community structures such as Ward Committees, ratepayers associations and traditional authorities where appropriate.

Please note that public concerns that emerge at a later stage that should have been addressed may cause the competent authority to withdraw any authorisation it may have issued if it becomes apparent that the public participation process was inadequate.

## 5 COMMENTS AND RESPONSE REPORT

The practitioner must record all comments and respond to each comment of the public before this application is submitted. The comments and responses must be captured in a comments and response report as prescribed in the EIA regulations (regulation 57 in the EIA

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Regulations, 2010) and be attached as Appendix E to this report.

## 6 PARTICIPATION BY DISTRICT, LOCAL AND TRADITIONAL AUTHORITIES

District, local and traditional authorities (where applicable) are all key interested and affected parties in each application and no decision on any application will be made before the relevant local authority is provided with the opportunity to give input. The planning and the environmental sections of the local authority must be informed of this application and provided with an opportunity to comment.

Has any comment been received from the district municipality ?

YES

If "YES", briefly describe the feedback below (also attach any correspondence to and from this authority with regard to this application):

Preliminary comments were made by the eThekweni Metropolitan Municipality on 16 September 2013.

The Municipality's letter included comment from the following eThekweni Departments:

- Electricity
- Environmental Planning and Climate Protection
- Framework Planning Branch
- Transport Authority
- Environmental Health
- Durban Solid Waste
- Geotechnical Engineering Branch
- Water and Sanitation
- Coastal, Stormwater and Catchment Management
- Disaster Management
- Fire Safety

In addition, written confirmation has been received from eThekweni Municipality confirming the capacity for the provision of bulk services (see Appendix G2), including:

- Bulk water supply (Water and Sanitation Department);
- Bulk sewerage capacity (Water and Sanitation Department);
- Electricity supply (eThekweni Electricity).

No objection to the development was made by eThekweni, and this report will be submitted to eThekweni for final comment. In addition to the specialist studies identified in the BID, additional information/investigation was requested on:

- Sea level rise and coastal vulnerability relating to the proposed site;
- Potential noise impacts from Virginia Airport on the proposed development;
- The collection of solid waste from the proposed site;
- Geotechnical conditions on the proposed site;
- The Stormwater management plan.

These issues have been addressed by the project team, and eThekweni's specific comments

and responses to these comments have been included in the comments and response table in the Public Participation Report in Appendix E.

**Has any comment been received from the local municipality?**

YES

If "YES", briefly describe the feedback below (also attach any correspondence to and from this authority with regard to this application):

As above, preliminary comments were made by the eThekweni Metropolitan Municipality on 16 September 2013.

**Has any comment been received from a traditional authority?**

NO

If "YES", briefly describe the feedback below (also attach any correspondence to and from this authority with regard to this application):

**7 CONSULTATION WITH OTHER STAKEHOLDERS**

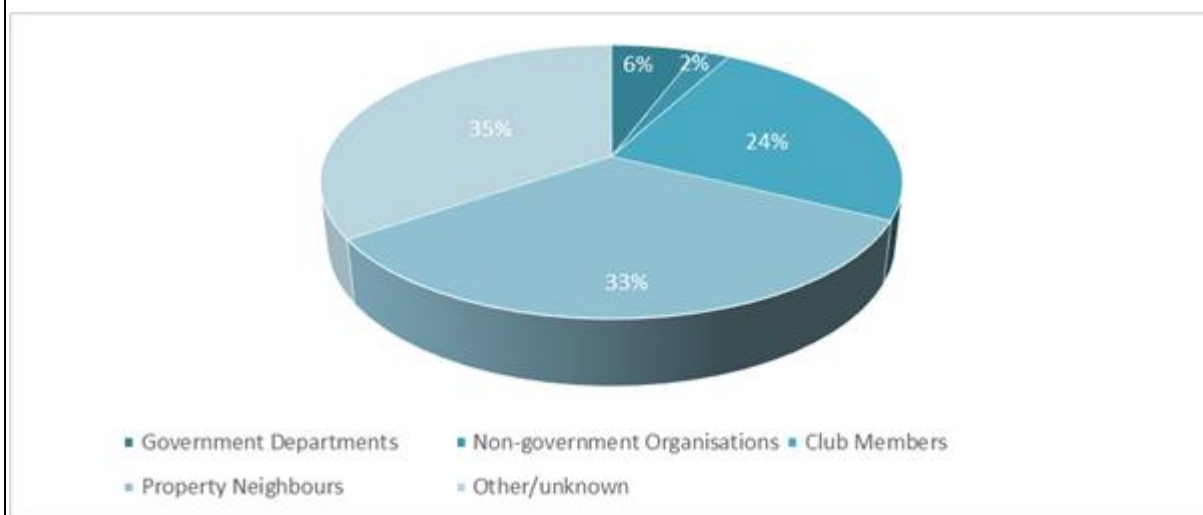
Any stakeholder that has a direct interest in the site or property, such as servitude holders and service providers, should be informed of the application and be provided with the opportunity to comment.

Has any comment been received from stakeholders?

YES

If "YES", briefly describe the feedback below (also attach copies of any correspondence to and from the stakeholders to this application):

The advertising of the public participation process, in combination with the focused communication to key I&APs and stakeholders resulted in numerous responses and a total of 148 Registered I&APs (as at 20 December 2013).



Among the responses were a number of objections to the proposed development by neighbouring residents (Fairway), and members of the Durban Country Club (five registered I&APs raised objections). These objections related mainly to:

- Possible impacts on the natural environments on and surrounding the proposed site;
- The loss of open space within the Durban Metropolitan Open Space System;
- Perceptions that the proposed development may result in loss of property value on adjacent properties;
- Perceptions that the proposed development may result in an increased security risk for local residents;
- Potential impacts on neighbouring residents' views;
- Any proposed restriction of access to the beach via Beachwood Close;
- Potential impacts on the golfing amenity of Beachwood Golf Course.

In contrast, a number of respondents expressed interest in purchasing options for the proposed development, and while this is not the subject of the Environmental Impact Assessment, this does demonstrate that there is local demand for the kind of development being proposed.

The majority of the responses to the announcement of the project and the distribution of the Background Information Document for the project (included in Appendix E) were requests for additional information, or raising issues for further study ahead of the compilation of the Draft BAR.

All of the comments received from I&APs are included in full in the Public Participation Report (Appendix E), along with responses to each of the comments received.

## SECTION E: IMPACT ASSESSMENT

The assessment of impacts must adhere to the requirements in the EIA Regulations, 2010, and should take applicable official guidelines into account. The issues raised by interested and affected parties should also be addressed in the assessment of impacts.

### 1 ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

List the main issues raised by interested and affected parties.

Issues raised by I&APs during the initial comment period included the following main themes:

- Potential impacts on property values in the area;
- Potential nuisance impacts on neighbouring residential properties;
- Potential impacts on neighbours' views and sense of place;
- Potential impact of the Virginia Airport on the proposed development;
- The design and architectural language of the proposed development;
- The fencing of the proposed development;
- Potential precedent for further loss/development of the Beachwood Golf Course;
- Design appropriate to the on-site geotechnical conditions;
- Potential impacts on local traffic (Fairway);
- Capacity of existing Municipal services to assimilate the proposed development;

- Capacity of the Durban Country Club to provide operational phase services to the proposed development;
- Stormwater management;
- Potential impacts on local security;
- Public Access across the proposed site to the beach;
- Loss and rezoning of open space and a component of the Durban Metropolitan Open Space System;
- Potential impacts on important local biodiversity;
- Potential impacts on the Beachwood Mangroves Nature Reserve;
- Potential impacts on wetlands;
- Rehabilitation of degraded indigenous vegetation on the site;
- Potential impacts on sea level rise on coastal vulnerability;
- Potential restrictive conditions in the title deeds on the property;
- The need and desirability of the proposed development as a solution to the management concerns of the Durban Country Club;
- Potential impacts on the golfing amenity of the Beachwood Golf Course.

Response from the practitioner to the issues raised by the interested and affected parties (A full response must be given in the Comments and Response Report that must be attached as Appendix E to this report):

The table providing the EAP's responses to the issues raised during the public participation process, are included in full in the Public Participation Report (Appendix E),

**2 IMPACTS THAT MAY RESULT FROM THE PLANNING AND DESIGN, CONSTRUCTION, OPERATIONAL, DECOMMISSIONING AND CLOSURE PHASES AS WELL AS PROPOSED MANAGEMENT OF IDENTIFIED IMPACTS AND PROPOSED MITIGATION MEASURES**

A key component of the Environmental Impact Assessment processes is the identification and assessment of potential impacts of the proposed activity. The use of a logical approach, where uncertain elements are assessed in a clear and methodical process, helps to ensure that the assessment is focused and provides a basis for making predictions and value judgements that will ultimately inform the decision of the competent authority. The process of assessing the impacts of this proposal has followed the recommended format within the regulations with regards to the assessment of type, scale and duration of direct, indirect and cumulative impacts.

*Types, scale and duration of impacts*

Impacts are the changes in an identified parameter that result from undertaking an activity and may be characterised as positive or negative. The change is the difference predicted or observed where the activity is undertaken compared with unaffected areas and can be described as low, moderate or severe. In addition, impacts may occur over a specific period and within a defined area allowing these to be described in terms of short, medium or long term and local, regional or international.

The impacts may be positive or negative and may be categorized as being direct (primary), indirect (secondary) or cumulative. Direct impacts are those caused directly by the activity and generally occur at the same time and at the place of the activity (e.g. noise generated by blasting operations on the site of the activity). These impacts are usually associated with the construction, operation or maintenance of an activity and are generally obvious and quantifiable.

Indirect impacts of an activity are indirect or induced changes that occur as a result of the activity (e.g. the reduction of water in a stream that supplies water to a reservoir that supplies water to the activity). These types of impacts include all the potential impacts that do not manifest immediately when the activity is undertaken or which occur at a different place as a result of the activity.

Cumulative impacts are those that result from the incremental impact of the proposed activity on a common resource when added to the impacts of other past, present or reasonably foreseeable future activities (e.g. discharges of nutrients and heated water to a river that combine to cause algal blooms and subsequent loss of dissolved oxygen that is greater than the additive impacts of each pollutant). Cumulative impacts can occur from the collective impacts of individual minor actions over a period of time and can include both direct and indirect impacts.

The range of factors that were taken into account in the impact assessment for this study included positive impacts (a benefit), negative (a cost) and neutral. The impact was also rated by extent or scale, duration and probability of occurrence as detailed in the table below.

<b>Extent/Scale</b>	<ul style="list-style-type: none"> <li>- Impact limited to the immediate areas of development activity (local)</li> <li>- limited to within 5 km of the development (area);</li> <li>- would affect the region as a whole (region)</li> <li>- occur at a national or international scale (national/international)</li> </ul>
<b>Duration:</b>	<ul style="list-style-type: none"> <li>- short term (0 to 5 years)</li> <li>- medium term (5 to 15 years)</li> <li>- long term (&gt; 15 years)</li> <li>- permanent</li> </ul>
<b>Probability of occurrence:</b>	<ul style="list-style-type: none"> <li>- improbable (low likelihood)</li> <li>- probable (distinct possibility)</li> <li>- high (most likely)</li> <li>- definite (impact would occur regardless of prevention measures)</li> </ul>
<b>Significance:</b>	<ul style="list-style-type: none"> <li>- <b>Insignificant:</b> The impact is insubstantial and does not require management</li> <li>- <b>Low:</b> The impact is of little importance, but may require management</li> <li>- <b>Medium:</b> The impact is important, management is required to reduce negative impacts to acceptable levels</li> <li>- <b>High:</b> The impact is of great importance; negative impacts could render development options or the entire project unacceptable if they cannot be reduced to acceptable levels and/or if they are not balanced by significant positive impacts. Management of negative impacts is essential</li> </ul>
<b>Status:</b>	<ul style="list-style-type: none"> <li>- Positive (beneficial to the receiving environment)</li> <li>- Neutral (no discernable benefit or detriment to the receiving environment)</li> <li>- Negative (detrimental to the receiving environment)</li> </ul>

## 2.1 IMPACTS THAT MAY RESULT FROM THE PLANNING AND DESIGN PHASE

### a. Site alternatives

List the potential impacts associated with site alternatives that are likely to occur during the planning and design phase:

#### Preferred Alternative S1

Direct impacts:	
<b>2.1.1</b>	<b>Impact on the golfing amenity as a result of changes to the Beachwood Golf Course layout</b>
<p><b>Description:</b> The preferred option will result in the re-design of the 3<sup>rd</sup> and 4<sup>th</sup> holes of the Beachwood Golf Course, and the course dropping from a par 72 to a par 69. This has been raised as a concern by some of the golfing members of the Durban Country Club, as</p>	



the quality of the course may be impacted as a result. A reduced quality may result in local golfers preferring one of the alternative local golf courses available, resulting in declining use of the Beachwood Golf Course. Should the use of Beachwood Golf Course decline, there is a risk that maintenance could decline and hence the quality of this active open space would decline.

Spatial extent	Duration	Probability	Significance	Status
Regional	Permanent	Certain	Low	Negative

**Mitigation:** In order to ensure that the quality of the golf course will not be diminished, the Durban Country Club has contracted the golf course architect Peter Matkovich for the redesign and re-alignment of the 3<sup>rd</sup> and 4<sup>th</sup> holes. Peter Matkovich has designed and collaborated on many of South Africa's premier golf courses and has re-designed the affected holes to accommodate the proposed development. Mr Matkovich is confident that the quality of the golf course will not be negatively impacted upon by the proposed re-alignment, that the enjoyment of the 3<sup>rd</sup> hole will be enhanced, and that the re-alignment will reduce the current risk of golf balls being hit into neighbouring houses. The proposed new layout for the affected portion of the golf course is included in Appendix G5.

**Assessment status after all mitigation measures are applied**

Spatial extent	Duration	Probability	Significance	Status
Regional	Permanent	Certain	Low	Neutral

**2.1.2 Impact of geotechnical conditions on the design of the proposed development**

A specialist geotechnical assessment was undertaken and a preliminary report is attached as Appendix D1. The primary findings of the geotechnical report are:

- that the slope along the western boundary of the proposed site must be protected from disturbance earthworks;
- a shallow, perennial watertable affects portions of the proposed site, corresponding with the findings of the Wetland Assessment Report (Appendix D2);
- The soils of the site are considered highly erodible;
- The soils of the site are considered conducive to subsoil stormwater disposal;

Spatial extent	Duration	Probability	Significance	Status
Local	Permanent	Probable	High	Negative

**Mitigation:** A number of mitigatory measures have been proposed, and general recommendations have been provided by the geotechnical specialists to address the

specific geotechnical conditions on the proposed site:

- In order to ensure that the slope on the western boundary is not affected in any way by the required earthworks, the proposed layout has been amended to set the proposed residential erven back from the slope.
- The geotechnical specialists have made specific recommendations regarding the founding conditions for the proposed structures, and these will be used to inform the detailed design and planning for the proposed development.
- Recommendations regarding subsoil drainage and the establishment of elevated structural platforms will need to be strictly adhered to.
- Subsoil storm water drainage structures should be located well away from the proposed structures on each of the proposed sites.
- Additional laboratory studies and site specific investigations will need to inform the detailed design and planning phase. The required laboratory studies are currently underway.

**Assessment status after all mitigation measures are applied**

Spatial extent	Duration	Probability	Significance	Status
Local	Permanent	Probable	Low	Neutral

**2.1.3 Loss of Open Space in the Durban Metropolitan Open Space System (DMOSS)**

The proposed development will result in the loss of open space that currently forms part of the Durban Metropolitan Open Space System (DMOSS), and ecosystem services that DMOSS provides. The proposed site currently offers a number of ecosystem services. Most notable among these would be recreation and tourism amenity (the golf course), and medium to low biodiversity services.

The loss of open space arising from development of the proposed site would be irreversible, and would mean that the opportunity to restore the site to natural or semi-natural conditions in future, and thereby alter/enhance the ecosystem services it provides, would be lost. However, it is unlikely that the proposed site would be rehabilitated to a natural or semi-natural condition unless the golf course were decommissioned and the land-use on the property changed.

The proposed development has been designed to take into account current ecosystem services provided by the Beachwood Golf Course as a whole, in order to inform the design of the proposed development, and ensure that ecosystem services are not significantly impacted. In addition, the design process has identified a number of opportunities for the active rehabilitation of portions of the proposed site and the property more broadly to enhance the ability of the property to provide valuable ecosystem services.

The proposed development would be unlikely to result in a significant loss of the ecosystem services currently provided, given that:

- The recreation and tourism amenity would remain sustainable, along with the future management of the property as active open space and functional DMOSS;
- Any loss of wetland services at the site would be compensated through the restoration and rehabilitation of nearby wetlands on the property and result in a higher level of ecosystem services relative to the *status quo*;
- The loss of biodiversity related ecosystem services is unlikely to be significant, given that the proposed development has been designed to avoid sensitive habitats on the property, and the proposed site is not known to support biodiversity of conservation value;
- The rehabilitation measures that are proposed on other portions of the property as a component of the proposed development, would be likely to enhance the overall ecosystem functionality and service provision of the golf course property as a whole.

Spatial extent	Duration	Probability	Significance	Status
Local	Permanent	Definite	Low	Negative

**Mitigation:** Although the loss of open space in this case is irreversible, the proposed development does present the opportunity to improve the functionality of the remaining open space. In addition, securing the sustainability of the Durban Country Club and this particular golf course is closely linked to the continued sustainability of other ecosystem services (such as supporting biodiversity).

**Assessment status after all mitigation measures are applied**

Spatial extent	Duration	Probability	Significance	Status
Local	Permanent	Definite	Low	Neutral

**2.1.4 Disruption of dune cordon and dune dynamics**

The Beachwood Golf Course eastern property boundary lies along the dune cordon and a specialist in dune dynamics and coastal vulnerability has assessed any potential impacts on the coastal strip that may occur as a result of the proposed development. The dune specialist found that the distance between the proposed development and the dunes is such that the impact of the development on the dune cordon is assessed as negligible.

Spatial extent	Duration	Probability	Significance	Status
Local	Long-term - Permanent	Improbable	Insignificant	Neutral

**Mitigation:** A benefit afforded by this development is the opportunity for restoration of the dune environment and it is recommended that:

- The leeward portion of the dune cordon is allowed to widen and is managed to allow for natural dune processes;
- Some of the greens/bunkers lying adjacent to the vegetated dune cordon be

redesigned to avoid encroaching on the dynamic dune cordon; • The beach area currently used as a car park is rehabilitated to extend the vegetated dune form at this beach access. Vehicle access to this area should be prevented and appropriate pedestrian access routes should be developed.				
<b>Assessment status after all mitigation measures are applied</b>				
<b>Spatial extent</b>	<b>Duration</b>	<b>Probability</b>	<b>Significance</b>	<b>Status</b>
Local	Long-term - Permanent	Probable	Medium	<b>Positive</b>

**2.1.5 Potential impact of projected sea-level rise on the coastal vulnerability of the proposed development**

Given that the Beachwood Golf Course is located in close proximity to the High Water Mark (HWM), concerns have been raised about the potential for climate change effects and sea-level rise. A specialist assessment was conducted to determine vulnerability to the potential impacts of climate change such as increased marine storminess, sea-level rise and coastal erosion.

It was noted that the impacts of severe marine storms are possibly of greater significance to the sub-tropical coastline in the medium term than the cumulative effect of sea-level rise. The long term trend is likely to be a landward movement of dunes and engulfing of vegetation and structures to the lee of the present dune cordon through a process of "coastal onlap". Therefore, built structures or transformed lands abutting the coastline are at risk of inundation by sand.

Considering that the location of the proposed site is at least 150 m from the dune cordon, the specialists' findings determined that the effect of both sea-level rise and coastal onlap are of little consequence in the short to medium term (25 to 50 year scenario) to the proposed new development. The golf course, as a transformed open space urban environment is possibly one of the more suitable land uses for the area in question, as it provides an effective buffer to the existing built structures along Fairway and the proposed new sites.

<b>Spatial extent</b>	<b>Duration</b>	<b>Probability</b>	<b>Significance</b>	<b>Status</b>
Local	Long-term - Permanent	Improbable	Insignificant	<b>Neutral</b>

**Mitigation:** Although the potential impact of climate change and projected sea-level rise on the proposed development is considered to be insignificant, a number of recommendations have been made to enhance the buffering effect of the dune cordon and golf course to the proposed development and existing infrastructure. These include:

- Widening the leeward portion of the dune cordon (particularly where this has been encroached on by some of the greens/bunkers adjacent) through redesign of sections of the golf course;
- Decommissioning of vehicular beach access, formalisation of pedestrian access

and rehabilitation of the damaged dunes.

**Assessment status after all mitigation measures are applied**

Spatial extent	Duration	Probability	Significance	Status
Local	Long-term - Permanent	Probable	Low	Positive

**2.1.6 Impacts on wetlands on the proposed site**

A wetland specialist study was undertaken early in the process to identify and delineate the wetlands on the proposed site and the majority of the golf course property to allow this to inform the design of the site during the planning phase. The study identified and delineated three natural wetland units and four artificial and/or transformed wetland units on or in close proximity to the proposed site. The condition of these wetlands has been significantly impacted through the historical clearing of vegetation, infilling, excavation, canalization, and impoundment for the establishment of the Beachwood Golf Course. These wetlands are also currently impacted by the disposal of stormwater from adjacent residential properties and roads into the streams and wetlands on the property, as well as runoff from the golf course (herbicides and fertilizers), clearing of vegetation for golf course maintenance, and alien invasive plant encroachment.

Two of the wetland units identified in the study will be impacted directly by the proposed development, as a portion of these wetlands will be filled. This will result in the loss of approximately 0.35 ha of transformed and/or artificial wetland (currently rough and fairways as part of Holes 3 and 4 of the golf course).

The wetland specialist notes that one of the wetlands to be impacted, referred to as wetland 7 in the specialist report (Appendix D2), is possibly an artificial habitat and the result of the establishment of cut banks along the western boundary of the course to intercept drainage from the west. The other wetland, referred to as wetland 6 in the specialist report (Appendix D ) is a likely remnant of a dune depression wetland that were once part of the larger swamp system to the south. This system has been highly transformed for the construction of the golf course. Thus both wetlands have been assessed as highly transformed, with the functional assessment rates them as poor. The impact of the loss of a small portion of these wetland areas and ecosystem services on downstream areas is assessed as low. The specialist therefore concludes that this loss is acceptable, provided that mitigation is provided as described below.

Spatial extent	Duration	Probability	Significance	Status
Local	Permanent	Definite	Medium	Negative

**Mitigation:** The extent and nature of the wetland units identified on the property have influenced the development design, and impacts to all highly valuable wetland systems have been avoided. In addition, the proposed layout plan has been amended following the wetland assessment in order to minimise the area of wetland that would be directly

impacted on by the proposed development. The direct and indirect impacts of the development have been restricted to the low value systems, and will be offset by the rehabilitation of other wetlands on the property to a semi-natural state (the identified areas are currently maintained as active portions of a fairway on the golf course).

In addition:

- The creation of/rehabilitation of wetlands on the golf course will be informed by an engineer and an aquatic ecologist, and the design will ensure a ratio of at least 1:1, in compensation for wetland loss at the proposed site;
- The artificial wetlands created on the site will partially act as surface water regulators (regulating volumes, velocity and quality), as well as providing additional habitat for local wetland fauna;
- The design and management of the stormwater management infrastructure should ensure that surface water runoff into downstream wetlands is not altered in volume or velocity.

Although the wetland specialist has recommended that all service/support infrastructure must be located outside the remaining wetlands and their buffers, it should be noted that some of the restored/created wetland system proposed would be an active part of the stormwater management plan (also as recommended in the wetland specialist report), and so some of the stormwater infrastructure would necessarily impinge on this area. According to the preliminary layout for the stormwater services (Services Report, Appendix G2), this infrastructure does therefore encroach into the transformed wetland adjacent to the proposed site.

**Assessment status after all mitigation measures are applied**

Spatial extent	Duration	Probability	Significance	Status
Local	Permanent	Definite	Low	Neutral

**2.1.7 Potential impacts on vegetation**

The proposed development will involve the destruction and clearing of vegetation at the proposed site. A specialist vegetation assessment has been undertaken to assess the significance of potential impacts on any vegetation of conservation importance as a result of the proposed development (Appendix D3).

Although the Beachwood Golf Course does support existing vegetation of conservation importance, the layout plan for the proposed development has been designed to avoid the highly to moderately sensitive portions of the property. The findings of the specialist report suggest that there will be no direct impact on important vegetation communities on the property, with the proposed site including some of the less sensitive vegetation types identified, namely:

- Aggregated indigenous trees;
- Indigenous trees with garden ornamentals;
- Secondary and alien vegetation;

- Alien vegetation.

There is a small likely impact on a portion of Open Hygrophytic Vegetation (wetland vegetation), but this was identified by the specialist as perhaps the least important area of hygrophytic vegetation on the property. The affected area is a man-made pond that forms part of the golf course and is surrounded by greens, and this area will become enclosed by the proposed development.

Although the proposed site supports only transformed or degraded plant communities, there are some large trees on the site, and some of these are ecologically valuable, for example *Ficus lutea* and *F. natalensis*. There may be direct impacts on some freestanding trees amongst lawns/greens, including *Mimusops caffra* and *Sideroxylon inerme*. It may be possible to accommodate some (but probably not all) of these trees through careful design of the footprints of dwellings and associated support infrastructure.

Spatial extent	Duration	Probability	Significance	Status
Local/Site	Permanent	Definite	Low	Negative

**Mitigation:** The proposed development has been designed to avoid the most sensitive vegetation communities on the property. In addition to this, the vegetation specialist has identified the principal mitigatory measure as being a simple conservation management plan for the site to manage, protect and improve indigenous vegetation resources. This plan would need to identify the key tasks required for conservation management, and include the mechanisms that will ensure committed funding for conservation management into the future.

Apart from the conservation management plan, the following mitigations are recommended by the vegetation specialist:

- Positions of all protected and ecologically sensitive trees must be marked and properly surveyed (*i.e.* by a professional surveyor).
- Where possible, the structures within the proposed sites must be positioned to accommodate protected/ecologically sensitive trees, mainly *Mimusops caffra/Sideroxylon inerme* (protected species) or *Ficus* species (ecologically valuable species).
- Ahead of site clearing for construction activities, all construction footprints and access routes should be checked for smaller protected or ecologically valuable plants, which should be relocated to other suitable habitats on this site with care and under supervision of a qualified specialist.
- Potential indirect impacts on vegetation communities of moderate to high conservation significance should be managed to ensure that construction staff do not access or disturb sensitive vegetation.
- Invasive Alien Plants (IAP) that have established on the site should be removed in accordance with a long-term IAP management programme, and IAPs that establish on the site during the construction phase should be immediately removed to prevent further encroachment. These management measures must be included in the Environmental Management Programme (EMPr) for the project.

**Assessment status after all mitigation measures are applied**

Spatial extent	Duration	Probability	Significance	Status
Local/Site	Permanent	Definite	Low	Positive

### 2.1.8 Impacts on faunal biodiversity

There are a number of invertebrate and vertebrate groups which are recorded and are anticipated to occur in the various natural and semi-natural areas throughout the Beachwood Golf Course property. These include many species common to urban environments, such as

Small mammals observed (not a complete list):

- Banded mongoose *Mungos mungo*
- Water mongoose *Atinaz paludinosus*
- Sender mongoose *Galerella sanguinea*
- Vervet monkey *Circopithecus aethiops*
- Blue duiker *Philantomba monticola*
- Greater Canerat *Thryonomys swinderianus*
- Also likely to occur based on species lists from the adjacent reserve – approximately seven bat, two rodents and one shrew species

Common birds recorded (not a complete list):

- Barbet, Black-collared *Lybius torquatus*
- Barbet, Crested *Trachyphonus vaillantii*
- Barbet, White-eared *Stactolaema leucotis*
- Bee-eater, Little *Merops pusillus*
- Bishop, Southern Red *Euplectes orix*
- Boubou, Southern *Laniarius ferrugineus*
- Cisticola, Rattling *Cisticola chiniana*
- Cisticola, Rufous-winged *Cisticola galactotes*
- Cormorant, Reed *Phalacrocorax africanus*
- Coucal, Burchell's *Centropus burchellii*
- Drongo, Fork-tailed *Dicrurus adsimilis*
- Drongo, Square-tailed *Dicrurus ludwigii*
- Flycatcher, Paradise *Terpsiphone viridis*
- Goose, Egyptian *Alopochena aegyptiaca*
- Greenbul, Sombre *Andropadus importunas*
- Heron, Black-headed *Ardea melanocephala*
- Heron, Grey *Ardea cinerea*
- Ibis, Hadedda *Bostrychia hagedash*
- Kingfisher, Brown-hooded *Halcyon albiventris*
- Kingfisher, Malachite *Alcedo cristata*
- Kingfisher, Pied *Ceryle rudis*
- Kite, Yellow-billed *Milvus aegyptius*
- Lapwing, Blacksmith *Vannellus armatus*
- Mannikin, Bronze *Spermestes cucullatus*
- Neddicky *Cisticola fulvicapilla*
- Prinia, Tawny flanked *Prinia subflava*
- Robin-chat, redcapped *Cossypha natalensis*



- Rush-warbler, Little *Bradypterus baboecala*
- Stork, Woolley-necked *Ciconia episcopus*
- Sunbird, Grey *Cyanomitra veroxii*
- Sunbird, Olive *Cyanomitra olivacea*
- Sunbird, White bellied *Cinnyris talatala*
- Swallow, Lesser striped *Hirundo abyssinica*
- Thrush, Olive *Turdus olivaceus*
- Tinkerbird, Yellow-rumped *Pogoniulus bilineatus*
- Trogon, Narina *Apaloderma narina*
- Turaco, Purple-crested *Tauraco porphyreolophus*
- Wagtail, African Pied *Motacilla aguimp*
- Wagtail, Cape *Motacilla capensis*
- Warbler, Willow *Phylloscopus trochilus*
- Weaver, Southern masked *Ploceus velatus*
- Weaver, Spectacled *Ploceus ocularis*
- Whydah, Pin-tailed *Vidua macroura*
- Woodpecker, Golden-tailed *Campethera abingoni*

Fish species (likely)

- Mozambique tilapia *Oreochromis mossabicus*
- Sharptooth catfish *Clarius gariepinus*
- Freshwater mullet *Myxus capensis*
- Flathead mullet *Mugil cephalus*
- and three alien live bearing species namely Guppies, Mollies and Swords

Reptiles

- *Bradypodion melanocephalum* Black-Headed Dwarf Chameleon
- *Hemidactylus mabouia* Moreau's tropical house gecko
- *Causus rhombeatus* Night Adder
- *Crotaphopeltis hotamboeia* Red Lipped Herald
- *Philothamnus angolensis* Green Water Snake
- *Philothamnus natalensis* Natal Green Snake
- *Lamprophis fuliginosus* Brown House Snake

Amphibians

- Bush Squeaker *Arthroleptis wahlbergii*
- Greater Leaf-folding Frog *Afraxalus fornasinii*
- Painted Reed Frog *Hyperolius marmoratus*
- Water Lily Frog *Hyperolius pusillus*
- Tinker Reed Frog *Hyperolius tuberilinguis*
- Plaintive Rain Frog *Breviceps verrucosus*
- Snoring Puddle Frog *Phrynobatrachus natalensis*
- Pickersgill's Reed Frog *Hyperolius pickersgilli*

Crustaceans

- Common freshwater prawn *Caridina nilotica*

As a part of the open space, the proposed site is highly likely to be part of an ecological corridor across the property, providing a linkage between remaining habitats on the golf course property, the adjacent dune cordon to the east and the adjacent Beachwood Mangroves Nature Reserve to the south. Although the condition of the vegetation communities and wetland habitats here is poor, the proposed site provides a north-south linkage across the property in combination with the dune cordon that is not affected by substantial built infrastructure.

The location of the proposed development relative to the existing clubhouse and support infrastructure has the potential to create movement barrier across the property for some fauna, particularly small mammals.

Spatial extent	Duration	Probability	Significance	Status
Local	Permanent	Probable	Medium	Negative

**Mitigation:** The proposed layout plan has been amended to set the proposed residential erven back from the western boundary of the proposed site. This provides an unobstructed corridor and creates a buffer between the existing residences on Fairway and the newly proposed sites. This amendment to the proposed layout plan also allows the proposed fencing of the estate below the toe of the slope on the western boundary of the proposed site, fencing the proposed development out of the corridor. This will effectively conserve the existing ecological corridor and the north-south linkage across the golf course property.

The architectural guidelines for the proposed development (Appendix G4) have also introduced additional mitigatory measures, by the inclusion of an indigenous planting palette, which has the potential to effectively extend the functional open space into the proposed development.

**Assessment status after all mitigation measures are applied**

Spatial extent	Duration	Probability	Significance	Status
Local	Permanent	Probable	Low	Neutral

**Indirect impacts:**

**2.1.9 The Need and Desirability of the proposed development as a financing mechanism for the DCC**

A number of stakeholders have raised concern about the desirability of the proposed development as a fund-raising mechanism for the DCC Trust, and some have questioned the need for any such fund-raising by the DCC. While the environmental authorization process is equipped to deal with aspects of Need and Desirability within the environmental impact assessment process (such as the need for this kind of development at a local level, or the broader economic impact potential of the proposed development), questions regarding the investment options and choices made by the DCC Trust are not considered to fall within the scope of this process.

This section has been included in the report to address the comments and questions of the Interested and Affected Parties regarding the DCC Trust's fund-raising activities.

**Response:** The DCC Trust has assured stakeholders that the net proceeds gathered from the Beachwood project will make a significant and meaningful contribution towards the

needs of the Durban Country Club.

### 2.1.10 Potential impact on property values in Fairway

A number of owners/residents of residential properties adjacent to the golf course have raised concern that inappropriate development at the proposed site would potentially impact negatively on their property values by altering the aesthetics and sense of place of properties in Fairway. In particular, concerns have been that the proposed property density, sizes, and "standard" should match those of the existing residences on Fairway.

**Response:** In mitigation the design of the proposed development has considered technical and aesthetic aspects of the landscape context of the proposed site. The design specifications for the proposed development have included considerations of the following aspects in order to ensure that the development does not have negative impacts on the Sense of Place in Fairway or Beachwood Place:

- Property sizes have been designed to be similar to those of existing residential properties in Fairway (although on average the proposed development property sizes are slightly larger);
- The allowable coverage (developable area) on each of the proposed residential sites will ensure that open space is retained on the sites;
- The architectural guidelines for the proposed development provide a cohesive, formal approach that will govern the identity of the proposed development, and this is aimed at the creation of an integrated, upmarket neighbourhood;
- The architectural guidelines for the proposed development includes a height restriction to ensure that the sea views of neighbouring properties in Fairway are not obstructed;
- The architectural language will include guidelines on the selection of materials, colours, landscaping and lighting, in order to minimize the visual impact of the proposed development.

Given that the proposed development is an extension of adjacent existing land-use, and will be designed to harmonize with the existing residential properties in Fairway, the impact on property value is anticipated to be low.

### 2.1.11 Proposed removal of Title Deed restrictions

Concerns were raised during the public participation process that various Title Deed restrictions relevant to the golf course property would be removed as a result of the proposed development. It is important to note that the removal of restrictive conditions cannot be effected through the environmental authorization process, and that this will be addressed through the rezoning application under the Planning and Development Act (Act No. 6 of 2008).

This section has been included in the report to address the comments and questions of

the Interested and Affected Parties regarding the existing Title Deed restriction, and significance has therefore not been assessed.

**Response:** Although the relevance of the Title Deed restrictions to this impact assessment is moot, it has been noted that among these restrictions is one that requires the use of the property as active open space (i.e. providing recreation and tourism amenity). While there are definite impacts on open space as a result of the proposed development (discussed in sections 2.1.3, 2.1.5, 2.1.14, 2.2.10, 2.3.1, 2.3.12), the effectiveness of the golf course property as an active open space is highly unlikely to be significantly impacted.

**2.1.12 Potential impact on the proposed development as a result of normal operation noise at Virginia Airport**

eThekwini Municipality’s Framework Planning Branch has raised concerns that the proposed site may be impacted on by the noise generated by the day-to-day operation of the Virginia Airport which lies immediately north of the Beachwood Golf Course. A specialist acoustic study was undertaken to assess the significance of aircraft noise on the proposed site (Appendix G6).

The noise impact study found that although there may be relatively high instantaneous noise levels, these are usually assessed as an average over 10 minutes. This average is found to be within the limits described by the municipal by-laws for eThekwini. However, as potential future residents would be exposed to this noise “often” during daylight hours, it was recommended that architectural noise control measures are included in residence design.

Spatial extent	Duration	Probability	Significance	Status
Local	Permanent	Definite	Low	Negative

**Mitigation:** Architectural noise control measures, including insulation through roof design, as well as detailed specifications for window glazing are recommended to reduce noise impact for residents.

**Assessment status after all mitigation measures are applied**

Spatial extent	Duration	Probability	Significance	Status
Local	Permanent	Definite	Very Low	Neutral

**2.1.13 Impacts on the mangrove habitat presently surrounded by holes 5, 6, 8 and 9 of the Beachwood Golf Course**

An area of mangroves exists on the southern side of the golf course which is an

extension of the Beachwood Mangroves Nature Reserve.. The potential direct and indirect impacts on these mangroves have been assessed by Prof. AT Forbes (MER). The mangrove area surrounded by golfing holes 5, 6, 8 and 9 consists of a remnant community composed entirely of the black mangrove *Brugueira gymnorhiza*. Its presence reflects an historic link with a predominantly open and hence tidal Umgeni estuary which in turn would have allowed for tidal rise and fall in what would have been a less vegetated and more open Beachwood Creek. All mangrove tree species are intertidal and cannot survive inundation for extended periods.

The survival of *B. gymnorhiza* in the area described therefore represents something of an anomaly as there is either very little or no tidal effect. The extremely limited variation in water level, assuming this is primarily tidally driven, will be insufficient to allow the survival of any inter-tidal faunal species, such as the climbing whelk (*Cerithidea decollata*) or the fiddler (*Uca* spp.), and consequently while the trees have survived to date the normally associated invertebrate fauna is highly unlikely to have done so.

The long term survival of the *B. gymnorhiza* is further moot as a loss of tidal exchange and an increasingly dominant freshwater influence will allow the invasion of freshwater and terrestrial plants and the eventual replacement of the mangroves by more suitably adapted species. Recruitment of young mangroves is limited to the periphery of this wetland area and the inner portions have been invaded by the reed, *Phragmites australis* which is better adapted to the standing freshwater conditions.

The proposed development is placed well to the north of the mangrove area and does not represent any infilling, disturbance (human or machinery) or modification of the water flow regimes which are currently maintaining this wetland. There is little likelihood of accelerated sediment accumulation. In consequence no impact is envisaged and no mitigation is necessary.

Spatial extent	Duration	Probability	Significance	Status
Local	Permanent	Improbable	Insignificant	Neutral

#### 2.1.14 Potential impact on Beachwood Mangroves Nature Reserve

The Beachwood Golf Course is located adjacent to the Beachwood Mangroves Nature Reserve (on the golf course's southern boundary). It is therefore important to ensure that the proposed development will not have detrimental effects on the integrity of this proclaimed provincial protected area.

The location of the proposed development allows for a 300 m buffer to the protected area, and the wetland and vegetation specialists have made a series of recommendations that will not only ensure that downstream impacts on the protected area are insignificant, but will enhance the potential benefits of the proposed development to the habitats on the golf course property and therefore be likely to enhance the ecosystem services to the downstream protected area. In addition, the proposed development does not represent

a new land-use in this area and the golf course will remain as an open space buffer between the proposed development and the protected area. Provided that the recommendations regarding the protection and management of wetlands and vegetation mitigatory measures are adhered to, including on-site and off-site measures that extend into other areas of the golf course properties, it is unlikely that there would be any direct, or indirect impacts and no effect on the sense of place on the Nature Reserve.

Spatial extent	Duration	Probability	Significance	Status
Local	Permanent	Improbable	Low	Neutral

**Cumulative impacts:**

**2.1.15 Potential precedent for future development on the Beachwood Golf Course**

A number of I&APs have raised concerns that the approval of the proposed development may lead to incremental development of the property and ultimately the loss of the Beachwood Golf Course as a recreation/tourism amenity and functional open space.

It is important to note that the proposed development has been determined by applying town planning principles to allow integration of the scheme with the existing golf course. This location and proposed footprint area has been mooted by the DCC Trust as what the golf course property can practically contain. Should the proposed development be given environmental approval, *i.e.* should the economic, socio-cultural and biophysical aspects of the proposed development be considered to be sustainable, the size and design of this development will be limited by the conditions of approval stipulated by the Department of Agriculture and Environmental Affairs. These conditions will be linked to the findings of this impact assessment, and the maximum extent of what could be approved would be contained within the layout plans presented as part of this assessment. Should an expansion of such an approved development be considered at some future time, this expansion would be subject to another independent environmental assessment process under the National Environmental Management Act (Act No. 107 of 1998) regulations.

The environmental approval of the proposed development would therefore in no way imply that any future extension of the proposed development might also be approved.

**Alternative Sites**

Although the Draft BAR does not consider alternative sites or alternative layout plans, and the only alternative presented here is the no-go option, there have been a number of alternatives that had been identified and assessed in the development of the preferred layout considered in this report (Alternatives Report, Appendix G1). The incremental improvements to the proposal have resulted in the preferred location and design within this report that is likely to minimize the potential environmental impacts of the project, particularly the biophysical and Sense of Place impacts. Thus, none of the previously

explored alternatives is considered feasible or reasonable alternatives to present in this report, as these would be likely to have more significant impacts on the receiving environment than the preferred alternative.

The Beachwood Golf Course is the only asset owned by the DCC Trust. The DCC Golf course in Masabalala Yengwa (NMR) Avenue and its Clubhouse buildings are on land that the DCC Trust leases, and this property therefore cannot be presented as a feasible alternative site. In addition, locating the proposed development on an alternative portion of the Beachwood Golf Course property is not considered feasible for a number of reasons:

- The area north of the clubhouse is adjacent to the Virginia Airport, making this area undesirable for residential development, as a result of the noise impacts during normal operations of the airport, as well as the potential risk to life and property of having residential homes in this area of dedicated flight paths.
- The portions of the golf course property south of the current proposed site are adjacent to the Beachwood Mangroves Nature Reserve, and associated more functional wetland habitats. These areas would be particularly vulnerable to direct and indirect development related impacts if the proposed development was located further to the south as there would be little opportunity to buffer the protected area.
- The central portions of the property are already largely transformed in the vicinity of the existing clubhouse, and these areas are already serviced. The proposed development would therefore allow for ease of access and an efficient extension of services to the proposed development.
- The location of the proposed development on the golf course property aimed to minimise the loss and disturbance of important habitats on and adjacent to the golf course. This central portion of the property is characterised by invasive alien plants, secondary indigenous vegetation, and aggregated indigenous trees and garden ornamentals. The use of this central portion of the site therefore avoids the more important habitats on the golf course, such as the intact and degraded Northern Coastal Forest and dune vegetation communities.

The central portion of the property, *i.e.* those areas in close proximity to the existing clubhouse, has therefore been established as the precinct that could be developed with the fewest environmental impacts.

### **Within-project Alternatives**

No alternative layout plans have been provided in the Draft BAR as feasible or reasonable alternatives to the currently proposed layout plan and design for the proposed development, as:

- The size of the proposed development has been established as the optimum development size that the golf course could absorb and still remain an 18-hole golf course.
- A series of 11 alternative layout plans for the proposed site has been investigated, with the number of proposed residential erven varying from 16 -20, and including a number of differences in the proposed layout plan. These previously considered plans are included in Appendix G1, with an outline of why each has been rejected in favour of the preferred alternative.

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**No-go alternative (compulsory)**

The no-go alternative would result in no residential development of the golf course. The environment would remain unchanged in terms of the status quo at least in the short-term. However, in the medium to long-term, the no-go option would be likely to result in the sale of the entire Beachwood Golf Course property (Appendix G1). This would make the future of this open space uncertain. The no-go option would therefore not secure the continued maintenance of the golf course and open space.

Indicate mitigation measures to manage the potential impacts listed above:

Mitigation measures are outlined in sections 2.1.1 to 2.1.15.

**b. Process, technology, layout or other alternatives**

List the impacts associated with any process, technology, layout or other alternatives that are likely to occur during the planning and design phase (please list impacts associated with each alternative separately):

**Alternative A1 (preferred alternative)**

**Direct impacts:**

**Indirect impacts:**

**Cumulative impacts:**

**No-go alternative (compulsory)**

**Direct impacts:**

**Indirect impacts:**

**Cumulative impacts:**

Indicate mitigation measures to manage the potential impacts listed above:

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**2.2 IMPACTS THAT MAY RESULT FROM THE CONSTRUCTION PHASE**

**a. Site alternatives**

List the potential impacts associated with site alternatives that are likely to occur during the construction phase:

**Alternative S1 (preferred alternative)**

Direct Impacts:				
<b>2.2.1 Impact on the golfing amenity at Beachwood Golf Course</b>				
<p>The construction phase for the proposed development is highly likely to result in short-term impacts on the quality of the golfing amenity at the Beachwood Golf Course, for the duration of the re-configuration of the necessary areas on the golf course itself. The affected portions of the golf course around holes 3 and 4 would not be available to golfers for the time period required to re-align the affected areas.</p>				
Spatial extent	Duration	Probability	Significance	Status
Local/Site	Short-term	Definite	Low	<b>Negative</b>
<p><b>Mitigation:</b> Short-term impacts on the availability of the affected portions of the course are unavoidable, but impacts on golfers/Club members can be minimized by scheduling the re-alignment of holes 3 and 4 outside of peak visitor periods.</p>				
<b>2.2.2 Direct impact on wetlands at the proposed site</b>				
<p>The proposed layout for the development would result in an unavoidable loss of portions of two transformed and/or artificial wetlands.</p>				
Spatial extent	Duration	Probability	Significance	Status
Local/Site	Permanent	Definite	Medium	<b>Negative</b>
<p><b>Mitigation:</b> The proposed layout plan has been amended following the wetland assessment, and the directly impacted area of wetland has been reduced from 0.41 ha to 0.35 ha. In addition, it has been proposed that wetlands areas would be created and rehabilitated off-site, on the adjacent golf course, as a form of offset for the loss of wetland area at the proposed site. In addition to this wetland creation (at a minimum ratio of 1:1), a number of mitigatory measures has been proposed to enhance the downstream wetland functionality and biodiversity value. It is anticipated that with all the wetland-related mitigatory measures in place there may be a net gain in wetland integrity on the</p>				

golf course property, resulting in slight benefits downstream, including portions of the Beachwood Mangroves Nature Reserve.

**Assessment status after all mitigation measures are applied**

Spatial extent	Duration	Probability	Significance	Status
Local/Site	Permanent	Definite	Low	Neutral

**2.2.3 Destruction of terrestrial vegetation on the site footprint**

The construction phase will require the destruction and clearing of vegetation within the footprint of the proposed development and along the routes for support infrastructure. Although the clearing of vegetation will not result in any direct or indirect impacts on any of the sensitive vegetation communities identified on the site, there are a few mature trees within this area that have been identified as protected species and/or species of conservation value. These include specimens of *Mimusops caffra* and *Sideroxylon inerme* (protected species), and *Ficus lutea* and *F. natalensis* (species of conservation value).

The extent and significance of the removal of these individual trees cannot be assessed at this stage, because it may be possible to accommodate some through careful design of the footprints of dwellings and support infrastructure. However, given that these individual trees are effectively isolated from intact habitats on the property, the overall impact of the loss of these trees is unlikely to be significant. Permits for the removal of any trees will have to be applied for prior to construction.

Spatial extent	Duration	Probability	Significance	Status
Local/Site	Permanent	Definite	Low	Negative

**Mitigation:** In order to minimize the impacts of construction-related vegetation clearing, it is recommended that:

- Positions of all protected and ecologically sensitive trees be marked and properly surveyed, *i.e.* by a professional surveyor, to inform the layout of individual units on the proposed sites;
- All mature trees that will be retained within the development be clearly marked prior to pre-construction site preparations;
- Where possible, the structures within the proposed sites be positioned and/or designed to accommodate protected trees or those of conservation value;
- Ahead of site clearing for construction activities, all construction footprints and access routes be checked for smaller protected or ecologically valuable plants, which should be relocated to other suitable habitats on this site with care and under supervision of a qualified specialist.
- Immediate re-vegetation of stripped areas and removal of aliens by weeding must take place to reduce the time and expense of invasive alien plant management during the post-construction rehabilitation of the site.
- Trees that have to be removed for construction should be replaced with regionally

appropriate indigenous species and planted to maximise ecological benefit.

**Assessment status after all mitigation measures are applied**

Spatial extent	Duration	Probability	Significance	Status
Local/Site	Permanent	Definite	Low	Positive

**2.2.4 Geotechnical constraints**

Given the local geotechnical conditions, the construction phase may result in disturbance to geotechnically sensitive areas, such as the slope along the western boundary of the proposed site. In addition, the soils of the proposed site are considered highly erodible, and earthworks may result in erosion and environmental degradation.

Spatial extent	Duration	Probability	Significance	Status
Local/Site	Permanent	Definite	High	Negative

**Mitigation:** During construction, the slope along the western boundary of the proposed site must be identified as sensitive and be fenced out of the active construction site during site preparation. The site must remain fenced for the duration of the construction phase. Earthworks should be undertaken during the dry season, in order to avoid problematic erosion and to avoid the influence of groundwater on identified portions of the proposed site. Erosion protection must be provided during the construction phase, and detailed requirements for this have been included into the Draft Environmental Management Programme (Appendix F).

**Assessment status after all mitigation measures are applied**

Spatial extent	Duration	Probability	Significance	Status
Local/Site	Permanent	Definite	Low	Neutral

**Indirect and Cumulative impacts:**

**2.2.5 Impacts on traffic**

There may be some impact during the construction phase as a result of increased movement of heavy construction vehicles in Fairway in the short term. However, there is already some presence of such vehicles to support several construction works currently happening at existing residential properties in Fairway.

Spatial extent	Duration	Probability	Significance	Status
Local	Short-term	Definite	Low	Negative

**Mitigation:** Construction activities will be confined to daylight hours, and construction vehicles should be restricted to demarcated access routes, haulage routes and turning areas.

**Assessment status after all mitigation measures are applied**

Spatial extent	Duration	Probability	Significance	Status
Local	Short-term	Definite	Very Low	Negative

**2.2.6 Nuisance impacts on neighbouring residents and golf course users**

Construction related activities have the potential to cause a nuisance to immediate neighbours and to golfers on the Beachwood Golf Course through the generation of visual impacts, noise and dust at the construction site.

Spatial extent	Duration	Probability	Significance	Status
Local	Short-term	High	Low	Negative

**Mitigation:** Measures will be put in place through the Environmental Management Plan to manage potential nuisance impacts during the construction phase. Such measures will include:

- Prior to construction, the site should be screened with appropriate materials (such as wooden supports and shade cloth), and specialist attention should be given to the screening of reflective surfaces at the construction site.
- Construction workers should be made aware that they are not to make excessive noise, e.g. shouting / hooting on the site, given that the site is in a residential area.
- Application of noise reduction facilities on construction equipment and construction vehicles.
- Construction equipment and machinery will be kept in good working order for the duration of the construction phase in order to minimize noise and leakage of oils and fuels.
- Advance notice of particularly noisy activities will be given to residents in Fairway, e.g. use of jackhammers, drilling, etc.
- Vehicles travelling along the access roads will adhere to a speed limit of 30 km/hour to avoid creating excessive dust.
- Access and other cleared surfaces must be dampened whenever possible and especially in dry and windy conditions to avoid dust.
- Where dust is unavoidable, screening will be installed in the form of wooden supports and shade cloth.
- No fires will be allowed on the construction site.
- Stripping of vegetation will only take place immediately before construction activities are planned for any portion of the site, and cleared areas will be re-vegetated as soon as possible after the completion of construction activities.
- Soil stockpiles will be managed in accordance with best practice in terms of establishing designated stockpiling areas, minimizing stockpile storage times, etc.

Assessment status after all mitigation measures are applied				
Spatial extent	Duration	Probability	Significance	Status
Local	Short-term	High	Very Low	Negative

2.2.7 Stormwater management				
<p>The construction and establishment of the major stormwater management installations have the potential to result in erosion and downstream sedimentation. This remains a risk until construction is complete and a full cover of permanent vegetation has been established.</p>				
Spatial extent	Duration	Probability	Significance	Status
Local	Short-term	Probable	Low	Negative
<p><b>Mitigation:</b> A Stormwater Management Plan has been prepared (Appendix G3) and includes a number of mitigatory measures for implementation during the construction phase, including:</p> <ul style="list-style-type: none"> <li>• Installation of the permanent stormwater management features on the site as early as possible during the construction phase;</li> <li>• The pre-construction installation of temporary stormwater management structures using sandbagging and/or silt fencing, strip sodding, earth deflection berms, etc., to control downstream stormwater runoff from the construction site. These will need to be maintained in place until they are made redundant by the final constructed features;</li> <li>• Immediate rehabilitation of any areas damaged as a result of stormwater runoff from the construction site;</li> <li>• Rehabilitation/revegetation of all open areas as soon as possible after construction activities are completed;</li> <li>• Ensuring that no potentially hazardous substances are allowed to enter the stormwater systems.</li> </ul> <p>Mitigatory measures for the management of stormwater during the construction phase will be included in the Environmental Management Plan (EMP), with particular emphasis on the Guideline Document for the Management of Stormwater Run-off during Construction, as provided in the SiVEST Stormwater Management Plan (Appendix G3). The appointed design engineers and contractors will need to ensure that these are strictly enforced.</p>				
Assessment status after all mitigation measures are applied				
Spatial extent	Duration	Probability	Significance	Status
Local	Short-term	Probable	Very Low	Neutral

**2.2.8 Construction phase impacts on wetlands**

During the construction phase, areas of wetland on the proposed site and the immediate area will be cleared for the development. The removal of vegetation will increase surface runoff and increase potential soil erosion. These areas would also be vulnerable to the establishment of invasive alien plants.

These impacts further act to reduce the wetland’s functionality and ability to provide ecosystem services.

Spatial extent	Duration	Probability	Significance	Status
Local	Short-term	Likely	Medium	Negative

**Mitigation:** There is a number of recommended mitigation measures that can be incorporated into the Environmental Management Plan to mitigate construction-related impacts (see the specialist report in Appendix F):

- Clearing activities must only be undertaken during agreed working times and permitted weather conditions. If heavy rains are expected, clearing activities should be put on hold. In this regard, the contractor must be aware of weather forecasts.
- Construction activities should be scheduled to minimise the area and duration of exposure to bare soils on site, especially on steep slopes.
- The full area of works must **not** be stripped of vegetation prior to commencing with other activities.
- The stormwater management plan must be strictly adhered to.
- Sandbags or silt fences must be established along the edge of all bare and exposed surfaces above the wetland buffers and un-kerbed roads. The berms, sandbags and/or silt fences must be monitored for the duration of the construction phase and repaired immediately when damaged. The berms, sandbags and silt fences must only be removed once vegetation cover has successfully re-colonised the embankments.
- Once shaped, all exposed/bare surfaces and fill embankments must be vegetated immediately. Embankments steeper than 1:3 must be vegetated using strip sods established at regular intervals (50-100 cm) down the bank and hydro-seeding in between. Embankments with a slope less than 1:3 must be hydro-seeded and the temporary erosion control measures removed only once re-colonisation is successful. In the winter months, the newly grassed areas must be watered daily until re-colonisation is successful. During the wet months, the grassed surfaces must be monitored for erosion until re-colonisation is successful. If re-vegetation of exposed surfaces cannot be established immediately due to phasing issues, rows of straw, hay or cut bundles of vegetation should be dug into the soil in contours and/or sand bags or silt fences must be established along the contours at regular intervals to slow runoff and capture eroded soil.
- All platforms above wetland buffer zones must have a slight back-fall to divert runoff away from the fill embankments. Platform runoff must be diverted away from the platforms via some sort of diversion structure, preferably an open drain. This runoff must be diverted into the formal storm water network where possible. However,

sediment must be removed from the runoff before being discharged into the formal system. This can be achieved by using temporary sediment capture ponds. If no formal storm water system is possible, the diverted runoff must be diverted to a temporary detention pond or temporary outlets armoured against erosion with energy dissipation measures.

- Effort must be made to ensure that the storm water system including pipes, drains, headwalls and Reno-mattresses are not silted up during the construction phase.
- Siltation will be minimised by ensuring that the roads and paths remain clear of sediment. Sediment on the roads from erosion or construction traffic must be cleared at the end of every day between September and March and at the end of every week between April and August. The need to clear will be minimal if the all bare slopes (sediment sources) are re-vegetated as soon as possible and adequate erosion protection and silt control applied where grassing is not feasible.
- After every rainfall event, the contractor must check the site for erosion damage and rehabilitate this damage immediately. Erosion rills and gulleys must be filled-in with appropriate material and silt fences or fascine work must be established along the gully for additional protection until grass has re-colonised the rehabilitated area.
- The construction of the offset rehabilitated wetlands will be to occur during the establishment and construction of the precinct.

**Assessment status after all mitigation measures are applied**

Spatial extent	Duration	Probability	Significance	Status
Local	Short-term	Likely	Low	Neutral

**2.2.9 Disturbance to vegetation during the construction phase**

The Construction phase indirect impacts on vegetation mainly relate to some degree of disturbance outside the construction footprint(s), but there could also be some impact on vegetation further away if workers' movements are not properly controlled. In this case impacts could include trampling or harvesting.

Spatial extent	Duration	Probability	Significance	Status
Local	Short-term	High	Insignificant - Low	Negative

**Mitigation:** The following mitigations are recommended during the construction phase:

- Construction footprints must be well demarcated and all other areas in particular sensitive environmental features fenced off, both to contain workers within footprint areas and prevent percolation of refuse or building waste outside of work areas.
- Construction staff must be made aware that the gathering of firewood, fruit, muthi plants, crops or any other natural material on the site or in adjacent areas is prohibited.
- Movement of workers must be strictly controlled so this is confined to what is needed within construction footprints, and they do not enter sensitive vegetation on an unauthorized basis (particularly forest and including disturbance to Subtropical Seashore Vegetation and Subtropical Dune Thicket flanking beaches).

- The Environmental Management Plan must stipulate that no vegetation is to be removed on the construction site without the approval of the Environmental Control Officer.
- Invasive alien plants that establish on the site construction site must be destroyed.

**Assessment status after all mitigation measures are applied**

Spatial extent	Duration	Probability	Significance	Status
Local	Short-term	High	Low	Positive

**2.2.10 Impacts on the mangrove habitat presently surrounded by holes 5, 6, 8 and 9 of the Beachwood Golf Course**

The placing of the proposed development is well to the north of the mangrove area and does not represent any infilling, disturbance (human or machinery) or modification of whatever tidal exchange might occur during the construction phase when access to the development sites will be from the Beachwood Place road. There is very little likelihood of accelerated sediment accumulation nor modification of existing water movement patterns (including tidal exchange) during the construction phase. The probability that human disturbance may result in impacts on the mangroves is low.

Spatial extent	Duration	Probability	Significance	Status
Local	Permanent	Improbable	Insignificant	Neutral

**Mitigation:** No mitigation measures required.

**2.2.11 Impacts on local fauna**

Construction activities at the proposed site would be likely to result in local disturbance to fauna known to use the golf course and adjacent natural and semi-natural areas through increased activity at the site or harassment by construction staff. The local fauna appear to utilize the site as a feeding/nesting/roosting and movement corridor (for a complete list see 2.1.8). Although it does not constitute high quality habitat that is exceptionally biodiverse it does in an urban context constitute a viable habitat for a number of species. This is in particular comparison with the habitats that are available to these animals in close proximity to the site.

Spatial extent	Duration	Probability	Significance	Status
Local	Short-term	High	Low	Negative

**Mitigation:** The proposed layout plan has been amended to ensure that the proposed development does not encroach into the existing ecological corridor along the western



boundary of the proposed site. This amendment avoids any loss of vegetation within the existing corridor during the construction phase, and the corridor area would be fenced out of the construction site, minimizing potential disturbance from construction-related activities. The Environmental Management Plan will include a number of measures to ensure that the activities of construction staff do not result in unnecessary disturbance to local fauna. These measures would include:

- Restricting the activities of all staff to the designated construction site;
- Prohibiting access or disturbance of adjacent natural and semi-natural habitats by construction staff;
- Forbidding hunting, capturing, or harassment of local fauna by construction staff;
- Ensuring that solid waste is managed to avoid risk to local fauna and to avoid attracting animals to the site.

**Assessment status after all mitigation measures are applied**

Spatial extent	Duration	Probability	Significance	Status
Local	Short-term	High	Very Low	Negative

**No-go alternative (compulsory)**

The no-go alternative would result in no residential development of the golf course. Although in the short term this would avoid any potential impacts, such as the loss of open space, this option would also negate the opportunities for rehabilitation of natural habitats that have been identified through the project and may in the medium to long term result in the sale of the entire property to offset DCC debt.

Indicate mitigation measures to manage the potential impacts listed above:

Mitigation measures are outlined in sections 2.2.1 to 2.2.11.

**b. Process, technology, layout or other alternatives**

List the impacts associated with process, technology, layout or other alternatives that are likely to occur during the construction phase (please list impacts associated with each alternative separately):

**Alternative A1 (preferred alternative)**

**Direct impacts:**

**Indirect impacts:**

**Cumulative impacts:**

**No-go alternative (compulsory)**

**Direct impacts:**

**Indirect impacts:**

**Cumulative impacts:**

Indicate mitigation measures to manage the potential impacts listed above:



**2.3 IMPACTS THAT MAY RESULT FROM THE OPERATIONAL PHASE**

**a. Site alternatives**

List the potential impacts associated with site alternatives that are likely to occur during the operational phase:

**Alternative S1 (preferred alternative)**

Direct and indirect impacts:				
<b>2.3.1 Impacts on aesthetics and Sense of Place</b>				
<p>The proposed development will potentially have some impact on the views of seven houses along Fairway Drive which lie adjacent to the golf course. Although the long view of the golf course from these residential properties will not be affected, these neighbouring properties would look onto the roofs of the house(s) adjacent to their property(ies). Although there has been some concern raised that the proposed development would potentially obstruct sea views for these neighbours, the project architect’s view shed assessment has found that the proposed development would not obstruct sea views.</p> <p>Although the proposed development will increase slightly the number of houses in the area, the proposed development is unlikely to significantly alter the broader Sense of Place, as these houses will be located adjacent to an existing residential area that borders the golf course; therefore the land-use pattern will continue to be one of low density residential and open space, although the proportion will be altered slightly, with less than 6% of current open space being converted to low density residential.</p>				
Spatial extent	Duration	Probability	Significance	Status
Local	Permanent	Certain	<b>Medium</b>	<b>Negative</b>
<p><b>Mitigation:</b></p> <p>The project architect has assessed the potential impacts on view sheds and the “look onto” effect that some of the immediate neighbours may experience. In order to ensure that there is no major impact upon view sheds for the neighbouring residential properties, the architectural language will need to ensure that there is a height restriction of two (2) storeys, and that the architectural language for the housing estate is sensitive to the open space setting of the development.</p> <p>The architectural guidelines (Appendix G4) propose a number of mitigatory measures, including:</p> <ul style="list-style-type: none"> <li>• A low pitch roofscape with mono pitch or flat roofs, and no hipped, Mansard or bowed roofs permitted,</li> <li>• An earthy colour palette across the proposed development with no white or brightly</li> </ul>				

coloured surfaces permitted, no reflective surfaces permitted, and subtle lighting where necessary,				
<ul style="list-style-type: none"> <li>• Concealed support infrastructure including minor stormwater management structures, heat pumps, air conditioners, aerials and satellite dishes,</li> <li>• A sense of open space including the use of "clearview" type fencing across the site and an indigenous landscaping theme.</li> </ul>				
<b>Assessment status after all mitigation measures are applied</b>				
<b>Spatial extent</b>	<b>Duration</b>	<b>Probability</b>	<b>Significance</b>	<b>Status</b>
Local/site-level	Permanent	Certain	Very Low	<b>Neutral</b>

### 2.3.2 Impact on delivery of Municipal services

A number of local residents have raised concern about the availability of municipal services to service the proposed development. Details regarding the provision of services to the proposed development are included in the Services Report (Appendix G2).

eThekwini Municipality Water and Sanitation Department has confirmed in their letter dated 19 September 2013 (Services Report, Appendix G2), that the existing sewerage infrastructure has sufficient capacity to accommodate the anticipated wastewater flows from the proposed development, and that the Northern Wastewater Treatment Works has sufficient capacity to accept and treat wastewater for the proposed development.

The availability of bulk water supply services from eThekwini Municipality has been confirmed by the Water and Sanitation Department, in their letter dated 26 September 2013 (Services Report, Appendix G2).

eThekwini Municipality has confirmed that there is sufficient capacity to provide the proposed development with electricity, and written confirmation dated 18 November 2013 is included in the Services Report (Services Report, Appendix G2).

The Services Report concludes that: *"All information relating to the availability of bulk services contained in this infrastructure services report indicates that there are and will be adequate bulk services to supply the required demands generated by the development"*. Therefore no mitigation is required.

<b>Spatial extent</b>	<b>Duration</b>	<b>Probability</b>	<b>Significance</b>	<b>Status</b>
Local	Permanent	Improbable	Insignificant	<b>Neutral</b>

**Mitigation:** No mitigation required.

**2.3.3 Infrastructure and provision of services for the proposed development**

The Preliminary Services Layout plan has been included and outlined in the Services Report (Appendix G2).

The internal services that the DCC Trust would need to provide to the proposed development (in terms of installation and maintenance) would include internal roads, wastewater reticulation, potable water reticulation (and water meters), electricity reticulation, and stormwater management. The 260 m of internal roads are designed to be 5 m wide with a 1.5 m grassed verge (total road reserve of 8 m), with a block or cobble paving, and appropriate storm water management installations. In addition, the services assessment has identified the need for rehabilitation of the existing Beachwood Place private road with localised patching and resurfacing with asphalt.

In order to connect to the existing bulk sewerage, a new rising main will be installed along Beachwood Place (to connect in Fairway at the existing municipal terminal manhole), to collect sewage from the reticulation system to be installed within the proposed development. Two small pump stations will be required; the existing pump station at the clubhouse will be refurbished or replaced, and one additional pump station will be installed. Both pump stations would have two pumps installed – one duty pump and one standby pump. Pump stations would also be designed to accommodate any possible overflows in the event of power failures.

The proposed development will have one metered bulk connection for potable water supply (billed to the new Home Owners Association to recover costs from the new home owners). Fire hydrants will be located along the road verges, and firefighting water would be drawn from the domestic supply line.

Electricity will be reticulated within the development, including street lighting along internal roads and the provision of individual electrical site connection kiosks alongside the roadways. The proposed erven will be individually metered.

The Services Report has noted that *"all aspects of the proposed designs for the various services will, be designed in accordance with the "Red Book" Guidelines for the Provision of Engineering Services and Amenities in Residential Township Developments and the eThekweni Guidelines and submitted to the relevant Municipal Departments for approval. All services will be constructed in accordance with the provisions and specifications of the SABS 1200 Series specifications"*.

A new Home Owners Association will be formed and they will be responsible for the future (post-installation) maintenance of services. Thus no additional mitigation is required.

<b>Spatial extent</b>	<b>Duration</b>	<b>Probability</b>	<b>Significance</b>	<b>Status</b>
Local	Permanent	Definite	Low	<b>Neutral</b>

**2.3.4 Stormwater management**

The increase in hardened surfaces on the proposed site would potentially result in the reduction of natural rainfall infiltration on-site and an increase in stormwater runoff from the site, unless adequate attenuation measures are implemented. .

Spatial extent	Duration	Probability	Significance	Status
Local	Permanent	Probable	Medium	<b>Negative</b>

**Mitigation:** To avoid this negative impact stormwater must be managed to avoid damage to downstream environments during storm events with a 1:10 year frequency, and to reduce the risk of damage during storm events at a 1:50 year frequency. All elements of the stormwater management system must ensure that 1:100 year storm events can be managed without significant risk to life or property.

Therefore, a Stormwater Management Plan has been developed and its main objectives are to:

- prevent downstream flooding due to a change in catchment characteristics;
- prevent soil erosion and consequential down-stream damage;
- prevent pollution of the water resources;
- provide for the safe efficient removal of storm water run-off from the various sites.

The Plan includes major installations (established under infrastructure during the construction phase), and minor installations (to be installed by the individual lot owners), and these will be a combination of natural and engineered features (a detailed description is provided in Appendix G3). A key feature of the Plan is that the minor (on-site installations) will ensure that all run-off from individual sites is attenuated on-site prior to being released into the major storm water installations (geotechnical investigations have found that the local soils are able to accept to subsoil storm water disposal). The major installations then operate as a “choke”, allowing storm/ floodwaters to temporarily back up within the water features designed for this purpose, and allowing the gradual release of the water downstream. This mechanism is also designed to allow the baseflows in the natural surface water systems through without hindrance, only coming into effect when there are storm events.

Once installed, the storm water management system will operate automatically, and be designed to require minimal maintenance. The key maintenance activities for this system will include the cleaning of blocked pipes and storm water inlets, and occasional repair of any localized erosion damage that may occur. This maintenance work will become the responsibility of the new Home Owners Association.

Additional recommendations include:

- Rainwater harvesting for re-use before disposal to on-site storm water attenuation structures, and onward disposal through the major storm water installations;
- Measures through the Home Owners Association to ensure that future home

owners and residents do not dispose of potentially hazardous substances into the storm water management system.

This system is intended to ensure that storm water runoff patterns pre- and post-development remain effectively the same, minimizing any risk to downstream environments.

**Assessment status after all mitigation measures are applied**

Spatial extent	Duration	Probability	Significance	Status
Local	Permanent	Probable	Very Low	Neutral

**2.3.5 Impact on local security**

Concerns have been raised by Fairway residents that the proposed development would result in an increased local security risk. The Fairway residents have established a visible security system along the road, and there are concerns that the proposed development may undermine the efforts to establish and maintain this system. Given that the proposed development is of a similar character to adjacent existing land-use (low density, upmarket residential), and that this is proposed to be a secure, gated-estate, it is highly unlikely that the proposed development would introduce any new security risk, nor increase local security risk. A controlled access system on Beachwood Place is anticipated which will monitor pedestrian movement to and from the beach and this is likely to increase the security measures in place.

Spatial extent	Duration	Probability	Significance	Status
Local	Permanent	Improbable	Low	Neutral

**Mitigation:** No mitigation necessary.

**2.3.6 Impact on traffic in Fairway**

There is the potential for the proposed development to generate a very small amount of additional traffic during both construction and operational phases. Fairway is the only access road to the site and this road does not suffer traffic congestion of any consequence. Using the norm of 1.5 vehicles per household generated during peak traffic hour, the new development will generate 30 vehicles at a rate of one vehicle every two minutes during rush hours. One additional vehicle every two minutes on Fairway is highly unlikely to cause existing residents any significant nuisance.

Spatial extent	Duration	Probability	Significance	Status
Local	Permanent	Probable	Low	Neutral

**Mitigation:** No mitigation necessary.

### 2.3.7 Access to local beaches

There is a perception that this development will prevent access to the local beach via Beachwood Place. The current situation is that vehicles have access via Beachwood Place and vehicles are currently parking on shoreline habitats. This access creates an environmental problem via damage to sensitive dune / beach habitats (discussed in detail in the specialist report in Appendix D4).

The Integrated Coastal Management Act 24 of 2008 prohibits the use of vehicles in the coastal zone to prevent this type of degradation of our coastal habitats. The recommendations from the dune specialist indicate that there is an urgent need to prevent vehicular access to the dune cordon. This is supported by the sign placed on the beach by the Department of Environmental Affairs.

The proposed development will not have a direct impact on the beach access at this stage, although, it is envisaged that the planning approval through the Planning and Development Act (Act No. 6 of 2008) will address the issue of vehicular beach access via Beachwood Place. The applicants are in the process of removing the vehicular right of way via the formal channels with the eThekweni Municipality to facilitate the recommended dune rehabilitation as per this report. **This will not prevent pedestrian access to the beach.** This will allow rehabilitation of the sensitive dune environment.

Spatial extent	Duration	Probability	Significance	Status
Local	Permanent	High	Medium	Positive

### 2.3.8 Indirect and cumulative operational phase impacts

The proposed development will result in increased hardened surfaces on the site, contributing a small increase to the volume and velocity of stormwater runoff from the proposed site. This will result in downstream habitats experiencing an increase in the volume and velocity of surface flow relative to subsurface flow during the wet season. This will increase the risk of erosion and sedimentation in and around the site. Conversely, the hardening of additional areas will reduce soil infiltration across the site and ultimately reduce subsurface flow. The downstream wetlands may experience decreased water inputs during low flow periods (dry season).

The support service infrastructure for the proposed development includes potential risk to wetlands on- and off-site, as the proposed services encroach on wetland areas and their buffer zones. In addition, once the internal, on-site sewer reticulation system is established and connected to the existing municipal bulk infrastructure, there is a potential pollution risk for the lifetime of the pipe network in the event of overflows. Overflows

might occur as a result of power outages, blockages, inadequate design and/or poor construction. If these manholes were to overflow, raw sewage could enter the surface and subsurface flows of streams and wetlands, with potential health and biodiversity risks.

The residential units will represent pollution sources for oils, hydrocarbons, sediment, dust, detergents and litter, e.g. plastic, cigarette butts etc., and other toxicants for the surrounding environment. Ultimately, the pollution of stormwater from the site represents a water quality risk to the downstream Beachwood mangroves. However, it should be noted that these wetlands already receive direct storm water flows from the existing adjacent roads and residential properties with very little management or attenuation.

There may be secondary human disturbance impacts arising from the operational phase of the proposed development, including:

- The proliferation of exotic and alien plant species around the edges of the residential units;
- Light pollution;
- Noise pollution
- Disturbance to resident fauna

Spatial extent	Duration	Probability	Significance	Status
Local	Permanent	Likely	Low	Negative

**Mitigation:** As noted in the specialist report, golf course maintenance includes the regular mowing and cutting back of the forest edges, the dumping of cut grass and plant material, and nutrient-rich runoff into the stream and wetland systems. This has exacerbated the establishment of invasive alien plants. The creeper *Ipomoea cairica* was particularly noted by the wetland specialist. The proposed development presents an opportunity to introduce management measures to improve the current condition and integrity of habitats associated with the golf course.

**Recommended Mitigation Measures:**

- Stormwater generated by the proposed development should be attenuated onsite as far as possible, the artificial wetland, proposed as a wetland offset, also being used to attenuate and filter surfacewater/stormwater runoff;
- Hardened and impermeable areas must be minimised as far as practically possible;
- Storm water management should provide some attenuation, encourage infiltration, and provide for filtration (removal of urban pollutants) across the site;
- Rainwater harvesting and storage should take place on-site;
- If stormwater collection systems require outlet points, the installation of many smaller storm water outlets must be favoured over a few large outlets and these should be designed and located to avoid flow concentration and subsequent erosion.
- The ongoing maintenance of the stormwater management system must be detailed in the operational phase Environmental Management Plan, detailing the management responsibility and budget.
- All future owners and their on-site employees must be provided with a set of rules and prohibitions regarding environmentally sustainable use of toilets and kitchen sinks.
- All homeowners should be informed of the contingency requirement to inform the



eThekweni Municipality Sanitation Department immediately in the case of blockages and overflowing manholes.

- The disposal of any grass/vegetation cuttings from the golf course or local gardens into the wetlands must be prohibited.
- Consideration should be given to the installation of educational signage at strategic locations to educate golfers and future residents on the importance of different habitats across the property.
- All private residential gardens must be strictly indigenous.

**Assessment status after all mitigation measures are applied**

<b>Spatial extent</b>	<b>Duration</b>	<b>Probability</b>	<b>Significance</b>	<b>Status</b>
Local	Permanent	Likely	Low	<b>Positive</b>

**2.3.9 Dune rehabilitation**

The dune specialist study has recommended the prevention of vehicular access to the present beach parking area to allow rehabilitation of the dunes. It is recommended that measures include:

- Cordoning off the areas designated for rehabilitation and providing a clearly demarcated pedestrian access point to the beach.
- Reshaping of the area to provide a natural wind and sand barrier to the leeward side of the dune cordon
- Possible re-establishment of appropriate dune plants to stabilise selected areas.

<b>Spatial extent</b>	<b>Duration</b>	<b>Probability</b>	<b>Significance</b>	<b>Status</b>
Local	Long-term	Probable	High	<b>Positive</b>

**2.3.10 Operational phase impacts on vegetation**

The operational phase of the proposed development may have indirect or cumulative impacts on vegetation (including important vegetation communities off-site but within the golf course property):

- Increased pressure for maintenance activities (mowing/trimming/manicuring) that may encroach on natural areas of conservation value;
- Planting of garden ornamentals and other species that do not naturally occur, but that may have invasive properties;
- Disposal of solid waste, particularly garden refuse, from residential sites over residential site boundaries. The wetland specialist noted the disposal of garden waste onto the adjoining golf course from private properties on Fairway.

<b>Spatial extent</b>	<b>Duration</b>	<b>Probability</b>	<b>Significance</b>	<b>Status</b>
Local	Permanent	High	Low	<b>Negative</b>

**Mitigation:** The following mitigations are recommended by the vegetation specialist during the operational phase.

- Homeowners will be provided with a planting palette of suitable indigenous plants;
- Homeowners must control alien plant species on their properties;
- Homeowners must not dispose of garden or other refuse over property boundaries.

These conditions should be included in a sale or Homeowner Association agreement so that compliance can be achieved.

**Assessment status after all mitigation measures are applied**

Spatial extent	Duration	Probability	Significance	Status
Local	Permanent	High	Low	Positive

**2.3.11 Impacts on local fauna**

There are a number of invertebrate and vertebrate groups which are recorded and are anticipated to occur in the various natural and semi-natural areas throughout the Beachwood Golf Course property. The area which will be developed as residential units is not comprised of high quality habitats for the species listed in 2.1.8. The area does however act as a north south corridor for animal movement across the property. The dune cordon east of this is also a significant conduit. The design of the housing precinct was adjusted to allow for this by pulling back from the western edge of the golf course property. The proposed residences would then be fenced out of this area to allow this space to act as an ecological corridor.

Spatial extent	Duration	Probability	Significance	Status
Local	Permanent	High	Low - Medium	Negative

**Mitigation:** The following mitigations are recommended by the vegetation specialist and zoologist during the operational phase. The proposed layout plan has been amended to ensure that the proposed development does not encroach into the existing ecological corridor along the western boundary of the proposed site. The Environmental Management Plan will include a number of measures to ensure that the activities of construction staff do not result in unnecessary disturbance to local fauna. These measures would include:

- Restricting the activities of all staff to the designated construction site;
- Prohibiting access or disturbance of adjacent natural and semi-natural habitats by construction staff;
- Forbidding hunting, capturing, or harassment of local fauna by residents and staff;
- Ensuring that solid waste is managed to avoid risk to local fauna and to avoid attracting animals to the site.
- Homeowners should adhere to the planting palette of suitable indigenous plants to ensure resting, feeding and roosting habitats for birds, amphibians and reptiles as well as ensuring the ecological corridor functions across the property;
- This includes the remainder of the golf course – clearing of vegetation and inappropriate planting has occurred in front many of the Fairway properties on the golf

course property and this has decreased the habitat integrity of this area as a wildlife/ecological corridor. This should be rectified and maintained to strengthen this function.

- Homeowners should disturb wildlife as little as possible with the possible restriction on the types of pets allowed within the estate. For example, restricted to no more than two small dogs with no cats permitted.
- Homeowners must control alien plant species on their properties;
- Homeowners must not dispose of garden or other refuse over property boundaries.

These conditions should be included in a sale or Homeowner Association agreement so that compliance can be achieved.

**Assessment status after all mitigation measures are applied**

Spatial extent	Duration	Probability	Significance	Status
Local	Permanent	High	Low	Positive

**2.3.12 Impacts on the mangroves presently surrounded by holes 5, 6, 8 and 9 of the Beachwood Golf Course**

The operational phase of the proposed development has the potential to impact during the operational phase on the mangroves in the following ways:

- Impacts on freshwater input into the mangrove area;
- Impacts of human disturbance arising from the development;
- Impacts on rates of sediment accumulation.

The placing of the proposed development is well to the north of the mangrove area and separated by both portions of the golf course and areas of vegetation. There is no likelihood or further sediment accumulation nor modification of existing water movement patterns arising from the proposed development. Greater golfing activity on the course, potentially arising out of the successful development and the proximity to the course of more golfers will not influence the mangrove trees in any way. Increased golfing activity in the mangrove area might constitute some sort of disturbance to any animal life but based on the antipathy of focused golfers to any sort of disturbance this would seem unlikely. The likelihood of any disturbance or changes on the golf course brought about through the development extending into the lower reaches of the Beachwood Nature reserve via the Beachwood Creek is negligible.

There are consequently no mitigation measures required.

Spatial extent	Duration	Probability	Significance	Status
Local	Permanent	Improbable	Insignificant	Neutral

**No-go alternative (compulsory)**

The no-go option has significant negative consequences for the Durban Country Club

which relate directly to the ability of the Club to discharge its current liabilities. This would place the medium- to long-term survival of the existing Beachwood Golf Course and the Durban Country Club at risk (both of these are significant components of Durban's tourism and sporting attractions). Should the Club be unable to maintain or sustainably manage the Beachwood Golf Course or have to sell the entire property, there then exists the potential for a loss of ecosystem integrity for the natural areas on the property.

Indicate mitigation measures to manage the potential impacts listed above:

Mitigation measures are outline in sections 2.3.1 to 2.3.12.

**b. Process, technology, layout or other alternatives**

List the impacts associated with process, technology, layout or other alternatives that are likely to occur during the operational phase (please list impacts associated with each alternative separately):

**Alternative A1 (preferred alternative)**

**Direct impacts:**

**Indirect impacts:**

**Cumulative impacts:**

**No-go alternative (compulsory)**

**Direct impacts:**

**Indirect impacts:**

**Cumulative impacts:**

Indicate mitigation measures to manage the potential impacts listed above:

[Redacted area]

**2.4 IMPACTS THAT MAY RESULT FROM THE DECOMMISSIONING OR CLOSURE PHASE**

**a. Site alternatives**

List the potential impacts associated with site alternatives that are likely to occur during the decommissioning or closure phase:

Should the proposed development be approved, no decommissioning phase is envisaged.

**Alternative S1 (preferred alternative)**

**Direct impacts:**

**Indirect impacts:**

**Cumulative impacts:**

**No-go alternative (compulsory)**

**Direct impacts:**

**Indirect impacts:**

**Cumulative impacts:**

Indicate mitigation measures to manage the potential impacts listed above:

**b. Process, technology, layout or other alternatives**

List the impacts associated with process, technology, layout or other alternatives that are likely to occur during the decommissioning or closure phase (please list impacts associated with each alternative separately):

**Alternative A1 (preferred alternative)**

**Direct impacts:**

**Indirect impacts:**

**Cumulative impacts:**

**No-go alternative (compulsory)**

**Direct impacts:**

**Indirect impacts:**

**Cumulative impacts:**

Indicate mitigation measures to manage the potential impacts listed above:

## 2.5 PROPOSED MONITORING AND AUDITING

For each phase of the project and for each alternative, please indicate how identified impacts and mitigation will be monitored and/or audited.

### **Alternative A1 (preferred alternative)**

The proposed monitoring for the pre-construction, construction, post-construction and operational phases of the proposed development have been included in the Draft Environmental Management Programme (Appendix F).

### 3 ENVIRONMENTAL IMPACT STATEMENT

Taking the assessment of potential impacts into account, please provide an environmental impact statement that summarises the impact that the proposed activity and its alternatives may have on the environment after the management and mitigation of impacts have been taken into account, with specific reference to types of impact, duration of impacts, likelihood of potential impacts actually occurring and the significance of impacts.

#### Alternative S1 and A1 (preferred site and preferred alternative)

The proposed development will to a very large degree occur on existing portions of the Beachwood Golf Course which have been significantly transformed. Direct irreversible effects on natural habitats will therefore be low. There will however be effects on the surrounding environment beyond the limits of the development during the construction and operational phases which can be effectively mitigated. The different aspects which arose during the EIA are listed below and accompanied by an assessment of their level of impact and long term significance.

Impacting Activity	Assessment of impact	
	Before Mitigation	After mitigation
<b>Phase 1: Planning &amp; Design</b>		
<ul style="list-style-type: none"> <li>Impact(s) on the Golfing Amenity. Inevitable changes to the structure of the golf course have been allowed for by suitable re-alignments and, while permanent, are not seen as adverse long term impacts.</li> </ul>	Negative (low)	Neutral
<ul style="list-style-type: none"> <li>Geotechnical Assessment found that the slope along the western boundary would need to be protected from earthworks, a shallow watertable exists on some portions of the site and the soils are considered highly erodible. Without mitigation construction activities on the site will have a negative impact. Changes to the design ie movement away from the western slope and specific recommendations from the geotechnical specialists regarding the founding conditions for the proposed structures have been used to inform the detailed design and planning for the proposed development. These mitigations are considered to effectively neutralise this impact.</li> </ul>	Negative (medium)	Neutral
<ul style="list-style-type: none"> <li>D'MOSS Impacts. The planned developments will result in a permanent loss of open space but the intention is that this will be compensated by enhancement of existing natural or semi-natural environments on the course and in the dune cordon.</li> </ul>	Negative (low)	Neutral
<ul style="list-style-type: none"> <li>Dune function. The planned development is well away from the coastal dune cordon and will have no impact on dune integrity and dynamics. The potential for dune restoration along the coastal strip was identified early in</li> </ul>	Neutral	Positive

<p>the planning stages and relevant measures recommended</p>		
<ul style="list-style-type: none"> <li>Sea level rise. While sea level rise is occurring and more frequent storm events are anticipated, the development is well away from the protective dune cordon and, on a human time scale, should not be affected.</li> </ul>	Neutral	Positive
<ul style="list-style-type: none"> <li>Wetland Impacts. These have been considered in terms of both the construction and operational phases and the implications will be dealt with under those sections</li> </ul>	Negative (low)	Neutral
<ul style="list-style-type: none"> <li>Vegetation. The potential effects have been considered in terms of both the construction and operational phases and the implications will be dealt with under those sections.</li> </ul>	Negative (very low)	Positive
<ul style="list-style-type: none"> <li>Faunal Diversity. The golf course and its surrounds as well as enclosed areas of natural or semi-natural vegetation support an obvious variety of bird species as well as less obvious small mammals and invertebrates. These aspects have been considered under the Construction and Operational Phases</li> </ul>	Negative (low)	Neutral
<ul style="list-style-type: none"> <li>Need &amp; Desirability. The proposed development arose out of a need by the Durban Country Club to discharge various debts at the cost of a loss of part of the Beachwood Golf Course. The possible effect of the rejection of this overall proposal is that the Course might have to be disposed of <i>in toto</i> which could have major effects on the neighbourhood.</li> </ul>	The DCC Trust has assured stakeholders that the net proceeds gathered from the Beachwood project will make a significant and meaningful contribution towards the needs of the Durban Country Club.	
<ul style="list-style-type: none"> <li>Property Values. This remains a potential issue for those Fairway properties directly overlooking the planned units but the elevations of these units, while obscuring parts of the golf course, will not interfere with sea views in any way. The possible effects on property values remain moot and would have to be balanced against possible long term benefits in terms of security and greater control of beach access.</li> </ul>	Given that the proposed development is an extension of adjacent existing land-use, and will be designed to harmonize with the existing residential properties in Fairway, the impact on property value is anticipated to be low.	
<ul style="list-style-type: none"> <li>Airport Noise. This was raised as a possible issue but measurements taken at the Club House indicated that noise levels were within municipally acceptable levels. The noise impact study found that although there may be relatively high instantaneous noise levels, these are usually assessed as an average over 10 minutes. This average is found to be within the limits described by the municipal by-laws for eThekweni. However, as potential future residents would be exposed to this noise "often"</li> </ul>	Negative (very low)	Neutral



<p>during daylight hours, it was recommended that architectural noise control measures are included in residence design.</p>		
<ul style="list-style-type: none"> <li>Mangrove Habitats. The proposed development is placed well to the north of the mangrove area and does not represent any infilling, disturbance (human or machinery) or modification of the water flow regimes which are currently maintaining this wetland. There is little likelihood of accelerated sediment accumulation. In consequence no impact is envisaged and no mitigation is necessary.</li> </ul>	Neutral	None necessary

<b>Phase 2: Construction</b>	<b>Before Mitigation</b>	<b>After mitigation</b>
<ul style="list-style-type: none"> <li>Golf Amenity. This phase will cause some disruption to play at those holes where course re-alignment is taking place in order to allow for construction activity and movement of associated vehicles. This would be a temporary situation.</li> </ul>	Negative	None possible
<ul style="list-style-type: none"> <li>Wetlands on Site. All wetlands in the area proposed for construction are considered highly transformed or artificial with very little or no functionality. Mitigatory controls have been specified in order to protect any wetland habitats in the vicinity.</li> </ul>	Negative (low)	Neutral
<ul style="list-style-type: none"> <li>Terrestrial Vegetation. The only terrestrial vegetation that is likely to be affected are isolated large trees. Layout suggestions have been made in order to protect as many of these trees as possible but as they do not represent any major sensitive habitats loss of a proportion is not seen as a significant impact.</li> </ul>	Negative (very low)	Positive
<ul style="list-style-type: none"> <li>Geotechnical Constraints Given the local geotechnical conditions, the construction phase may result in disturbance to geotechnically sensitive areas, such as the slope along the western boundary of the proposed site. In addition, the soils of the proposed site are considered highly erodible, and earthworks may result in erosion and environmental degradation. Mitigation measures suggested neutralise these impacts.</li> </ul>	Negative (low)	Neutral
<ul style="list-style-type: none"> <li>Traffic impacts: There may be some impact during the construction phase as a result of increased movement of heavy construction vehicles in Fairway in the short term. However, there is already some presence of such vehicles to support several construction works currently happening at existing residential properties in Fairway. Construction activities will be confined to daylight hours, and construction vehicles should be restricted to demarcated access routes, haulage routes and turning</li> </ul>	Negative (low)	Negative (Very Low)

areas.		
<ul style="list-style-type: none"> <li>Nuisance Impacts. Noise, dust and vehicle movements during construction are inevitabilities for which mitigatory policies and controls have been put forward. These impacts would quite possibly have to be borne to a larger degree by golf club members and players, who ultimately stand to benefit, than local residents.</li> </ul>	Negative (low)	Negative (Very Low)
<ul style="list-style-type: none"> <li>Stormwater. Stormwater runoff, particularly during construction, represents a particular hazard, possibly to a greater degree in this case because of the proximity of the construction site(s) to the golf course greens and fairways. Detailed control measures have been put forward and, assuming implementation, should provide protection against most rainfall conditions.</li> </ul>	Negative (low)	Neutral (very low)
<ul style="list-style-type: none"> <li>Wetlands generally. Wetlands away from the actual construction sites stand to be affected by activities on the actual construction site(s), primarily in terms of stormwater runoff and sediment transport. The suggested measures for control of water movement should, apart from exceptional circumstances, provide adequate control</li> </ul>	Negative (medium)	Neutral (low)
<ul style="list-style-type: none"> <li>Terrestrial Vegetation. As referred to earlier, the only terrestrial vegetation likely to be affected by the development consists of isolated trees which do not constitute major habitats. While development layouts are intended to allow for the maintenance of these trees, some may be lost and if they are protected species permit applications will be made for their removal.</li> </ul>	Negative Insignificant – low)	Positive (low)
<ul style="list-style-type: none"> <li>Mangrove habitats. Mangrove habitats occur both within the southern bounds of the course as well as adjacent to the southern boundary in the Beachwood Mangrove Nature Reserve. The proposed development is at least 300 m from the closest mangrove and there is very little likelihood that construction activities will impinge on these areas.</li> </ul>	Neutral	None necessary
<ul style="list-style-type: none"> <li>Local fauna. Impacts are possible through disturbance, possible trapping etc but not through habitat loss. Strict control measures have been proposed and, assuming implementation, should provide the necessary protection.</li> </ul>	Negative (low)	Negative (Very Low)

Phase 3: Operational	Before Mitigation	After mitigation
<ul style="list-style-type: none"> <li>Aesthetics/Sense of Place. This remains an issue because of the long history of the presence of residences along Fairway overlooking the golf course and the sea. The nature of the proposed development is such that sea views will not be obstructed. The architectural guidelines for the development emphasise unobtrusiveness in terms of colours, roof designs, reflective surfaces, lighting etc so as to minimise the visual impact. Indigenous plant use is also emphasised and it can be expected that tree growth under Durban climatic conditions and careful selection by owners could rapidly transform a grassed open space into a semblance of a coastal forest.</li> </ul>	Negative (low)	Neutral (very low)
<ul style="list-style-type: none"> <li>Municipal Services. Assurances have been received from the eThekweni Municipality that the provision of services to the proposed development is assured.</li> </ul>	Neutral (insignificant)	Neutral
<ul style="list-style-type: none"> <li>Infrastructure. As with municipal services, there is an assurance that infrastructure for the development will be provided. A new Home Owners Association will be formed and they will be responsible for the future (post-installation) maintenance of services. Thus no additional mitigation is required.</li> </ul>	Neutral (low)	No mitigation required
<ul style="list-style-type: none"> <li>Stormwater management. This point has been considered in detail because of the sensitivity of the surroundings, whether it be natural or semi-natural wetlands or the adjoining golf course. The increase in hardened surfaces on the proposed site would potentially result in the reduction of natural rainfall infiltration on-site and an increase in stormwater runoff from the site, unless adequate attenuation measures are implemented. This system is intended to ensure that storm water runoff patterns pre- and post-development remain effectively the same, minimizing any risk to downstream environments.</li> </ul>	Negative (low)	Neutral
<ul style="list-style-type: none"> <li>Security concerns. Concerns have been raised by Fairway residents that the proposed development would result in an increased local security risk. The Fairway residents have established a visible security system along the road, and there are concerns that the proposed development may undermine the efforts to establish and maintain this system. Given that the proposed development is of a similar character to adjacent existing land-use (low density, upmarket residential), and that this is proposed to be a secure, gated-estate, it is highly unlikely that the proposed</li> </ul>	Neutral	Positive

<p>development would introduce any new security risk, nor increase local security risk. A controlled access system on Beachwood Place is anticipated which will monitor pedestrian movement to and from the beach and this is likely to increase the security measures in place.</p>		
<ul style="list-style-type: none"> <li>Fairway traffic. It is accepted that the development will increase traffic movements on Fairway. It is however, further argued that present traffic levels on Fairway are low and the small number of additional residential units, which will result in traffic movement along Fairway to and from Beachwood Place, will have a negligible effect, even during rush hour periods.</li> </ul>	Neutral	None necessary
<ul style="list-style-type: none"> <li>Beach access. The proposed development will not have a direct impact on the beach access at this stage, although, it is envisaged that the planning approval through the Planning and Development Act (Act No. 6 of 2008) will address the issue of vehicular beach access via Beachwood Place. The applicants are in the process of removing the vehicular right of way via the formal channels with the eThekweni Municipality to facilitate the recommended dune rehabilitation as per this report. <b>This will not prevent pedestrian access to the beach.</b> This will allow rehabilitation of the sensitive dune environment.</li> </ul>	Neutral	Positive
<ul style="list-style-type: none"> <li>Dune rehabilitation. As part of the general policy towards environmental enhancement in balance with any adverse impacts of the proposed development, the intention of the restriction of vehicular beach access is to allow recovery and rehabilitation of the break in the dune cordon where the present illegal parking area is situated.</li> </ul>	Neutral	Positive
<ul style="list-style-type: none"> <li>Vegetation impacts. The long term impacts of the proposed development, i.e. during the operational phase, are primarily on what is presently part of the playing area of the golf course and therefore has little real natural significance. The development and the linked activities such as wetland and dune restoration, could arguably significantly enhance biological diversity on the golf course, particularly if a reasonable programme of indigenous planting was carried out in the proposed development.</li> </ul>	Negative (low)	Positive (low)
<ul style="list-style-type: none"> <li>Mangrove impacts. As pointed out elsewhere in this summary, the nearest mangrove area is ca. 300 m from the proposed development and there is no possibility of any physical impact. Run-off from the development should be insignificant in the short term and any future run-off should not differ significantly from that which</li> </ul>	Neutral	None necessary

<p>occurs at present.</p> <ul style="list-style-type: none"> <li>Faunal diversity: There are a number of invertebrate and vertebrate groups which are recorded and are anticipated to occur in the various natural and semi-natural areas throughout the Beachwood Golf Course property. The area which will be developed as residential units is not comprised of high quality habitats for the species listed in 2.1.8. The area does however act as a north south corridor for animal movement across the property. The dune cordon east of this is also a significant conduit. The design of the housing precinct was adjusted to allow for this by pulling back from the western edge of the golf course property. The proposed residences would then be fenced out of this area to allow this space to act as an ecological corridor.</li> </ul>	Negative (low - medium)	Positive (low)
<b>Phase 4: Decommissioning Phase</b>		
No decommissioning is anticipated and therefore impacts of this phase are not assessed.		

**No-go alternative (compulsory)**

The no-go alternative would result in no residential development of the golf course. Although in the short term this would avoid any potential negative impacts already described, such as the loss of a small amount of open space, this option would also negate the opportunities for rehabilitation of natural habitats that have been identified through the project and may in the medium to long term result in the sale of the entire property to offset DCC debt.

**SECTION F: RECOMMENDATION OF EAP**

Is the information contained in this report and the documentation attached hereto in the view of the EAPr sufficient to make a decision in respect of this report?

YES	
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**Summarised Recommendation of the EAP**

Based on the findings of this Basic Assessment process, it is the opinion of the Environmental Assessment Practitioner, that there are no negative impacts that should be considered as "fatal flaws" from an environmental perspective that require a re-design or termination of the project. Based on the fact that the No Go Alternative poses significant risks for the long term viability of the golf course as a valuable open space asset within the City, it is the opinion of the Environmental Assessment Practitioner that the project's benefits outweigh the negative environmental impacts, and will make a substantial contribution towards the offset of the financial challenges faced by the Durban Country Club.

If "NO", please contact the KZN Department of Agriculture, Environmental Affairs and Rural Development regarding the further requirements for your report.

If "YES", please attach the draft EMPr as Appendix F to this report and list any recommended conditions, including mitigation measures that should be considered for inclusion in any authorisation that may be granted by the competent authority in respect of the application:

The Draft EMPr is attached as Appendix F

## SECTION G: APPENDICES

The following appendixes must be attached as appropriate:

Appendix A: Site plan(s)

Appendix B: Photographs

Appendix C: Facility illustration(s)

Appendix D: Specialist reports

Appendix D1: Geotechnical Report

Appendix D2: Wetland Assessment Report

Appendix D3: Vegetation Report

Appendix D4: Ecological Review of the Dune Cordon Associated with the Beachwood Golf Course, Durban

Appendix E: Comments and Responses Report

Appendix F: Draft Environmental Management Programme (EMPr)

Appendix G: Other information

Appendix G1: Alternatives Report

Appendix G2: Services Report

Appendix G3: Stormwater Management Plan

Appendix G4: Architectural Language

Appendix G5: Golf Course Layout Plan

Appendix G6: Noise Impact Assessment