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OPERATIONAL ENVIRONMENTAL MANAGEMENT PROGRAMME

For

PINNACLE POINT ESTATE



Prepared for: Pinnacle Point Estate Home Owners Association

By: Cape EAPrac

Report Reference: MOS252/02

Date: July 2014 (updated 22 August 2014)

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PURPOSE OF THIS REPORT:

Operational Environmental Management Plan for
Pinnacle Point Estate

APPLICANT:

Pinnacle Point Estate Home Owners Association

CAPE EAPRAC REFERENCE NO:

MOS252/02

SUBMISSION DATE

July 2014 (updated 22 August 2015)

OPERATIONAL ENVIRONMENTAL MANAGEMENT PROGRAMME (OEMP)

PINNACLE POINT ESTATE

MOSSEL BAY

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VERSION HISTORY

Version #	Implemented By	Revision Date	Approved By	Approval Date	Reason
1.0	Desireé du Preez	January 2019			Some corrections and correlation with the new conservation and golf course management programmes Deleted text are strikethrough Inserted text in green

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ABBREVIATIONS AND ACRONYMS

ACMP	Archaeological Conservation Management Plan
ARC	Architectural Review Committee
CMP	Conservation Management Plan
DAFF	Department of Agriculture, Forestry and Fisheries – the national authority responsible for the agricultural, forestry and fishery sector and its management.
DEA&DP	Department of Environmental Affairs and Development Planning – the provincial authority for sustainable environmental management and integrated development planning.
EA	Environmental Authorisation – Authorisation obtained on completion of an Environmental Impact Assessment
ECO	Environmental Estate Conservation Officer – The person responsible for general environmental and conservation management on the Estate. independent site agent appointed by a proponent to observe and enforce environmental policies and principles on a development site. <i>Delete: this was relevant to the construction phase, which has been completed.</i>
GMP	Golf Course Management Plan
HOA	Home Owners Association – body responsible for daily management of the resort representing home owners.
HWC	Heritage Western Cape – Provincial body responsible for enforcing the National Heritage Resources Act in the Western Cape.
NEMA	National Environmental Management Act (Act 107 of 1998, as amended) – national legislation that provides principles for decision-making on matters that affect the environment.
PPHOA	Pinnacle Point Home Owners Association

1 INTRODUCTION

Cape Environmental Assessment Practitioners (Cape EAPrac) was appointed by the **Pinnacle Point Estate Home Owners Association (PPHOA)** to develop an Operational Environmental Management Programme (OEMP) which will be used to promote and ensure environmental monitoring, control and management of the properties and leased areas under management of the PPHOA.

Pinnacle Point Estate is made up of privately owned and municipal land situated on a Portion of Remainder Erf 2001 and Erf 3438 immediately west of Mossel Bay in the Southern Cape. On 29 October 2003 the Department of Environmental Affairs & Development Planning (DEADP) issued the Environmental Authorisation (Ref: EG12/2/1-74- Erf 2001 & Erf 3438 Pinnacle Point Golf Estate 38859) permitting the development of an 18 hole golf course with ancillary facilities, 500 residential units, a 300 room hotel with conference, sport, health, leisure and entertainment facilities, resort / operational facilities, open space and conservation areas, including the associated infrastructure, approximate to the layout plan No 213502 as submitted by Planning Partners dated 18 August 2003. A copy of the Environmental Authorisation is attached as Appendix A.



Plate 1: Google image showing Pinnacle Point Estate layout.

Although issued to Pinnacle Point Resort (Pty) Ltd initially, the EA was successfully transferred to the **PPHOA** on 9 October 2013 (Ref: 16/3/1/5/D6/28/0011/13) making the

PPHOA responsible for compliance with the EA and condition of approval, including implantation of the OEMP. A copy of the Amended Environmental Authorisation is included with Appendix A.

The Draft OEMP was submitted to DEADP by the PPHOA in 2013. DEADPs review comments on the draft requested that the following be addressed in an updated version of the report:

- Clarification on the Roles & Responsibilities of parties involved with the management of the Resort;
- Additional detail on monitoring requirements and performance indicators of management actions;
- Include an Implementation Schedule for ongoing actions;
- Integrate the Archaeological Conservation Management Plan (ACMP) and Fire Management Plan with the OEMP;
- Ensure that sufficient funding are allowed for in the annual budget to achieve conservation and management targets;
- Detail the initiatives undertaken, or to be undertaken for creating environmental awareness;
- Reintroduce the ELC in an overseeing role to assist with OEMP compliance at annual meetings. Alternatively introduce independent annual Audits to report any non-compliance that could not be rectified;
- Specific shortcomings identified by the Department must be addressed; and
- Allowance to be made for vehicular access to erven previously only accessible via golf carts.

This OEMP contains the above management requirements and recommendations forthcoming from the environmental impact assessment (EIA) process in terms of the regulations contained in the National Environmental Management Act (NEMA, Act 107 of 1998). The OEMP is a dynamic document which develops during the lifespan of a development to include all relevant mitigations, recommendations and policy changes, the outcome of which should always be in furtherance of sustainable management.

1.1 PURPOSE OF THE OEMP

Section 28 of NEMA provides for the Duty of Care principle that “...obliges every person who causes, has caused or may cause significant environmental degradation to take reasonable measures to prevent such degradation from occurring, continuing or recurring”. This clause forms the underpinning philosophy of this OEMP.

The purpose of this OEMP is to ensure that the environmental impacts and management of

the various phases of the development on the receiving environment are managed, mitigated and kept to a minimum. These phases include existing dwellings, construction of new dwellings, management of open space areas and overall sustainability. The OEMP provides guidance and assistance to the PPHOA members and visitors to maintain the pristine integrity of the area in terms of its biodiversity, social nature and sense of place. The ultimate goal is to ensure conservation based objectives within an urban environment.

The OEMP must provide easily understood and clearly defined actions that should be implemented during each phase of the development of the Resort. The OEMP is a dynamic document that is flexible and responsive to new and changing circumstances.

The specifications contained in the OEMP links back to the main impacts and concerns and a key focus of the OEMP should always be to ensure that the anticipated and expected impacts are managed and where possible their level of significance maintained or improved.

1.2 STATUS OF THE OEMP

The OEMP is a legal document as a condition of the Environmental Authorisation.

Condition 9 of the Environmental Authorisation (EA) states:

“The applicant must compile and submit an acceptable operational phase Environmental Management Plan (OEMP) for the entire property. This must be approved by this Directorate before any of the units may be occupied. The OEMP must (8.1) as a minimum address the burning of fynbos; the complete removal and eradication of all alien invasive vegetation and management of greens to prevent the spread of kikuyu grass; management of conservation areas; storm water management; fauna management; water conservation and demand management; waste minimization; energy efficiency and any other aspects identified by the specialists and environmental liaison committee (ELC) regarding (a) the acquisition of additional land for conservation purposes as outlines in the specialist botanical review must be pursued in consultation with the local authority, (b) the various recommendations in the specialist botanical and other studies must be implemented; (8.2) incorporate the conditions of authorisation given in this Record of Decision, as appropriate to the operational phase of the project. The HOA and / or operator of the facility must implement and ensure compliance with this OEMP”.

The document is binding on the Holder of the EA (PPHOA), all homeowners, property owners, all contractors and sub-contractors and visitors to the site. It is noted that Clause 110 of the Deed of Sale (for the transfer of any property), as well as the PPHOA Memorandum of Incorporation imposes an obligation to comply with the OEMP and EA.

The OEMP or applicable sections thereof must be included as part of any tender documents / agreements as well as contractual documents between the Proponent or individual land owners and any contractors. Copies of this OEMP must be kept on site and all home and land owners are expected to familiarise themselves with the content of this OEMP.

This OEMP must be accepted and approved by the Department of Environmental Affairs & Development Planning (DEADP) in order for it to become legally binding.

1.3 COMPOSITION OF THE OEMP

The OEMP for the PPHOA consists of various parts and documents. This document is the main body of the OEMP and sets the rules in terms of policy, management, revisions and auditing. Further additions to this OEMP consist of the Conservation Management Plan (CMP) and Golf Course Management Plan (GMP). These management plans are free standing documents, but should be regarded as extensions of this OEMP. Reports and other documents that inform the management of the Estate are appended, as listed in the List of Appendices.

1.4 REVISIONS OF THIS OEMP

This OEMP (along with the associated sub management plans) reports on a number of existing initiatives and requirements that has been in existence since before finalisation of this OEMP. Amongst others, the Integrated Fire Management Plan, Game Introduction Plan, Archaeological Conservation Management Plan, Stormwater Management Policy, Landscaping Guidelines, Deed of Trust and HOA Articles.

These are standalone documents which have been endorsed by, for instance CapeNature (Game Introduction Plan) and Heritage Western Cape (Archaeological Conservation Management Plan), thus their contents is not repeated in this OEMP although they are referenced and included as Appendices.

These documents are specific and to avoid the excessive updating and resubmission of the OEMP every time that one of these documents are revised or slightly adjusted, it is recommended that the OEMP be adopted with the understanding that the Pinnacle Point Home Owners Association (PPHOA) maintain updated versions of all Appendices at all times and present such to the DEADP for information.

This OEMP, along with the CMP, GMP and other documents mentioned above, are viewed as dynamic documents that should be reviewed and updated on a continual basis as the need arises. Updated versions of any of the Appendices must be noted and reported in the **Audit**. The OEMP must be updated **every five (5) years** from date of approval to reflect **significant changes** (to Addendums also). Revisions to the OEMP must follow the requirements of the NEMA at the time.

2 SITE DESCRIPTION AND LOCAL CONTEXT

The site is located adjacent and to the south of the Pinnacle Point Casino (Garden Route Casino), approximately 6km west of the Mossel Bay central business district (CBD), between the townships of Mossel Bay and Dana Bay, along the Indian Ocean. The site is approximately 4.51km² in extent with a coastline frontage of approximately 3,8km.

Three distinct vegetation types occur on the property namely Limestone Fynbos, Proteiod Fynbos and Coastal Thicket. Pinnacle Point represents the eastern most distribution of Limestone Fynbos which is one of the Least Conserved vegetation types while it has a high degree of species endemism (species occurring only in Limestone Fynbos). The Proteiod Fynbos on site contains at least five (5) Red Data species including *Prorea lanceolata* and *Diosma aristata*. The Groot Brak Dune Strandveld along the coastal cliffs is an endangered ecosystem and the caves at Pinnacle Point have recently been declared as a Provincial Heritage Site.

Thus not only is the site important from a biodiversity perspective, but an archaeological heritage perspective as well, making long-term management of these features important, hence the need to implement the OEMP meticulously.

2.1 IMPACTS ASSOCIATED WITH THE DEVELOPMENT

As part of the environmental impact assessment (EIA) process undertaken to inform the Pinnacle Point development the environmental assessment practitioner (EAP) Codev Environmental, recorded the following key impacts. This summary includes reference to how this OEMP links to the key impacts in terms of ongoing environmental management and control.

FLORA:

- Loss of vegetation – impact rated as LOW.
 - *The identified conservation areas that form part of the Estate are being maintained with provision for alien clearing, fire management and conservation/rehabilitation initiatives as per the OEMP.*
- Impact of using treated effluent for irrigation of golf course, on surrounding natural vegetation – impact rated as LOW.
 - *Quality control has been introduced to ensure that irrigation water is safe with limited impact on the receiving environment. Specific golf holes have been identified where overspray (potentially affecting indigenous vegetation) is monitored.*
- Benefits associated with rehabilitation and alien control within the remaining natural and open space areas.
 - *Conservation areas are subject to fire regimes specified in the accepted fire management programme. The PPHOA is also a member of the South Cape Fire Protection Agency to ensure that they get the necessary support and training to facilitate efficient controlled burns. Combined with effective fire management the PPHOA also implements ongoing alien control, both of these assisting with maintenance and effective management of the remaining natural and open space areas.*

- Fragmentation of habitats – impact rated as LOW due to adaptations to layout.
 - *The conservation areas allow for ecological connectivity through the linking of external conservation areas with internal open space as well as the coastal corridor. The Estate operates game gates within the game fence and ensure that the coastal corridor remains accessible.*

FAUNA:

- Permanent loss of habitat associated with development – rated as HIGHLY positive due to trade-off associated with rehabilitation and conservation of conservation areas.

The PPHOA must continue to maintain open corridors and ensure that faunal gates remain open to facilitate faunal movement. The continued rehabilitation of conservation areas, along with ongoing alien clearing and fire management as per the approved plans, must ensure a suitable trade-off between loss of habitat (to accommodate development) and reclamation and recovery of conservation areas previously not well maintained by the Municipality.

ARCHAEOLOGY

- On-site archaeological sites to be affected by development – impact as HIGH positive through formal protection and continuous monitoring by professional archaeologists.
 - *Archaeological Conservation Management Plan (ACMP) compiled and accepted by HWC. The PPHOA must continue to maintain the caves as per the criteria set by the ACMP and that of its Provincial Heritage status.*
- Long term impact of increased human activity / presence – impact as LOW.
 - *The PPHOA ensures that archaeological sites identified through the EIA and continued excavations/research is protected by means of controlling public access via scheduled guided tours only (allowing 12 people at a time);, with security measures in place to minimise and report/restore any damages that may occur as a result of unsupervised entry.*
- Impact on St Blaise Trail – rated as MEDIUM negative.
 - *The PPHOA must continue to ensure public access is not interrupted via the St Blaise Trail. The HOA controls access at both the entrance and exit points (of the Estate) with proper record keeping improving safety and security. Fisherman who wish to access the coast after 14:00 are required to sign in at the HOA Security, from where they are escorted to the closest coastal point.*

SOCIO-ECONOMIC

- Seasonal impact associated with the operations - rated as MEDIUM-LOW negative.
 - *The St Blaise Trail, Caves and Golf Course are open to the public throughout the year. Seasonal influx is managed in the same manner as year round controls.*
- Financial gain for local economy and municipality – MEDIUM-HIGH positive.
 - *The HOA continues to engage with Local Authority in initiatives to expand general knowledge of archaeological/biodiversity features.*

VISUAL

- Visual impact of the development – rated as MEDIUM-LOW negative.
 - *Approved Architectural and Landscaping Guidelines are in place for the Estate with accompanying Checklists to ensure compliance.*

The management of these impacts have all been addressed in separate reports that are part of this OEMP, namely the Integrated Fire Management Plan, the Archaeological Conservation Management Plan, the

Conservation Areas Management Plan, the Architectural and Landscaping Guidelines, and the Game Management Guideline.

2.2 SITE AMENITIES

When the golf course opened in 2006 the American publication Golf, Travel & Leisure selected the Pinnacle Point Golf Course as one of the top ten new golf courses in the world and it has since remained rated as one of the top 20 courses in South Africa. The golf course facilities are accessible to the public and the historic **St Blaise Trail** is visible along parts of the golf course that is situated closest to the coastal cliffs.

- The PPHOA must ensure that the St Blaise Trail remains open to the general public as well as residents and visitors to the Estate. The existing access control points on the St Blaise Trail (one at the entrance onto the Estate property and another at the existing from the Estate property) must be maintained and record (of people moving through these points) must be kept for purpose of the Annual Compliance Audit. People who plan to end the walk at the clubhouse must be requested to sign out at the clubhouse. A sign to this effect should be erected where the trail reaches the clubhouse and a register needs to be supplied for this purpose.
- The PPHOA must ensure that there are adequate signs or markers along the trail to prevent people from taking wrong turns and getting lost on the golf cart paths or other paths.
- Due to the long hours fisherman spend at the coast as well as to ensure safety and security, the PPHOA requires all fisherman who intend on fishing after 14:00 to sign in at the PPHOA/Security Gate where they have to sign in and will be escorted to the location they wish to go to. The record of fisherman accessing the coast in this manner must be kept for purpose of the Annual Compliance Audit.

According to the official Pinnacle Point website (<http://www.pinnaclepointestate.co.za/>) the Resort offers a variety of activities and services including **mountain bike and hiking trails** through the designated conservation areas, **recreational or deep sea fishing, game and bird watching** as well as access to **historical on-site caves** which are accessible to residents and visitors via guided tours.

- Due to the heritage significance of the caves, access (for the general public and/or homeowners/ and their guests/visitors) is controlled. The caves may only be visited via scheduled guided tours where the number of people is limited. Please refer to the ACMP.
- The area around the caves is fitted with security cameras and access to and from the site is monitored via the Control Room. Any footage that identifies criminal or damaging actions should be presented to the local police and Heritage Western Cape (HWC) for further action.

2.2.1 Amendments to the original Layout Plan

Since approval of the Estate, some changes have occurred, leading to amendments to the original layout plan. These are:

- Residential erven 254,255 were converted into a business extension to the Clubhouse;
- Erven 268, 269 and 270 were converted into parking and open area;
- Erf 366 (Oester Bay) was converted into open area due to sensitive heritage finds.

2.3 SOCIAL RESPONSIBILITIES

The 2012 – 2017 Integrated Development Plan (IDP) for Mossel Bay lists the Pinnacle Point archaeological discoveries as one of the area's strengths to be capitalised on in terms of tourism and cultural development implying that it contributes to the socio-economic fabric of the region.

Pinnacle Point Beach & Golf Resort as a funding agent, in collaboration with the Mossel Bay Municipality and a number of other local businesses, are involved with community projects, amongst others development of the Hayway Park Sportsfield facilities in Ward 2 of Mossel Bay district (Mossel Bay IDP 2012-2017).

The Municipality is also in the process of establishing Service Level Agreements with all coastal property owners to ensure controlled public access to coastal areas for recreational and fishing purposes. Pinnacle Point Beach & Golf Resort already provides such controlled access via the publicly accessible St Blaise Trail.

2.4 LOCAL DEMOGRAPHIC CONTEXT

Mossel Bay has the 2nd largest population in the Eden District with a population size of 117 840 in 2007 compared to 71 499 in 2001. The population grew on average by 8.7 per cent between 2001 and 2007 as compared to the district wide growth of 2 %. According to the population projections of the Department of Social Development, the population is expected to increase to 155 947 people by 2010 accounting for an average annual growth of 9.8 % from 2007 (Stats SA, Community Survey 2007).

According to Stats SA (Community Survey 2007) in 2001, 48.1 % of all households in Mossel Bay reported to have annual incomes of between R0 to R42 000. In 2009, 16.6 % of all households in Mossel Bay reported to have annual incomes of between R0 to R42 000. In 2001, households with an annual income of R18 000 - R30 000 accounted for the largest concentration (14.2 %) of households within an income category. In 2009, households with an annual income of R1 920 000 – R360 000 accounted for the largest concentration (13.6 %) of households within an income category. In addition to employment opportunities (direct

and indirect) the Pinnacle Point Beach & Golf Resort offers investment opportunities for the higher income bracket which according to the Stats SA data is present in the Mossel Bay area and result in further spending in the area which contributes to the local economy.

2.5 CONSERVATION AREAS

The Pinnacle Point Home Owners Association (PPHOA) entered into lease agreements with the Mossel Bay Municipality for three areas (owned by the Municipality) to be managed as part of their conservation area. These areas include:

- Internal conservation areas with linking corridor function;
- Portion of Erf 2001 of approximately 60ha for a period of 9 years and 11 months ceded to the PPHOA on 27 July 2012;
- Portion of Erf 2001 of approximately 118.3ha for a period of 9 years and 11 months ceded to the PPHA on 27 July 2012; and
- Portion of Erf 2001 of approximately 111ha for a period of 99 years ceded to the PPHA on 20 November 2012. *This portion is excluded from the area deemed to be the „conservation area“ in as far as this OEMP refers.*

The relevant „conservation areas“ may not be used in any way that is not compatible with a zoning appropriate for a nature conservation area / nature reserve. The leased land shall be rehabilitated and managed by the PPHOA in accordance with best practice principles. The three (3) corner stones for rehabilitation of these areas are (i) **ongoing alien clearing**, (ii) appropriate **ecological fire management** and (iii) sustainable **game management**. Each of these corner stone actions are dealt with in this OEMP with particulars contained in the Integrated Fire Management Plan (Appendix B) and Game Management Guidelines (Appendix J).

If not in effect by the time of approval of this OEMP, the obligatory rezoning of these leased areas from „undetermined“ to „open space or an equivalent conservation zoning“ must be enforced within **12 months** from the date of approval of the OEMP.

The **Conservation Trust** acts as managing agent of the PPHOA, for these leased areas and must ensure that fire management, alien clearing, game management and environmental awareness and education is implemented in the manner as prescribed in the relevant specialist reports (i.e. Integrated Fire Management Plan) and this OEMP.



The above image reflects the existing Conservation Areas Plan that incorporates the relevant conservation areas in relation to the Resort development. This plan should be used as the basis for development of the Conservation Management Plan for applicable areas of the Resort. The following **Terms of Reference (ToR)** should be used to inform the **Conservation Management Plan (although many of these items are already addressed in this OEMP or other Estate documents)**:

- Development a Rules & Regulations Document for the Conservation Areas that is easy to monitor and implement. (refer to House Rules)
- Develop a Pedestrian Access Map that allows for designated hiking and cycling routes in areas within the conservation areas that are not considered sensitive(although it must be safe and secure) to ensure that residents and visitors alike can benefit from these areas.
- Detail golfers access into conservation areas (i.e. restrict entry into conservation areas to collect golf balls);(Refer to Golf Club Rules)
- Develop a Code of Conduct for employees entering and working within the conservation areas to ensure that such employees are trained and informed of the purpose and function of these areas (i.e. collection of golf balls, alien clearing, fire management, catch & release activities) (Induction training, section 5 of this OEMP);
- Specify the details for Trail Management and Vehicular Access with the Conservation Areas.

- Provide details for domestic pets accessing the Conservation Area (i.e. residents wanting to walk their dogs within the Conservation Area). (refer to House Rules)
- Detail steps to be followed for any modification of the boundaries, operations and/or fencing requirements within the Conservation Areas.
- Specify requirements for general waste management within the Conservation Areas. (refer to House Rules and the relevant section of this OEMP)
- Provide specifications for fires, alien clearing and wood collection within the Conservation Areas (ensure that it aligns with the existing Fire and/or Alien Management Plan for the Resort).
- Detail general management of indigenous fauna and flora within the Conservation Areas.
- Provide details on how to deal with problem or dangerous animals within the Conservation Areas (i.e. snakes / wild dogs).
- Provide details on specific alien control measures within the Conservation Areas. Ensure that regular follow actions are included and align with the OEMP.
- Provide details for rehabilitation measures within the Conservation Areas in instances where any work needs to be undertaken (i.e. creating walkways).
- Provide guidelines on the use and positioning of signage throughout the Conservation Areas to ensure that information displayed reflects the site's correct information. Signage must include reference to "Do's and Don'ts" as well as Penalties.
- Provide for the development of a Bird & Mammal Inventory system whereby the PPHOA must draw-up a preliminary list that should be expanded with input from visitors to the Conservation Areas.
- Detail staff training requirements and frequency of training requirements for people who are responsible for the Conservation Areas.
- Provide specifications for the use of herbicides and pesticides within the Conservation Areas.
- Identify areas within the Conservation Areas that may be prone to erosion and detail erosion control measures that may be implemented with such areas.
- Include specifications for regular seasonal botanical surveys that may be required to ensure that a detailed species list can be developed over time for the full extent of the Conservation Areas.
- Recommend review requirements of the Conservation Management Plan.

The Conservation Management Plan must be developed by a suitably qualified or experienced professional who has sufficient knowledge and understanding of conservation management within an urban/coastal environment. The Management Plan must be developed within **12-months** from the date when the OEMP is approved by the Department.

3 LEGISLATIVE REQUIREMENTS

All owners and visitors are required to comply with all necessary legislation and policies applicable to development and management of Pinnacle Point Beach & Golf Resort. These include but are not limited to:

3.1 NATIONAL ENVIRONMENTAL MANAGEMENT ACT (NEMA, ACT 107 OF 1998)

The National Environmental Management Act (NEMA, Act No. 107 of 1998, as amended) embraces the notion of sustainable development as contained in the Constitution in that everyone has the right:

- to an environment that is not harmful to their health or well-being; and
- to have the environment protected for the benefit of present and future generations through reasonable legislative and other measures.

NEMA aims to provide for cooperative environmental governance by establishing principles for decision-making on all matters relating to the environment and by means of Environmental Implementation Plans (EIP) and Environmental Management Programmes (OEMP).

3.2 ENVIRONMENT CONSERVATION ACT, 1989 (ECA)

The EIA regulations contained in the Environmental Conservation Act (ECA) have been replaced by NEMA. However, property owners must comply with the draft regulations pertaining to noise as published in the province of Western Cape Provincial Extraordinary Gazette as provision made in section 25 of the ECA), as well as Section 24 of the ECA regarding waste management and Section 20 of the ECA dealing with waste management under Part IV, Control of Environmental Pollution.

3.3 NATIONAL ENVIRONMENTAL MANAGEMENT: WASTE ACT (ACT 59 OF 2008)

The NEM:Waste Act presents the South African government's strategy for integrated waste management for South Africa.

It deals among others with: Integrated Waste Management Planning, Waste Information Systems, Waste Minimisation, Recycling, Waste Collection and Transportation, Waste Treatment, Waste Disposal and Implementing Instruments.

3.4 NATIONAL ENVIRONMENTAL MANAGEMENT: INTEGRATED COASTAL MANAGEMENT ACT (ACT 24 OF 2008)

The Act aims to establish a system of integrated coastal and estuarine management in the Republic, including norms, standards and policies, in order to promote the conservation of the coastal environment, and maintain the natural attributes of coastal landscapes and seascapes, and to ensure that development and the use of natural resources within the coastal zone is socially and economically justifiable and ecologically sustainable; to define

rights and duties in relation to coastal areas; to determine the responsibilities of organs of state in relation to coastal areas; to prohibit incineration at sea; to control dumping at sea, pollution in the coastal zone, inappropriate development of the coastal environment and other adverse effects on the coastal environment; to give effect to South Africa's international obligations in relation to coastal matters; and to provide for matters connected therewith.

The ICMA activities applicable to Pinnacle Point Beach & Golf Resort generally include conservation measures and access to the natural / cultural resources in the coastal zone in support of social and ecological accountability.

3.5 **NATIONAL ENVIRONMENTAL MANAGEMENT: BIODIVERSITY ACT (ACT 10 OF 2004)**

This Act provides for i.a. the management and conservation of South Africa's biodiversity, the protection of species and ecosystems that warrant national protection, the sustainable use of indigenous biological resources and the fair and equitable sharing of benefits arising from biospecting involving indigenous biological resources.

A national list of threatened ecosystems was published in 2009 in terms of this Act. The Groot Brak Dune Strandveld {FS 9} that occurs on the Estate is listed as a threatened ecosystem.

Furthermore, the list of Alien and Invasive Species to be managed was published in August 2014 in terms of the NEM:BA.

3.6 **SANS 10400 APPLICATION OF THE NATIONAL BUILDING REGULATIONS**

The application of the National Building Regulations contains performance parameters relating to fire safety, sanitation systems, moisture penetration, structural safety, serviceability and durability. It also takes into account how the above can be established to reflect social expectations in a manner which supports sustainable development objectives.

3.7 **NATIONAL BUILDING REGULATIONS**

The National Building Regulations and Building Standards Act as amended must be complied with. This act addresses, inter alia:

- Specifications for draftsmen, plans, documents and diagrams;
- Approval by local authorities;
- Appeal procedures;
- Prohibition or conditions with regard to erection of buildings in certain conditions;
- Demolition of buildings;
- Access to building control officers;
- Regulations and directives; and
- Liability.

3.8 CONSERVATION OF AGRICULTURAL RESOURCES ACT (CARA)

The Conservation of Agricultural Resources Act aims to provide for the conservation of natural agricultural resources by maintaining the production potential of land, combating and preventing erosion and weakening or destruction of water resources, protecting vegetation and combating weeds and invader plant species.

In the case of the PPHOA, the provisions regarding erosion control and control of invasive species must be considered.

3.9 NATIONAL FOREST ACT (ACT 84 OF 1998)

In terms of regulation 15 of the aforesaid Act,

No person may:

- (a) cut, disturb, damage, destroy or remove any protected tree; or
- (b) collect, remove, transport, export, purchase, sell, donate or in any other manner acquire or dispose of any protected tree, except under a License granted by the Minister.

The Department of Agriculture, Forestry and Fisheries (DAFF) have declared the following species as protected trees:

Acacia erioloba (Camel thorn), *Acacia haematoxylon* (Gray camel thorn), *Adansonia digitata* (Baobab), *Azelia quanzensis* (Pod mahogany), *Balanites* subsp. *maughamii* (Torchwood), *Barringtonia racemosa* (Powder-puff tree), *Boscia albitrunca* (Shepherd's tree), *Brachystegia spiciformis* (Msasa), *Breonadia salicina* (Matumi), *Bruguiera gymnorhiza* (Black mangrove), *Cassipourea swaziensis* (Swazi onionwood), *Catha edulis* (Bushman's tea), *Ceriops tagal* (Indian mangrove), *Cleistanthus schlechteri* var. *schlechteri* (False tamboti), *Colubrina nicholsonii* (Pondo weeping thorn), *Comretum imberbe* (Leadwood), *Curtisia dentata* (Assegai), *Elaeodendron transvaalensis* (Bushveld saffron), *Erythrophysa transvaalensis* (Bushveld red balloon), *Euclea pseudebenus* (Ebony guarri), *Ficus trichopoda* (Swamp fig), *Leucadendron argenteum* (Silver tree), *Lumnitzera racemosa* var. *racemosa* (Tonga mangrove), *Lydenburgia abottii* (Pondo bushman's tea), *Lydenburgia cassinoides* (Sekhukhuni bushman's tea), *Mimusops caffra* (Coastal red milkwood), *Newtonia hildebrandtii* var. *hildebrandtii* (Lebombo wattle), *Ocotea bullata* (Stinkwood), *Ozoroa namaquensis* (Gariep resin tree), *Philenoptera violacea* (Apple-leaf), *Pittosporum viridiflorum* (Cheesewood), *Podocarpus elongatus* (Breede River yellowwood), *Podocarpus falcatus* (Outeniqua yellowwood), *Podocarpus henkelii* (Henkel's yellowwood), *Podocarpus latifolius* (Real yellowwood), *Protea comptonii* (Saddleback sugarbush), *Protea curvata* (Serpentine sugarbush), *Prunus africana* (Red stinkwood), *Pterocarpus angolensis* (Wild teak), *Rhizophora mucronata* (Red mangrove), *Sclerocarya birrea* subsp. *caffra* (Marula), *Securidaca longependunculata*

(Violet tree), *Sideroxylon inerme* subsp. *inerme* (White milkwood), *Tephrosia pondoensis* (Pondo poison pea), *Warburgia salutaris* (Pepper-bark tree), *Widdringtonia cedarbergensis* (Clanwilliam cedar) and *Widdringtonia schwarzii* (Willowmore cedar)

Any trimming and / or removal of the Milkwood trees (*Sideroxylon inerme*) or other protected trees on the Pinnacle Point Beach & Golf Resort site will be subject to a license in terms of the aforementioned Act. The list is a national list, however if any species are planted as part of landscaping, the Act will apply.

3.10 NATIONAL WATER ACT (NWA, ACT 36 OF 1998)

The National Water Act (NWA) gives effect to the constitutional right of access to water. The Act's overall purpose is to ensure that South Africa's water resources are protected, used and managed in ways which take into account a number of factors, including inter-generational equity, equitable access, redressing the results of past racial and gender discrimination, promoting sustainable and beneficial use, facilitating social and economic development, and providing for water quality and environmental protection.

The NWA makes persons who own, control, occupy or use land responsible for taking measures to prevent pollution of water resources, and empowers Government authorities to take measures to enforce this obligation.

In terms of the NWA, the irrigation of the golf course with treated effluent, including any impacts on watercourses requires authorisation in the form of a Water Use License.

3.11 NATIONAL VELD AND FOREST FIRE ACT (ACT 101 OF 1998)

The purpose of the National Veld and Forest Fire Act is to prevent and combat veld, forest and mountain fires throughout the RSA and to provide institutions, methods and practices for achieving this purpose. Institutions include the formations of such bodies as Fire Protection Associations (FPA's) and Working on Fire. The Act provides the guidelines and constitution for the implementation of these institutions as well as their functions and requirements.

All landowners are required in terms of this Act to prepare and maintain firebreaks on the boundary of their property and any adjoining land. Only the Minister may exempt a landowner from providing firebreaks.

In areas that are considered a high fire risk, especially in vegetation types that tend to be fire driven ecosystems, it is recommended that a fire management plan is put in place, or the owner becomes a member of the local FPA and fall under the umbrella of the regional fire management strategy. The Southern Cape is considered to be a fire driven ecosystem and the vegetation types that occur on Pinnacle Point Beach & Golf Resort requires burning at frequent intervals.

For this reason an Integrated Fire Burning Plan was compiled by Bolweki SSI (July 2010) for

the respective portion of the Resort and its conservation areas. A copy of this Integrated Fire Burning Plan is included as **Appendix B** of this OEMP.

3.12 NATIONAL HERITAGE RESOURCES ACT (ACT 25 OF 1999)

The purpose of the National Heritage Resources Act is to:

- Introduce an integrated and interactive system for the management of the national heritage resources;
- Promote good government at all levels,
- Empower civil society to nurture and conserve their heritage resources so that they may be bequeathed to future generations;
- To lay down general principles for governing heritage resources management throughout South Africa;
- To introduce an integrated system for the identification, assessment and management of the heritage resources of South Africa;
- To establish the South African Heritage Resources Agency together with its Council to co-ordinate and promote the management of heritage resources at national level;
- To set norms and maintain essential national standards for the management of heritage resources in South Africa and to protect heritage resources of national significance;
- To control the export of nationally significant heritage objects and the import into South Africa of cultural property illegally exported from foreign countries;
- To enable the provinces to establish heritage authorities which must adopt powers to protect and manage certain categories of heritage resources;
- To provide for the protection and management of conservation-worthy places and areas by local authorities; and
- To provide for matters connected therewith.

In terms of the Pinnacle Point Beach & Golf Resort any evidence of archaeological remains must be communicated to the PPHOA and Heritage Western Cape (HWC) immediately.

Due to the presence of a number of archaeological heritage sites occurring on the premises HWC required the compilation of an *Archaeological Conservation Management Plan (ACMP)* for the Resort. This ACMP has been revised over time with the final version having been accepted and approved by HWC on 9 May 2014. A copy of the ACMP with approval documents from HWC is included in **Appendix C** of this OEMP.

3.13 OCCUPATIONAL HEALTH AND SAFETY ACT (ACT 85 OF 1993)

The Act provides for the health and safety of persons at work and for the health and safety of persons in connection with the use of plant and machinery; the protection of persons other than persons at work against hazards to health and safety arising out of or in connection with the activities of persons at work.

In terms of this Act, a Health and Safety Officer and Protocol must be implemented on any sites during any construction related activities.

4 POLICY, ROLES & RESPONSIBILITIES

The Pinnacle Point Beach & Golf Resort Home Owners Association (PPHOA) is the legal Holder of the Environmental Authorisation". In its overarching role it is responsible for the golf course and associated facilities, the conservation areas as well as the residential estate and common areas.

4.1 ENVIRONMENTAL POLICY

The Pinnacle Point Estate is located in a sensitive natural environment with important archaeological features in the Mossel Bay Municipal area. It is a high quality, professional standard golf estate developed for country living and tourism.

The estate's management team is committed to ensuring that Pinnacle Point Estate is developed and managed in an environmentally sensitive and sustainable way, taking account of social, economic and biophysical issues. To this end Pinnacle Point Estate is committed to:

1. Complying with all environmental legal and policy requirements.
2. Developing and managing the estate in a way that minimises environmental impacts and prevents pollution through:
 - ensuring that the development does not undermine the functioning of essential ecological systems and archaeology on the Estate as well as the coast.
 - ensuring that no management activities, equipment or products used on the Estate cause negative impacts on or are extremely harmful to the environment.
 - ensuring that monitoring and measuring of environmental performance is undertaken and remedial action implemented where necessary.
 - ensuring that only recreation activities compatible with the natural and heritage environments are provided.
3. Implementing environmental and heritage management practices that enable continuous improvement.
4. Protecting and, where applicable, improving the natural features, systems and wildlife on the property.
5. Contributing to local communities through providing employment and training opportunities, supporting local businesses wherever possible and allowing continued of utilisation of the coast.
6. Maintaining an open relationship with environmental and community organisations and neighbours.
7. Promoting environmental awareness amongst estate employees as well as residents and visitors.

4.2 PINNACLE POINT BEACH & GOLF RESORT HOMEOWNERS ASSOCIATION

The PPHOA is supervised by the **Estate General Manager** (GM) who is the highest ranked individual within the operation with an overall responsibility to ensure procedural correctness and compliance with all statutory obligations.

The GM oversees individual **Department Managers** which inter alia include the **Director of Golf, General Operations Manager** and the **Estate Conservation Officer (ECO)**.

The PPHOA is managed in terms of a formal Constitution (as adopted by the ELC) which defines its role and legal responsibilities along with the Memorandum of Incorporation (MOI) (attached in Appendix D). These responsibilities, relevant to the receiving environment, include but are not limited to the following:

- Be conversant with the OEMP, any relevant Environmental Authorisation, Waste License, Permit or any other legally binding documentation;
- Ensure that the senior site personnel are aware of and understand the conditions and recommendations contained in the OEMP, any relevant Environmental Authorisation, Waste License, Permits or any other legally binding documentation;
- Order the removal of any person(s) and / or equipment found in contravention of any of the above mentioned authorisations.

The PPHOA is responsible for enforcing the *House Rules* (as adopted by the ELC) made in terms of the articles of the HOA (copy included in Appendix E). Amongst others these *House Rules* address:

- Domestic refuse handling/disposal, domestic animals, traffic, sporting facilities, open space allowances, electricity supply, landscaping, accounts, security and other specific rules.

Contravention of these rules is deemed to be a breach of such rules and the responsible person/entity will be liable for payment of penalties issued by the PPHOA.

The GM must have **weekly meetings/communication** with his Department Managers (i.e. Director of Golf, Technical Manager) where day-to-day problems or challenges relating to the receiving environment must be discussed. The GM as well as the various Department Managers must prepare **reports** forthcoming from these sessions for **presentation to the PPHOA** who should meet on a regular basis. Urgent matters must be communicated via email to ensure that the necessary actions are not delayed unnecessarily.

4.3 TECHNICAL OPERATIONS DIVISION

The ~~Technical Manager (TM)~~ **Estate Operations Manager (OM)** is one of the department managers that reports directly to the GM.

1. Contractor supervision and induction. The OM must ensure that all engineers and contractors are conversant with the **Contractor's Protocol** ~~Construction Environmental~~

~~Management Plan~~, which is a subsection of this plan designed for construction and maintenance activities. An induction course is presented to all contractors responsible for construction or maintenance tasks and an induction document is presented to them.

2. Compliance with the architectural guidelines. An **Architectural Review Committee** (ARC) has been established to assist the PPHOA in compliance with the *Architectural Guidelines* (copy included in Appendix G). The OM, with input from the ARC, must approve the *Architectural Code Checklist* that must be completed by each property owner for construction on all free standing plots on the Estate (copy of Checklist included with Appendix G).

3. Compliance with the *Stormwater Management Policy Guidelines* that were developed particularly because of the varying soil profiles and steep slopes at Pinnacle Point Beach & Golf Resort. According to this Policy detailed plans to control and prevent erosion by water must be agreed with the PPHOA's ARC prior to the commencement of any works on any portion of the Estate. The stormwater guidelines forms part of the internal house plan approval process for all plots. A copy of this *Guideline* document is included as Appendix H.

- The PPHOA ensures compliance with the Stormwater Management Policy through a system whereby a stormwater engineer certificate is required from the home owner prior to approval of the issue of an occupation certificate for a house.

4. The OM is responsible for all waste management on the Estate.

5. The OM is responsible for safety and security. That includes (but not exclusive to) fire safety, management of the game gates and management of fisherman entering the Estate.

6. Cooperate with archaeological specialist team to ensure appropriate archaeological management.

7. Maintain a public complaints register in which all complaints and action taken must be recorded.

4.4 ENVIRONMENTAL ESTATE CONSERVATION OFFICER (ECO)

Due to the sensitivity of the environment a suitably qualified ~~Environmental~~ Estate Conservation Officer (ECO) must ~~oversee all activities for the duration of the construction phase (i.e. construction activities, services, beach erosion control measures, road works).~~ **oversee all environmental and conservation management on the Estate.**

The responsibilities of the ECO include but are not limited to the following:

- Ensure and monitor compliance with the CMP
- Ensure and monitor the implementation of and compliance with the OEMP by all Estate staff, keep relevant records and update and review the OEMP when

necessary.

- Liaison between the PPHOA, Contractors, Authorities and other lead stakeholders on all environmental concerns, including the implementation of the OEMP;
- Compilation of a quarterly Environmental Report (ER) for submission to the GM to report on and ensure compliance with the EA, OEMP and duty of care requirements, where necessary;
- Ensuring compliance with the Environmental Authorisation or DAFF permit, if applicable;
- Provide guidance and interpretation of the EA and OEMP where necessary;
- Maintain a record of environmental incidents (e.g. spills, impacts, legal transgressions etc.) as well as corrective and preventative measures taken. This information must also be included in the ECR;
- Maintain a public complaints register in which all complaints and action taken must be recorded. ~~This information must also be included in the ECR;~~
- Oversee management of the conservation areas;
- Ensure implementation of the alien eradication and fire burning plans.
- ~~— Provide environmental induction training to contractors on site prior to construction activities commencing (in collaboration with the Technical Manager);~~
- ~~— Provide maintenance, update and review of the OEMP if necessary;~~
- ~~— Ensuring compliance with this OEMP;~~
- ~~— Compilation of the Environmental Audit Report or Environmental Completion Statement, after completion of construction (or as otherwise defined in the Environmental Authorisation), where necessary;~~
- ~~— Issuing site instructions to the contractor for corrective actions required;~~
- ~~— The ECO is required to conduct regular site visits for the duration of the construction period, in order to ensure the contractor receives the necessary induction and that all procedures are in place. Additional visits may be undertaken in the event of any unforeseen environmental accidents;~~
- ~~— Attendance of site meetings if required;~~

4.5 GOLF OPERATIONS

The **Director of Golf** reports directly to the GM. The Golf Course Superintendent, Deputy Greenkeeper / Spray Technician and the Assistant Spray Technical all report to the Director of Golf. The Irrigation Technician, as a specialised division, reports to the Deputy Greenkeeper.

Amongst others the following responsibilities lie with Golf Operations:

- Ongoing monthly training to golf personnel to ensure the correct application of poison, pesticides, herbicides and fertilisers;
- Testing for and reporting on soil chemistry and salt balance to ensure optimal quantity of fertiliser is used;

- Golf course drainage and maintenance with associated repairs to reinstate disturbed areas and protect the surrounding natural areas from erosion;
- Quality control for irrigation water (treated effluent);
- Verify wind speed and direction to prevent overspray of treated effluent onto neighbouring natural areas surrounding the golf course;
- Maintain photographic record of natural areas at each course hole as an additional measure to monitor irrigation edge-effect on natural areas surrounding the golf course; and
- Management of turf (kikuyu grass) to ensure that it does not encroach into remaining natural areas surrounding the golf course.

4.6 PINNACLE POINT CONSERVATION TRUST

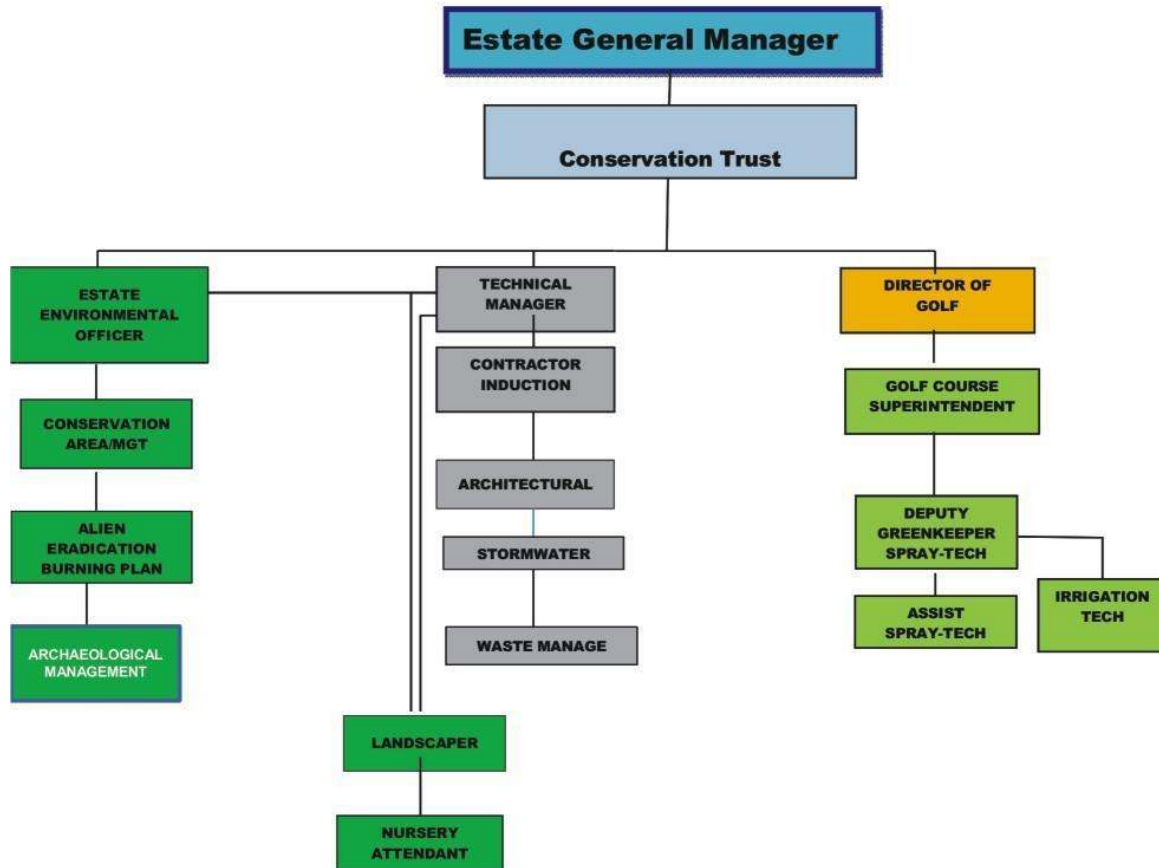
The PPHOA has six (6) different Sub-Committees namely the:

1. Golf sub-committee
2. Financial sub-committee
3. Social sub-committee
4. Marketing sub-committee
5. Architectural sub-committee
6. **Conservation Trust sub-committee** (with representatives on the HOA)

The Conservation Trust sub-committee represents an important role-player within the operation namely the **Pinnacle Point Conservation Trust** which was established in terms of condition 15 of the Record of Decision (Environmental Authorisation) dated 29 October 2003 to „oversee the conservation areas through the lifespan of the development“. The conservation areas include all the areas on the estate that are not landscaped and maintained as natural vegetation, inclusive of the land leased from the Mossel Bay Municipality as well as the pockets of natural indigenous vegetation within the Resort that area subject to the Integrated Fire Management Plan.

The „conservation area“ as defined in the **Deed of Trust** of the Pinnacle Point Beach & Golf Resort Conservation Trust means: *“...the three areas leased by the Developer from the Municipality of Mossel Bay for conservation, botanical and nature reserve and related tourism facility purposes, in extent 111, 118 and 60ha respectively, and such additional areas within the development to be established and managed as conservation areas. Any land at any time added to the conservation area in future shall be included in this conservation area”.*

The following organogram shows the responsible parties within each division of the operation with links to the Conservation Trust. These relevant divisions within the operation have the potential to impact on the receiving environment thus they report to the PPHOA via the Conservation Trust sub-committee to ensure compliance with environmental requirements and conditions of approval.



The Conservation Trust is regulated in terms of the **Deed of Trust** of the Pinnacle Point Beach & Golf Resort Conservation Trust (document attached as Appendix F) and managed by appointed Trustees. (Clauses 6, 7 & 8 of the Deed of Trust refer to the responsibility and powers of the Trustees.)

The Trust's activities are **funded by the PPHOA** and according to the Deed of Trust the Trustees will consider the following key aspects when deciding how the income of the Fund will be utilised:

- Will the action contribute to **increased benefits to the local community** arising from improved understanding of the area's biodiversity assets;
- Will the action contribute to the individual learners **awareness, appreciation and caring of the environment**;
- Will the action contribute to the increases **wise use of resources** in the Mossel Bay area or further afield;
- Will the action contribute to the **enhanced national and international status and level of protection of the Fynbos biome and local natural areas**;

- Will the action contribute to an increase in **areas free of invasion by alien species**;
- Will the action contribute to a **reduction in the risk of unseasonal/unwanted wildfires**;
- Will the action contribute to **reductions in any negative effects on natural areas from neighbouring metropolitan areas** and;
- Will the action seek to **involve local communities** in a meaningful and sustainable manner?

5 OPERATIONAL PHASE ENVIRONMENTAL MANAGEMENT REQUIREMENTS

The day to day management activities that are required to ensure sustainability and the achievement of best practice principles and objectives forms the basis of an OEMP. The requirements are applicable to all land owners, tenants and all visitors (business or tourism) to any properties that fall under the umbrella of the PPHOA.

5.1 ANNUAL COMPLIANCE AUDIT

It is the recommendation of this OEMP that an ~~Annual~~ OEMP Compliance Audit be undertaken every 5 years according to the requirements of the NEMA. ~~as a motion to ensure compliance with the OEMP.~~

The audit must be undertaken by a suitably qualified and experienced, independent environmental practitioner with a decent understanding of the OEMP, to ensure a holistic approach. The PPHOA must avail all relevant incident reports, as well as record of compliance with the OEMP and supporting documents (i.e. proof of dates / time / cost for alien clearing / controlled fires / environmental awareness and educational initiatives) to the auditor.

The main purpose of the ~~Annual~~ OEMP Compliance Audit which must be submitted to the PPHOA and DEADP must be to:

- highlight areas where improvements may be necessary alongside an implementation schedule for implementing such improvements;
- non-compliance with the OEMP or EA must be reported with the necessary actions to rectify such non-compliance;
- The PPHOA must be given a reasonable opportunity (not exceeding 2 months after completion of the Audit) to review and comment on the Audit report where it will be the responsibility of the PPHOA to;
- Submit copies of the Audit report with their Response Report to the Provincial Department of Environmental Affairs & Development Planning (DEA&DP), the Mossel Bay Municipality and Heritage Western Cape (HWC) for their records and/or further action within two (2) weeks of completing their Response Report.
- Fulfill the requirements of the NEMA.

Notwithstanding the above procedure the PPHOA must report any deliberate or negligent non-compliance matters that have the potential to cause harm to the receiving environment, to the relevant Authority without delay.

5.2 ENVIRONMENTAL MONITORING

The PPHOA must ensure that the various checklists developed to ensure that appropriate measures and monitoring takes place, are completed and submitted to the PPHOA for record

keeping, these include but are not limited to:

Monitoring Tool	Responsible	Frequency
Architectural Guideline Checklist to ensure compliance with the specifications and conditions of the Architectural Guideline. AVAILABLE	To be assessed and signed off by the Architectural Review Committee (ARC).	Pre- and Post-Construction for every house /structure on the Estate.
Landscaping Guideline Checklist to ensure compliance with the specifications and conditions of the Landscape Guideline. AVAILABLE	To be evaluated and signed off by the ARC and the OM.	Pre- and Post-Construction for every house / structure on the Estate where landscaping is required.
Stormwater Management Policy approval to ensure compliance with the specifications and conditions of the Stormwater Management Policy Guidelines. AVAILABLE.	To be assessed and signed off by a representative of the PPHOA.	Pre- and Post-construction stormwater plan must be submitted for every house as per the Architectural Guidelines.
Archaeological surveys of archaeological sites to evaluate the safety, condition and risks as per the Archaeological Conservation Management Plan (ACMP). AVAILABLE	To be undertaken by the appointed independent archaeological monitor and reports submitted to the PPHOA and Heritage Western Cape.	Monthly is considered optimum.
Water flow monitoring in the caves to manage the impact of golf course irrigation on the caves. AVAILABLE	To be undertaken weekly by the appointed independent archaeological monitor. If results show an increase in water flow it should be reported to the Greenkeeper to reduce irrigate volumes.	Weekly
Alien clearing & Fire Management (AVAILABLE)	The Conservation Trust must ensure that alien clearing and fire management takes place according to the OEMP and Fire Management Plan schedule. External contractors may be used.	As per the Fire Management Plan schedule and OEMP specifications.

5.3 FUNDING

Condition 6 of the EA stipulates that the Applicant must establish a Trust with adequate funding from the Applicant to oversee the leased conservation areas through the lifespan of

the development.

Unless otherwise stipulated the PPHOA is responsible for funding of all related conservation responsibilities and initiatives such as fire management, alien clearing, educational training and archaeological monitoring.

The PPHOA is obligated to compile a budget, based on feedback and proposals from each of the individual Department Manager's programme for each financial year that will cover the cost(s) associated with the relevant programmes and plans adopted or approved for Pinnacle Point Beach & Golf Resort.

It is accepted that a fixed budget amount is unlikely as several of the relevant programmes i.e. alien clearing / fire management plan have different implementation / frequency schedules that will result in the annual budget varying from year to year. It is a requirement of this OEMP however that the annual budget must make provision for all the requirements of the OEMP its supporting documents.

The Annual OEMP Compliance Audit must reflect on the effectiveness of each year's budget compared to the annual environmental actions / plans to ascertain whether sufficient funds are allocated for conservation / educational purposes.

5.4 ONGOING CONSTRUCTION ON THE ESTATE

~~The Construction Environmental Management Plan (CEMP) must be available for all construction related activities.~~

~~Future houses that are yet to be constructed must sought compliance with the recommendations of the CEMP.~~

A Handover Checklist for Sites is provided to all homeowners who plan to build a house, or for any construction work on Estate or Golf Club buildings. The checklist needs to be signed off by the contractor and ensure knowledge of and compliance with the various guidelines, as well as specifying the work protocol on the Estate. It is recommended that a spill treatment protocol is included.

Security personnel are trained to report on failures by contractors to comply with the requirements .

- ~~Architectural Guidelines~~
- ~~Landscape Guidelines~~
- ~~Stormwater Management Policy Guideline~~

~~These documents specify the internal process requirements for construction of dwellings on the Estate.~~

5.5 ENVIRONMENTAL INDUCTION AND TRAINING

~~The ECO or PPHOA in consultation with the Technical Manager OM shall ensure that all~~

PPHOA employees, construction and maintenance workers receive an induction presentation or environmental awareness training on the importance and implications of environmental management the OEMP. The presentation shall be conducted, as far as is possible, in the employees' language of choice. The contractor should provide a translator from their staff for the purpose of translating should this be necessary.

As a minimum, training should include:

- Explanation of the importance of complying with the OEMP and the employees accountability;
- Discussion of the potential environmental impacts of construction activities;
- The benefits of improved personal performance;
- Employees' roles and responsibilities, including emergency preparedness ;
- Explanation of the mitigation measures that must be implemented when carrying out their activities;
- Explanation of the specifics of this OEMP and its specification (no-go areas, etc.);
- Explanation of the management structure of individuals responsible for matters pertaining to the OEMP.

~~Should the staff turnover be high and with additional appointment of sub-contractors, it may be necessary to undertake additional induction training sessions.~~ The contractor must keep records of all environmental training sessions, including names, dates and the information presented.

5.6 LANDSCAPING

Pinnacle Point Beach & Golf Resort falls inside an area identified as ecologically sensitive. This provides an elevated measure of responsibility to ensure that activities within the transformed / urban area do not negatively impact on the coastal zone or remaining natural areas within or adjacent to the Estate.

Within urban environments, one of the greatest impacts on surrounding open spaces is the uninhibited use of exotic vegetation for gardening and landscaping. Plants do not adhere to boundaries such as fences or cadastral units, and may be blown, carried or creep outside of designated areas (gardens) and establish themselves in natural areas. This causes the so called "garden escapees", which can affect the natural biodiversity. The most effective method of preventing this is to simply landscape with locally indigenous vegetation. The other benefits to using this approach is that locally indigenous vegetation is adapted to local conditions and uses less water and fertiliser and requires less maintenance.

The *Landscape Guidelines* developed for the Estate was done with the aim of preserving and protecting the unique qualities of the Garden Route landscape. These guidelines support the preservation and rehabilitation of natural areas with the collective purpose of integrating the Estate with the surrounding natural landscape. An important aspect of the Guideline is its

requirement for landscapers who wish to work on the Estate to be accredited and qualified. A copy of the Guideline document is included as Appendix I along with the *Landscape Checklist* that must be completed and signed-off by a representative of the ARC as well as the OM.

The PPHOA strongly promotes the use of water wise landscaping, not only in the interests of water conservation, but excessive watering creates changes in the hydrological capabilities of soil. This could potentially have an impact on the structure of the soil as well as for the management of stormwater.

According to the approved Landscape Guidelines “...any form of exotic plant that is not indigenous to the Garden Route, will not be allowed on site”.

- No kikuyu or any exotic grasses may be planted on the Estate.
- No declared invasive alien plant, shrub, tree or grasses may be planted on the Estate, or in any private property.
- Clearing of invasive alien vegetation on any vacant erf remains the responsibility of the owner and must be undertaken on a quarterly basis, failing which the PPHOA must clear the erf for the owners account.

The PPHOA must be especially vigilant with regards to the removal of kikuyu grass that threatens to spread into adjacent natural vegetation (fynbos/thicket) areas

~~Landscaping as a rule is the combined responsibility of the Estate Environmental Officer (ECO) and Technical Manager. Both parties must ensure compliance with the landscaping requirements relevant to their fields of responsibility. The ECO and Technical Manager must report back on any non-compliance to the GM at weekly feedback sessions.~~

5.7 ~~ALIEN VEGETATION MANAGEMENT PLAN~~

~~Alien invasive vegetation is identified as exotic (imported, not indigenous) plant material that is supremely adapted to local conditions. In most cases, these plant species have no natural predators and are able to out-compete indigenous vegetation.~~

~~The impact of alien vegetation on biodiversity, water resources, aesthetics and fire management is very well documented. All alien invasive vegetation should be removed from the area in order to ensure restoration of the indigenous vegetation.~~

~~Removal of alien vegetation can be undertaken using various methods. These include mechanical (cutting, chopping, pulling, ring barking), chemical (poisoning) or biological (bugs, beetles). Each species reacts differently and thus often requires specific actions or a combination of actions to effectively remove.~~

~~An alien vegetation management plan should be drawn up to aid in the systematic removal of alien vegetation on the Estate. Alien clearing in the conservation areas must be in line with the fire management plan to ensure that fire management units that are designated to be~~

~~burned in a controlled manner are cleared of invasive alien vegetation **at least one (1) year prior to a controlled burn. Six (6) month follow-ups** must be undertaken within each of the identified fire management units until such time as the unit is burned and thereafter to reduce the presence and spreading of invasive alien plants between relevant fire management units.~~

~~Open space and landscaped areas within the Estate that fall outside the formal conservation area must be cleared of invasive alien vegetation on **a continuous / weekly basis.**~~

~~The important thing is to first identify the species of plant and then to implement effective removal actions. Most species require ongoing management, i.e. initial clearing then several follow up clearings of juvenile plants.~~

~~Use of general herbicides is discouraged in any areas where contamination of natural areas may occur.~~

~~The status of the species identifies the threat and the management actions required to address the threat. The CARA categories are currently the effective categories for identifying invader plant status.~~

~~The CARA categories currently are:~~

~~**Category 1:** Invader plants must be removed & destroyed immediately~~

~~**Category 2:** Invader plants may be grown under controlled conditions only~~

~~**Category 3:** Invader plants may no longer be planted~~

~~According to the approved Landscape Guidelines "...any form of exotic plant that is not indigenous to the Garden Route, will not be allowed on site".~~

- ~~No kikuyu or any exotic grasses may be planted on the Estate.~~
- ~~No declared invasive alien plant, shrub, tree or grasses may be planted on the Estate, or in any private property.~~
- ~~Clearing of invasive alien vegetation on any vacant erf remains the responsibility of the owner and must be undertaken on a quarterly basis, failing which the PPHOA must clear the erf for the owners account.~~

~~The PPHOA must be especially vigilant with regards to the removal of kikuyu grass that threatens to spread into adjacent natural vegetation (fynbos/thicket) areas. The removal of Port Jackson trees must also remain a priority. **The alien invasive control programme in the Conservation Management Plan needs to be adhered to.**~~

5.7.1 Herbicide Application

~~The following needs to be considered when applying herbicides:~~

5.7.2 Foliar Applications

- ~~— Foliar applications should be made with a **low pressure** (20-50 psi) backpack sprayer at rates of 4 liters or less per minute;~~

- All foliar treatments should be made after full leaf expansion in the spring and before Autumn (before the end of April);
- Allow herbicide treatments to **dry** for at least **three hours** at an air temperature above 18° to ensure adequate absorption and translocation. In other words, herbicide should not be sprayed on days where rain is expected;
- It may be necessary to **close off** the treatment area for access until the herbicide has completely dried;
- Use a nonionic surfactant (i.e. a wetting agent such as actipron) with all herbicide solutions used for foliar spraying. Surfactants (wetting agents) increase the effectiveness of the herbicide by:
 - reducing surface tension and ensuring complete foliar coverage, and
 - increasing the rate of absorption through the leaf cuticle.
- Apply herbicide with a backpack or similar hand-operated pump sprayer equipped with a **flat spray tip** or adjustable cone nozzle.
- Apply herbicide to the leaves and stems of target plants using a consistent back and forth motion.
- Herbicide should thoroughly **cover** foliage, but not to the point of run-off.
- Triclopyr herbicide requires complete foliar coverage to be effective.
- Applications made while walking backward will reduce the risk of the herbicide getting onto the applicator's clothing.

5.7.3 ~~Cut Stump Applications~~

The main advantages to these methods and this are the reason they have been recommended for the initial clearing options, are:

- they are very economical,
- there is minimal probability of non-target damage,
- minimal application time, and
- they can be used in the winter. Backpack sprayers or spray bottles are very effective for all of these methods.

Horizontally cut the stems at or near ground level as described above (no higher than 100mm); all cuts should be level, smooth, and free of debris. Immediately apply the herbicide to the outer 20% (cambial area) of the stump; delayed treatment may reduce the effectiveness of treatment.

Alien clearing and management is the responsibility of the Estate Environmental Conservation Officer (ECO) who in consultation with the Conservation Trust oversees implementation of optimal alien clearing. Both parties must ensure compliance with alien clearing requirements. The ECO and representative of the Conservation Trust must report back on any non-compliance to the GM at weekly feedback sessions.

The PPHOA must guarantee that sufficient funds are available to ensure effective alien clearing across the Estate (including leased conservation areas). Such financial planning must be reflected in the annual budget.

5.8 FIRE MANAGEMENT / PROTECTION

Fire plays an important role in maintaining the biodiversity of certain ecosystems, especially Fynbos systems, but can be detrimental to other such as Forest ecosystems. In the case of Pinnacle Point Beach & Golf Resort there are fynbos elements with forest species in pockets across the Estate. Forests tend to have adapted a natural immunity to fires and have certain species on the edges to protect the truer forest species from the effects of fire. It should, however, be noted that forest/thicket will also burn under extremely dry and hot conditions, such as those experienced in June 2017.

The PPHOA has access to firefighting equipment in the event that a small fire requires extinguishing or fire approaches the Estate from outside. The response to fires is detailed in the relevant sections of the Site Procedure Manual for Security. In case of emergency incidences the Eden District Municipality's Emergency Response number is: **10177**.

While fire response is important, catastrophic fires can only be prevented by treating the landscape according to acceptable Wildland/Urban interface principles. For this purpose, the following measures need to be undertaken:

1. Maintain open access routes along all fences or boundaries of the Estate.
2. Maintain a 10 m wide (minimum) fire break of short, brushcut vegetation along the periphery of the Estate.
3. Do regular block burns as prescribed in the *Integrated Fire Management Plan* for the Estate to manage fuel loads.
4. Golf course greens 3-6 provide a useful internal fire break to protect residential precincts from fires from the north west of the Estate. Keep vegetation around between greens 3-5, up to and around Bushbuck drive short (500mm) and remove dead shrubs. Brushcut 3-5 m fire breaks next to the cart path between the greens and up to the maintenance buildings. Turn on the irrigation system when a fire approaches. Do the same between greens 14-16, 10 and 11.
5. Brushcut 5 m fire breaks alongside the roads/paths between green 6 and the western boundary.
6. Remove dead or dying plants, especially trees and shrubs from landscaped or natural areas between residential zones and around the golf course where prescribed burning is not an option or hazardous.
7. These measures should protect most of the Estate west of the entrance road from fires from the northwest.

8. Amend the Estate’s Landscape Guidelines to allow private landowners (and Estate management) to treat (firescape) their properties according to the recommendations from FireWise SA (refer to the pamphlet: *Firescaping your Garden* by FireWise SA). A general principle is that of creating a survivable or defensible space of paving and short vegetation and low fuel loads within 10 m of a house or other building.

~~Bolweki Environmental SSI developed an *Integrated Fire Management Plan* for the Estate in which specialist attention is given to identification of optimal fire management units, the frequency of controlled burns, the season of controlled burns and the intensity of such burns.~~

~~This Plan divides the Estate into 17 individual fire management units, each with specific detail to execute successful burns. A copy of the Plan is attached as Appendix B.~~

~~Combined fire management and alien clearing is critical to ensure the effectiveness of both activities, as such the same schedule is followed for both activities.~~

~~Pinnacle Point Beach & Golf Resort is currently a member of the South Cape Fire Protection Agency (SCFPA). It is recommended they remain such in order to benefit from the Agency’s support as well as training. The ECO responsible for overseeing fire management must ensure that all responsible personnel involved with fire management (at the Resort) attend the SCFPA’s One-Day Basic Fire Fighting Course prior to taking on firefighting responsibilities.~~

~~The Estate Conservation Officer (ECO) is responsible for alignment of these activities in the following repetitive cycles (unless otherwise determined by the Fire Management Plan):~~

YEAR 1	Alien clearing must take place one year prior to burn of a designated fire-unit to ensure that excess biomass is removed, thereby reducing the changes of a controlled fire transforming into a runaway fire.
YEAR 2	Burning of designated fire unit one year after clearing.
YEAR 3	Follow-up alien clearing 6 months after controlled burn within designated fire unit.
YEAR 4	Follow-up alien clearing.
YEAR 5	Follow-up alien clearing.
General alien clearing across the Estate (areas not included in the designated Fire-Management units) to take place on a weekly basis.	

~~The approved Fire Management Plan is relevant till 2028 where after long-term Alien-Clearing Follow-up Plan must be compiled to ensure effective monitoring and ongoing-clearing.~~

~~Fire management is the responsibility of the Estate Environmental Officer (ECO) who in consultation with the Conservation Trust oversees implementation of the Integrated Fire Management Plan. Both parties must ensure compliance with Plan. The ECO and representative of the Conservation Trust must report back on any non-compliance to the GM at weekly feedback sessions. in the quarterly reports.~~

~~The PPHOA must guarantee that sufficient funds are available to ensure effective fire management as per the Plan. Such financial planning must be reflected in the annual budget.~~

5.9 ARCHAEOLOGY CONSERVATION MANAGEMENT

Nationally and internationally important archaeological resources occur in abundance at and around the Pinnacle Point Beach & Golf Resort. Amongst others the historical caves along the coastal cliffs represents the earliest evidence of human use of coastal resources as well as pigment of rock art or personal adornment which is considered as evidence for modern human behaviour. The dates for these are around 160 000 years ago which is nearly 40 000 years earlier than any similar evidence found elsewhere.

Because this site contains the largest volume and highest quality of prehistoric archaeological record of any development in the Western Cape the heritage authorities requires that an Archaeological Conservation Management Plan (ACMP) be compiled to ensure proper protection of these features. The Environmental Authorisation includes reference to the ACMP in Condition 12 of the EA. These sites received Provincial Heritage status in April 2013, and application has been made for World Heritage status.

The ACMP prescribes short, medium and long term conservation and management measures to cover both construction and operational phases, amongst others:

- That the archaeological sites will receive a regular (monthly is optimum) evaluation to check for site security, erosion and damages, to be undertaken by an independent monitor approved by Heritage Western Cape (HWC);
- The PPHOA must ensure that the necessary surveys occur and cover the costs associated;
- Monitor water flowing into the archaeological caves:
 - Weekly water monitoring (bucket system whereby placed in strategic locations in the caves and monitored for water drip);
 - Regular communication between the appointed independent monitor and the golf course greenkeeper monitoring water flow, if the monitor determines the water flow to be too high the irrigation volumes must be cut back.
- Submit reports to the PPHOA and HWC upon completion of all monitoring site surveys.

Archaeological monitoring falls within the responsibilities of the Estate Environmental Officer (ECO) who in consultation with the appointed independent archaeological monitor must ensure implementation of the ACMP. The archaeological monitor must report high levels of water flow into the caves to the Deputy Greenkeeper who in turn must report it to the Director of Golf via the Golf Course Superintendent. The Director of Golf must report any recommendations forthcoming from the weekly water flow monitoring, or monthly site surveys directly to the GM for action.

5.10 ENVIRONMENTAL AWARENESS & EDUCATION

The on-site office of the PPHOA hosts a number of archaeological and environmental features on display to the public and visitors. In the absence of a separate interpretive centre or museum these offices fulfil the role of making available such records in an informative manner.

PPHOA in collaboration with the Oyster Bay Reserve Conservation Trust has embarked on a number of environmental training and awareness initiatives which include but are not limited to:

- The Oyster Bay Reserve's community conservancy Ranger Project, using local specialists to educate prospective Ranger's in various fields of environmental interest, i.e. Archaeologist to inform on the importance of the historical caves at Pinnacle Point;
- Guided tours to the Historical Caves according to the Memorandum of Agreement between the PPHOA, Mossel Bay Archaeology Project Cultural Resource Management (MAPCRM) and Oyster Catcher Trails dated 1 June 2013). This stipulates that:
 - MAPCRM will from time to time allocate caves that are suitable for public visits by small tour groups not exceeding 12 people;
 - The PPHOA will grant and maintain access to the caves; and
 - The tour operator will market, and supply and informed guide to the tour group(s).

Initiatives such as these must continue and the PPHOA must maintain a record of all such activities for reference in the ~~Annual~~ OEMP Compliance Audit.

The PPHOA must ensure that relevant information boards (see example below) must be maintained and remain visible for visitors and people to view so that the importance of the Pinnacle Point biodiversity and archaeological relevance are shared.



5.11 WATER CONSERVATION & MONITORING

Water conservation in South Africa is of vital importance. Our water resources are under extreme pressure from pollution, over abstraction and development and all efforts to minimise usage should be implemented.

It is a recommendation of this OEMP that the following water conservation and monitoring actions are implemented:

- PPHOA to maintain a metered **record of potable water** usage for the Estate. If such is not possible the PPHOA must strive to obtain collective water meter readings from the Mossel Bay Municipality for the Estate. These records must be kept and made available for use in the Annual OEMP Compliance Audit.
- The approved **Landscape Guidelines** must be implemented (specifying irrigation systems, garden variety species, species that are not permitted etc.).
- Golf course **irrigation volumes must be monitored** and monthly reports submitted to the PPHOA. In particular the volume of irrigation volume at golf course holes closest to the protected caves must be highlighted to allow comparative analysis with the archaeological monitoring (of water draining into the caves). These records must be kept and made available for use in the Annual OEMP Compliance Audit.

It is recommended that the following specifications be included in the Architectural Design Guidelines to ensure that water conservation is implemented throughout the estate.

a. Dual Flush Toilets

Conservative estimates have shown that a saving of more than 22 000 liters per household can be achieved annually with the installation of dual flush toilets (Aquanotion, 2008). All households and ablution facilities should be fitted with dual flush systems.

b. Low flow shower heads

The installation of low flow shower heads can not only reduce water consumption by up to

50%, but also the energy required for water heating by up to 50% (Eartheasy, 2008).

It has been estimated that a saving of up to 57 000 liters of water per annum per household can be achieved through the installation of low flow shower heads. Low flow shower heads make use of either aerators or pulse systems to reduce the flow without compromising the quality of the shower. The choice of shower head is up to the individual owner, but must have a flow of less than seven liters per minute.

c. Low flow Taps

Low flow tap use aerators to reduce the flow of the water. These are either built into the faucet or added as an aftermarket product. The faucets in bathrooms should have a peak flow of less than 10 liters per minute.

d. Geyser and pipe insulation

Apart from the savings in terms of energy as detailed below, insulating geysers and pipes save water, as shorter periods of running the tap to get hot water are required. All structures should have insulation on geysers and all hot water pipes.

e. Swimming Pools

Incorrectly designed and maintained swimming pools are a significant part of the senseless waste of water resources. A typical uncovered pool can lose between 1,2 and 1,8m of water a year to evaporation. Chemicals can also evaporate into the air, requiring the ongoing use of more than is necessary. The following considerations must be implemented on any properties that intend building swimming pools (PracticalEnvironmentalist, 2008):

- Pool covers must be used to prevent water evaporation, loss of chemicals, loss of water heat and as security against drowning of people or animals. The covers reduce the amount of make-up water by between 30 and 50 percent and reduce chemical consumption by between 35 and 60 percent. The covers further retain as much as 70 percent of the water heat.
- Pools painted with dark colours absorb heat and increase the water temperature naturally without the use of a pool heater.
- Pool water heaters should not be run all year and should be kept at lower temperatures in order to be more energy efficient. Ideally no pool heaters should be used.
- ~~— Well maintained pool equipment is more efficient and lasts longer.~~
- Operate pool filters and automated pool cleaners outside of peak energy use times. In winter, this equipment can be used less frequently without affecting the clarity of the pool.
- ~~— Create a windbreak around the pool using indigenous plants. This prevents the wind from increasing evaporation on the surface of the water. It also creates habitat for birds and can act as a natural barrier to decrease the visual impact of a fence;~~

Windbreaks are not practical when on decks

- Chemical pools are discouraged and consideration should rather be given to salt water or natural pools;
- ~~Backwash water (applicable to both chemical and salt water pools) may not be discharged onto the ground, but must be collected in a tank and removed from site. It is possible to discharge the backwash water into a grey water system if one is in place.~~ *The Stormwater Management Policy specifies the disposal of backwash water.*

In addition, it must be noted that a swimming pool forms part of a building footprint.

f. Waterwise Landscaping

Waterwise landscaping principles must be incorporated into the detailed landscaping plans.

The following principles apply to waterwise gardening:

- Grow water-wise plants – generally the best suited plants are those indigenous to the area, as they seldom need additional watering;
- Group plants according to their water needs – this avoids wasting water on plants that don't need it;
- Consider the quality and type of the lawn. Lawns use unacceptable amounts of water, so consider reducing lawn areas to a minimum. Use tougher, low-water lawn types such as Buffalo (coastal areas) or Kweek (inland), no Kikuyu.
- Maintain the garden – remove unwanted plants, plant more perennials than summer annuals, as they have deeper root systems and so need less watering.
- Improve the soil and mulch. Soil water-holding capacity is improved by higher organic matter content. Mulching (covering the soil with a thick layer of bark, compost, straw etc.) keeps the soil much more moist.
- Plant in the right season – For winter rainfall areas this is in autumn and early winter so the plants have a chance to develop their root systems before the dry season. In summer rainfall areas it is spring and early summer for the same reason.
- Water correctly – avoid watering during the heat of the day or in windy conditions.
- The best irrigation system is one that reduces evaporation, e.g. micro irrigation – it uses 25% of water used by normal irrigation systems with the same effect, and can even be placed under lawns.

g. Rainwater harvesting

The PPHOA must promote the installation of rainwater storage tanks at existing individual homes where there is sufficient space to accommodate such tanks. All future dwellings must be fitted with rainwater storage tanks to supplement their municipal potable water supply. Ideally individual home owners must refrain from irrigating their gardens / landscaped areas with municipal potable water and instead make use of rainwater storage.

5.11.1 Golf course irrigation

~~Unlike many golf courses~~ The Pinnacle Point golf course is irrigated with treated effluent from the Mossel Bay Municipal / Pinnacle Point Waste Water Treatment Works (WWTW). This approach to golf course irrigation contributes significantly to (potable) water conservation.

Due to the potential negative impact associated with overspray (spraying treated effluent over a wider area than the golf course footprint thereby affecting the composition of natural vegetation bordering the golf course) it is the responsibility of the Director of Golf, and ultimately the PPHOA to ensure that:

- wind speed and direction are taken into account when the course is being irrigated;
- Soil moisture be taken into account for irrigation volumes to prevent waterlogging and excessive drainage;
- ~~spray heads must be set to spray at specific distances only to not exceed the golf course footprint;~~
- monitoring of the natural vegetation adjacent to the six (6) golf course holes according to the protocol specified in the Conservation Management Plan.
- ~~photographic record of natural vegetation at the six (6) designated golf course holes must be recorded with photos being taken at the following locations on a quarterly basis:~~

HOLE NUMBER	COORDINATES
HOLE 1	34°20'4.07" S 22°08 7.08E
HOLE 2	34°20'2.24" S 22°08 4.94E
HOLE 4	34°19'6.66" S 22°08 5.31E
HOLE 10	34°20'2.99" S 22°08 9.14E
HOLE 16	34°20'0.91" S 22°09 7.42E
HOLE 18	34°20'5.42" S 22°09 2.55E

~~The following figure depicts the locations of these holes.~~

- ~~on a quarterly basis do a visual comparison to monitor changes in the vegetation in the event that the data shows a notable change in the species composition or condition, the irrigation system must be adapted to adjust the irrigation impact;~~
- ~~soil samples adjacent to above mentioned golf course holes must be taken regularly (quarterly is optimum) to have comparative data from which to determine if any leaching is taking place form the golf course into natural vegetation areas in the~~

~~event that the data shows an increase in unwanted chemistry/salt values the irrigation system must be adapted to adjust the irrigation impact.~~

Daily record must be kept of golf course irrigation volumes and soil moisture content through means of metering through the irrigation systems. These records must be maintained and made available for the Annual OEMP Compliance Audit by the Director of Golf.

5.11.2 ~~Washing machines~~

~~It is recommended that all washing machines that are to be installed in houses should be front loading washing machines as opposed to top loading washing machines. Apart from much lower energy and water requirements, front loader washing machines have a number of advantages that make them a better environmental choice:~~

- ~~— **Less wear and tear on washed materials** — Washed materials therefore last longer and result in a net resource saving;~~
- ~~— **Faster drying times** — Because of the horizontal axis and faster spin speeds, more water is removed and the materials dry faster which results in energy saving if a clothes dryer is used.;~~
- ~~— **Quieter operation** — Therefore less noise pollution; and~~
- ~~— **Less detergent** — Far less is required compared to top loaders. Fewer chemicals therefore reach treatment plants and ultimately waterways.~~

5.12 ENERGY CONSERVATION

The provision of energy has become a controversial topic, and has led to the reconsideration for many people of how they use energy in their homes.

Solar energy is created by light and heat which is emitted by the sun, in the form of electromagnetic radiation. With modern technology, we are able to capture this radiation and turn it into usable forms of solar energy such as electricity.

~~Many of the suggestions below generally require inclusion during the design phase of new developments, but can just as easily be incorporated into existing dwellings.~~

It is recommended that the following specifications be included in the Architectural Design Guidelines to ensure that energy conservation is implemented throughout the estate.

h. Solar panels

The Pinnacle Point Architectural Guidelines recommends as a minimum that solar panels be fitted to dwellings on the Estate and no three phase connections are allowed.

i. Solar heating water systems

The Pinnacle Point Architectural Guidelines recommends as a minimum heat pumps. Solar heated water systems are an innovative way of producing hot water without putting additional

pressure on gas or municipal power supply. There are many different types available on the market, and home owners should consider all their requirements (number of people using facility, location of house, angles of roof) before making a choice.

j. Energy Efficient Lighting

In terms of Best Practice, it is required that energy saving lighting fixtures be used throughout the entire township. It is therefore specified that Light Emitting Diode (LED) ~~or Compact Fluorescent (CF)~~ lighting be used as opposed to incandescent or Compact Fluorescent (CF) lighting. This is required for all internal and external lighting, including street lighting. Proximity switches should be used in areas where lighting for pedestrians is required.

NO external High Pressure Sodium (HPS) or Metal Halide (MH) spot or floodlights should be installed.

CF lighting uses quantities of mercury in the bulbs and tubes which pose serious environmental hazards. The mercury from one CF bulb can pollute many thousand litres of water if not treated correctly (Eden District Municipality, 2011). CF lighting (energy saving bulbs and tubes) must be correctly disposed of at registered Hazardous waste sites. Companies like Pick n Pay and Woolworths offer facilities to collect CF bulbs for recycling and disposal. The following should be considered when handling CF bulbs (eHow Home, 2011):

Disposing of Burnt Out CF Bulbs

- Seal the bulb inside two plastic bags, or one thick freezer bag, before disposal.
- Find the nearest recycling station that handles hazardous materials. Check with your city's municipal office to see if there is a recycling program in your town.
- Take the bulbs to the recycling station. Ask the people there about the process of giving them your bulbs and follow all their instructions.
- Tell everyone you know who is using energy efficient bulbs how to properly dispose of them as the use of these bulbs is growing.

If a Bulb Breaks

- Open a window and leave the room. Let no one inside for at least 15 minutes.
- Collect the fragments and powder with stiff paper or cardboard. Wear disposable rubber gloves. Do not use a vacuum cleaner.
- Clean the entire area with a wet wipe or wet paper towel. Use adhesive tape to collect excess powder.
- Seal all pieces and cleanup materials in a plastic bag. Follow the above procedures on disposal or recycling. Wash your hands completely afterward.
- Dispose of the vacuum bag in the same manner the next time you vacuum the area. If it's a canister vacuum, wipe it completely clean.

k. Energy Efficient Appliances

Energy efficient appliances are becoming widely available. Follow the Energy Guide labels on appliances to help selection of correct models. Any appliance that has to heat up water or air will use more energy, as will an appliance that boasts additional extras such as ice making, dispensing and auto defrosting on fridges or heat drying on dishwashers.

l. Solar Cooling Systems

Where required by homeowners, the home owner should consider the use of solar cooling systems such as absorption or adsorption chillers as opposed to conventional air conditioning units.

m. Evaporative Cooling Systems

Consideration should be given to evaporative cooling systems as these cut down considerably on energy usage for appliances such as air conditioners. Furthermore, the system ensures that fresh air circulates within housing units, which improves on environmental health risks.

Fresh air is drawn from outside the house (the hotter the better) and passes through moistened pads which cools it down and filters it before flowing through outlets in the house. There are certain parameters required for evaporative cooling systems, which should be thoroughly investigated prior to installation.

n. Geyser and pipe insulation

Apart from the savings in terms of energy as detailed below, insulating geysers and pipes save water, as shorter periods of running the tap to get hot water are required.

All structures should have insulation on geysers and all hot water pipes.

~~Energy and water conservation initiatives are the responsibility of the ARC in collaboration with the Estate Environmental Officer (ECO) and Technical Manager. Weekly feedback sessions to the GM must report on achieving the above-mentioned initiatives.~~

5.13 FAUNA MANAGEMENT

This section is aimed at the management of animals, both wild and domestic, in the built environment of the Estate where they interact with people. The management of wildlife in the the conservation areas of the Estate is addressed in the CMP.

~~Developments of any kind create several problems for the indigenous fauna of an area. This includes destruction and fragmentation of their habitat, destruction of corridors, introduction of problem animals, poaching, road mortality and disturbance of breeding sites to name a few.~~

~~Pinnacle Point Beach & Golf Resort is a coastal development with a responsibility to ensure and maintain corridor function and movement of wild animals. For security purposes areas have been fenced with faunal gates inserted at specified intervals. The coastal corridor of approximately 100m wide has remained unfenced and should remain such.~~

~~Maintenance of the game gates is problematic and although frustrating the PPHOA must ensure that these gates are functional. For this reason, a Site Procedure Manual for Security has been prepared, which stipulates that:~~

- ~~• The on-duty Shift Manager shall ensure that the faunal gates, number one and two, on the perimeter fence are to be opened and remain so between 06:00 and 18:00 seven days a week.~~
- ~~• The Control Room Operator must monitor these faunal gates by means of camera system and motion detector sensors to ensure that no unauthorized entry is gained through these points.~~
- ~~• The Control Room Operator must take snapshots of any game moving through the gates in order to determine the effectiveness of these features in the overall wild life management.~~
- ~~• The on-duty Shift Manager shall report any issues regarding safety risks at these gates to the Security Manager at a timeous manner.~~

~~In the event that any security breaches are noted (unlawful trespassing or domestic animals) the PPHO reserves the right to temporarily (no longer than one week at a time) close these faunal gates at night. During this time the Control Room must monitor for indigenous faunal movement wanting to make use of these gates. Daily records of indigenous faunal movement must be kept on record and make available for the Annual Compliance Audit.~~

~~The Provincial office of the Department of Environmental Affairs & Development Planning (DEA&DP) should be notified of any *permanent* changes to the operations of these faunal gates.~~

5.13.1 Destruction of Natural Habitats and Populations

Habitat destruction is the prime driver in the decimation of populations.

- Restrict development and construction activities to planned areas;
- Clear each building site individually;
- Restrict the footprint of development to the smallest area possible;
- Preserve undeveloped portions of erven in their natural state;
- Create laydowns in previously disturbed areas;
- Rehabilitate affected areas, where possible;
- Manage functional areas appropriately;
- Compensate for loss of habitats through creating indigenous gardens;
- Facilitate search-and-rescue operations before and during site clearance;
- Facilitate collection of scientific material and information before and during site

- clearance (this should fall under the responsibility of an ECO);
- Leave undeveloped portions of erven unfenced;
 - Make provision for, and manage, ecological corridors;
 - Widen the ecological corridors where possible where allowing gardens and open space corridors to merge;
 - Create continuity with neighbouring properties;
 - Use recommended types of security fencing;
 - Wherever possible, place pipelines and cables underground, and rehabilitate;
 - Restrict creation of unwanted tracks;
 - Use natural materials to surface footpaths.

5.13.2 Game introductions

~~A *Guideline for Game Introduction & Management* is in place for the Estate (see Appendix J) specifically dealing with the recommended game species that may be introduced into the conservation areas as well as their specific habitat requirements, management and monitoring of these species. CapeNature has endorsed this Plan. Since the areas these animals can be introduced into are relatively small (by game reserve standards) it is critically important to ensure that game will be efficiently managed.~~

~~The ECO, in collaboration with the Conservation Trust, are responsible for implementation of the monitoring plan. Any problems with the activity of game management must be reported to the GM at weekly feedback meetings. The Conservation Trust must ensure that an annual assessment/audit of overall game management is undertaken by a suitably informed expert.~~

~~This section identifies various mechanisms that can be adopted by home owners to improve their interaction with the local wildlife (Harrison, 2008 and CapeNature).~~

5.13.3 Road mortality

Road deaths of animals have led to mass deaths of animals as a direct result of human actions and can be limited by a small change in behaviour.

- Restrict speed on roads;
- Place warning signage in appropriate places.
- ~~Use appropriate curb designs (recommend edge restraint and/or mountable instead of barrier curbs). *Standard curbs have already been constructed*~~

5.13.4 Light pollution

The *Architectural Guidelines* provide details on allowable exterior lighting on the Estate. Amongst others the following key points are noted and should be implemented.

- Reduce exterior lighting and avoid constant lighting;
- Use only long-wavelength or low wattage lights for exterior lighting;
- Use directional fittings for exterior lights. No direct light sources should be seen from

outside the township;

- Encourage the screening of interior lighting.

5.13.5 Poaching of local wildlife

Poaching of wildlife is a constant threat and comes from surprising quarters. In light of the objectives of the PPHOA, poaching is strictly prohibited within the boundaries of the conservation areas. The following points should be considered to prevent poaching:

- Educate workers to avoid poaching;
- Patrol the area to ensure that no snares are set;
- Maintain perimeter security to prevent unauthorized access by people and domestic animals (especially dogs who move and hunt in packs).
- Report incidents of snaring to the PPHOA;
- Keep a record of incidents;
- Extend the network of footpaths where appropriate to increase patrol areas;
- Control materials to avoid pollution and damage to fauna;
- Control after-hours access.

5.13.6 Problem-animal scenarios

Problem animals are created as a direct result of human interference in their habitats. Baboons and monkeys are the most common of problem animals as they most easily adapt to using humans as a food source, and are able to access houses, vehicles and most other units with ease when not sufficiently secured.

Baboons and monkeys are not a protected species and for years were considered vermin and indiscriminately destroyed. However, in terms of biodiversity, protection of all species is important as each has its role to play. In order to minimise the impact of problem animals on people and to protect the animals themselves, the following should be undertaken:

- Do not allow feeding of wild animals;
- Keep attractive resources out of reach, this includes planting of fruit trees too close to dwellings;
- Keep food out of reach of baboons and monkeys i.e. don't leave a picnic unattended;
- Exercise rigorous control of edible refuse;
- Do not leave dustbins outside in easy reach;
- Keep windows and doors securely closed;
- ~~Avoid bird feeders.~~

CapeNature has developed a pamphlet (Understanding Baboons) providing information regarding baboons. The pamphlet has been attached as Appendix 5.

Other animals which can become problem animals are feral cats and dogs. When found, they should be removed. Contact the local Society for the Prevention of Cruelty to Animals

(SPCA) for assistance in capturing and removing feral animals.

Domestic animals can also have an impact on wildlife. Animals should be kept confined to the property as far as possible.

5.13.7 Domestic Animals

Domestic animals such as dogs, cats, monkeys and some birds can cause problems to the natural fauna if not kept adequately enclosed. This is in line with the municipal bylaws regarding domestic animals. The following measures must be implemented and communicated very clearly too all homeowners.

- No domesticated animal may roam outside of the owners property unsupervised;
- animals roaming the nature areas unsupervised are liable to be removed from the site at the PPHOAs discretion;
- the municipal regulations regarding the number of animals that may be kept must be adhered to.

5.14 WASTE MANAGEMENT

Effective management of household waste contributes to a more sustainable implementation of landfill sites and their management. Sorting of recyclable materials at the source, i.e. in each household, causes less backlog at the landfill site and decreases the availability of material so required by scavengers to the dump site. Using biodegradable waste in a garden compost heap or an earthworm farm is far more supportive of the environment than disposing of it in the general waste.

5.14.1 Recycling

It is recommended that recycling bins are placed at a central point in the Estate, with access for all residents and visitors to encourage recycling of most of the general household waste that is produced. Bins need to be adequately marked for ease of reference. The PPHOA should enter into an agreement with a local recycling organisation for collection of these materials.

5.14.2 Garden Refuse

Garden refuse, such as prunings and grass clippings may not be disposed of in the open space areas. Unwanted germination of seed in natural areas is to be prevented at all costs. Grass clippings from the golf course get disposed of in skips. Homeowners must take the responsibility of removing their garden waste or having it removed to a suitable disposal site or in private compost heaps. ~~Where there is sufficient space and / or mechanisms in place, garden refuse may be composted.~~ No burning of garden waste on site is permitted. Estate garden waste is chipped and used on site as mulch.

5.14.3 Biodegradable Refuse

Households produce large amounts of biodegradable refuse that can easily be recycled

privately to produce compost. Compost provides a rich source of nutrients for plants, both indoors and out. There are a vast array of methods and mechanisms available to homeowners, from worm farms to kitchen composters which make this process easy and not labour intensive, as well as odourless.

More information can be obtained from the Urban Sprout Green Directory on www.urbansprout.co.za.

The Estate does not compost biodegradable refuse, as kitchen waste is mixed with proteins and other non-compostable materials. Furthermore, spreading kitchen waste compost on the Estate will allow for various foreign seeds (especially tomatoes) to establish, which is undesirable.

~~Compost heaps is not advisable due to the potential issues around leaving biodegradable refuse at any place accessible by baboons and monkeys. Worm farms are an acceptable method of composting as they can be kept indoors away from predators. It is however, advisable that this activity is only undertaken by more permanent residents where a constant source of material is available for the worms.~~

Waste management is the responsibility of the Technical Manager. Problems with waste management must be reported to the GM during weekly feedback sessions.

5.15 AUTHORISATIONS, PERMITS AND LICENSES

Although Pinnacle Point Beach & Golf Resort has its relevant environmental and planning approvals in place, other less well known permits/licenses and authorisations must be noted.

Apart from the abovementioned authorisations required for the Estate, the following permits and licenses are also required by land owners within the Estate:

- **Recreational Fishing and Bait Collection Permits** must be obtained. Available from the Mossel Bay Post office, or any DEA: Oceans and Coast (previously known as Marine and Coastal Management) office;
- **Forestry permits** for the removal or trimming of protected tree species;
- **Archaeological demolition permits** for any instance where archaeological remains are exposed that may require relocation.
- **Introduction of game** to the conservation area.

With the exception of introduction of game (Conservation Trust), the ECO is considered to be the responsible party with whom individuals on the Estate can make contact to ensure that they comply and obtain relevant permits / licenses / authorisation as may be required.

6 DECOMMISSIONING PHASE ENVIRONMENTAL MANAGEMENT REQUIREMENTS

It is not likely that decommissioning of a residential and tourism development such as the

Pinnacle Point Beach & Golf Resort will take place in the near future. The possibility does exist that individual owners may decide to demolish existing facilities to make way for new ones. In this event, or if the entire area requires decommissioning for some reason, all relevant legislation and policies must be complied with for the given period.

In general, should the facility be decommissioned, the following should be undertaken:

- Only identified buildings should be removed within a demarcated area to prevent unnecessary damage to the surrounding vegetation;
- Materials that can be recycled should be correctly sorted and stacked for removal to appropriate waste stream sites;
- The footprint area of the facility must be rehabilitated.

7 NON-COMPLIANCE

All homeowners, personnel, workman and visitors on the Estate are liable to comply with the Environmental Authorisation and this management programme. It is the responsibility of the PPHOA to ensure that all people are informed and comply. Procedures are developed in this section for dealing with offences in terms of this OEMP and the Environmental Authorisation, ~~Any person is liable on conviction of an offence in terms of sub-regulation (1) of the National Environmental Management Act to imprisonment for a period not exceeding two years or to a fine not exceeding an amount prescribed in terms of the Adjustment of Fines Act, 1991 (Act No. 101 of 1991). Since NEMA is applicable to all persons residing in the Republic, it is important that everyone is aware of their responsibilities to the environment.~~

7.1 PROCEDURES FOR CONSTRUCTION PHASE OFFENSES

All contractors shall comply with the environmental specifications and requirements of this OEMP, any additional OEMP, any EA issued and Section 28 of NEMA, on an on-going basis and any failure on his part to do so will entitle the ECO or PPHOA to impose a penalty. The Pinnacle Point Home Owners Association Building Rules specify the rules for contractors and fines for contravening any rule.

~~In the event of non-compliance the following recommended process shall be followed:~~_____

7.2 PROCEDURES FOR OPERATIONAL PHASE OFFENSES

It is the hope of the PPHOA that all land owners will agree to comply with this OEMP in order to ensure the sustainability of the Estate.

In the event that an offense in terms of the OEMP is identified the following process should be followed:

- The PPHOA shall issue a Notice of Non-compliance to the land owner/ responsible entity, stating the nature and magnitude of the contravention;
- The land owner shall act to correct the transgression within the period specified in by the PPHOA;
- The land owner shall provide the PPHOA with a written statement describing the actions to be taken to discontinue the non-conformance, the actions taken to mitigate its effects and the expected results of the actions;
- In the case of the entity failing to remedy the situation within the predetermined time frame, the PPHOA shall notify the relevant authorities, depending on the nature of the transgression and recommend halting the activity or initiate a Committee investigation into the failure to comply;
- In the case of non-compliance giving rise to physical environmental damage or destruction, the PPHOA shall notify the relevant authorities;
- In the event of a dispute, difference of opinion, etc. between any parties in regard to

or arising out of interpretation of the conditions of the OEMP, disagreement regarding the implementation or method of implementation of conditions of the OEMP, etc. any party shall be entitled to require that the issue be referred to the PPHOA committee and any specialists.

8 CONCLUSION

The PPHOA must keep record of changes to Appendices attached to this OEMP and provide the record and reason for such changes or amendments to the relevant person conducting the ~~Annual~~ Compliance Audit. The results of every audit must be used as a guideline for updating and improving the OEMP where necessary.

The PPHOA must ensure that the OEMP is updated every two (2) years and all previous versions of the OEMP must be kept on file for future reference.

This OEMP is a legally binding document and once approved by the DEADP the PPHOA has a duty and responsibility to ensure that it complies with all conditions and recommendations contained in the main document as well as in the relevant Appendices.

9 REFERENCES

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