



## LANGEBAAN COUNTRY ESTATE

# Environmental Management System

Reviewed January 2008

### PREPARED FOR:

LANGEBAAN COUNTRY ESTATE JOINT

VENTURE

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# Langebaan Country Estate Environmental Management System

Review No 1: January 2008

## 1. GENERAL REQUIREMENTS

### 1.1 What is an Environmental Management System?

An **EMS** is a systematic approach incorporating environmental considerations into every business decision. The **EMS** provides **LCE** with a framework for managing the environmental performance of the Estate. As an integral part of the overall management structure, an **EMS** ensures that major environmental risks and liabilities are identified early, then minimized or eliminated and sustainably managed. The development and application of an **EMS** is a dynamic and a reiterative process, and presents a long term commitment to environmentally responsible management.

An Environmental Management System is based on guidelines created by the International Organization for Standardization (ISO). The ISO 14001 standard is one of a series of international standards that serve as a basis for international comparison, reference and certification. It serves as a model for any organization interested in designing and implementing an **EMS**.

### 1.2 The Five Principles of an EMS

The ISO 14001 model identifies five principles essential to the successful implementation of an **EMS**. Each principle again contains a number of further important elements to be developed.

- **Commitment and Policy.** The Environmental Policy is the up-front indicator of the commitment to the environment by the Estate. It is the driving force behind the implementation and continual enhancement of the **EMS**. Basically, the policy establishes the goals and directions for the organization's environmental responsibilities and commitments. It is the link that binds the activities of the

organization and provides the framework for actions to be initiated within the effective implementation of the **EMS**.

- **Planning** incorporates all the activities needed to fulfil the commitments contained in the Environmental Policy. It is a very important aspect within the development of an **EMS**.
- **Implementation and Operation.** Implementing an **EMS** requires both management and budgetary resources to be available. Responsibilities for the specific tasks are to be assigned to individuals. These individuals must have, or have access as needed, to acquire the required skills and training to action implementation affectively. The first stage of the **EMS** involves the documenting of all key elements and operations within the system. Documentation shall be legible, dated, always showing revision dates readily identifiable, and maintained in an orderly manner, and to be retained for a to be specified period. Procedures and responsibilities are to be established and maintained for the creation and modification of the various documents and systems.
- **Checking and Corrective Actions** are established to be implemented to verify performance and to correct situations of non-conformances on a reiterative basis.
- **Management Review.** The annual **EMS** review by management is to ensure that the system is functioning, and that it continues to meet the needs of the organization. Amendments are to be made at this point, as required, to ensure to the ongoing improvement of both the **EMS** and the environmental performance of the Estate and management team.

### 1.3 Benefits of an EMS

The EMS endeavours to improve both the accessibility to environmental performance information and the internal accountability within LCE relative to the environment. It needs to help in external reporting commitments and also facilitate effective and improved internal communications on environmental performance. A fully functional EMS will allow the organisation to demonstrate commitment to a methodology which recognizes that simply complying with environmental laws is no longer adequate on the global scale. A

more pro-active approach to the environment is necessary. The EMS provides opportunities for LCE to move beyond just managing compliance and fixing problems reactively, to a pre-emptive management and prevention of environmental degradation.

## 2. IMPORTANT CONCEPTS WITHIN AN EMS

A number of important concepts are to be considered and completely understood if the EMS is to function effectively.

These include

- management support,
- employee involvement,
- continual improvement,
- environmental awareness,
- documentation and
- regulatory compliance.

These concepts more fully described:

- **Management Support.** The EMS does not function without full and ongoing Management support. Dwindling support will reflect in the reduction of and in the operational efficiency of EMS elements.
- **Employee Involvement.** As with management, employee commitment and support is necessary. The EMS is a system that relies on the commitment and actions of all the people who make up the organization. It does not function effectively without input and support from all levels of the organization.

The EMS cannot be viewed as simply an add-on to the duties and responsibilities of personnel or contractors. It is vital to get everybody involved both in the early planning as well as the role out stages of the EMS.

Some important questions to ask and readily obtain answers to, as an employee or Estate resident or club member would be:

- What is an Estate EMS?
- Where can I find the Estate EMS manual?
- Who is my Estate EMS Management Representative?
- What are the priority aspects identified in the Estate EMS?
- Who is the Estate Champion of such aspect (as may be queried)?
- Where can I learn more about the Estate EMS?

Finding the answer to such questions is a good starting point towards getting people involved. It is important that information on progress further be shared throughout the organization and Estate.

- **Continual Improvement.** A principle tenet of an EMS consistent with the ISO standard is reiterative improvement. It is deemed a stumbling block by many top managers and a source of fear and trepidation for many EMS coordinators. One simply is not able to improve everything right away. Accept that it usually isn't technically or economically feasible to achieve all goals fully or immediately.
- **Environmental Awareness.** Every person in the organization is to be aware of the environmental priorities and programs if the EMS is to function and prosper. It is not only important that personnel and residents of the Estate with specific environmental responsibilities and interests are aware of how to effectively satisfy those responsibilities. It is equally important that all employees be aware of the commitments made in the environmental policy and the role they have in ensuring that policy commitments are met. Always be realistic and remember that there will be people who just do not care or fully commit. Such apparent apathy should not detract from the more important priority of providing appropriate training and implementing feedback mechanisms to staff who want to share ideas and contribute to achieving the EMS ideal.
- **Documentation.** At first glance, the documentation requirements for an EMS may seem overwhelming. The ISO Standards specifies the areas where information, procedures, and plans must be documented. Even in areas where documentation of the guidelines is not specifically called for, it is good practice to document as much as possible so that the EMS continues to serve your organization effectively.

It's important to understand that much of the necessary documentation may already be readily available at points within the organisation.

- **Regulatory Compliance.** The EMS must include a commitment to comply with environmental regulatory requirements, a procedure to identify those requirements that are applicable to the organization, and for a way for the organization to evaluate compliance with those requirements. It must also contain a procedure to identify areas of non-compliance and specific actions to bring the organization into compliance when there is a problem. The organization must build the EMS recognizing that problems will occur, and incorporate procedures to determine root causes of those problems, and prevent their reoccurrence.
- **EMS Scope.** All guidelines in this EMS are applicable to all activities and link management, maintenance and development on the Langebaan Country Estate, Langebaan, South Africa.

**3. ENVIRONMENTAL SERVICES OFFICERS: Name list of Responsible Persons**

<b>DIVISION/SECTIONS</b>	<b>MANAGER</b>	<b>EMS REPRESENTATIVE</b>
<b>Management</b>	Craig Scott	<b>Divan Roets</b>
<b>Civil Contractors</b>	Marius Ferreira	<b>Marius Ferreira</b>
<b>Building Contractors</b>	Craig Scott	<b>Lee Doubell</b>
<b>Homeowners Association</b>	Bill Shepherd	<b>Bill Shepherd</b>

**SIGNATURES :** \_\_\_\_\_

**DATE :** \_\_\_\_\_

**4. ISO 14001 ENVIRONMENTAL REPRESENTATIVES:**

<b>ZONE MANAGERS</b>	
A.	Zone 1: Estate Management.
B.	Zone 2: Lead Civil Contractors.
C.	Zone 3: Building Contractor Representative.
D.	Zone 4: Homeowners Association.

## 5. LCE ENVIRONMENTAL POLICY

### 5.1 The Vision

To develop a West Coast Country Estate that is a model for environmental integrity, human enjoyment and economic security. The core strategy is to create a Country Estate that fits within its natural habitat, rather than have pockets of natural habitat that fit within the country estate.

### 5.2 Environmental Responsibility

#### *Principle:*

- To facilitate ongoing co-ordination between Sports Club Members and Users, Home-owners and the H O Association, the Developer, the Contractors and Estate Staff, to ensure all display a high level of respect to environmental integrity and quality.

#### *Responsibilities:*

1. **Sports Club Members and Users** will be required to at all times respect Estate environmental policy and display and maintain an appropriate behaviour to sustain such ethos. Individual club rules of association and use will be required to refine this ethos to specifics in detail for all facility users.
2. **The Home Owners and HO Association** are responsible for the environmental integrity, alien management, conservation, protection, restoration and maintenance of the soft-landscaped Common areas and Private Open Space, including parks, road reserves, natural conservation areas, wetlands and ponds and natural vegetation areas as in their ownership or under the HO Association management.

3. **Golf Course Maintenance Staff** will be responsible for the environmental integrity, alien management, indigenous conservation, protection, restoration, replacement and maintenance of the golf course(s) and dams.
4. **The Lead Civils Contractor** will be responsible for the environmental integrity, conservation and protection of all the vegetation adjacent to construction sites and other areas affected by construction.
5. **Keyway Construction and Allied Operations** will be responsible for the environmental integrity, conservation and protection of the vegetation adjacent to construction sites and other areas affected by construction on sites after civils work has been signed off.
6. **The Developer** will be responsible for ensuring that all necessary actions are taken to enhance the environment and that alien eradication, reinstatement and protection of vegetation be implemented for the entire Estate as development progresses.

<b>PERSONS</b>	<b>AREAS OF RESPONSIBILITY</b>
Individual Home Owners/HOA	<ul style="list-style-type: none"> <li>• Individual erven</li> <li>• Areas under HOA control or responsibility</li> </ul>
The HO Association	<ul style="list-style-type: none"> <li>• Common Areas as assigned</li> <li>• Private erven via owners</li> <li>• Private Open Space : Road reserves, parks, wetlands, nature conservation areas and natural vegetation areas beyond the golf course and erf boundaries</li> </ul>
The Contractors	<ul style="list-style-type: none"> <li>• Pavement areas</li> <li>• Conservation of sites during construction</li> <li>• Other area(s) affected by construction activities</li> </ul>
The Developer	Entire estate

### **5.3 The Management and Personnel at LCE asked to Commit and Ensure that:**

- As a widely acclaimed and recognised golf estate, activities are conducted in a manner that causes no irreversible damage to the natural environment.
- All actions to comply with every requirement imposed by legislation, local authorities and protocols incumbent on the LCE management or facility enjoyment.
- Diverse indigenous ecosystems are protected and their continued existence promoted.
- Ongoing action is taken to prevent pollution and to maintain a healthy working environment for all employees, homeowners and users of Estate facilities.
- Concern regarding disturbances of the community within the region are minimised by considering the impact of all aspects of the business on the environment.
- Environmental awareness and appreciation is encouraged throughout the Estate as a whole.
- Organisational resources are allocated and responsible persons designated to discharge commitments as existing.
- To conduct a regular review of **LCE's** environmental performance in order to measure achievement versus environmental objectives set.
- Ensure continuous improvement to processes and procedures as may emanate from the annual review at **LCE**.
- The ISO 14 001 environmental programme at **LCE** is documented, implemented, maintained and communicated to all and is available for scrutiny by the public as may be desired.

## 6. ENVIRONMENTAL PLANNING

### 6.1 Environmental Aspects

The environmental manager and ISO 14 001 zone representative are to consult and identify aspects in each respective zone on a continual basis. As a new aspect is identified it is to be recorded on **LCE** Aspect Register.

The following must be taken into account:

- All negative potential and direct impacts to be taken into consideration.
  - Direct and indirect impacts form part of the aspects consideration.
  - Potential secondary and cumulative impacts must be considered.
- All waste generated (household waste and wood excluded), to be considered and managed as having a significant aspect.

[And an additional maximum value of five (5) will be added to the formula as follows].

- As soon as waste is removed from **LCE** the value will accrue to the region where the waste is to taken.
- The significance rating of each aspect is determined by the following formula;

***Severity (extent + duration) + Probability + waste) – Mitigation = Impact.***

- The severity factor consists of two sections, (i) extent and (ii) duration of an impact.
- The extent factor has four categories;
  - a. Localised in zone within LCE--- adds value of one (1).
  - b. Effect restricted to LCE--- adds value of two (2).
  - c. Effect restricted to Regional West Coast-- adds value of three (3).
  - d. National effect, inside boundaries of SA--- adds value of four (4).
  - e. International effects, outside SA, -- adds value of five (5).

- The duration factor consists of four categories namely:
  - a. Immediate, impact continuing for not longer than one day, adds a value of one (1).
  - b. Short term, impact continuing for not longer than one week, adds value of two (2).
  - c. Medium term, impact continuing for not longer than one month, adds a value of three (3).
  - d. Long term, impact continuing for not longer than one year, adds a value of four (4).
  
- The probability factor links directly with the frequency of the activity that might occur
  - a. Continuous, adds a value of five (5).
  - b. Day only, adds a value of four (4).
  - c. Weekly, adds a value of three (3).
  - d. Monthly, adds a value of two (2).
  - e. Yearly, adds a value of one (1).
  
- Mitigation refers to legislation, procedures and work instructions that are in place to counter any impact.
  
- Such values may be subtracted from the total.
  - a. Instructions/orders/procedures in place, subtracts a value one (1).
  - b. Training of personnel involved in place, subtracts a value two
  - c. Monitoring and measures in place, subtracts a value three (3).
  - d. Engineering measures in place, subtracts a value four (4).
  
- The outcome rating will be classified into one of three categories namely, high, medium and low.

- a. A high aspect has a value of ten (10) and higher.
  - b. A medium aspect has a value lying between five (5) and nine (9).
  - c. A low aspect has a value lying between zero (0) and four (4).
- Each EMS zone must ensure that a copy of the identified aspects is available in the section records.
- An operational procedure to be formulated for every aspect to guide relevant person/s.
- The identified aspects will be finalised when annual environmental objectives and targets are set for each department and Zone.
  - The updated Aspects Register forms part of the legal compliance review.
  - Any amendments or new identified legal requirements are to be incorporated in the aspect register.
- All infrastructure projects to include an environmental impact study. Environmental impact considerations must be enacted for all programmes during the planning phases.

## 6.2 Legal and other Requirements

Insert all environmental aspects and impacts into the legal register, noting areas or aspects for compliance

The following are broad areas of legal requirement:

- International treaties and conventions.
- National and provincial legislation and regulations.
- Local Authority by-laws.
- Permits, licenses, authorisations and agreements with public authorities.

**LCE** is to ensure that a legal compliance review is completed annually. An external environmental auditor is required to perform the annual audit.

Should a breach of legislation be recorded the following steps are to be taken:

- A corrective action report and plan to be compiled.
- Implement soonest any corrective action.
- Notify the certification body in writing of the non compliance issue.

### **6.3 Objectives and Targets**

Management are to develop annual environmental objectives and targets on an overall basis. At each relevant function and level specified objectives and targets are to be set. The EMS manager will assist the various departments and sections in this regard. These objectives and targets to be recorded both in writing and electronic form, and be available for scrutiny on request.

The following to be taken into account when objectives and targets are documented:

- All significant aspects identified within the zone are to be addressed within objectives and targets of the EMS.
- Comply with the commitments as agreed upon in the environmental policy.
- Comply with the Legal and other requirements as in place.
- Comply within available technology options and financial capacity.

Management shall annually review its environmental objectives and targets to establish and document the progress for the past year. After a management review senior management shall issue the updated set of environmental objectives and targets for the coming year.

A management program is to be drawn-up to achieve the set objectives and targets within each relevant function and level. These environmental management programs are to be both in printed and electronic form, and be available on request.

Within each program the following to be stated:

- Responsible person for the program in the relevant zone.
- Resources and timeframe for target achievement.
- Legislation and regulation applicable to the aspect.

The objectives and targets are to be prioritised for each function and level. Identified aspects in the high significance category are automatically to be prioritised over the medium or lower rated aspects.

Quarterly progress meetings are to be held to monitor progress in achieving objectives and targets. Management, the environmental manager, zone heads and ISO 14 001 zone representatives are to attend these meetings. Review of the programs to also take place at this meeting. Should a zone fail to achieve or implement a target, keeping in mind any negative impact on the objective, a new target date *may* be fixed. Should the zone fail to achieve or implement an objective by the target date, reasons are to be provided for such non compliance. A corrective action or a non conformance is to be raised.

For any new development or aspect that is intended a complete environmental management program response must be executed.

## **7. IMPLEMENTATION AND OPERATION**

### **7.1. Structure and Responsibility**

The LCE EMS manager is the appointed co-ordinator of the SABS ISO 14 001 LCE Environmental Management System and functions to be delegated by means of a duty sheet. The ISO 14 001 co-ordinator is to receive adequate training to prepare and accept the responsibility for establishment, implementation and maintenance of the system.

The environmental courses (as below) at North West University Centre for Environmental Management in Potchefstroom are a recommended formal option:

- Environmental management systems.
- Environmental law.
- Environmental auditing. t

Note:

CLES is able to provide an uncertified home tuition pre course to capacitate any EMS manager to better attempt the formal CEM courses at Potchefstroom.

Management has committed to the implementation of SABS ISO 14 001.

The necessary human, technology and financial resources are to be made available to the EMS manager for ISO 14 001 to be implemented and maintained.

ISO 14 001 zone representatives are to be appointed to assist the EMS manager in the implementation and maintenance of the ISO 14 001 requirement. Zone representatives are also to be delegated by means of a duty sheet.

The zones are to provide feedback on a monthly basis to the EMS manager.

The EMS manager is to provide feedback and recommendations to management at quarterly progress meetings. Crisis feedback is to be given at any time to management should an emergency present itself.

## **7.2. Competence, Training and Awareness**

All personnel should receive ongoing training to better performance of their duties. Training is to be given by the EMS manager as stated in the Training Needs register to be compiled. This training program is to be reviewed on an annual basis.

The aim of the Training Needs Register is to:

- Highlight the importance of conformance with environmental policy and procedure within the requirements of the environmental management system.
- Highlight any significant environmental impact, either actual or potential, of workplace activities and the environmental benefit of to be improved personnel performance.
- Define the roles and responsibilities to achieve conformance with the environmental policy and procedures and the requirement of the EMS, including both emergency preparedness and response requirements.
- Assess the potential consequences of departures from specified operating procedures.
- Assess the impact of new or current dated amendments to the legal framework of environmental legislation upon the Estate working environment.

Zones that act as host for outside contractors are to ensure that all contractors receive appropriate training concerning **LCE**'s environmental policy, objectives and targets that are applicable to the area where such contractors are to be working, as well as defining the procedures. Zones must log training as given to contractors, as auditable proof.

Vendor Companies supplying **LCE** with goods or services of whatever kind are required to be trained to comply with the procedures applicable for goods or service delivery at **LCE** in compliance to ISO 14001 and to be instructed to adhere strictly to these requirements.

All zones to keep a formal auditable record of ISO 14001 training received.

### **7.3. Communication**

The EMS manager will be responsible for internal communications. All internal documentation is to be filed for future reference.

This to be as follows:

- **Top down.** Decisions made by management regarding the ISO 14001 environmental management system will be formally documented and advised. Awareness information to be documented as given to employees at meetings and training sessions.
- **Bottom up.** Information from grassroots level to management to be assessed and processed in various ways, e.g.
  - Direct contact with the ISO 14001 co-ordinator.
  - Non-conformance report sheets to be raised.
  - Quarterly progress meeting minutes.
- **Lateral.** Cross-functional communication is encouraged on both an informal and formal manner. All formal communications to be filed as appropriate.

The EMS manager, as instructed by the CEO, to handle any external communication concerning the impact of **LCE** on the environment.

The following practises to apply:

- **LCE** to confirm the transparency towards the community by scheduling Environmental (EAC) meetings at **LCE** to both announce and explain the **EMS** and the commitment thereto as guardian of the LCE natural environment. EAC members to input with regards to the objectives and targets set. The EAC members to communicate such to the community as prudent.
- A complaint received by **LCE** per telephone, letter, fax or personal visit to be logged and handled by the EMS manager. The CEO is responsible any action via the environmental manager.

- The EMS manager as instructed to give feedback to the complainant and community as soon as the problem is addressed or a solution evident with timing scenario indicated.

All such documentation as received is to be filed together with the response thereto.

#### **7.4. Documentation**

The scope of the **EMS** to include:

- Members/home owners detail who are responsible for an erf/ erven
- The Association or body responsible for common areas, Private Open Spaces, including road reserves, parks, natural conservation areas and natural vegetation areas under their HOA or erf control.
- Estate Maintenance Staff responsible for the Golf Course and all natural vegetation on the Estate not falling under the HOA.
- Contractors are responsible for conservation of sites and all adjacent areas during construction.

The core elements of the environmental management system are summarised in Paragraph 8 immediately hereafter.

### **8. THE ENVIRONMENTAL POLICY**

The EP sets the tone for the whole EMS. It's the ultimate environmental goal towards which **LCE** is committed to working. The environmental policy again is to be guided by the Aspects Register. This ensures activities are conducted only in a way that no irreversible damage is done to the environment.

## 8.1. Planning

- **The aspects register**

This register contains the schedules of all aspects impacting on the Estate. It identifies the impacts, lists the significance rating and relates to all applicable legislation. The compilation of a legal register relates directly to the Aspects register.

- **The legal register**

The Legal Register contains *all* legislation that is applicable to the estate inclusive international treaties and protocols, national and provincial legislation and Local Authority bylaws.

- **Objectives and targets**

Objectives and targets are set within the Environmental Policy based upon both Aspects and Legal registers. These objectives and targets are to be made relevant to each level and function and are to be available for inspection upon request. The objectives and targets provide direction for the various EMS programs on the estate.

- **The environmental management program (EMP)**

This program has been specifically drawn-up with the aim of achieving a specific set objectives and targets. Responsibilities and timeframes clearly state the intention of the EMP, namely to actively manage the objectives and targets either during construction (CEMP) or during operation (OEMP).

## 8.2. Implementation and Operationalising

- **Structure and responsibility**

Roles, responsibilities and authority have to be defined, documented and communicated to all personnel. The necessary resources including manpower, technology and finance are to be available in achieving the successful implementation and maintenance of the **EMS**.

- **Training, awareness and competence**

A training needs register is to indicate the appropriate training needs as identified for individuals working on the estate. Always to take into account the environmental policy, procedures, impacts, legislation and non conformances in completing this register.

- **Communication**

Internal and external communications are to be handled as instructed by the CEO. The CEO is responsible for internal and external communication with the help of the EMS manager. All communication is to be filed also in hard copy

- **Documentation control**

Documentation control procedures will define the handling of documentation. This will ensure that documents are traceable, revised as necessary, while obsolete documents are to be removed and stored in a depository

- **Operational Procedures**

Documented procedures stipulating operating criteria are designed to manage situations. Any deviations from the environmental policy, objectives and targets are to be anticipated in planning and catered for under emergency response and preparedness procedure.

- **Emergency preparedness and response**

An emergency preparedness and response plan is to be designed and be in place guide each unit to respond to accidents and emergency situations in an anticipated and predictable way to prevent and at worst mitigate any environmental impacts that may be result.

### **8.3. Checking and Corrective Action**

- **Monitoring and measurement**

Key characteristics of operations and activities that may have a significant impact on the environment are to be monitored and measured on a regular basis. Information is to be documented to track EMS performance.

- **Non-conformance and corrective and preventative action**

Clear responsibilities and authority lines are to be laid down to ensure that non-conformance is investigated, action taken to mitigate impacts caused, and to initiate and complete corrective and preventative action. Formal records are to be kept.

- **Records**

All records to be kept for a period of five full calendar years.

- **Environmental management system audit**

Annual environmental management system audits will be done to determine if the **EMS** conforms to expectations, inclusive to the standards of implementation. Audit results will require management attention.

- **Management review**

Annually management will review the **EMS** to ensure its continued suitability, adequacy and effectiveness. Possible need for changes to the **EMS** are effected after an audit, or changed circumstances to show the commitment to continual improvement by management.

- **Documentation control**

Standardisation helps to promote economy in training, flexibility in staff deployment and workplace synergy. All ISO 14 001 documentation generated will be to conventions of service writing (CSW). All documentation generated to be in both in writing and electronic formats.

#### **8.4. Operational Protocols**

Staff receiving documents as amended is responsible for reviewing the amendments to determine the effect of these changes on their functions or units. To stay in line with legislation, technology and time regular revision by each section should take place. Should any changes be needed the relevant requirement and information must be formally given to the EMS manager.

The EMS manager issues documentation to each zone only via a formal distribution list.

The ISO 14 001 zone representative to sign in the document register upon receiving the new document, and is responsible for distributing the documentation within the various sections of the zone. When an updated version of any documentation is distributed, the relevant superseded document is to be returned to the EMS manager at the time the new document is issued. Superseded documents are to be destroyed. To revoke a document the same procedure is followed.

Control over all Environmental Management System (**EMS**) documentation to be within the following logic file framework which may be further developed as needed.

- When drawing up documentation use the following file references. This ensures that all documents are located within a standardised framework:
  - LCE/EMS/1/1 LCE EMS document
  - LCE/EMS/1/2 ISO 14 001 Management system.
  - LCE/EMS/1/3 LCE Home Owners Constitution
  - LCE/EMS/1/4 LCE Club(s) House rules
  - LCE/EMS/1/5 LCE Operational Structure (Organogram).
  - LCE/EMS/1/6 LCE Architect Guidelines.
  - LCE/EMS/1/7 LCE Landscape Guidelines
  - LCE/EMS/1/8 Training and competence register and manuals.
  - LCE/EMS/1/9 Communication register (All internal and external communications plus meetings documentation).
  - LCE/EMS/1/10 Environmental aspects and impacts register(s).
  - LCE/EMS/1/11 Environmental management programs (Alien Vegetation Management / Integrated Waste Management).
  - LCE/EMS/1/12 LCE Operational Environmental Management Plan
  - LCE/EMS/1/13 LCE Construction Environmental Management Plan
  - LCE/EMS/1/14 Training and competence register and manual(s).
  - LCE/EMS/1/15 Documentation control system.
  - LCE/EMS/1/16 Emergency preparedness and scope document.

- LCE/EMS/1/17 Monitoring and measurement.
- LCE/EMS/1/18 Non-conformance and corrective and preventive action reports.
- LCE/EMS/1/19 Environmental audit record(s).
- LCE/EMS/1/20 Environmental review record(s).

Document files are to be revised as and when any new information becomes available. All changes to procedures, instructions or other documentation to be correctly recorded.

Documents affected by such changes to include the following:

- Operational procedures.
- Aspects and impact lists.
- Any new environmental legislation.
- Responsibilities schedules.
- Training and competency schedules.
- Emergency preparedness and response schedules.
- Monitoring and measurement.
- Non-conformance and corrective and preventive action reports.
- Formal Records.

Annually management are to review and revise documents and needs as necessary. After a document has been revised the EMS manager will approve under delegated authority it for adequacy.

Such documents to include:

- Environmental policy.
- Objectives and targets.
- Environmental management programs.
- Environmental management system audit.
- Management review.

All necessary documentation will be available at each section and within each zone.

Operational control procedures are compiled to ensure that significant impacts are managed and controlled. Any new, or amendments to legal requirements, will form part of these procedures. These procedures must be respected and adhered to by all the estate personnel and users, inclusive contractors.

All relevant procedures are to be available in the section where operations essential to the effective functioning of the environmental management system are to be performed.

### **8.5. Emergency Preparedness and Response**

Each procedure relates to an emergency response action plan. The estate is required to be in possession of such a contingency plan. This plan is to be reviewed and revised on a regular basis. Annual reviews of the contingency plan are to be conducted.

## **9. CHECKING AND CORRECTIVE ACTION**

### **9.1. Monitoring and Measurement**

All identified and potential aspects are to be regulated by both monitoring and measurement. The procedures are to stipulate clearly where monitoring and measurement takes place.

The monthly occupational health and safety inspection report to also serve as a monitoring tool.

The Local Authority fire brigade will additionally perform routine checks on Estate equipment as required by their standard working instructions.

The calibration and maintenance of monitoring equipment is to be done in accordance

with the manuals and all permitting requirements.

## **9.2. Non-conformance, Corrective and Preventive Action Reports**

Any person at **LCE** is to be enabled to report a non-conformance to his ISO 14 001 zone representative. The EMS manager will thereafter be responsible for the investigation and reporting.

The following are regarded as defined non-conformances:

- Environmental accidents.
- Ineffective procedures.
- Deviations from specified conditions.
- Legal non-compliance.

The following steps to be taken when a non-conformance is identified and or reported:

- Lodging the non-conformance report via a non-conformance reporting sheet.
- Any non-conformances logged to be sent to the EMS manager. After appropriate consultation a recommendation by the EMS manager to be recorded on the form. The form to be sent to the section responsible for implementation. After implementation of the recommendation the EMS manager will do a follow-up to ensure compliance.
- Implement or modify the controls necessary to avoid a repetition of the non-conformance, or prevent potential non-conformances.
- Regular feedback to be given to the EMS manager on the progress made concerning the corrective action(s).
- Any non-conformance to be an agenda point for the next management review meeting.
- Should corrective and preventive action results in identify better work strategies, the necessary procedures to be amended.

### **9.3. Records**

Each procedure to stipulate what data must be recorded and where this data will be recorded on the prescribed records. The records are to be filed within each section where the specific aspect has been identified. These records must be filed for five years in the sections where after it is to be removed to the archives. Sections must ensure that all necessary records are kept for all applicable aspects as needed for audit proof. These records must be traceable at all times.

The following records to be generated:

- Scope of **LCE**'s environmental management system.
- Information on applicable environmental legislation and other regulations.
- Training needs.
- Decision on communication with interested parties.
- Results of monitoring and measurements.
- Records of formal training.
- Compliance to legislation.
- Changes to documented procedures resulting from corrective and preventive action.
- Results from environmental management system audits.
- Management reviews.
- Records of complaint.
- Non-conformance reports.
- Emergency preparedness and response plan.
- Environmental aspects register.

### **9.4. Internal Audit**

**LCE** will undergo both internal and external audits.

- The EMS manager to coordinate and perform the internal audits. Annually after each phase development, or as stipulated by the record of decision, an internal audit

to be conducted.

- EMS auditors that hold appropriate registration with SAATCA to perform the annual external audit.
- SABS auditors to perform the external audit as required by the International Standards Organisation for final accreditation.

The audit results will determine whether or not the environmental system conforms to the requirement or standard. The results of the audit are to be documented. Audits may be performed to ensure that the **EMS** conforms to the ISO 14 001 standard as well as to ensure that the zones conform to **LCE's EMS**.

The following criteria will form part of the audits:

- All the areas on the estate.
- All the activities on the estate.
- All the services rendered to or on the estate.
- Zones that could have a potential greater impact on the environment.
- Zones indicated as possibly experiencing problems during any internal audits.

The auditor to audit the following:

- All significant aspects in the relevant zone.
- Non-conformances as registered in the past six months.
- Registering any new conformances.
- Findings as reflected in the previous audit.

Information gleaned from audits to be used as follows:

- As feedback to management.
- To highlight areas where better or changed management is recommended.

## 10. MANAGEMENT REVIEW

**LCE** to conduct reviews as necessary, but at least once annually, of the environmental management system. This review is to ensure the suitability, adequacy and effectiveness of the management system in relation to the scope of activities. The review will be documented for future use.

The review will cover the following aspects:

- The environmental policy.
- Results from environmental management system audits.
- The extent to which objectives and targets have been met.
- Concerns raised by relevant interested and affected parties.
- Non-conformances.
- Records of corrective and preventive actions.
- Breaches in environmental legislation.
- Changes to operational processes.
- Changes to applicable environmental legislation.

**11. DECLARATION BY CERTIFIED PRACTITIONER**

I, .....on ..... at .....

Hereby duly declare that this program is a true reflection of how the Environmental Management System operates at **LCE**.

Prepared by:

N W Hanekom

South African Auditor and Training Certification Association (SAATCA).  
Environmental Management Systems ISO 14001:2004.  
Internal Auditor (SAATCA Reg.No. IE015).

Cape Lowlands Environmental Services

28 December 2007

LCE	ABBREVIATIONS					
<b>MATRIX</b>  <b>QUALITY ASSURANCE</b>  <b>ENVIRONMENTAL SERVICES</b>	V	VOLUME	B	BOOK	AN	ASS NEEDED
	P	PART	Db	DATABORD	D	DAYLY
	S	SECTION	R	ROOM	W	WEEKLY
	C	CHAPTER	CA	CABINET	M	MONTHLY
	P	PAGE	D	DRAWER	Q	QUATERLY
	PA	PARAGRAPH	F	FILE	6	6 MONTHLY
	AP	APPENDIX	S	SHELF	Y	YEARLY
	AN	ANNEXURE	CB	CLIP BOARD	YP	YEAR PLAN
SUBJECT	REFERENCE		AVAILABLE AT	POS NO		YP
<b>1. Environmental policy statement</b>						
a. Unit policy	SOURCE	SABS ISO 14 001, 2004	LCE CEO Estate Office	SABS	01/48	AN
	DOC	LCE ISO 14 001 Environmental Management System Manual.	LCE CEO Estate Office	01/48	02/48	Y
<b>2. Environmental aspects</b>						
a. Environmental aspects	SOURCE	SABS ISO 14 001, 2004	LCE CEO Estate Office	SABS	01/48	AN
	DOC	LCE ISO 14 001 Environmental Management System Manual.	LCE CEO Estate Office	01/48	02/48	AN

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<b>MATRIX</b>  <b>QUALITY ASSURANCE</b>  <b>ENVIRONMENTAL SERVICES</b>	<b>V</b>	<b>VOLUME</b>	<b>B</b>	<b>BOOK</b>	<b>AN</b>	<b>ASS NEEDED</b>
	<b>P</b>	<b>PART</b>	<b>Db</b>	<b>DATABORD</b>	<b>D</b>	<b>DAYLY</b>
	<b>S</b>	<b>SECTION</b>	<b>R</b>	<b>ROOM</b>	<b>W</b>	<b>WEEKLY</b>
	<b>C</b>	<b>CHAPTER</b>	<b>CA</b>	<b>CABINET</b>	<b>M</b>	<b>MONTHLY</b>
	<b>P</b>	<b>PAGE</b>	<b>D</b>	<b>DRAWER</b>	<b>Q</b>	<b>QUATERLY</b>
	<b>PA</b>	<b>PARAGRAPH</b>	<b>F</b>	<b>FILE</b>	<b>6</b>	<b>6 MONTHLY</b>
	<b>AP</b>	<b>APPENDIX</b>	<b>S</b>	<b>SHELF</b>	<b>Y</b>	<b>YEARLY</b>
	<b>AN</b>	<b>ANNEXURE</b>	<b>CB</b>	<b>CLIP BOARD</b>	<b>YP</b>	<b>YEAR PLAN</b>
<b>SUBJECT</b>	<b>REFERENCE</b>		<b>AVAILABLE AT</b>	<b>POS NO</b>		<b>YP</b>
<b>3. Legal and other requirements</b>						
a. Legal register	SOURCE	SABS ISO 14 001, 2004	LCE CEO Estate Office	SABS	01/48	AN
	DOC	<b>LCE</b> ISO 14 001 Environmental Management System Manual.	LCE CEO Estate Office	01/48	02/48	AN
b. Legislation applicable on zone	SOURCE	SABS ISO 14 001, 2004	LCE CEO Estate Office	SABS	01/48	AN
	DOC	<b>LCE</b> ISO 14 001 Environmental Management System Manual.	LCE CEO Estate Office			AN

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	<b>P</b>	<b>PART</b>	<b>Db</b>	<b>DATABORD</b>	<b>D</b>	<b>DAYLY</b>
	<b>S</b>	<b>SECTION</b>	<b>R</b>	<b>ROOM</b>	<b>W</b>	<b>WEEKLY</b>
	<b>C</b>	<b>CHAPTER</b>	<b>CA</b>	<b>CABINET</b>	<b>M</b>	<b>MONTHLY</b>
	<b>P</b>	<b>PAGE</b>	<b>DL</b>	<b>DRAWER</b>	<b>Q</b>	<b>QUATERLY</b>
	<b>PA</b>	<b>PARAGRAPH</b>	<b>F</b>	<b>FILE</b>	<b>6M</b>	<b>6 MONTHLY</b>
	<b>AP</b>	<b>APPENDIX</b>	<b>S</b>	<b>SHELF</b>	<b>Y</b>	<b>YEARLY</b>
	<b>AN</b>	<b>ANNEXURE</b>	<b>CB</b>	<b>CLIP BOARD</b>	<b>YP</b>	<b>YEAR PLAN</b>
<b>SUBJECT</b>	<b>REFERENCE</b>		<b>AVAILABLE AT</b>	<b>POS NO</b>		<b>YP</b>
<b>4. Environmental objectives and targets</b>						
a. Objectives and targets	SOURC E	SABS ISO 14 001, 2004	LCE CEO Estate Office	SABS	01/48	AN
	DOC	<b>LCE</b> ISO 14 001 Environmental Management System Manual.	LCE CEO Estate Office	01/48	02/48	Y
<b>5. Environmental management programme</b>						
a. Zone environmental management program	SOURC E	SABS ISO 14 001, 2004	LCE CEO Estate Office	SABS	01/48	AN
	DOC	<b>LCE</b> ISO 14 001 Environmental	LCE CEO Estate Office	01/48	02/48	Y

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<b>MATRIX</b>  <b>QUALITY ASSURANCE</b>  <b>ENVIRONMENTAL SERVICES</b>	<b>V</b>	<b>VOLUME</b>	<b>B</b>	<b>BOOK</b>	<b>AN</b>	<b>ASS NEEDED</b>
	<b>P</b>	<b>PART</b>	<b>Db</b>	<b>DATABORD</b>	<b>D</b>	<b>DAYLY</b>
	<b>S</b>	<b>SECTION</b>	<b>R</b>	<b>ROOM</b>	<b>W</b>	<b>WEEKLY</b>
	<b>C</b>	<b>CHAPTER</b>	<b>CA</b>	<b>CABINET</b>	<b>M</b>	<b>MONTHLY</b>
	<b>P</b>	<b>PAGE</b>	<b>DL</b>	<b>DRAWER</b>	<b>Q</b>	<b>QUATERLY</b>
	<b>PA</b>	<b>PARAGRAPH</b>	<b>F</b>	<b>FILE</b>	<b>6M</b>	<b>6 MONTHLY</b>
	<b>AP</b>	<b>APPENDIX</b>	<b>S</b>	<b>SHELF</b>	<b>Y</b>	<b>YEARLY</b>
	<b>AN</b>	<b>ANNEXURE</b>	<b>CB</b>	<b>CLIP BOARD</b>	<b>YP</b>	<b>YEAR PLAN</b>
SUBJECT	REFERENCE		AVAILABLE AT	POS NO		YP
		Management System Manual.				
<b>6. Structure and responsibility</b>						
a. Representatives	Source	SABS ISO 14 001, 2004	LCE CEO Estate Office	SABS	01/48	AN
	DOC	<b>LCE</b> ISO 14 001 Environmental Management System Manual.	LCE CEO Estate Office	01/48	02/48	Y
b. Feed back	Source	SABS ISO 14 001, 2004	LCE CEO Estate Office	01/48	01/48	AN
	DOC	<b>LCE</b> ISO 14 001 Environmental Management System Manual.	LCE CEO Estate Office	01/48	02/48	Y

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<b>MATRIX</b>  <b>QUALITY ASSURANCE</b>  <b>ENVIRONMENTAL SERVICES</b>	<b>V</b>	<b>VOLUME</b>	<b>B</b>	<b>BOOK</b>	<b>S</b>	<b>ASS NEEDED</b>
	<b>P</b>	<b>PART</b>	<b>Db</b>	<b>DATABORD</b>	<b>D</b>	<b>DAYLY</b>
	<b>S</b>	<b>SECTION</b>	<b>R</b>	<b>ROOM</b>	<b>W</b>	<b>WEEKLY</b>
	<b>C</b>	<b>CHAPTER</b>	<b>CA</b>	<b>CABINET</b>	<b>M</b>	<b>MONTHLY</b>
	<b>P</b>	<b>PAGE</b>	<b>D</b>	<b>DRAWER</b>	<b>K</b>	<b>QUATERLY</b>
	<b>PA</b>	<b>PARAGRAPH</b>	<b>F</b>	<b>FILE</b>	<b>6</b>	<b>6 MONTHLY</b>
	<b>AP</b>	<b>APPENDIX</b>	<b>S</b>	<b>SHELF</b>	<b>Y</b>	<b>YEARLY</b>
	<b>AN</b>	<b>ANNEXURE</b>	<b>CB</b>	<b>CLIP BOARD</b>	<b>YP</b>	<b>YEAR PLAN</b>
<b>SUBJECT</b>	<b>REFERENCE</b>		<b>AVAILABLE AT</b>	<b>POS NO</b>		<b>YP</b>
<b>7. Training, awareness and competence</b>						
a. Environmental training	Source	SABS ISO 14 001, 2004	LCE CEO Estate Office	SABS	01/48	AN
	DOC	<b>LCE</b> ISO 14 001 Environmental Management System Manual.	LCE CEO Estate Office	01/48	02/48	Y
<b>8. Communication</b>						
a. Internal	Source	SABS ISO 14 001, 1996, par 4.4.3.	LCE CEO Estate Office	SABS	01/48	AN
	DOC	<b>LCE</b> ISO 14 001 Environmental Management System Manual.	LCE CEO Estate Office	01/48	02/48	AN

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<b>MATRIX</b>  <b>QUALITY ASSURANCE</b>  <b>ENVIRONMENTAL SERVICES</b>	<b>V</b>	<b>VOLUME</b>	<b>B</b>	<b>BOOK</b>	<b>S</b>	<b>ASS NEEDED</b>
	<b>P</b>	<b>PART</b>	<b>Db</b>	<b>DATABORD</b>	<b>D</b>	<b>DAYLY</b>
	<b>S</b>	<b>SECTION</b>	<b>R</b>	<b>ROOM</b>	<b>W</b>	<b>WEEKLY</b>
	<b>C</b>	<b>CHAPTER</b>	<b>CA</b>	<b>CABINET</b>	<b>M</b>	<b>MONTHLY</b>
	<b>P</b>	<b>PAGE</b>	<b>D</b>	<b>DRAWER</b>	<b>K</b>	<b>QUATERLY</b>
	<b>PA</b>	<b>PARAGRAPH</b>	<b>F</b>	<b>FILE</b>	<b>6</b>	<b>6 MONTHLY</b>
	<b>AP</b>	<b>APPENDIX</b>	<b>S</b>	<b>SHELF</b>	<b>Y</b>	<b>YEARLY</b>
	<b>AN</b>	<b>ANNEXURE</b>	<b>CB</b>	<b>CLIP BOARD</b>	<b>YP</b>	<b>YEAR PLAN</b>
<b>SUBJECT</b>	<b>REFERENCE</b>		<b>AVAILABLE AT</b>	<b>POS NO</b>		<b>YP</b>
b. External	Source	SABS ISO 14 001, 2004	LCE CEO Estate Office	SABS	01/48	AN
	DOC	<b>LCE</b> ISO 14 001 Environmental Management System Manual.	LCE CEO Estate Office	01/48	02/48	AN
<b>9. Document control</b>						
a. Compiling documentation	Source	SABS ISO 14 001, 2004	LCE CEO Estate Office	SABS	01/48	AN
	DOC	<b>LCE</b> ISO 14 001 Environmental Management System Manual.	LCE CEO Estate Office	01/48	02/48	AN

LCE	ABBREVIATIONS					
LCE	ABBREVIATIONS		LCE	ABBREVIATIONS		
SUBJECT	REFERENCE		AVAILABLE AT	POS NO		YP
b. Filling	Source	SABS ISO 14 001, 2004	LCE CEO Estate Office	SABS	01/48	AN
	DOC	<b>LCE</b> ISO 14 001 Environmental Management System Manual.	LCE CEO Estate Office	01/48	02/48	AN
c. Updating procedures	Source	SABS ISO 14 001, 2004	LCE CEO Estate Office	SABS	01/48	AN
	DOC	<b>LCE</b> ISO 14 001 Environmental Management System Manual.	LCE CEO Estate Office	01/48	02/48	AN
<b>10. Operational control</b>						
a. Procedures	Source	SABS ISO 14 001, 2004	LCE CEO Estate Office	SABS	01/48	AN
	DOC	<b>LCE</b> ISO 14 001 Environmental Management System Manual.	LCE CEO Estate Office	01/48	02/48	AN
<b>11. Emergency preparedness and response</b>						
a. Contingency plan	Source	SABS ISO 14 001, 2004	LCE CEO Estate Office	SABS	01/48	AN
	DOC	<b>LCE</b> ISO 14 001 Environmental Management System Manual.	LCE CEO Estate Office	01/48	02/48	AN

LCE	ABBREVIATIONS					
LCE	ABBREVIATIONS		LCE	ABBREVIATIONS		
SUBJECT	REFERENCE		AVAILABLE AT	POS NO	YP	
<b>12. Monitoring and measurement</b>						
a. Procedures	Source	SABS ISO 14 001, 2004	LCE CEO Offices	SABS	01/48 AN	
LCE	ABBREVIATIONS					
<b>MATRIX</b>	<b>V</b>	<b>VOLUME</b>	<b>B</b>	<b>BOOK</b>	<b>S</b>	<b>ASS NEEDED</b>
<b>QUALITY ASSURANCE</b>	<b>P</b>	<b>PART</b>	<b>Db</b>	<b>DATABORD</b>	<b>D</b>	<b>DAYLY</b>
<b>ENVIRONMENTAL SERVICES</b>	<b>S</b>	<b>SECTION</b>	<b>R</b>	<b>ROOM</b>	<b>W</b>	<b>WEEKLY</b>
	<b>C</b>	<b>CHAPTER</b>	<b>CA</b>	<b>CABINET</b>	<b>M</b>	<b>MONTHLY</b>
	<b>P</b>	<b>PAGE</b>	<b>D</b>	<b>DRAWER</b>	<b>K</b>	<b>QUATERLY</b>
	<b>PA</b>	<b>PARAGRAPH</b>	<b>F</b>	<b>FILE</b>	<b>6</b>	<b>6 MONTHLY</b>
	<b>AP</b>	<b>APPENDIX</b>	<b>S</b>	<b>SHELF</b>	<b>Y</b>	<b>YEARLY</b>
	<b>AN</b>	<b>ANNEXURE</b>	<b>CB</b>	<b>CLIP BOARD</b>	<b>YP</b>	<b>YEAR PLAN</b>
SUBJECT	REFERENCE		AVAILABLE AT	POS NO	YP	
	DOC	LCE ISO 14 001 Environmental Management System Manual.	LCE CEO Estate Office	01/48	02/48 AN	

LCE	ABBREVIATIONS					
LCE	ABBREVIATIONS		LCE	ABBREVIATIONS		
SUBJECT	REFERENCE		AVAILABLE AT	POS NO	YP	
<b>13. Non-conformance, corrective and preventative action</b>						
a. Identification	Source	SABS ISO 14 001, 2004	LCE CEO Estate Office	SABS	01/48	AN
	DOC	<b>LCE</b> ISO 14 001 Environmental Management System Manual.	LCE CEO Estate Office	01/48	02/48	AN
b. Corrective action	Source	SABS ISO 14 001, 2004	LCE CEO Estate Office	SABS	01/48	AN
	DOC	<b>LCE</b> ISO 14 001 Environmental Management System Manual.	LCE CEO Estate Office	01/48	02/48	AN
<b>14. Records</b>						
a. Keeping records	Source	SABS ISO 14 001, 2004	LCE CEO Estate Office	SABS	01/48	AN
	DOC	<b>LCE</b> ISO 14 001 Environmental Management System Manual.	LCE CEO Estate Office	01/48	02/48	AN
<b>15. Environmental management system audit</b>						
a. Audits	Source	SABS ISO 14 001, 2004	LCE CEO Estate Office	SABS	01/48	AN

LCE	ABBREVIATIONS					
<b>MATRIX</b>  <b>QUALITY ASSURANCE</b>  <b>ENVIRONMENTAL SERVICES</b>	V	VOLUME	B	BOOK	S	ASS NEEDED
	P	PART	Db	DATABORD	D	DAYLY
	S	SECTION	R	ROOM	W	WEEKLY
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	PA	PARAGRAPH	F	FILE	6	6 MONTHLY
	AP	APPENDIX	S	SHELF	Y	YEARLY
	AN	ANNEXURE	CB	CLIP BOARD	YP	YEAR PLAN
SUBJECT	REFERENCE		AVAILABLE AT	POS NO		YP
	DOC	LCE ISO 14 001 Environmental Management System Manual.	LCE CEO Estate Office	01/48	02/48	Y
<b>16. Management review</b>						
a. Review	Source	SABS ISO 14 001, 2004	LCE CEO Estate Office	SABS	01/48	AN
	DOC	LCE ISO 14 001 Environmental Management System Manual.	LCE CEO Estate Office	01/48	02/48	Y