



PRIFYSGOL
BANGOR
UNIVERSITY

Environmental Management Manual

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1.0 Introduction

1.1 Background

Bangor University is committed to excellence. Our mission statement describes our overarching aim to be a *“a leading research-led University with an international reputation for teaching and research, that fosters the intellectual and personal development of its students and staff, provides a supportive multicultural environment, promotes widening access and inclusiveness, and supports the economic, social and cultural well-being of Wales and the wider community it serves. Bangor University will be recognised regionally, nationally and internationally as a centre of excellence for a varied portfolio of academic programmes and for the high quality of the experience it provides for its students and staff”*.

We aspire to be sustainable by means of a balanced consideration of financial matters, our staff and students, the local community and of the environment around us. We have over 10,000 students and 2,000 members of staff located within an estate of 210 buildings across 346 hectares. We are committed to providing teaching, conducting research of the highest quality, engaging in knowledge transfer and enterprise and reaching out to the community, whilst at the same time taking good care of our staff and students. We will not only protect our natural environment at both local and regional levels, but will actively seek opportunities to enhance it.

1.2 Environmental Management System

As a contribution to the overarching objectives described above, we developed and implemented our first **Environmental Management System (EMS)** in January 2009, which subsequently achieved Level 3 of the Green Dragon Environmental Standard.

Our EMS has been designed to:

1. Provide an understanding of our environmental impacts through an initial comprehensive baseline review.
2. Establish processes and procedures to reduce our most significant environmental impacts through actions in accordance with defined objectives and targets
3. Ensure compliance with relevant environmental legislation, and
4. Raise awareness of environmental issues amongst staff and students through effective communication and training.

The University's Environmental Management System covers the entire estate with the exception of:

- Prince Madoc Research Vessel (a joint venture with P&O)
- Centre For Advanced Software Technology Limited (CAST LTD)
- Industrial Development Bangor (IDB) Ltd
- The BC Tech Transfer Unit at Mona

We are committed to further the development of our Environmental Management System, achieve continual environmental improvement, and attain registration under the internationally recognised Environmental Management Standard, ISO14001.

1.3 Environmental Manual

This **Environmental Manual** is designed as a navigational guide to our EMS, which effectively comprises of three integrated elements, i.e.:

- A. Environmental Manual
- B. System Documentation
- C. Operational Procedures

Documents are referenced in accordance with the Green Dragon Environmental Standard requirements, which consist of five Levels. Each document reference is therefore preceded with a number which indicates the Green Dragon Level, and a letter that indicates the category within that Level.

For ease of reference these elements are summarised in Appendix A.

2.0 Environmental Policy

Our commitment to the environment is set out in our Environmental Policy (Appendix B) which has been endorsed by the University Executive and signed by the Vice Chancellor.

All new employees are made aware of the policy through induction and “Maps and Compasses” training and a copy is publically available on the Environmental pages of the University’s website. The policy is also displayed on notice boards in our main buildings.

The policy is reviewed annually by the Sustainability Implementation Group (SIG) and any revisions considered necessary are presented to the Sustainability Management Board for endorsement, and ultimately to the University Executive for the signature of the Vice Chancellor.

The Environmental Manager will produce an annual Environmental Statement/Report each year, and a separate Carbon Dioxide Report summarising our carbon footprint. These documents will be endorsed by the Sustainability Implementation Group and the Sustainability Management Board, and will summarise our environmental performance over the preceding academic year. The documents will be made publicly available on the University’s website.

Related Documentation:

- 1C – Environmental Policy**
- 3H – Environmental Statement**
- 3G – Carbon Dioxide Report**
- 4F – Carbon Dioxide Data Collection**

3.0 Planning

3.1 Environmental Review

An initial environmental review was undertaken in July 2008. This review was the fundamental starting point of our EMS, providing the basis of an understanding of our environmental impacts and applicable legislation. From this review, appropriate objectives, targets and actions have been developed for the achievement of continual environmental improvement at the University.

The environmental review is updated annually following the Environmental Review Procedure.

Related Documentation: **1B – Environmental Review**

3.2 Aspects and Impacts

Following the initial environmental review, a Register of Environmental Aspects and Impacts reflecting our activities and operations was developed using the following definitions:

Environmental Aspect: *element of an organisation's activities, products or services that can interact with the environment.*

Environment Impact: *any change to the environment, whether adverse or beneficial, wholly or partially resulting from an organisation's aspects. (An example of a beneficial impact would be a reduction in Resource Depletion by virtue of renewable energy installations).*

This Register, approved by the Vice Chancellor, identifies the situation during which an aspect is likely to arise (normal; unusual; emergency) and indicates whether each Aspect is directly or indirectly responsible for a resultant environmental impact. Each Aspect has also been categorised according to whether the University has direct control over it, or limited influence.

Following compilation of the Register, the Aspects were prioritised according to their relative significance using evaluation methodology based on the *likelihood* and *consequence* of an adverse environmental impact arising. The methodology used provided an overall score between 0 and 144 based on a number of criteria. Those aspects with the most significant impacts (i.e. with a score above a pre-defined threshold) were then addressed in our objectives and targets.

The Register of Environmental Aspects and Impacts will be amended and updated on an annual basis as part of the environmental review process, and where appropriate, in accordance with any internal and external audits. This will be used to identify new impacts and to assess the progress made towards reducing current impacts.

Related Documentation: **3A – Environmental Aspects Register**
 3B – Evaluation of Environmental Aspects
 3C – Control of Environmental Aspects

3.3 Legal and Other Requirements

Compliance with Statute is a fundamental requirement of any EMS. We have identified a number of legal and other requirements relevant to the University's activities, which are documented in the Register of Legal and Other Requirements, which is approved by the Vice Chancellor.

The register is split into five parts:

1. Air Pollution Control
2. Water and Effluent Control
3. Waste Management
4. Other Requirements
5. Pending Legislation

Each entry within the Register is summarised as follows:

- Legislative Act
- Details
- Relevance to University
- Compliance Status

The Environmental Manager will ensure that the Legislation Register remains up to date by monthly review of environmental updates from NetRegs¹, as well as relevant publications, bulletins etc. Any new environmental legislation and other requirements relevant to the University, or amendments to those already documented will be recorded in the Register.

Any actual or potential non-conformance with the legal requirements set out in the Register will be subject to Corrective and Preventive Action procedures.

Related Documentation: **2A – Register of Legal and Other Requirements**
 2B – Managing Legal Compliance

3.4 Objectives and Targets

In order to facilitate a structured approach towards achieving continual environmental improvement we establish environmental objectives and targets on an annual basis. When setting objectives and targets we will ensure that they are consistent with the environmental policy, the significant environmental aspects and the requirement for legislative compliance. In addition, technological options, financial, operational and business requirements will be considered.

¹ www.netregs.gov.uk/

The objectives and targets, which include responsibility and timescales for completion, are formulated by SIG, endorsed by the Sustainability Management Board and signed off by the Vice Chancellor.

In order to determine whether or not the objectives and targets are being met, performance will be monitored by the Environmental Manager. Progress will be reported to the Sustainability Forum, SIG and SMB, and made publicly available through the annual Environmental Statement.

Related Documentation: **3E – Objectives and Targets**

4.0 Implementation and Operation

4.1 Resources, Roles, Responsibility and Authority

The Environmental Manager has the overall responsibility for implementing the EMS. This role is supported by a number of University staff and students as set out in the Communication and Responsibility Document. Members of staff with specific responsibilities for implementing and overseeing the EMS are detailed below:

- ***Vice Chancellor:***

The Vice Chancellor has overall responsibility for the EMS, including the Environmental Policy and providing adequate resources for implementing and maintaining the system on a strategic basis.

- ***Chair of the Sustainability Management Board***

The Chair of the Sustainability Management Board is responsible for ensuring resources are made available across the organisation to ensure the efficient operation of the EMS. The Chair is also responsible for reporting on the EMS to the University Executive Committee.

- ***Environmental Manager:***

Responsible for administering the system on a day-to-day basis, including the following specific duties:

- Ensuring the Environmental Policy is implemented through the requirements of the EMS
- Ensuring the EMS is established, implemented and maintained in accordance with Green Dragon and ISO14001 requirements
- Reporting on the performance of the EMS to top management for review and to provide a basis for improvement of the system
- Raising Staff Awareness
- Ensuring that objectives and targets are being monitored, and progress is reported
- Publish an annual Environmental Statement

- **Heads of Colleges / Heads of Services**

The Heads have responsibility for ensuring compliance with the EMS within their relevant units.

- **Staff Environmental Champions Group:**

The group members are responsible for assisting in the implementation of the EMS, providing a link to the staff in their offices, and for carrying out reviews and audits.

Group to meet a minimum of twice/year, minutes of the meetings are to be produced and recorded.

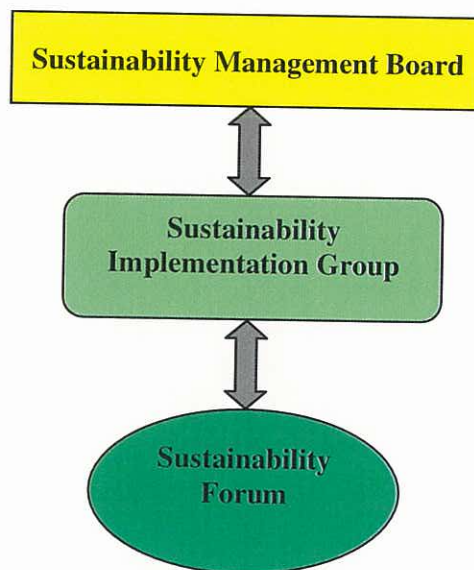
- **All Staff and Students**

All Staff and Students are to comply with the requirements of the EMS, including conforming to the requirements of the Environmental Policy, Objectives and Targets and Legal and other requirements.

- **Sustainability Groups**

The University's Sustainability reporting structure was revised in January 2010, and now comprises 3 tiers as shown in Figure 1 below:

Figure 1: Bangor University Sustainability Reporting Structure



The Sustainability Management Board is tasked with overseeing the evolution and implementation of a Sustainability Agenda for Bangor University, and reporting to the Executive Committee. Specific Actions are achieved through the multifunctional Sustainability Implementation Group, supported with input from Sustainability Forum, which includes representation from the wider University population as well as the local community.

Related Documentation:

1A - Responsibility and Resources

4.2 Training, Awareness and Competence

Heads of College / Service Department will ensure that only personnel with the suitable qualification and experience are employed on work tasks which have the potential to cause a significant environmental impact. They will take action to ensure that training requirements are met and that the effectiveness of training to meet requirements is monitored. All personnel are appraised with respect to competence.

All new staff will undergo environmental awareness training as part of the induction process. Key staff will receive higher-level training as required. Records of training, education, qualification and experience will be maintained.

Related Documentation: **4A – Training Procedures**

4.3 Communication

The University has well established procedures for dealing with internal and external communications, including complaints. Where such communications relate to environmental issues, they will be referred to the Environmental Manager, either for a direct response, or for the provision of an input into a corporate response as appropriate.

To facilitate effective communication of environmental issues, we have developed a Communications Strategy to heighten awareness of the EMS and related issues across the University population.

All external communications relating to our environmental performance, Green Dragon or ISO14001 standards are referred to the Environmental Manager, who is responsible for recording and responding to such communications. The key pathways relating to environmental communications are shown in Appendix C.

Related Documentation: **2D – Communication and Competence**

4.4 Environmental Management System Documentation

Our Environmental Management System has been developed, and is maintained, in accordance with a range of defined procedures. Documents that are necessary to meet the requirements of the EMS shall be maintained as evidence of compliance.

Related Documentation: **4D – System Procedures**

4.5 Document Control

All EMS documentation shall be approved for issue and reviewed and updated as necessary in accordance with our Document Control Procedure. The revision status and page numbering of documents shall be implemented to ensure that incorrect documents are not inadvertently used. The Environmental Manager is responsible for ensuring that only pertinent versions of documents are available for use and that all such documentation is identifiable and legible.

Related Documentation: **4C – Control of Documents**

4.6 Environmental / Operational Control

Activities associated with our significant environmental aspects will be subject to necessary controls and operating criteria. Where required, documented procedures will be prepared, implemented and maintained to define the operational controls necessary to minimise the environmental impacts. The Environmental Manger will maintain a record of all relevant operational control procedures.

4.7 Emergency Preparedness and Response

The potential for accident and emergency situations is identified in the Register of Environmental Aspects and Impacts and detailed in the Pollution Prevention Plan. Procedures have been established to address our response to emergencies.

The Environmental Manager is responsible for:

- ensuring that all environmental incidents are investigated and recorded on the Environmental Incident Report Form
- arranging emergency procedures to be tested where practical
- ensuring that the potential for environmental incidents is reviewed annually

Management Review Meetings will have regard both to any previous incidents, and the potential for future incidents to occur.

Related Documentation: **3D – Pollution Prevention Plan**

5.0 Checking and Corrective Action

5.1 Monitoring and Measuring

The Environmental Manager is responsible for monitoring and reporting on:

- Compliance with Environmental Management System documentation
- Compliance with statutory and other requirements,
- Performance against our objectives and targets, and
- Any University activities likely to adversely impact upon the environment.

Performance is reviewed regularly and remedial actions implemented where appropriate.

Related Documentation:

1D - Environmental Monitoring
3F – Monitoring Environmental Performance
4E – System Monitoring

5.2 Evaluation of Compliance

Compliance with legislation and other requirements is reviewed in accordance with paragraph 3.3 above, and evidence of evaluation is maintained through the Management Review process.

5.3 Non Conformity, Corrective and Preventative Action

Non conformance may arise from a number of situations, including:

- Failure to observe the requirements of the environmental management system
- A result of environmental audits (internal and external)
- Failure or risk of failure to comply with environmental legislation
- Complaints from within or outside the University

The Environmental Manager is responsible for ensuring that any identified environmental problems are investigated and that action is taken to prevent or mitigate any impacts, and avoid recurrence. All such occurrences will be recorded and reported to the Sustainability Management Board, and other staff as necessary. Lessons learned from such incidents will be communicated to the appropriate personnel.

Problem Identification, Correction and Prevention will be a standing agenda item on the annual Management Review meeting.

Related Documentation:

4E – System Monitoring

5.4 Control of Records

The Environmental Manager is responsible for the identification, maintenance and disposal of all documentation associated with the EMS. The Environmental Manager will hold all paper records on the EMS in the Estates and Facilities Office, and will be responsible for controlling all electronic versions.

Related Documentation: **2E – Environmental Records**

5.5 Audit of the Environmental Management System

The audit of our EMS will be based on a one-year cycle and will be carried out by the Head of Sustainability, the Environmental Manager and additional staff as necessary who will be fully trained to carry out this function. The audit programme will be designed and reviewed on an annual basis by SIG.

6.0 Management Review

6.1 Management Review Meeting

An Annual Management Review meeting is used as the pivotal means of ensuring that the EMS is fully implemented and effective. This meeting is undertaken to the requirements of ISO 14001: 2004 and all pertinent aspects are reviewed and actions taken as required. The review meeting is structured in accordance with the following agenda:

- **Actions from previous meeting**
- **Internal audit results**
- **Environmental Communications / Complaints**
- **Environmental Performance**
- **Objective & Targets / Continual Improvement**
- **Corrective & Preventive Actions**
- **Environmental Aspects**
- **Preventive Actions / Suggestions**
- **Resources**
- **Date of Next Meeting**

The Environmental Manager will provide suitable information to allow an effective review to be undertaken. The review will address the possible need for changes to the policy, objectives and targets, and any other element of the system in the light of the audit findings, changes in circumstances and the commitment to continual improvement.

The minutes of the review will be maintained as an EMS record.

Bangor University Environmental Management System

Index of Documentation

Green Dragon Level 1

- 1A** - Responsibility and Resources
- 1B** - Environmental Review
- 1C** - Environmental Policy
- 1D** - Environmental Monitoring

Green Dragon Level 2

- 2A** - Register of Legal and Other Requirements
- 2B** - Managing Legal Compliance
- 2D** - Communication and Competence
 - 2D (i)** Communication Form
 - 2D (ii)** Complaints Form
 - 2D (iii)** Communication Strategy
- 2E** - Environmental Records

Green Dragon Level 3

- 3A** - Environmental Aspects Register
- 3B** - Evaluation of Environmental Aspects
- 3C** - Control of Environmental Aspects
- 3D** - Pollution Prevention Plan
- 3E** - Objectives and Targets
- 3F** - Monitoring Environmental Performance
- 3G** - Carbon Dioxide Report
- 3H** - Environmental Statement

Green Dragon Level 4

- 4A** - Training Procedures
 - 4A (i)** Training Register
- 4B** - Environmental Manual
- 4C** - Documents Control Procedure
- 4D** - System Procedures
- 4E** - System Monitoring
 - 4E (i)** - Environmental Incident Report Form
- 4F** - Carbon Dioxide Data Collection

Appendices and Supplementary Documents

- ZA** - Document Control Record
- ZB** - Legislation Update
- ZC** - Document Review Time Line
- ZD (i)** - Transport Emissions Methodology
- ZD (ii)** - Indirect Transport Emissions Methodology
- ZE** - Oil Delivery Procedure
- ZF** - Oil/Fuel Spill Procedure
- ZG** - Print Unit Spillage Procedure
- ZH** - Solvent Store Spillage Procedure
- ZI** - Solvent Store Items
- ZJ** - Chemical Store Guidance
- ZK** - Waste Management Procedures
- ZL** - Environmental Standards for Contractors
- ZM** - Sustainability / Environmental Policies
- ZN** - Carbon Management Strategy
- ZO** - Induction Leaflet
- ZP** - Environmental Incident Reports
- ZQ** - EMS Management Review Meetings
- ZR** - Audit / Assessment Reports (Internal and External).
- ZS** - Green Dragon Standards 2006
- ZT** - Bangor University Green Dragon Certificate
- ZU** - Laboratory Working - Policy and Guidance

 System Document

 Procedural Document



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Environmental Policy

Bangor University has over 10,000 students and 2,000 members of staff located within an estate of 210 buildings across 346 hectares. This includes significant activities undertaken outside the city of Bangor, particularly in Menai Bridge and in Wrexham. We are committed to providing teaching and conducting research of the highest quality whilst simultaneously taking good care of our staff and students. We aim not only to protect our natural environment both locally and regionally, but to actively seek opportunities to enhance it.

Additionally, we aim to develop a culture of environmental stewardship amongst our staff and students. We understand that our activities have an impact on the environment, and are committed to continual improvement of our environmental performance, working to meeting the requirements of the Green Dragon Environmental Standard. This is fundamental to achieving our goal of becoming a leader in effective environmental management within the higher education sector in Wales.

We will adopt the following key principles within our approach:

- To minimise our environmental impacts and work towards the goals of sustainable development
- To ensure compliance with all relevant legislation and regulations associated with our activities
- To manage waste through reduction, re-use, and the promotion of recycling
- To reduce energy and water consumption, and promote green transport initiatives
- To reduce our contribution to global climate change by making significant reductions in our greenhouse gas emissions
- To work with suppliers who themselves have sound ethical environmental and sustainability policies
- To undertake all necessary steps to prevent the pollution of the natural environment
- To raise environmental awareness amongst staff and students through improved communication and involvement
- To embed sustainable development and awareness of environmental issues in our curricula across the University

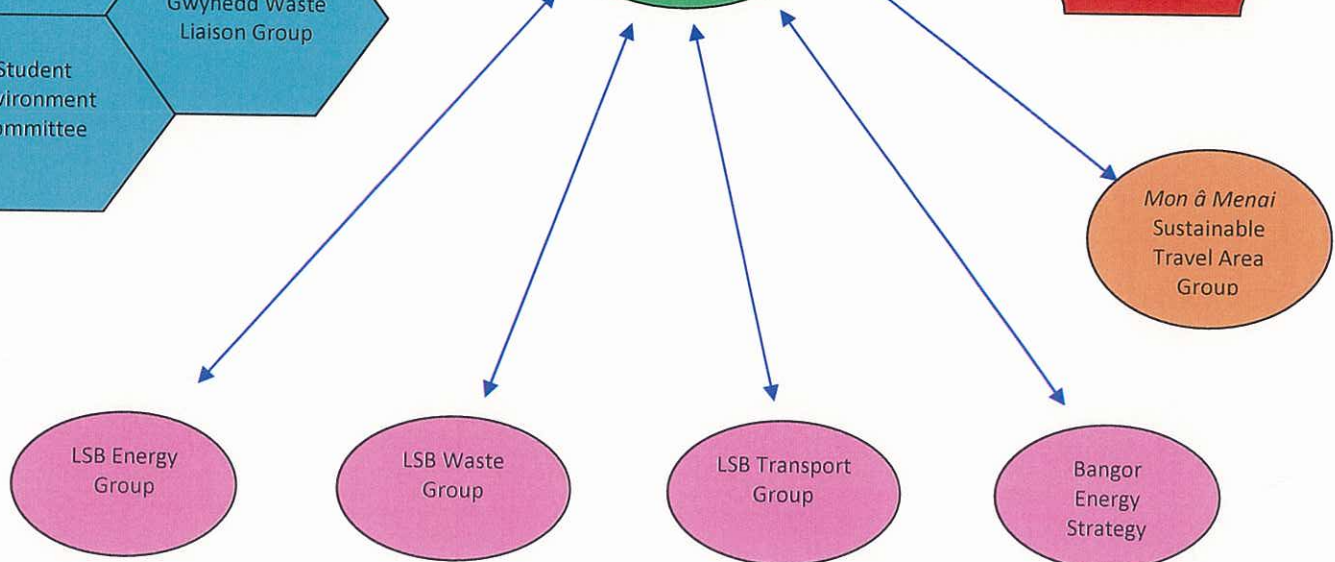
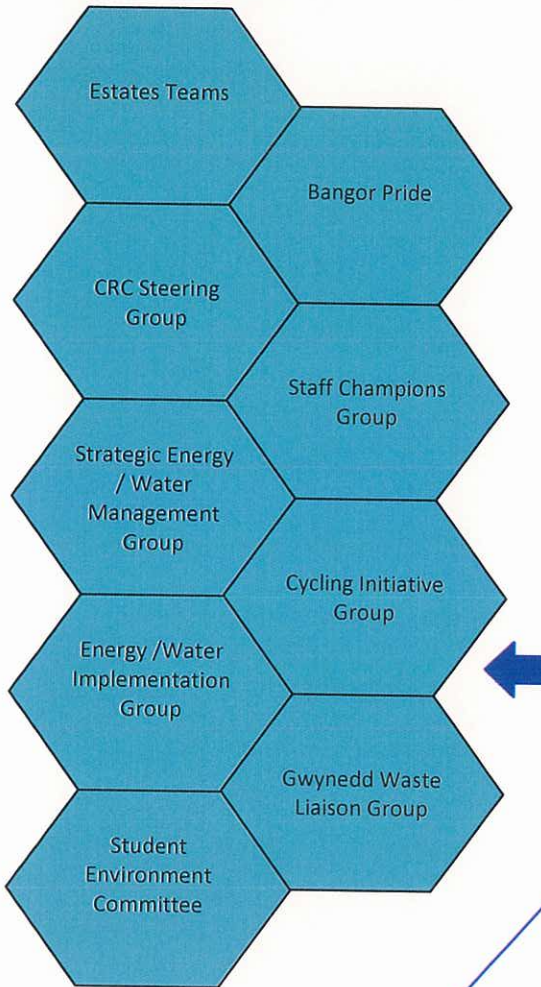
This Environmental Policy will be reviewed annually by the Sustainability Implementation Group, endorsed by the Sustainability Management Group, and reported to the University Executive. It will also be communicated to the wider University population and is publicly available.

Appendix C



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Key Environmental Communication Pathways



Gwynedd Local Services Board

