

Annual Sustainability Report

2010/2011



Estates Strategy Steering Group

2nd December 2011



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➤ **Forward**



This report provides the achievements made towards sustainability by the Glamorgan Group in the 2010/2011 academic year and also highlights areas where we can improve and develop.

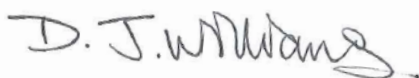
Sustainability aims to fulfil human needs while preserving the environment so that these needs can be met not only in the present, but also for future generations. The commitment of the Glamorgan Group to sustainability consists of a holistic approach that involves; addressing environmental issues, adapting policies, compliance and the inclusion of all users.

The Glamorgan Group has a long-term, integrated approach to developing and achieving a healthy community for staff, students and visitors by jointly addressing economic, environmental and social issues, whilst avoiding the over consumption of key natural resources.

Adapting a series of policies and strategies which over time underpin how the University operates, functions and presents itself to the outside world, whilst complying with the increasing demand to perform across a wide range of environmental, social and economic drivers.

The Glamorgan Group must draw upon and include our staff, students, visitors, business contacts, suppliers, local residents and partners to adhere to sustainable responsibility.

As the Sustainability Manager at the University of Glamorgan I would like to thank all staff, students, partner organisations and other stakeholders, for their continued support and valued contributions in helping to achieve these important sustainability aims. I look forward to the onward journey as we strive to preserve the planet.



David Williams,
Sustainability Manager, University of Glamorgan

➤ Executive Summary

- This report points to several achievements in the 2010/2011 academic year.

Energy and waste initiatives have been implemented, such as voltage optimisation, sustainable ICT and improved recycling facilities. Within the area of carbon management we are working with the Carbon Trust to implement a carbon management plan/programme to reduce our carbon footprint. In addition to this we continue to encourage video conferencing and reduce business trip travel where practically possible and endeavour to reduce both staff and student commuting via single occupancy vehicles by promoting the use of public transport through initiatives in line with our Travel Plan. We continue to progress with the Travel Plan Steering Group, to oversee the development and implementation of our Travel Plan and have introduced sustainable travel events, such as free bike checks, across the Glamorgan Group estate throughout the year. We have also maintained certification to our ISO14001 Environmental Management System for a 10th consecutive year.

With regards to construction and refurbishment we continue to drive sustainable construction and development with our BREEAM Excellence Rated Students Union, Glamorgan Sport Park and Student Accommodation developments. We have also continued to actively employ and progress our sustainable procurement guidelines, seeking to expand the range of Fairtrade products available within the Glamorgan Group and supporting colleagues and departments across the Glamorgan Group, such as LCSS-IS and Catering, who are considering sustainability in their projects. We have implemented efforts to conserve biodiversity through the establishment of conservation areas across the estate, continued to develop the academic profile around expertise in sustainability and expanded staff engagement activities and support related to sustainability.

- This report also highlights areas where we can improve and develop in sustainability.

We need to focus on developing a Carbon Management Plan with the help of the Carbon Trust, to minimise our contribution to climate change and to account for the indirect emissions that result from our activities. We also need to look seriously at our travel habits to develop ways to reduce these impacts. We need to reduce our waste, increase our recycling and develop our plans to improve biodiversity on our campuses. A key issue that also needs to be resolved is the improvement of sub - metering of our buildings across the Glamorgan Group, to ensure that effective monitoring and targeting of energy use can occur. Promotion of public transport incentives needs to continue in order to discourage single occupancy vehicle travel and aid in the implementation of our Travel Plan. Certification to our ISO14001 Environmental Management System must be maintained, as well as aiming to improve the University's position in the Green League, to drive sustainable construction and development further, to actively progress our sustainable procurement guidelines, to continue to establish conservation areas across the estate and finally to actively promote the communication of progress in sustainability projects between departments and across the Glamorgan Group as a whole.

It is vital that the Glamorgan Group continues to improve its profile in sustainability and to build sustainability concerns into its formal decision-making and strategic development processes. Publication of this report is fundamental to our improvement process and it aims to provide greater transparency in our approach to sustainability. This will be a regular series of reports, setting out priorities and targets for the coming period, whilst celebrating progress as we move forward.

➤ **Summary of Achievements in Sustainability**

- Continued Fairtrade status and ISO 14001 registration, including curriculum development.
- Installation of voltage optimisation equipment and continued implementation of a strategic approach to reduce energy associated with ICT.
- Installation of video conferencing on all campuses.
- Efforts to conserve biodiversity through the establishment of conservation areas across the estate.
- A programme of sustainability seminars, events and campaigns throughout the year, providing opportunities for staff and students to reflect on professional and personal responses to sustainability.
- Development of a University Sustainable Food Policy, and award of the University's catering contract using sustainable procurement guidelines.
- The Edge Careers Fayre, providing opportunities for students to talk directly to local and national employers involved in sustainability work.
- The continuation of the District Urban Garden (DUG) Allotment Project for students, schools and the community.
- A decrease in gas consumption and energy consumption per person (staff and students).
- A decrease in gas emissions and carbon emissions per person (staff and students).
- An increase in total waste recycled of 19% (216 tonnes) from 259 tonnes to 475 tonnes.
- Sub - metering of New Accommodation Photovoltaic Array.
- Installation of electrical meters in each individual accommodation block, enabling us to measure and compare consumption levels between blocks.
- Introduction of condition surveys for University buildings gives even greater control of utility consumption and quality of the internal environment.
- Sustainable ICT projects being rolled out by LCSS-IS across the University campuses.
- In response to accounting for greenhouse gas emissions, the Estates & Facilities Department is working with the Carbon Trust on an Energy Reduction and Mentoring Project.
- Rainwater Harvesting at New Accommodation.
- Reduction of cistern sizes of toilets at Glamorgan Court Accommodation from 12 litres to 6 litres.
- The Sustainability Manager has invested in a programme to improve the recycling facilities and improve recording of waste weights at our campuses.
- 34% Discount on Annual Train Season Tickets for Glamorgan Group Staff & Students.

- Up to 15% Discount on Bikes and Bike Equipment for Glamorgan Group Staff & Students.
- University has collected data to calculate the carbon footprint of staff business travel in order to benchmark emissions.
- Successfully obtained South East Wales Transport Alliance (SEWTA) Travel Grant Funding 2011 – 2012.
- The Student Accommodation Project is now complete, the first BREEAM Excellent Accommodation in Wales with a BREEAM rating of 73%.
- Sustainability Manager has been working with the Finance Department to research the chain of custody of the four types of core university equipment paper, stationery, furniture and IT equipment to identify a common sustainable procurement procedure that can be issued publicly as a policy for all items procured through the University.
- The Catering Department at the University is maintaining its sustainable route throughout its procurement process and only select those suppliers who meet these sustainable values.
- Sustainability is a key aspect of Staff Induction.
- Introduction of the Glamorgan Staff Recognition Scheme Sustainability Award 2011.
- A network of Departmental Sustainability Champions has been established to assist in the control of the University's sustainable responsibilities and to promote good sustainable practice and improvements in sustainable performance.
- The Sustainability Manager is working with the CCI Faculty on running a student project to update our Sustainability DVD.
- A Sustainability stand led by the Sustainability Manager was a feature of the Freshers Fayre.

➤ **BSEN ISO 14001:2004 Ongoing Improvement Targets**

The Glamorgan Group has continued to measure the energy and carbon emissions, water, and waste it has used and produced by implementing a set of 'ISO14001 Ongoing Improvement Targets' that aid in identifying the numerical trends of data and comparing this data within each financial year. These ISO14001 targets can be viewed below:

BSEN ISO 14001:2004 Ongoing Improvement Targets:

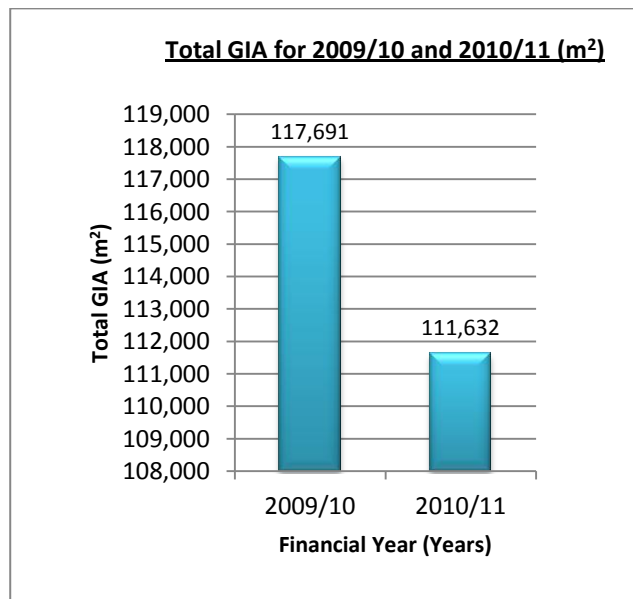
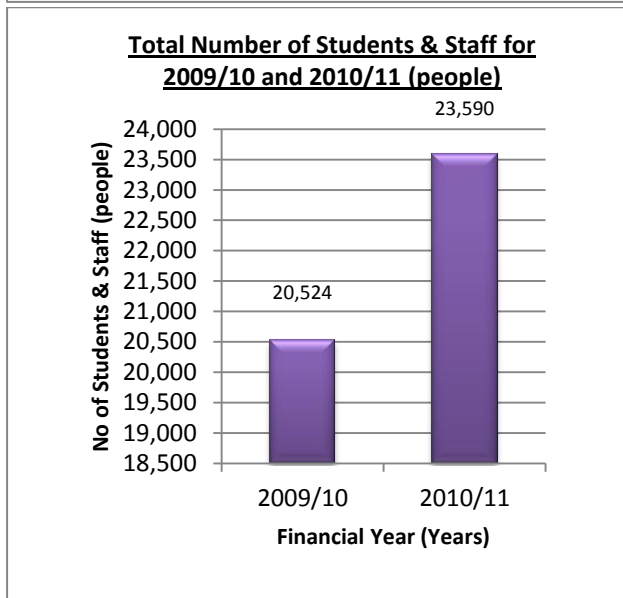
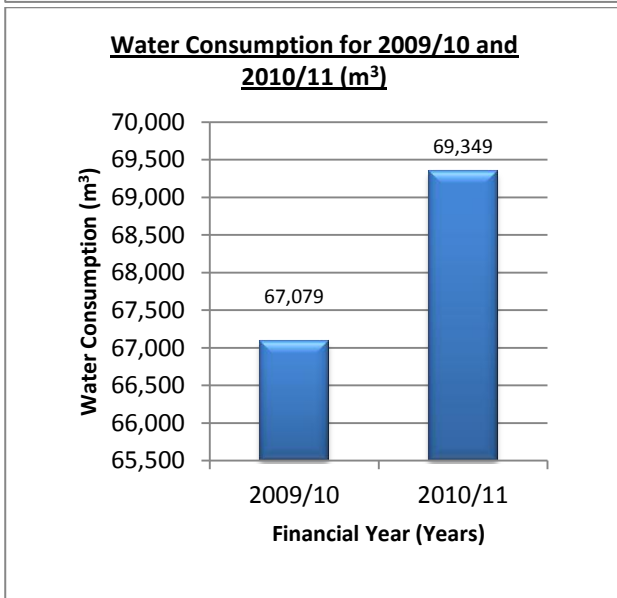
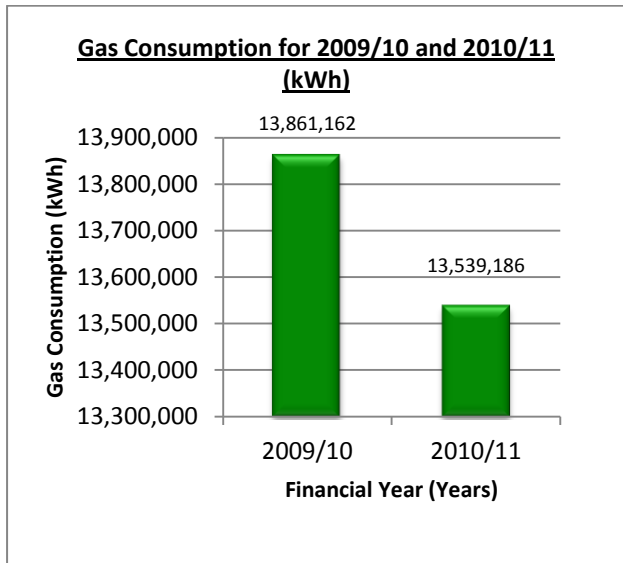
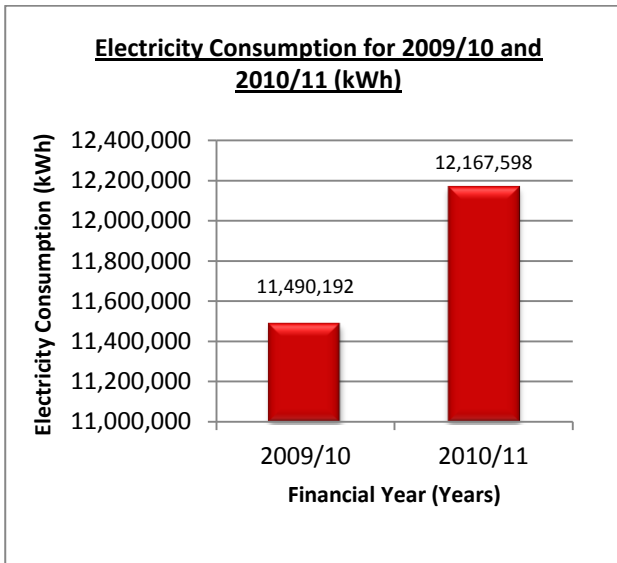


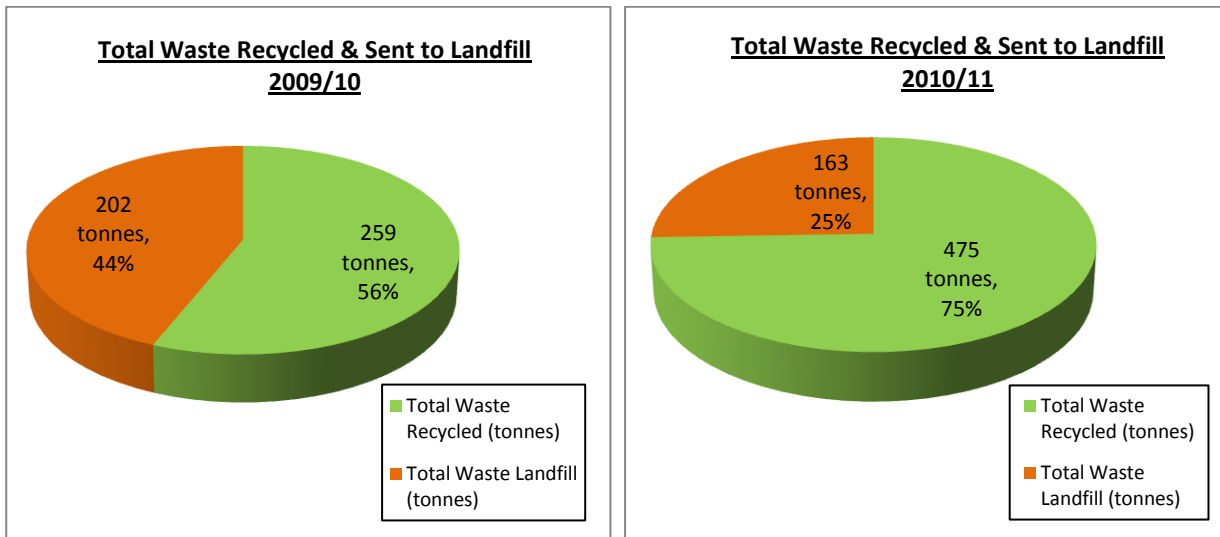
- Reduce electricity consumption by 1% p.a. year on year in line with the number of students & staff and University GIA
- Reduce gas consumption by 1% p.a. year on year in line with the number of students & staff and University GIA
- Increase renewable energy production by 1% p.a. year on year
- Reduce water consumption by 2% p.a. year on year in line with the number of students & staff and University GIA
- Annual carbon reduction of 3% p.a. year on year in line with the number of students & staff and University GIA
- Short-term target of total carbon reduction of 15% between 2010 and 2015 (five years), based on a 2007 baseline
- Long-term target of total carbon reduction of 80% between 2010 and 2050 (forty years), based on a 2007 baseline
- Continual increase in environmental awareness amongst staff and students
- Less waste to landfill
- Increase recycling with the goal of achieving 'total recycling' of ALL waste

This report sets out the annual achievements of the Glamorgan Group in sustainability, found in the following areas:

- Energy, Water and Waste Management
- Carbon Management
- Sustainable Travel
- Environmental Management System
- Construction & Refurbishment
- Sustainable Procurement
- Biodiversity
- Research & Development

➤ **Energy, Water and Waste Management Key Performance Indicators at the University of Glamorgan**





Between 2009/2010 and 2010/2011 there was:

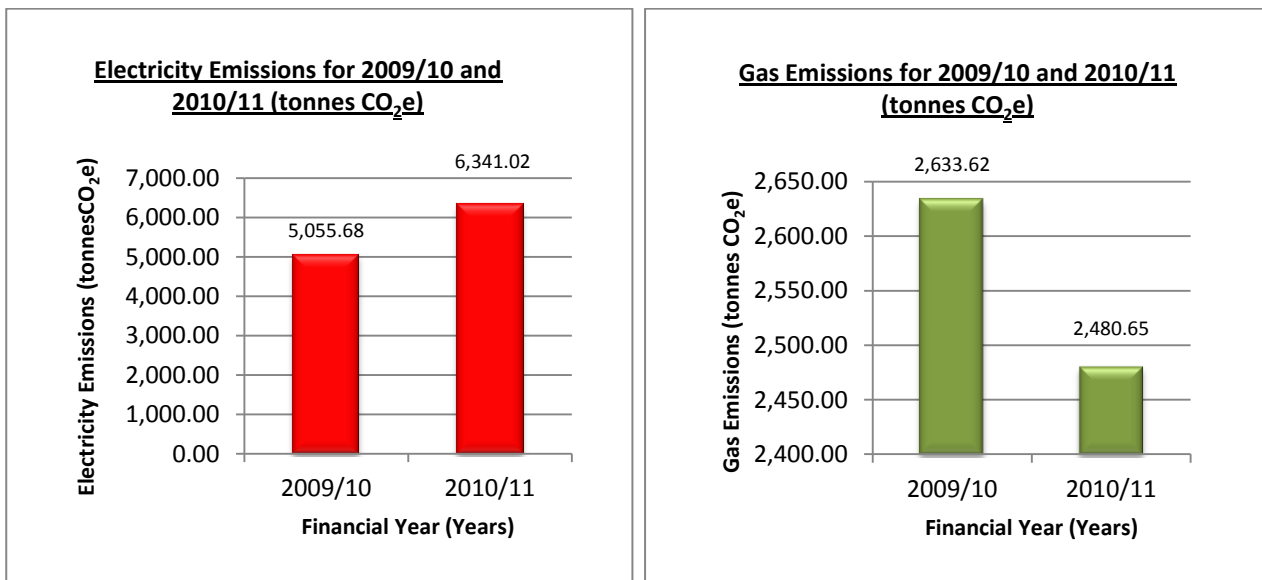
- An *increase* in electricity consumption of 5.90% (677,406 kW) from 11,490,192 kW to 12,167,598 kW.
- A *decrease* in gas consumption of 2.32% (321,976 kW) from 13,861,162 kW to 13,539,186 kW.
- An *increase* in water consumption of 3.38% (2,270 m³) from 67,079 m³ to 69,349 m³.
- An *increase* in the total number of students and staff of 14.94% (3,066 people) from 20,524 people to 23,590 people.
- A *decrease* in total GIA of the University of 5.15% (6,059 m²) from 117,691 m² to 111,632 m².
- An *increase* in energy consumption per square metre (GIA) of 6.91% (0.040751422 kWh/m²/yr) from 0.5901556 kWh/m²/yr to 0.630907022 kWh/m²/yr.
- A *decrease* in energy consumption per person (staff and students) of 11.78% (0.460357792 kWh/person/yr) from 3.9088776 kWh/person/yr to 3.448519808 kWh/person/yr
- An *increase* in total waste recycled of 19% (216 tonnes) from 259 tonnes to 475 tonnes.

Explanation of Results

- As the University population grows this will lead to an increase in utility usage and waste and recycling production.
- Installation of gas saving initiatives such as condensing boilers and thermo-static radiator valves.
- Additional premises being built and refurbishment of old buildings and new acquisitions require utility use for construction works. The new Students Union and Glamorgan Sport Park had been introduced to the building portfolio during this period.
- Allowance for weather and changes to the University estate.
- Improved recycling facilities and methods of waste data collection.

➤ Carbon Management Key Performance Indicators at the University of Glamorgan

- Scope 2 Emissions - Accounts for GHG emissions from the generation of purchased electricity by the company.



Between 2009/2010 and 2010/2011 there was:

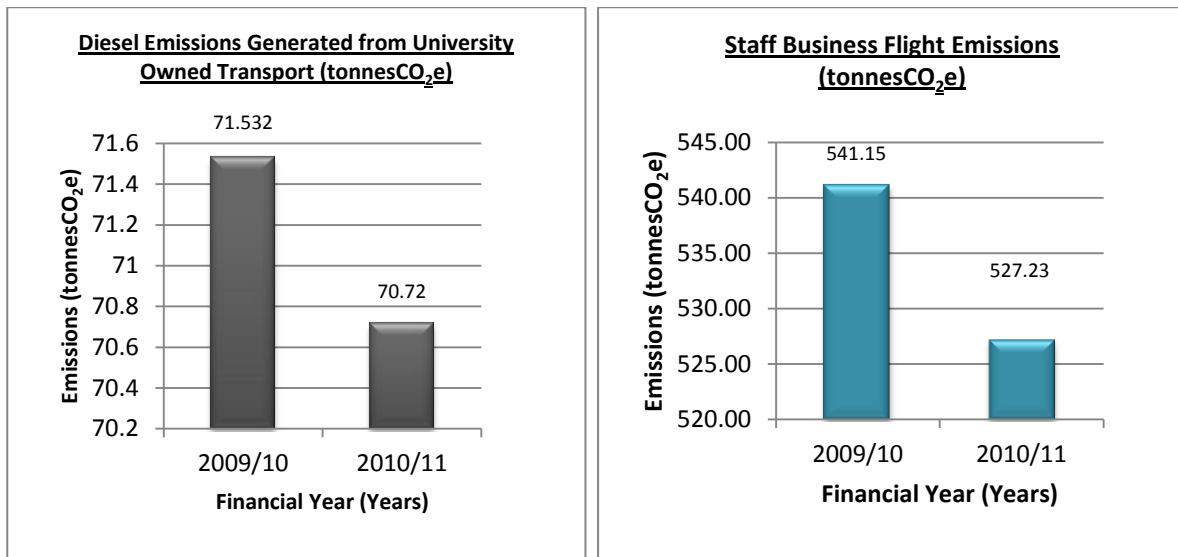
- An *increase* in electricity emissions of 25.42% (1,285.34 tonnes CO₂e) from 5,055.68 tonnes CO₂e to 6,341.02 tonnes CO₂e. (Please note contributory factor to increase due to change in emission calculation by DEFRA)
- A *decrease* in gas emissions of 5.81% (152.97 tonnes CO₂e) from 2,633.62 tonnes CO₂e to 2,480.65 tonnes CO₂e. (Please note contributory factor to increase due to change in emission calculation by DEFRA)
- An *increase* in carbon emissions per square metre (GIA) of 20.95% (0.000037505 tonnesCO₂e/m²/yr) from 0.000179 tonnesCO₂e/m²/yr to 0.000216505 tonnesCO₂e/m²/yr. (Please note contributory factor to increase due to change in emission calculation by DEFRA)
- A *decrease* in carbon emissions per person (staff and students) of 0.18% (0.000002188 tonnesCO₂e/person/yr) from 0.0011856 tonnesCO₂e/person/yr to 0.001183412 tonnesCO₂e/person/yr. (Please note contributory factor to decrease due to change in emission calculation by DEFRA)

Explanation of Results

- The explanations mentioned in the 'Energy, Water and Waste Management KPIs' also need to be considered for the findings above.
- One additional factor that must be considered is the change in emission calculations by DEFRA.

- Scope 3 Emissions - Optional reporting category that allows for the treatment of all other indirect emissions.

Staff Business Diesel Pool Car Emissions & Staff Business Flight Emissions



Between 2009/2010 and 2010/2011 there was:

- A *decrease* in diesel emissions of 1.14% (0.812 tonnes CO₂e) from 71.532 tonnes CO₂e to 70.72 tonnes CO₂e.
- A *decrease* in staff business flight emissions of 2.57% (13.92 tonnes CO₂e) from 541.15 tonnes CO₂e to 527.23 tonnes CO₂e.

Explanation of Results

- Increase in the cost of fuel.
- Limitations on departmental budgets.
- Use of alternative means of transport such as rail, bus etc.
- Encouraging the use of video conferencing and reducing business trip travel where practically possible.
- Encouraging the use of pool cars for business trips where recharges per gallon of fuel used are applied specifically to departments to reduce unnecessary travel.

To explain and improve on the Key Performance Indicator findings, the Glamorgan Group has and is adopted a number of projects. These projects include:

➤ Energy Management Projects

Sub - Metering of New Accommodation Photovoltaic Array



The new accommodation at the Treforest Campus features photovoltaic panels. A sub meter has now been installed allowing us to measure electricity generated by the scheme. A PV Array FIT application has now been successfully applied allowing the PV array to supply electricity back into the grid and reduce utility costs. The Estates & Facilities Department is now considering installing PV Arrays on all new projects and establish sub-meters around the estate, to further improve opportunities for energy reduction.

Installation of Voltage Optimisation

The Estates & Facilities Department installed the installation of voltage optimisation equipment in the Glynneath Block on the Treforest Campus to reduce input voltage from 240 V to 225 V. The project has been financed through the Estates & Facilities Sustainability Budget and has already saved 856.90 kWh of electricity at the Glynneath Block since its installation in April 2011, enough energy to make 42,845 cups of tea.



E Block Accommodation Students are the most carbon efficient by 13,366 kgCO₂e



Accommodation Services are committed to the aim of reducing the carbon footprint of our accommodation. To achieve this aim it is critical that both Accommodation Services and the Sustainability Manager engage with our customers living in halls to raise awareness and make a concerted effort to make a difference. We have introduced many initiatives to assist us in actively reducing the carbon footprint of our accommodation, the newest initiative being working alongside the company 'StudentCom' to install electrical meters in each individual block, which enables us to measure and compare consumption levels between blocks.

With over 700 students living within the Glamorgan Court campus, each with their own TV, computer, stereo, hairdryer, not to mention the communal facilities such as a fridge, freezer, cooker, just imagine how much energy is used on a daily basis. Whenever students log onto their PC in their rooms they can see the energy league chart and how well or badly they are performing in comparison to other blocks. We run inter-block competitions on a termly basis and prizes are awarded to the blocks that perform the best. For the period October 2010 to September 2011 the most energy efficient block was Block E who were overall winners, using a total of 35,715 kWh / 19,429 kgCO₂e (1,020 kWh / 555 kgCO₂e per student) in comparison to 49,081 kWh / 26,700 kgCO₂e (1,402 kWh / 762 kgCO₂e per student) in the least energy efficient block, which was T Block, a significant 27% less!

Additional Estate & Facilities Energy Initiative Projects

Energy efficient lighting and lighting controls continue to be installed as part of refurbishment works and new builds across the estate. Work continues to update and convert boilers to help provide energy and carbon savings. Improving control systems to boilers and heating systems is also taking place in order to provide greater local control within individual buildings. Installation of PIR lighting controls, high frequency lighting, and thermo-static radiator valves has also continued.

Condition Surveys of Glamorgan Buildings

The commitment to sustainability extends to the estate maintenance and building management regimes. In the last year, investments have been made in heating plant and the building management systems which will give even greater control of utility consumption and quality of the internal environment. Further significant investment is required.



The condition survey has highlighted areas of potential investment during the maintenance regime of the current building stock that will allow energy savings in the future. It is the intention to work closely with the maintenance team to ensure that where investment is required the most energy efficient systems or material are procured and installed.

Sustainable ICT

Sustainable ICT Projects being rolled out by LCSS-IS across the campuses include:

- Standby mode for Student PCs - PCs are moved into standby mode after 10 minutes of inactivity on the keyboard. The development has been deployed across student computers and is now being deployed across staff computers through more energy efficient 'Eco Quiet' PCs.
- Management of print & photocopy devices – With the rollout of Multi-Functional Devices (MFDs) with default duplex printing, we have saved considerable amounts of paper as well as toners and ink jet cartridges. In addition to this, the paper we use in campus photocopiers is produced from FSC sources.
- Overnight PC shutdown – LCSS-IS have introduced an energy saving automatic shut down of all computers at 9pm as part of an ongoing commitment to improving energy efficiency. The next stage is to look at automatic shutdown of PCs at the end of the working day set at a time after a member of staff or student has logged out of their computer. This will further reduce energy consumptions and costs, and contribute towards the Glamorgan Group Green Agenda.
- Data Centre & Server Room Carbon Management – With the aid of the Carbon Trust and Environ UK Ltd, LCSS-IS are identifying energy efficiency actions for data centres and server rooms in our estate and in the Welsh higher Education Sector.
- LCSS-IS have developed a collaborative partnership with its preferred PC supplier, which has resulted in replacing redundant PCs with more energy efficient 'Eco Quiet' PCs through an annual replacement programme. In addition to this LCSS-IS have been working with the Sustainability Manager to implement an energy saving awareness poster campaign.



➤ Carbon Management Projects

Carbon Reduction Commitment (CRC) Update



The CRC Energy Efficiency Scheme is a mandatory emissions trading scheme run by the Environment Agency to improve energy efficiency and therefore cut CO₂ emissions in large public and private sector organisations. The University purchased in excess of 6,000 MWh of electricity through half hour meters in 2008, which qualifies the University to be entered into the Carbon Reduction Commitment Scheme. The University has submitted its Phase 1 Annual Report of actual emissions to the scheme, in line with the July 2011 deadline. If an organisation fails to submit an annual report by the deadline it will incur a £5,000 fine. At the end of each year, information will be gathered from the annual reports of all CRC scheme participants and used to compare performance of how successful organisations have been in reducing emissions.

A CRC Evidence Pack has been compiled by the Sustainability Manager. This is a collection of records that the University must maintain to show that we have complied with CRC and to enable the Environment Agency to audit. The audit may be desk based or take the form of a site visit, or both. All participant organisations can expect to be audited at least once in each phase, therefore an evidence pack must be provided.

The 10:10 Project

The Glamorgan Group has signed up to 10:10, a project promoting a UK wide reduction of greenhouse gas emissions by 10% during 2010-11, following a formal launch in January 2010. We firmly support the need to reduce our demand for energy and the greenhouse gas emissions resulting from supply of that energy. Furthermore, we recognise the need to account for greenhouse gas emissions arising as a result of our activities more broadly, in order to plan and take actions to reduce emissions from these “indirect” sources. In response, the Estates & Facilities Department is working with the Carbon Trust to develop a Carbon Management Plan (CMP), setting out the objectives of the Glamorgan Group with respect to its greenhouse gas emissions.



Carbon Trust Energy Reduction & Mentoring Project

In response to accounting for greenhouse gas emissions, the Estates & Facilities Department is working with the Carbon Trust on an Energy Reduction and Mentoring Project. The project will focus on the property portfolio to fully utilise the existing system for energy monitoring and targeting, introduce an appropriate implementation focused carbon management plan and identify action plans for energy cost reduction.

➤ Water Management Projects

Rainwater Harvesting at New Accommodation



Rainwater harvesting is a way of saving the rainwater which would normally flow off a roof and down the drain, and using it as piped water to flush toilets. A storage tank has been fitted at the south end of the accommodation site and has been fitted to the stormwater drain from the accommodation roof. Falling rain enters the tank through a filter which removes leaves and other matter. The storage tank contains a pump which pumps the rainwater to the building where it is piped to the toilets, and to the outside taps.

Installation of Water Conservation Measures

Water conservation measures continue to be implemented where potential savings are identified. This has involved installing items such as percussion and spray taps, waterless urinals and reducing the cistern sizes of toilets at Glamorgan Court Accommodation from 12 litres to 6 litres. Greater monitoring and pro active maintenance has also been implemented to avoid leaks and correct defective equipment.

➤ Waste Management Projects

Continued Compliance with Waste Legislation

The Environment Agency renewed the Glamorgan Group hazardous waste and waste carrier licenses this year as a result of there being no breaches to the restrictions and processes that we have to follow.

Improvement of Recycling Facilities

The Sustainability Manager has invested in a programme to improve the recycling facilities and improve recording of waste weights at our campuses. Improved sustainability notice boards and recycling stations have been installed in key communal areas within each campus through a phased approach over a 12 month period. It is hoped that installing these facilities will allow for more accurate quantification of individual weights of specific recycled materials i.e. paper, cardboard, plastic, and cans. A new compactor is due to be installed in the Recycling Area at the rear of the Estates & Facilities Department and new recycling facilities will be looked at to accommodate the increased rate of recycling and improve access.



Improvement of Accommodation Recycling Facilities

In-line with the new Student Accommodation Project and Glamorgan Court Accommodation Refurbishment Project, dedicated recycling and waste refuse areas have been installed with the aid of Campus Services and RCT council, to encourage more students to recycle their waste. Over the next 12 months we will monitor the amount of waste students recycle at the accommodation blocks.

Reuse of W.E.E.E. to Small Businesses & Schools

The Estates & Facilities Department donates redundant suitable ICT equipment to a Waste Electrical & Electronic Equipment (W.E.E.E.) contractor, which is a UK based charity that delivers ICT equipment to small businesses and local schools to reuse and improve communications.

➤ Sustainable Travel Projects

34% Discount on Annual Train Season Tickets for Glamorgan Group Staff & Students



As part of the Glamorgan Group (UoG, RWCMD, Merthyr Tydfil College) Travel Plan and in conjunction with Arriva Trains Wales, we are able to offer a 34% discount on Annual Train Season Tickets. Tickets are only available where Arriva Trains Wales services operate but are valid for travel on the Valley Lines route service. The scheme has been so successful with both staff and students that the Sustainability Manager is now looking at similar discounts for bus travel. For more information about how to apply for this discount visit the University Staff Travel website.

Up to 15% Discount on Bikes and Bike Equipment for Glamorgan Group Staff & Students

The Glamorgan Group (UoG, RWCMD, Merthyr Tydfil College) has negotiated an offer with local bike outlets within close proximity of each campus/institution. It has been agreed the listed bike outlets will offer up to 15% off bikes and bike equipment to staff and student members of the Glamorgan Group:



- Treforest & Glyntaff Campuses:- Cyclone Cycles Limited, EC.Cycles
- Atrium Campus & Royal Welsh College of Music & Drama:- The Bike Shed
- Merthyr Tydfil College:- EC.Cycles, Taff Vale Cycles

Carbon Emissions Scope 3 for Business Travel

Aligned to the Scope 3 Carbon Emissions Regulations, and in accordance with the Glamorgan's Carbon Strategy, data has been collated to calculate the carbon footprint of staff business travel in order to benchmark emissions. Information has been collated for pool car and flight business travel. The next stage will be to monitor rail travel.

Installation of Video Conferencing Facilities at Campuses

In order to help reduce the need for business travel, video conferencing facilities have been installed on all campuses.

Travel Plan Steering Group

A Travel Plan Steering Group has been established, to oversee the development and implementation of the Glamorgan Travel Plan. Asbri Transport are carrying out the Annual Travel Survey at all campuses as part of the monitoring stage of the Travel Plan.

Bike Week Free Bike MOTs with Dr Bike



On Thursday 23rd June a Dr Bike cycle surgery was held with free health checks undertaken by 'Cycle Training Wales' at Treforest, Glyntaff and Atrium Campuses as part of Bike Week (18 - 26 June). After monitoring our bike shelters on campus and in response to several complaints from students and staff, we took the opportunity to clear away several abandoned bikes, freeing up valuable space. The abandoned bikes where possible have been restored and have had MOTs completed on them, free of charge. If they remain unclaimed, the bikes will be utilised as pool bikes for staff and students to travel between Treforest Campus and Glyntaff Campus as part of the Travel Plan initiative to encourage cycling and reduce congestion.

South East Wales Transport Alliance (SEWTA) Grant Funding 2011 – 2012

We have successfully applied for SEWTA funding this year. Last year the funding was used to purchase a bike shelter and stands at the Lower Glyntaff Campus. This year the funding will be used to purchase changing facilities and lockers for cyclists and the printing of leaflets to promote sustainable travel options. Funding of approximately £8,000 has been provided and must be spent by March with progress reports needed once a month during this period.



➤ Environmental Management System

Continuation of ISO14001 Environmental Compliance



The Glamorgan Group has received no fines or non-monetary sanctions for non-compliance with environmental laws and regulations. Our ISO 14001 certified Environmental Management System (EMS) including curriculum development, continues to be used to support environmental protection and prevention of pollution in balance with sustainable development. In April and October, BM Trada conducted a continuing assessment visit to establish the effective implementation of the EMS in accordance with requirements of ISO 14001. No issues or non-conformities were identified and the auditor recommended the continuation of the registration.

Penarth Management Annual Environmental Legislation Audit

The overall finding of this audit was that the Environmental Management System was seen to be further developing in conjunction with ambitious building and expansion projects. A well developed general commitment to environmental performance improvement was evidenced at all audited sites. The central foundation of the improving Environmental Management System appears to be the advancing environmental data monitoring and evaluation system that is in permanent combination with the enthusiastic culture amongst staff and students. Despite the proactive approach, the general finding revealed that in addition to the commendable long term objectives (e.g. sustainable development) there are some opportunities to make relatively simple progress, for



example ensuring that the recycling facilities/communications increase recycling activities at Glyntaff and The Atrium. The main conclusions from the audit can be found below:

- Environmental Awareness - Improved student participation was seen to generate valuable feedback in terms of awareness raising and improvements towards increased student involvement. An increasingly large number of students have shown interest in the Environmental Management System during the last twelve months while the Sustainability Champion staff members were found to be passionate and committed to enhancing awareness.
- Glyntaff Campus - An improvement in the provision of recycling facilities was noted. This now requires action to enhance awareness and alignment with Treforest processes. Hazardous chemical waste was seen to be dealt with in a satisfactory manner.
- Treforest Campus - The recent and ongoing new developments at the campus provide new opportunities for environmental improvements. The student accommodation recycling facilities review and the new shuttle bus services are expected to generate noticeable improvements in environmental performance. There may be opportunities for further reduction in energy and paper use at Reprographics.
- Atrium Campus - The development at this campus did not have to achieve a BREEAM rating for performance but a number of post project adjustments have been identified to improve the ongoing performance. A review of the existing recycling and waste management facilities could identify opportunities for further improvements.
- Glamorgan Sport Park - The new building has achieved BREEAM Excellence and fits well into the well managed but ecologically sensitive area. The site shows significant achievements that arose from appropriate site management. Further environmental improvement plans are in place, with consideration being given to the implementation of a wind turbine. In the meantime, improvements for the chemical storage facilities in the park garage would help to minimise the risk of spillages and pollution incidents.
- Merthyr Tydfil College - The new college building has recently opened and is used for teaching but there are still significant changes due for buildings. The college benefits from numerous environmentally positive facilities and activities and has attained unprecedented achievements. Further focus on management documentation and progress evaluations could provide better insights of the difficulties and could also help to prioritise tasks.
- Steering Group - The frequent meetings and the cooperation amongst the group members seem to provide an effective mechanism for identifying and prioritising further participation based improvements.
- Update of ISO14001 Documentation - In line with the start of the academic year all Sustainability Management documentation and additional guidance and information have been updated in accordance with organisational changes, approved by the Vice Chancellor and made available on the website to provide a central access point of resources and information.

The Times Higher Green League 2011



The Green League is People & Planet's award-winning environmental ranking of the UK's universities. It aims to improve environmental performance in universities by raising the profile of environmental issues and creating a competition mechanism to drive up standards in the sector. This year the

University of Glamorgan was awarded a 2:1 for its environmental performance in the 'Green League', placing 50th out of 142 universities. Next year we hope to continue to improve this standard by working on the following topics:

- Ethical Investment – We need a publicly available ethical investment policy. Record any instances where the University has divested/invested/engaged with companies as a shareholder or changed banking provider.
- Carbon Management - We need to look at having a publicly available 'Carbon Management Plan' based on 2005/2006 baseline. Targets must be set that are ambitious but attainable.
- Sustainable Food – We need to have a Sustainable Food Policy for in-house service delivery. There is a need to work with Hospitality on this.
- Curriculum – Work with teaching departments to integrate sustainability into the curriculum in the Corporate/Strategic Plan, Teaching & Learning Strategy. Look at a reporting strategy/process to monitor (e.g. number of students undertaking sustainability related courses/modules).

➤ Construction & Refurbishment Projects

Student Accommodation – The Student Accommodation Project is now complete, the first BREEAM Excellence Accommodation in Wales with a BREEAM rating of 73%. The Woodland Walk has been used to facilitate pedestrian traffic, increasing awareness of this area.



Merthyr Learning Quarter (MLQ) – The Minister for Children, Education and Lifelong Learning has approved the change in age range of the four secondary schools in Merthyr Tydfil from 11-19 to 11-16. This means that the MLQ project can now proceed. The project is currently in the design process looking for BREEAM Excellence Rating and should be opening in 2013 ready for the first intake of year 12 learners from schools.

RWCMD New Build – June 23rd 2011 marked the official opening of the new build. The development has achieved a BREEAM Excellence Rating. The contractors for the project have provided waste data that 17,186 tonnes of waste has been recycled and 735 tonnes were disposed of as general waste during the project.



Atrium Street Project – The project to replace the front entrance doors to reduce the effect of a wind tunnel and wasted energy consumption through the Atrium Street when both sets of doors are open in the foyer/reception area has now been completed.

➤ Sustainable Procurement Projects

The Procurement 'Chain of Custody'

The Sustainability Manager has been working with the Finance Department to research the sustainable procurement of core university equipment. The 'Chain of Custody' is a process that rigorously documents a certified product from the source to the final point of purchase. The process tracks through each stage of the supply chain, for example in relation to the product timber, from forest and logging through sawmill, factory and distributor, to timber merchant and contractor. This process provides a level of transparency and traceability to guarantee compliance with demands for ethically sourced products. Researching the chain of custody of the core university equipment paper, stationery, furniture and IT equipment, will identify a common sustainable procurement procedure that can be issued publicly as a policy for all items procured through the University.



University Ethical Investment Policy

The University was identified within the Higher Times Green League as not having an Ethical Investment Policy. An Ethical Investment Policy recognises the importance of making the link between the investments an organisation makes and the corporate practices it is supporting. The Ethical Investment Policy for the University has been drafted. The proposal for the policy will go to the Ethical Committee for approval.

Continuation as a Fairtrade University



Glamorgan is now officially a Fairtrade University. The Fairtrade Foundation granted us this status to recognise what we are doing to help create a fairer and safer world. A group of staff and students have worked together for three years to earn this achievement, developing Fairtrade across the Glamorgan Group and raising awareness of the movement. We are committed to Fairtrade produce throughout our shops, cafes and restaurants, which in reality means that everyone here is supporting the sustainable development of farmers and farming in three continents.

Fairtrade Fortnight

During the fortnight the Students' Union and Campus Services ran a range of offers in their bars and shops providing students and staff with special offers on Fairtrade chocolate, coffee and clothing. The Students' Union and Chaplaincy also run a Fairtrade Committee to discuss issues with students and staff such as whether it is better to buy Fairtrade or local produce. Through the Fairtrade Committee, the Glamorgan Group looks for opportunities to expand the range of Fairtrade products on offer to staff and students.

Sustainable Food & University Sustainable Food Policy

The Catering Department at the University is maintaining its sustainable route throughout its procurement process and only selects those suppliers who meet these sustainable values. The department also consider the reduction of air miles and utilising more local suppliers when possible. The University Catering Department will continue to choose only those suppliers who utilise environmentally conscious packaging and produce, such as using fish from sustainable sources. The Catering Department intends to publish a Food Strategy and University Sustainable Food Policy. The Sustainability Manager is also working with the Catering Manager and Estates ground keepers to provide herb beds for Stilts restaurant to grow their own herbs to use in their produce.



Use of Electronic Transactions

Use of electronic purchase orders, BACS payments and remittances as standard has resulted in less postage and faster delivery to suppliers this year, reducing emissions.

Utility Bill Validation

The Estates & Facilities Department and Finance Department are currently researching the potential of bill validation and tendering for utility suppliers in order to manage energy consumptions and costs more effectively.

➤ **Biodiversity**

The University in Bloom

The University grounds are in full bloom thanks to the efforts of Simon Baker and Tyrone Minnett, the Estates grounds keepers. They have taken ownership of the University grounds and apply their creative skills to cutting back and clearing the landscape in order to prepare for the planting of attractive and interesting plants and flowers to encourage various insects such as bees and butterflies for pollination and also to develop a more aesthetically pleasing landscape for students, staff and the public. Cutbacks in maintenance budgets recently have meant that they have had to go the extra mile to maintain their own extremely high standards, but they have responded magnificently.



Woodland Walk Refurbishment

The Woodland Walk is a 322 metre path that intersects the Treforest Campus, running between Stilts restaurant and the crèche. The conservation area features picturesque views, peaceful clearings and even a mountain stream and is home to a multitude of wildlife including bats, foxes and birds. It's an ideal place for staff and students to escape for some peace and quiet over lunch, or to get some fresh air. The path was used as temporary access to the student accommodation. Now that the accommodation project is complete the stairwell will now be removed to accommodation and contractors will start work on returning the Woodlands Path back to its original state. Opening winter hours of 10am to 3pm will now resume.

Glyntaff Conservation Site



Lecturer Ed Morgan and Kier Manager Gareth Llewellyn have been working on installing conservation areas at Upper Glyntaff to encourage wildlife. Colony Collapse Disorder (CCD) is a phenomenon in which worker bees from a beehive or European honey bee colony abruptly disappear. Honey bees are observed to build nests inside tree cavities and edges of various objects so as to camouflage themselves from their predators. The European honey bee has been spotted within the Glyntaff Campus. Kier FM services have made every effort to maintain the insect habitat of woodlands and flower bearing areas to combat CCD. The honeybee population will be moved from campus to ensure bees are looked after in due course.

➤ Research & Development

Sustainability is a Key Aspect of Staff Induction

The Human Resources Department ensures that new staff have opportunities to understand the importance of sustainability to the institution, as reflected in the strategic plan and sustainability strategy. This is achieved through staff induction, as well as provision of further information on sustainable travel. New staff are provided with an opportunity to learn about what sustainability means at the Glamorgan Group and how they can get more involved.

The Glamorgan Staff Recognition Scheme Sustainability Award 2011

Over the past two years the Glamorgan Staff Recognition Scheme has taken place and seen staff rewarded and recognised for their contribution in their area of work. Annually, the process for these rewards is reviewed with a view to enhancing the success of previous years. This has occurred and it is recommended that there are some refinements to the process and awards categories. The 'Sustainability Award' recommendation focuses on changing the name and emphasis from the 'Environment / Community Award' to the 'Sustainability Award'. The Glamorgan Plan outlines that sustainability is one of our values. All staff have a role to play in ensuring we deliver a positive contribution to sustainability matters. The aim of this award will be to recognise the contribution of an individual or team has implemented initiatives that have begun to influence and lead to a sustainable student community or educated others on the impact they have and the improvements they can achieve in the area of sustainability.

Glamorgan Sustainability Champions

A network of Departmental Sustainability Champions has been established to assist in the control of Glamorgan's sustainable responsibilities and generally to promote good sustainable practice and improvements in sustainable performance. Highlights of the Sustainability Champions Meetings this year have included a tour of the BREEAM accommodation set up by the Sustainability Manager and a presentation about bats by Countryside Council for Wales.

Universities that Count Year 3 - Moving Forward with UTC

Universities that Count is a benchmarking and performance improvement programme for the UK Higher Education sector, based on the Business in the Community Corporate Responsibility Index.



Engagement work has been undertaken to bring on board key sector bodies to help in the development work of the UTC Scheme. Following this, practitioners will come together with these sector bodies at advisory panels between April to mid-July. From March to August a series of case studies will also be provided from UTC which will range from Health, Safety & Wellbeing, to Equality and Environment. The UTC Index will then be re-opened during the next academic year for institutions to complete.

Sustainability is a Key Aspect of Student Coursework



Students undertaking the courses Environmental Engineering & Management and Geography at the University of Glamorgan have been given a task assignment as part of their coursework to carry out an internal audit of the ISO14001 EMS system of the Glamorgan Group and report on the audit findings as part of the core coursework element. The Sustainability Manager will use the student assignments to identify areas of non-compliance and good practice to help the Glamorgan Group in its efforts to continually improve on its sustainable performance.

The Sustainable Environment Research Centre (SERC)

One of our most well established research groups in the Glamorgan Group is the Sustainable Environment Research Centre (SERC). SERC comprises The Wastewater Treatment Research Unit, which focuses particularly on anaerobic digestion, and the Hydrogen Research Unit which is recognised nationally and internationally for its work. SERC undertakes national and world-leading research. To achieve this, considerable investment has been made into the facilities available to researchers and students and much of the work of SERC is done in association with sustainable industry.



CCI Curriculum Sustainability Media Project

The Sustainability Manager is working with the CCI Faculty on running a project to update our Sustainability DVD which is used throughout the Glamorgan Group at events such as Fresher's Week and Staff Induction. This project will be implemented as part of student coursework.

Sustainability at Freshers Fayre 2011



A Sustainability Stand led by the Sustainability Manager was a feature of the Freshers Fayre, providing opportunities for new students to find out more about sustainability at the Glamorgan Group and about sustainable travel offers open to them. Promotional material made from recycled materials were also provided to promote key sustainability messages and help convey what this means in practice.

➤ Recommendations

➤ Energy, Water and Waste Management

- The Glamorgan Group could implement long-term energy targets and energy awareness initiatives to educate both staff and students, reduce its impact on the environment and increase its ISO 14001 coverage even further. Meeting these targets would come down to actions by both staff and students so education would need to take priority through awareness-raising initiatives such as exhibitions, newsletters, promotional posters and internet and intranet environmental information pages.
- A key issue that needs to be resolved is the improvement of sub - metering of buildings across the Glamorgan Group. This will ensure that effective monitoring and targeting of energy use can occur particularly in the areas of utilities, heating and ventilation. Sub – metering is the foundation of accurately analysing the savings associated with any energy saving initiatives installed within the Glamorgan Group buildings, therefore it must not be overlooked.
- The Sustainability Manager has a dedicated budget of £75,000 per annum, as part of a carbon reduction plan to procure and implement energy initiatives and carbon reduction projects, including both staff and student projects, in order to reduce the University’s energy consumption and carbon footprint.
- The Sustainability Manager could donate time to provide energy surveys within each department across the campus not only to help the department to reduce their carbon emissions, but also to enable the staff and students to grasp the larger sustainable picture.
- The Glamorgan Group could install more water conservation measures and undertake an increased amount of regular inspection and maintenance to prevent waste with the aid of reporting measures such as the Estates Helpdesk.
- The Glamorgan Group could continue to support the already implemented recycling scheme with the addition of branching out the scheme to incorporate other recyclable materials such as plastic film and packaging, and composting food waste, especially with the University Catering Department. The Group could also arrange environmental improvement volunteering projects to improve energy consumption and reduce the amount of waste produced as an organisation. Landfill waste is an area of potential further improvement and we will aim to reduce landfill waste and further improve the recyclable waste rate over the next few years.

➤ Carbon Management

- Work with the Carbon Trust to implement a carbon management plan/programme to reduce its Carbon Footprint.
- Continue to encourage the use of video conferencing and reducing business trip travel where practically possible.
- Continue to encourage the use of pool cars for business trips where recharges per gallon of fuel used are applied specifically to departments to reduce unnecessary travel.



- Reducing both staff and student commuting via single occupancy vehicles and promoting the use of public transport through the Glamorgan Group Travel Plan.
- Including student and staff travel data to and from the Glamorgan Group on a daily basis, and at the start and end of each academic semester and each academic year.
- The Glamorgan Group could calculate and monitor its carbon footprint by reducing its rate of CO₂ emissions per employee or student. This would be much more effective than simply buying 'carbon credits' in the market. In addition to this any 'offsets' that the Group did commit to could be undertaken with recognised carbon management schemes to deliver genuine reductions in unavoidable emissions. This could be done in association with charities such as the Woodland Trust or the Carbon Trust as part of their 'Carbon Reduction Commitment', which is a government regulation that all large organisations are legally obliged to follow.

➤ Sustainable Travel

- Progress with the Travel Plan Steering Group, to oversee the development and implementation of the Glamorgan Travel Plan.
- Continuation and promotion of public transport offers and incentives in order to discourage single occupancy car travel and aid in the development and implementation of the Glamorgan Travel Plan.
- Expand public transport incentives to cover bus travel.
- Continuation of Annual Travel Surveys at all campuses as part of the monitoring stage of the Travel Plan.
- Continue to organise sustainable travel events across the Glamorgan Group estate throughout the year.

➤ Environmental Management System

- Maintain certification to our ISO14001 Environmental Management System.
- Undertake an analysis of the Green League to understand priority areas that the Glamorgan Group needs to tackle and develop recommendations for approval and implementation.
- Aim to improve Glamorgan's position in the Green League.
- Consider the BREEAM Excellence Rated Student Union's involvement in the Green Impact Awards.

➤ Construction & Refurbishment

- We have five BREEAM Excellence Rated buildings within the Glamorgan Group building portfolio. It is the priority of the Glamorgan Group to drive sustainable construction and development further with all future developments, such as the Merthyr Learning Quarter, Brecon Block and Learning Resources Centre developments.



➤ Sustainable Procurement

- Continue to actively progress and employ the Glamorgan Group's sustainable procurement guidelines.
- Seek to expand the range of Fairtrade products available within the Glamorgan Group.
- We will also pay particular attention to opportunities for procuring green energy in preference to brown. If it is viable then the Group could make the decision to put their entire electricity supply out to tender, with the supply of green energy forming one of the main procurement criteria. In doing this the Group would significantly reduce its emissions that it currently produces, by substituting the non-renewable energy resources that supply the electricity for renewable energy resources (e.g. wind energy, tidal energy).
- Prepare and submit bids for funding of key priority activities within the Glamorgan Group.
- Continue to support colleagues and departments across the Glamorgan Group, such as LCSS-IS and Catering, who are considering sustainability in their projects and bidding for funds to support sustainability related activities.

➤ Biodiversity

- Continuation of efforts to conserve biodiversity through the establishment of conservation areas across the estate.
- Undertake project to return the Woodlands Path back to its original state.

➤ Research & Development

- Continue to develop the Glamorgan Group academic profile around expertise in organisational and curriculum change for sustainability.
- Work with teaching departments to embed sustainability within the curriculum.
- Expand staff engagement activities and support related to the course development process.
- Scope ways to extend work placement opportunities for students, in collaboration with sustainable organisations.
- Explore new sustainability partnerships with regional and local organisations.
- Create more opportunities for public engagement in sustainability.
- Improve communication of progress in sustainability projects between departments and across the Glamorgan Group.

➤ Conclusion

The Glamorgan Group is committed to measuring its performance as an organisation in the subject of CSR. To demonstrate its commitment, the Group has created a formal Environmental Management System which has been successfully assessed to the International Environmental Management Standard BS EN ISO14001:2004. A major part of Glamorgan's commitment has been to improve how it measures and benchmarks its sustainable impacts. This has been done by implementing a set of 'ISO14001 Ongoing Improvement Targets' that aid in identifying the numerical trends of data and comparing this data within each financial year in order to comply with the ISO14001 standard.

The findings from this analysis have indicated that the Glamorgan Group has been successful in achieving some of its targets in line with ISO14001, in particular in the areas of reducing gas consumption and waste being recycled. However, a number of findings convey that the Group has not been successful in achieving some targets, especially regarding KPIs associated with electricity and water consumption and emissions.

We need to focus on developing a Carbon Management Plan with the help of the Carbon Trust, to minimise our contribution to climate change and to account for the indirect emissions that result from our activities. We also need to look seriously at our travel habits to develop ways to reduce these impacts. We need to continue to reduce our waste, increase our recycling and develop our plans to improve biodiversity on our campuses.

A key issue that also needs to be resolved is the improvement of sub - metering of our buildings across the Glamorgan Group, to ensure that effective monitoring and targeting of energy use can occur. Promotion of public transport incentives needs to continue in order to discourage single occupancy vehicle travel and aid in the implementation of the Glamorgan Travel Plan.

Certification to our ISO14001 Environmental Management System must be maintained, as well as aiming to improve Glamorgan's position in the Green League, to drive sustainable construction and development further, to actively progress our sustainable procurement guidelines, to continue to establish conservation areas across the estate and finally to actively promote the communication of progress in sustainability projects between departments and across the Glamorgan Group as a whole.

From undertaking this study it can be seen that although the analysis of Glamorgan's 'ISO14001 Ongoing Improvement Targets' has identified areas where the organisation has been successful and unsuccessful in achieving its ISO14001 targets, more importantly it has conveyed how successful benchmarking is as an approach for an organisation to use in order to become more corporately socially responsible. Benchmarking can, and as this study has proven, does identify positive achievements, gaps in performance and improvement, facilitates new ideas and aids in setting priorities for sustainable management. This study has also illustrated the importance of comparing KPIs that incorporate floor area, number of students and staff and energy consumption all together, as this provides more accurate and precise data that can be analysed against the ISO14001 targets to greater effect, thus providing more applicable and relevant information.

It is vital that the Glamorgan Group continues to improve its profile in sustainability and to build sustainability concerns into its formal decision-making and strategic development processes. Publication of this report is fundamental to our improvement process and will be a regular series of reports, setting out priorities and targets, whilst celebrating progress as we move forward.

