



THE UNIVERSITY
OF QUEENSLAND
AUSTRALIA



Environmental Sustainability Report 2008

Produced by Environmental Services,
Property and Facilities Division,
The University of Queensland,
on behalf of the
Environmental Management Committee

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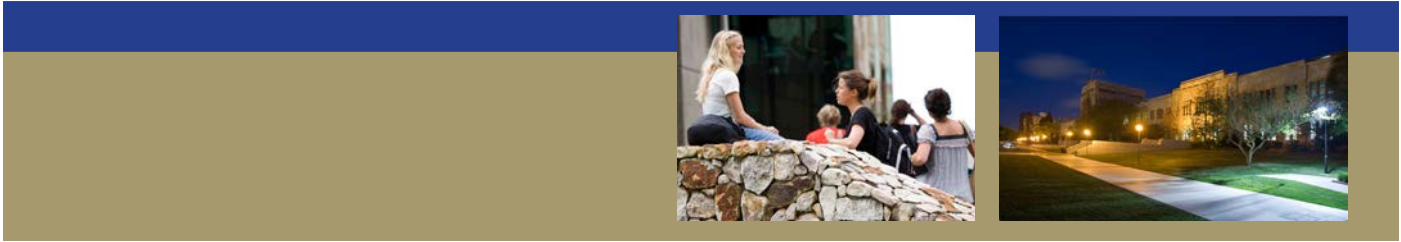
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Front cover photos:
L-R Bush Stone-curlew nests on St Lucia campus
Forgan Smith Building St Lucia campus

Looking to Environmental Sustainability



UQ's journey toward environmental sustainability lead us to renewed commitment and action in 2008.

A carbon footprinting consultancy gave us a blueprint to build on in 2009. This will include further embedding environmental sustainability into our teaching and research programs, as well as our operational activities.

Student and staff enthusiasm reinforced the University's commitment to implement sustainability principles throughout our operations, and engagement with the UQ community will remain a focus in 2009.

Highlights of 2008 include:

- Purchase of 2.5% renewable energy.
- Completion of Energetics' Scoping Report and commencement of Stage 2 to establish an overall plan for greenhouse gas emissions management across the University.
- Opening of General Purpose North 4 building on the St Lucia campus that includes photovoltaic cells, two 110,000 litre rainwater tanks, and other energy saving features.
- Commencement by Property and Facilities Division of an ongoing audit to identify opportunities to conserve energy.
- Engagement of staff at a Climate Change Forum to obtain feedback on implementing sustainability practices on all UQ campuses.
- Increased emphasis on biodiversity, with the University's Experimental Mine site being declared a "Land for Wildlife" site.
- Expansion of the Green Office Program to support staff who are pursuing environmental sustainability practices in their work areas.
- Increased green procurement initiatives, with over 50% of paper supplied from the Property and Facilities Store now having recycled content.
- Formation of a Student Sustainability Working Group to incorporate environmental elements into the UQ Student Union complex.

I thank the many UQ staff and students, as well as external partners, whose involvement will continue to be crucial as environmental sustainability is adopted and championed throughout the University.

A handwritten signature in black ink, which appears to read "Paul Greenfield".

Professor Paul Greenfield AO
Vice-Chancellor

Minimising our environmental Impact



Environmental Risk Management (Environmental Aspects)

In 2008 the University of Queensland continued its risk management approach in addressing the environmental performance of its operations.

Though risks are constantly identified and addressed in day-to-day activities a formal assessment process is undertaken annually. In this process, all the risks listed in 2007 were reassessed, and items identified by the University community and Environmental Services staff were added. This year saw a 55% increase in the number of submissions from the University community and the inclusion of nine new risk items not previously considered in this process, eg. use and emission to atmosphere of CO₂ and dry ice in research work.

In total 267 environmental risks were identified and assessed; an 8% increase from 2007. Thirty-one of the 267 risks were assessed as “unacceptable”. Many of these risks are similar, if not the same, and can be

categorised and grouped. The common “unacceptable” risks were:

- Operations and activities that release greenhouse gases and may contribute to climate change (12 items),
- Waste management issues that result in the consumption and loss of resources (5 items),
- Noise causing nuisance to neighbours from aspects such as air conditioning, and research equipment and plant (4 items). [This risk has increased with recent legislative changes],
- Wasting potable water through inefficient or unnecessary use (4 items), and
- Non-compliance with environmental licences, permits, etc (2 items).

Overall, the result of the risk assessment is consistent with the preceding year. The percentage of “unacceptable risks” is the same as for 2007 and the categories into which they can be grouped are identical.

The “unacceptable risks” are considered when reviewing the existing Environmental Objectives and Targets for 2009. Where it is deemed necessary, changes to the Objectives and Targets are recommended to ensure the “unacceptable risks” can be addressed. However, the similarity of the 2008 risk assessment results to those of 2007 and the continuing Environmental Objectives and Targets will probably mean that few, if any, changes need to be made to adequately address the University’s environmental risk.

Objectives and targets

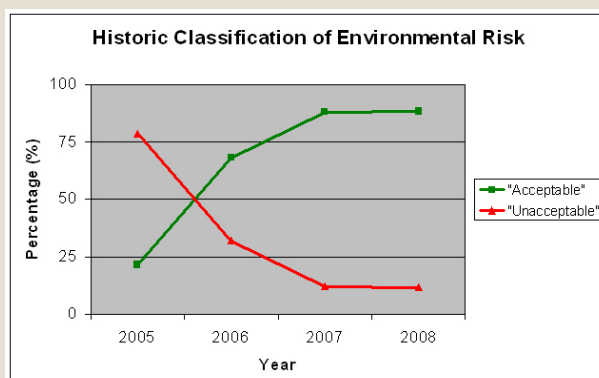
Established Environmental Objectives, Targets and Goals focus The University of Queensland’s efforts on key aspects of environmental performance. They are reviewed annually to ensure they remain current and applicable to UQ’s Environmental Policy, and address contemporary environment issues and unacceptable environmental risks.

In 2008, UQ worked towards three Environmental Objectives.

Objective 1

Ensure the University continues to operate in accordance with all relevant environmental legislation.

This requires our operations to comply with environmental legislative, permit or licence conditions.



Minimising our environmental impact



Progress is measured by penalties received for environmental legislative breaches (the target being 0).

Projects accomplished in 2008 to meet this objective were:

- Installation of water saving devices and water tanks for water restrictions.
- Obtaining Development Approval (for Environmentally Relevant Activities) at the new Centre for Advanced Animal Studies at Gatton.
- Responding to complaints and incidents to address environmental harm and nuisance.

Despite these efforts, UQ received two penalties for non-compliance with Development Approval conditions at the Pinjarra Hills incinerator and Gatton Campus sewage treatment plant. They were the result of lapses in process and were easily rectified.

This showed that early identification of these failures could avoid the legal ramifications. This year, a second target was adopted to monitor compliance with operating conditions. An appropriate measure for this is still being developed.

Objective 2

Continue to improve the University's environmental sustainability, prioritised by environmental risk.

Objective 2 addresses the University's environmental risks and impacts. Using the results of 2007's Environmental Risk Assessment (Environmental Aspects), targets were adopted focusing on greenhouse gas emissions, water consumption, resources and wastes, and specific legal issues:

- Working with consultants, the University estimated its 2007/08 operational (direct) greenhouse gas emissions at 106 ktCO₂e. This will serve as a baseline for measuring success of the University's greenhouse minimisation strategy and management plan being developed during 2009.
- Ongoing ablutions and fixture retrofits were completed this year and success with Federal Government grant applications meant other water saving measures were installed across the campuses. The success of these actions is measured by reduction of an average, standardised consumption from the 05/06 financial year (pre-drought). In 2008, UQ achieved a reduction of 43%.
- A measure of performance for wastes and resources is still to be developed. In the meantime, the University continues to audit the general waste streams to gauge the success of ongoing education and recycling strategies. 2008 audits show a reduction of waste to landfill of 24% to 757 tonnes for this year (St Lucia and Ipswich Campuses). This includes

a 47% reduction of recyclables in the general waste stream.

- The final target addressed risk associated with the management of contaminated land. No incidents have occurred (meeting the goal of 0) and the sites will continue to be managed responsibly.

Objective 3

Encourage the University community to be involved in environmental management.

This objective engages and integrates the University community in environmental management aspects of University operations. Two targets were established; integrating operational and teaching programs, and developing awareness of environmental sustainability. Success was measured by items delivered on schedule. In 2008:

- Property and Facilities offered Green Office, Weeds Management, Construction Wastewise and Green Purchasing student projects. Three of the four were delivered on schedule with the last (Green Purchasing) deferred to 2009 due to other commitments.
- The training schedule was surpassed. In addition to planned courses (e.g. EMS inductions, chemical management and safety, and climate change forum), additional training was delivered to UQ schools and centres as the need was identified.

Incorporating Sustainability into Building Works



Sustainable practices and measures in development are growing within the University's construction and maintenance programs. Some examples of this in 2008 follow:

Heron Island Reconstruction

In 2008 a major reconstruction project took place on Heron Island Research Station after the devastating fire destroyed a significant number of buildings in 2007. Student and staff accommodation was rebuilt during the year, along with teaching and research buildings that were completed in late 2008, ready to be used by researchers early in 2009.

Environmental considerations have been an important part of the reconstruction project. This includes:

- Early in the reconstruction stage disused underground tanks were discovered and removed.
- Existing footings were reused and lightweight structures erected so that the ground nesting birds were able to utilise more of the site.
- A rainwater tank was connected to the boat shed to enable boats

to be washed down using rain-water.

- New staff accommodation toilets use the greywater supplied from the neighbouring Heron Island Resort.
- A new fire fighting system has been installed, using saltwater. It has a dual electric and diesel pumping system to ensure that there will always be a supply of fire fighting water.
- Re-landscaping, using native plants endemic to the region, will replace a significant amount of vegetation that was destroyed by the fire.

General Purpose Building 4 (GPN4) - St Lucia

GPN4 was completed on 16 May 2008 with possibly the greatest number of sustainable measures of any UQ project to date. Some of these included:

- 220,000 litre stormwater tanks (for irrigation and toilet flushing),
- Three types of photovoltaic cells in two arrays supplementing the building's demand and set

up to facilitate research into the technology,

- Energy-efficient light fittings,
- Tinted and high-performance glazing,
- Fixed and automated external solar shading,
- Water efficient fixtures throughout, including waterless urinals,
- Use of motion sensing lighting and air conditioning, and,
- Consideration of embodied energy in materials selection.

Combined with a greater level of metering, the success of these measures should be measurable over the coming years.

Set Point Relaxation – St Lucia Air Conditioning

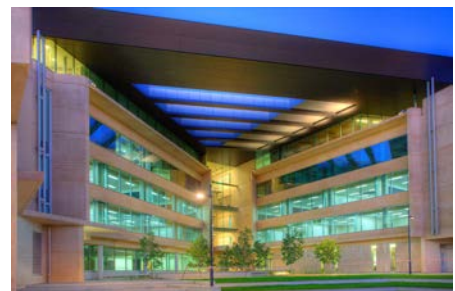
A successful trial of climatic variation of air conditioning set points was conducted in St Lucia's Colin Clark Building. Over the winter period, the four month trial reduced power consumption in the air conditioning system by 20%; a saving of 36.8 tCO₂e. This practice will be rolled out across the University.



Heron Island Research Station Aerial View



Fixed and automated external solar shading on GPN 4 Building - St Lucia campus



GP North 4 Building - St Lucia campus

Incorporating Sustainability into Building Works



Alumni Court - St Lucia

The Alumni Court was refurbished. This involved converting the heritage listed Radon Lab into an open, undercover area. Modwood, a product made from recycled timbers and plastic, was used for walkways. An irrigation system for the area has been set up to use water from the University's freshwater lake.

Water Saving Aerators

2008 saw the completion of a 20 month program to install water sav-

ing aerators on every basin on all campuses. This equates to 4,500 aerators which has more than halved the flow rates on these fixtures.

Boyce Gardens, Toowoomba

Boyce Gardens in Toowoomba have been drought proofed by installing three 110,000 litre underground concrete tanks for stormwater harvesting. These tanks will provide year round water for garden maintenance and development with no visual impact on the heritage listed gardens.

John Hines and Social Sciences Buildings - St Lucia

Level 4 water restrictions (now high-level restrictions) required retrofit of all cisterns, pans and urinals with water efficient units.

In the John Hines and Social Sciences Buildings this work prompted a complete refurbishment with an upgrade to waterless urinal technology.

Green Star ratings for Educational Buildings

During 2008, The Green Building Council of Australia released the new Green Star rating for educational buildings replacing the pilot rating.

The rating tool assesses the environmental attributes of new and refurbished education facilities in Australia. It can be applied from the design phase of a project and up to two years from practical completion.

The release of the tool represents a milestone in the assessment of environmental attributes of education facilities, and is expected to guide the industry towards more sustainable design practices. (Green Building Council of Australia, 2009)

State Procurement Policy

In January 2008, a new State Procurement policy was released which states "Agencies must integrate the practice of sustainability into the procurement of goods, services and construction". Specifically the proportion of procurement expenditure on sustainable goods and services is to be increased from year to year. Compliance with the State Procurement Policy is required by the Financial Management Standard issued under the Financial Administration and Audit Act 1977.

Property and Facilities Division's Central Store has been working with suppliers to increase the proportion of sustainable goods available for sale to University Schools and Centres over the past two years. Within the stores catalogue environmentally friendly products are highlighted with a green symbol.

Environmental Management System Internal Audits

In 2008, EMS Internal Audits were conducted in twelve University Schools and Centres in accordance with the three year internal audit schedule. With EMS Internal Audits now being conducted in the University for over 10 years, environmental awareness in areas with hazardous materials is well established and staff are familiar with environmental procedures related to their activities.

Technical Audits

Audits continued to be undertaken on the effluent lake at the St Lucia campus with no serious outbreaks of algae or any other issues recorded during the year. Audits were also undertaken in the freshwater lake with similar findings.

Greenhouse Gas Mitigation



Australia's low carbon future

In 2008 Australia made progress towards a low carbon future. A medium term target of 5-15% reduction of 2000 levels by 2020 was set and long term target of 60% reductions by 2050.

Legislation

Though the Carbon Pollution Reduction Scheme has been the focus of much of the public debate, two laws requiring verifiable information place requirements on the University of Queensland to actively measure, audit and report on emissions saving projects.

National Greenhouse and Energy Reporting (NGER)

The NGER system requires companies to report their energy production, energy usage and greenhouse gas emissions data for the 2008/2009 financial year onwards.

UQ will produce its first report by October 2009 and is already collecting data and developing systems for determining operational control, data collection, emission calculation, record keeping and reporting of greenhouse gas emissions (including carbon, methane, nitrous oxide, sulphur hexafluoride and refrigerants).

Energy Efficiency Opportunities (EEO)

The EEO mandates Australia's biggest companies to undertake comprehensive energy assessments using a whole of business approach and identify energy saving oppor-

tunities. Companies are required to report (publicly, to government and internally) the business response to opportunities identified with a 4 year payback or less.

Companies who meet the 0.5 petajoule threshold must report under this legislation. UQ is expected to meet the threshold and participate from 2009/2010.

Carbon Pollution Reduction Scheme (CPRS)

From 2010 companies will pay for the emissions they generate and there will be a limit on Australia's carbon pollution. UQ will not meet the threshold of 25kt of direct emissions and thus will not be required to buy permits. However the university will be indirectly affected through participating companies passing on the costs to the consumer, in particular higher electricity and fuel costs are expected.

Carbon footprint project

A comprehensive inventory of the University's greenhouse gas emissions was developed in 2008, covering the three main campuses and 21 research and other facilities across Queensland. This focussed on emissions directly related to UQ's operations (scope 1 and 2 emissions under NGER) but, where possible, indirect emissions (scope 3) were also estimated.

In 2007/08 the university used approximately 439 terajoules of energy. The majority of this was from elec-

tricity whilst other sources include UQ's fleet vehicles and plant, gas and LPG consumed in the operation of the Pinjarra Hills incinerator.

In total, UQ emitted 140 kt of CO₂ in 2007/08, 70% due to electricity consumption, 2% from transport, gas and LPG and 26% from other indirect emissions as a result of the university's activities.

Total energy consumption at UQ has been steadily increasing mainly associated with an increase in campus sizes. In 2008 for example, construction of the new \$54 million General Purpose North 4 building at St Lucia and the \$66 million UQ Centre for Clinical Research (UQCCR) at the Royal Brisbane & Women's Hospital was completed.

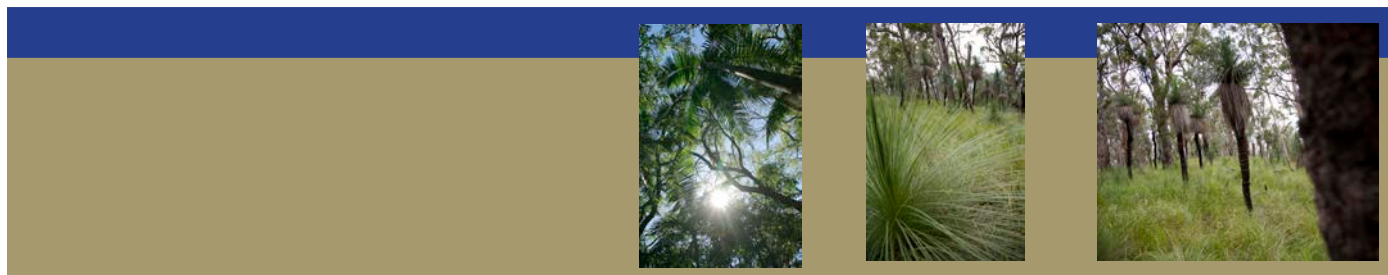
In 2008/09 growth in floor area with Centre for Clinical Research, Centre for Advanced Animal Science and the new School of Veterinary Science at Gatton is likely to see consumption increase. The focus will be on reducing energy through audits, retrofits, workshops and improved awareness.

Energy audits

In 2008 energy audits were conducted in five buildings on St Lucia campus to identify energy saving opportunities. As a result, a number of energy saving projects are being investigated and implemented including:

- Installation of air-conditioning timers and movement sensors.
- Placing Switch off Save Energy stickers on light switches to re-

Greenhouse Gas Mitigation



mind staff to turn lights off when leaving the office.

- Investigating energy savings related to lighting efficiencies.
- Investigating energy savings from turning off hot water boilers at night.

Also, Energetics was commissioned to conduct a level 2 energy audit as per AS/NZ3598 of the multi-level carparks and provide a cost-benefit analysis of opportunities identified. One of these is to shut down Car Park 2 after hours (9pm to 7am). This is expected to save approximately 160,000kWh, \$11,000 and 150 tonnes of CO₂ emissions annually.

Energy retrofits

In existing buildings Property and Facilities are continuing to upgrade to more efficient lighting. Energy efficient bulbs are being used to replace blown bulbs and new technologies are being trialled.

Green energy

In 2008 UQ purchased 2.5% of its energy from accredited Green Power producers (member of the National Green Power Accreditation Program).

This initial purchase reduced the University's greenhouse gas emissions by 3,400 tonnes of carbon dioxide. The switch to green power means that UQ is contributing to the development of renewable energy generation through its buying behaviour as well as our leading edge research.

Greenfleet

Since 2004 the University has subscribed to Greenfleet to offset the fuel-burning emissions of the University's vehicles and Property and Facilities Division's fleet vehicles. In 2008 this was expanded to encompass the total plant and vehicle fleet held by the University which includes departmental and executive

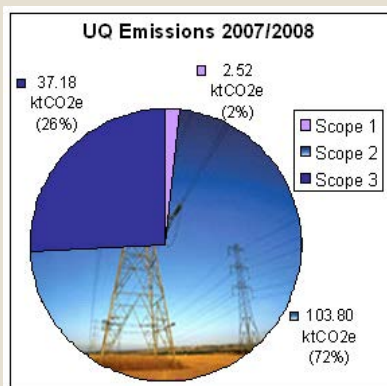
vehicles and fuel used in all plant and equipment (e.g. tractors and generators).

The total emissions from fuel burning annually average 1780 tonnes of carbon dioxide, requiring 6640 trees to be planted as a carbon sink over their lifetime.

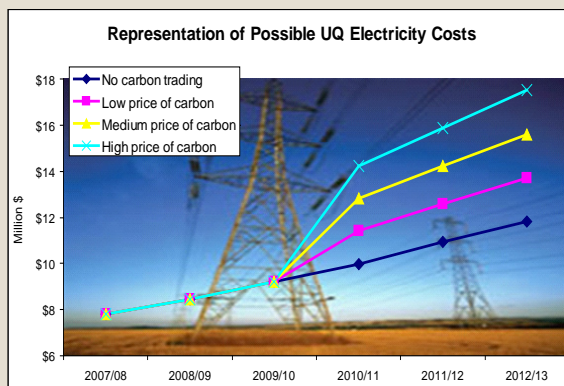
Solar Panels on GPN4

10 kWh solar photovoltaic cells were installed on the roof of the new General Purpose North Building at St Lucia campus.

Over the first 6 month period of operation the panels supplied 6000 kWh of energy into the University's electrical system, reducing the university's CO₂ emissions by 5600kg.



UQ Emissions 2007/2008

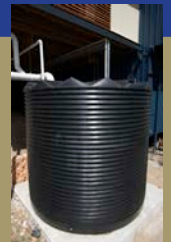


Representation of Possible UQ Electricity Costs



Solar Panels on GPN 4 Building St Lucia campus

Water Conservation



Water Consumption

Water consumption at most University of Queensland sites has continued to decline during the 2008 calendar year. The installation of water saving fittings and fixtures was completed at all UQ sites in 2008 bringing about a further 14% water saving when compared to 2007. The best performers were;

- Dental School - reduction of 65% due to the replacement of water cooled chillers with air cooled chillers in late 2007.
- Ipswich - reduction of 33% due to lower consumption requirements (estimate only).
- Indooroopilly Mine - reduction of 23% due to water tanks being installed for washing down in the pilot plant.
- St Lucia - reduction of 20% due to all buildings being fitted with water saving fittings and fixtures

and an ongoing program to make laboratories more efficient.

(Note: the total savings for UQ have been calculated using an estimated consumption figure for the Ipswich campus. An accurate result for Ipswich is not available due to an ongoing problem with council water meters.)

Community Water Grants

Two more community water grants were received during 2008, one for the Gatton campus and one for the Ipswich campus.

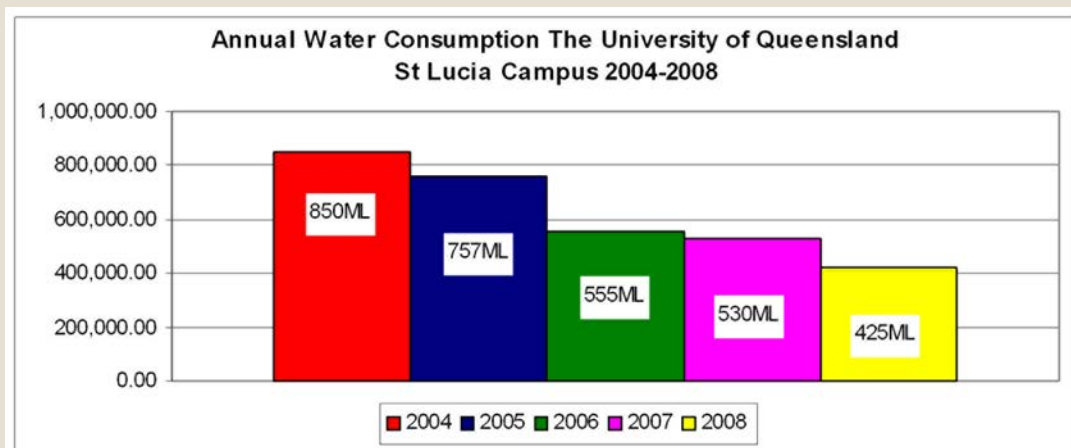
Both grants will be used to help fund the installation of water tanks to help reduce potable water use on the sites.

Projects are expected to be completed early in 2009.

Water Efficiency Management Plans (WEMP's)

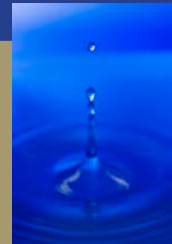
All University Water Efficiency Management Plans were approved in 2008 with plans now available for St Lucia, Gatton and Ipswich campuses as well as Pinjarra Hills Farm and the Indooroopilly Mine site. The plans outline actions required to be undertaken to reduce water consumption. All sites operating under WEMP's are required to reduce water consumption by 25% from their base year (2004/2005) or demonstrate that they are operating at best practice.

Site and cooling tower reports have been submitted quarterly as required to the relevant local councils for the UQ sites during 2008. Most actions outlined in the WEMP's have now been completed and the success of the projects is evident by the reduction in consumption at most university sites.



Water consumption data per calendar year shows a 50% reduction in consumption from 2004 to 2008.

Water Conservation



Projects completed during 2008 include:

- The retrofit of all fittings and fixtures on all sites including laboratory taps at St Lucia.
- The installation of water tanks at the Gatton campus for use in buildings and stock watering.
- Building meter installations are complete at all sites allowing a more detailed view of water consumption in all areas of the university. The data is entered into a spreadsheet monthly which enables Property and Facilities Division to identify areas with higher than usual consumption so that they can be investigated in a timely manner. An electronic meter at the front gate of the St Lucia campus sends a warning to the Engineering Manager, and an Engineering Project Officer, should the water flow exceed a

predetermined flow rate. All instances of higher than usual flow rates are further investigated.

Future Direction

Water Efficiency Management Plans will be reviewed in 2009 as the actions are almost complete. Laboratory areas using above average water consumption will continue to be investigated during 2009 to determine if further savings can be made.

The implementation of water savings for laboratory processes will depend on funding availability.

Water data will be made available via the Property and Facilities website to staff at the university during 2009 to raise awareness and encourage staff to take an active role in further reducing consumption.



Two Community Water Grants were received in 2008. They helped fund the installation of water tanks to reduce potable water use on Gatton and Ipswich campuses.



Water efficiency projects included the retrofitting of all fittings and fixtures on all sites including laboratory taps at St Lucia campus.



Water Meters installed on buildings to provide a more detailed view of water consumption in University buildings.

Recycling and Waste Management

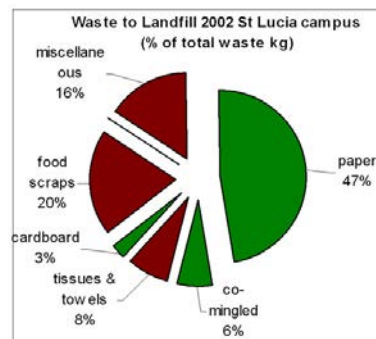


General Waste

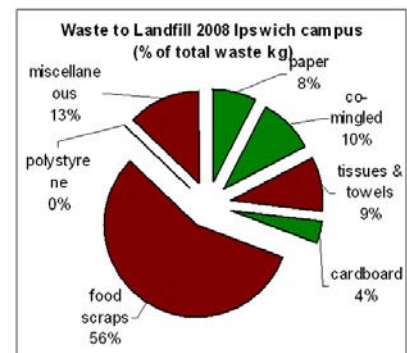
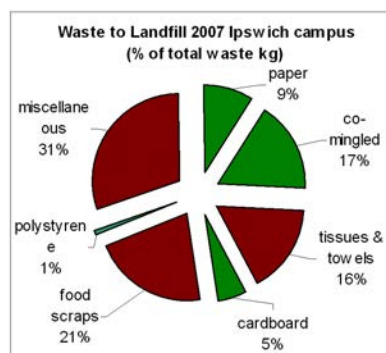
In 2008 audits of general waste wheelie bins were conducted at St Lucia, Ipswich and Gatton campuses. The audits did not consider waste streams from skips, refectories or other businesses on campus. The audits help the University to evaluate the effectiveness of recycling strategies and target awareness in the appropriate areas. Audit results are placed on the Property & Facilities Environmental website with data per building for St Lucia campus and per campus for Ipswich and Gatton campuses.

Results for 2008 show that there has been a decrease in the total weight of waste going to general waste from all campuses. At this stage we assume that this means that recycling streams are being used more than in previous years as we do not currently measure recyclable streams.

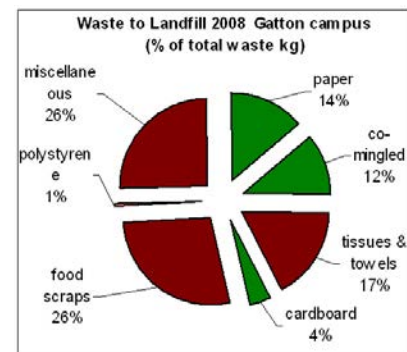
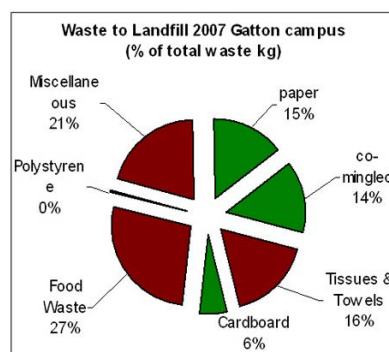
A Waste Management Plan will be developed in 2009 to help Property and Facilities manage and monitor waste and recycling streams from UQ more effectively. Our goal is to reduce recyclables in the general waste stream to zero.



St Lucia: As a percentage of general waste recyclables have dropped from 56% in 2002 to only 27% in 2008. Paper in the general waste has decreased from 47% to 13%.

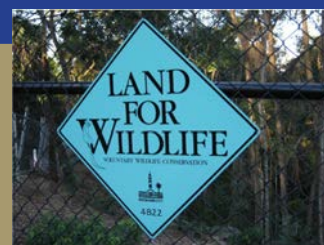


Ipswich: As a percentage of general waste recyclables have dropped from 31% in 2007 to 22% in 2008. Glass, aluminium, plastic decreased from 17% to 10%.



Gatton: Recyclables as a percentage of the total waste stream decreased from 35% in 2007 to 30% in 2008.

Biodiversity



St Lucia

The end of 2008 saw the completion of the University's three year Landscape Management Plan to redevelop the St Lucia Lakes Precinct. Achievements included:

- Removal of weeds species and replanting with native grasses and shrubs to enhance habitat for wildlife.
- Erection of viewing platforms to enable the University community and visitors to view birdlife.
- Placement of new seating around the lakes for recreational use.
- Increased capacity of the freshwater lake by 1.7 megalitres of water.
- Increased irrigation network from the freshwater lake to high profile areas including Alumni court, Michie Building forecourt, JD Story building, Forgan Smith building, the James and Mary Emelia Mayne Centre and Biological Sciences Building.
- Continued implementation of the White Ibis Management Plan.

The University's Playing Fields were also improved in 2008, with growth regulators being successfully introduced in the summer growing season. The product encourages grass to grow laterally and reduces mowing frequency and irrigation requirements, as well as improving quality of the fields. Currently the fields are irrigated with water from the Fairfield Sewerage Treatment Plant at no cost. With increased water restrictions, as well as charges expected

from Fairfield Sewerage Treatment Plant in 2010 due to its upgrade to Class A water, new ways to minimise irrigation is important.

In 2009 the Landscape Management Plan for the St Lucia campus will focus on tailoring the landscape for the current climatic conditions. Potable water is no longer used on gardens and lawns which has reduced water consumption significantly, but has also resulted in the loss of approximately 30% of the garden area. Removal of established weed species and revegetation with native species endemic to Brisbane and South-east Queensland will continue.

University Experimental Minesite – Indooroopilly

In 2008 the University's Experimental Minesite at Indooroopilly, signed onto Brisbane City Council's Land for Wildlife Program which encourages and supports landholders (including business and non-government organisations) to restore, rehabilitate and protect their bushland and natural wetlands.

Under a five-year Landscape Management Plan, the site (approx 7.5 hectares) is being revegetated with native plants of the regional ecosystem and being transformed back to its original natural condition. The property was severely infested with weeds, from ground covers to huge trees. Two years into the five year plan is starting to see results with several hundred plants being planted

in strategic locations on the mine site.

In addition, fauna surveys have been undertaken by the Environmental Protection Agency and UQ students and these have revealed a sighting of the Mountain Bobuck possum (*Trichosurus caninus*). A sighting so close to the city is a rarity, possibly indicating that remnant patches of bushland and plantings of trees along the Brisbane River provide significant habitats for arboreal mammals.

Gatton campus

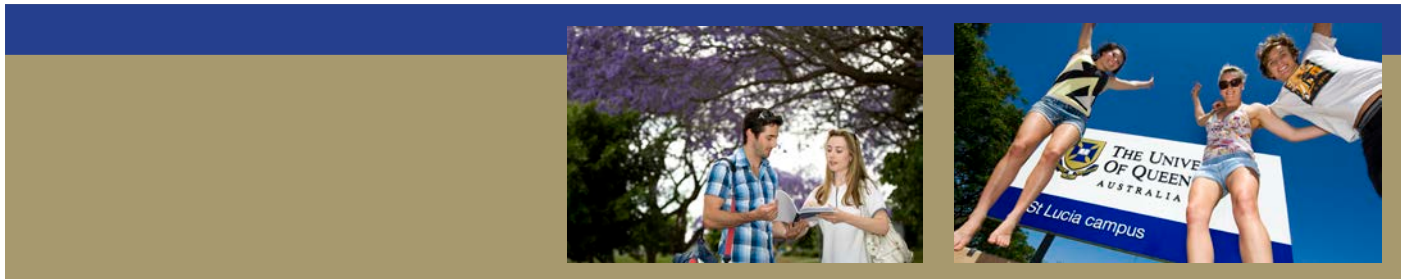
The Gatton Environmental Park continued to be developed with further species being planted to increase diversity.

Weeds monitoring on campus was also incorporated into an academic program on a trial basis in 2008. Thirty students were involved in two weeds identification and mapping exercises.



Birdlife at Gatton Environmental Park
Above: Plumed Whistling-Ducks
Top: Pied Stilt

Student Engagement



Student engagement involved students in ongoing programs and new initiatives in 2008 ranging from the ongoing Green Office Program to a new Student Sustainability Working Group. These projects give students the opportunity to contribute to practical sustainability projects on campus, giving them valuable work experience. It also allows Environmental Services to concentrate on specific areas to be developed, implemented or expanded.

UQ Student Union Sustainability Taskforce

In 2008, the UQ Student Union Sustainability Task Force was formed to identify projects which will incorporate principles of sustainability into operational aspects of the Student Union including energy, water and waste management, purchasing and transport. The group includes representation from the Student Union and Property and Facilities Division. The main objectives of the group are:

- To develop and implement sustainability initiatives centred on Student Union facilities.
- To demonstrate the viability and benefits of these 'best practice' initiatives.
- To use these initiatives to raise awareness and education levels regarding sustainability among students and staff at UQ, and the broader community.

During 2008, student representatives presented a business case for the installation of a composting system to treat organic waste on the St Lucia site. It was proposed that the system take food waste from the refectories as well as some organic waste from the grounds section. It is proposed that a small scale trial be put into place during 2009 to assess the performance of such a system before further action is taken.

Construction and Maintenance Waste - Scoping Study

The University of Queensland's portfolio of approximately 500 buildings require new construction and ongoing maintenance and refurbishment projects. This creates a large amount of waste including furniture, building and construction materials.

In second semester 2008, an engineering student was employed by Property and Facilities Division to collect information and data to help identify construction, demolition and maintenance waste streams and to determine what happens to the waste.

The results showed that while a lot of waste is sorted and recycled through waste contractors, if the waste is mixed it is more difficult and costly to separate. In addition, recycling of waste is heavily dependant on the current value of the resource.

The study also highlighted the many site issues associated with reusing and recycling. These include:

- space on construction sites to enable the sorting of materials,
- the coordination of services for the removal and storage of items,
- storage space for items with potential reuse value within the university or other schools and time frames given for the removal of

the items and the demolition.

A Waste Management Plan will be developed in 2009. This will help to manage some of the issues identified and further identify and manage other university waste streams.

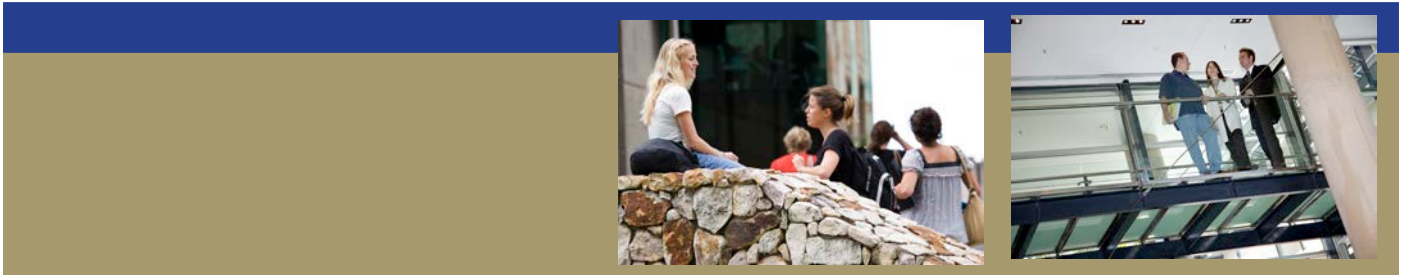
Students coordinate Green Office Program

Students, engaged by Environmental Services, Property and Facilities Division, have coordinated the Green Office Program for the past three years. Each year on Environment Day (5 June) the students change-over. In 2008 Jessica Lindsay handed over the role to Jessica Walsh, a 3rd year Bachelor of Science student who has a keen interest in everything sustainable.



L-R Jessica Walsh takes over the role of Green Office Coordinator from Jessica Lindsay

Stakeholder Engagement



Students continue Weeds Management Project

The Weeds Management Project was originally conducted by a Post Graduate Student in 2007 and resulted in the development of a generic Weeds Management procedure, as well as a Declared and Problem weeds register for the Gatton campus.

As an ongoing project, weeds monitoring was incorporated into an academic program on a trial basis at Gatton campus in 2008 where 30 students were involved in two weeds identification and mapping exercises on campus.

This has led to the establishment of an ongoing academic program that will incorporate a practical exercise for students that will in turn assist operational staff to manage weeds at Gatton campus.



UQ Business School practices what it preaches - Corporate sustainability

Governments are taking steps to reduce GHG emissions through a range of national policies. Understanding and managing GHG risks is critical to long-term success, and to being prepared for future climate policies.

The UQBS is the first Business School in Australia and one of the first Business Schools globally to undertake and report on its own carbon emissions. The School has undertaken a proactive approach in the area of business sustainability, demonstrating its ongoing commitment in this area.

The School recently released its first internal carbon audit, estimating overall emissions at 576.86 tonnes CO₂-e for 2008. The carbon audit on the School's GHG emissions was conducted by the School's Sustainable Business Unit.

Policy initiatives resulting from this audit will be integrated with other current initiatives at The University of Queensland and will enable UQBS to fully exploit the advantages of a sophisticated emissions reductions strategy and accentuate UQBS' leadership in the area of sustainability.

2008 Moreton Bay Research Station's (MBRS) Open Day - 'Reef Fest'

The 2008 MBRS's Open Day was a huge success. Being the 'International Year of the Reef', MBRS decided this year's theme would be 'Reef Fest'.

'Reef Fest' formed part of the wider Island 'Celebration of the Sea Festival'.

Displays included live corals, reef fish and invertebrates collected from Moreton Bay to highlight to the wider public the presence of unique and diverse reefs here in the Moreton Bay Marine Park.

Moreton Bay Research Station operates under an Environmental Management System, and is also certified under the Green Globe Program.



Moreton Bay Research Station, The University of Queensland - Open Day 2008

Staff Engagement



Green Office Program

Over 60 Green Office representatives attended the annual Environment Day Breakfast and Awards presentation on 5 June 2008.

Guest speaker, Assoc Professor William Grey, School of History, Philosophy, Religion and Classics, gave a presentation on Climate Change, and trade displays provided a range of environmentally preferred products.

Most Improved Green Office area over the past 12 months, Centre for Critical and Cultural Studies, improved its overall rating by 23% and received the Green Office Perpetual Trophy.

Best New Green Office area over the past 12 months, School of History, Philosophy, Religion and Classics, scoring an overall rating of 72%, received a certificate and voucher for paper with recycled content.

After the presentations, Green Office representatives went on site visits to Sims E-Waste and Visy Paper and Pulp recycling facilities.



Green Office Award winners 2008
L-R Maureen McGrath, Ctr for Critical and Cultural Studies, and Serena Bagley, Sch of Philosophy, Religion and Classics

With 84 staff as Green Office representatives in 72 areas across UQ's three campuses the program has come a long way from seven areas being involved in 2005.

Committees and Working Groups

Many UQ stakeholders have been involved in raising the profile of environmental sustainability in 2008:

Environmental Management Committee

Four Executive Deans, Pro Vice-Chancellor Ipswich campus, Associate Director OH&S Unit, and a number of Property and Facilities staff met quarterly to monitor environmental sustainability at UQ. This committee is responsible to the Vice-Chancellor.

Utilities Management Committee and Sub Committees (Water, Energy and Building Management System)

The Utilities Management Committee, with representatives from Property and Facilities Division and Finance and Business Services, meets regularly to monitor and reduce energy and water consumption at UQ.

Unigreen Working Party

The Unigreen Working Party consists of UQ academic and general staff representatives that promote environmental awareness on campus.

St Lucia and Gatton Environmental Sub Committees

Representatives from University Schools and Centres and Administrative Units provide valuable contributions to Environmental Management processes and programs on campus.

EMS Internal Auditors

Over 20 University staff are involved in the Environmental Management System Internal Auditing program that is conducted in areas with hazardous materials.

Environmental Training and Awareness

Environmental training and awareness activities in 2008 included:

- Unigreen stalls at Orientation Week Market Days.
- Unigreen stall at the Moreton Bay Research Station Open Day in November 2008.
- Environmental Training sessions for staff through the University's Staff Development program.
- Environmental Training sessions through UQ Schools and Institute Induction programs.
- Contractor Safety and Environmental Induction Program.
- Green Office Program Information and Update sessions.
- Unigreen bi-monthly newsletter for UQ staff and students.
- Special events such as Earth Hour on 29 March and a Climate Change Forum in September.

Unigreen focuses on environmental sustainability



Earth Hour

The University of Queensland joined with local councils and cities worldwide to turn off lights for Earth Hour on 29 March 2008. The campaign aims to encourage companies, communities and individuals to identify where they can take simple, ongoing measures to reduce their energy consumption.

Lights and non-essential equipment in UQ carparks and buildings were turned off and sporting fields remained in darkness for Earth Hour on Saturday 29 March at six UQ campuses and sites (St Lucia, Gatton and Ipswich campuses, Experimental Mine site, Herston site and Customs House).

The combined result – 14.2% energy reduction during Earth Hour (graph below), equating to a saving of 1.7 tonnes of CO₂-e emissions. The graph also highlights that switching

off really does make a difference, with an 8% energy saving – equating to 24 tonnes of CO₂-e – across participating UQ sites from midnight Friday to midnight Saturday.

The downward trend continued the following Saturday night with a reduction of 6.7% between 8-9pm and over 10% for the 24-hour period from midnight Friday to midnight Saturday. That is equivalent to savings of 31 tonnes of CO₂-e emissions.

Climate Change forum

Approximately 90 people from the University community attended the Climate Change Forum, hosted by Property and Facilities Division on Thursday 4 September 2008. The group included representatives from UQ Faculties and Schools, Research Centres, Libraries, Administrative sections, Institutes, UQ Sport and Students.

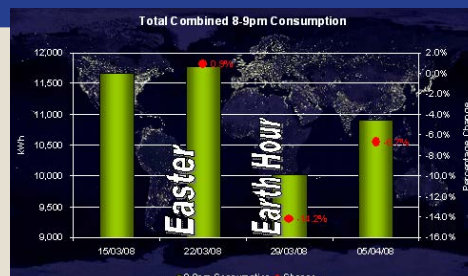
Keynote speaker, Professor Ove Hoegh-Guldberg, Director, Centre for Marine Studies, The University of Queensland, gave an informative and thought-provoking presentation on Climate Change issues and the need for UQ to respond at all levels of the organisation.

Property and Facilities staff, Geoff Dennis – Operations Manager, Stuart Green, Stefanie Butler and Leigh Burgess – Environment Services, provided further information on the increasing legislative requirements associated with climate change, as well as current and future operational initiatives being implemented at UQ.

After the presentations, attendees had the opportunity to get together in small groups and identify what they considered were the most important issues related to climate change that UQ should consider.



Green Office Representatives visit Visy's Paper Recycling Facility on Environment Day 2008

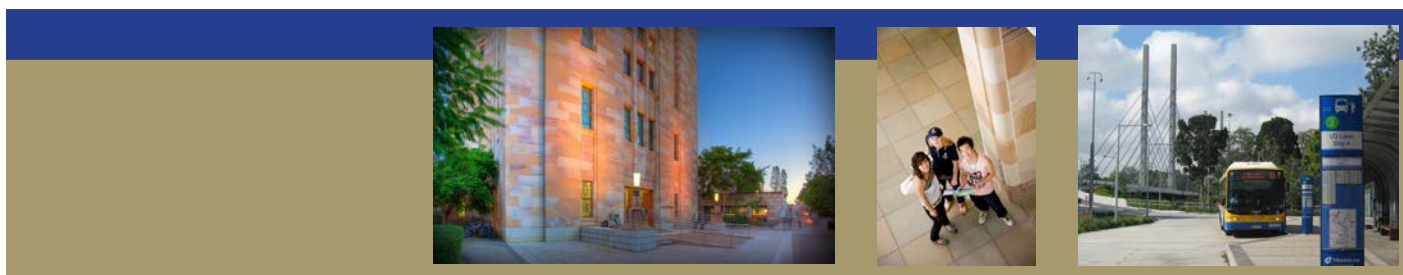


UQ's combined result for Earth Hour - 14.2% energy reduction



Over 90 UQ staff and students attended a Climate Change forum in September 2008

A Journey to Environmental Sustainability



Over recent years environmental sustainability has gained impetus, resulting in the University of Queensland engaging consultants to conduct a carbon footprinting exercise in 2008. The initial report and subsequent plan have enabled the University to focus its attention on the journey to environmental sustainability.

This will include expanding the committee structure to focus on sustainability, as well as engaging internal and external stakeholders in implementation of the plan. Attention will be placed on a range of areas including research and academic programs, renewable energy projects and operational programs to meet legislative reporting requirements.

In addition to the carbon footprinting exercise, the annual review of the University's environmental aspects have highlighted the following areas for attention in 2009:

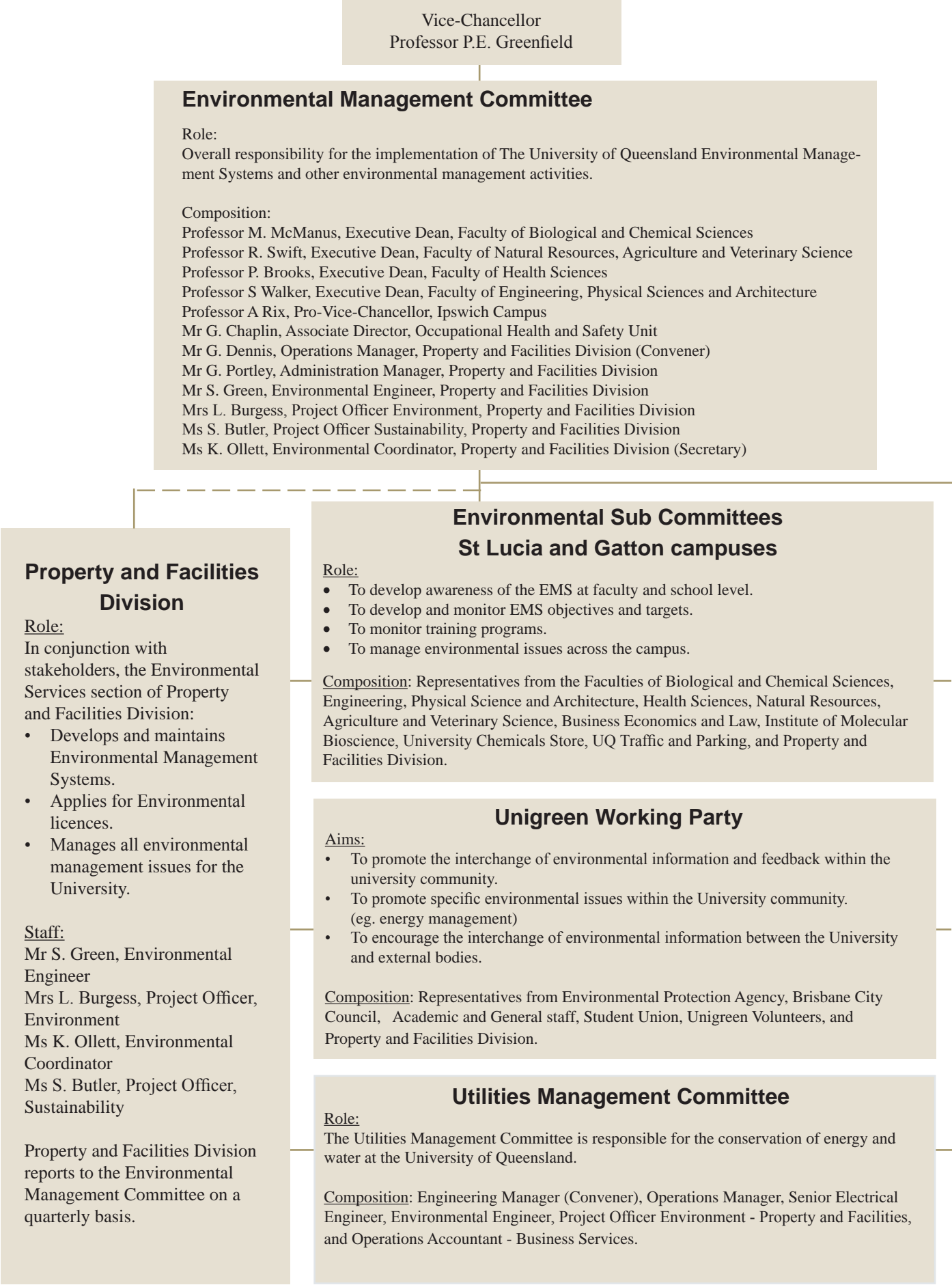
Greenhouse Gas Emissions	Focusing resources on reducing greenhouse gas emissions and on meeting energy and greenhouse gas reporting requirements.
Use of Potable Water	Identifying further opportunities to both conserve water and use it in the most efficient manner.
Use of Materials	Promoting the purchase of environmentally preferred products.
Waste	Developing a Waste Management Plan to further improve recycling and waste management on campus.


Established and ongoing programs will continue to be implemented in 2009 including:

- Environmental Management System (EMS) policies and procedures
- EMS Internal Auditing Program
- Environmental Technical Audits
- Management of Water Efficiency Management Plans
- Unigreen Training and Awareness Program
- Green Office Program
- Student Projects to address specific environmental issues.



Organisational Structure





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Property and Facilities Division
The University of Queensland
on behalf of the
Environmental Management Committee

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