University of Cape Town (UCT)

ISCN-GULF Sustainable Campus Charter Report 2011

Introduction

Campus Sustainability

The University of Cape Town (UCT) has gradually established a commitment to a sustainable campus over the last few decades, since the signing of the Talloires Declaration in 1990. In 2001 the Environmental Management Working Group (EMWG) was formed to coordinate the implementation of the Talloires commitments and remains the centre of environmental management of campus operations. A draft environmental policy was developed by the EMWG in 2003, which includes sustainability in operations as well as in research, education and outreach and is aligned with the ISCN-GULF Charter. While this policy has guided campus sustainability, this has yet to be formally adopted. A further initiative to develop a policy framework began following discussions at the Global University Leaders Forum (GULF) at the World Economic Forum in 2007. This resulted in the development of the *Green Campus Policy Framework* in May 2008, which was formally adopted by the University Senate and Council in that year. This lead to the development of the *Green Campus Action Plan 2008*, which has gradually been implemented through the UCT Properties and Services department, the EMWG and the student initiative, the Green Campus Initiative (GCI), a student-led movement.

It is hoped that reporting in terms of the ISCN-GULF Sustainable Campus Charter will add to the momentum of progress towards a sustainable campus, in terms of policy and practices and education and research.

About UCT

The University of Cape Town is South Africa's oldest university, founded in 1829 as the South African College, and developed into a fully fledged university during the period 1880 to 1900. The main campus comprises an iconic set of buildings of heritage value, located on the slopes of Table Mountain, which is a World Heritage Site, a national park and is considered a global biodiversity 'hotspot'.

The university has eight faculties, over 50 departments, more than 60 specialist research units and is home to more than a quarter of South Africa's A-rated researchers. It has approximately 25 000 students, and employs over 5 000 staff members, with 937 academics. The student body comprises 22% international students contributing to the richness of academic, social and cultural diversity. The estate comprises more than 75 buildings on its Main Campus, and has a number of satellite campuses across the city, including the Health Sciences Campus, Hiddingh Fine Arts campus, and the Graduate School of Business.

Community and Culture/Mission
UCT is committed to producing graduates who are not only well-educated, but also mindful of the responsibilities of democratic citizenship. During the 1980s, UCT was known for its opposition to Apartheid, and today the institution remains committed to social transformation. UCT seeks to contribute to addressing problems of global significance, as well as local societal challenges, through a wide range of socially responsive activities.

Governance and Institutional Context
UCT is governed by a Council comprising the Vice-Chancellor, 4-5 Deputy Vice-Chancellors, academics, and external members. The Properties and Services department is responsible for the provision of all services, the procurement of new buildings and maintenance of existing facilities. The Environmental Risk Officer is based in this department and it employs the services of the Sustainability Coordinator.

The management of operational environmental issues is overseen by the Environmental Management Working Group, which reports to the University Building and Development Committee (UB&DC), a formal committee of the university. Their work is guided by the Green Campus Policy Framework, with key aims and objectives including energy savings, reduction of carbon emissions, waste recycling and water conservation. Further to these objectives, the Framework policy recognises the need for a holistic approach to integrating sustainability thinking and practice across all aspects of university life. The EMWG oversees the implementation of the Green Campus Action Plan. Implementation is presently funded from maintenance and operational budgets since a 'green fund' or financing model has not yet been developed. As is the case in developed countries with government carbon reduction commitments, UCT does not receive funding for campus greening from government.

About this Report
This Charter Report is the first of its kind for the University of Cape Town and is for the period January 2011 to December 2011. Its aim is to provide a baseline for key data as a starting point for more detailed reporting in the future. This report draws on information in the Green Campus Action Plan and related Audit Report of 2009/2010 and the UCT Carbon Footprint developed by the Energy Research Centre. Supporting documents can be found at http://www.greening.uct.ac.za/

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Principle 1 – Sustainability Performance of Buildings on Campus

Principle 1: To demonstrate respect for nature and society, sustainability considerations should be an integral part of planning, construction, renovation, and operation of buildings on campus.

A sustainable campus infrastructure is governed by respect for natural resources and social responsibility, and embraces the principle of a low carbon economy. Concrete goals embodied in individual buildings can include minimizing environmental impacts (such as energy and water consumption or waste), furthering equal access (such as nondiscrimination of the disabled), and optimizing the integration of the built and natural environments. To ensure buildings on campus can meet these goals in the long term, and in a flexible manner, useful processes include participatory planning (integrating end-users such as faculty, staff, and students) and life-cycle costing (taking into account future cost-savings from sustainable construction).

Management Approach to Principle 1 Topics

The Properties and Services department is responsible for providing a range of services to the university, development and maintenance of the facilities, and for providing a safe environment conducive to teaching and research. One of its core values is adherence to safe, environmentally acceptable practices. For some years, this department, together with the EMWG has been the centre of environmental management activities at UCT, including the development of the Green Campus Action Plan and reporting in terms of this; supporting the Green Campus Initiative, a student environmental movement, as well as convening and chairing the Environmental Management Working Group.

The Environmental Management Working Group includes staff of Properties and Services Department, academics from a number of departments and disciplines and student representatives. A key role of this group is discussion of appropriate mechanisms for the implementation of priority sustainability initiatives. The Sustainability Coordinator reports to this group and draws upon the expertise of its members. Task teams are deployed by the EMWG to deal with specific issues, such as solid waste management and recycling.

The Green Campus Initiative is an important partner in driving change towards more sustainable operations and works closely with the Properties and Services Department.

Main Initiatives and Results

Resource use

Due to country-wide energy security issues and related cost increases, there has been a focus on energy efficiency and demand reduction. A key action has been the installation of web-based electricity meters on the Main Campus and Health Sciences Campus in 2011, to allow identification of substantive uses and inform demand reduction strategies. Institution-wide reporting and analysis of this data has not yet been achieved; however an initiative has begun to set up a robust information system to address this issue. Some progress has been achieved with the installation of solar water heaters at selected residences and is an ongoing programme; however once again, data on the quantity of renewable energy being produced is not yet available.

Water is acknowledged as a scarce resource and gardens and sports fields are irrigated using water from a dam on campus. Investigations have begun to assess the feasibility of water sub-metering.

Waste management and emissions

Solid waste management has been another key focus area at UCT and one of the more successful initiatives to date. This may be attributed to this being one of the first campus greening initiatives, one that has been forcefully driven by the student environmental movement, proving the proposition that sustainable practices at universities need to driven by both 'top-down' and 'bottom-up' pressures. Within the waste management arena, certain specific waste collection projects have been launched such as the collection of electronic waste, the e-Waste System.

A 'Green Cleaning' initiative began in 2009 and is an ongoing process. Custodial services are outsourced to commercial companies on a long-term contract basis. The Procurement policies do not yet include environmental aspects, so the contractors had to be encouraged to meet the sustainability aims on a voluntary basis. Investigation began with research and review of all chemicals used at UCT, followed by running trials on alternative products. Availability of less toxic chemicals that function effectively was initially a barrier; however, driven by demand, suppliers offered alternative products and these have been adopted by UCT. It is hoped that the better practices at UCT may also be expanded to other sites serviced by the cleaning contractors so that UCT's efforts contribute to transformation in the custodial industry in South Africa.

Research/IT facilities and sustainability

A comprehensive Hazardous Substances Control programme is being implemented at UCT, covering Hazardous Biological Agents, Genetically Modified Organisms; Hazardous Chemical Substances including Pesticides; and Ionising Radiation. Systems are in place or being introduced to reduce the quantity of hazardous substances being acquired, handled, stored, and ultimately disposed of. Awareness programmes and regular training sessions are also in place to improve the safe handling, storage, and disposal of hazardous substances. The UCT Environmental Risk Officer manages this programme and ensures compliance with legislation.

Users

In terms of inclusivity, UCT's vision is to provide disabled people with the opportunity for a fair and equal educational and work experience. The UCT Disability Service provides advice and support for the accommodation of people with disabilities, as well as providing specialist services. These services include advocacy, counseling support, advising on academic adjustments and accommodations, a resource centre, physical access design, text conversion and assistive technologies, and facilitation of exam accommodations for disabled students. The adoption of the UCT Disability Policy by University Council in March 2011 was an important milestone.

http://www.uct.ac.za/services/disability/

Building design aspects

The sustainable design of buildings is a relatively new field in South Africa and until November 2008, no rating tools for the local context were available. The Green Building Council of South Africa was established in 2007 and a 'Green Star SA' rating system was introduced in 2008, based on the Australian Green Star system and drawing upon other international precedents. No rating tool for Education buildings is yet available; however a pilot Education Tool is currently being tested.

In 2010 the design of the new Engineering building was the first campus development to aim for certification in terms of the Green Star SA rating system. However, this goal was subsequently set aside due to capital cost constraints. The funding model for building developments at UCT has yet to reach a point where consideration of ongoing, life-cycle costs can make resources available for sustainability elements. Some progress was made with the Engineering building in that an independent sustainability consultant was included in the professional team and energy modeling was undertaken, which significantly enhanced the energy efficiency of the building design and informed the facade design.

An achievement for UCT has been the implementation of Environmental Management Plans for the new Economics (2010), Student Administration (2010) and the new Engineering buildings (2011-2012), including diversion of demolition materials and construction waste from landfill sites and reuse for building material.

Design of public open spaces and landscaped areas are typically integrated with all new building developments at UCT. The Middle Campus Development, comprising new buildings for Student Administration and Economics was constructed during 2010/11 and included substantial related open spaces that have been landscaped and over 200 trees planted.

UCT's Principle1 Goals

Topics	Goals and Initiatives		Results	
Priority topics (with units of measurement)	**Objectives and targets** (for reporting year, for the following year, and/or beyond)	**Key Initiatives** (in reporting year, and /or planned for the following and beyond)	**Performance 2010**	**Performance 2011**
Resource use				
Electricity	Energy efficiency Reduction of 10% against 2007 by 2014.	Establish baseline; Fluorescent lamp refit; and installation of web-based digital metering	Total kWh/a: ~63500000 Digital meters installed on Health Sciences Campus at transformers	Total kWh not available 33 digital meters installed on Main Campus
Water (Total kL/annum)	Reduction of potable water consumption	Baseline established; investigation of sub-metering	Baseline 2009: 350 000kl (Main Campus)	Consumption not available
Waste, recycling, local emissions, and non-compliance				
Solid Waste (average tonnes/month)	Reduction of waste to landfill through recycling; target of 70% recycling; develop measurement and reporting system	Baseline data gathered; 4-bin recycle at source system established outdoors; waste audit performed; education campaigns	66% recycled 805 tons of waste	60% recycled 892 tons of waste

		about what can be recycled		
e-Waste System	Diversion of e-Waste from landfill for reuse and recycling	e-Waste system launched in 2009; sustainable reuse, donation, material recovery and safe disposal	6565kg recycled	5970kg recycled
Pollution from custodial practices	Minimise the use of cleaning products that are harmful to health and ecosystems	Green cleaning initiative 2010	Rationalization of list of products and suppliers; trial of alternative products; bleach removed	Ongoing trial of newly developed products
Research/IT facilities and sustainability				
Hazardous waste	Safe removal and disposal of hazardous chemical wastes	Hazardous Substances Control programme	100711 litres (major clear-out campaign)	44919 litres
Users				
Inclusivity	Continual improvement towards the objectives of the UCT Disability Policy	The ongoing work of the UCT Disability Service to provide advice, advocacy and support services to the disabled	Annual Report on progress against Policy objectives and the achievements of the disabled (available online)	Annual Report on progress available online
Building design aspects				
Green Building practices	Achievement of minimum standards of best practice, 4-Star Green Star SA for all new buildings and major refurbishments	Detailed design investigation undertaken for new Engineering Building to achieve 4-Star certification; University Council adopted a policy of minimum 4-Star Green Star SA rating in June 2012	N/A	Design of new Engineering building was optimized for energy efficiency, thermal comfort through energy modelling and façade design
Landscape integration with building design	Integration of landscaping with building design on all new developments	Investment in hard and soft landscaping for new Student Administration, Economics (2010/11) and Engineering buildings (2012/13)	N/A	New plaza and open spaces around Student Administration and Economics buildings completed and landscaped

Principle 2 – Campus wide Master Planning and Target Setting

Principle 2: To ensure long-term sustainable campus development, campus-wide master planning and target-setting should include environmental and social goals.

Sustainable campus development needs to rely on forward-looking planning processes that consider the campus as a whole, and not just individual buildings. These processes can include comprehensive master planning with goals for impact management (for example, limiting use of land and other natural resources and protecting ecosystems), responsible operation (for example encouraging environmentally compatible transport modes and efficiently managing urban flows), and social integration (ensuring user diversity, creating indoor and outdoor spaces for social exchange and shared learning, and supporting ease of access to commerce and services). Such integrated planning can profit from including users and neighbors, and can be strengthened by organization-wide target setting (for example greenhouse gas emission goals). Existing low-carbon lifestyles and practices within individual campuses that foster sustainability, such as easy access for pedestrians, grey water recycling and low levels of resource use and waste generation, need to be identified, expanded and disseminated widely.

Management Approach to Principle 2 Topics

A number of master planning studies have been completed at UCT, usually guided by the UCT Physical Planning Unit and undertaken by external consultants. These include:

- Development Framework Plan (DFP), Physical Planning Unit, Revised March 2010

- A Long Term Spatial Development Framework and Urban Design Concept for the University of Cape Town (Dewar, Southworth and Louw, 2005)

- Landscape Framework Plan for UCT (2006)

The Physical Planning Unit reports to the University Building and Development Committee (UB&DC) on a monthly basis. The UB&DC is a formal committee of the university and has sub-committees to further mange the estate such as the Physical Planning and Landscape Sub-Committee.

The measurement of UCT's Carbon Footprint was undertaken by the Energy Research Centre in the Engineering faculty; however responsibility has now been transferred to the Information Systems department. A team in this department is currently setting up systems for ongoing updating of the measurement and documentation of UCT's Carbon Footprint, and plans to include some of this work in their curriculum. This approach is aimed at significantly improving the information systems at UCT, allowing monitoring of campus greening activities, ISCN-GULF reporting and the Carbon Footprinting.

Main Initiatives and Results

Master Planning

A Development Framework Plan (DFP) was completed by the UCT Physical Planning Unit in 2010 to guide the nature and form of all proposed physical development. This comprised a series of planning processes, including the development of a Guide Plan (*A Long Term Spatial Development Framework and Urban Design Concept for the University of Cape Town 2005)*, an Access Management Plan, a number of Heritage Assessments, a *Landscape Framework Plan 2006* and substantial internal consultation. The DFP was also informed by metro-wide planning and policy, local area planning as well as planning work associated to adjacent land holdings such as the Groote Schuur Estate on the slopes of Table Mountain. This plan sets out nine performance qualities to guide spatial planning at UCT, which include equity, heritage, landscape, sustainability, and safety and security.

The DFP guides the form and location of new development in relation to vacant and underutilised land in a way that facilitates improved integration between the campuses. Transportation and pedestrian access networks are thus an important informant of the plan. Safety through improved lighting, CCTV, emergency bollards, trimming of vegetation and more responsive building interfaces are proposed. The DFP states categorically that pedestrians are to be accommodated in all situations before vehicles, and investment in infrastructure is aimed at encouraging the use of public transport and non-motorised transport.

The Landscape Framework Policy, commissioned in 2006, provides principles, policies and guidelines as a basis for decision-making. The principles in the policy are based on the role of the open space system as ecological, recreational and educational, and include ecological sustainability, legibility, accessibility, safety, security and comfort. In line with ISCN Charter Principles, the Landscape Plan identified a need for open spaces and landscaping to play a stronger social and educational role. This principle is currently being explored in the UCT Forest Management Framework study and has informed the planning of the recent Middle Campus development (Student Administration and Economics buildings), which has a set of related outdoor spaces that promote social integration and can be used for social exchange and education.

Baseline Carbon Footprint Study

A Carbon Footprint Study for UCT was completed in 2009 by the Energy Research Centre in the Engineering Faculty. UCT's carbon footprint for the year 2007 was found to be about 83400 Tons CO2-eq, with campus energy consumption and transportation contributing 81% and 18% of the footprint, respectively. Electricity consumption contributes about 80% of all the emissions associated with university activities. The completion of the Carbon Footprint Study is considered a significant achievement, making UCT the first university in South Africa to reach this milestone.

Transportation

Transport of UCT staff and students has been identified as a priority in terms of reducing the carbon footprint, and transport services are considered to be one of the more successful campus greening initiatives to date. UCT has a shuttle service, which is free to all UCT students and staff. The service comprises a fleet of 26 buses and operates between residences and all UCT campuses across the city. These bus routes are integrated with the City's public transport system and parking facilities in the local vicinity. The buses are equipped to cater for sight- and hearing-impaired students.

A highly innovative sustainable transport project- 'Ridelink'- was conceptualised and developed by the GCI students and has subsequently been taken up by the university administration, although it continues to be student-driven. This is a web-based car pooling system, aimed at assisting students and staff to access sustainable transport, and working with university management to provide infrastructure to support alternative modes of transport. The Ride-link scheme is a flagship project with over 900 participants that have been allocated preferential parking as an incentive. This project now needs monitoring and continual improvement.

Currently there is a focus on promoting other modes of transport including, walking, cycling and the use of scooters and motorbikes. Cycle and pedestrian infrastructure upgrades are in the detailed design stage, and implementation is planned for 2012. This infrastructure will comprise signage, roadmarkings and secure bike storage at transport hubs. A pilot bike rental scheme is under consideration and can be implemented once the infrastructure upgrade is complete.

Land-use and biodiversity

Given the location of the campus adjacent to the Table Mountain National Park, with its globally significant biodiversity resources, biodiversity is considered a priority. Objectives include enhancing the biodiversity and ecological value of the estate by planting endemic and indigenous vegetation; creating habitats to support local fauna and flora; and adopting amphibian-friendly horticulture practices.

The UCT Forest, also part of the original design, comprising largely alien Pine species, lies on the slopes above Upper Campus and spreads into the adjacent Table Mountain National Park. The Forest forms a backdrop to the iconic buildings and is considered of heritage value; however the trees are now senescent and should be felled. The issues pertaining to proposed regeneration of the forest backdrop have resulted in conflicting approaches within the UCT community, relating to the heritage versus biodiversity values attached to the area. A voluntary, non-statutory assessment study was undertaken, with the objective of informing a future Forest Regeneration and Management Plan that would replant the area with indigenous species. Proposals currently under consideration are aimed at providing space for recreational and educational activities, while enhancing biodiversity value. The work has been undertaken in accordance with best practice guidelines in terms of inclusive stakeholder participation, and has applied Integrated Environmental Management principles.

The Main Campus has a population of threatened species of frog, the Cape Rain Frog *Beviceps gibbosus,* which is Red Listed as Vulnerable. UCT is in a unique position to provide a long term habitat for this threatened species, as few areas of habitat remain in the city. A baseline distribution survey of these frogs in the Middle and Lower Campus areas was commissioned in 2009 and the study found that the population is conservation-worthy with an adult population is estimated at ~320 individuals. This study informed the planning of the Middle Campus Development by preserving habitat. Further work required is the further research of the distribution in other campus zones, adoption of the management recommendations, setting up of a monitoring programme to determine population trends and the installation of interpretive signage to inform the community.

Social inclusion and protection

UCT has invested in improving the quality of the neighbourhoods surrounding the university, participating in planning and making a financial contribution to the development of the Groote Schuur Improvement District (GSCID), which was established in 2010. UCT is represented on the board of the

GSCID together with business and community representatives. This initiative has been successful thus far in enhancing the quality of the environment in terms of safety, security and cleanliness. A further recent initiative is the Residential Security Initiative, a wholly-owned and run UCT initiative to provide improved security services to the surrounding residential areas, implemented on 1 June 2012.

A wide range of services and amenities are available on campus:
- An Educare Centre accommodating about 75 children of staff and students in 5 pre-school classes (3months to 6 years). Plans are in hand to expand the Centre in 2013 with an additional class for babies
- A well-utilized Student Health Service which includes Aids counseling
- 30 contracts with third parties to provide food services to students and staff from a combination of fully operational cafeterias, or smaller kiosks.
- A Post Office, a camera/pc/mobile phone shop and a bookshop on the Upper campus
- About 50 student sports clubs and a further 80 cultural clubs and societies (including 21 religious societies); 2 Muslim prayer rooms (for males and females); and a chapel for the Christian groups on the upper campus

Dissemination

Core team members within the GCI were instrumental in the establishment of the official University of Cape Town Sustainability Portal in 2011, in collaboration with the UCT Communications Department, Sustainability Coordinator and the Environmental Management Working Group. Other GCI communication platforms include Facebook, Twitter, blogs and Youtube channels.

Overview of UCT's Principle 2 Goals

Topics	Goals and Initiatives		Results	
Priority topics (with units of measurement)	**Objectives and targets** (for reporting year, for the following year, and/or beyond)	**Key Initiatives** (in reporting year, and /or planned for the following and beyond)	**Performance 2010**	**Performance 2011**
Institution-wide carbon targets and related achievements				
GHG reduction	Calculate annual GHG emissions and set reduction targets	Institutional arrangements and information systems for ongoing reporting of GHG emissions are in the planning stage	Baseline established: 83,400 Tons CO_2-eq total CO_2 emissions for 2007	To be updated in 2012/2013
Master Planning				
Campus Master Plan	Requirement to give due consideration to	Development Framework Plan	N/A	Mobility study to commence in 2012

	equity, heritage, landscape, sustainability, safety and security; Enhanced transportation and pedestrian access networks	2010 in place to guide decision making		
Pedestrian-friendly campus and open spaces	Invest in infrastructure to enhance the pedestrian environment	All new buildings to include the development of adjacent open spaces and pedestrian routes	Middle Campus development with public squares	Continual upgrading of the pedestrian environment
Transportation				
Promote cycling (numbers of commuting cyclists	Provide adequate infrastructure to ensure safety of cyclists	Cycle infrastructure design and documentation for Main Campus; extend to other campuses; implementation planned to commence in 2012	Preliminary design of cycle infrastructure with stakeholder participation undertaken	Detailed design for Main Campus completed; tender documentation in progress
Commuting / alternative transportation	Reduce private car travel	Provide free Shuttle service to all campuses; integrate with city transport system	Number of Shuttle Passengers: 5116032	Number of Shuttle Passengers: 4487926
Business travel management (number of video conference units installed)	Reduced air miles and provide video conference access	Deploy video conferencing as alternative to travel; IT department provides assistance	N/A	Number of video conferencing units = 2
Car-pooling (3 person minimum)	Increase number of car-pooling participants; increase preferential parking areas	Car-pooling incentivised with preferential parking area for 80 cars; access controlled	N/A	842 participants
Bike rental scheme	Promote cycling by provision of rented bikes	Planning of bike rental scheme; Procurement of bikes; loan arrangements; legal issues	N/A	First 200 rental bikes to be available by 2012
Social Inclusion and protection				
Access to services	Provide services and		Services on campus:	No change since

(number of services available on campus)	amenities for the campus community		30 food outlets 50 student sports clubs; 80 student organizations; Student Health Service; Kindergarten for 75 children	2010
Participative campus/neighbourhood planning	Continue/foster dialogue with neighbourhood, city and institutions (schools)	Establishment of a neighbourhood Central Improvement District	GSCID established in 2010 with planning and financial contributions from UCT	UCT is represented on the board of the GSCID; UCT's Director of Properties is on the board of the Residential Security Initiative
Land-use and biodiversity				
Forest regeneration and management	Develop plan for the area that considers ecological, educational and recreational uses; remove invasive aliens; replace ageing trees with indigenous species	Forest management study, planning process and consultation during 2011 and 2012	N/A	Spatial concept and final report available for stakeholder comment and approval; approval to occur in 2012
Tree planting	Develop and adopt an indigenous tree planting policy, balancing heritage, biodiversity and maintenance aspects	Tree planting list finalized	~200 Indigenous trees planted	~100 Indigenous trees planted

Principle 3 – Integration of Facilities, Research, and Education

> ***Principle 3: To align the organization's core mission with sustainable development, facilities, research, and education should be linked to create a "living laboratory" for sustainability.***
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> On a sustainable campus, the built environment, operational systems, research, scholarship, and education are linked as a "living laboratory" for sustainability. Users (such as students, faculty, and staff) have access to research, teaching, and learning opportunities on connections between environmental, social, and economic issues. Campus sustainability programs have concrete goals and can bring together campus residents with external partners, such as industry, government, or organized civil society. Beyond exploring a sustainable future in general, such programs can address issues pertinent to research and higher education (such as environmental impacts of research facilities, participatory teaching, or research that transcends disciplines). Institutional commitments (such as a sustainability policy) and dedicated resources (such as a person or team in the administration focused on this task) contribute to success.
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Management Approach to Principle 3 Topics

In the last two decades, UCT has had a strong focus on environment and sustainability teaching in the Department of Environmental and Geographical Science. The Environmental Evaluation Unit (EEU) has been actively engaged in research and short course training in the field of environmental management and sustainability since 1985. Sustainability principles and topics have gradually become integrated into courses in Economics, Engineering, Humanities, Health Sciences and the Graduate School of Business. Over the past 15 years the number of departments and staff involved in sustainability teaching and research has grown substantially.

In 2004, the PASE initiative (Partnership for a Sustainable Environment) lead by the office of the Deputy Vice-Chancellor was established to co-ordinate and strengthen sustainability research, teaching and outreach ay UCT. A key aim was to enhance understanding of sustainability principles and practices and promote adherence to commitments in the Talloires declaration. However, the initiative was only supported for two years. In recent years, the appointment of a Pro Vice-Chancellor to address climate change and development emerged as an appropriate mechanism for coordinating sustainability, climate change and development related activities and initiatives.

In 2012 the first Pro Vice-Chancellor was appointed at UCT to provide enhanced academic leadership around the strategic goal of addressing the climate and development challenges of Africa from an African perspective. The Pro Vice-Chancellor is tasked with taking the lead in facilitating and substantially extending climate research at UCT. The Pro Vice-Chancellor is also director of the recently established the African Climate and Development Initiative (ACDI) that aims to coordinate the University's current resources, partnerships and intellectual capital across a range of disciplines in research, teaching at postgraduate level and social/public awareness.

UCT has a social responsiveness committee that seeks to foster engagement with communities and other non-academic actors through their expertise and research, to assist in solving problems and creating solutions. The committee produces a social responsiveness report every year which seeks to profile work across faculties that shows how academics are engaging with civil society to address societal challenges. The committee is in the process of preparing an audit of such projects across the campus.

Staff and students at the University of Cape Town have always been involved with civil society partners to address a range of development challenges. The UCT Knowledge Co-op was established in 2010 to enable community groups to access this expertise more easily. At the same time it provides an opportunity for academics and students to engage with society, to address the needs of communities and to apply their knowledge to real-world issues.

A central role in social integration at UCT is delivered by the Green Campus Initiative (GCI), which is a student-led movement, with staff membership and collaboration. The structure of the GCI comprises committee members with portfolios, and many dedicated volunteers. The movement began in 2008 and has grown rapidly to become one of the largest student movements at UCT. The GCI works closely with the Properties and Services department, the EMWG and the Sustainability Coordinator. Their activities also involve external partners such as the City of Cape Town, scientific institutions, schools, and other universities in southern Africa. In recognition of it work, was awarded Team of the Year at the 2009 UCT Student Leadership Awards.

Main Initiatives and Results

In the research arena there are a number of research groups that engage in sustainability research.

The African Centre for Cities (ACC) seeks to promote interdisciplinary research on cities in Africa. Scholars and postgraduate students across UCT with an interest in urban research can participate in a number of ways. The ACC offers a masters programme, monthly open seminars and informal discussions to advance interdisciplinary discourse on urban research topics and on contemporary developments in the urban development policy field. A voluntary PhD Seminar series provides a space for PhD students working on urban topics across UCT to meet on a regular basis.

The Climate Systems Analysis Group (CSAG) is a research group addressing the climate change knowledge needs of developing nations, delivering tailored information, building capacity within the continent, and engaging with users around adaptation, policy, and impacts.

The Environmental-Economics Policy Research Unit (EPRU) was established in 2007 to promote sustainable development and poverty reduction in Southern Africa. To achieve this EPRU aims to enhance the effectiveness of environmental policy making by adopting a threefold strategy of research, teaching and policy consultation.

The Energy Research Centre (ERC) is a multi-disciplinary centre which pursues excellence in technology, policy and sustainable development research, education and capacity building programmes at a local and international level.

The Environmental Evaluation Unit (EEU) is a research, consulting and training unit in the field of sustainable development and integrated coastal and environmental management, responding to local, regional and global environmental challenges using interdisciplinary and participatory approaches. The EEU is engaged in a number of multi and transdiciplinary research projects with partners across the world on issues of governance for justice and sustainability.

The Marine Research (MA-RE) Institute aims to enhance UCT's strength in the marine research and teaching field through formalised collaboration and coordination of all marine researchers and academics across disciplinary boundaries. The institute strives to transform the marine field through capacity building and skills development, is open to all marine-related research groups and individuals at UCT, as well as all issues influencing these areas (e.g. socio-economic, legal and historical).

The Centre of Criminology is a research unit in the Faculty of Law, where current research includes the new and critical area of enquiry, Environmental Security. This research explores emerging institutions of governance for mitigation of and adaptation to climate change; considers how communities manage the increasing risks associated with climate change; how regulatory institutions contribute to these processes; and what alliances can be built between them. A feature of the Centre's research is the close collaborative partnerships it builds with other institutions across the science, education, public and private sector divides. Research includes southern African food security, sustainable housing in informal communities and outreach programmes with schools and colleges that integrates understandings of sustainability into science curricula.

There are five South African Research Chairs Initiative (SARChI) associated with the above research groups.

Topical Integration

The extent to which sustainability issues are integrated into the university curriculum was reviewed for this report for the first time. A distinction was made between courses that focus on sustainability - that explore concepts, principles and practices of sustainable development and those that only include some lectures on specific aspects of sustainability. It was difficult to make this distinction, and therefore only the sustainability focussed courses have been included in this report. These courses and programmes are typically inter-disciplinary in nature, and offer a broader perspective than would be found in a course dedicated to one area of knowledge. Some further development of criteria is needed. The distribution of courses was found to be well spread across the Faculties rather than confined to the Science Faculty.

Social Integration

The annual 'Green Week' is the major awareness-raising drive of the GCI, comprising music concerts, documentary film screenings and panel discussions, which include city officials, sustainability researchers and experts, and civic society leaders. Orientation Week provides another important annual platform for awareness-raising. The annual Sustainability Awards were launched by the GCI in 2010 and this has become a regular annual event.

GCI outreach activities have included a schools-learning programme focussed on recycling education. During 2011, monthly sessions were hosted in disadvantaged communities, involving school children in recycling workshop and beach clean-ups.

During 2011 the GCI members attended the international climate change event COP17 summit in Durban, with three members of the GCI taking part in the official proceedings and others participating in the civil society proceedings. They also played a significant role in the establishment of a national youth environmental network, the 'Bluebuck Network' which links other southern African universities.

Regular education events are organised by the GCI with guest speakers and panel discussions around specific themes, involving local and international academics, civil society activists and government representatives.

A dynamic and high profile GCI initiative aimed at behavioural change is the 'Green Police', a team of energetic young activists who are present at all events, wearing their trademark green overalls. They engage with the public, inviting debate around issues, and provide education and aid to campus greening events.

Institutional commitments

The Environmental Management Working Group (EMWG) has been active since 2001 and meets on a quarterly basis. The group consists of academics, facilities management staff, students and the Sustainability Coordinator. The Sustainability Coordinator has been appointed since 2008, and works with students, faculty and the administration to facilitate the implementation of the Green Campus Action Plan. An audit of progress achieved on the Green Campus Action Plan was completed during 2011, followed by updating of the Action Plan to reflect current priorities.

The Properties and Services department has supported the GCI financially for such events as an annual Green Week, and development of the Ridelink web-based car pooling system.

Overview of UCT's Principle 3 Goals:

Topics	Goals and Initiatives		Results	
Priority topics (with units of measurement)	Objectives and targets (for reporting year, for the following year, and/or beyond)	Key Initiatives (in reporting year, and /or planned for the following and beyond)	Performance 2010	Performance 2011
Topical Integration				
Sustainability courses and programmes	Increase the number and quality of sustainability related courses	Mapping of courses across faculties	Not available	40 Sustainability focused courses; 15 sustainability P/G programmes
Sustainable development in research	Enhance academic leadership and interdisciplinary engagement around societal and environmental challenges	ACDI initiative with Pro VC to engage with climate and development challenges; African Centre for Cities; EPRU; MA-RE institute; EEU; ERC; CSAG	5 academic chairs with research and training objectives closely tied to sustainable development	5 academic chairs with research and training objectives closely tied to sustainable development
Social Integration				
Number of members of the Green Campus Initiative (GCI)	Growing awareness and action towards a sustainable campus	Orientation week membership drive; social media; regular events and actions	Membership in 1st year 2008: 570 Membership in 2010: ~1100	1600 students and staff
Annual 'Green Week'	Education and communication around 'green' issues	Exhibitions, films, concerts, panel discussions	3rd Annual Green week	4th Annual Green Week
GCI Networking with other campuses	Sharing of knowledge and experience in campus sustainability with other southern African Universities	Establishment of the Bluebuck Network in 2011	N/A	First Annual Summit held in 2011
Engaging with civil society	Participation in African and International Environmental Forums	Member of African Youth Environmental Network (AYEN) – a subgroup of TUNZA, the youth section of United Nations	GCI participation at the World Environmental Day 2010 TUNZA Regional Youth Conference in Kigali Rwanda, hosted	GCI participation at COP 17 in Durban 2011

		Environmental Programme (UNEP)	by AYEN	
Research & Education projects on Laboratory/IT facilities and sustainability				
Living laboratory	Maximise the use of the campus as a 'living laboratory' for student research projects	Professional Communications, Commerce Faculty	Semester projects for 12 students on Campus Greening	Semester projects for 25 students on Campus Greening
		Computer science practical component of the 3rd year course focused on monitoring usage and power consumption of PCs, air conditioning, and paper consumption and made recommendations for reduction strategies	N/A	22 students
		Botany: Global Change Ecology course	4 students research papers on biodiversity resources at UCT	Not available
Commitments and resources for campus sustainability				
Human Resources	Provide the resources to coordinate and drive campus sustainability	Full-time Environmental Risk Officer; part-time Sustainability Coordinator; 10 staff members meet quarterly at EMWG; Academic chairs oversee sustainability-related research and educational initiatives	2 dedicated staff (Risk Officer and Sustainability Coordinator); 5 Research Chairs	No change since 2010
Policy with monitoring and reporting	Develop policy and monitor progress against this	Development and updating of Green Campus Action Plan; Audit of progress	N/A	Biannual Audit of progress undertaken
ISCN-GULF Charter	Submission of reports to ISCN in 2012	Actively engaging with ISCN network to further campus sustainability	N/A	ISCN charter signed and recognized by university leadership