

UCT GREEN CAMPUS ACTION PLAN
SUMMARY TABLE OF AUDIT REVIEW 2009-2010

LEGEND	
	Good progress within timeframe, target achieved
	Fair progress, but needs follow through to completion
	No progress or not yet active – might be due to a range of reasons

	ACTION	DESCRIPTION OF PROGRESS	TARGET	PROGRESS
1.0	ENERGY			
1.1	Install electricity meters to each building	Upper campus meters ordered in October 2010; installation schedule commenced with 33 meters planned during 2011. Installed web-based meters to transformers at Medical Campus & Menzies.	Commence April 2009 – 2 yr plan	
1.2	Establish baseline of electricity consumption. Identify substantive uses and set reduction targets. Establish effective monitoring and reporting.	Consumption is recorded but substantive uses and trends not identified; monitoring and reporting system not yet established at Properties and Services (P&S).	By March 2009	
1.3	Reset all computers under ICTS management to energy saving modes	The power management of all computers under Information and Communication Technology Services (ICTS) has been optimised to a degree. Continual improvement to be pursued as technologies advance.	June 2009	
1.4	Launch programme of behaviour change to switch off lights	No progress	Commence March 2009	
1.5	Install equipment and software for gathering and analysing of resource use information to allow remote data logging.	Due to advances in technology available, this action has become linked to action 1.1 so that the meters and software are part of one solution. Refer to 1.1 above for progress on this item.	2009-2010	



UCT GREEN CAMPUS ACTION PLAN: AUDIT OF PROGRESS 2009-2010

1.6	Replace all magnetic ballasts on fluorescent lights with electronic ballasts	Retrofitting of electronic ballasts approximately 50%.	Ongoing	
1.7	Install lighting controls (automatic switching)	Expensive so retrofits unlikely - applicable to all new buildings	Ongoing	
1.8	Upgrade all Building Management System (BMS) equipment with new web-based technology	Due to changes in technology, this action is now linked to 1.1	2009-2010	
1.9	Install solar water heaters to small and medium residences	Cadbol, Edwin Hart and Woodbine residences and Glenara (Vice Chancellor's home) completed. Graca Machel residence solar system not yet operational due to construction defects in control system.	2009-2011	
1.10	Commence a programme of upgrading all HVAC (Heating, Ventilation and Air-con) equipment to energy-efficient technology. Negotiate with Eskom/CEF to obtain funding for infrastructure towards 2 MW savings target.	Due to high cost this action was being pursued directly by P&S with Eskom/CEF during 2009. A consortium was formed with Stellenbosch, Cape Peninsula University of Technology and University of Western Cape to seek funding for equipment upgrades, but negotiations failed by the end of 2010. Some upgrading is ongoing using maintenance budgets.	5 years	
1.11	Change cooking methods to gas wherever practical	No opportunities identified. Biogas digester installed at Leo Marquard Residence late 2010 will provide cooking gas.	2009-2010	
2.0	WATER			
2.1	Install water sub-meters (digital)	No progress - access to info about existing system an obstacle to progress	End 2011	
2.2	Establish baseline of water consumption	Minimal progress - global metering for entire Main Campus renders identification of domestic vs. irrigation use impossible.	June 2009	
2.3	Retrofit all urinals with waterless urinal valves	Stalled due to capital costing approach – annual replacement valve is equal to water cost savings. Waterless urinals were installed in Kramer in 2009 and annual maintenance occurred in 2010.	1-2 years (2009-2010)	
2.4	Commence a programme of upgrading irrigation to surface drip technology for planting beds only	This action has not been widely implemented due to lack of clarity on merits of drip irrigation vs. conventional systems and concerns about maintenance issues	2-3 years	
2.5	Adopt Sustainable Urban Drainage practices	New Middle Campus development the first to implement permeable paving	Ongoing	
2.6	Ensure adequate dry season flows to maintain natural streams on Upper Campus.	No progress - research required	Ongoing	
2.7	Investigate establishment of 2nd storage dam on Table Mountain property in adjacent tributary	No progress	2 years (2009-2010)	
3.0	INDOOR AIR QUALITY			
3.1	Upgrade ventilation systems to best practice standards for all copy centres	No progress	3-5 years	



3.2	Minimise all materials containing volatile organic compounds (VOCs) carpets, paint and adhesives, for maintenance and new buildings	No progress	Ongoing	
3.3	Purchase furniture and fittings with low or no formaldehyde emissions	Lack of suppliers in SA at present	Ongoing	
3.4	Enhance thermal comfort by retrofitting insulation to roofs; insulation material with the best environmental profile to be selected	No progress Audit required	End 2010	
3.5	Retrofit daylight glare and heat control mechanisms to east and west facades/glazing to enhance comfort and reduce load on air-con.	No progress due to lack of funding for retrofits – UCT Green Fund needed for this type of action	Ongoing	
3.6	Adopt standards of ventilation rates and air distribution effectiveness, for all new buildings, that are higher than minimum requirements of the building code SABS 10400-O	No evidence of progress	2009. Target 50% improvement	
4.0	SOLID WASTE			
4.1	Establish baseline information	Monthly average total waste 67 tonnes of waste with 14 tonnes (21%) going to landfill, 65% recycled and 14% condemned recyclables to landfill.	June 2009	
4.2	Establish and monitor a Waste Recycling system for outdoor areas	Outdoor 4-Bin system well established. Audits of sorting performance undertaken.	Mar 2009	
4.3	Set up facilities and procedures for the responsible disposal of CFLs and batteries	These materials can be included in e-waste; but certain types of batteries only. CFLs are disposed of with fluorescent tubes for which adequate measures are in place.	End 2010	
4.4	Set up an E-waste disposal system	More than 7500kg of e-Waste was diverted from landfill during 2010.	March 2009	
4.5	Reduce the use of plastic water bottles by introducing alternatives e.g. water dispensers	No progress	End 2009	
4.6	Purchase paper with recycled content, FSC certification and/or chlorine-free	UCT Procurement maintains that the price premium for this paper remains an obstacle.	June 2009	
4.7	Establish procedures and responsibilities for recycling of printer cartridges	Included in e-waste	March 2009	
4.8	Reduce and phase out polystyrene in waste	Recycling of polystyrene in Cape Town becoming possible; the appointed contractor Wasteman to find a contractor to purchase material.	2009-2012 3 -4 year plan	
5.0	CARBON EMISSIONS			
5.1	Continue the Carbon Footprint study, to include Tier	Completed – needs to be published	Jun-Sept 2009	



UCT GREEN CAMPUS ACTION PLAN: AUDIT OF PROGRESS 2009-2010

	2 emissions			
5.2	Purchase and hire vehicles that are fuel-efficient and have lower emissions	No response from Purchasing Department	2010	
5.3	Develop the use of renewable energy technologies through further pilot schemes	A Biodigester project has been implemented to receive kitchen wastes at Leo Marquard Residence and is being used for research. If the renewables target is to be reached, much more needs to be done	Ongoing Target 5% by 2015	
6.0	TRANSPORT			
6.1	Provide adequate, secure bicycle storage	Upper campus inspection undertaken Nov 2010; new infrastructure (racks) planned for installation in January 2011.	Target - 3% population by 2012	
6.2	Provide dedicated parking for scooters and motorbikes	Parking inspected and appears adequate for present users.	Nov 2009	
6.3	Develop Park and Ride schemes to limit private transport to campus	FIFA 2010 World Cup Park and Ride scheme from Upper Campus for public successful and good learning experience. Student schemes have been planned for years but no progress achieved in land negotiations with City of Cape Town.	Ongoing	
6.4	Promote and support web-based 'Ride-link' car pooling scheme	Re-launch Green Week 2010; 900 members in the scheme. Excellent level of innovation achieved.	2009-ongoing	
7.0	EMISSIONS			
7.1	Research and implement 'Green Cleaning' Programme	Some progress with revising materials used but awaiting results of trials and final product list from Supercare, the service provider.	June 2009	
7.2	Reduce the use of pesticides, seeking alternatives, and develop UCT's Integrated Pest Management Policy	No progress	Ongoing	
7.3	Avoid refrigerants and gaseous fire suppression systems with Ozone Depleting Potential (OPD) and specify refrigerants with zero OPD	Becoming standard practice for Heating Ventilation and Air-conditioning (HVAC) as affordable zero OPD refrigerants become available. Zero OPD gaseous fire suppression systems still under development.	Target: Zero OPD	
7.4	Avoid refrigerants with Global Warming Potential (GWP) – aim for GWP of <10	Aiming for GWP of <10 in South Africa at present has proven to be an unrealistic target	Target: GWP < 10	
7.5	Contain refrigerant leaks to comply with Green Star SA requirements in new buildings with Central HVAC systems	Applicable/affordable only with new central AC systems	Ongoing	
7.6	Minimise watercourse pollution from stormwater run-off through a range of strategies - infiltration,	New Middle Campus development the first to implement permeable paving	Aim for first outcomes by	



	attenuation		Nov 2009	
7.7	Reduce light pollution through lighting design to meet Green Star SA requirements	Lighting design responds to a number of considerations (security, aesthetics, energy) and does address light pollution	2009-2011	
7.8	Specify insulation materials with zero ODP, and no loose fibres – AC ducting; ceiling insulation	No progress This would be included in future Green Star SA certified new buildings.	Ongoing	
8.0	CONSTRUCTION			
8.1	Adopt the Green Star SA rating system	Adopted at the planning stage for the New Engineering Building (NEB) in June 2010. Subsequently set aside due to perceived cost constraints.	March 2009	
8.2	Issue a Sustainable Design brief to all consultants including Engineers, with an instruction to design to comply with the Green Star SA rating system	Sustainable Design brief implemented for New Engineering Building in June 2010	Immediate	
8.3	Implement and monitor construction Environmental Management Plans (EMPs)	Implemented for Middle Campus development; reports poor performance for site management and high penalties awarded. Appears to be a lack of oversight by Project Implementation Committee (PIC).	Immediate	
8.4	Adopt Sustainable Urban Drainage practices using Green Star SA requirements to define standards	New Middle Campus development the first to implement permeable paving east of New Economics Building	Ongoing	
8.5	Encourage and support Green Star SA training and accreditation within P&S	Two staff attended training and one became accredited in 2010	Ongoing	
8.6	Minimise the footprint of parking to conserve land	No growth in parking space in this period.	Ongoing	
8.7	Provide the minimum number of car parking spaces to encourage use of alternative modes of transport	There has been no development of additional parking. Incentives for using car pooling are a positive contribution.	Green Star SA targets	
8.8	Adopt a PVC minimisation strategy	PEX piping is becoming a standard, preferred specification. Vinyl is still used as flooring in certain locations – alternatives to be explored.	2009-2010	
9.0	LANDSCAPING AND BIODIVERSITY			
9.1	Enhance the quality of the estate vegetation to reflect the unique character of the Cape flora and fauna, while respecting planting with heritage value	No evidence of progress towards showcasing Cape flora	Ongoing/ annual review	
9.2	Enhance biodiversity and ecological value by planting indigenous vegetation	Indigenous (South African but not Cape) tree planting on Middle Campus development plus some limited Renosterveld planting	Ongoing/ annual review	
9.3	Conserve and enhance the Japonica Walk, Bremner Forest, and Glenara greenbelt as per the principles contained in the UCT Development Framework Plan	Ongoing	Ongoing	
9.4	Develop composting techniques and practices	All cutting material is composted on site for use as mulch, but compost site needs to be better managed and productivity increased to conserve space.	Ongoing	



UCT GREEN CAMPUS ACTION PLAN: AUDIT OF PROGRESS 2009-2010

9.5	Reduce the use of chemical fertilisers with the aim of improving soil condition	All organic feeding being used.	2009-2010	
9.6	Plant lawns using water-wise and indigenous, non-invasive grass species, where possible (excludes sports fields)	No progress	Ongoing	
9.7	Conserve topsoil on construction sites; maintain productivity; adopt best practice (Green Star SA)	This was done to some extent for recent Middle Campus development.	Immediate - 2009	
9.8	Upper Campus Forest Management Plan	Decision taken at Environmental Management Working Group (EMWG) in November 2010 for drafting a ToR for development of forest regeneration strategies and alternatives. ToR was issued for pricing in December 2010.	2009-2010	
9.9	Alien vegetation management practices	Some removal of aliens around Upper Campus dam, tennis court area, but much still to be done.	Ongoing	
9.10	Propagate indigenous and endemic plants in a nursery, with an emphasis on rare species and cognisance given to planning for Climate Change	Various programs currently in place and on-going including propagation partnerships being developed with other growers in the horticultural industry	2009 and Ongoing	
9.11	Adjust timing of lawn mowing to allow seeding of wildflowers, where function allows.	Measures are in place in certain areas e.g. Japonica Woodland	Spring 2009	
9.12	Ensure amphibian-friendly horticulture practices to protect Cape Rain Frog, UCT's only red data (vulnerable) species	Study commissioned in August 2009; outcome influenced decision not to build retention ponds and to use permeable paving in Middle Campus development, however, management recommendations in Report not yet adopted by P&S.	2009-2010	
10.	INSTITUTIONAL			
10.1	Establish a Green Campus Unit with a funding model for green projects	A discussion group of academics was held and the matter was discussed with Financial Officer. Progress in implementation is hampered by issue of financial accountability of a new entity.	2009	
10.2	Adopt Green Star SA environmental rating system for all new buildings and major refurbishments. Aim for 4 Star Green Star – 'best practice'	Adopted for New Engineering Building in June 2010 but cost limitations mean that only R4 million (25%) of R16 million measures are planned.	Immediate	
10.3	Increase skills and capacities within P&S for sustainability programmes e.g. training, CPD, employing a dedicated Energy Officer	Limited progress in that 2 staff members at P&S have attended the Green Building Council of SA training and one has passed the accreditation exam.	2009 and ongoing	
10.4	Develop and implement a Sustainable Procurement Policy, as part of the overall Procurement Policy, by 2010	No progress on this action and a lack of responsiveness from Procurement department.	2010	



10.5	Integrate life cycle costing within UCT's financial decision making processes and adopt triple-bottom-line decision making	No progress	2010	
10.6	Prepare and disseminate biennial sustainability report that summarises progress and sets agenda for next two years	This Report completes this action	1st Report in Nov 2010	

