Report on

SUSTAINABLE DEVELOPMENT 2009 – 2010

ISCN-GULF Charter Report

UNIVERSITÉ DU LUXEMBOURG

INTRODUCING SUSTAINABLE DEVELOPMENT AT THE UNIVERSITY

Our Profile: The defining characteristics of our University are its multilingualism, its personalised approach to students and its international student and staff communities. The University of Luxembourg (UL) was founded in 2003, and was thus designed, right from the start, according to the Bologna system for higher education. One provision in the 2003 Law on the Establishment of the University of Luxembourg, which makes for particularly fertile grounds to promote sustainable development, is the promotion of interdisciplinarity as key organizing principle. The working languages of research, teaching, and the administration are French, German, and English. With a total of 4934 students enrolled in the winter semester 2009 / 2010, we are a small and personable university; we offer a tutor system. In 2009, we hosted students of 96 different nationalities, with just under half of our students being of Luxembourg nationality. Most international students come from neighbouring EU countries such as France, Germany, Holland, and Belgium. In the academic year of 2010, a total of 2069 students enrolled were EU foreign nationals and a further 476 came from a wide range of countries outside the EU.

Organization: The Board of Governors decides upon the University's general policies and strategies. It has 7 members, at least 4 of whom currently hold, or have held, a position of responsibility within a university. The University's President, the Government Commissioner, a representative from the Teaching Body, and a Students' Representative participate at meetings. Three Vice Presidents (one for each research, academic affairs, organisation and international affairs) and the Director of Administration report directly to the President of the University. A large share of the University's budget is provided for by the Luxembourg government.

History of sustainability at the UL: In 2006, a group of staff formed the Working Group on Sustainable Development. Since 2008, this group under a new chair, expanded from eight to over fifty members and coordinated the development of the UL Strategic Action Plan on Sustainable Development (2010-2013) in a participatory process. The plan's stated overarching goal is to foster learning, research, and action to address the complex environmental and social challenges we face. We would like to develop our campus into a living laboratory for technology and best practices, governed by a respect for natural resources and consideration for social equity. Our concept of learning in a community places active participation, practical experience, inquiry-based learning, and real-world problem solving at its centre. Accordingly, three overarching strategic goals are to foster research and teaching that:

- integrate with campus operation, planning, and management;
- connect diverse disciplines to explore the complexities of societal challenges; and,
- is applicable to practice to ensure social salience.

In March 2009, the university created a Cell for Sustainable Development with a head, an administrative assistant, and the possibility to engage students contractually. The Cell's role is to see to the implementation of the action plan, involving students and staff. The Working Group on Sustainable Development that now includes members from all faculties, the administration, students, and other public research centres in Luxembourg, advises on, and contributes to, the activities of the cell. The Cell is actively contributing to work of key global networks like the ISCN and GULF.

Signatory of the International Sustainable Campus Network Charter: In July 2010, Rolf Tarrach, President of the University of Luxembourg, signed the 'ISCN-GULF Charter' which highlights the clear commitment of the university to set targets and to monitor and report on progress towards achieving these. The charter was developed by the International Sustainable Campus Network (ISCN) and the Global University Leaders Forum (GULF) under the co-ordination of the Head of Sustainable Development of the University of Luxembourg.

Rolf Tarrach signing the ISCN-GULF Charter, Ariane König

Priorities for 2008, 2009 and 2010: At present the University operates on three campuses, while a future move to a new campus (Belval) is foreseen during the time period of the University's next four year plan (2014 – 2017). As we are a very young university just starting activities on sustainable development, our priorities for 2008 and 2010 might be viewed as modest, though pragmatic. In the area of operations and planning, the priority was a first mapping of energy-use, establishing what data we can generate now and needs for developing more systematic targets, monitoring, and reporting on the present three campuses as well as for Belval. A second priority was to develop research projects to make our campuses more sustainable by fostering research at faculty level that can connect with campus operations and strategic planning. A third priority was to provide opportunities on campus for multi- and interdisciplinary learning. Fourth, we decided to seek integration in an international network on sustainable development and to organize public events on salient topics in Luxembourg.

1. FACILITIES, OPERATIONS AND PLANNING

Our goals

Our goals include the management, construction, and refurbishment of buildings in a resource-efficient manner, and a campus that teaches about best practices for improved use of natural resources and reduced waste. This requires an improved linkage between organisational strategies and the campus community. This can be achieved by combining environmental considerations in infrastructure development and management with clear communication and campaigns that foster adoption of best practices at the individual and institutional level.

CO2 emissions

Overall on–campus energy use has been increasing, largely due to the rapid growth that this young University is experiencing (see Figure 1.1). However, energy-saving measures adopted in 2009 and 2010, including installation of movement-triggered lighting and improved heating regulation have resulted in leveling-total CO_2 emissions from energy used on campus (See Figure 1.2). For an overview on all measures adopted to reduce electricity-use, gas consumption and reliance on district heating in campus buildings in 2009 and 2010, please see Table A1 in the Annex. Thanks to these measures, the University has significantly reduced CO_2 emissions per staff member and has not increased spending on electricity, in spite of its growth and a 20 % price increase for electricity in 2009 (Table A1). In 2010, we have professionalised our on-campus energy-use monitoring plan. In the future, we will also take account of transport-related CO_2 emissions. Towards this goal we have started developing a transport policy and survey to address one of our greatest challenges – the high level of individual car use for daily commutes of over 30 km (see Section 2 on research). The next step will be to develop targets for on-campus and transport-related emissions.

Waste

The UL uses recycle paper. To facilitate waste sorting, collection and recycling, triple garbage bins have been placed in all offices and in public areas. All waste produced by the University is recycled or retreated, except household waste. An infrastructure for recycling of biological materials in household waste in Luxembourg is being developed, thus this situation is expected to be improved next year. Information campaigns have been carried out in offices and laboratories both on waste separation and recycling, as well as on measures to save paper and printing toner. Waste management and prevention plans also aim at limiting the purchase of new raw materials. Starting in 2010, the University has implemented a new system to monitor and produce annual reports on waste management aiming for continued waste reduction over time. Two years of data will be required for defining targets.

Towards more sustainable catering – fair trade and regional produce

The UL has been working with caterers and food and beverage suppliers to offer Fair Trade products where possible. In consequence, the consumption of Fair Trade products at the UL is on the rise, and a measurement system to take account of this is being developed. The canteens offer Fair Trade products such as coffee, bananas, tea and rice; food and drinks dispensers offer Fair Trade products; and juices and coffee served at meetings also carry Fair Trade labels. Information campaigns on Fair Trade products and tasting opportunities have been organised by canteen staff. Furthermore, local dairy products, pastas, and butchery are bought from local enterprises to minimise food miles and impacts from logistics.

The future campus on the Cité des Sciences

The government has passed a decision to develop a 'Cité des Sciences' (City of Science) on a derelict industrial site formerly used by Arcelor Mittal. The Cité shall house a new campus for the University of Luxembourg. The construction of the University buildings is managed by 'Le Fonds Belval', a public organisation, which was founded in response to a 2002 legal decree as constructor of public structures on site. Under the coordination of the UL Working Group on Sustainable Development, in 2008, a group of experts from the UL and CRP Henri Tudor prepared a position statement setting goals and providing recommendations and targets for efficient energy- and water use (Table 1). The recommendations apply to planning, construction, and operation, and result in a more formal involvement of UL experts at all stages. The Fonds Belval has adopted the UL position as official guidance in architectural competitions. The University Engineering Research Unit is supporting three projects with research on energy-efficiency with a focus on modelling temperature and comfort during the hotter summer months.

The University has also developed a position statement on eco-certification of buildings. It remains, however, unclear how this will be funded. The Fonds Belval has now started a process with selected experts to develop sustainability assessment criteria for judging the construction outcomes and future operation of buildings in the Cité des Sciences. Some of the building plans promise to be state of the art in environmental design. For example, the "Maison du Savoir" (House of Knowledge) is the flagship project with a surface of about 60,000 m² which is designed to link the future identity as a site knowledge production with its past as a steel production centre (see Figure 1.3). The building has an outer hull of steel that reflects recent insights in environmental design to optimise solar loading and provide isolation throughout the year. Construction work began on 20 March 2009.

Figure 1.1 Staff and student increase 2007 – 2010

Persons

● Students ● Staff
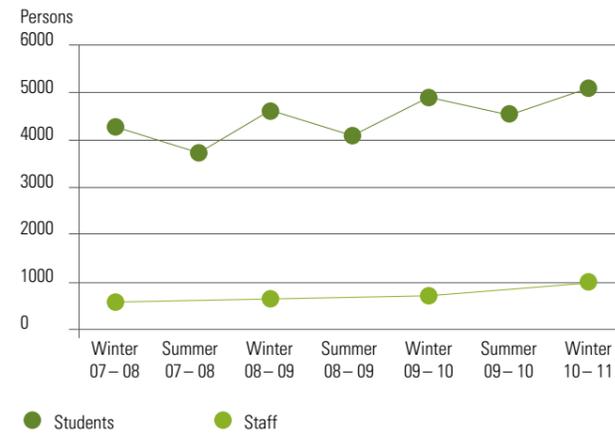
Figure 1.2 Total UL CO_2 emissions from on-campus energy-use 2007 – 2010

kt CO_2
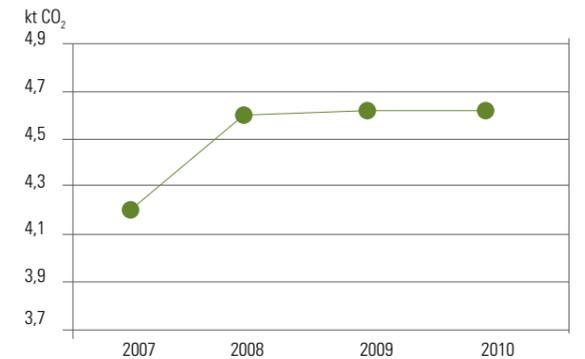
Table 1 Overview on requisites and targets for office buildings on the future campus Belval

Topic	Requisites	Criteria / Targets*
1) Comfort	• Reliance on natural methods for thermal comfort, light and air quality where possible • Acceptable temperature range (20-26°C) • Isolation: Transmission-coefficient of the mean temperature of the fassade • Office lighting	• Minimal deployment of building technologies • 20-26 C° ** • U = 0.2-0.23 W/m²·K • Max. 500 lux
2) Energy	• Target efficiency for final district energy consumption in office buildings: • Target efficiency for electric power consumption in office buildings: • CO_2 emissions associated with ICT operations:	• 14 kWh/m³·a* • 6 kWh/m³·a* • 0 g/year
3) Renewable energy	• Foresee installation of PV systems on all roof spaces that are not green.	PV electricity production > needs for ICT operations
4) Construction materials	• Evaluation of building materials with the life cycle assessment-balance method	
5) Water	• Water saving fixtures and appliances • Substitution of drinking water with rain water for operation of a centralised cooling system • Green roofs • No groundwater evacuation pumping	

* For calculations reference norms based on Directive 2002/91/CE are acceptable. Reference dimension: Brutto volume of the building.
**Future users will accept if temperatures exceed this range during a maximum of 15 hours per year during office hours.

Figure 1.3 The future "Maison du Savoir" in the "Cité des Sciences"

© Fonds Belval

2. EDUCATION AND RESEARCH

Our goals

Our main goal is to build capacity within and beyond the campus community to propose solutions for complex and interlinked environmental and social issues and to assume to individual and collective responsibilities to address these. This requires problem-centred research and teaching, which transcends disciplines, connects with practical know-how, and relies on new participatory methods to find local solutions reconciling trade-offs and conflicts of interest.

Education – offering access to courses from multiple disciplines to all students

To create opportunities for learning of diverse disciplines, we are opening access to courses of general interest from a wide range of disciplines to students from all faculties. Starting in September 2010, the Cell has worked with study directors to compile a catalogue of 33 such Open Courses for the winter semester 2010/2011. We are progressively extending the range of degree programmes in which students have the option to enrol in and gain ECTS points for Open Courses that count towards their degree.

Education – offering interdisciplinary courses to all students

The Head of Sustainable Development coordinated the development of a first interdisciplinary Cross-Faculty Course, an Open Course that is not associated with any specific degree programme. The course entitled '*Science and citizens meet challenges of sustainability*' explores the responsibilities that citizens and science can assume in a knowledge society. The course is open to students from all degree programmes, representatives of businesses, NGOs, and government engaged in life-long learning, and will start in the summer semester of the academic year 2010/2011. It yields 4 ECTS or a certificate (See Figures 2.1 and 2.2).

Research – developing a UL sustainable transport policy

Currently, the transport sector is responsible for 34 % of the Luxembourg Carbon footprint. Sustainable transport is one of the most serious challenges in the planning of the new campus in the Cité des Sciences. It will require an integrated approach to planning that considers implications across a range of policy sectors, and that relies on participation of diverse stakeholders and future users. The main challenge we face is the high level of individual car use for daily commutes of over 30 km, each user emitting over 2t CO_2 per year. The Sustainable Development Cell together with UL Geography researchers are jointly developing a UL policy on sustainable transport. policy. The draft policy proposes a wide range of concrete measures and targets leading to a reduction of automotive km per person, and fostering public transport and low impact alternatives such as walking and bicycling for the commute to the University by students and staff. The public research centres CEPS and Henri Tudor have joined the project. Priorities for implementation and targets will now be defined in a participatory process. A Travel Survey is being developed to estimate the CO_2 emissions related to transportation, to refine the policy recommendations, and to serve as a tool to monitor the progress of implementation over time. Results from a first pilot survey on our transport challenge are provided in Figures 2.3 and 2.4. Measures already adopted in view of reducing transport based CO_2 emissions include a student pass for public transport at reduced price; and rules for business related travel, declaring that for distances of less than 500 km, 1st class train tickets will be reimbursed, while air travel for under 500 km will not be funded at all. Further, car rental expenses will only be reimbursed if the distance is longer than 100km and if transport was shared with at least one more person (see also Table A2 in the Annex).

Towards Carbon-neutral ICT operations

We are developing together with students a student-led interdisciplinary research project towards attaining Carbon-neutral ICT operations, which counts towards the students' degrees. The project has three research strands:

1. To *reduce energy consumption from our ICT equipment and operations*:
Students from the Bachelor or Masters in Information and Computer Science, and a PhD student and Postdoc team from the UL Green ICT project have started to work together to plan and implement measures to increase energy efficiency. (See Annex 1 Table A2).

2. *To develop a monitoring system for ICT-related energy consumption*:
Students from the Masters in Sustainable Development – Energy and from the Bachelor in Engineering will develop and implement a system to continually measure, record, analyse and display energy consumption from our ICT operations.

3. *To design and implement a business model for renewable energy from PV*:
Students from the Masters in Entrepreneurship and Innovation will develop a business model to rent out roof space on Kirchberg to a University-member or citizen's group that invests in photovoltaïc cells and sells the renewable energy output back to the University for its ICT operations (indirectly through involvement of the grid-energy provider if need be). A transportable PV system would be purchased that could be transferred to Belval at the time of the move. We have set out to empower our students in a student-led interdisciplinary research project that counts towards the respective degrees, to work towards this goal in an interdisciplinary student team.

New Course: Science and citizens meet challenges of sustainable development

Figure 2.1 Course icon

Figure 2.2 Team of lecturers for the course

Figure 2.3 Mode of transport used on the greatest distance on the commute to University determined in a pilot survey
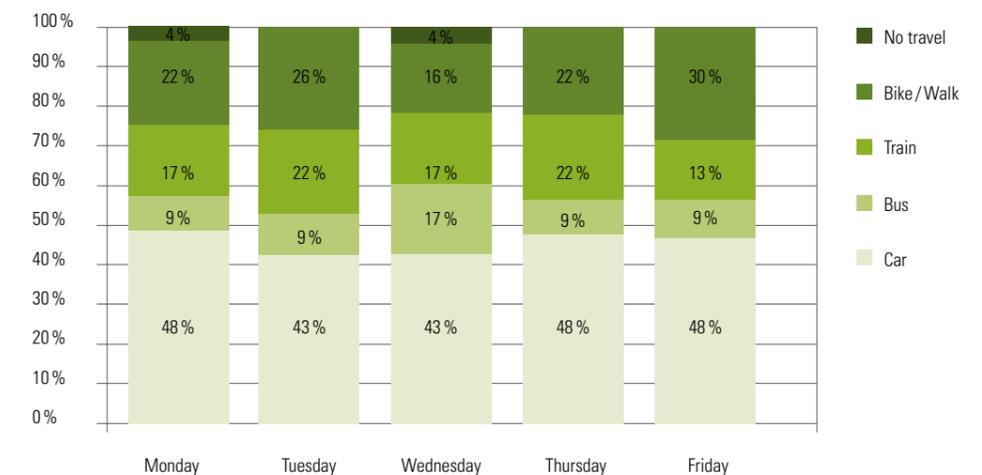
Figure 2.4 Average commuting duration of staff determined in a pilot survey

- Less than 16 minutes
- Between 16 and 35 minutes
- Between 36 and 55 minutes
- More than 55 minutes
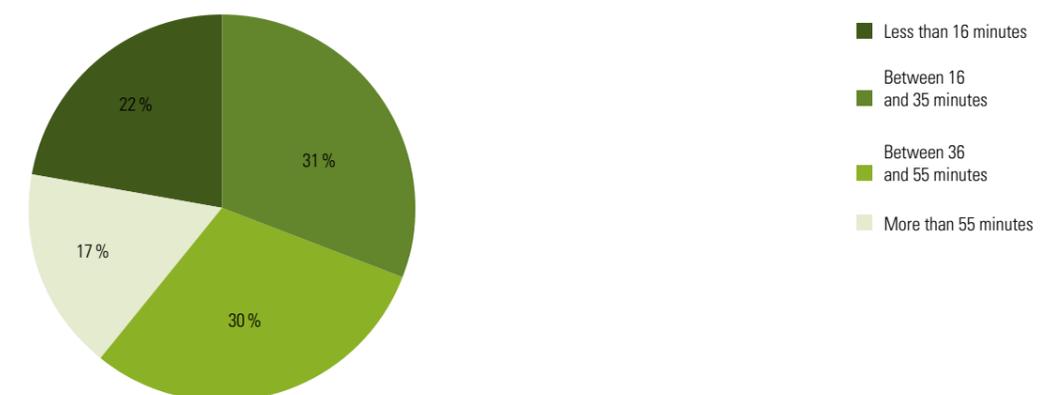
3. SOCIAL COHESION AND OUTREACH

Our goals

Our goals in this area include to develop participatory projects and workshops on local environmental and social issues with engagement from local government, industry, and organised civil society, and to provide input for local, national and regional policy-making. Furthermore, external parties asked us to contribute to further improving the international image of Luxembourg on matters of sustainable development.

International Outreach – Joining the ISCN, developing and signing the ISCN Charter

The UL Cell for Sustainable Development coordinated the development of the ISCN Charter (in parallel with the development of the UL strategic action plan). 21 Universities of the Global University Leadership Forum, including Harvard, MIT, ETH Zürich, Oxford and Cambridge, INSEAD, and Tsinghua University signed the ISCN-GULF Charter in January 2010, and committed to the Charter's principles and reporting mechanism. The President of the UL signed this Charter in July 2010. The Head of the Sustainable Development at the University of Luxembourg continues to act as Co-Chair an ISCN Working Group concerned with integration of research, teaching and campus improvment.

International Outreach – Expanding ISCN's reach further into Asia at the 2010 World Expo

On 27 and 28 July 2010, the University of Luxembourg organised an international symposium on sustainable campus development in the Luxembourg pavilion at the Expo in Shanghai, China. The Symposium 'Better Campus, Better City: learning for a sustainable future' asks questions central to the Expos theme 'Better City, Better Life'. What can Universities do to get us there? The symposium was co-organised by Tongji University and the International Sustainable Campus Network (ISCN). The Luxembourg Fonds National de la Recherche also provided substantial support. The General Planner of the Expo 2010 and Dean at Tongji University, Prof. Zhiqiang Siegfried Wu, opened the symposium with a keynote speech, highlighting the challenges of sustainable development in China, a country now nearly 1.5 Billion strong, with a racing growth of the GDP per capita and urbanization, and proportionally rising energy consumption. Prof. Wu emphasized that thanks to the close co-operation of universities and regional governments, China is planning eight cities with model character, the energy for which shall within a short time frame be provided entirely from renewable sources.
A book on this Symposium is in the making.

Promoting interdisciplinary thinking and action in Luxembourg

On 29 October 2010, the University of Luxembourg hosted a joint workshop with the European Research Council (ERC), Europe's leading research council on the 'Evaluation of Interdisciplinary Research'. Society's complex problems, including equity and environmental issues, are often better understood from the perspective of several disciplines, rather than just relying on models steeped in assumptions of just one disciplinary perspective, such as economics. Challenges to 'interdisciplinary' research are manifold. Questions to be explored include 'How has knowledge production changed over the last decades and what are the impacts on the organisation of research?' and 'What is the meaning of 'success' in interdisciplinary research, what might, and what might not be achievable?' The workshop was co-hosted and funded by the Fonds National de la Recherche and co-organised by the University's Cell for Sustainable Development. The President of the ERC Board Prof. Helga Nowotny highlighted the need to develop students capacities for interdisciplinary thinking and action; towards this goal she called for a reform in the undergraduate curriculum to provide learning opportunities to work with and integrate across languages and associated systems of thought of several disciplines

Promoting integration of Social Business in economic activities in Luxembourg

The Head of Sustainable Development of the University was invited to join the Luxembourg delegation of the Grand Duchess to attend the Global Social Business Summit in Wolfsburg on 4 and 5 November 2010. According to Prof. Muhammad Yunus, a Social Businesses, just like traditional businesses are designed to be economically and financially self-sustaining. However, similar to charities, a Social Business is solely created and fully dedicated to addressing a specific social issue and improving the quality of life in marginalised communities. Any profit is invested either to expand the Social Business' reach, or to serve the community affected by the issue in some other way. At the summit, an action plan was developed with support from several public and private actors that proposes a series of actions in 2011 to promote Social Business in Luxembourg. The planned activities include a workshop to build a support network, a competition for developing Social Business projects, the establishment of a Fund to provide seed money for starting award winning projects, and accompanying research to monitor reasons for success or failure of these projects.

Figure 3.2 Symposium Recommendations for Connecting Sustainable Campus and City Development

1. **Design for exchange:** Exchange between campus and city requires well-connected infrastructures and social networks. A prerequisite for exchange in practice are socially robust design processes to structure the interface between campus and city, which engage representatives of the University, city communities, planners and engineers.

2. **Governance for exchange:** Japanese research suggests that local and regional policies for environmental conservation, renovation, and economic revitalisation work well if they rely on formalised Town-University Partnerships that are based on legal agreements and involve annual reporting. The best performing projects combine environmental conservation, social integration and spatial planning considerations. Successful examples include projects promoting low carbon mobility, gardening in the city, and the establishment of green businesses helping social inclusion of socially disadvantaged.

3. **Develop infrastructures that teach:** The best building technology fails without user engagement. Eye-catching demonstration projects of environmental technologies and visible monitoring efforts can be combined with other awareness raising design measures to foster behavioural change at the individual and institutional level. Examples include visible solar panels, monitoring screens, visible recycling. Development of such measures can be combined with research and teaching.

4. **Combine experiential learning with civic engagement projects:** Student projects can address local issues or emergency help in disaster areas. For example, Hong Kong University developed student projects to help restructuring in Haïti.

5. **Empower students to act as change agents on and beyond campus:** Students at the conference requested well-advertised and accessible offices and funds to help them realize campus sustainability projects. Information on campus infrastructure and operations should be accessible to students. They also recommended that university management should seek to establish student-run sustainability audits of Universities – and to make available a tool kit for students to run such audits.

OUTLOOK ON PRIORITIES
FOR 2011 AND BEYOND

1 FROM MAPPING TO TARGETS

In the year 2010 we have developed robust monitoring systems for energy consumption, water consumption and waste production. Based on three years of monitoring data we will be able to develop targets for future years.

2 BETTER CONNECTING USERS WITH THE BUILT ENVIRONMENT

Developing infrastructures that teach will help to reap all benefits from improving building technology user engagement is key. We will develop web sites and campaigns to make our efforts on monitoring and target setting more visible to the campus staff and student communities to foster behavioural change at the individual and institutional level.

3 DEVELOP FURTHER CROSS-FACULTY-COURSES

On key themes of sustainable development and connect these with initiatives to improve campus, internship opportunities and research and civic engagement projects.

4 EMPOWER STUDENTS TO ACT AS CHANGE AGENTS ON AND BEYOND CAMPUS

Information on campus infrastructure and operations should be visible and accessible to students. We will explore what it takes to establish student run sustainability audits of Universities – and to make available a tool kit. This could be one project proposed for development under ISCN.

The three tables below summarise UL sustainable development goals, initiatives and results in the years 2009 and 2010 for each of the three principles of the ISCN-GULF CHARTER, respectively.

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 and optimizing the integration of built and natural environment. 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).

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 2009	Performance 2010
Resource use				
Direct & Indirect energy use (kWh)	Energy saving targets will be set based on first monitoring	Electricity-saving measures: • installation of movement detectors for automatic lighting • replacement of old light bulbs with T5 bulbs • improvement of ventilation schedule and set points for defined comfort levels Saving gas and district heating: • improvement of the heating schedule and set points for defined comfort levels • introduction of a new building temperature regulation system that takes reference of the outdoor temperature	Total energy use[1]: 13,2 GWh Electricity use: 5,0 GWh	Total energy use[1]: 13,3 GWh Electricity use: 5,0 GWh Server electricity use: 0.6 GWh
Printing	Reducing annual prints by both students and staff members. Student-set target: Reduce paper and toner use by 20% in 2010.	• In 2010 a new printing system aiming to cap the number of free print outs per student was introduced. • A staff information campaign on reducing printing was run. • A paper-use monitoring system was put in place.		Cost of toner sank by 17% compared to 2009.

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).

Topics	Goals and Initiatives		Results	
Priority topics	Objectives and targets	Key Initiatives	Performance 2009	Performance 2010
Institution-wide carbon targets and related achievements				
Direct and indirect emissions[1]	Establishing a baseline carbon monitoring system	CO_2 emission targets will be set based on first monitoring	4,7 kt CO_2	4,7 kt CO_2
Master Planning				
	The Master Plan was developed by the Architectural office Jo Coenen & Co. Sustainable development criteria were taken into account. ~ 1 300 000 m² on 69 ha land for construction	• 30% of the surface reserved for parkland and public spaces • Urban spaces, parkland, and mixed zones with shops and restaurants are in walking distance • A train station with railway line to Luxembourg City	Construction of the "Maison du Savoir" started	Construction of the "Maison des Sciences Humaines" started
Transport				
	Develop and implement measures and adopt targets for sustainable transport. Support a research project for the development of a UL sustainable transport policy	Rules for business-related travel: • For distances of less than 500 km 1st class train tickets will be reimbursed, but not air tickets. • Car rental expenses will only be reimbursed if the distance is longer than 100 km and if transport was shared with at least one more person.	For students a pass for public transport is provided at reduced price.	Development of a travel survey and conduct of a pilot study. Start participatory process to set priorities for implementation of measures and adopt targets.
Food				
Fair Trade food products	The Government programme on Development Cooperation promotes public spending on Fair Trade products.	• The UL offers Fair Trade products systematically. • The UL develops a system to measure the consumption of Fair Trade products.	The canteens started to offer Fair Trade products including coffee, bananas, tea and rice. Local dairy products, pastas and butchery are bought from local enterprises.	• Fair Trade coffee and juice are offered during meetings • Fair Trade products are available at vending machines.
Social Inclusion				
	Increase the proportion of women in the academic force from 18.6% in 2008 to 23% by 2013.	In October 2009, the "Maison Relais Willmar" was opened in Limpertsberg offering child care for children of students and staff.	December 2009: Students in undergraduate and continuing education: 2478 women: 2456 male Academic staff: 19,6%	December 2010: Students in undergraduate and continuing education: 2478 women: 2456 male Academic staff: 20%

1   Heated surfaces: 61901 m²

1   Values for conversion factors of kWh into kg CO_2 were taken from the «Règlement grand-ducal du 31 août 2010 concernant la performance énergétique des bâtiments fonctionnels» (transposition of Directive no. 2002/91/CE)

Table A3
Principle 3:
Integration of facilities,
research, education,
and outreach
as a "living laboratory"
for sustainability

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.

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.

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 2009	Performance 2010
Social Integration				
	Develop 3 interdisciplinary courses fostering problem-solving skills for sustainable development towards a diploma in sustainable development by 2014.	Start development of first course	--	A first interdisciplinary Cross-Faculty-Course entitled 'Science and Citizens meet Challenges of Sustainable development' open to all students from the UL and civil society starts in the summer semester 2010 / 2011.
Research projects on sustainable facilities and operations				
Building operation	Improve energy efficiency of building operation	The Service Infrastructure et Logistique is working closely with the engineering group on use-adapted ventilation of class rooms and indentifying the best energy efficient lighting systems.	Implemented movement triggered lightning	
ICT operations	Develop student research projects to improve and monitor the energy efficiency of the ICT operations		--	Started developing student-led research along 3 strands: • Informatics • Engineering • Entrepreneurship
Commitments and resources for campus sustainability				
	The UL strategic action plan on sustainable development (2010 – 2013) implementing activities.	In March 2009 the UL created a cell dedicated to sustainable development. The cell's role is to see to the implementation of the action plan, involving students and staff.	May – appointed 50 % head September hired 50 % secretary 2 students working under contract.	50 % head 50 % secretary On average 3 students working under contract at any time.
	The Service Infrastructure & Logistique proactively supports implementation of proposed measures			

THIS REPORT

This is the first ISCN-GULF Charter report to be completed by the University of Luxembourg. The information included presents aggregate results for the entire University, which includes the three faculties on the three campuses operated by the University. Most of the goals and objectives are based on the strategic action plan on sustainable development for the UL (2010 – 2013). This strategy amongst other things also sets out a coherent approach to how the UL can work toward its commitment under the ISCN-GULF Charter to develop targets under each Charter principle, and monitor and report on them.

Sustainable Development at the University of Luxembourg.
The core team of 2010: Zihomara Salvador Matar Renteria, Danielle Schwirtz-Lejeune, Ariane König, Muriel Bruchhage, François Sprumont.

ACKNOWLEDGEMENTS

www.uni.lu/sustainability