The Rolex Learning Center at EPF:
A building optimized for social interaction and informal knowledge exchange.
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President’s Statement

What has more potential for sustainability than a university, the traditional and contemporary hub for knowledge, discovery, and education? Universities are the ideal laboratory where the principles of sustainable development can be experimented with and applied to everyday life by students, teachers, researchers, and staff.

Major campuses around the world have chosen to engage in this strategic topic by participating in ISCN-GULF and its Sustainable Campus Charter. This platform is essential to support member organizations in framing their actions in a manner that balances economic, environmental, and social goals in order to achieve exemplary, comparable, and robust results.

With their long tradition in the field, the two Swiss Institutes of Technology have decided to support the launch of a permanent ISCN-GULF Sustainable Campus Secretariat that is able to facilitate this process professionally, and to strengthen the development of this initiative into an established standard platform in this field.

Patrick Aebischer, President of EPFL
Introduction

The Ecole Polytechnique Fédérale de Lausanne (EPFL) is one of two Federal Polytechnical Schools in Switzerland. Like its sister institution ETHZ, EPFL has three missions: education, research, and technology transfer at the highest international level. Associated with several specialized research institutes, the two EPFs form the EPF domain, which is directly dependent on the Federal Department of Home Affairs. EPFL, in its idyllic location on the shores of Lake Geneva, brings together a campus of over 5,580 students, and 4,145 full-time faculty and staff. Collaboration is stimulated between students, professors, researchers, and entrepreneurs. These daily interactions give rise to new and groundbreaking work in science, technology, and architecture.

Education

EPFL is a world-class educational and research institution, whose field activities cover the whole of science and technology, including:

- Basic science (mathematics, physics, chemistry)
- Engineering (electronics, microtechnology, materials, mechanical)
- Life sciences (neuroscience, bios engineering, cancer research)
- The natural and built environment (architecture, civil engineering, environment)
- Information technology and communication systems
- Technology management and financial engineering.

EPFL offers 13 complete study programs at the Bachelor’s and Master’s levels. These study programs are designed to be flexible and modular. They meet the requirements of the Bologna accords and as a result, students can take advantage of a wide array of exchange opportunities, and the degrees they earn are internationally recognized.

Within EPFL’s Doctoral School, PhD students share ideas, provide mutual support and intellectual stimulation, and round out their education with high-level specialized courses. PhD students benefit from EPFL’s scientific expertise and excellent infrastructure.

Students in EPFL’s School of Continuing Education have the opportunity to strengthen and update their skills and knowledge, giving them a competitive edge in a rapidly evolving professional environment. The School offers a range of courses and modular programs from seminars to postgraduate Master’s degrees.

Research & Technology Transfer

With more than 250 laboratories and research groups on campus, EPFL is one of Europe’s most innovative and productive technology institutes. The School’s unique structure facilitates transdisciplinary research and encourages partnerships with other institutions. EPFL emphasizes both fundamental research and engineering applications.

The campus also offers services and facilities to transform scientific excellence into economic competitiveness, jobs, and quality of life. A start-up incubator, coaching services, study programs in entrepreneurship, and innovation programs all serve to stimulate the links between lab and business. EPFL’s Science Park is home to more than 100 enterprises and numerous investors. The
campus is rich in new technology, research infrastructure, academic partnerships, and other forms of collaboration, making it an attractive environment for start-ups and technology enterprises.

Campus Community and Culture

The environment at EPFL is one of exchange and interaction. With 107 nationalities represented on campus and more than 50% of our professors coming from abroad, the School is one of the world's most cosmopolitan universities. At EPFL, women benefit from a policy of active promotion and support at all levels. The proportion of female students has increased by 30% over the past five years.

The EPFL campus is contiguous with that of the University of Lausanne, an institution that excels in economics, the social sciences, and humanities, as well as in earth sciences, biology, and medicine. Taken together, the two campuses have approximately 20,000 students, nearly 10% of the population of the larger Lausanne metropolitan area. Lausanne offers students a wide palette of cultural and sports activities and is also known internationally as the seat of the International Olympic Committee.

Governance and Institutional Context

EPFL is directed under the jurisdiction of the Swiss Confederacy by the ETH Board (CEPF), which itself depends on the Federal Department of Home Affairs, more specifically the Secretary of State for Education and Research.

The ETH Board is the body of strategic direction and oversight for the ETH Domain (EPF Law, art. 33a). It consists of a chairman and eight members from the scientific and scientific community. The Board is responsible for the execution and implementation of the mandate benefits conferred by the Federal Council and Parliament, the definition of the four-year strategy of the ETH Domain, and the distribution of federal funds. EPFL is led by a president and four vice-presidents: Academic Affairs, Planning and Logistics, Enrichment and Innovation, and Institutional Affairs.

EPFL has two types of financing (2009): 1.) Budget directly allocated by the Swiss Confederation through CEPF (CHF 547 Mio); and 2.) Third-party funds (CHF 193 Mio), from external research funding such as Swiss national foundation or European projects.

About This Report

EPFL is a member of the Global University Leadership Forum (GULF), and a signatory of the International Sustainable Campus Network (ISCN) charter. This is EPFL’s first ISCN-GULF Charter Report, covering the calendar year period from 2009 to 2010 (using all data which was available at the time of report publication for 2010 indicators), and including all operations within its Ecublens campus. This report is a stand-alone document, with content drawn from other documentation developed by EPFL related to sustainability.

For questions or comments on this report, please contact:

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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**

EPFL was certified in 2006 under RUMBA, a system developed by the Swiss federal government as a framework for resource and environmental management. Its main objective is to continuously reduce the pollution load of products and government activities, while motivating employee sustainable behavior, reducing operating costs, and increasing efficiency.

*Decision-making on aspects of infrastructure*

The EPFL campus occupies a total area of 409,217 square meters, encompassing 66 buildings. As a member of the Swiss Federal government, the buildings used by EPFL are the property of the Swiss Confederation, however the government delegates decision-making and budget for construction, renovation, and operations to EPFL. Larger projects and those involving real estate investments must be approved by the Swiss Federal Council.

EPFL’s buildings are managed by the Real Estate and Infrastructure department, and the RUMBA program and all sustainability-related policies and procedures are managed by the sustainability coordinator, whose responsibilities include leading the development of program mission and objectives, supervising working group activities, and responding to the steering committee. The RUMBA program is governed by the RUMBA Committee, consisting of a cross-disciplinary group including senior administrators, operations staff, faculty, and students, whose responsibilities include developing indicators and updating the analysis of the school’s environmental impacts, and establishing and executing action plans with various departments.

**Main Initiatives and Results**

In constant evolution since its founding in 1853, the campus of the Federal Polytechnical School in Lausanne-Morges was initially located in various downtown buildings in Lausanne. Subsequently, with the acquisition of the Federal Polytechnic School, and growing with the rise of University of Lausanne
and EPFL, a decision was made to combine these two entities on the same location west of the city in Ecublens.

EPFL’s campus was built in three phases based on a blueprint for defining the arrangement of buildings, and considering function and space planning. The basic principles driving construction was a master plan which emphasizes modularity according to current and changing future needs. A description of the master plan is included under Principle 2; however elements of this plan related to sustainable buildings are presented below.

Building Energy Use and Energy Conservation

At the first phase of campus development, systems were put in place to provide heating via heat pumps, and cooling via lake water. Buildings were designed to reduce the amount of air-conditioned space from 40% to 15%. All measures taken for the first phase yielded an overall saving of about 20% to 30%.

For the second and third phases, improvements were made in building materials, specifically insulation, thus, improving energy performance.

Since the introduction of the “Minergie” standard for low consumption architecture in Switzerland (30% lower than the SIA norm), new-construction EPFL buildings will be certified, starting with the the Rolex Learning Center, which received certification at the end of 2010.

Lake Cooling

A pumping station was designed to provide cold water for cooling of all the buildings of the University of Lausanne and EPFL. In early 1985, upon completion of the central heat pump, water intake was strengthened to provide additional water required to feed the heat pumps. The use of the power plant heating has drastically decreased the consumption of fuel oil, by 60,000 l. per week to 75,000 l. per year. This corresponds to a savings of nearly 200,000 tons of CO2 over the same period.

A broader energy management strategy has been developed to further optimize campus energy performance. It consists of:

- Further optimizing insulation of building envelope
- A systematic recovery of waste heat of any kind
- Restrictive use of space cooling
- Orientation of buildings to use “passive” solar radiation
- Education and adoption of indoor climatic conditions which may be perceived as less comfortable than those prescribed in the usual standards.

Sustainable Roofs

Several buildings are clad in green roofs, others in gravel. The recent Life Sciences building, which opened in 2009, presents a particularly innovative green roof. Much of the EPFL’s roofs which are currently covered with gravel will be gradually covered by PV panels with the goal of developing the largest solar park in Switzerland by 2012 (20,000 m2).
**Waste**

EPFL has the infrastructure in place to collect waste both centrally and in facilities that are organized according to their needs. In each building, containers are available for the recovery of certain wastes. The campus has 19 different recycling streams including paper, plastic, metals, wood, construction debris, and toner cartridges. Metrics on waste and recycling are tracked annually via RUMBA.

**Maintenance and rehabilitation of existing buildings**

For EPFL’s aging housing stock, an emphasis on rehabilitation and building performance has resulted in a systematic approach whereby project managers assess information on building performance and plan maintenance work and rehabilitation projects based on data gathered in the EPFL facilities maintenance software. This software tracks information such as: building status, occupancy, cost of repairs in the short, medium, and long term, and deadline for repairs. The outcomes of this systematic approach have included improved energy efficiency, improved indoor air quality, improved occupant comfort, and reduced maintenance calls and costs.

**Data Center**

The Computing Center of the EPFL is currently located in the first phase development. Apart from a heat recovery system capturing waste heat from the servers, there are further opportunities to improve the environmental performance of these facilities. EPFL is evaluating building a new computer center and server facility in 2015, which will integrate all potential energy recovery available.

**Accessibility**

The entire first development of EPFL’s campus has been certified and recognized by relevant professional associations for its management of accessibility for the disabled. For example, the Rolex Learning Center previously had ramps which were unfavorable for the disabled, and these have been fully modified, including innovations such as horizontal elevators.

**Sustainable Construction, Renovation, and Operation**

Highlights of the sustainable design principles employed throughout EPFL’s master planning process are provided below:

- Semi-heavy (concrete parapet) facades ventilated for proper conservation and heat circulation
- Use of triple glazing
- Anodized aluminum-covered facades, which are durable and recyclable, and can be washed by rainwater runoff
- Lake water cooling
- Heating through the central heat pump
- Orienting buildings to take advantage of passive solar
- Robust concrete covered with ceramic
- Programming building usage so that laboratories and workshops are north-facing while the offices are south-facing, to optimize passive heating and cooling.
## Overview of EPFL’s Principle 1 Goals

### Topics

<table>
<thead>
<tr>
<th>Priority topics (with units of measurement)</th>
<th>Objectives and targets (for reporting year, for the following year, and/or beyond)</th>
<th>Key Initiatives (in reporting year, and/or planned for the following and beyond)</th>
<th>Performance 2009</th>
<th>Performance 2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resource use</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electricity consumption (mega joules [MJ] normalized by space and headcount)</td>
<td>Goals will be evaluated during energy master planning, underway now for 2012-2022 period</td>
<td>24,774 MJ/m2, 25,652 MJ/person</td>
<td>28,526 MJ/m2, 30,689 MJ/person</td>
<td></td>
</tr>
<tr>
<td>Renewable energy produced (Megawatt hours [MWh])</td>
<td>Largest solar park in Switzerland by 2012</td>
<td>Installing PV on all EPFL flat roofs</td>
<td>Signed partnership with Romande Energie, 80% of roofs covered, 3% of total MWh, 20 MWh/yr generated</td>
<td>4,500 m2 of roofs covered, 600 MWh/yr generated</td>
</tr>
<tr>
<td>Heat demand (MJ normalized by space and headcount)</td>
<td>Goals will be evaluated during energy master planning</td>
<td>142 MJ/m2/yr, 7296 MJ/person</td>
<td>111 MJ/m2/yr, 5729 MJ/person</td>
<td></td>
</tr>
<tr>
<td>Heat energy consumption (MJ normalized to space)</td>
<td>Goals will be evaluated during energy master planning</td>
<td>326 MJ/m2</td>
<td>315 MJ/m2</td>
<td></td>
</tr>
<tr>
<td>Natural gas consumption (kWh)</td>
<td>Goals will be evaluated during energy master planning</td>
<td>8,185,552 kWh natural gas</td>
<td>Data not yet available</td>
<td></td>
</tr>
<tr>
<td>Heating and cooling produced from renewable sources (% of total heat kWh)</td>
<td>Goals will be evaluated during energy master planning</td>
<td>Heat pumps and lake cooling</td>
<td>56% Savings of 200,000 tonnes of CO2/year in comparison with a traditional power plant</td>
<td>56%</td>
</tr>
<tr>
<td>Electricity produced by renewable sources (% of total electricity kWh)</td>
<td>Combined heat &amp; power-electricity generated from natural gas turbines</td>
<td>0.03%</td>
<td>Signed partner</td>
<td>0.03%</td>
</tr>
<tr>
<td>Recycled-content paper purchasing (# of sheets and % of total sheets purchased, paper use per person)</td>
<td>Goals to be evaluated during energy master planning for 2012-2016</td>
<td>27% of all paper purchased included recycled content, 3977 total paper use per person</td>
<td>23% of all paper purchased included recycled, 3384 total paper use per person</td>
<td></td>
</tr>
</tbody>
</table>
## Resource use (continued)

<table>
<thead>
<tr>
<th>Water consumption (Liters per person)</th>
<th>Goals to be evaluated in master planning for 2012-2016</th>
<th>Waterless urinals were installed in the men’s rooms.</th>
<th>15,996 L/person</th>
<th>17,886 L/person</th>
</tr>
</thead>
</table>

## Waste, recycling, local emissions, and non-compliance

<table>
<thead>
<tr>
<th>Waste (kg/person)</th>
<th>Goals to be evaluated in master planning for 2012-2016</th>
<th>48.6 kg/person trash</th>
<th>Data not available</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recycling (kg/person)</td>
<td>Goals to be evaluated in master planning for 2012-2016</td>
<td>Improved signage and labeling of bins</td>
<td>100 kg/person recycled (combined streams), Recycling rate: 61.9%, Total tons recycled: 1,037 tons</td>
</tr>
</tbody>
</table>

## Research/IT facilities and sustainability

<table>
<thead>
<tr>
<th>Data center energy use</th>
<th>New data center to be built in 2015, to optimize energy recovery</th>
<th>Evaluating objectives for High Performance Computing (HPC)</th>
<th>Total energy 880 KW</th>
<th>Data not available</th>
</tr>
</thead>
</table>

## Users

<table>
<thead>
<tr>
<th>Handicap Accessibility</th>
<th>All facilities will be certified by SIA for meeting the needs of the disabled</th>
<th>EPFL must meet SIA, as it is a government regulated program</th>
<th>As of 2009, all buildings have met the SIA certification (phase 1 of campus)</th>
<th>By law, all new construction must meet SIA requirements</th>
</tr>
</thead>
</table>

## Building design aspects

<table>
<thead>
<tr>
<th>Sustainability principles for design</th>
<th>Optimize designs for energy efficiency, passive energy, use of renewables, and flexibility/adaptability of usage</th>
<th>Buildings oriented for passive solar heating, improved insulation, modified HVAC settings for reduced energy use</th>
<th>No performance data</th>
<th>Rolex Center achieved Minergie certification on Oct. 18, 2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Building performance management</td>
<td>Goals to be evaluated in master planning for 2012-2016</td>
<td>Employed facilities management software to track maintenance issues and costs and plan strategically for renovations &amp; improvements</td>
<td>General operating costs (administrative, maintenance, repairs): 110 CHF per m2</td>
<td>Data not available</td>
</tr>
</tbody>
</table>

For more information on EPFL’s RUMBA Indicators, see: [http://rumba.epfl.ch/site/rumba/page-39828-fr.html](http://rumba.epfl.ch/site/rumba/page-39828-fr.html).
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

See description under Principle 1 for RUMBA program management. In addition, these groups also participate in planning, goal setting, and implementation: Planning and Logistics Department, representatives from local city planning group, and the transportation board. For campus transportation, a survey is conducted biannually by the Laboratory of Intermodality Transport and Planning (LITEP). The survey aims to explore and identify different commuting behaviors of staff, students, and campus visitors.

With RUMBA program indicators, EPFL can measure its annual performance against specific goals. EPFL has committed to a 10% reduction in greenhouse gas emissions by 2016, aligning with the Federal government’s Kyoto Protocol target.

Main Initiatives and Results

Comprehensive Master Planning

The new campus was planned in the late 1960s, during an era of student political activism. The authorities decided to create a non-residential campus, in order to avoid the emergence of a student residence which could be too autonomous. Thirty years later, facing the rapid development of the School and the Lausanne-Morges region, EPFL management decided in 2002 to launch the “Campus
2010” program to revitalize the campus and make it a 24-hour operation. The project includes the creation of student housing (800 units), a hotel for visiting academics, a large library (Rolex Learning Center), and a community center with shops and a neighborhood with nearby innovative businesses. In parallel, an urbanization project named “Campus Objective” was launched to promote accessibility to the campus and support non-motorized transportation.

The relationship with the city has changed dramatically since the relocation of the campus from the City of Lausanne to Ecublens. The campus has gradually led to the revitalization of Lausanne-Morges.

Transportation

Mobility and Access to Public Transportation
EPFL has good access to public transportation, including numerous buses, trains, and subways that connect to the adjacent municipalities and regional centers. The campus has added more bicycle lanes, leading to a notable increase in ridership.

Promotion of Alternative Transportation
EPFL has numerous incentive programs to encourage the use of alternative transportation. These include:

- Free or discounted public transportation fares
- Subsidies for carpooling
- Car sharing at a preferable rate for staff and students, using campus fleet vehicles outside of working hours
- Bicycle borrowing, with self-service bicycles available for free for three hours on campus
- Bicycle shop and repair service

In addition, EPFL has participated in the national “bike to work” contest, organized by the PRO VELO Association since 2006. In 2009, EPFL exceeded its goal of attracting 1,000 participants, and ranked it in second place among Swiss establishments over 5,000 people. EPFL won an award in 2009 by PRO VELO for its bicycle-friendly program.

Social Inclusion and Protection

In addition to embracing handicap access to campus buildings, EPFL has many programs and facilities aimed at improving campus life. These include:

- A policy (mandated by federal law) and office devoted to equal opportunity for women. Their objectives are to establish measures and actions for equal opportunities at all levels at the EPFL, and to take specific actions to attract and retain women in scientific fields.
- Professional mediation and conflict resolution services (HELP network)

EPFL embraced this concept of livability in its master planning process by designating spaces on campus for services beyond academic support, and for leisure:

- An area for interfaith services (The Geode)
- Two child care centers and a private school on campus
- Assembly areas for social gatherings, including a bar and concert hall
- The main square of the esplanade includes a bank, travel agency, hospitality information, the library, and the headquarters of the general association of students, and is the location for a weekly market and the “Vivapoly” annual celebration of the school.
• On February 22, 2010, The Rolex Learning Center was opened, which includes the library, a bank, the Polytechnic library, the career center, the alumni association EPFL, local associations, CRAFT (Unit support to teachers and Research Laboratory on technology training), a self-service restaurant, a gourmet restaurant, and a cafeteria.

A vibrant community for students, EPFL has about sixty student associations, which provide a wide degree of entertainment and activities. Also note, the sports center of the UNIL and the EPFL offers a range of about 200 sports for free or a very low cost. More than half of EPFL-UNIL students use this facility.

Regional Community Planning

The school is a partner in several larger community development projects including:
• The Lausanne Morges PALM area includes 27 municipalities. This project is ambitious and with the goal of accommodating approximately 40,000 residents and 30,000 jobs by 2020. It intends to overcome financial constraints by coordinating urbanization, transportation, and the environment, and it will include a network of green spaces.
• Master Plan for West Lausanne (SDOL), a commitment of nine districts to create a common vision of urban development in the long term.
• Development of research projects evaluating transportation and public space needs throughout the region, given the expected population growth of 30,000–40,000 through 2020.

Land Use and Biodiversity

We have twice received the quality seal from the Foundation Nature Swiss Economy, in 2005 and 2008, for promoting biodiversity on site. This certification requires that outdoor areas meet criteria such as:
• Maintain natural configuration of landscaping, planted with native or adapted species, and excluding exotic and invasive species
• No use of biocides (fungicides and insecticides), herbicides, and fertilizers on natural surfaces
• Allow for rainwater infiltration whenever possible, employ permeable paving surfaces.
• Create habitats supportive of native wildlife
## Overview of EPFL’s Principle 2 Goals

<table>
<thead>
<tr>
<th>Topics</th>
<th>Goals and Initiatives</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Priority topics</strong> (with units of measurement)</td>
<td><strong>Objectives and targets</strong> (for reporting year, for the following year, and/or beyond)</td>
<td><strong>Key Initiatives</strong> (in reporting year, and /or planned for the following and beyond)</td>
</tr>
<tr>
<td><strong>Institution-wide carbon targets and related achievements</strong></td>
<td></td>
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</tr>
<tr>
<td>GHG reduction (MTCO2e)</td>
<td>Align with national Switzerland’s GHG goals for Kyoto Protocol: 10% reduction over 1990 levels by 2016</td>
<td>See goals/objectives under principle 1 for energy management</td>
</tr>
<tr>
<td><strong>Master Planning</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pedestrian-friendly campus and open space</td>
<td>Focus on creation of pedestrian walkways, green space; goals to be considered during 2012-2016 master planning</td>
<td></td>
</tr>
<tr>
<td><strong>Transportation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Commuting / alternative transportation (commute modal split, by %)</td>
<td>Develop transportation management plan, including: -Parking policy and pricing structure, -Increase incentives: Continued public transit discounts, telecommuting, carpooling subsidies; -Improve biking infrastructure</td>
<td>Commute modal split: 56% Public transport 22% Car 3% Motorcycle/moped 14% Bicycling 5% Walking</td>
</tr>
<tr>
<td>Bicycling (number of participants in annual bicycle to work contest)</td>
<td>2009 Goal: Recruit 1000 participants for Bicycle to Work Contest, 2010: Create single organization to coordinate all bicycle-related activities and programs</td>
<td>Won award from PRO VELO for bicycling promotion</td>
</tr>
<tr>
<td><strong>Transportation (continued)</strong></td>
<td><strong>Campus Fleet Management</strong> (total km travel, km/person)</td>
<td><strong>Evaluate electric transportation options</strong></td>
</tr>
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<td>-------------------------------</td>
<td>----------------------------------------------------------</td>
<td>---------------------------------------------</td>
</tr>
<tr>
<td><strong>Business travel management</strong> (number of video conference units installed)</td>
<td><strong>As part of energy master planning, set sustainability goal for reduced air miles and video conference access</strong></td>
<td><strong>Deploy video conferencing as alternative to travel</strong></td>
</tr>
<tr>
<td><strong>Food</strong></td>
<td><strong>Sustainable dining</strong></td>
<td><strong>Sustainable dining coals will be considered during 2012-2016 master planning</strong></td>
</tr>
<tr>
<td><strong>Social Inclusion and protection</strong></td>
<td><strong>Diversity</strong> (percentage of faculty/staff and student populations which are international and/or female)</td>
<td><strong>Policy and programs to support women on staff; Active recruitment of international candidates</strong></td>
</tr>
<tr>
<td><strong>Access to services</strong> (number of services available on campus)</td>
<td><strong>Goals to be considered during 2012-2016 master planning</strong></td>
<td><strong>Continued development of campus services, with the addition of Rolex Learning Center, and esplanade</strong></td>
</tr>
<tr>
<td><strong>Participative campus/neighborhood planning</strong> (number of meetings attended)</td>
<td><strong>Continue dialogue with neighboring city and institutions</strong></td>
<td><strong>Active member in numerous community and regional planning initiatives</strong></td>
</tr>
<tr>
<td><strong>Land-use and biodiversity</strong></td>
<td><strong>Biodiversity preservation</strong> (number of third party certifications)</td>
<td><strong>Maintain Quality Seal status by Foundation Nature Swiss Economy</strong></td>
</tr>
</tbody>
</table>
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.

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 regarding 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.

Management Approach to Principle 3 Topics

The sustainability manager centralizes and coordinates all requests to bring together aspects of education, research, innovation, and management of campus operations (infrastructure). The RUMBA group evaluates sustainability project applications, and ensures that sustainability is addressed through these projects within the various departments and central services. The group assesses the feasibility of proposals and monitors and evaluates the initiatives. It also oversees the gradual implementation of projects on an academic and administrative basis to ensure their sustainability.

EPFL’s sustainability programs are driven by its Charter for Sustainable Development:

Basic Objective:
Achieve the mission of teaching, research, and service. EPFL strives for continuous improvement in its performance while meeting this mission.

Commitment:
EPFL is committed to contribute concretely to the management of its resources to support sustainable development.

Vocation:
With respect for the laws in force and within the means available, EPFL wants to convey and apply advanced knowledge in the field of sustainable development.

Outreach:
EPFL ensure that its suppliers adhere as closely as possible the principles of this charter.
Desire for transparency and improvement:
The results of EPFL’s policies are published each year, and EPFL undertakes a commitment to respond to suggestions and questions, both internally and by the public.

Control of means and actions:
EPFL seeks to ensure the provision of facilities for the implementation and enforcement of this charter.

Main Initiatives and Results

Sustainable Development in Education and Research

The ENAC Program (Built and Natural Architectural Environment) covers various topics related to sustainable development and offers courses in Architecture, Engineering, Science, and Environmental Engineering. These courses are part of Bachelor’s, Master’s, Ph.D., and continuing education programs.

All EPFL Bachelor’s students are assigned non-technical or social science electives, of which several have a strong relationship with the sustainable development.

In the research arena, EPFL is participating in new projects either in Switzerland or in Europe, to foster sustainable development. These include a project on thermonuclear fusion, several interdisciplinary research centers, and three academic chairs focused on sustainable development, including:

1. The UNESCO Chair, which promotes scientific cooperation with Southern hemisphere institutions to seek solutions for vulnerable populations in developing countries. This program includes training, technology development, and deployment to address the sustainable development of cities, preservation of natural habitats, renewable energy production, and disaster management.

2. LODH Chair, which is part of an ongoing partnership between Generation Investment Management and Lombard Odier Darier Hentsch & Cie, will aim to establish a relevant connection between the understanding of environmental phenomena and human behavior in a manner that will greatly influence the scientific and academic community. This chair is involved in research and also contributes to teaching activities for students and policymakers.

3. Landolt & Cie Chair ‘Innovations for a Sustainable Future’ allows a world-renowned expert in a field related to Sustainable Development to come to EPFL as a visiting professor. During his/her stay, the professor can continue his/her research, give lectures, oversee master projects, and organize interdisciplinary activities open to the general public. The chair was created as the result of a convergence of values between EPFL and the Banque Landolt & Cie: to contribute to build a sustainable world for the future generations. Strategic planning for the Chair are defined by an Academic Council comprising of Representatives of the five faculties and two colleges of the EPFL, EPFL’s president, and the leadership of Landolt & Cie, Swiss Private Bankers.

Civic Engagement

EPFL is a member of the "Alliance," a platform for technology transfer between Western Switzerland and Ticino, which includes 6,000 researchers from universities and university hospital partners. Through
its outreach program, Alliance is forging links between laboratories and businesses, to improve the transfer of technology, dually benefiting entrepreneurs and researchers. Alliance has created a proactive network to attract and connect individuals interested in accelerating a dynamic collaboration between research and economics, promoting growth and jobs.

In addition, through its Science Park, EPFL enables the emergence of start-up high-tech companies by providing support and linkage to a pool of resources and skills, due to the proximity of the EPFL campus. By 2011, the Science Park will expand by adding an area devoted to research and development (R&D). Several high-profile companies have been recruited to the R&D center.

**Commitments and resources for campus sustainability**

In late 2007, the Sustainable Development Unit of EPFL was formally created, although during the last 40 years, the growth of the campus was led with a strong sense of environmental and social responsibility.

The continued growth of EPFL both in terms of urbanization and demographics makes it more urgent and appropriate to coordinate, implement, and quantify all aspects of the school’s development according to the principle of sustainable development. With the establishment of the Sustainable Development Unit, a whole system of indicators and digital data collection system will be set up in collaboration with ISCN-GULF, in order to publish a report meeting the Global Reporting Initiative (GRI) criteria.
## Overview of EPFL’s Principle 3 Goals

<table>
<thead>
<tr>
<th>Topics</th>
<th>Goals and Initiatives</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Priority topics</strong> (with units of measurement)</td>
<td><strong>Objectives and targets</strong> (for reporting year, for the following year, and/or beyond)</td>
<td><strong>Key Initiatives</strong> (in reporting year, and/or planned for the following and beyond)</td>
</tr>
<tr>
<td><strong>Topical Integration</strong></td>
<td></td>
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<tr>
<td>Training on Sustainable Development (Number of students graduating with sustainable development proficiency)</td>
<td>Promote the introduction of the principles of sustainable development into courses and projects of all sections. Establish a partnership with teachers interested in increasing awareness of Sustainable Development in their field.</td>
<td>Consolidated the group with EDUC-RUMBA to incorporate members from education and research.</td>
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<tr>
<td>Sustainable development research projects (number of faculty and projects dedicated to sustainability)</td>
<td>3 academic chairs with research and training objectives closely tied to sustainable development</td>
<td>5 prizes awarded for sustainable development projects</td>
</tr>
<tr>
<td>Technology Transfer (number of researchers and enterprises involved)</td>
<td>Become incubator for emerging technologies related to sustainable development</td>
<td>Innovation Square, under construction since 2009, has attracted well-established companies.</td>
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<tr>
<td><strong>Social integration</strong></td>
<td></td>
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<tr>
<td>Partnership (number of partner organizations)</td>
<td>Forge collaborations with associations whose goals align with sustainable development</td>
<td>First draft of events/engagement charter has been developed</td>
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</table>
## Social Integration (continued)

| Campus community engagement (student organization membership, number of projects and events) | Educate campus community on campus sustainability | Distributed information on activities and RUMBA at freshman orientation
Hosted “Vivapoly” day inviting community to guess costs of campus waste removal and disposal
Improved signage for campaign to encourage building-users to shut off lights when exiting a room | UNIPOLY Student association led 17 projects and hosted six conferences related to sustainability | UNIPOLY student association led 9 projects related to sustainability, including: electronic bartering forum, sustainability education forum, guided tours, honey bees, COP 15 participation
UNIPOLY membership: 139 | UNIPOLY membership: 72 |

## Commitments and resources for campus sustainability

<table>
<thead>
<tr>
<th>Campus sustainability charter</th>
<th>Develop a charter to define and give direction to campus sustainability initiatives</th>
<th>Internal charter developed</th>
<th>ISCN charter signed and recognized by university leadership</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial resources (total funding in CHF)</td>
<td>Funding sources include: CO2 tax revenues, government funds, institutional budget</td>
<td>170,000 CHF</td>
<td>170,000 CHF</td>
</tr>
<tr>
<td>Human resources (number of staff dedicated to campus sustainability)</td>
<td>A sustainability coordinator oversees sustainability programming and a RUMBA coordinator oversees environmental management. Academic chairs oversee sustainability-related research and educational initiatives</td>
<td>4 staff persons (2 environmental, and 2 sustainability-focused)</td>
<td>No change from 2009</td>
</tr>
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