

*“If we don’t push the boundaries  
of accepted wisdom, if we don’t break the  
inertia of smug comfort, who will?”*

Professor Stephen J. Toope  
UBC Climate Symposium

# 2008/09

## UBC Sustainability

ANNUAL REPORT  
ON IMPLEMENTATION  
OF SUSTAINABILITY INITIATIVES

Prepared by the  
UBC Sustainability Office  
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Photo By Javier Landaeta

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# ANNUAL REPORT ON IMPLEMENTATION OF SUSTAINABILITY INITIATIVES AT THE UNIVERSITY OF BRITISH COLUMBIA

Report to the UBC Board of Governors

## Executive Summary

The *Annual Report on the Implementation of Sustainability Initiatives (2008- 2009)* prepared for the UBC Board of Governors provides an overview of the sustainability activities at UBC, highlights achievements from the year, and outlines strategic priorities for next year. Attachment A includes a presentation of progress against some key sustainability metrics for the latest reporting period 2007/2008.

At a time when the world struggles with climate change, biodiversity decline and economic turmoil, it is even more important to pursue ways to live within our means as a global community. Already, UBC is recognized as a global leader in sustainability. The challenge is to maintain and grow this leadership position. This report acknowledges the competitive advantage and financial savings that a leadership position in sustainability offers the University. For example, in 2008 UBC realized more than \$3.5 million in energy savings. Since 1999, the energy savings have totalled \$23 million.

This report presents key sustainability achievements covering the efforts of the entire campus community. Highlights are presented in the following six focus areas:

1. Policy and Governance
2. Campus Engagement
3. Academic Integration
4. Model Campus
5. Communications and Outreach
6. External Leadership and Influence

This year in **Policy and Governance**, the President signalled the importance of sustainability at UBC by establishing the President's Advisory Council – Sustainability (PAC-S). In addition, a new Socially Responsible Investment (SRI) Committee was struck. UBC, along with six other Canadian universities, participated in the STARS (Sustainability Tracking, Assessment and Rating System) pilot program aimed at establishing standard metrics for university sustainability benchmarking in North America.

Continuing to embed sustainability into the DNA of the university requires distributed ownership, commitment and responsibility. This in turn requires a variety of targeted **campus engagement programs**. The many achievements in campus engagement in the past year include the Social Ecological Economic Development Studies Program (SEEDS), in which more than 50 per cent of 2007-2008 projects will be implemented and/or will affect decision making at UBC; the Sustainability Coordinator (SC) and the Residential Sustainability Coordinator (Res SC) programs; and the production and

hosting at UBC Vancouver (UBC-V) of UBC's first Climate Action Symposium. The later attracted a capacity audience of 245 people from throughout the UBC community and presenters from 18 different departments, units and community groups. In addition, UBC Okanagan (UBC-O) earned a WorkLife BC Award from the Ministry of Children and Family Development for its work creating a flexible workplace that supports employees to balance work and life commitments.

The **Academic Integration** of sustainability is a strategic area of focus for UBC. A Working Group under the PAC-S has been established to guide the development of a Sustainability Academic Strategy (SAS.) This will include a focus on the South Campus Academic Plan, the Centre for Interactive Research in Sustainability (CIRS), and the Sustainability Institute, UBC-O. The Working Group Academic Programs (WGAP), part of the PAC-S, has been established, and this year will focus on developing undergraduate and graduate curriculum related to sustainability. The Centre for Interactive Research in Sustainability (CIRS) building, scheduled for completion in 2010, will be home to inter-disciplinary researchers working in collaboration with industry and community partners to research and accelerate sustainability solutions beyond the campus. This year, UBC led four of eight Pacific Institute for Climate Solutions (PICS)-commissioned white papers on key climate change issues of interest to the Province and co-authored one additional paper. We continue hazardous waste minimization efforts to reduce the environmental impact of UBC's research programs. This year we reduced hazardous waste by of 8.2 tonnes with resultant costs savings of \$295,000.

UBC as a **Model Campus** is illustrated by the many examples of initiatives and programs that demonstrate the scope of UBC's cross-campus action on sustainability. Financial savings, greenhouse gas (GHG) reductions and important behavioural changes are achieved through such programs as UBC Renew, the TREK Program Centre, U-Pass, ECOTrek, the green building program, and water, waste and fleet management on our campuses. This year, ECOTrek was awarded national first prize for quality and productivity from the Canadian Association of University Business Officers (CAUBO). The US Green Building Council selected UBC-V's Wesbrook Place neighbourhood plan to participate in the LEED for Neighbourhood Development (LEED ND) pilot program. In addition, UBC Properties Trust was a BC Hydro PowerSmart Award finalist for builder/developer of the year. The Fipke Centre for Innovative Research, opened in the fall of 2008 on the UBC Okanagan's campus. It is the first building to use the campus geoexchange groundwater energy system for heating and cooling – an emissions-reducing and cost-saving system that will eventually provide heating and cooling to every academic building on the campus.

**Communication** of UBC's successes and commitment to a sustainable future is key to attracting top students, faculty and staff, and to demonstrating UBC's value to the region and the world. This year our sustainability efforts to date were recognized when UBC earned a top mark, A-, on the College Sustainability Report Card. This is an annual award from the Sustainable Endowments Institute of Cambridge, Massachusetts. UBC was the top Canadian post-secondary institution and was third overall – ahead of Harvard, Columbia and Stanford.

Although UBC is recognized as a leader in sustainability, we have only begun to design initiatives to leverage **external leadership and influence** based on our successes. This year, our President led five other B.C. university presidents and others to sign the University Presidents' Climate Change Statement of Action for Canada. In addition, the

UBC Summer Institute in Sustainability drew participants from across Canada and around the world. The UBC Sustainability Office is one of three partners that launched the student-led goBEYOND project which has reached 84,000 students across the province through climate awareness programming.

In considering **Future Priorities**, we believe that universities play a unique role in advancing society towards sustainability. As the quest to realize a more sustainable way of life on this Earth gains urgency, UBC must consider its responsibility and its opportunities. Within this context, strategic priorities for 2009-2010 include:

Continued **financial security gains** must be a focus through ongoing investments in energy management initiatives and climate action. Next year, we will address energy retrofits in selected ancillary buildings (ECOTrek Phase 2), and aggressively pursue additional ways to reduce our energy use through business practices and behaviour change initiatives. A central feature of our climate action program is the Alternatives Energy Sources Project. In addition, Phase 2 of UBC Renew just makes good economic sense. In a 2008 study, the green architecture firm Busby Perkins + Will noted that although it is essential to incorporate green standards into new buildings on our campuses, the biggest gains in the quest for carbon neutrality are to be made by refurbishing existing core building stock.

Our continued goal is to increase **curricular and co-curricular** opportunities for students to engage actively with sustainability. We will review the SEEDS program with the hope of expanding it, and provide support our faculty partners to enhance the integration of sustainability within the formal curriculum.

In the area of **sustainability management and planning** four initiatives provide the focus for the upcoming year: The Sustainability Academic Strategy; the UBC Climate Action Plan and a related operational proposal; the 2008/2009 Sustainability Report and *Inspirations and Aspirations Beyond 2010* to guide a comprehensive and inclusive approach to campus sustainability; and the Vancouver Campus Plan.

As we approach the one-year countdown to **the Olympics**, UBC will focus on ensuring that UBC Sustainability has a prominent place in the Olympic spotlight. With Public Affairs, we are working to package and tell our sustainability success stories to the world. In addition, we will enhance the hands-on experience for campus visitors by expanding and improving our campus tour program. Our goal this year is also to enhance UBC's web presence significantly. Coordinated efforts are underway to develop a website that will provide students and prospective students with access to UBC's academic offerings in sustainability. In addition, a full redesign and development of the UBC SO campus sustainability website is underway.

An important place for UBC's leadership role in sustainability is in context of the **external community**. Next year, we hope to dedicate resources to enable us to be proactive in our response to external interest. For instance, we will partner again on the UBC Summer Institute in Sustainability and we plan to develop a web-based seminar designed to share our case studies with communities of sustainability experts, scholars and students. We will lead the way in the formation of an informal Canadian network to advance campus sustainability on the national stage.

## 1. Introduction

Setting clear goals, monitoring and measuring our progress, and publicly reporting on it are essential components of our work. Last year we reported against UBC's *Inspirations and Aspirations* in our first comprehensive Sustainability Report (2006/2007). Next year we will produce a final comprehensive report on *Inspirations and Aspirations*. At the same time, we will begin work on a new strategic plan for sustainability at UBC for 2010 and beyond.

In preparation for future planning, this interim report provides the Board with an overview of the breadth and depth of the sustainability program at UBC. This work includes the good efforts of the entire campus community. In addition, this report details our achievements since we last presented to the Board in November 2007. Perhaps most importantly, this report also provides a snapshot of the strategic priorities for the future that are critical to maintaining and growing UBC's leadership position in sustainability.

We appreciate the Board's awareness of the serious and urgent need for UBC, and all institutions of influence, to aggressively pursue the sustainability transformation underway. It is the most significant challenge of our time. Not only do we at UBC have the intellectual capacity and expertise to inspire solutions, we can also lead by example. A significant benefit to a leadership position in sustainability is the enrolment, as well as the research dollars and donations that it attracts.

## 2. Contextual Overview

As we celebrate our progress and successes of the last year, we also acknowledge current circumstances and future challenges. These include the threat of global climate change and a world in economic turmoil.

### **Climate Change, Biodiversity Decline and Economic Turmoil**

The WWF's 2008 Living Planet Report says that human demands on natural capital now exceed the Earth's capacity by 30 per cent, and that the world is heading for an ecological credit crunch. Globally, natural wealth is declining and biodiversity continues to decline.

Increasingly, individuals, institutions and communities are awakening to the urgency of the climate change threat. At the same time, sustainability is reaching the mainstream, fuelled by increased public awareness, NGO and stakeholder pressure and new perspectives in corporate governance, particularly related to risks associated with climate change. We see it in the daily headlines. We also see it reflected in the increase of corporate sustainability reporting. Here in British Columbia, the Vancouver Organizing Committee for the 2010 Olympic and Paralympic Winter Games has embraced a comprehensive sustainability program and is publishing annual sustainability reports from 2005 to 2010.

Many governments are responding with carbon reduction targets and policies. The provincial government's Climate Action Plan and Bill 44 obligate all public sector agencies, including universities, to be carbon neutral by 2010. We have embraced the challenge and have begun to implement the UBC Climate Action Plan.

### **Weathering Tough Times**

So, from a global perspective, it is necessary and right to maintain our leadership in sustainability. It also positions us well to weather tough times and gives the University a competitive advantage. On the economic front, we save money through energy efficiencies and new technology. For example, this year, we realized more than \$3.5 million in energy savings. And since 1999, the energy savings have totalled \$23 million. The majority of this money goes towards paying down the \$34-million loan for ECOTrek and investing in future conservation efforts.

### **Competitive Advantage**

From a social and organizational perspective, sustainability unites people – students, staff, faculty and community partners – in the quest to discover and demonstrate better ways of doing things. In addition, a leadership position in sustainability provides enhanced learning and teaching opportunities. We attract students and teaching staff because of our commitment to, and action on, sustainability. It also helps attract funds for research and the University Endowment.

## **3. Highlight Achievements**

For the purposes of this report, we report our highlight achievements in the following six focus areas:

- i. Policy and Governance
- ii. Campus Engagement
- iii. Academic Integration
- iv. Model Campus
- v. Communications and Outreach
- vi. External Leadership and Influence

### **i. Policy and Governance**

As all progressive organizations know, to have real potency, the commitment to sustainability must come from the top. It must also be integrated into the organization's governance structure and connected, from the inside out, to the communities it serves. At UBC, sustainability is entrenched in our vision statement and reflected throughout our operations, teaching and research.

### **The President's Advisory Council**

This year, the President signalled the importance of sustainability at UBC by establishing the President's Advisory Council – Sustainability (PAC-S) which is co-chaired by Dr. John Hepburn, Vice President Research and Geoff Atkins, Leader of University Sustainability. The Council will help advance our strategies and initiatives and coordinate sustainability efforts across our campuses. Divided into six working groups, the PAC-S includes representation from staff, faculty, students and community members. Following is a list of the working groups and their leaders:

- Academic Programs – Vancouver – Dr. Peter Dauvergne, Senior Advisor to the President
- Academic Programs – Okanagan -- Dr. Alaa Abd-El-Aziz, Provost, UBC Okanagan
- Research and Partnerships – Dr. John Robinson, Professor IRES/CIRS & Dr. John Hepburn, Vice President Research
- Communication – Scott Macrae, Director, Public Affairs

- Development – Tara Mackenzie, Executive Director - Campus Based Fundraising
- Operations/Campus as a Living Lab – Charlene Easton, Director, Sustainability

An associated External Advisory Board, supported by Dr. James Tansey, will enhance stakeholder input and advice on sustainability at UBC.

### **The Socially Responsible Investment Committee**

This year, UBC struck a committee to advise on socially responsible investment (SRI) in regards to the UBC Endowment. The committee will advise the Board of Governors on issues related to transparency, proxy treatment, and the socially responsible practices of our fund managers. The committee does not deliberate upon individual proxy votes. The objective is to keep the Board of Governors informed on SRI developments and to provide advice on specific issues as appropriate and/or on best practices. The committee has a broad membership of up to 13 faculty, staff, students, alumni and representatives from the investment industry.

### **Sustainability Planning, Management and Reporting**

UBC sustainability plans and reports are part of an overall sustainability management system. Based on the *Inspirations and Aspirations* sustainability strategy, reports serve a number of purposes including providing accountability to our publics and a third-party assessment of UBC's performance. Recent reports include:

- *The UBC Sustainability Report 2006-2007* (A comprehensive report of our progress against targets set in *Inspirations and Aspirations*.)
- *The 2006-2007 Annual Report – Foresight* (Included a triple bottom line progress snapshot with select targets and results.)
- *The 2007-2008 UBC Annual Report – Not Me. We.* (Included a triple bottom line progress snapshot with select targets and results.)
- The 2007-2008 Annual General Meeting (The sustainability progress report was delivered by Lisa Castle, Acting VP Administration and Finance.)

### **Sustainability Tracking, Assessment and Rating System (STARS)**

With the release of our first comprehensive sustainability report in November 2007, we noted the importance of external benchmarking against a standard set of metrics for university sustainability. To this end, we are one of seven Canadian universities participating in the Sustainability Tracking, Assessment and Rating System (STARS) pilot program. The STARS system, an initiative of the Association for the Advancement of Sustainability in Higher Education (AASHE) will be a standard rating system for sustainability in higher education. Campuses earn credits in three categories: Curriculum and Research, Operations, and Administration and Finance.

## **ii. Campus Engagement**

Critical to the successful integration of sustainability in any organization is “getting the inside outside”. The “inside” at UBC Vancouver and Okanagan campuses is a dynamic mix of personalities, talent, and intellect in students, faculty and staff. They total some 49,000 students and 13,000 full-time and part-time staff and faculty. Through study, work, research and university operations, each one of these people has tremendous potential to contribute to UBC's leadership position in sustainability. Our challenge is to enable the potential, to connect expertise, to inspire involvement and to ignite action. Given the size and complexity of our two campuses, we have obstacles to overcome

and more work to do in campus engagement. That said, much has been achieved this year. Following are some highlights.

### **SEEDS (SOCIAL, ECOLOGICAL, ECONOMIC DEVELOPMENT STUDIES) at UBC–V**

The Social, Ecological, Economic Development Studies (SEEDS) program is western Canada's only academic program bringing together students, faculty, and staff in projects that address sustainability issues. Now in its eighth year, SEEDS has attracted more than 2,000 participants. SEEDS has experienced a 57 per cent growth in the number of SEEDS papers since 2004-2005 and has made significant contributions to advancing sustainability on campus. More than 50 per cent of 2007-2008 projects will be implemented and/or will affect decision making at UBC.

In 2008, the Sustainability Office received Teaching and Learning Enhancement Fund support, which included \$20,000 in funding for SEEDS climate change projects. The program was also recognized with an award from Student Development for contributing to the lives and learning of students (prize of \$500). In addition, SEEDS continues to receive recognition for winning the national second prize Canadian Association of University Business Officers (CAUBO) Award in June 2007 (prize of \$5,000).

This year, the Sustainability Office initiated the first external SEEDS project. The project involves a student and a professor from the School of Community and Regional Planning in research supporting the Strathcona Business Improvement Society and its vision to create a Green Zone in Vancouver's Downtown Eastside. We hope to have a greater number of SEEDS off-campus projects in the future.

### **SEEDS at UBC–O**

The SEEDS program now operates on the UBC Okanagan campus. A student composting research project, combined with the goal of reducing organic waste from UBC-O's food services operations, resulted in the acquisition of composting equipment and new composting practices to help meet this goal. UBC Okanagan provided funding for two Earth Tubs - compact composting systems that recycle organic waste materials at the site where it's generated. While this project demonstrated UBC Okanagan's commitment to student involvement in sustainability, it also assisted Aramark in its quest to become the most sustainable campus cafeteria in Canada. The high-grade compost produced by the Earth Tubs will be used in flower beds and gardens situated on campus.

A student project is currently underway to inventory UBC Okanagan's GHG emissions, which will contribute important data toward UBC Okanagan's emission baselines and toward the development of appropriate CO<sub>2</sub> reduction strategies.

### **goBEYOND**

The UBC Sustainability Office is one of three partners in the goBEYOND project, a B.C. student network that educates and builds capacity for students across the province to move themselves and their communities beyond climate-neutral. The program was piloted at UBC, University of Victoria and Thomson Rivers University and has expanded to 9 other B.C. institutions in 2009. Funded by the B.C. government, BC Hydro and the Pacific Institute for Climate Solutions for more than \$150,000, the youth-led program engages students to make carbon-smart lifestyle choices through lectures, workshops and presentations, and challenges students to take climate action. To date, the project has reached more than 84,000 youth across the province through its programming. The

Fall and Spring teach-in engaged more than 20,000 students, 400 professors and 21 institutions in a province-wide in-class discussion on climate action. At UBC's Vancouver and Okanagan campuses, more than 17,000 students have been made aware of, or participated in, the project.

### **Residence Sustainability Coordinators**

The UBC residence sustainability coordinators (Res SCs) are students living in residence at UBC-V who work with other energetic volunteers to lead, inspire, network, learn and create change in their residences and on campus. The Res SC program involves approximately 80 students with an email listserve of 113. It reaches approximately 2900 more students through its programs. The Res SCs have a strong partnership with Sprouts and Waste Management that focuses on organic food and composting. In addition, their work contributes savings in energy, waste, and water consumption and provides students with important learning, networking and leadership experiences. The program began in the two junior residences, Totem Park and Place Vanier, and has expanded to four senior residences; Fairview, Gage, Acadia and Marine Drive.

### **Aboriginal Strategy**

This year, under the direction of the Provost, an Aboriginal Strategic Plan was developed to support Aboriginal access and success through appropriate policies, programs, engagement strategies and budgetary commitments.

### **Orientation for New Students, Staff and Faculty**

The UBC Sustainability Office works to integrate sustainability into student, staff and faculty orientations. For students, not only do we provide information at their two major annual orientation events, we also provide useful resources, such as our sustainable event protocol. This year, 5,000 first-year students each received a reusable mug that included information on how to reduce their carbon footprint at UBC. In addition, the Sustainability Office provides information to new faculty and staff at regular orientation sessions.

### **North American Youth Leadership Project (NAYLP)**

With BC Hydro's generous support of \$20,000, nine high school students and three UBC Student/Alumni mentors attended the North American Youth Leadership Conference on Sustainability in San Francisco, California in January 2008. The NAYLP is a collaborative partnership among UBC, the California Centre for Civic Engagement and five other host institutions across the west coast of Canada, the United States and Mexico to support student-led education and action. The conference targeted youth, the public at large and adult decision-makers.

Led by UBC TREKStep student Janine Pham, the attendees joined youth from California and Mexico to learn the skills and tools necessary to initiate and manage their own sustainability and energy conservation projects. Upon return, the students began projects in four high schools in the Vancouver region, and established a Green Team. The youth leaders involved in the Green Team hope to cultivate strong student and staff support to encourage mindful environmental practice through daily actions.

### **Focus on People: Workplace Practices at UBC**

*Focus on People: Workplace Practices at UBC* was approved by the UBC Board February 7, 2008. This plan sets out strategies and corresponding initiatives to

consider how we may improve our daily practices in order to create the workplace envisioned by and for staff and faculty members at UBC Vancouver and UBC Okanagan. The plan will help realize UBC's mission to: "...provide its students, faculty, and staff with the best possible resources and conditions for learning and research, and create a working environment dedicated to excellence, equity, and mutual respect."

Developed through a campus-wide consultation with faculty and staff, the Focus on People framework articulates five strategies with a corresponding action plan to improve the University's workplace practices:

- Develop a sustainable, healthy, workplace;
- Retain staff and faculty through positive opportunities and incentives;
- Foster leadership and management practices;
- Attract outstanding talent to UBC; and
- Identify and share institution-wide goals.

### **WorkLife BC Award of Merit – UBC Okanagan**

In February 2008, UBC Okanagan earned a WorkLife BC Award from the Ministry of Children and Family Development for its work creating a flexible workplace that supports employees to balance work and life commitments. UBC Okanagan received an Award of Merit for the B.C. Interior in the category of Large Workplace (more than 250 employees). UBC Okanagan encourages work-life balance through policies, programs and services such as:

- Flexible work schedules, including job sharing, telecommuting and education leave;
- Support for child care, including an on-campus daycare, and elder care needs; and
- A confidential counselling service available to faculty, staff and their family or household members.

### **LBS Health and Wellness Award – UBC-V**

UBC Land and Building Services was the recipient of Canada's eighth annual Healthy Workplace Award for the department's work in developing programs designed to improve the health and well-being of its employees. The award, presented by Great West Life and managed by the National Quality Institute in collaboration with the Canadian Centre for Occupational Health and Safety, was designed to introduce organizations to workplace health and support those who are already promoting healthy workplaces.

### **Sustainability Coordinators**

UBC's Sustainability Coordinators (SCs) volunteer to work within their departments to inspire colleagues to make environmentally sustainable behaviour changes. The program includes a network of 147 faculty and staff who foster a sustainability culture throughout the University. The energy conservation efforts of the Sustainability Coordinators save UBC \$75,000 per year. The program builds a sense of community and improves workplace satisfaction. In the most recent survey, 96 per cent of SCs found the program enriching and would recommend it to a friend.

Results from our summer 2008 survey showed that in the 2007/08 school year, 63 per cent of SCs implemented the Energy Reduction campaign, 54 per cent implemented the Transportation Alternatives campaign, and 61 per cent implemented the Materials

Reduction campaign. The Sustainability Office, in partnership with Supply Management, will release a new sustainability purchasing toolkit in January 2009.

### **The Climate Action Symposium**

In response to the expressed desire of researchers and faculty to come together to share knowledge and practice, the Sustainability Office co-hosted, with the Office of the Provost/VP Academic, the Climate Action Symposium in October 2008 at UBC-V. It attracted a capacity audience of 245 people from throughout the UBC community and presenters from 18 different departments, units and community groups. This year's Climate Action Symposium successfully met the following goals:

- To foster learning and dialogue regarding UBC's search for climate change solutions;
- To inform the campus community about UBC's Climate Action Framework; and
- To strengthen purpose and community in UBC's efforts to innovate and incubate climate change solutions.

Symposium participants overwhelmingly expressed a desire for an annual campus sustainability symposium. They noted the importance of communicating across disciplines and units as we build a campus community with sustainability at the forefront. The cost of the event was approximately \$43,000.

### **iii. Academic Integration**

In 2006, the UBC Sustainability Office conducted a survey of courses on sustainability at both UBC-V and UBC-O. Last year we reported that UBC offered 400 sustainability-related courses<sup>1</sup> across the two campuses. In addition, UBC houses at least nine research centres that conduct sustainability-related work including the Centre for Human Settlements, the Centre for Interactive Research in Sustainability (CIRS), and the Institute for Sustainability at UBC Okanagan. At least 11 teaching programs include degrees related to sustainability, both at the graduate and undergraduate levels (e.g. the Graduate Program in Resource Management and Environmental Studies or BSc in Natural Resources Conservation). We note a trend that sustainability is increasingly prominent in new or re-shaped programs in universities in Canada and around the world in response to the increasing popularity of sustainability learning. We ask ourselves if UBC can improve the integration of sustainability into existing programs and establish new and important sustainability teaching options. To this end, UBC has stepped up efforts to review and establish new or revised options for academic programs in sustainability.

### **The Sustainability Academic Strategy**

The Sustainability Academic Strategy (SAS) will provide a framework to guide the UBC community in ongoing planning, resource allocation and decision-making for sustainability. The SAS working group is consulting widely with the UBC-V and UBC-O communities and others to develop a draft Sustainability Academic Strategy by August 2009 that is shaped by a wide range of viewpoints and expertise. The SAS Working Group reports to the President's Advisory Council – Sustainability, which is co-chaired by Dr. John Hepburn, Vice President Research and Geoff Atkins, Leader of University Sustainability. The SAS process is building on the work of three other PAC-S Working

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<sup>1</sup> Sustainability-focused courses concentrate on the concept of sustainability, including its social, economic, and environmental dimensions, or examine an issue or topic using sustainability as a lens. Sustainability-related courses incorporate sustainability as a distinct course component or module, or concentrate on a single sustainability principle or issue.

Groups, namely the UBC-O Sustainability Working Group, the UBC-V Academic Programs Working Group, and the UBC-V Operations Working Group. The

### **Working Group Academic Programs**

Established as part of the President's Advisory Council on Sustainability, the Working Group Academic Programs (WGAP) of the PAC-S will develop, pilot and consult widely on potential sustainability degree options with the goal of implementing permanent undergraduate and graduate academic programs on sustainability. The WGAP will also develop a website displaying academic programs on sustainability at UBC.

Early in 2009, we anticipate completing a report that documents sustainability labour market trends and areas of importance, as viewed by students and employees, to inform UBC in the creation of new courses and programs on sustainability at the undergraduate and graduate levels.

### **The Sustainability Academic Strategy**

Plans to develop a Sustainability Academic Strategy (SAS) were announced in February 2009. The SAS will become a central element of the new UBC Strategic Plan along with a number of cross-cutting strategies and will provide a framework to guide the UBC community in ongoing planning, decision making, and resource allocation. A SAS working group has been established to consult widely with the UBC-V and UBC-O communities and others to develop draft recommendations by August 2009. The SAS Working Group is chaired by Dr. John Robinson, Professor in the Institute of Resources, Environment and Sustainability.

### **Integrating Sustainability into the Curriculum**

The Sustainability Office has partnered with UBC Teaching and Academic Growth to develop and implement a two-day training workshop at UBC-V to provide faculty with the tools, skills and knowledge required to integrate sustainability into the curriculum. This project received funding in its first two years from the Teaching and Learning Enhancement Fund (TLEF), and this year, the third year, received \$25,000 from the Sustainability Office.

### **The Centre for Interactive Research on Sustainability (CIRS)**

In 2008, the Board approved construction of the Centre for Interactive Research on Sustainability (CIRS) on the UBC-V campus. CIRS will be designed and constructed as a globally unique state-of-the-art living green building. It will demonstrate environmentally progressive ways to construct a building, integrate storm water management, wastewater treatment, ground source heating infrastructure landscaping and public education about sustainability. Once it is up and running, the CIRS building will be home to inter-disciplinary researchers working in collaboration with industry and community partners to research and accelerate sustainability solutions beyond campus. CIRS will offer advanced visualization, simulation and community engagement technologies and processes that will support research exploring sustainable lifestyles. The new CIRS site is at 6381 Stores Road on the northeast corner of West Mall and Stores Road (referred to as Sustainability Street). The UBC Sustainability Office will take up residence at CIRS upon completion in 2010. In anticipation of this move, the SO is working on joint programming efforts with Dr. John Robinson and the Institute for Resources, Environment and Sustainability (IRES).

### **Pacific Institute for Climate Solutions**

This year, the Province made a significant investment in its four research universities with a \$98-million endowment for the new Pacific Institute for Climate Solutions (PICS). PICS creates a province-wide network of researchers in British Columbia. It seeks to develop and recommend solutions to climate change impacts and discover adaptive and mitigative responses to the challenges we face. Its work will engage virtually all disciplinary areas of research: climatic and oceanic responses, marine and terrestrial ecosystem shifts, and human (socioeconomic, behavioural, cultural, and health) responses.

PICS recently commissioned eight white papers on key climate change issues of interest to the Province. This year, UBC faculty led a total of four of these white papers (transportation and climate change: “An Integrated Approach to Transportation Policy in BC” - Dr. Hadi Dowlatabadi; communities and climate change: “Infrastructure and Communities: The Path to Sustainable Communities” - Dr. John Robinson; clean energy: “Alternative Energy Technologies for BC” - Dr. Robert Evans; and forestry: “Carbon Sequestration in British Columbia’s Forests and Management Options” - Dr. Andrew Black, Dr. Rachhpal Jassal (UBC) / Dr. Arthur Fredeen (UNBC)). UBC participated in an additional paper on building design: “Buildings and Climate Solutions” - Dr. Ray Cole, Dr. Dana Vanier. In addition, PICS has recently approved budgets for each research university. We will create an integrated secretariat across PICS, PAC-S and CIRS. UBC is expected to hire its campus coordinator in January.

### **The Centre for Sustainability and Innovation in the Sauder School of Business**

In July 2007, the Centre for Sustainability and Innovation launched Phase 1 of its overall business plan. Under the leadership of Director Dr. James Tansey, the vision of the Centre is to drive and support the emerging fields of social innovation and social philanthropy and to contribute innovation and strategic action. This year, the Centre completed extensive social enterprise research including 41 case studies focused on India and China and a global review of 180 universities.

### **UBC, UCSD Partner to Reduce Emissions with Green IT**

UBC, the University of California, San Diego, and Prompt Inc, a non-profit corporation that fosters research and development, have signed a Memorandum of Understanding to work together to reduce greenhouse gas emissions on our campuses while developing information technology that improves energy efficiency and reduces the impact of emissions on climate change. The MOU stipulates that signatories will explore a system whereby “carbon offsets earned through a variety of GHG reduction mechanisms” would be traded between participating institutions in exchange for access to cyber-infrastructure resources, including, for example, grid computational cycles, wide area network bandwidth, other virtual services and even research funding.

### **Greening Research**

UBC is taking progressive and innovative steps to reduce the environmental footprint of our research programs. UBC Health, Safety and Environment (HSE) facilitates this process by coordinating the disposal (recycling, exchanging, neutralizing, and safely disposing) of hazardous waste materials at UBC-V through the Environmental Services Facility located at South Campus. Hazardous waste minimization efforts in 2007 resulted in waste reduction of 8.2 tonnes with resultant costs savings of \$295,000.

In the Okanagan, HSE coordinates the disposal of hazardous materials through the Environmental Services Portable. The portable located at the east end of campus is a temporary location while a more permanent solution is sought. As battery recycling, chemical exchange, and other waste reduction programs are developed in the Okanagan, realized cost savings will be captured and reported.

In August 2008, UBC Supply Management, the UBC Sustainability Office and HSE signed a commitment with supplier Fisher Scientific to focus on green laboratory education for scientific end-users. The project aims to enhance an environmentally responsible culture in UBC research laboratory facilities. As part of this initiative, a Greening Your Lab workshop was delivered in October 2008. It attracted about 60 attendees, most of whom were lab personnel. The project also includes plans to create a virtual green lab and an incentive program for researchers and students to green their labs.

### **The Habitat Exchange**

This year, the University of British Columbia and UN-HABITAT launched the Habitat Exchange ([www.habitatexchange.org](http://www.habitatexchange.org)). The Habitat Exchange is an online venue for governments, NGOs, academics and civil society across the globe to share and discuss best practices, appropriate technologies, action plans and other tools relevant to the pursuit of ecologically sound and socially equitable urban development. It is a venue for peer review of urban development practices and for free exchange of information and ideas. The Habitat Exchange continues to benefit from the assistance of partners from the Irving K. Barber Learning Centre, the UBC Library and the University of British Columbia.

## **iv. Model Campus**

Our commitment to reduce the ecological footprint of our campuses and to be good stewards of public assets is reflected in the way we plan, operate, do business, and build community at UBC. With partners across the University, we work to integrate sustainability considerations into campus operations. This work is one reason why UBC is recognized as a global leader in campus sustainability. In the following list, we highlight some of our accomplishments this year.

### **Buildings, Infrastructure and Operations**

#### **Campus Climate Action Plan**

This year we have intensified our efforts to address climate change. Building on our pioneering programs to reduce emissions on campus, the UBC Executive has made leadership on the climate agenda a priority. In March 2008, UBC formalized this commitment by signing the President's Statement of Action on Climate Change. This commitment dovetails with November 2007 Provincial legislation, which mandates UBC to be carbon-neutral by 2010. For now, carbon neutrality requires that we measure, reduce and offset emissions resulting from our energy consumption, fleets, buildings and paper purchasing practices.

The UBC Sustainability Office has established a Climate Action Team to support this priority. It will lead efforts, in collaboration with the campus community, in the preparation of a Climate Action Plan.

In January 2008, the Sustainability Office completed the 2006 GHG inventory report, which measured GHG emissions resulting from operations at both the Vancouver and Okanagan campuses. A technical advisory committee with expertise of faculty, staff and students provided support and guidance. We have begun our 2007 inventory. Completion is pending the release of provincially approved emissions factors.

In October 2008, we launched the climate action planning process amongst the campus community. Planning includes the development of a shared vision to guide plan goals and targets, unit-specific GHG emission reduction strategies, a climate risk assessment and the preparation of a climate management operational framework. We anticipate a draft to be completed in July 2009.

### **Alternative Energy – UBC-V**

This year the UBC Executive endorsed plans for The Alternative Energy Sources Project (AESP). This project will be the first step in economically transforming the UBC Vancouver campus into a global showcase for sustainability. The AES will identify and implement the most cost-effective options for alternative energy supplies, ultimately replacing the UBC steam heating system. The existing system burns natural gas to produce steam heat for most of the campus' 259 core buildings (758,000 sq. m of academic space). It comprises four boilers, two of which have a remaining expected useful life of seven to 10 years. Our 2006 GHG emissions assessment calculates the steam system's carbon footprint at almost 58,000 tonnes per annum, which is the largest single source of GHG emissions on campus. This represents an estimated financial liability of up to \$1.7 million by 2010 when we anticipate paying \$25 per tonne for carbon offsets associated with carbon neutrality.

In line with its goal to be a global leader in sustainability, UBC is proactively reducing greenhouse gas emissions. The Alternative Energy Sources Project is a significant step towards achieving the University's sustainability aspirations. Additionally, the AESP will also contribute to UBC's aspirations to showcase the Vancouver Campus as the world's first net positive energy and water campus.

Submissions for a Request for Proposals for an alternative energy feasibility study for UBC Vancouver are currently under review, with the intention of having a selected consultant retained early in 2009.

### **Campus-wide Geoexchange System – UBC-O**

Once finished, UBC-O's campus-wide geoexchange system is projected to reduce carbon dioxide emissions by more than 88 per cent, or 2,959 tonnes per year, equivalent to taking 14,000 cars off the road over the next two decades. The cost avoidance for UBC Okanagan's complete geoexchange heating and cooling system — which takes the place of traditional natural gas systems — will be an estimated \$610,000 per year, offsetting the total project's capital cost in only 10 years.

### **UBC Renew**

UBC Renew has completed seven<sup>2</sup> out of the 10 buildings targeted for Phase 1 on schedule, on budget and to the satisfaction of all project stakeholders.

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<sup>2</sup> M17, M18, Buchanan C, Buchanan D, Chemistry North, Chemistry Centre, Friedman

By completion of Phase 1, UBC Renew – a project that renovates rather than demolishes aging infrastructure at UBC-V – will have avoided \$89 million in new construction costs, saved 97 million MJ of primary energy, 27 million litres of water, 3.2 million kWh of electricity, and 492 tonnes of coal. It will prevent the emission of 6,150 tonnes of greenhouse gases, divert 1,458 tonnes of construction waste from landfill, and eliminate \$77.4 million from UBC's accumulated deferred maintenance debt, which currently stands at \$548.2 million.

In 2008, the Chemistry Centre and Friedman were completed and occupied. Buchanan B and the Old Auditorium are under construction. Buchanan A's construction drawings are 95 per cent complete in preparation for tender. UBC Chemistry Centre re-opened in March 2008 after 14 months of closure. The 1923 heritage building is the centrepiece of the Chemistry complex and, to date is the most significant building to be revitalized under UBC Renew. The distinctive architectural details were intact, but the building was in desperate need of life safety upgrades, and could no longer support today's chemistry research. UBC Renew's economic, ecological and social analysis determined that the building qualified for renewal.

Scheduled for completion under the UBC Renew Phase 2 program, the UBC Biological Sciences Building offers an installation opportunity for a relatively new UBC invention - the solar canopy. This technology provides daylight to the core of multi-floor buildings in order to reduce the need for electrical lighting, and is currently being trialed at a BCIT installation.

### **TREK Program Centre**

The TREK Program Centre, UBC's Transportation Demand Management Department, is dedicated to promoting a more sustainable environment by improving transportation options. Since 1997, TREK has been working to reduce single-occupant automobile trips to and from UBC's campuses by promoting more sustainable modes of transportation including transit, carpooling, walking and cycling. TREK provides a variety programs, including the U-Pass and Employer Pass programs, end-of-trip facilities for cyclists, and an Emergency Ride Home program. TREK initiatives since 1997 have resulted in a 185 per cent increase in transit ridership and a 14 per cent decrease in single occupancy vehicle trips. In addition, despite a 32 per cent growth in population, auto traffic to and from UBC has declined by 20 per cent since 1997.

### **U-Pass**

The U-Pass program is an integrated comprehensive transportation package that provides students with universal, accessible, and affordable access to public transit and other sustainable transportation programs. It is a mandatory program and costs \$23.75 per month for UBC-V students and \$45 per semester for UBC-O students. The UBC U-Pass program has increased transit ridership and reduced emissions by 16,000 tonnes per year. In addition, the program saves students approximately \$800 per year in transportation costs. The program began on the Vancouver campus in 2003 and at the Okanagan campus in 2007. At both campuses, transit ridership increased by approximately 50 per cent in its first year of implementation, and commuting by transit now accounts for the majority of trips made in and out of campus at UBC Vancouver, with a mode share of 44 per cent. UBC supports the expansion of U-Pass at the UBC-V rate to all post-secondary students in Metro Vancouver, and estimates that a potential

further savings in GHG emissions of 30,000 tonnes per year could be achieved with such an expansion.

### **ECOTrek**

Launched in 2001, ECOTrek was conceived as the largest energy and water infrastructure retrofit ever to have taken place on a Canadian campus. In the four years prior to the start of this project, UBC's utility costs had doubled as the result of climbing energy prices. The goal was to reduce energy and water consumption in core academic buildings along with associated GHG emissions. That goal was achieved in spades. In addition, ECOTrek provided a mechanism to fund facility renewal, which had been increasingly deferred. In the same manner, the project funded utility management infrastructure (such as metres) critical to effective management, but which have a very long return on investment. ECOTrek was a \$39-million investment in energy and water savings and infrastructure renewal. In order to minimize the financial risk to the University, UBC entered into an energy performance contract with an Energy Service Company (ESCO), MCW Custom Energy Solutions Ltd.

MCW undertook energy audits of 288 campus buildings. Reductions in water and energy use were targeted at 30 per cent and 20 per cent respectively (adjusted for campus growth), along with the associated GHG emissions. The cost for implementing the identified energy conservation measures was budgeted at \$39 million, a little more than double UBC's annual \$17-million energy bill. BC Hydro provided incentives totalling nearly \$4 million, contingent on realizing the projected electricity savings. The remainder of the project was funded by a loan from the University, to be repaid over a 24-year period out of the guaranteed annual utility savings of at least \$2.6 million. ECOTrek also pursued savings through a series of soft measures, including general maintenance related issues and staff and student awareness programs. These measures complemented UBC's goals of institutionalizing sustainability within the university community.

In 2007/2008 construction on these measures was completed, and a monitoring and verification report was produced to ensure that the promised energy savings would materialize. The report is being verified by BC Hydro and the Sustainability Office. In 2007/2008, total CO<sub>2</sub> and equivalent emissions from buildings has been reduced by 26 per cent per square metre from 2000 levels. Non-renewable energy consumption in institutional buildings adjusted for growth stands at a 23 per cent reduction against 2000 levels. The program also involved retrofitting the boilers in our steam plant. This has resulted in nitrogen oxides (NO<sub>x</sub>) emissions being 86 per cent lower in 2006 than in 2000. In addition, the ECOTrek program eliminated an estimated \$20 million from UBC's accumulated deferred maintenance debt.

### **Energy Management**

Our approach to energy management has two focus areas. We reduce energy consumption through behaviour change and through technology. Our programs include the following three highlight initiatives:

#### **Energy Dashboard Pilot Program**

With support from University Investment Fund (UIF) funding (\$50,000), Phase 1 of this program provided the occupants of five UBC-V campus buildings with their building's real-time energy statistics, including real-world conversions, through a website. Analysis indicated that the pilot was successful in terms of engaging

building occupants and raising awareness of energy consumption. The macro level metering could not be expected to show an impact on energy conservation. Phase 2 will examine the use of a more complex suite of web-based energy management software to allow proactive energy management strategies to help operations personnel reduce building energy consumption. On completion, a business case will be evaluated for rolling out the technology to all campus buildings.

### **Continuous Optimization**

UBC is part of a BC Hydro pilot program designed to examine the concept of continuously optimizing building operation systems, such as HVAC, to conserve energy. The pilot involves auditing and retrofitting two campus buildings and monitoring the energy savings over a three-year period. The pilot will allow UBC to evaluate another example of energy management software.

### **Kill-a-Watt Meter**

The UBC Library and the Sustainability Office partnered in a pilot project offering 10 Kill-a-Watt meters to the campus community. The Kill-a-Watt meter is a small hand-held device that plugs into an electricity socket at one end and a household appliance at the other. The meter displays the real-time energy consumption of the appliance. One application is to assess the energy efficiency of appliances in sleep mode and use the information to help make personal energy reduction choices. The meters are available to UBC students, faculty and staff from the Koerner, Irving K Barber and Woodward libraries.

### **Water Management – UBC-V**

The 30 per cent reduction target for water use has already been surpassed. In 2007/08, water consumption was 40 per cent lower than the 2000 base year (academic campus adjusted for growth). This was achieved primarily through ECOTrek improvements such as fixing leaks and installing low flow fixtures. First and second quarter fiscal year 2008/09 data indicates an increase in consumption from fiscal year 2007/08 levels. The reasons for this increase in consumption are being investigated.

### **Water Management – UBC-O**

Technology that works with the Okanagan climate ensures that campus irrigation systems are used only when conditions require. The new irrigation systems will conserve 9,000 cubic metres of water in a maximum-demand month, usually July, reducing the current maximum demand from 19,000 cubic metres to 10,000 cubic metres. Xeriscape landscaping reduces the reliance on irrigation by working with plants that creatively and strategically complement the Okanagan's natural environment. The xeriscape concept of appropriate plant selection has the added benefit of reducing fertilizer and pesticide use. To reduce irrigation demands even further, artificial turf will replace the natural turf sports field on campus which, as an added bonus, extends the playing season for UBC Okanagan athletes and students.

Each non-residence water fountain on campus has been equipped with a Granular Activated Carbon water filter to decrease the usage of bottled water and improve the taste of campus water. In addition, the UBC Students' Union Okanagan (UBCSUO) and UBC Okanagan Facilities have partnered to install a top-of-the-line water-dispensing unit in the main entrance of the Sciences Building. The PENTEK FreshPoint Ultrafiltration System is an advanced point of entry (POE) treatment device that improves water

quality while preserving its beneficial minerals. UBC Okanagan is the first site in North America to install the ground-breaking system, which is extremely energy efficient. The \$10,000 cost was shared equally between UBCSUO and UBC Okanagan Facilities.

### **Waste Management**

UBC boasts Canada's first university in-vessel composter, which has been in operation at UBC-V since 2004. By digesting up to 350 tonnes of waste a year, the composter turns organic waste into nutrient-rich soil that is used to enhance landscaping on campus. As of this year, Food Services provides biodegradable hot beverage cups, plates, napkins, and cutlery, as well as organic waste collection bins in all of its outlets across campus. Furthermore, customers receive a 15-cent discount if they use their own mug or food container. Since its launch in 2003, this One Less Cup initiative has resulted in a 20 per cent reduction in paper cups annually. In addition, UBC Waste Management captures and recycles more than 36 tonnes of electronic waste annually under B.C.'s Electronic Product Stewardship Plan, which ensures that all e-waste is recycled in North America in a responsible manner. Overall, UBC diverts 45 per cent (1678 tons) of its waste into recycling and composting programs, and aims to divert 55 per cent (2051 tons) by 2010.

UBC Okanagan food services provider Aramark has changed its practices to support sustainability. It now uses environmentally friendly cleaning products and has switched to biodegradable garbage bags that decompose in 60 days. Aramark has also implemented an aggressive recycling program for all bottles, glass, plastic, metal, and cardboard. In the spirit of social responsibility, the money from recycling pop bottles and cans is donated to the Kelowna and District Society for Community Living.

### **Fleet Management**

UBC Plant Operations Fleet Management unit at UBC-V manages over two-thirds of the University's fleet of vehicles. The remainder of campus-owned vehicles are managed and operated by university departments or faculties.

Recent sustainability successes include:

- Use of bio diesel in all diesel-run vehicles
  - 20 per cent mix in the summer
  - 10 per cent mix in the winter
- Purchase of Electric Vehicles
  - Currently have seven electric vehicles and plan to replace four gas-powered vehicles with four electric vehicles by the end of 2008. 2009 plans include replacing an additional two to four gas-powered vehicles with electric or hybrid vehicles.
- Replacement of larger diesel-powered vehicles with hybrid-diesel units, which are ideally suited for on-campus use. UBC was awarded \$40,000 from the Fraser Basin Council to help offset the costs of acquiring the first two hybrid-diesel trucks.

In the spring of 2008, Food Services purchased two lightweight electric delivery trucks to support their fleet of five traditional gas vehicles at UBC-V. This investment promises strong returns, through cost savings for maintenance and fuel, significant GHG reductions, and positive marketing and public relations gains. A future goal is to convert the entire Food Services fleet to use more sustainable energy sources.

## Green Buildings

**The Fipke Centre for Innovative Research**, which opened in the fall of 2008, is the first new building to be completed as part of UBC Okanagan's campus master plan. It adds 70,000 square feet of space for teaching and research. The Fipke Centre is also the first building to use the campus geoexchange groundwater energy system for heating and cooling – an emissions-reducing and cost-saving system that will eventually provide heating and cooling to every academic building on the campus.

**The Centre for Interactive Research on Sustainability (CIRS)** on the UBC Vancouver campus was approved for construction this year. It will be the most innovative and high performance building in North America, demonstrating leading-edge research and sustainable design, products, systems and decision-making. A state-of-the-art living green building, it will include environmentally progressive storm water management, wastewater treatment, and ground-source heating. The CIRS building will be a true living lab – a home to inter-disciplinary researchers working in collaboration with industry and community partners to accelerate sustainability solutions. Construction is scheduled to begin in summer 2009 for completion in 2010.

### **The Student Union Building (SUB) Renewal**

The SUB Renewal project is a student-driven revitalization of the centre of campus at UBC-V. A combination of grass roots activism and professional planning has enabled students to imagine their space and work to realize their vision. In one short year, the Alma Mater Society (AMS) of UBC Vancouver Student Council ran a successful referendum and signed an MOU with UBC, thereby establishing a \$110-million budget for the new building. The AMS plans to harness the knowledge and creativity of the campus community throughout the process. The new SUB will feature sustainable construction practices and designs, and will strive for LEED Platinum certification.

### **Sustainable Procurement Principles**

This year UBC developed and implemented principles of sustainability for procurement and developed a supplier code of conduct. An example of sustainable procurement in action was Supply Management's negotiation in 2008 with our paper supplier, Unisource, to supply UBC with 30 per cent post-consumer waste recycled paper for the same price as virgin stock. This will be the minimum acceptable standard by the B.C. government when the carbon-neutral mandate takes effect in 2010.

UBC Vancouver uses approximately 880,000 lbs of paper annually, and in 2007/08?, 41 per cent had 30 per cent post-consumer recycled content. This contributed to the release of approximately 1,350 tonnes of GHG emissions. If UBC was to switch exclusively to 30 per cent post-consumer recycled paper, the University could save 96 tonnes of GHG emissions from entering the atmosphere.

In addition, Supply Management Travel has reached an agreement with WestJet Airlines whereby WestJet Airlines now provides an eight per cent discount on all reservations and a further allocation of two per cent of the ticket price to purchase carbon offsets through Offsetters Climate Neutral Society. Offsetters invests in renewable energy and energy efficiency projects.

### **LEED for Neighbourhood Development Pilot Program**

The US Green Building Council selected UBC-V's Wesbrook Place neighborhood plan to participate in the LEED for Neighborhood Development pilot program. The LEED-ND Rating System integrates the principles of smart growth, new urbanism, and green building into the first national standard for neighborhood design, and is anticipated to receive the same level of recognition and use as the LEED for buildings rating system. Staff from UBC Properties Trust, Campus & Community Planning and the Sustainability Office will work together on the submission. UBC has already received recognition for its leadership in the realm of green buildings, due in part to the exposure that accompanies certifying both new construction and major renovations under the LEED system. Similarly, LEED certification of neighborhood designs will provide the independent, third-party verification that a development's location and design meet accepted high standards for environmentally responsible development.

### **REAP Update**

UBC REAP is a made-at-UBC green building rating system that is mandatory for all residential construction in UBC-V's University Town neighbourhoods. REAP was developed to answer the need for a rating system that could be applied to all residential construction types planned for the campus. The Provincial Office of Housing and Construction Standards recently added new green requirements for energy and water efficiency to the B.C. Building Code. Some of the new code requirements now meet or are more stringent than REAP requirements. In response to these changes, staff from Campus & Community Planning and the Sustainability Office are working to generate options for the REAP update. The updated version will come into effect in January 2009, and will help UBC retain its leadership position in green building.

### **Vancouver Campus Plan**

The Vancouver Campus Plan process has successfully incorporated sustainability principles into consultation events over the past year. In June 2008, for example, Campus & Community Planning hosted three policy roundtables: The 2010 Carbon Neutral Target (co-hosted with the Sustainability Office); On-Campus Student Housing; and Food Security. The roundtables were well attended, and the proceedings will be considered during policy development in Phase 5, the next phase of the planning process. In Phase 4, Campus & Community Planning developed a workbook as part of the consultation on campus plan options. The workbook incorporated criteria for working towards sustainability and a low-carbon campus.

### **UBC-O Campus Guidelines toward Sustainability**

Ongoing dialogue concerning the UBC Okanagan Campus Guidelines takes place, with an aim to direct the future growth of the campus so that the footprint of the buildings is minimized and the natural spaces, including the pine forest and iconic Okanagan grasslands, are protected.

### **University Investment Fund Project: LEED for Existing Buildings**

In February 2008, the Sustainability Office was awarded \$99,000 from the University Investment Fund. The award is funding an investigation into the effectiveness of green building rating systems at helping UBC achieve its greenhouse gas reduction goals. Phase 1 of the project, now complete, was a review of green building rating systems and a recommendation for moving campus buildings to carbon neutrality. Green architecture

firm Busby Perkins + Will completed the study, and pointed out that over the next decade, planned new construction and major renovations at UBC will constitute just nine per cent of the total building stock. In other words, UBC will need to focus its efforts on improving the energy performance of its existing buildings – not just new construction. Phase 2 of the project will see one or more green building rating system for existing buildings applied to a test building as a pilot project.

## **v. Communications and Outreach**

Communicating our successes and commitment to a sustainable future is integral to attracting top students, faculty and staff, and demonstrating UBC's value to the region and the world. Creating an overarching sustainability brand that can represent all of the initiatives (academic and operational) is paramount as we strengthen the story and enlist the support of communicators across our campuses to integrate the sustainability narrative into their efforts.

We enjoy solid public awareness of our operational successes and our commitment to sustainability. This is suggested by 10,000 unique visitors per month to our website. However, given that only three per cent of our web traffic is international; we have identified the need to improve our international communications.

Similarly, our internal take-up appears to be limited. Results of a 2007 survey of 500 students at UBC-V showed low awareness of UBC sustainability programs, which points to the need for improvements in the internal communications of sustainability initiatives.

The survey results included the following points:

- 14 per cent of respondents indicated that recycling was UBC's major accomplishment in sustainability;
- 66 per cent of respondents were unaware that UBC has a sustainability strategy, and 58 per cent were unaware of the Sustainability Office; and
- 63 per cent of people asked were NOT aware of the courses on sustainability available in all faculties.

The following efforts and initiatives are underway to strengthen branding and communications on sustainability:

- The Presidents Advisory Council on Sustainability (PAC-S) includes a Communications Working Group that will be overseeing the creation of a communications strategy for sustainability at UBC;
- The Sustainability Office is chairing the PAC-S Academic Working Group – Communications sub-committee, whose mandate is the creation of an integrated web presence for sustainability at UBC that representing sustainability in operations and academia.
- Public Affairs and the Sustainability Office are collaborating to build sustainability into one of UBC's highest brand assets.
- Collaborating with the UBC's campus-wide network of communicators to tell the story.

### **SO Communications Quick Stats for 2008**

Web traffic: average of 8,000 to 14,000 unique visitors per month

Media Coverage: 64 media stories attained

Presentations: delivered 44 on-campus and off-campus presentations and seven international presentations

Events: attended 20 events on campus; hosted and organized Climate Action Symposium

Tours: conducted 52 green building tours

General Inquiries: received and responded to 255 general inquiries

### **Sample Headlines from 2008**

- B.C. university Presidents sign climate action statement, UBC Public Affairs media release, March 13, 2008
- The meaning of greening, Vancouver Magazine, May 2008
- Five UBC buildings go head-to-head to conserve energy, UBC Public Affairs media release, May 15, 2008
- UBC President applauds sustainability commitment at first-ever G8 summit, UBC Public Affairs media release, July 3, 2008
- Practising what they preach, Green Space BC, July 2008
- UBC's ECOTrek takes up top prize at CAUBO awards, University Manager, Summer 2008
- Building green in BC: LEED and REAP, CanNewHomes.com, July 2008
- How to save the world, Ubyssy, September 5, 2008
- UBC is Canada's greenest campus, Asian Pacific Post, September 2008
- The Ivory Tower turns green, Globe-Net, September 29, 2008
- Hope sprouts on UBC farm, Vancouver 24hrs, July, 2008

## **vi. External Leadership and Influence**

As a recognized leader in sustainability, UBC has the opportunity to influence campuses around the globe. Within Canada alone, there are just over 100 universities and approximately 300 colleges. Increasingly, campus sustainability is a strategic priority for these institutions. While UBC has actively pursued the sustainability agenda for many years, other universities and colleges are just beginning down the path. Over the past 18 months, we have received a steadily increasing number of requests to share our story, our lessons learned and our materials. We have begun to design initiatives that leverage our role externally.

### **President Signs Climate Commitment**

On March 13, 2008, President Toope and five other B.C. university presidents signed the University Presidents' Climate Change Statement of Action for Canada, committing UBC to accelerate its reduction of greenhouse gas emissions. The statement commits the universities to initiate a climate action planning body that consists of students, faculty, staff and other partners, and to produce a comprehensive climate action plan. Under the plan's two-year phased timeline, UBC's GHG emissions will be measured and targets and strategies to reduce them will be set. Inventories, plans and progress reports will be made available to the public for review.

### **Summer Institute in Sustainability**

The UBC/UW Summer Institute in Sustainability was a week-long program held in summer 2008 and well received by the 37 attendees from across Canada and elsewhere. International participants came from Barbados, Nairobi, New York and California. The program included a combination of lectures by sustainability experts and practitioners, UBC on-site excursions, case studies featuring five UBC signature sustainability programs, and applied work sessions. The Summer Institute in Sustainability attracted professionals involved in establishing and managing

sustainability policies and programs within their own institutions and organizations.

The Summer Institute in Sustainability was a joint initiative of UBC Continuing Studies, the UBC Sustainability Office and the University of Washington.

### **Case Studies**

We began to document our signature programs in a series of case studies for the above-mentioned Summer Institute. Since then, these case studies have proved to be a valuable resource to share with others who are interested in learning about UBC's best practices in sustainability. The five case studies we developed are as follows:

- Energy and Climate Management
- Green Building
- Institutionalizing Sustainability
- SEEDS
- Student Engagement
- Sustainability Coordinators

### **Green Building Tours**

Green buildings garner a great deal of positive public attention for the University. In addition to their contribution to numerous campus sustainability initiatives and awards, UBC's green buildings were the focus of 52 tours in 2008. Tour attendees were diverse, including local and international students and university officials, architects, engineers, planners, and green building professionals. UBC is an originator of the green building movement in North America. The next phase in the evolution of green building at UBC furthers UBC's leadership position. In developing the living laboratory concept, UBC will continue to attract the external community onto its campuses to learn more about our innovative green building and infrastructure practices.

### **Awards**

In the past year, our sustainability efforts have received recognition through awards and honourable mentions including:

- College Sustainability Report Card: UBC was ranked one of the top three most sustainable schools in North America and top school in Canada by the Sustainable Endowments Institute of Cambridge, Massachusetts;
- Just Desserts Award for SEEDS program from the AMS/GSS;
- Helen McCrea Award for SEEDS program from the Campus Advisory Board on Student Development;
- ECOTrek awarded national first prize for quality and productivity from the Canadian Association of University Business Officers;
- Healthy Workplace Award presented by Great West Life to Land and Building Services. This award recognizes LBS for its work in developing programs designed to improve the health and well being of its employees;
- The Fipke Centre's design earned an unprecedented five Green Globes from the Building Owners and Managers Association of Canada, an award reserved for designs serving as national or world leaders in energy and environmental performance; and
- WorkLife BC Award of Merit for UBC Okanagan from the Ministry of Children and Family Development.

In addition, UBC Properties Trust was a BC Hydro PowerSmart Award finalist for builder/developer of the year. The PowerSmart Excellence Awards showcase the best

energy efficiency and conservation practices of BC Hydro customers. The nomination signals Properties Trust's commitment to sustainability at UBC.

#### **4. Future Priorities**

The quest to realize a more sustainable way of life on this Earth is increasingly becoming a race – not against each other, but against time. We believe that universities represent the greatest opportunity to advance society towards sustainability. This is a position of tremendous responsibility and opportunity.

As we have already detailed in this report, UBC is a front-runner in this race. This means we must often find the direction and lead the way. Therefore, if we are to embrace the inherent duties associated with this leadership position, we must ask ourselves two questions:

1. Are we doing enough within our sphere of direct control on campus and within our extended community to provoke a fundamental transformation towards a more sustainable society? Are we doing all we can to lead by example?
2. Given our status as a recognized global leader in campus sustainability, what is our responsibility within the higher educational sector in Canada and around the world to lead the quest for solutions that meet the great challenges of the 21<sup>st</sup> century?

We will not attempt to answer these questions but we will simply present them for consideration as we think about our priorities for the future. Here are some strategic priorities for 2009-2010.

#### **Financial Security – Energy and Climate Change**

We have realized substantial financial security gains thanks to the foresight of some of our early champions and the projects they initiated, such as ECOTrek. Our challenge is to continue to realize these savings as the University grows. Not only must we maintain our rigorous monitoring and reduction efforts, we must aggressively pursue additional ways to reduce our energy use and the associated costs and environmental impact. As well, we must continue to encourage individual and departmental behaviour change on campus to reduce our carbon footprint. Programs such as the energy dashboard pilot, continuous optimization and the Kill-a-Watt meters all contribute to footprint reduction through behaviour change.

Equally as important in terms of financial security and conservation is our climate agenda. Clearly, the marketplace is changing. Already there is a price tag on carbon that will increase as we approach 2010 and the Provincial carbon-neutral target. Therefore, we must make every effort to reduce our largest emission areas on campus. These will be addressed with such initiatives as the Alternative Energy Sources project and the potential expansion of the U-Pass program. In addition, Phase 2 of UBC Renew just makes good sense. In a recent study, the green architecture firm Busby Perkins + Will noted that although it is essential to incorporate green standards into new buildings on campus, the biggest gains in the quest for carbon neutrality are in refurbishing existing building stock.

### **Engagement**

It is clear from the volume of student, web, media, and public queries received by the Sustainability Office and others that people want to know more about sustainability and to find ways of bringing it into their lives. Our goal this year is to increase opportunities for students to engage actively with sustainability. In particular, we will review the SEEDS program with the hope of expanding it. In addition, we will look for ways to build on the success of the Climate Symposium and to provide more cross-campus opportunities for staff and faculty to come together to share ideas and expertise on sustainability. Additionally, we are developing a framework for Social Sustainability which includes aligning existing programs that support social sustainability within the framework and developing a methodology for reporting performance in the annual *UBC Sustainability Report* and *Inspirations and Aspirations*.

### **Academic Integration**

A major focus over the next year is the work of the PAC-S Working Group Academic Programs to develop educational programs at the undergraduate and graduate levels.

### **Communications**

As noted earlier in the report, communications is critical both to the successful integration of sustainability on campus, and to reinforcing national and international awareness of UBC's sustainability strengths and stories. Our goal this year is to enhance UBC's sustainability web presence significantly.

### **Strategic Planning and Reporting**

In the area of sustainability management and planning four initiatives provide the focus for the upcoming year: The Sustainability Academic Strategy; the UBC Climate Action Plan and a related operational proposal; the 2008/2009 Sustainability Report and *Inspirations and Aspirations Beyond 2010* to guide a comprehensive and inclusive approach to campus sustainability; and the Vancouver Campus Plan.

### **University Town and South Campus**

Enhancements to UBC's own Residential Environmental Assessment Program (REAP) will be completed and will ensure that UBC retains its leadership position ahead of the BC Building Code and other jurisdictions in the region. The Academy and campus partners will plan and implement efforts to give South Campus a prominent place in UBC's overall sustainability program. As well, the University Neighborhood Association and UBC will work closely together on U-Town neighborhood sustainability initiatives.

### **CIRS**

We also look forward with much anticipation to locating sustainability focused units in the new CIRS building in 2010. Already we are working on joint programming efforts with Dr. John Robinson and the Institute for Resources, Environment and Sustainability (IRES) in anticipation of our move. The Centre for Interactive Research on Sustainability (CIRS) will be a living example of sustainability in action. It will represent the next generation of green buildings, a generation beyond LEED Platinum, which is the highest standard Canada has known to date. CIRS will be a living building that provides net positive energy and net positive water back to the utility systems.

### **Olympics**

As we approach the one-year countdown to the Olympics, we will focus on ensuring that UBC Sustainability has a prominent place in the Olympic spotlight. We will package and

tell our sustainability success stories to the world. In addition, we will enhance the hands-on experience for campus visitors by expanding and improving our campus tour program.

### **Global Influence**

UBC's leadership role in sustainability in higher education extends to national and international stages. One of our strengths in the marketplace is our ability to foster collaboration with other universities around the world. However, in order to have a dynamic external presence, it is essential that we continue to build and expand our activities on our campuses. In turn, our focus as a living lab for sustainability equips us with a unique body of knowledge and experience to share at home and around the world.

The year, we will dedicate time and resources to conduct outreach. For instance, we plan to develop a web-based seminar designed to share our case studies with an international community of sustainability experts, scholars and students. In addition, in cooperation with the AVP International and Tecnológico de Monterrey in Mexico, we are currently developing a Declaration on Sustainability for Universitas 21 (U21). U21 is an association of universities from Asia, Europe, Australia and the Americas. The declaration will be globally significant and address issues pertinent to both the northern and southern hemispheres. The presidents of the U21 universities will review the declaration at their next meeting in Seoul, Korea in May 2009.

## **5. Final Words**

Thank you for taking the time to read and consider this report. We appreciate the Board's leadership role in fostering sustainability at UBC and in supporting the work that we do in the Sustainability Office and with our colleagues across our campuses. In addition, we look to your vision, inspiration and diligence to guide us as we all work together to shape the future of this University.

To return to our President's words:

"If we don't push the boundaries of accepted wisdom, if we don't break the inertia of smug comfort, who will?"

-- Professor Stephen J. Toope  
UBC Climate Symposium, October 2008

## Attachment A

### Selected Measurements for Model Campus and Campus Engagement based on data collected for the Period 2007/2008

Model Campus	Result (Trend data where Available)
<b>Reduce Pollution</b> Reduce CO2 and equivalent emissions from institutional and ancillary buildings from 2000 levels (adjusted for growth)	2005-2006 – 22% reduction 2006-2007 – 24% reduction 2007-2008 – 26% reduction
Maintain annual average auto traffic at or below 1997 per capita levels for UBC-Vancouver	2005-2006 – 24% reduction 2006-2007 – 22% reduction 2007-2008 – 20% reduction
<b>Conserve Resources</b> Reduce non renewable energy consumption in institutional buildings by 30% (adjusted for growth) from 2000 levels	2005-2006 – 17% reduction 2006-2007 – 23% reduction 2007-2008 – 26% reduction
Reduce water consumption in institutional and ancillary buildings by 40% (adjusted for growth) from 2000 levels	2005-2006 – 34% reduction 2006-2007 – 42% reduction 2007-2008 – 40% reduction
Divert 55% of annual operational waste from the landfill (by 2010)	2005-2006 – 41% reduction 2006-2007 – 46% reduction 2007-2008 – 44% reduction
<b>Protect Biodiversity</b> Eliminate the use of pesticides for “cosmetic” purposes (as defined by GVRD).	2005-2006 – 45.18 L Roundup 1.8 kg Casoron 2006-2007 – none used 2007-2008 – none used
Set target to reduce hazardous materials purchased.	2007-2008 – waste reduced by 8.2 tonnes. Resultant costs savings \$295,000
<b>Model Campus</b> Plan for the Official Community Plan goal that 20% of new residential dwellings will be rental housing, of which not less than half will be non-market housing that may include staff, faculty, cooperative, social, or other special housing needs	2005-2006 – 39% 2006-2007 – 28% 2007-2008 – 26%
Work toward the Official Community Plan goal that not less than 50% of new market and non-market housing serves households where one or more members work or attend university on the UBC (Vancouver) campus.	2005-2006 – 48.8% 2006-2007 – 68% 2007-2008 – 26%
<b>Energy Savings</b> Completion of MCW ECOTrek verification report	2007-2008 – \$ 3.5 million in avoided energy costs 2008 – \$2 million incentives monies secured from BC Hydro, used to fund final ECOTrek costs
<b>Space Utilization</b> Increase space utilization by at least 5% from 2000 levels (UBC-V)	2005-2006 – 2% 2006-2007 – 4% 2007-2008 – 7%
Campus Engagement	

Support and engage staff, faculty and students in sustainability learning, practice and leadership development	2004-2005 – 364 SEED participants, 44 papers 2005-2006 – 344 SEED participants, 50 papers 2006-2007 – 398 SEED participants, 64 papers 2007-2008 – 500 SEED participants, 69 papers 2000–2008 - over 2800 participants, 500 SEEDS projects
Demonstrate and recognize sustainable practices in the workplace and in student living.	2004-05: 140 Sustainability Coordinators 2005-06: 140 Sustainability Coordinators 2006-07: 141 Sustainability Coordinators 2007-08: 146 Sustainability Coordinators 2008-09: 150 Sustainability Coordinators  2007-2008 - Residence Sustainability Coordinators – 5 Resident Advisors Outreach to 2900 students
UBC's first <i>Climate Action Symposium</i>	Attracted a capacity audience of 245 people from throughout the UBC community and presenters from 18 different departments, units and community groups.
goBeyond	Engaged 60,100 students, 21,000 event participants, and 1,300 students signed the personal challenge. Nearly 400 faculty from 15 institutions reaching 18,000 students have participated in the goBEYOND Teach-In.
Overall Sustainability Fundraising Revenues generated for the University (by the Sustainability Office)	2008-2009 work year \$ 1,026,617