

Participatory approaches to green a campus.

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Sub-Themes: Community- University partnerships and Greening the Campus.

Introduction:

How do we create an education system with a central focus on developing sustainability? The Universities in British Columbia have used a systems approach to management, which entails a comprehensive and holistic approach to decision making. The British Columbia Campus Climate Network (CCN) has created a network out of 15 post secondary institutions in the province of British Columbia. The network consists of colleges, universities, and polytechnics. Participants include the faculty, administration, staff, students, teachers, professional associations and community members. The idea is to transform education of science, arts, engineering and media into the real world, starting at the post secondary campus. The current technology at the University of Victoria (Uvic) offers great opportunities for improving education for sustainable development. It offers new ways to present ideas and information, new ways to enhance student-student and student-teacher communication and new ways to assess student performance and provide pedagogically powerful and timely targeted feedback. What does the carbon-neutral mandate mean for our colleges and universities? Public and private institutions in BC are undertaking collaborative and integrated climate change strategies.

The School of Environmental Studies at the University of Victoria is one of the best in Canada and the world. It offers an interdisciplinary program, with courses that examine systemic aspects of environmental issues and explore solutions that cut across the boundaries of traditional disciplines. There is also the recognition that many aspects of local, national and international environmental problems are inextricably connected to our dominant cultural values, and attendant political, social, economic and educational institutions. The school has supported students who wish to carry out environmentally friendly activities at the university. The teachers in coordination with the students have created an organization called Common energy. This is student run but fully supported and financed by the school. The university administration has also caught on to this idea and has opened an office called office of campus sustainability. They work on sustainability issues related to the entire university and community surrounding the university. It cross sects across all schools and faculties and includes the student residents and all buildings and grounds within the university. The office has a created a campus sustainability framework that is using a systems approach to management. It encompasses and comprehends every function and process at the university.

PART I: Initiatives by the office of campus sustainability of Greening the University of Victoria:

1. Campus design guidelines:

In the spring of 2006, the UVic campus planning committee, one of the two multi-stakeholder bodies involved in campus planning, adopted sustainable campus design

guidelines to assist decision making related to sustainability in new buildings and renovations. These guidelines essentially provide options for meeting the academic mission of the university in a manner that is socially, economically and environmentally sustainable. In addition, the guidelines complement municipal strategies for reducing demand on utilities and roads, minimizing sprawl development and protecting the environment.

The guidelines promote green buildings which emphasize:

1. responsible construction and building practices;
2. feature recycled materials and renewable resources;
3. minimize impacts on natural areas;
4. accommodate more floor space within a smaller building footprint;
5. utilize systems that emphasize water and energy conservation and efficiency;
6. Enhance indoor environmental air quality.

2. Natural and landscaped areas

Naturescape is a landscaping concept which emphasizes restoring, preserving and enhancing wildlife habitat in urban and rural areas. The intent is to create new habitats, utilize native plant species, reduce the need for extensive watering and eliminate the need for chemical pest control. There are a number of natural landscaping projects on campus, including the Native Plant Study Garden, the Lorene Kennedy Memorial Garden, Medical Sciences Building, and Continuing Studies Building and outside the MacLaurin Building.

3. Integrated Pest Management Program

As a part of the Campus Integrated Pest Management Program, facilities management strives for zero pesticide/herbicide use and applies pesticides and herbicides only in very limited cases when problems occur. For example, in 2005 facilities management undertook a Hogweed and Hemlock eradication program using spot treatments of Roundup on both mature and young plants. While the application was required, staff also applied physical controls to prevent further seed germination.

4. Ecological Restoration

Grounds staff have been busy in Mystic Vale removing invasive species, relocating the jogging trail and constructing detention ponds in Hobbs Creek. Each of these initiatives contributes to the enhancement of the entire forest ecosystem and ensures the long-term protection and continued use of this space. While new native species will take time to set root, work has been successful in removing aggressive invasive species such as ivy and holly and replacing them with sword ferns, snowberry and Indian plum.

5. Reclamation Trials

Now in its third year, the UVic Garry Oak Reclamation Trials are being conducted in the field on the corner of Cedar Hill Cross Road and Henderson Road. This is a joint project of the restoration of natural systems program and facilities management.

This experiment is being conducted to compare different methods of soil preparations and planting regimes to assess optimal ways of controlling exotic species and re-establishing native plant communities.

6. Urban Watershed Renewal Initiative

For the past five years, the university has participated in the CRD Bowker Creek Urban Watershed Renewal Initiative. The initiative is a collaborative effort involving the municipalities of Saanich, Oak Bay and Victoria to improve the overall health of the creek, manage storm water flows, expand public areas along the creek and protect the watershed from pollution. From creek clean up projects to riparian area restoration, university staff has played an active role in the revitalization of this urban watershed.

7. Groundwater protection and erosion control

Maintaining healthy and aesthetically pleasing grounds can be a challenge during periods of heavy construction. Several controls are in place to avoid erosion and impact on vegetation. The university works with landscape architects, arborists and grounds staff to evaluate and protect trees on campus during construction.

8. Transportation Demand Management

At Uvic a series of initiatives that encourages travel options other than the use of single-occupant vehicles. The goal is to reduce traffic volumes and parking demand by changing travel behavior. Transportation Demand Management (TDM) focuses on pricing strategies, infrastructure and incentives to encourage sustainable transportation behavior and complements the CRD Travel Choices Strategy. The result is reduced roadway congestion, reduced demand for the construction of new parking spaces, improved air quality, and amenities that cater to users of alternative modes of transportation.

The TDM program includes:

- Cycling infrastructure improvements.
- Crosswalk and signage improvements.
- Rideshare, car-share and car-pooling programs.
- Dedicated parking areas for motorcycles, scooters and electric bicycles.

9. Energy management

The university is pursuing a number of initiatives to further reduce energy consumption on campus including education campaigns, retrofit programs, purchasing programs and

investments in green power certificates. While the up-front costs of energy management projects are high, the long-term saving and avoided costs for the institution provide benefits for years to come.

Energy-efficient buildings

Since its inception, the university has promoted the development of energy efficient buildings. UVic limits the use of air conditioning to specific areas such as archives and special collections, computer server rooms, laboratories with fume hoods, and animal care facilities. New buildings also incorporate occupancy sensors, energy-efficient equipment (e.g. fume-hoods, photo copiers, and computers), reflective roof material, energy-efficient lighting, sun-shades, and natural ventilation systems, all of which contribute to reducing energy use and providing a healthier work environment.

Renewable energy

Renewable energy sources, such as solar and wind power, produce no greenhouse gas emissions or air pollution. In addition to the 173 solar panels installed on the roof of the McKinnon gym to heat the indoor swimming pool, the university has added solar power to its parking ticket dispensers and lights mounted on campus transit stops. Without the requirements to connect to central electricity sources and no scheduled maintenance for at least five years, these installations have proved to be a great investment and a practical demonstration of locally made technology.

Greenhouse gas reduction strategies

Greenhouse gas (GHG) emissions contribute to global climate change, which has significant economic, environmental and social consequences. Many of the activities on campus, such as vehicle travel, using electricity and creating waste, produce Green house Gases (GHGs). In an attempt to reduce operating costs while assisting the provincial and federal governments in meeting the Kyoto protocol, UVic is committed to undertaking measures to limit the production of greenhouse gas emissions on campus. Facilities management has four major programs in place to help reduce GHG emissions: energy management, waste management, transportation demand management and campus fleet management. For example, the facilities management utility vehicle fleet is now more than 90 per cent emissions free.

10. Waste Management:

The Department of Facilities Management is leading the way with innovative programs, policies and infrastructure to reduce, reuse and recycle wastes in order to extend the life and capacity of the region's landfill facility. The greatest contribution a user can make to the campus waste management program is to limit waste production in the first place.

The university promotes the four rules of waste management:

- reduce the waste you produce
- reuse as much as you can
- rethink the way you purchase
- recycle the rest

On-campus recycling also includes:

- electronic equipment, such as computers, printers, and fax machines
- furniture, such as desks, chairs, mattresses, and tables
- concrete
- wooden pallets
- toner cartridges from printers and photocopiers
- paints and solvents

11. Green Cleaning Program

One way the university dramatically reduces waste and chemical use each year is through the Campus Green Cleaning Program. Launched in 2000 as a pilot project, the program became a permanent part of maintenance operations in 2002. The campus Green Cleaning Program does more than just reduce packaging and chemical waste generated by janitorial services. The use of environmentally friendly products is contributing to healthier indoor environments, reducing the amount of potable water used in building maintenance, and protecting the long-term health of employees.

12. Water conservation initiatives

In 2005, the university consumed 178,000,000 imperial gallons of potable water, down 2 per cent from 2004. While major efforts are still required to reduce potable water consumption, the university has implemented a number of water conservation initiatives. Sensor faucets and low-flow toilets are used to replace units in older buildings, and new technology is used in new facilities. For example, the Engineering Computer Science Building features waterless urinals, a new technology for the UVic campus. Each waterless urinal typically saves 151,000 liters of fresh water per year.

PART II: Student led participation in greening campuses:

In November 2007 the British Columbia Provincial Government passed the Greenhouse Gas Reduction Target Act mandated all public ministries, schools, universities, colleges, hospitals and crown corporations to be carbon neutral by 2010, and all municipalities to be carbon neutral by 2012 (Ministry of Environment & Office of the Premier, 2007). This Act is part of a suite of policy and regulatory tools which make BC the North American leader in provincial or state-level climate change policy. The provincial government is sending clear signals to public sector bodies and institutions, to the private sector and to institutions that reducing emissions must become part of business as usual. Universities

and specifically the University of Victoria have an opportunity to take on a unique leadership role in achieving carbon neutrality through operational efficiency and academic research. The opportunity exists to create transferable models for climate action and to set a high bar for emissions reductions, innovation and organizational transformation. At the same time, the risks of failure are also high. As the continental leader, failure to achieve mandated reductions through foot-dragging, public resistance, inertia or mismanagement could set climate change policy in North America back a decade or more.

This is a tremendous opportunity for the public institutions to become leaders in climate action, yet many institutions have not positioned themselves to meet this goal through GHG Inventory, baselines, initial climate initiatives or integrated climate plans. The Campus Climate Network (CCN) is example of a pioneer project to get the ball rolling in making the universities carbon neutral. The network is one of the first in Canada which is working with diversity of stakeholders on climate action projects in post-secondary schools across the province. The universities partnered and created the go Beyond Project. The project identifies possible partnerships with the municipalities, local organizations, private sector, education centers, and community members of all ages, backgrounds, and abilities. These connections are necessary because creating sustainable places is about carrying on a sustained dialogue about how the community wants to grow and evolve” (Beatley & Manning cited in Found & M’Gonigle 12).

The CCN has a variety of projects within each focus areas that include:

- Buildings
- Transportation
- Food
- Energy
- Business
- Civic Engagement
- Governance

The CCN abides by the ESD practices as they gain meaning through critical engagement and reflection in local community contexts. The CCN embraces global development objectives of ensuring the right to education for all, and aspirations that all learners should have access to good quality education. It embraces both formal and non-formal learning, and includes efforts to ensure adult literacy and community learning processes.

The CCN programs include:

1. Community-based food gardening, health, nutrition and business development training.
2. Training of local government officials to implement environmental management or public health systems.
3. Youth education programs to understand patterns of globalization and over-consumption.

4. Development education programs aimed at enhancing sustainable utilization of natural resources, food security etc.
5. Indigenous knowledge research programs seeking new ways of knowing and new solutions to social and environmental issues.
6. Programs focused on the well-being of children and youth.
7. School curriculum initiatives to support sustainable development e.g. science, math, technology, social science, life orientation, life sciences, agricultural sciences etc. programs.
8. Literacy, numeracy and life skills learning programs for children in schools, out of school youth and adults.
9. Teacher education initiatives aimed at transforming education systems.
10. Critical political, economic, environmental, and social education programs that seek to generate new models and literacy's in society.
11. Industry education and training programs aimed at implementing environmental management and sustainability principles and practices.
12. Public awareness / media programs aimed at educating the public about environmental, social and sustainability issues.
13. Human rights education and gender equity education programs.

The Campus Climate Network (CCN) has followed a strict process where students interact with other students and community members. The CCN disseminates information throughout to all campus representatives so they can sensitize students as well as community members. They have done this through a comprehensive communications strategy that includes public outreach to all community stakeholders. This includes: mass emails to all contacts to university departments in every school, department and chair in the province. These mass emails have enhanced the publicity of the network. Second the human resources in each institution build a group of representatives that sensitize students of their institution. They advertise to students via pamphlets, brochures, posters and on-line WebPages. It is necessary to hold campus workshop for campus representatives and decide what the governance structure and strategic planning of the network. The network works with the career centers to build a bridge between jobs in the field of environment and sustainable development. The NGO's and community members have also joined the campus climate network to help publicize conferences, workshops, and activities of the network. Each stakeholder in the community has the right to participate and this is encouraged to a point where the multi-stakeholder participatory approach has led to its success. The network is also financed by public, private and NGO sectors so that there is sufficient capital to host and subsidize extra-curricular workshops, conferences, programs and activities. There is a professional employment which is income generating for those involved in the network. Including, website design and manager, social marketers, student trainers, managers and directors. The network is making use of virtual technology to further communicate their ideas and programs to other students across the planet. Video conferencing has enabled the network to grow beyond British Colombia, Canada to East Africa.

All students in the network build relationships and network with other students. These friendships are what create unity and communication between each entity. The value of these relationships goes beyond tangibles. The commitment by student's volunteers and employees in terms of planning, time management and financial costs is significant. It can be very hard to split tasks, especially after graduation of the students involved. For many students their voluntary work acts as a beneficial side project that coincides with their main priority of graduating with decent marks. The reason for the effectiveness of communication between students, teachers and members is the open space principle of the conversations. The students share what we call as group sustainability or efficient knowledge transfer. The open space platform allows every one in the space to speak and share their ideas. Everyone is a facilitator rather one person deciding the fate of the debate.

The workshops and conferences in the province are very multi-disciplinary; and touch on almost all generic subjects. This provides incentive for students in all disciplines to participate. Pod casts and tape and audio recordings are usually installed on the CCN website. These act as a great way to recall on past information as well as advertise to new members to join. There are even radio shows within the universities which play the recordings from the CCN workshop or conference. There are also power points and PDF's of the presenters listed on the website for more academics to further research. Youth engagement is the main priority therefore youth groups and clubs have great accessibility and incentives to participate in the network. Conferences are usually subsidized and students receive bursaries and scholarships for pursuing ventures.

Conferences are begun with and followed up with phone calls. This is an efficient communication strategy. They enable every leader from each institution to talk on the phone at the same time for a very minimal amount of financial, and technical input. Also the calls are convenient as people do not have time or money to do travel the place for a meeting. These calls can be confusing but once the participants talk names and positions are easily recalled. The phone calls can last up to 1- 6 hours. They can be greatly beneficial as everyone is listening at the same time and questions and answers can be answered immediately and by all stakeholders. This allows for fluid and direct communication between members that are spread throughout large geographic regions. The call is interactive and relevant for different campuses and experience levels. The idea of conferences and workshops is to help provide beneficial non-formal learning exercises for students. The involvement with their local community and environment provides excellent experiential learning opportunities that help prepare students for after graduation.

Case study: Student-Community Dialogue - Business and sustainability training workshops.

The business and economy working group is a network of students and faculty at Uvic working to "green" local businesses. The Common energy workshop presents realistic,

sustainable business practices that are easy to implement. They learn how to give your businesses the competitive advantage of sustainability. The themes include:

1. Transportation and energy efficiency: Bike lanes and green zones for walking and exercising.
2. Sustainable waste management and how to utilize resource recovery from solid and liquid wastes.
3. Marketing green initiatives and capital procurement.

Businesses that attend receive a toolkit that includes:

1. Marketing strategies and promotional materials to communicate sustainable practices.
2. Information on available grants programs and requirements for green businesses initiatives. The information from local experts regarding retrofits and profitable energy reductions
3. Information from local experts regarding marketing , think tanks and the competitive advantage of being “green”
4. List of energy reduction and waste management products and services
 - Local examples of 75%-100% waste reduction projects with step by step guidelines to reduce waste.

Conclusion:

The Idea of the CCN is to establish a collaborative campus climate change network between BC provincial networks. This network can act as a hub for all students to share best practices, disseminate information and exchange ideas and resources. The network is supported by each university involved. The University of Victoria with its campus sustainability office has adhered to the principles of this network and has designed a plan to accommodate student and community participation in all levels of the campus greening. The idea is now to bring forward the CCN network as a beneficial role model that African universities can follow. The network could provide on line e-learning, international exchanges and internship opportunities for students from Canada and Africa. It can bridge the gap between Canadian and African students. The intention of sharing best practices, financial and technical resources between the developed and developing world is the keystone for international development. The network between students, community members, teachers and staff, provides this opportunity for collaboration, integration and communication. This all helps lead to efficient and institutionalized approaches to greening a campus.

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