

Keynote Speaker: Next generation sustainability at The University of British Columbia: beyond harm reduction

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Regenerative Sustainability at UBC



Presentation at Challenging Connections: EAUC Annual Conference

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> John Robinson UBC

The Sustainability Discourse

Limits Storyline

- Harm reduction
- Damage limitation
- Mitigation
- Cutting back
- Sacrifice

Problems

- Not motivating
- Doesn't go far enough
- Mostly environmental
- Scientistic

Regenerative Sustainability



- From less bad to more good
- From reducing damage to creating benefits
- From sacrifice to contribution
- From net zero to net positive

Campus as Sustainability Test-Bed

Universities uniquely suited for this role:

- Single (owner-) occupiers
- Public mandate
- Teaching
- Research

Develop integrated campusscale systems:

- Demonstration and research
- Engage and train students; develop new curricula and programs



Institutional Culture Change



Two Cross-cutting Themes

Campus as Living Lab

Agent of Change





UBC Campus as Living Lab

UBC Campus Steam System



Current Signature Projects

Demand-Side

Supply-Side



Continuous Optimization of Campus Buildings Centre for Interactive Research on Sustainability (CIRS)

Steam to Hot Water Conversion of Campus District Energy System Bioenergy Research and Demonstration Project

\$150 million of capital investment

UBC-V GHG Emissions and Drivers 2007-2013





Regenerative in Environmental and Human Terms



Copp Building Redevelopment: a living lab project



- Site of new multi-storey mixed-use commercial and faculty/staff (non-market) rental building
- Living lab components built into process from pre-design stage

Infrastructure Policies & Practices

- LEED Gold certification minimum requirement for new buildings, coupled with aggressive Energy Use Intensity (EUI) targets
- Technical and Design Guidelines: incremental improvements
- Design peer review for key building systems
- Construction management delivery model and internal "retained risk" fund to manage risks
- Goal: Functional, reliable, sustainable, maintainable and economic solutions
- Aspiration: Regenerative buildings



Capital Program Overview

- Completed in last 6 years: 43 projects, \$1,398m
- Currently in design or construction: 21 projects, \$832m
- Investment across all infrastructure types:

_	Core Academic	53%
_	Student Housing	21%
_	Student & Community Services	12%
_	Utilities & Public Realm	10%
_	Athletics & Recreation	4%

 \$165m investment in key sustainability projects (CIRS, Bioenergy, Steam to Hot Water Conversion, Okanagan Campus Geoexchange).



Job Description, Managing Director, Energy and Water Services (Jul, 2014)

"The Managing Director will govern the campus infrastructure to facilitate the implementation of the "campus as a living lab" initiatives with the intent to substantially reduce energy consumption and greenhouse gas emissions on the UBC Vancouver campus."

Social Sustainability $\leftarrow \rightarrow$ Human Wellbeing

UBC Wellbeing Initiative Initial Priorities

- Mental health
- Physical activity
- Inclusion & connection
- Food & nutrition
- Transportation
- Natural & built environments





Ponderosa Commons

- ~600,000 ft²
- 1116 beds \$167 million
- LEED GOLD
- First of five •

- academic offices •
- classrooms & meeting rooms ullet
- cafe ۲
- convenience store
- Collegium •

- fitness centre ullet
- informal learning spaces •
- child care centre ullet
- end-of-trip bicycle facilities \bullet
- art gallery

UBC Neighbourhoods



















<u>2041</u> ~40,000 people



Sustainable Community Indicators





Strategic Alliance Partnerships

BChydro

Energy systems, decision support



Energy, engagement, mobility



Residential sustainability



Utown@UBC as living lab

UBC/COV Sustainability Collaborative



Operational and Research Collaboration

Greenest City Scholars, 2014



59 students (2010-14); 8/40 hired in first 4years

Sustainability Scholars, 2014-15

City of Vancouver18BC Hydro7Fortis1Musqueam1UBC5

Total

32

Nexus program

Scholars

SEEDS

CCEL

3900 students

students

39 grad

~800

students

Work-learn

2600 students Thousands of students working with partners on sustainability projects:

- Off campus/on campus
- Grad/undergrad
- For credit/not for credit
- Unpaid/paid

Innovator Working Group

Members:

- UBC (co-founder)
- Arizona State (co-founder)
- Harvard
- U Texas Austin
- UC Davis

Regular meetings and exchanges:

- Share knowledge
- Compare best practice

North America leaders in campus energy & climate programs

Teaching & Learning Vision: Integration across the University

Each student, regardless of their degree program, should have access to an education in sustainability via a "sustainability learning pathway" (UBC Sustainability Academic Strategy, 2009)

Sustainability Pathways

Sustainability Learning Pathway

Yr 4	Capstone/Leadership Course		D
Yr 3/4	Sustainability Electives (courses vetted for sustainability attributes)	Real World Experience (e.g. SEEDS, CLL, Co-op, etc.)	ainability Learni Community
Yr 1/2	Introductory Course (e.g. SCI 220)		Susta
Yr 1	First Year Courses with Sustainability Embedded		

STUDENT ATTRIBUTES

Holism

Everything is connected

Sustainability Knowledge

Understand the context, know the challenges

Awareness & Integration

Connect what I know with what you know

Acting for Positive Change

Contribute to co-creating a better future

Select UBC Student Initiatives





Engagement Summary



2,000+ ENGAGED













MEETINGS & PRESENTATIONS





At UBC's Vancouver campus, sustainability means SBOItarevits ampreentine and munity, design and a support of the integration of



a place of mind The university of british columbia

sustainability