ANNUAL SUSTAINABILITY REPORT

2017-2018

THE UNIVERSITY OF BRITISH COLUMBIA
sustainability

2017/18 FAST FACTS

50%
REDUCTION IN ABSOLUTE WATER USE SINCE 2000

40%
INCREASE IN CHILDCARE SPACES SINCE 2009

1025
PEOPLE ATTENDED SUSTAINABILITY AMBASSADORS EVENTS

62
SUSTAINABILITY-RELATED ACADEMIC PROGRAMS

70%
OF TRIPS BY SUSTAINABLE MODES OF TRANSPORT

354
ADDITIONAL STUDENT BEDS AT **c̓əsnaʔəm** HOUSE

450
FACULTY RESEARCHING SUSTAINABILITY

61%
OVERALL WASTE DIVERSION RATE

30%
REDUCTION IN ABSOLUTE GHG EMISSIONS SINCE 2007

VANCOUVER CAMPUS

OKANAGAN CAMPUS

4%
REDUCTION IN WATER USE PER STUDENT SINCE 2013

33%
OVERALL WASTE DIVERSION RATE

5
CERTIFIED GREEN BUILDINGS

22%
REDUCTION IN GHG EMISSIONS PER STUDENT SINCE 2013

51%
OF TRIPS BY SUSTAINABLE MODES OF TRANSPORT

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ABOUT UBC

The University of British Columbia is a global centre for research and teaching, consistently ranking among the 40 best globally, and among the top 20 public universities in the world. Since 1915, UBC's West Coast spirit has embraced innovation and challenged the status quo. Its entrepreneurial perspective encourages students, staff and faculty to challenge convention, lead discovery and explore new ways of learning. At UBC, bold thinking is given a place to develop into ideas that can change the world.

UBC recognizes that the UBC Point Grey campus is situated on the traditional, ancestral, and unceded territory of the Musqueam (**xʷməθkʷəy̓əm**) people and that the Okanagan campus is situated on the territory of the Syilx Okanagan Nation.

MILESTONES

1990

1990 Tailloires declaration signed. Globally commits to sustainability.

1996 C.K. Choi Building opens, setting new green building benchmarks worldwide.

Dr. William Rees and graduate student Mathis Wackernagel develop ecological footprint concept.

1997 ***Sustainable Development Policy adopted.**

1998 ***Campus Sustainability Office opened.**

2000

2001 ECOTREK (2001-2008), the largest energy and water retrofit program at a Canadian university launched.

2003 U-Pass program pioneered, quadrupling transit ridership since 1997.

2006 ***Comprehensive campus-wide sustainability strategy published.**

2007 Kyoto Protocol greenhouse gas (GHG) reduction targets met five years early.

Dr. John Robinson shares Nobel Peace Prize as one of lead authors of the Intergovernmental Panel for Climate Change report.

2009 Sustainability Academic Strategy developed.

Sustainability integrated as a core pillar of UBC's strategic plan.

2010

2010 ***Bold targets set to reduce GHG emissions. Invests to meet climate change goals.**

Okanagan Sustainability Office established.

UBC Sustainability Initiative (USI) established to integrate operational and academic sustainability.

2011 ***Gold rating in STARS, a university sustainability rating system, earned.**

***Designation as Fair Trade Campus earned.**

2014 ***20-year Sustainability Strategy to advance regenerative sustainability developed.**

2015 MOU with Metro Vancouver signed.

Second Gold rating in STARS earned.

2016 34% reduction in GHG emissions from 2007 levels achieved at Vancouver campus.

33% reduction in GHG emissions from 2013 levels achieved at Okanagan campus.

2017 Hosted International Sustainable Campus Network (ISCN) conference at Vancouver campus.

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*First in Canada

SUSTAINABILITY
RECOGNITION

GLOBAL
NETWORKS

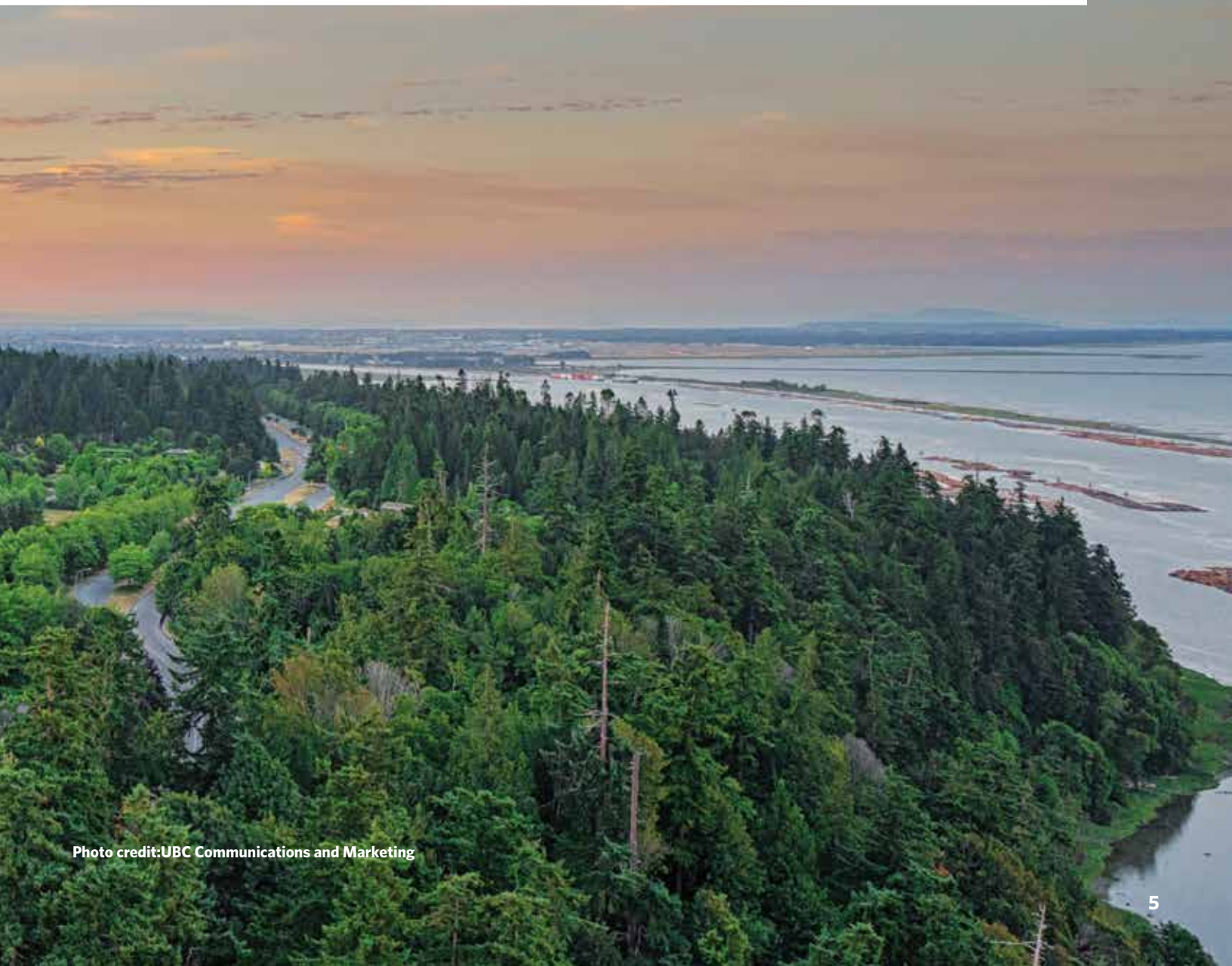


Photo credit:UBC Communications and Marketing

FOREWORD

Dr. James Tansey
Executive Director
UBC Sustainability Initiative

Michael White
Associate Vice-President
Campus + Community Planning

Rob Einarson
Associate Vice-President
Finance & Operations, UBC Okanagan

UBC puts sustainability at the heart of teaching, learning and research, operations and infrastructure, and community. While we innovate in teaching and research, our campuses also serve as models for the cities of the future and we design and build some of the most advanced infrastructure projects in the world. Our annual report provides an opportunity to share success, measure progress, and highlight our ongoing commitments.

Across both campuses, UBC focused on enhancing human and ecological health together by taking a systems-thinking approach. In Vancouver, our emerging Green Building Action Plan outlines new strategies to deliver improved sustainability outcomes in buildings, renovations and retrofits towards a vision of net-positive environmental and human health. At UBC Okanagan, the Whole Systems Infrastructure Plan encourages a holistic approach to developing a relatively new and growing campus, including designs for new campus buildings that reduce energy demand and connect to renewable, low-carbon energy sources, as well as thoughtful investments in transportation infrastructure, storm water retention, and more sustainable landscaping. These efforts are supported and informed by the incredible work of more than 400 faculty members across UBC who engage in sustainability-related research.

Addressing affordability pressures and enhancing accessibility was also a key priority last year. Through the updated Child Care Expansion Plan, UBC Vancouver now offers 814 child care spaces, and is targeting an additional 398 new child care spaces by 2041. In addition, we created new and affordable student housing at **c̓əsnaʔəm** House in Totem Park, including 354 new first-year beds, increasing the total number of student beds to 11,795 (a 12% increase from the previous year).

We also enabled students, faculty and staff to make powerful contributions to sustainability. Through our new Campus Biodiversity Initiative: Research and Demonstration (CBIRD), we helped advance biodiversity policy and practices at UBC and beyond by connecting academics, practitioners and community partners through applied research. In the Okanagan, we achieved significant energy conservation and waste diversion goals in labs, residences, and offices through engagement campaigns, leading to a five-fold increase in lab recycling, and a 14 percent increase in reusable foodware.

Finally, by expanding local, regional, and international community engagement, we increased collaboration on sustainability issues. Last year we hosted the International Sustainable Campus Network (ISCN) conference in partnership with the City of Vancouver, bringing together 80 leading universities from across 30 countries to explore how city-campus collaborations can advance climate action and sustainability. And we joined the University Climate Change Coalition (UC3), to collaborate on regional climate action along with 18 other leading North American universities.

We hope that this report inspires and accelerates further action toward safeguarding the sustainable future of our communities, and will advance our efforts to lead in sustainability and wellbeing on a global and local scale.

TEACHING, LEARNING AND RESEARCH

Across the university, UBC faculty are teaching and studying sustainability through hundreds of courses, programs and research projects. We are committed to fostering the knowledge, skills and experience of students in order for them to serve as agents of change, community leaders, and responsible global citizens. UBC's ambitious goals are for all students to have access to sustainability learning alongside their chosen degree program; to create diverse learning and co-curricular engagement opportunities for students; and to be a global leader in applied research on sustainable behaviour, infrastructure, and communities.

TEACHING AND LEARNING

UBC faculty advance sustainability by collectively teaching thousands of students a diversity of sustainability-related courses and programs. In support, we provide curriculum grants for faculty to develop innovative sustainability course content and teaching methods. We also offer advising services to students on curricular and co-curricular opportunities, and curate relevant courses and programs.

KEY ACHIEVEMENTS

NEW CURRICULUM DEVELOPED THROUGH GRANTS AND FELLOWSHIP PROGRAMS

Our Pathways Grant program supported UBC faculties and departments to create new curriculum that advances our long-term goal of offering every student access to sustainability learning alongside their chosen degree program. In addition, our Teaching Fellowship program connected grant holders with their peers from other disciplines to encourage shared learning and discovery.

Highlights last year included:

- Created a new Education for Sustainability cohort within the Teacher Education program in the Faculty of Education. The cohort was fully subscribed with 36 participants for fall 2018.

- Developed a Sustainable Foods Systems minor in the Faculty of Land and Food Systems to enable students in other faculties to access course content previously only available to land and food systems students.

SUPPORTED STUDENTS TO FIND SUSTAINABILITY COURSES AND DEGREES

Last year UBC instructors offered over 630 courses on diverse sustainability topics spanning 49 departments and 83 subjects. To help prospective and current students match courses and degrees with their interests, we annually consult with faculty to offer curated, easy-to-use lists of academic opportunities. In addition, our advisors provided personal support for students to find appropriate sustainability learning opportunities.

Featured course: Conservation Science and Sustainability (CONS 330)
Explores the fundamental concepts in conservation science and tackles different philosophies, perspectives, and disciplines used in setting priorities for managing biodiversity at all scales.

Featured course: Ethics and Sustainability (BA 560)
Explores the roles and responsibilities of business in society, including how to increase positive impacts and minimize negative impacts to unlock long-term, strategic opportunities while addressing social and environmental issues.

Featured program: Geography: Environment and Sustainability
Develops student's integrated understanding of the physical, ecological, economic, socio-cultural, and political systems that shape the world in which we live and influence the future of life on planet earth.

Featured program: Master of Engineering Leadership in Clean Energy Engineering
Allows engineers and environmental science graduates to make their sustainable vision a reality, and advance their careers in the field of clean energy.

FAST FACTS

635 SUSTAINABILITY-RELATED COURSES

62 SUSTAINABILITY-RELATED ACADEMIC PROGRAMS

7 PATHWAY GRANTS AWARDED TO SIX FACULTIES (2014-2017)

35 TEACHING FELLOWSHIPS (2010-2017)

HAIDA GWAII SEMESTER

Haida Gwaii is an unparalleled setting for students to learn first-hand about the complex social, cultural, political, ecological and economic issues facing communities around the globe, and at a local level.

With support from UBC, the Haida Gwaii Higher Education Society (HGHES) now offers several Haida Gwaii Semesters. UBC's Faculty of Forestry recently accredited the courses, and provides instructors for the Reconciliation Studies Semester, teaching alongside local instructors.

A Haida Gwaii Semester offers senior undergraduate students the opportunity to join an intensive 14-week program including four courses and a weekly project-based seminar. While students attend classes at the award winning Haida Heritage Centre at Kay Llnagaay, they also explore the incredible natural environments, meet with local experts and knowledge holders, and become immersed in the Haida Gwaii community.

NEW PROGRAM: TRAINING OUR FUTURE OCEAN LEADERS

How can young marine scientists and social scientists bridge the gulf between science and society?

Training Our Future Ocean Leaders (Ocean Leaders) is an innovative new UBC program designed to meet this challenge. It aims to give the next generation of marine researchers new abilities to translate technical knowledge into effective policy and management for our oceans. The program emerged from UBC's Institute for the Oceans and Fisheries, which unites top marine researchers across disciplines behind a mission of research, teaching, and social engagement on the future of oceans and their resources.

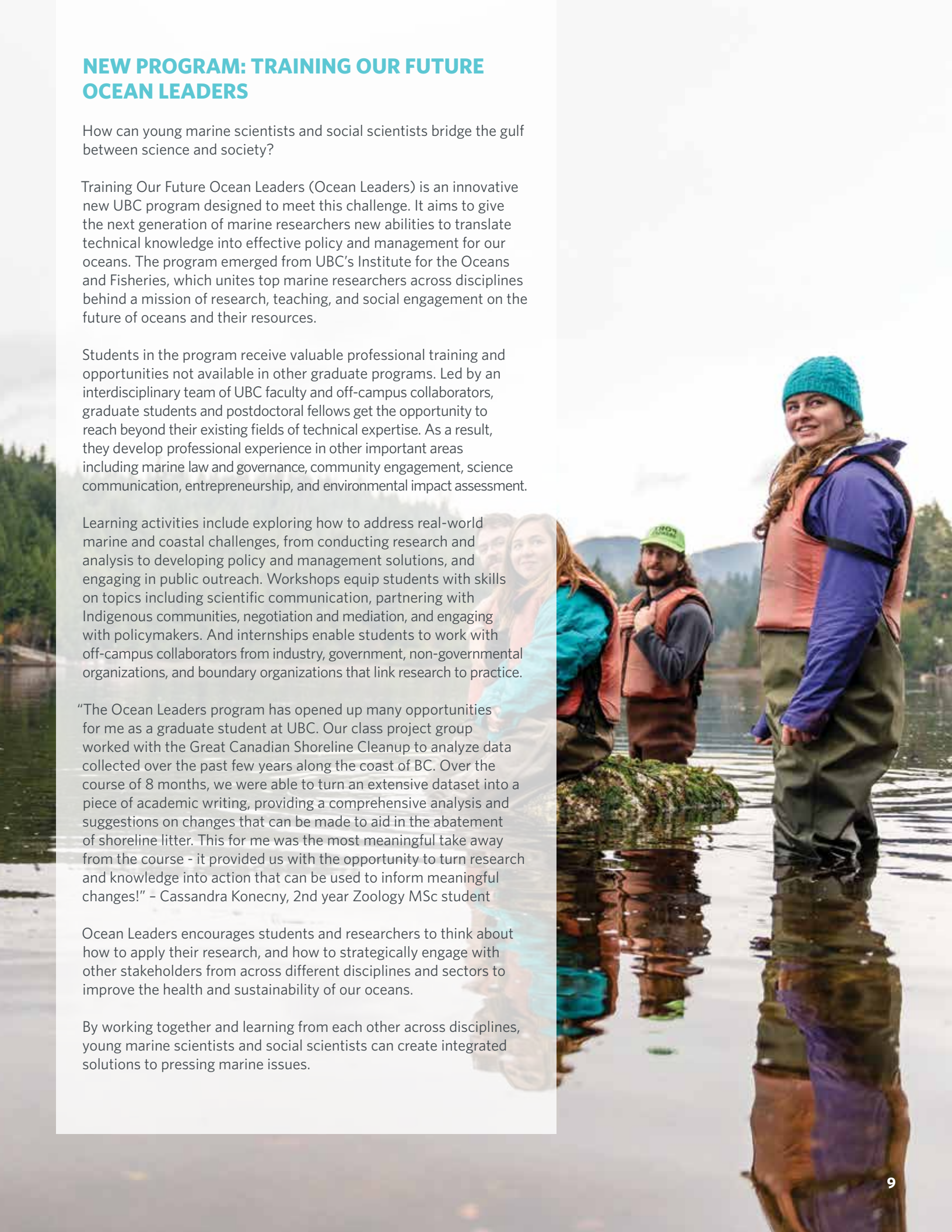
Students in the program receive valuable professional training and opportunities not available in other graduate programs. Led by an interdisciplinary team of UBC faculty and off-campus collaborators, graduate students and postdoctoral fellows get the opportunity to reach beyond their existing fields of technical expertise. As a result, they develop professional experience in other important areas including marine law and governance, community engagement, science communication, entrepreneurship, and environmental impact assessment.

Learning activities include exploring how to address real-world marine and coastal challenges, from conducting research and analysis to developing policy and management solutions, and engaging in public outreach. Workshops equip students with skills on topics including scientific communication, partnering with Indigenous communities, negotiation and mediation, and engaging with policymakers. And internships enable students to work with off-campus collaborators from industry, government, non-governmental organizations, and boundary organizations that link research to practice.

"The Ocean Leaders program has opened up many opportunities for me as a graduate student at UBC. Our class project group worked with the Great Canadian Shoreline Cleanup to analyze data collected over the past few years along the coast of BC. Over the course of 8 months, we were able to turn an extensive dataset into a piece of academic writing, providing a comprehensive analysis and suggestions on changes that can be made to aid in the abatement of shoreline litter. This for me was the most meaningful take away from the course - it provided us with the opportunity to turn research and knowledge into action that can be used to inform meaningful changes!" – Cassandra Konecny, 2nd year Zoology MSc student

Ocean Leaders encourages students and researchers to think about how to apply their research, and how to strategically engage with other stakeholders from across different disciplines and sectors to improve the health and sustainability of our oceans.

By working together and learning from each other across disciplines, young marine scientists and social scientists can create integrated solutions to pressing marine issues.



SEEDS SUSTAINABILITY PROGRAM

The SEEDS Sustainability Program creates partnerships between students, faculty, staff and community partners to work together on research projects that are tested on campus, and applied in real-world settings. Interdisciplinary by nature, SEEDS has integrated into approximately 250 different courses, and within 12 faculties.

KEY ACHIEVEMENTS

Last year nearly 1,000 participants collaborated on applied research to advance UBC's sustainability priorities. This included providing input into the AMS Student Driven Sustainability Strategy, UBC's Zero Waste, Climate Action, Transportation, Public Realm and Wellbeing Plans, emerging plans for Green Building, Water, Urban Forest Management, and the development of future biodiversity strategies and actions.

SEEDS SCALED AND REPLICATED ACROSS NORTH AMERICA AND EUROPE

The SEEDS program was recognized through multiple conferences and other forums last year as an international model for using university campuses as a living laboratory. So far, several universities have created programs modelled on SEEDS, including Portland State University, University of Arizona, University of Washington, Maastricht University, University of California-Santa Cruz, and Swarthmore College in Pennsylvania.

GREEN BUILDINGS

SEEDS informed the development of UBC's emerging Green Building Action Plan last year. A total of 23 related projects were initiated – highlights included a modeling tool for measuring benefits in stormwater management for planning and engineering; a series of projects to better understand factors in bird-building collisions; and demonstration projects such as pollinator and bird-friendly window installations.

ZERO WASTE

10 SEEDS research projects helped advance UBC's Zero Waste Action Plan's goals, including the implementation of campus food waste guidelines, an assessment of UBC's role in contributing to plastics in oceans, the development and launch of an athletic textile recycling pilot, and research on effective communications messages related to contamination rates and sorting practices.

CLIMATE ADAPTATION

SEEDS participants worked together on a series of climate adaptation projects including research that baselines UBC's business air travel emissions, the development of a methodology to model future weather conditions to inform building energy modelling, and a group of projects aimed at understanding carbon sequestration in various types of trees.

FAST FACTS

958 STUDENTS, FACULTY, STAFF AND COMMUNITY PARTNERS ENGAGED

119 PROJECTS (OVER 1000 SINCE INCEPTION)

196 RESEARCH REPORTS

47 COURSES INTEGRATED SEEDS PROJECTS

TACKLING PLASTICS IN OUR OCEANS

Across the globe, the ratio of plastics to fish in our oceans is currently 1:5 by weight, and expected to reach a staggering 1:1 by 2050.

To help address this growing issue, SEEDS and UBC's Campus + Community Planning – Sustainability and Engineering group – partnered with graduate students Kaleigh Davis and Fiona Beaty from the Training Our Future Ocean Leaders program to better understand how UBC can be a leader in reducing its impact on the ocean.

In collaboration with UBC's Zero Waste Action Committee and partners across campus, the team looked at the potential to recycle various plastic types, their environmental risk in ocean ecosystems, and their sources at UBC – from food outlets and research labs to the UBC Farm. Their research traced the journey of plastics when they leave UBC, from recyclers in the Lower Mainland, to manufacturers across the ocean. In addition, the team recruited a summer intern, Carolina Sánchez, to assess the marine impacts of UBC's single-use plastics. Their results emphasized the need for UBC to prioritize reducing single-use items, and provided practical recommendations for UBC to switch from high-impact to lower-impact plastics for items that cannot be eliminated.

The research was shared through a series of presentations to the Zero Waste Action committee, to local businesses and community at consultation events, and informed UBC Food Services plans to discontinue the distribution of two forms of single-use plastics.

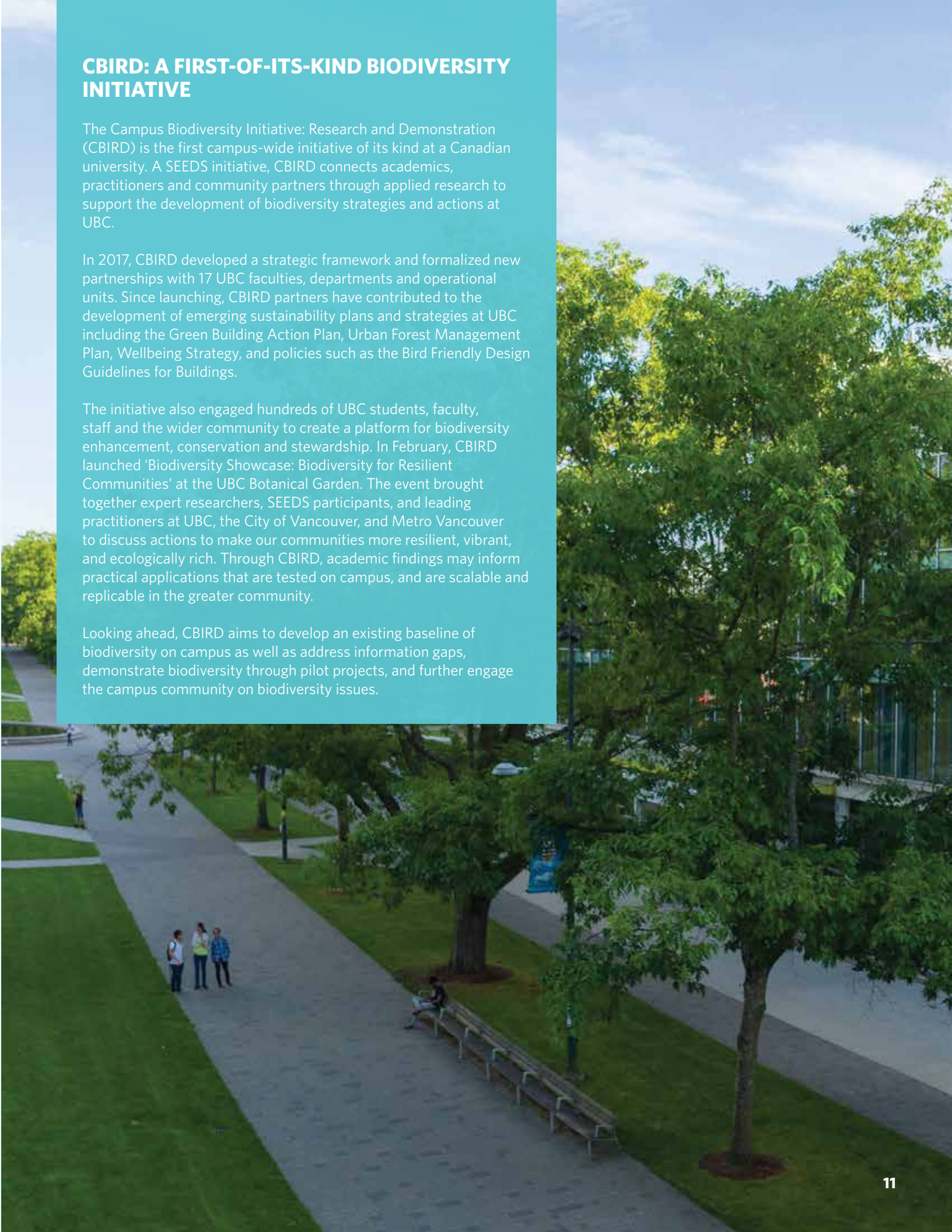
CBIRD: A FIRST-OF-ITS-KIND BIODIVERSITY INITIATIVE

The Campus Biodiversity Initiative: Research and Demonstration (CBIRD) is the first campus-wide initiative of its kind at a Canadian university. A SEEDS initiative, CBIRD connects academics, practitioners and community partners through applied research to support the development of biodiversity strategies and actions at UBC.

In 2017, CBIRD developed a strategic framework and formalized new partnerships with 17 UBC faculties, departments and operational units. Since launching, CBIRD partners have contributed to the development of emerging sustainability plans and strategies at UBC including the Green Building Action Plan, Urban Forest Management Plan, Wellbeing Strategy, and policies such as the Bird Friendly Design Guidelines for Buildings.

The initiative also engaged hundreds of UBC students, faculty, staff and the wider community to create a platform for biodiversity enhancement, conservation and stewardship. In February, CBIRD launched 'Biodiversity Showcase: Biodiversity for Resilient Communities' at the UBC Botanical Garden. The event brought together expert researchers, SEEDS participants, and leading practitioners at UBC, the City of Vancouver, and Metro Vancouver to discuss actions to make our communities more resilient, vibrant, and ecologically rich. Through CBIRD, academic findings may inform practical applications that are tested on campus, and are scalable and replicable in the greater community.

Looking ahead, CBIRD aims to develop an existing baseline of biodiversity on campus as well as address information gaps, demonstrate biodiversity through pilot projects, and further engage the campus community on biodiversity issues.



CO-CURRICULAR STUDENT ENGAGEMENT

UBC supports student learning in sustainability through co-curricular engagement programs that provide leadership training, support student-initiated projects, and empower peer-led networks of sustainability champions.

KEY ACHIEVEMENTS

STUDENT SUSTAINABILITY NETWORK LAUNCH

Last year, UBC launched the Student Sustainability Network to connect UBC students to groups seeking volunteers for sustainability events and initiatives. The network also provides students with professional development and community building experiences. In its first year, 119 students joined the Network and supported over 130 requests for volunteers.

UBC READS SUSTAINABILITY

This speaker series provides a forum for students and other members of the UBC community to learn about sustainability issues from globally-recognized authors. Campus partners included the Irving K. Barber Learning Centre, the Pacific Institute for Climate Solutions, and the R. Grant Ingram Distinguished Speaker Program.

Last year, the program invited three writers:

- Duncan McCue author of *The Shoe Boy*
- Joel Solomon author of *The Clean Money Revolution*
- Elizabeth May author of *Who We are: Reflections on My Life and Canada*

SUSTAINABILITY AMBASSADORS

The Sustainability Ambassadors Program brings together students to learn about sustainability, collaboration, and leadership, and to develop sustainability outreach events that engage the UBC student community. Last year 19 Sustainability Ambassadors from 10 disciplines planned events and activities that attracted more than 1,000 participants.

Event highlights included the annual Sustainability Fair held in the AMS Nest, and a Career Night that connected students to UBC alumni with careers in sustainability-related fields. The Ambassadors also created a short film series called "Wasted" to highlight energy, water, food, and waste initiatives on campus.

STUDENT SUSTAINABILITY COUNCIL

The Student Sustainability Council gives students a voice to influence emerging and existing operational and academic sustainability initiatives and projects on campus. Last year 15 representatives provided input on the Zero Waste Action Plan, AMS Lighter Footprint Strategy, Healthy Beverage Initiative, UBC Strategic Plan Consultation, UBC Farm Engagement Strategy, and the Water Action Plan.

FAST FACTS

119 STUDENTS JOINED THE STUDENT SUSTAINABILITY NETWORK

1,025 PEOPLE ATTENDED SUSTAINABILITY AMBASSADORS EVENTS

130K VIEWS OF UBC READS SUSTAINABILITY LECTURES ON YOUTUBE (SINCE 2010)

UBC CLIMATE TOWN HALL

The Sustainability Collective, an open coalition of student groups, clubs, and associations advocating for bold university leadership on sustainability, invited students, staff, and faculty from across disciplines to brainstorm creative strategies to springboard future climate actions on campus at UBC's first ever Climate Town Hall.

The Climate Town Hall aimed to inspire the UBC community to take action related to three key climate themes: urgency, hope, and justice. Participants engaged with specific topics like voting and civic engagement, curriculum, divestment, and Campus as a Living Lab 2.0. They also discussed the creation of a climate hub group, and mapped sustainability initiatives and assets across campus.

With support from UBC's Sustainability Initiative and Campus + Community Planning Department, extensive network-building and collaboration amongst students attracted over 300 participants. The event showcased how UBC can continue to build on its role as a leader in sustainability on campus, and how it can influence work beyond our campus through climate research, innovation, engagement, and action.

UBC SUSTAINABILITY SCHOLARS PROGRAM

The UBC Sustainability Scholars Program provides UBC graduate students with the opportunity to gain valuable professional experience while working on applied sustainability projects through paid internships with partner organizations and local governments across the region.

Since launching as the Greenest City Scholars Program in 2010, the program has expanded to engage more than 200 students who together have completed over 50,000 hours of research addressing social, economic and environmental sustainability problems in our region.

KEY ACHIEVEMENTS

Last year 54 students from over 25 different UBC graduate programs successfully completed internships with the Sustainability Scholars Program. Scholars worked for partners in local governments, the health and energy sectors, and departments at UBC Vancouver and UBC Okanagan.
Under the mentorship of sustainability professionals at nine partner organizations, the Scholars tackled projects in a variety of areas including Climate & Energy, Food Systems, Green Procurement, Green Buildings, Leadership & Behaviour Change, Social Sustainability, Transportation, Waste Management & Recycling.

FEATURED PROJECTS

DEVELOPING A COMMUNITY SOLAR GARDEN
City of New Westminster

Community solar gardens have proven effective in increasing the accessibility of solar energy in the United States. This report reviewed best practices and policies from Canada and the US, including community engagement strategies, project plans, technology evaluation, design and development, and financing options.

GHG EMISSIONS REDUCTION POTENTIAL OF BC ENERGY STEP CODE SCENARIOS
City of Maple Ridge

The City of Maple Ridge has adopted a target of reducing greenhouse gas emissions by 33 percent of 2007 levels by 2020. This report assessed how the City can leverage the BC Energy Step Code to fulfill its target and concluded that targeting residential building GHG emissions is an effective and efficient strategy.

WASTE AS A RESOURCE: TOOLS FOR CONSTRUCTION AND DEMOLITION WASTE MANAGEMENT
Metro Vancouver

Efficient use of resources is one of the biggest societal challenges of the 21st century, and cities will play a central role. This report recommended a number of changes to municipal practices, bylaws and zoning, including using buying power to drive markets for recycled materials, and implementing variable tipping fees and deconstruction regulations to increase diversion rates and encourage high-value reuse.

FAST FACTS

54 SUSTAINABILITY SCHOLARS WORKED WITH NINE PARTNERS ACROSS OUR REGION

33 GREENEST CITY SCHOLARS EMPLOYED BY THE CITY OF VANCOUVER (SINCE 2010)

19 PARTNERS ENGAGED IN SCHOLARS PROGRAM (SINCE 2010)

213 INTERNSHIPS AWARDED TO UBC GRADUATE STUDENTS (SINCE 2010)

RESEARCH TO ACTION: ADVANCING URBAN SUSTAINABILITY

UBC Sustainability Scholars are involved in creating real change. In September 2017, 33 UBC Sustainability Scholars shared how they are advancing urban sustainability across the region during a half-day conference at UBC.

Presenting their applied research projects in themed panel sessions, Scholars lead discussions on critical sustainability challenges such as water sustainability, energy efficient buildings, green transportation, waste management, building social resilience, influencing behaviour change and scaling sustainable practices for success.

The main floor meeting rooms of the CIRS building were abuzz that day. Comprised of UBC students, faculty, staff, and industry professionals, 174 attendees came to hear the Scholars' presentations.

MEET EMMA LUKER, GREENEST CITY SCHOLAR

Emma Luker was a UBC Greenest City Scholar in summer 2017, working with the City of Vancouver's Green Infrastructure Implementation team on a rainwater management project.

"While I originally applied for this position because it was aligned with my research interests, there were a number of skills that I had the chance to develop which could not have been easily advertised in the job description.

A hidden benefit of the Scholars Program is that you get some amazing public speaking opportunities, and with that comes networking. I might be alone here, but I find networking really hard. I struggle to figure out how to sound interesting, without blatantly seeming like I am trying to sell myself. I found my Scholar research to be a perfect entry-point to showcase my applied skills and interests. After that, networking became a bit less intimidating and a bit more fun.

As a Scholar, I also got to experience what it was like to work in a complex public institution. I worked out of the City offices, attended interesting presentations, and built professional connections with other City departments. I was also working with a dynamic and motivated team that really helped me solidify my burgeoning career goals.

I realized how much I enjoyed being involved in long-term urban planning projects with clear environmental goals, and I used this information to apply for jobs where I could realistically see myself being happy. I think a big reason that I scored a permanent job (I now work in UBC's Campus + Community Planning Department) was because I used the Scholars program as a stepping stone in my career.

My experience made the transition from student to working professional much smoother than I thought it would be as a grad student with a lot of education and little work experience. Overall, this program was invaluable to me when deciding what to do with my degree." — Emma Luker, Greenest City Scholar

RESEARCH

UBC plays a leadership role among global post-secondary institutions that focus on researching, developing, and demonstrating sustainable practices. With over 400 faculty investigating sustainability, our goal is to excel across the spectrum of fundamental and applied research.

We operate multiple centres of excellence and research groups in order to address complex issues at different scales, and respond to critical community needs. And our research advances interdisciplinary and cross-cutting methods, linking research to action both on-and-off campus. Below are some examples—just a small selection from the incredible breadth of sustainability research taking place across the university.

HIGHLIGHTS: INTERDISCIPLINARY RESEARCH GROUPS

URBAN INNOVATION RESEARCH GROUP

In 2017, UBC established the Urban Innovation Research Group to support interdisciplinary research capabilities and strengthen the role of the university in responding to the interconnected challenges of an increasingly urban world, demonstrate potential solutions, and advance sustainable practices and policies.

Featured research: Tallwood Building Research Program

UBC recently completed Brock Commons Tallwood House, the tallest hybrid mass timber building in the world. A three-year interdisciplinary research project by UBC's Sustainability Initiative and faculty in Forestry and Civil Engineering studied the design, construction and performance of this innovative mass timber high rise.

The results, documented in a series of case studies, show how the alignment of advanced computer modelling with prefabrication technology and the use of mass timber improved construction productivity, safety, and accuracy. The work also highlights the creative strategies and lessons learned from the integrated design and construction teams to inform future projects and policies related to tall wood buildings.

Featured research: Social and environmental impact investing in Indigenous communities

Reconciliation issues remain at the forefront of Canadian policy and culture. Government, non-profits and charities, and indigenous communities have begun to interact on ways to address these issues, but private investors can play a major role as well. Working with Purpose Capital, an impact investment advisory firm, UBC's Centre for Social Innovation & Impact Investing (Sauder S3i) produced a report that examines a critical question in the Canadian investment community: With an estimated $10.5 billion available for investments towards social and environmental impact, how can we allocate capital to contribute to the betterment of Indigenous communities in Canada?

FAST FACTS

450 FACULTY RESEARCHING SUSTAINABILITY-RELATED TOPICS

56 DEPARTMENTS WITH SUSTAINABILITY RESEARCHERS

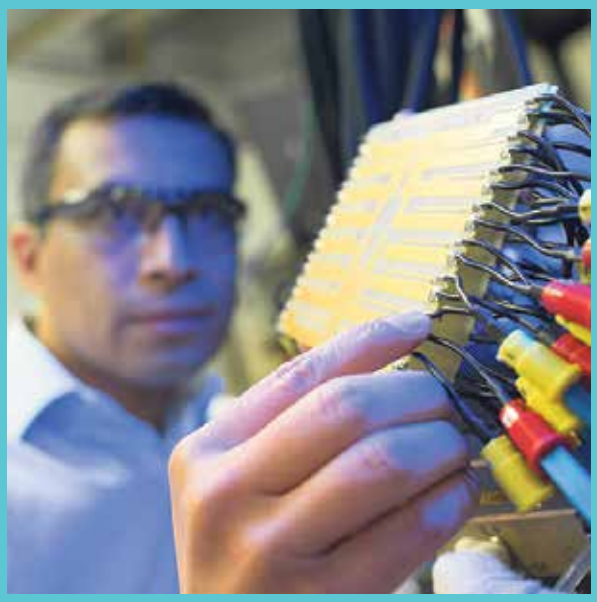
75 PHD DISSERTATIONS COMPLETED ON SUSTAINABILITY-RELATED TOPICS

COLLABORATIVE FOR ADVANCED LANDSCAPE PLANNING (CALP)

An interdisciplinary research team in the Faculty of Forestry, CALP focuses on community-based research to develop solutions for sustainability and climate change by bringing science and modeling, environmental design, visualizations, and participatory visioning processes to planning low-carbon, resilient communities.

Featured research: Data integration for health, greenspace, and climate resilience across the Cascadia corridor

Research demonstrates strong links between nature and levels of human health and wellbeing. However, relationships between urban forestry practice, health outcomes on the ground, and emerging climate change impacts and solutions have yet to be clearly established. This project brings together leading urban forestry and health researchers from UBC and The University of Washington with partners from health authorities in south west BC, and the City of Surrey. The research forms the first step in creating a corridor-wide data platform concerning nature, human health & community resilience planning, with metro Seattle and Vancouver to become the first hubs of a broader network.



CLEAN ENERGY RESEARCH CENTRE

The Clean Energy Research Centre (CERC) is an interdisciplinary group drawn from many UBC faculties to develop viable solutions for sustainable energy through education, research, and innovation.

Featured research: Beyond Traffic – Clean, Connected and Safe Transportation

Last year the Canadian Foundation for Innovation and the BC Knowledge Development Fund awarded UBC and the Transportation Futures Initiative at CERC $11.6M to investigate the evolution of transportation. The program looks at energy sources, fuels produced (e.g. hydrogen, synthetic fuels), zero emission vehicles, connected vehicles and infrastructure, and the impacts of transportation on health, wellbeing, policy, and new business models. An example of the research so far includes the first programmable photovoltaic system integrated with fuel production, energy storage, and vehicle refuelling or recharging.

ELEMENTSLAB

elements**lab** is an applied urban design and built environment research group in the School of Architecture + Landscape Architecture and the Centre for Interactive Research on Sustainability at UBC.

Featured research: Energy Efficiency in the Built Environment

This multi-year, multi-disciplinary Pacific Institute for Climate Solutions-funded research program investigates energy and emissions in the built environment from the scale of building systems to entire cities. In collaboration with co-investigators from UBC Vancouver, SFU and UBC Okanagan, the elements**lab** researches practical, implementable solutions for BC municipalities to reduce energy demand and GHG emissions in their built environments. Research projects within this program investigate community-scale solutions, new construction standards, building energy retrofits, building lifecycle assessment, financial mechanisms to reduce emissions, and effective policy mechanisms at all levels of government.

HIGHLIGHTS FROM UBC OKANAGAN

LAVENDER EXPLORED AS A NATURAL PESTICIDE

While lavender has long been known for its strong scent and soothing oils, UBC Okanagan researchers are exploring the plant's ability to create natural pesticides.

Soheil Mahmoud, an associate professor of biology at UBC's Okanagan campus, conducts research on organic compounds found in plants – specifically lavender. While lavender is known for its strong scent, and the plant's oils are said to have a healing or soothing benefit, Mahmoud agreed lavender has much more to offer.

"Lavender has proven to be very good at protecting itself through production of antimicrobial and anti-fungal biochemical compounds," reported Mahmoud. "One of our goals is to identify molecules that are involved in this natural self-defence."

Traditionally, chemical herbicides or pesticides have been used to control fungal growth or pests like insects. But according to Mahmoud this method is becoming less and less desirable as many of the pests and fungi have become resilient to the chemicals used, and as consumers prefer food that is untreated or treated with "natural" pesticides.

"We've become much more health conscious," he added. "There are healthier options instead of spraying chemicals on plants; we just need to explore these. Aromatic plants like lavenders could provide suitable alternatives to chemical-based insecticides."

IMPACTS OF URBANIZATION ON RAINWATER FLOODING

Research from UBC's Okanagan campus showed municipalities should put a greater emphasis on green initiatives to reduce heavy rainfall flooding urban areas.

Rainwater flooding occurs when an urban drainage system has trouble funnelling intense amounts of rainfall. In Canada, the costs of flooding from extreme rainfall events have been recently estimated at more than $13 billion.

The study reported that urbanization changes a city's land cover – more buildings, roads and other development means fewer porous areas made up of trees, grass and natural greenspaces. So instead of being absorbed by these natural areas, rainfall ends up in a city's drainage system.

"By promoting green development like green roof constructions and encouraging the use of porous pavement materials, urban planners can reduce the vulnerability of neighbourhoods currently at risk," said lead author Yekenalem Abebe, a PhD student in the School of Engineering.

The research goes on to provide a detailed methodology that will assist municipalities in identifying the areas at risk and help identify unknowns in the decision-making process.

"Flood risk mitigation requires a coordinated effort between multiple stakeholders," explained Abebe. "We are currently collaborating with municipalities in the Okanagan region to develop a holistic approach looking into climate change, infrastructure management and urban planning."

OPERATIONS AND INFRASTRUCTURE

As a large, research-intensive university, with considerable land, assets and utilities in Vancouver and the Okanagan, UBC is in a unique position to use our campuses as test beds for sustainability. Our goals are to enhance the efficiency of our operations, improve environmental performance, and achieve cost savings, while leveraging our campus infrastructure and built environment to demonstrate innovative sustainability solutions at a municipal scale.

VANCOUVER CAMPUS

ENERGY AND EMISSIONS

As a global leader in sustainability and climate action, UBC uses its land, assets and utilities as a hub for sustainability innovations. UBC has set aggressive greenhouse gas (GHG) reduction targets. The Vancouver campus now produces 30 percent less GHG emissions than it did in 2007. Our next GHG reduction target is fast approaching – with the actions outlined in the Climate Action Plan 2020 Update, the Vancouver campus is aiming for a 67 percent reduction by 2020.

KEY ACHIEVEMENTS

ENERGY CONSERVATION WITH BUILDING TUNE UP

The ongoing implementation of the Building Tune Up program has so far reduced energy use in over 50 buildings, saves $2.3 million a year in operating costs, and has eliminated over nine percent of campus GHG emissions compared to 2007 levels.

ACADEMIC DISTRICT ENERGY SYSTEM STEAM TO HOT WATER CONVERSION PROJECT

After nearly one hundred years of operation, UBC's aging steam plant was decommissioned in 2017 as part of UBC's Academic District Energy System steam to hot water conversion project and has been replaced with a highly efficient 45MW hot water Campus Energy Centre. The project replaced 14km of 90-year-old steam piping and connected over 100 buildings to a more efficient hot water district energy system – altogether improving energy efficiency by over 24 percent.

CLIMATE ACTION PLAN UPDATE AND BRDF EXPANSION

The Climate Action Plan 2020 Update was created to define the actions UBC can take to advance towards a 67 percent GHG emissions reduction by 2020 compared to 2007 levels, and ultimately a 100 percent reduction by 2050. The plan outlines strategies to reduce GHG emissions through demand-side management for building operations, fleets and paper consumption, as well as increasing renewable energy supply on campus through the expansion of the Bioenergy Research and Demonstration Facility (BRDF).

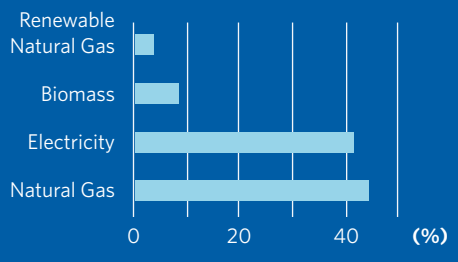
FAST FACTS

55% ENERGY CONSUMPTION FROM RENEWABLE SOURCES

30% REDUCTION IN ABSOLUTE GHG EMISSIONS SINCE 2007

ENERGY SOURCES AT VANCOUVER CAMPUS

The majority of UBC Vancouver's energy supply is generated from renewable sources - hydroelectric power (42%), biomass from our Bioenergy Research and Demonstration Facility (9%) and renewable natural gas (4%).



OKANAGAN CAMPUS

ENERGY AND EMISSIONS

UBC Okanagan is integrating actions to reduce energy and emissions in campus planning, development and operations. The continued implementation of our Whole Systems Infrastructure Plan (WSIP) is critical to support campus growth and future capital projects. The plan provides direction for achieving reductions in energy use and operational emissions; utility and carbon cost savings; innovative building and infrastructure design; and campus engagement that work towards our Whole Systems Performance Goals.

KEY ACHIEVEMENTS

DISTRICT ENERGY EXPANSION

District energy provides ground-sourced energy to buildings from an aquifer underlying the campus, and significantly reduces consumption of conventional natural gas and associated greenhouse gas emissions. Major projects completed this year included expanding the district energy system to the new Okanagan Commons. District energy system improvements included the addition of a third cooling tower to increase the system's cooling capacity. In addition, three academic buildings underwent retrofitting to improve energy efficiency and compatibility with the district energy system.

OPERATIONAL SAVINGS THROUGH ENERGY DEMAND REDUCTION

Two demand-side management projects completed this year under the direction of the WSIP and our campus Strategic Energy Management Plan achieved over $100K in utility savings and helped reduce campus GHG emissions. The projects focused on building energy efficiency, energy conservation via behavior change, and other strategies to reduce consumption of energy. Cumulatively, these efforts amount to nearly $900K in savings since 2013.

CLIMATE POLICY DEVELOPMENT

Last year UBC Okanagan's proposed and aspirational GHG reduction targets were re-calibrated to account for updated campus growth projections. New targets are currently under review, while related capital projects – new student housing developments and the commons building – prioritize low carbon construction and operations toward the achievement of UBC Okanagan's Whole System Goals.

WHOLE SYSTEMS PERFORMANCE GOALS

#1 Achieve a net-positive performance in operational energy and carbon

#2 Implement a framework that supports low embodied carbon in future development

FAST FACTS

16% REDUCTION IN ABSOLUTE EMISSIONS SINCE 2013

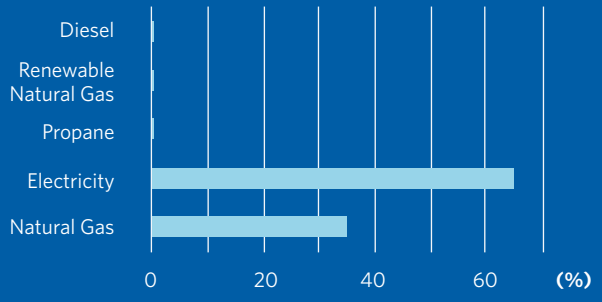
19% REDUCTION IN GHG EMISSIONS PER M^2 FLOOR SPACE SINCE 2013

22% REDUCTION IN GHG EMISSIONS PER STUDENT FTE SINCE 2013

5% REDUCTION IN ABSOLUTE ENERGY USE (GJ) SINCE 2013

ENERGY SOURCES AT OKANAGAN CAMPUS

The majority of UBC Okanagan's energy supply is from clean hydroelectric power and natural gas.



VANCOUVER CAMPUS

WATER

UBC Vancouver's water consumption continued to decline last year, despite continued growth of the campus. This was achieved as a result of increasing the water efficiency of our buildings and infrastructure, including the Academic District Energy System. Rainwater management remained another important aspect of building design for individual sites, in order to reduce the risk of flooding.

KEY ACHIEVEMENTS

WATER CONSERVATION PROJECTS REDUCED CONSUMPTION

Retrofit projects to buildings and infrastructure continued to increase water use efficiency and decrease water consumption and costs, with total water consumption down by 50 percent since 2000. Decommissioning the campus steam plant, plus our continued conversion from steam to hot water through the Academic District Energy System, significantly contributed to water savings on campus. Combined, these projects will save 272 million litres of water per year.

NEW DRAFT WATER ACTION PLAN BEING COMPLETED

UBC has drafted a new Water Action Plan to build on achievements to date and guide our water management activities in the future. The draft plan addresses areas including metering and reporting, landscape and irrigation, alternative water sources, drinking water, and campus engagement. Collaborations through the development of the plan have already facilitated a Campus as a Living Lab research project at the UBC Farm, aimed at minimizing the water footprint of agriculture. The plan is scheduled for completion in fall 2018.

RAINWATER MANAGEMENT TO REDUCE RISK

Development at Wesbrook Village included an additional stormwater detention pond for the former BC Research site. The added use of stormwater infiltration and increased soft landscape with new buildings reduces the amount of rainwater that is sent to the storm sewer system. The long-term implementation of the Integrated Stormwater Management Plan will further reduce the risk of flooding and the amount of rainwater sent directly to the ocean.

In support of further enhanced rainwater management, SEEDS research projects investigated the installation of green roofs for new campus buildings, through collaborations between students from the School of Architecture and Landscape Architecture and architects, planners, and engineers from UBC's Campus + Community Planning Department. The result was a sophisticated modelling tool for measuring benefits in stormwater management.

FAST FACTS

50% REDUCTION IN ABSOLUTE WATER USE SINCE 2000

520 MILLION LITRES OF WATER USED EACH YEAR AT UBC RESIDENCES

46 SEEDS PROJECTS ON WATER CONSERVATION/MANAGEMENT

120L OF RAINWATER PER DAY CAN BE ABSORBED BY A SINGLE TREE

BE WATER WISE

Fresh water is an extremely precious resource. Although 70 percent of the Earth is covered with water, only one percent is readily available for human use. Each year UBC residences use 520 million litres of water. Half of this water is used for showers!

Last year the Water Wise campaign asked students living in UBC residences to be Water Wise by reducing their shower time to five minutes. UBC residence buildings contain energy and water meters that will indicate overall savings, and the results will be reported back to each residence.

Taking a shorter shower is a simple action that can save precious water from going down the drain and reduce greenhouse gas emissions from water heating.

OKANAGAN CAMPUS

WATER

Water consumption at UBC Okanagan is attributed to academic and residential building use, evaporative cooling, and irrigation. While absolute water consumption increased last year by four percent compared to 2013, we achieved a four percent reduction in water consumption per student (full-time equivalent). Ongoing improvements include irrigation system upgrades, equipping academic building facilities with low flow faucets, showerheads and toilets, and using aerators in labs to reduce water use.

KEY ACHIEVEMENTS

WATER CONSERVATION ACTIONS

Last year many campus water conservation actions focused on irrigation, landscaping and new construction. The campus' wireless irrigation system now reduces water use by adjusting irrigation to local weather conditions, while the addition of zone control to new areas of campus and a focus on indigenous, drought tolerant plants are anticipated to further reduce irrigation demand. All new academic facilities including The Commons – a major addition to the Library – now use high efficiency fixtures in line with UBC's fixture performance policies.

INTEGRATED RAINWATER MANAGEMENT PLAN

UBC Okanagan's new Integrated Rainwater Management Plan (IRMP) focuses on rainwater management at the source through the application of cost-effective, low impact techniques, that reduce risks to infrastructure and deliver human and ecological benefits. The plan provides direction for 100 percent rainwater management on campus to achieve regulatory requirements and safeguard campus infrastructure from flood risks.

The new transit exchange, Commons building, Upper Campus Connector and adjacent parking lots have been designed and constructed to achieve the IRMP's minimum retention requirements through features including rain-gardens, bioswales, and infiltration measures. Benefits include support for natural hydrological processes, enhanced campus ecology and biodiversity, additional habitat and wildlife corridors, and social amenities.

2050 WHOLE SYSTEMS PERFORMANCE GOALS

#3 Optimize water quality, supply, and security

#4 Enhance and/or Restore the Ecology

#5 100% Diversion of Rainwater from Municipal Systems

FAST FACTS

4% REDUCTION IN WATER USE PER STUDENT SINCE 2013

0% CHANGE IN WATER USE PER GROSS SQUARE METRE SINCE 2013

BIOSWALES IN THE TRANSIT EXCHANGE

A new transit exchange at UBC Okanagan was among the first construction projects to implement low impact development (LID) rainwater management features, in compliance with UBC Okanagan's Integrated Rainwater Management Plan. These prevent the need for costly piping improvements to the campus' existing rainwater management system, and reduce flood risks.

The site features a bioswale – a landscaped LID drainage course that surrounds the perimeter of the transit exchange and parking lot area. The bioswale receives rainwater diverted from the hard surface area for transfer, filtration and absorption, and by doing so replenishes natural groundwater and enhances campus ecology. Together with other actions, bioswales support UBC Okanagan to maintain our performance in diverting 100 percent of campus rainwater from the municipal system – a 2050 Whole Systems Performance Goal.

VANCOUVER CAMPUS

MATERIALS AND WASTE

UBC Vancouver's Zero Waste Action Plan targets 80 percent overall waste diversion by 2020, including both construction materials and waste from operations. Meeting this ambitious target will require innovation and strategic partnerships, but we are committed to achieving the environmental and economic benefits associated with doing so.

Improving campus recycling infrastructure is a major focus for changing how UBC handles waste. However, recycling does not happen without the participation of our entire community. Through campus-wide engagement programs, behavioural change campaigns and awareness building activities, we encourage everyone at UBC to play an important role in reducing our impact.

KEY ACHIEVEMENTS

NEW ZERO WASTE PARTNERSHIP ON FOODWARE

Last year we began collaborating with Metro Vancouver and the City of Vancouver on the development of our Zero Waste Foodware Strategy to reduce and recycle single use food serviceware and packaging, such as coffee cups and take-out food containers.

FEATURED RESEARCH INTO ZERO WASTE

UBC continues to engage the academic community and students through the SEEDS program to help research the challenging and complex problems associated with waste.

Last year's highlights included:

Researching Green Bin Contaminants

Identified which food packaging items at UBC are most commonly sorted incorrectly and identifying potential solutions.

Multi-Unit Residential Building Waste Behavioural Research

Improved waste sorting in multi-family residential buildings by applying signage and education solutions informed by behavioural psychology.

Sustainability in Athletics Textiles Recycling Program

Developed a clothing and shoe recycling program model to reduce the waste from athletic gear.

FAST FACTS

61% OVERALL WASTE DIVERSION RATE

876 TONNES OF ORGANIC WASTE COMPOSTED

20 STUDENT ZERO WASTE VOLUNTEERS

12,000 EVENT ATTENDEES ENGAGED TO REDUCE WASTE

ZERO WASTE SQUAD

The Zero Waste Squad is a peer-to-peer led volunteer program that educates the campus community about recycling and waste reduction.

Last year over 20 Zero Waste Squad student volunteers led educational and outreach events to promote waste reduction across campus, contributing over 500 volunteer hours and engaging over 12,000 event attendees to reduce waste.

In total, the group facilitated or supported over 46 events across campus, including staffing regular booths in student residences, providing event support to help attendees sort their waste, and hosting educational workshops.

OKANAGAN CAMPUS

MATERIALS AND WASTE

UBC Okanagan continues to reduce operational waste to landfill and increase waste diversion through awareness programs and stakeholder engagement strategies. Last year marks the fourth consecutive year of improvement, with the campus achieving an overall 33 percent waste diversion rate.

KEY ACHIEVEMENTS

WASTE REDUCTION ENGAGEMENT PROGRAMS

UBC Okanagan's waste reduction efforts focused on campus engagement programs including the Recycle Your Coffee Cup campaign and renewal of the Lab Plastics Recycling Program. These initiatives resulted in a 14 percent increase in reuse of cups and foodware, and a five-fold increase in lab recycling report submissions over the previous year.

SIGNAGE UPDATES TARGET RECYCLING COMPLIANCE

Improvements to campus Recycling Station signage were implemented to increase sorting compliance and improve visual continuity across campus. This included clearly defined material images, written content, and unique stream colour identifiers.

2050 WHOLE SYSTEMS PERFORMANCE GOALS

#6 Strive Towards Full Waste Recovery/Reuse

FAST FACTS

33% OVERALL WASTE DIVERSION RATE

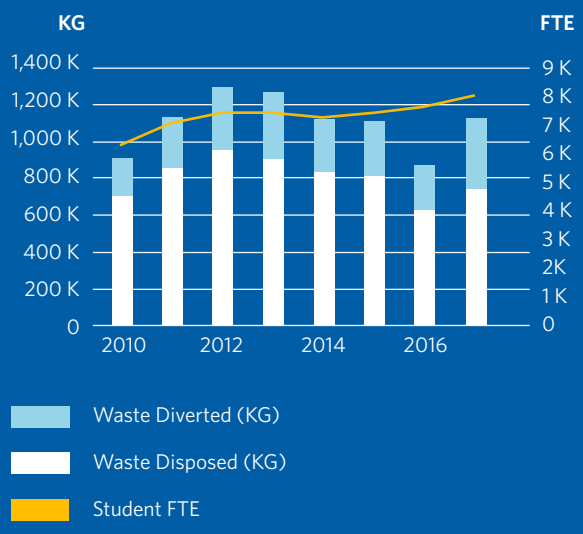
11% INCREASE IN WASTE DIVERSION RATE SINCE 2010

11% REDUCTION IN OPERATIONAL WASTE TO LANDFILL SINCE 2010

30% REDUCTION IN OPERATIONAL WASTE TO LANDFILL PER STUDENT SINCE 2010

WASTE DIVERSION AT UBC OKANAGAN

UBC Okanagan has improved its Waste Diversion Rate to 33% despite a 28% growth in Student (FTE) since 2010.



VANCOUVER CAMPUS

GREEN BUILDINGS

Buildings help serve UBC's academic mission by creating a sustainable, healthy place for teaching, learning and research as well as places to socialize, live and play. Our emerging Green Building Action Plan highlights future priorities that create a pathway for the built environment to contribute to a net-positive campus that promotes human and ecological wellbeing.

Creating the plan last year involved over 30 focus groups and engaged 112 staff, faculty, students and green building consultants to develop actions towards goals in eight component areas.

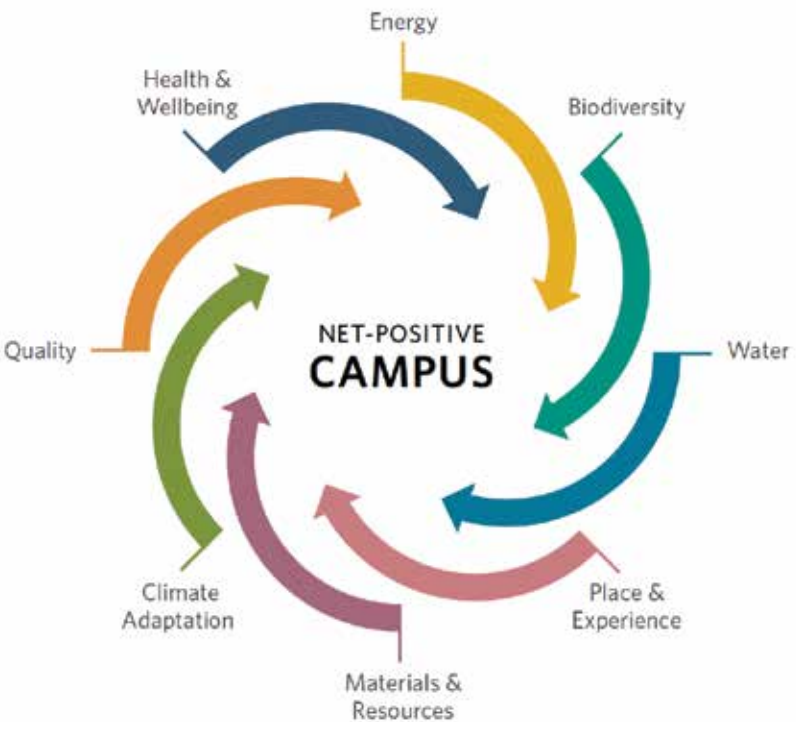
KEY ACHIEVEMENTS

INTERCONNECTING EIGHT AREAS OF BUILDING DESIGN

The Green Building Action Plan is a policy framework that outlines incremental improvements for new buildings, renovations and retrofits towards a vision: By 2035, UBC's buildings will make net positive contributions to human and natural systems.

The Green Building Action Plan will provide a goal-oriented framework and an action plan across eight interconnected areas of building design: energy, water, materials and resources, biodiversity, health and wellbeing, quality, climate adaptation, and place and experience.

Ambitious goals, targets, and actions set for each component will follow a cycle that encourages evaluation and improvement throughout implementation.



FAST FACTS

130 ACADEMIC BUILDINGS CONNECTED TO THE ACADEMIC DISTRICT ENERGY SYSTEM

23 SEEDS PROJECTS ON BUILDING DESIGN AND STORMWATER MANAGEMENT

BIRD FRIENDLY BUILDING ART

If you take a walk around UBC's Vancouver campus, one CBIRD project is particularly easy to spot. For several years, SEEDS collaborated with Environment and Climate Change Canada on bird collision research. The research identified several factors that influence bird deaths from windows, including how reflective the glass is, the direction it is facing, distance from nearest vegetation, height of nearby trees, presence of corner windows, and lighting.

To demonstrate the outcomes of the research to the public, SEEDS held a competition for artwork that would tell the story of bird biodiversity on campus while adhering to a new 'Bird Friendly Design Guidelines for Buildings' policy informed by the research.

The resulting artwork (shown above) by Lora Zosia Moon, a PhD candidate in English, beautifully depicts common birds and flora found on campus, and was installed for testing on the windows of the Centre for Interactive Research on Sustainability building.

OKANAGAN CAMPUS

GREEN BUILDINGS

At UBC Okanagan, the Whole Systems Infrastructure Plan defines and supports a long-term vision that incorporates environmental, economic and social sustainability outcomes to achieve a net positive impact on the wellbeing of the campus community and ecology.

The plan provides an implementation framework including green building design recommendations to meet performance goals, and strategies beyond the site to benefit the campus as a whole, including connecting buildings to our renewable district energy system.

KEY ACHIEVEMENTS

GREEN BUILDING INTEGRATED DESIGN PROCESS

UBC Okanagan supports an integrated design process to ensure that disciplines work together to achieve a high level of sustainability. The UBC Sustainability Process brings stakeholders together at the start of the design phase to look for synergies between systems and building components. The benefits of integrated design include higher levels of building performance and occupant comfort, reduced environmental impact, and – with the input of building managers and end users – improved building lifecycle management and user satisfaction.

THE COMMONS: A MULTI-PURPOSE LEARNING FACILITY

Sustainably designed and near completion, the Commons is targeting LEED® Gold Certification, and is connected to the renewable district energy system. It will manage 100% of rainwater accumulation on-site through a raingarden feature, achieving benefits for both the campus community and ecology.

NECHAKO: NEW STUDENT HOUSING AND COMMONS BUILDING

In 2017, UBC Okanagan began designing the Nechako student housing and commons building. This LEED® Gold targeted development will be located adjacent to the University Centre at the south end of the University Residence precinct. It is designed to add 220 units to support our growing student community, with services including a new 500-seat dining hall, central kitchen, and 24-hour access to social amenities and study spaces.

SKEENA: NEW STUDENT RESIDENCE

UBC Okanagan began designing the Skeena student residence project in 2017. In addition to adding 220 additional housing units to the campus, Skeena is targeting Passivehaus certification.

FAST FACTS

5 CERTIFIED GREEN BUILDINGS

11 BUILDINGS CONNECTED TO THE LOW CARBON DISTRICT ENERGY SYSTEM

1 REAP CERTIFIED RESIDENT BUILDING WITH HORIZONTAL LOOP DISTRICT ENERGY SYSTEM

WHAT IS PASSIVEHAUS?

Passivehaus certification is an internationally recognized high performance-building standard developed in Germany that focuses on the design, construction and operation of energy efficient buildings.

Buildings designed and constructed to the Passivehaus standard are characterized by high levels of comfort with low energy consumption – up to 90 percent less space heating and energy consumption than conventional buildings – hence the term "passive" as they need little active heating or cooling to stay comfortable throughout the year. This is achieved by design that minimizes air leakage through the building envelope (e.g. windows, insulation, heat recovery ventilation), while maintaining indoor air quality and thermal comfort.

VANCOUVER CAMPUS

CAMPUS ENGAGEMENT

UBC's Vancouver campus and community of 80,000 people are essential to achieving sustainability goals and operational targets. Our signature engagement programs enable students, staff, faculty and residents to contribute towards meeting UBC's sustainability commitments to climate action, energy and water conservation, waste reduction, and sustainable transportation, while building sustainability leadership.

Through a wide range of programming in research laboratories, workplaces, and student residences, our goal is to inspire, engage and activate campus community members to create a more sustainable campus, and world.

KEY ACHIEVEMENTS

ENERGY CONSERVATION AND INNOVATION IN LABS

Our Green Labs program delivered a series of engagement initiatives to reduce the significant environmental impact of UBC's 400 research laboratories. This included completing a comprehensive laboratory equipment inventory, and analysing energy consumption to identify the highest impact conservation opportunities. Projects like this represent our focus on expanding energy conservation and carbon reduction projects to support the implementation of UBC's Climate Action Plan, and achieve cost savings.

GREENING WORKPLACES

UBC's Green Office program engaged over 8,000 employees through training, events and campaigns to promote resource conservation and sustainable practices in the workplace. Highlights included a new workshop with event professionals to reduce waste from campus events, cycling workshops to promote sustainable transportation, and the 2nd annual campus-wide Seasonal Shutdown energy conservation campaign.

FOSTERING STUDENT LEADERSHIP IN RESIDENCES

The UBC Sustainability in Residence program launched several new training opportunities and campaigns to enhance the capacity of student leaders to create positive change on campus, and beyond. A team of student residents joined as Student Sustainability Champions to promote sustainable behaviour on-campus and help conserve energy and water through peer engagement.

CULTIVATING CHAMPIONS

UBC's Sustainability Coordinator Program fosters and engages a network of 120 staff and faculty sustainability champions to help promote sustainable behaviours and initiatives across campus.

Last year we engaged participants from over 42 academic and operational departments, providing tools, resources and training to enable implementation of sustainability projects in offices and labs.

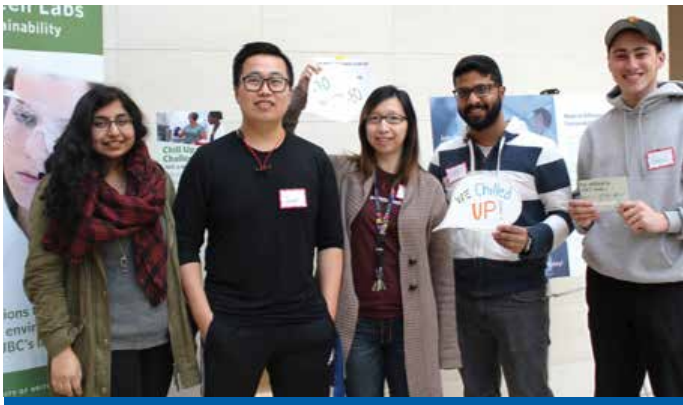
FAST FACTS

8,000 UBC STAFF REACHED THROUGH ENGAGEMENT PROGRAMS

120 SUSTAINABILITY COORDINATORS IN OFFICES AND LABS

10,300 KG IN GREENHOUSE GAS EMISSIONS SAVED DURING BIKE TO WORK WEEK

71,500 kWh OF ELECTRICITY PER YEAR SAVED BY LIFE SCIENCE CENTRE



CHILL OUT AND CHILL UP

Last year UBC's largest research facility, the Life Science Centre, was challenged to Chill Up to reduce energy consumption and increase the longevity of Ultra-Low Temperature freezers (ULT). These freezers preserve millions of precious research samples, but are energy intensive. A standard ULT freezer set at -80°C consumes as much electricity per year as a single-family home.

Research shows that increasing ULT temperatures by ten degrees (from -80°C to -70°C) is safe for many sample types and can reduce a freezer's energy consumption by 20 percent on average. With a participation rate of 40 percent, the Life Science Centre is saving over 71,500 kWh of electricity per year, equivalent to the annual electricity consumption of seven-and-a-half single-family homes.

"By chilling up our freezers, we not only reduce our carbon footprint, but we also prolong the life of our freezers. That means fewer midnight freezer emergencies, and that is a huge relief!"

Jade Shiller, Research Assistant, Hallam Lab, Department of Microbiology and Immunology, UBC.

OKANAGAN CAMPUS

CAMPUS ENGAGEMENT

At UBC Okanagan, our campus engagement programs bring students, staff and faculty together to collaborate on projects and activities that build greater awareness and understanding of human ecological systems.

Informed by our Whole Systems Infrastructure Plan, our programs and campaigns encourage energy conservation, waste diversion, active transportation, and enhancing biodiversity across our campus.

KEY ACHIEVEMENTS

THE POWER OF YOU

The Power of You is our signature sustainability campaign, designed to engage the entire campus community in conservation actions. The program was recently scaled-up to target multiple performance areas including energy, carbon, waste, water and ecology.

Last year, energy conservation and waste diversion campaigns across labs, residences and offices, resulted in over 400 new sustainability pledges, a five-fold increase in lab recycling reports, a 14 percent improvement in reuseable foodware, and shutting down over 5,000 lights and closing over 200 windows for energy and cost savings.

NECTAR TRAIL BUILDS COMMUNITY

Last year the UBC Okanagan Gardening Club offered the campus community six opportunities to get their hands dirty. Nearly 90 staff and faculty came together to plant the Okanagan Campus Nectar Trail – an array of wild pollinator plants along Discovery Avenue that provide critical habitat for bees, birds and other pollinating species.

Key workshop topics included fire-smart gardening, general gardening tips, native plants found on campus, bulb planting and a birds and pollinators nature walk along the Old Pond Trail.

BIKE TO WORK WEEK EVENTS

Last year three teams and 26 cyclists participated in Bike to Work Week at UBC Okanagan, up from five riders the previous year.

During the one-week event, cyclists saved over 350 kg of greenhouse gas emissions by switching to two wheels.

FAST FACTS

14% INCREASE IN REUSEABLE FOODWARE

2,000 KM PEDDLED BY BIKE TO WORK WEEK PARTICIPANTS

BEES INSPIRE PUBLIC ART AND COMMUNITY PROJECTS

Art, science and community is a powerful combination that helps improve our relationship with the natural world. It is this combination and a focus on industrious little insects—bees—that's resulting in community-driven partnerships.

That's what inspired the Border Free Bees project run by Nancy Holmes, an associate professor of creative writing at UBC Okanagan, and Cameron Cartiere, an associate professor in the Faculty of Culture and Community at Emily Carr University of Art + Design.

"We work with gardening and conservation groups, public schools, university communities, kids, seniors, as many people as we can pull in," said Holmes, an award-winning poet, writer, educator and researcher.

"Art is the driver as we get people together to care. Science provides the underpinning and community makes change happen," she added. "Bees engage everyone."

COMMUNITY

UBC is a place where people live, work, and learn together among the natural beauty, buildings, landscapes, and engaging public spaces found across our campuses. Our goals are to create a vibrant, complete, sustainable community at a local neighbourhood scale, and to share what we learn on campus through meaningful engagement activities with partners across our region, and with universities around the world.

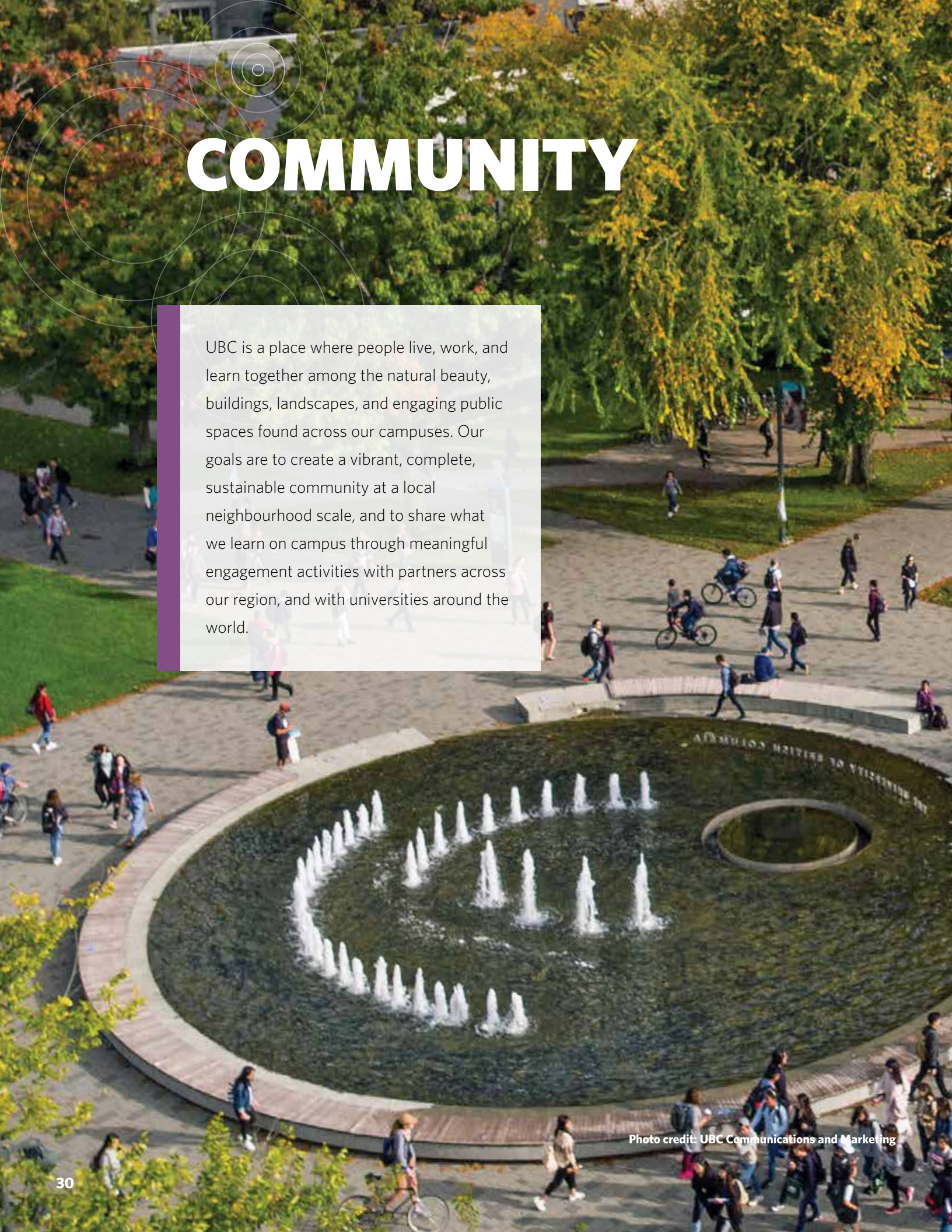


Photo credit: UBC Communications and Marketing

BUILDING OUR COMMUNITY

UBC is an extraordinary place because of the diversity of people that study, teach, work, and live in our community. We believe that it takes quality programming, partnerships, and capacity building to leverage the unique assets of our community members to nurture a vibrant campus that promotes wellbeing for all.

KEY ACHIEVEMENTS

CHILD CARE EXPANSION PLAN

Last year UBC updated the Vancouver campus Child Care Expansion Plan (CCEP). The updated plan enables UBC to deliver on child care policy commitments and addresses long-range institutional and neighbourhood child care needs. The CCEP targets an increase of 398 new child care spaces by 2041 within our academic and neighbourhood lands, resulting in a total of over 1,200 spaces at UBC Vancouver.

To support this goal, UBC's Campus + Community Planning Department, in partnership with the University Neighbourhoods Association (UNA) and the YMCA are proceeding with construction of the Wesbrook Child Care Centre, a 49-space child care centre at the Wesbrook Community Centre. The centre will be operated by the YMCA and is expected to open in 2020.

COMMUNITY PROGRAMMING WITH OVER 40 PARTNERS

UBC introduced three new exciting events to the campus community this year including: Car Free Morning, which transformed a school street into a family-friendly festival; Kids Takeover UBC, which gave kids adult-sized roles in a fun-filled arts festival; and Pride Picnic, an outdoor party to celebrate diversity, inclusion and positive space at UBC.

In addition, UBC funded and supported the new AMS Bike Co-op's Kids Bike Library, the UTown@UBC Baby Senior Sing-Along, and the Acadia Park Family Resource Fair.

SEEDS PROJECTS FOSTER INCLUSION, VIBRANCY, AND SAFETY ON CAMPUS

The SEEDS Sustainability Program partnered with faculties and departments across campus on a series of projects that contributed to community building, campus vibrancy, fostering greater inclusion and enhancing safety on our campus.

Highlights included:

- A collaboration between the School of Community and Regional Planning and UBC's Campus + Community Planning Department gathered experiences from over 300 cyclists and pedestrians to inform new wayfinding signage across campus.
- The founders of the Agronomy garden in collaboration with other students partnered with SEEDS and the Faculty of Land and Food Systems on projects to develop a signage strategy and a 2018 expansion plan.

FAST FACTS

814 LICENSED FULL- AND PART- DAY CHILD CARE SPACES

40% INCREASE IN CHILD CARE SPACES SINCE 2009

500 VOLUNTEER HOURS DELIVERED BY YOUTH LEADERSHIP MEMBERS

40 COMMUNITY PROJECTS SUPPORTED THROUGH UTOWN@UBC COMMUNITY GRANTS

CREATIVE PLACEMAKING ON CAMPUS

UBC's Point Grey campus boasts everything from theatre, film, contemporary and fine art, to music, opera, and world-renowned museums. Having our own Arts and Culture district on campus not only helps to foster community engagement in the arts, but also inspires us to use the power of the arts to create community on campus.

Last year saw an explosion of art-centric projects and events on campus designed to animate campus spaces, enhance the educational experience and promote creative expressions for community members of all ages.

SEEDS projects incorporating murals and installations added vibrancy to our campus. A mural by visual arts students on the theme of movement now brings stunning colour to the Rose Garden Parkade, and the rain activated art designed by engineering student Tiffany Quon spreads messages of hope through the West Coast rainy season to elevate awareness of mental health on campus.

YOUNG AT HEART: EXPANDING CHILDCARE, POCKET PARKS, AND KIDS' PROGRAMS

It might not feel intuitive to think about children as part of university life, but every day hundreds of kids bring vitality and energy to the UBC campus. Our vibrant work-learn-live community includes members of all ages and in the last year, a number of spaces, policies and programs have been designed to ensure that UBC provides an exceptional place for kids to live, learn, play and thrive.

This year, UBC updated its Child Care Expansion Plan to ensure that the university addresses child care needs for our growing community. As part of this, the Wesbrook Community Centre will welcome a new 49-space daycare in 2020.

UBC's outdoor spaces are also designed to provide an abundance of opportunities to nurture the wellbeing and growing minds of young residents through outdoor play and exploring nature. UBC's Wesbrook neighbourhood will soon welcome a fifth pocket park among the housing, in addition to being only a hop, skip and jump away from UBC's community gardens, The UBC Farm, The Botanical Garden, and the Nitobe traditional Japanese garden.

On the community programming side, popular programs such as UTown@UBC KidsFit, Walk n' Roll to School, and the Nature Club at Beaty Museum were joined by some exciting new offerings and events for kids and their families. The UTown@UBC Baby Senior Singalong, which began as a community grant project, brings together young-at-heart residents of the Tapestry retirement community with parents and toddlers for a bi-weekly meeting of singing, socializing and snacking. And with support from UBC's Campus + Community Planning Department, the AMS Bike Co-op was able to launch a new Kids Bike Library that exchanges or adapts bikes that kids have outgrown so they can have a better fitting ride.

Kids on bikes and other wheels were a common sight of the newly created Car Free Morning, an event that supports the Walk n' Roll to School program by reclaiming the street in front of a local school for fun and learning rather than cars. Similarly, the Kids Takeover UBC event gave kids adult-sized roles in a fun-filled arts festival, proving that when it comes to creating a lively, fun and connected community at UBC, kids rule.

UBC AND THE CITY OF VANCOUVER HOST THE ISCN CONFERENCE

Urbanization and climate change are at the forefront of issues facing both our local and global communities. By 2050, the United Nations estimates that 70 percent of the total global population will be living in urban areas. As a result, cities provide a unique and important opportunity for climate action.

The 2017 International Sustainable Campus Network (ISCN) conference, co-hosted by the University of British Columbia and the City of Vancouver, brought together leading higher-education organizations to explore how city-campus collaborations can advance climate action and sustainability. Over 140 delegates from 80 universities across 30 countries attended the event.

The program provided attendees with practical insights into city-campus collaborations, including a City and Campus Strategic Relationships dialogue session and an Ideas Lab, where delegates were invited to learn about the Greenest City Scholars Program and engage with graduate students working on projects in support of the Greenest City Action Plan.

"This was a great opportunity for the City of Vancouver and our efforts to become the greenest city," said Doug Smith, Director of Sustainability at the City of Vancouver. "Hosting the ISCN provides a platform to share information, collaborate and problem solve with sustainability experts from around the world."

As an ISCN first, UBC tracked the conference's daily travel, food, energy, waste and attendee satisfaction and physical activity as a way to assess conference impact, encourage participants to be sustainable, and inform future conference planning.

"The conference is one of the cornerstone activities of the ISCN, where a cross-section of those deeply involved with campus sustainability gather to cross-pollinate ideas, learn, and further sustainability in higher education," said Zena Harris, Executive Director of the ISCN. "ISCN 2017 took place in one of the most sustainability-oriented places on the world, and it was rewarding to work with conference co-hosts, the University of British Columbia and the City of Vancouver."

UBC JOINS THE UNIVERSITY CLIMATE CHANGE COALITION

UBC joined the University Climate Change Coalition (UC3), to activate climate action within regional communities. Along with 18 leading North American universities that make up UC3, UBC will act as an agent for collective action by convening community and business leaders to accelerate the implementation of research-driven climate policies and solutions. In 2018, each of the universities convened a climate change forum with leaders in their regions to sustain the momentum of climate action and inform best practices, policies and recommendations with the rest of UC3.

"At UBC, we have a long-standing commitment to exploring and embracing sustainability through ground breaking research, education and innovative projects on campus. These efforts helped to significantly reduce waste and greenhouse gas emissions on campus, and to promote smart, healthy communities. We look forward to working with other members of this coalition to promote sustainability in our region and beyond." — Santa J. Ono, UBC President

TRANSPORTATION

As British Columbia's largest university, UBC is a destination for students, staff, faculty, neighbourhood residents, alumni and citizens from communities across the region. UBC is focused on reducing automobile trips to and from campus by adding new infrastructure, and making improvements to existing infrastructure that encourage our campus community to choose more sustainable travel modes.

KEY ACHIEVEMENTS

RAPID TRANSIT STRATEGY APPROVED BY UBC'S BOARD

Last year the UBC Board of Governors approved the next steps to help bring rapid transit to the Vancouver campus, a once-in-a-generation transformational opportunity for improved connectivity for both the University and region.

This included endorsing the ongoing technical strategy for rapid transit, approving the business strategy of exploring, along with external partners, a contribution towards the regional share of a rapid transit extension to accelerate its completion to the campus; an ongoing engagement strategy for rapid transit, including continued discussion with senior governments, regional partners, and the UBC community; and continued engagement with external partners to secure an agreement to complete rapid transit to the campus as a seamless continuation of the Skytrain's Millennium Line.

Together, these efforts have the potential to unlock the transformational social, environmental and economic benefits that rapid transit will bring to the University and region.

WALK N' ROLL CREATES CAR FREE MORNING

The Walk n' Roll program promotes active and sustainable transportation to local elementary school kids from UBC neighbourhoods. It encourages kids and parents to give up their car commute by offering walking school buses and bike trains from different pick-up locations across UBC. To celebrate Walk n' Roll, a new event – Car Free Morning – was launched to transform a vehicle entry area into a family friendly festival. Building on its success, Car Free Morning will become an annual event of the Walk n' Roll program.

WAYFINDING IMPROVEMENTS FOR CYCLISTS ACROSS CAMPUS

Research by transportation planning students at the School of Community and Regional Planning indicated that cyclists have a difficult time navigating the campus. As a result, UBC is adding new wayfinding for cyclists to attract more people to designated cycle routes that connect to key destinations on campus. The new wayfinding signage will be installed next year.

TACKLING BIKE THEFT ON CAMPUS

Project 529 is a smartphone app that provides a community-based bike registration and recovery service. It keeps bikes safe from theft by recording unique information to help reunite owners with their stolen bikes.

Last year Campus + Community Planning, the University Neighbourhoods Association, and Campus Security partnered with Project 529 to help tackle bike theft on the Point Grey Campus. In September and October, a back-to-school campaign at student residences and campus-wide events including Crime Prevention Week and Bike to Work Week registered over 300 bikes on campus.

FAST FACTS

70% OF TRIPS BY SUSTAINABLE MODES OF TRANSPORT

0% INCREASE IN SINGLE OCCUPANT VEHICLE TRIPS, DESPITE A 64% INCREASE IN THE CAMPUS POPULATION SINCE 1997

MUSQUEAM STREET SIGNS

Musqueam street signs were created in partnership with the Musqueam First Nation to give a bilingual experience while travelling on campus and acknowledge the linguistic heritage of the UBC's Point Grey campus. The names do not refer to traditional sites but instead to UBC's geography. For example, the word "middle" used for Main Mall reflects its central position on campus.

Musqueam's language, **hən̓q̓əmin̓əm̓**, uses a place-based directional system which refers to the land and flow of water (e.g. upriver or downriver, inland and towards the shore) and not cardinal directions such as north, south, east, and west. The names chosen by Musqueam seek to educate us about the way they perceive place, movement across the land, and to show everyone how their language and culture is intrinsically connected to their territory.

UBC OKANAGAN INCREASES TRANSIT CAPACITY AND ACTIVE TRANSPORTATION

NEW TRANSIT EXCHANGE

A new campus transit exchange completed in 2017 includes new bus bays, layover stations, transit shelters and cycling facilities. The result of a partnership between the Government of Canada, Province of BC, UBC and the City of Kelowna, the new facility is part of nearly $160 million in federal and provincial 2017 funding for BC Transit projects. The project increases the capacity of the existing transit system, supports sustainable transportation options, and provides a critical hub in a regional network that connects people and communities to UBC Okanagan and across Kelowna.

IMPROVING CAMPUS ACCESS

Significant campus development and infrastructure improvements last year supported UBC Okanagan's development as a vibrant, sustainable community. Multiple road and infrastructure projects improved campus access, increased transit options, and encouraged active transportation. This included the extension of John Hindle Drive, and a shared pedestrian and cycling pathway to provide access to campus from the west, slated for completion by September 2018.

HOUSING AND AMENITIES

UBC is building a vibrant community by providing campus housing options to students, faculty, staff and residents, and by developing recreation facilities, community centres, parks, and open spaces within our neighbourhoods and academic spaces. Driven by UBC's vision to be a world-class community of scholars with access to beautiful, functional, and sustainable campuses, we are committed to increasing housing choices and growing campus amenities.

KEY ACHIEVEMENTS

HOUSING ACTION PLAN

Implementing UBC's Housing Action Plan last year resulted in several exciting rental and homeownership programs for students, faculty and staff.

Highlights included:

- **Completed Student Housing: ċəsnaʔəm** House in Totem Park now has an additional 354 beds for first year students, while the UBC Exchange Building is under construction to provide an additional 651 student housing beds to upper-year students.
- **Accelerated Student Housing:** As a result of the 2017 Housing Action Plan update, we developed a new plan to deliver more than 2,000 new student housing beds from 2019-2025.
- **Expanded Faculty Home Ownership loans:** All faculty are now eligible for a $45,000 to $50,000 Down Payment Assistance Loan depending on hiring date. The Prescribed Interest Rate Loan Program provides approved faculty members a one-time loan to assist with the purchase of a principal residence anywhere in Metro Vancouver.
- **Piloted Staff Rent-Geared-to-Income Program:** this program targets UBC staff at the Vancouver campus earning less than $68,000 to rent units in the restricted faculty/staff rental portfolio on campus capped at 30% of household income.

AFFORDABLE STUDENT HOUSING AT ċəsnaʔəm HOUSE IN TOTEM PARK

ċəsnaʔəm, a Musqueam village, existed on the **staɬəẇ̓** (now called the Fraser River) long before Vancouver was founded. For over 4000 years, generations of Musqueam lived at **ċəsnaʔəm**. UBC is honoured to be gifted this very important name in Musqueam history and culture for the Totem Park Residence In-Fill Phase 2 project.

Completed in 2017, this project added 354 first-year beds to the Totem Park Residence, complementing the existing dining hall, support services and student amenities. Adding new student beds are part of UBC's growth plan to address the significant demand for on-campus student housing.

Students that live on campus are more engaged with the university community and report higher levels of wellbeing.

FAST FACTS

175 NEW FACULTY AND STAFF BELOW-MARKET RENTAL UNITS NEAR COMPLETION

354 ADDITIONAL STUDENT BEDS AT **ċəsnaʔəm** HOUSE IN TOTEM PARK

STADIUM NEIGHBOURHOOD DEVELOPMENT

Creating new communities on campus is one way UBC works to reduce commutes, diversify the campus experience, and demonstrate leadership in sustainable development. Stadium Road is UBC Vancouver's next neighbourhood – an opportunity to complete the South Campus, connect neighbourhoods and destinations, and create a next generation sustainable community.

The planning team has been guided by Engagement Principles that define how to engage the public and campus community in an open conversation about the design, implementation and conclusion of public engagement.

Early themes that emerged from consultations to date include the need for expanded affordable housing options for the UBC community, improved accessibility for the South Campus, and the importance of natural assets and campus open space.

WELLBEING

UBC Wellbeing is a collaborative initiative to make UBC a better place to live, work, and learn through a systems-wide approach to human wellbeing across our campuses. We are guided by the Okanagan Charter, a shared call to action for partners, leaders, and community members to make UBC a leader in wellbeing. Our goals are focused around four priority areas: Food and Nutrition, Physical Activity and Sedentary Behaviour, Social Connection, and Mental Health and Resilience. In each area, we collaborate to address challenges and enact meaningful change.

KEY ACHIEVEMENTS

HEALTHY BEVERAGE INITIATIVE AT UBC

UBC Wellbeing, in collaboration with a Food and Nutrition Working Group, explored options for a Healthy Beverage Initiative at UBC with the aim of promoting drinking water and decreasing consumption of sugar-sweetened beverages on our campuses. Following extensive student-led research into consumer behaviour and evidence-based strategies to reduce consumption of sugar-sweetened beverages, UBC Executive approved the Healthy Beverage Initiative.

WELLBEING SUSTAINABILITY SCHOLARS LAUNCH

Last year, UBC Wellbeing partnered with UBC's Sustainability Initiative to expand the Sustainability Scholars Program to include a cohort of five inaugural Wellbeing Scholars. Projects ranged from participatory action research on mental wellbeing, a kindness week action plan, an evaluation framework for social sports, and a framework for student wellbeing in the context of graduate research supervision.

SEEDS RESEARCHERS EXPLORE WELLBEING

Last year, 41 SEEDS projects supported further research and understanding of wellbeing at UBC.

Highlights included:

Library Action Station

A collaboration between Electrical Engineering Capstone and the Irving K Barber Learning Centre saw students design and build human-powered work stations. The project invited students to engage in quiet forms of physical activity within the library, and enabled students to keep track of their total exercise as they study over the year.

Recreation Framework Projects

In partnership with Athletics and Recreation, Health Promotion students identified opportunities to enhance inclusion through increasing access to recreation for underrepresented groups, developing toolkits for students to put on their own activities, and finding new ways to reach more students.

FAST FACTS

41 SEEDS PROJECTS SUPPORTED WELLBEING AT UBC

2,800 TRIPS PER DAY BY BICYCLE TO UBC VANCOUVER

SWEET ENOUGH

Sugar-sweetened beverages are responsible for alarming health and economic burdens. So UBC Wellbeing – in collaboration with a Food and Nutrition Working Group – explored options for a Healthy Beverage Initiative (HBI).

Students performed SEEDS research to map beverage consumption at the Vancouver campus, interviewing and surveying over 400 students to understand behaviours and gather community input. And a Sustainability Scholar further explored how best to develop an evidence-informed HBI strategy.

Following UBC Executive approval, UBC Food and the AMS have committed to making impactful changes to their operations to support three core actions: 1) encouraging drinking water consumption; (2) promoting healthier beverage choices within our community, and; (3) modifying our environment to support healthier beverage consumption.

A research team will study their effectiveness.

UBC HOSTS CANADA'S FIRST FORWARD FOOD PLANT-BASED CULINARY TRAINING

Last year UBC Food Services, in partnership with Humane Society International/Canada, The Humane Society of the United States, and Vancouver Humane Society, hosted the first Forward Food Culinary Training and Summit in Canada.

The event consisted of a two-day culinary training experience followed by a one-day summit. The culinary training helped chefs refine their plant-based cooking skills, challenged them to think differently about their menus, and offered hands-on training led by Chef Wanda White, former Executive Operations Chef at the University of North Texas, who opened the first vegan university dining hall in the United States.

Culinary training participants learned how to prepare delicious plant-based entrees that appeal to guests of all dietary preferences. Participants were encouraged to focus on using their creativity to produce visually appealing, flavourful, and delicious dishes, and learnt that – whether vegan or vegetarian – what matters most to customers is "just good food." They were also shown how to describe menu items using the ingredients instead of simply labelling them as vegetarian or vegan – a potential turn-off for customers who don't identify as either.

The one-day summit that followed was geared toward food service and nutrition professionals, offering insights into the latest trends in implementing and marketing plant-based menu items. The summit included a series of speakers kicked off by Adriane Carr, City of Vancouver Councillor, a "pulled" jackfruit tasting, lunch at the UBC Farm, and opportunities for attendees to share learnings and insights in a peer-to-peer environment.

"It was amazing to hear from and spend the day with so many forward thinkers. I liked that the plant-based message was not "all or none" instead that any reduction, no matter how small, has a great impact on your health and the environment. The food was also out of this world." Alice Wyche, Island Health.

UBC Food Services is passionate about the many environmental and health benefits of eating more plant-based foods, including reduced risk for chronic disease. And the demand for plant-based foods from students is increasing – a trend across campuses in North America.

The event was an opportunity for our food services team and other institutions to raise awareness of the benefits of plant-based foods, and to better meet growing demand. Now UBC Food Services is incorporating some of the recipes featured in the culinary training into campus menus across all three residence dining rooms.

PERFORMANCE DATA

METRICS	VANCOUVER CAMPUS 2017/18	TREND	STATUS	BASELINE	OKANAGAN CAMPUS 2017/18	TREND	STATUS	BASELINE
CONTEXT								
Staff and Faculty Employees (FTE)	12,542	+19%		2007	1,125	+78%		2007
Student Enrollment (FTE)	48,782	+30%		2007	8,010	+96%		2007
Institutional Floor Space (m^2)	1,558,209	+21%		2007	141,896	+97%		2007
TEACHING, LEARNING & RESEARCH								
Sustainability Courses (#)	635				119			
Sustainability-related Academic Programs	62							
Faculty Engaged in Sustainability-Related Research (#)	450							
SEEDS Participants (# of students, faculty, staff)	958							
SEEDS Projects (#)	119							
UBC Sustainability Scholars (# of internships with regional partners)	54							
UBC Sustainability Scholars (# of partners)	9							
UBC Sustainability Scholars (# of graduate programs represented)	25							
Sustainability Ambassadors (# of students)	19							
Sustainability Ambassadors (# of attendees at Ambassador organized events)	1,025							
OPS AND INFRASTRUCTURE								
Absolute Offsettable GHG Emissions (tCO_2e)	42,786	-30%	🟠	2007	3,053	-16%	🟠	2013
GHG Emissions per Student (tCO_2e/student FTE)	0.88	-46%	🟠	2007	0.38	-29%	🟠	2007
GHG Emissions per Floorspace (tCO_2e/m2)	0.027	-43%	🟠	2007	0.022	-29%	🟠	2007
Campus Energy Sources in GJ (%)								
Natural Gas	45%	-29%		2007	35%			
Electricity	42%			2007	65%			
Biomass (Vancouver)	9%			2007	0.09%			
Propane and Diesel (Okanagan)					0.09%			
Renewable Natural Gas	4%	+0%		2007	0.05%			
Absolute Energy Use (GJ)	1,741,780	+2%	🟠	2007	155,585	-5%	🟠	2013
Energy Use Intensity (GJ/m^2)	1.12	-16%	🟢	2007	1.10	-9%	🟢	2013
Absolute Water Use (m^2)	2,356,936	-50%	🟢	2000	171,493	+4%	🔴	2013

METRICS	VANCOUVER CAMPUS 2017/18	TREND	STATUS	BASELINE	OKANAGAN CAMPUS 2017/18	TREND	STATUS	BASELINE
Overall Waste Diversion Rate (%) Target: Increase overall waste Diversion rate to 70% by 2016 and 80% by 2020	61%	+4%	🟡	2010	33%	+11%	🟢	2010
Green Buildings Target: All new construction and major renovations at the Vancouver and Okanagan campuses must achieve LEED or REAP Gold								
LEED Projects (# certified and registered building projects)	12 certified 9 registered	+2 registered			2 certified 2 registered	+1 registered		
REAP Projects (# certified and registered projects)	27 certified 7 registered				1 certified			
COMMUNITY								
Transportation Mode Share								
Trips to/from Campus by Single Occupant Vehicle (SOV)	30%	+0.65%	🔴	1997	35%	-7%	🟡	2009
Trips to/from Campus by Transit, Carpool, Cycling and Walking	69%	+83%	🟢	1997	64%	+8%	🟡	2009
Trips to/from Campus by Transit Target: At least 50% of all trips to and from campus will be made by public transit by 2040	52%	+328%	🟢	1997	33%	-1%	🟡	2009
Student Beds (# of beds) Target: Build up to the capacity or SHHS0 operated housing on the Academic Lands	11,796				1,676			
Faculty and Staff Housing (total units)(GJ)	686	+16%		2014/15				
Child Care	814	+42%	🟢	2014/15	36		🟢	2013
STARS Rating	Gold	2nd Gold Standing						
Sustainability Coordinators (# in office, Vancouver Campus)	82							
Power of You (# volunteers, Okanagan Campus)					23			
Sustainability Coordinators (# in labs)	40							
Sustainability Tours								
# of Tours Conducted	154				1			
# of Participants	2,209				37			
Digital Engagement								
# of Website Pageviews	201,821				7,743			
# of Website Users	56,736				2,763			
# of Facebook Likes	3,582							
# of Twitter Followers	11,500							
# of Instagram Followers	2,109							
# of Newsletter Subscribers	1,900							

🟢 On track/continued progress made.

🟡 Monitor/explore opportunities for improvement.

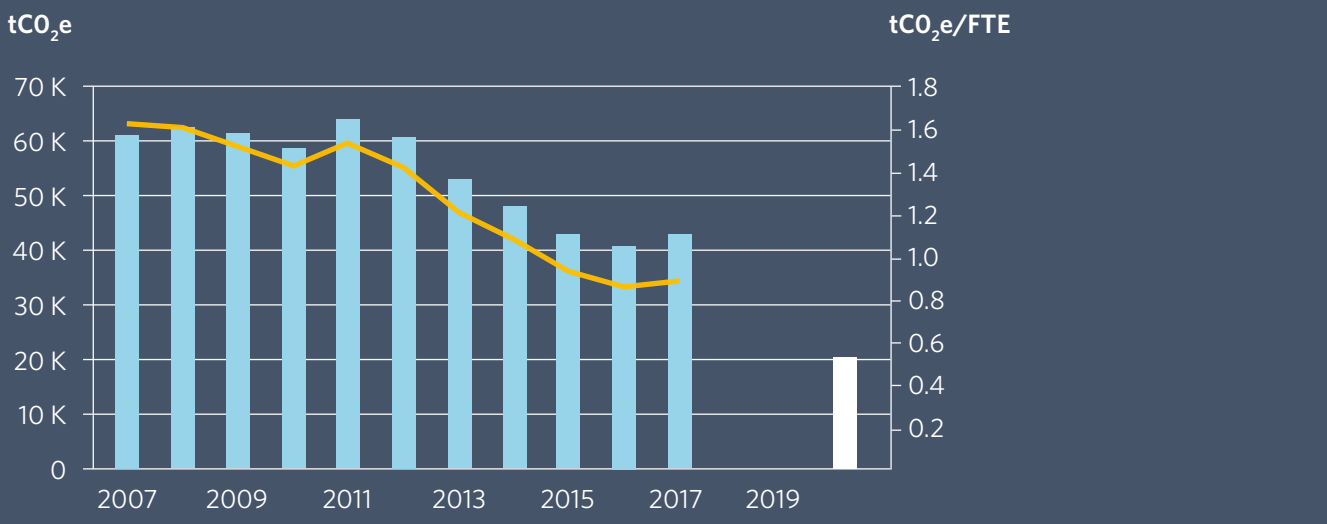
🔴 Attention required/advance process.

VANCOUVER CAMPUS

TREND DATA

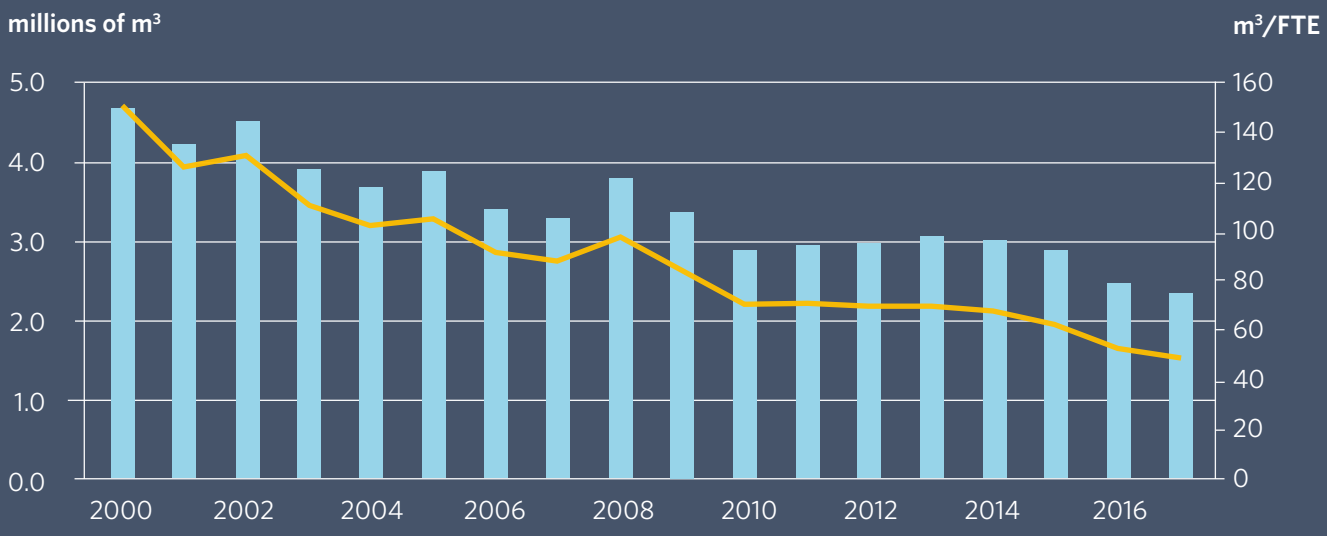
GHG EMISSIONS

Since 2007, UBC's Vancouver campus absolute GHG emissions have decreased by 30% despite significant growth. Per capita, emissions have decreased by 46% per student full time equivalent, and 43% per m^2 of floor space. We are aiming for a 67 percent reduction by 2020, and zero emissions by 2050.

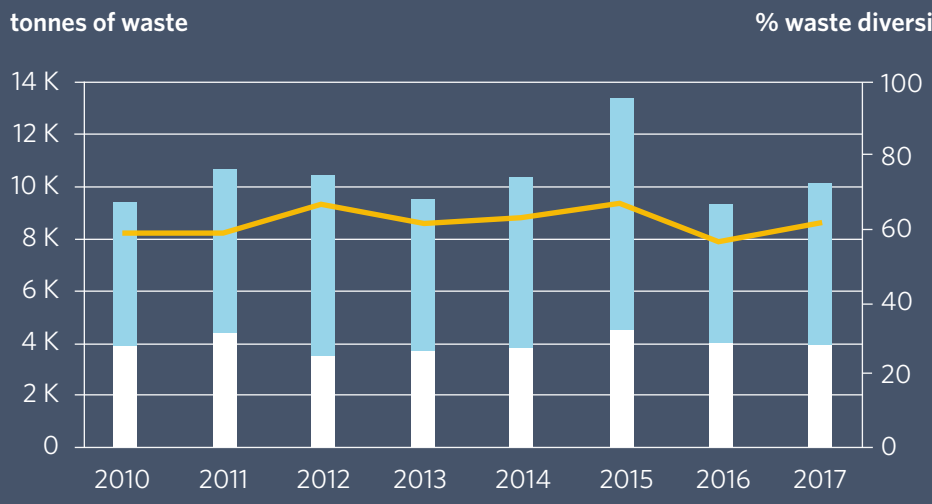


WATER

Water consumption has decreased consistently at UBC's Vancouver campus over the past 17 years. The total amount of water used in the campus' academic buildings has reduced by 50% since 2000, despite significant campus growth.



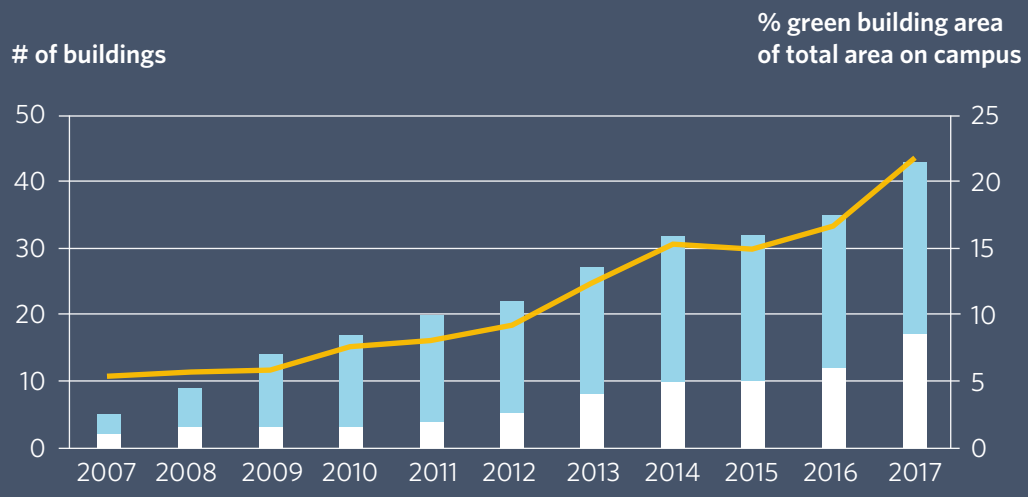
MATERIALS AND WASTE



Last year UBC Vancouver diverted 61% of overall waste (operational and construction waste) from the landfill. In the Zero Waste Action Plan, UBC targets 70% diversion by 2016, and 80% diversion by 2020.

- Waste Diverted
- Total Waste Sent to Landfill
- % Waste Diversion (Overall)

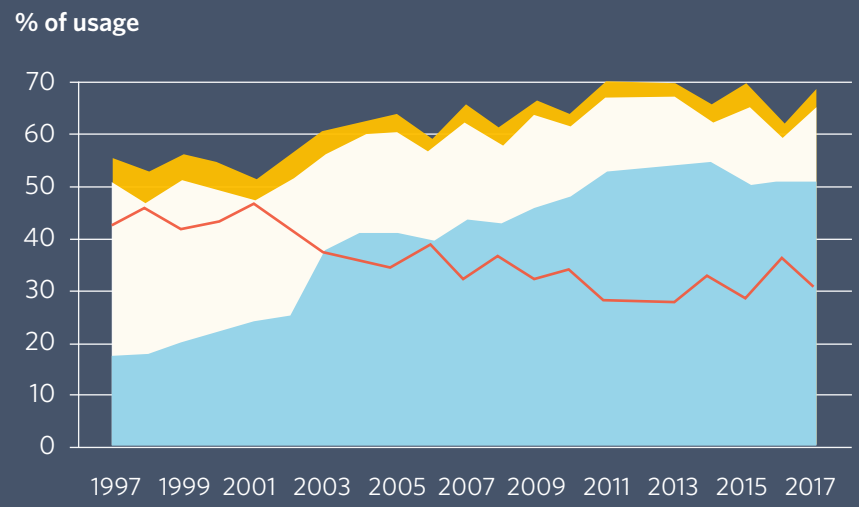
GREEN BUILDINGS



UBC requires that all new buildings be certified either under LEED or REAP. There are 43 buildings that have been certified under the LEED and REAP rating systems, with many other buildings registered and pursuing certification.

- REAP Projects
- LEED Projects
- % Green Building Area of Total Area on Campus

SUSTAINABLE MODES OF TRANSPORTATION



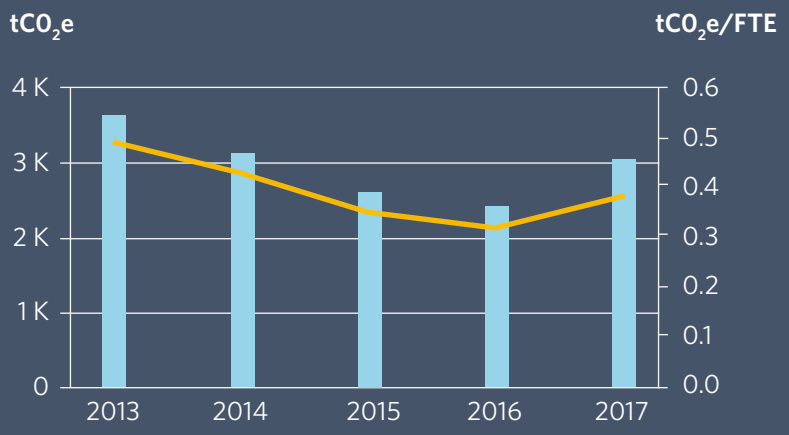
The use of sustainable transportation modes (walking, cycling, carpool, and transit) increased at the Vancouver campus in 2017, representing 69% of all trips made to and from campus. UBC targets a reduction in single occupant vehicle use by 20% from 1997 levels. In 2017, single occupant vehicle use was 30%.

- Walking and Cycling
- Carpooling
- Transit
- Single Occupancy Vehicle

TREND DATA

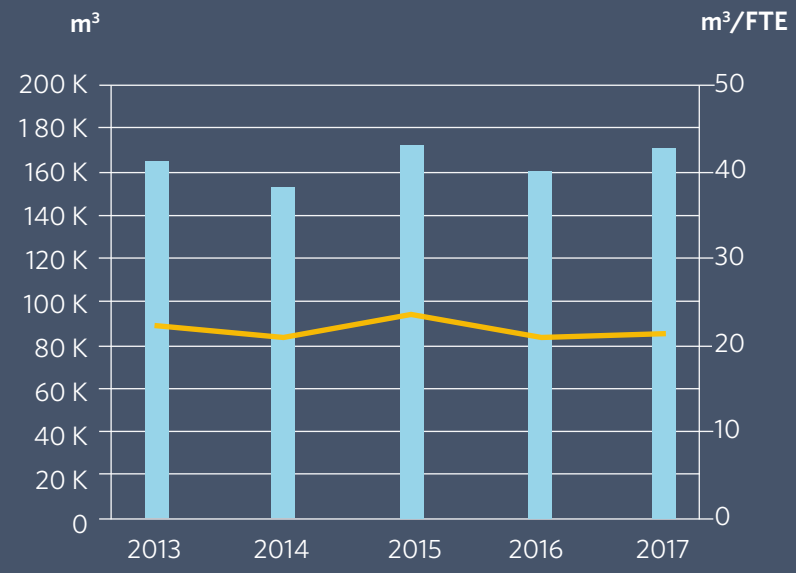
GHG EMISSIONS

UBC Okanagan's GHG emissions declined by 16% from 2013 levels, despite an 8% increase in student FTEs (full-time equivalents).

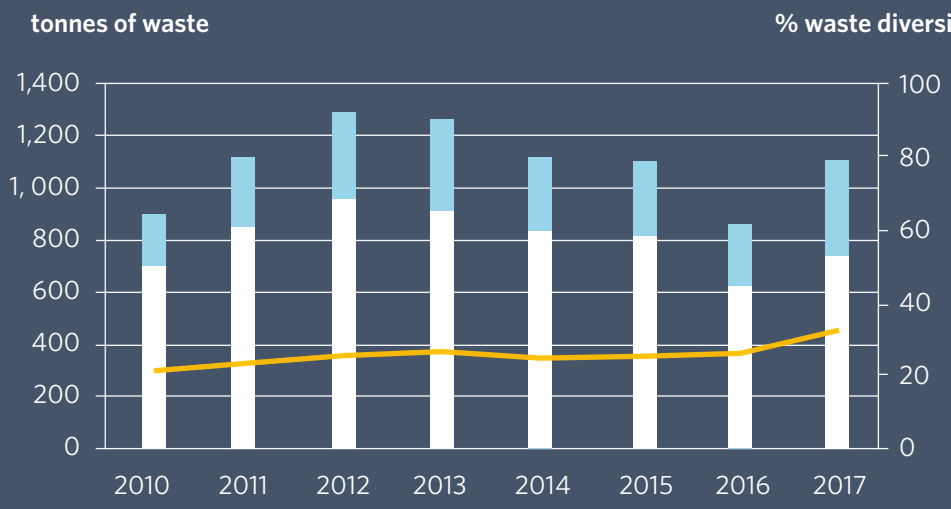


WATER

Despite an eight percent increase in student FTEs since 2013, absolute water consumption at UBC Okanagan has only increased by four percent. Continued reductions in per capita water consumption are expected with the implementation of the Integrated Stormwater Management Plan and the Whole Systems Infrastructure Plan.



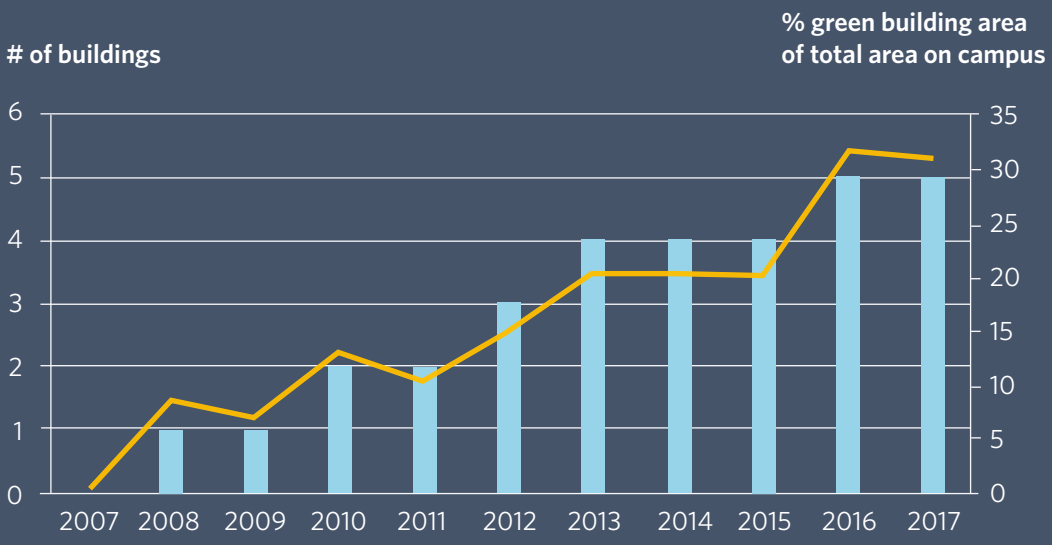
MATERIALS AND WASTE



Last year UBC Okanagan improved waste diversion by 11% over the 2010 baseline. However, the 28% growth of both campus student population and building footprint is challenged by overall waste disposed – since 2010, the total amount of waste generated has increased by 23%.

- Waste Diverted
- Total Waste Sent to Landfill
- % Waste Diversion (Overall)

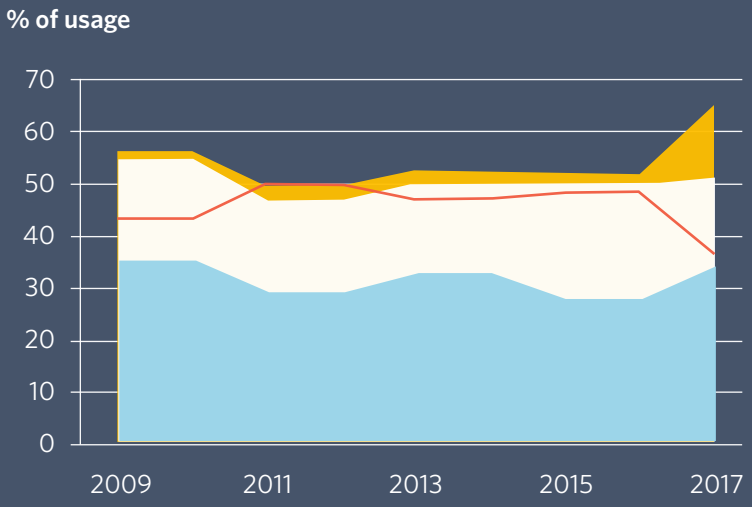
GREEN BUILDINGS



UBC's Okanagan campus has five buildings that are certified under the LEED Rating System, REAP, and Green Globes – currently 31% of the total floor area of the campus is green buildings.

- Total Green Building Projects
- % Green Building Area of Total Area on Campus

SUSTAINABLE MODES OF TRANSPORTATION



The use of sustainable transportation modes increased at the Okanagan campus, representing 64% of all trips made to and from campus. There was also a decline in single occupant vehicle use, which now comprises 35% of all trips made to and from campus.

- Walking and Cycling
- Carpooling
- Transit
- Single Occupancy Vehicle

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