



a place of mind

THE UNIVERSITY OF BRITISH COLUMBIA

A photograph of a modern university campus. In the foreground, a dark reflecting pool shows the reflection of the sky and the buildings. Several students are walking on a paved path that runs along the edge of the pool. In the background, there are modern, multi-story buildings with large windows and balconies. The sky is clear and blue. The overall scene is bright and sunny.

# Campus as a sustainability incubator

Dr. James Tansey 12<sup>th</sup> April 2016

# The Vision Thing

- More than 50% of the worlds population lives in cities and by 2100 it will be 85%
- Move beyond sustainable campuses to sustainable cities
- Campuses as microcosms of cities, communities and workplace
- Experiments in infrastructure, social engineering and citizenship
- Two degrees requires \$150-200bn R&D spending
- We need a new operating system for cities



*“At UBC's Vancouver campus, sustainability means simultaneous improvements in human and environmental wellbeing, not just reductions in damage or harm. By 2035, such **regenerative sustainability** is embedded across the University...”*





# UBC Advantages

## Policy, Jurisdiction and Innovation

- Campus operates like an independent city with 60,000 residents
- Provincial policy sets \$55/ton carbon tax and supports investment
- Strong foundations among staff and faculty in sustainability research
- Strong industry liaison office and relationships with partners



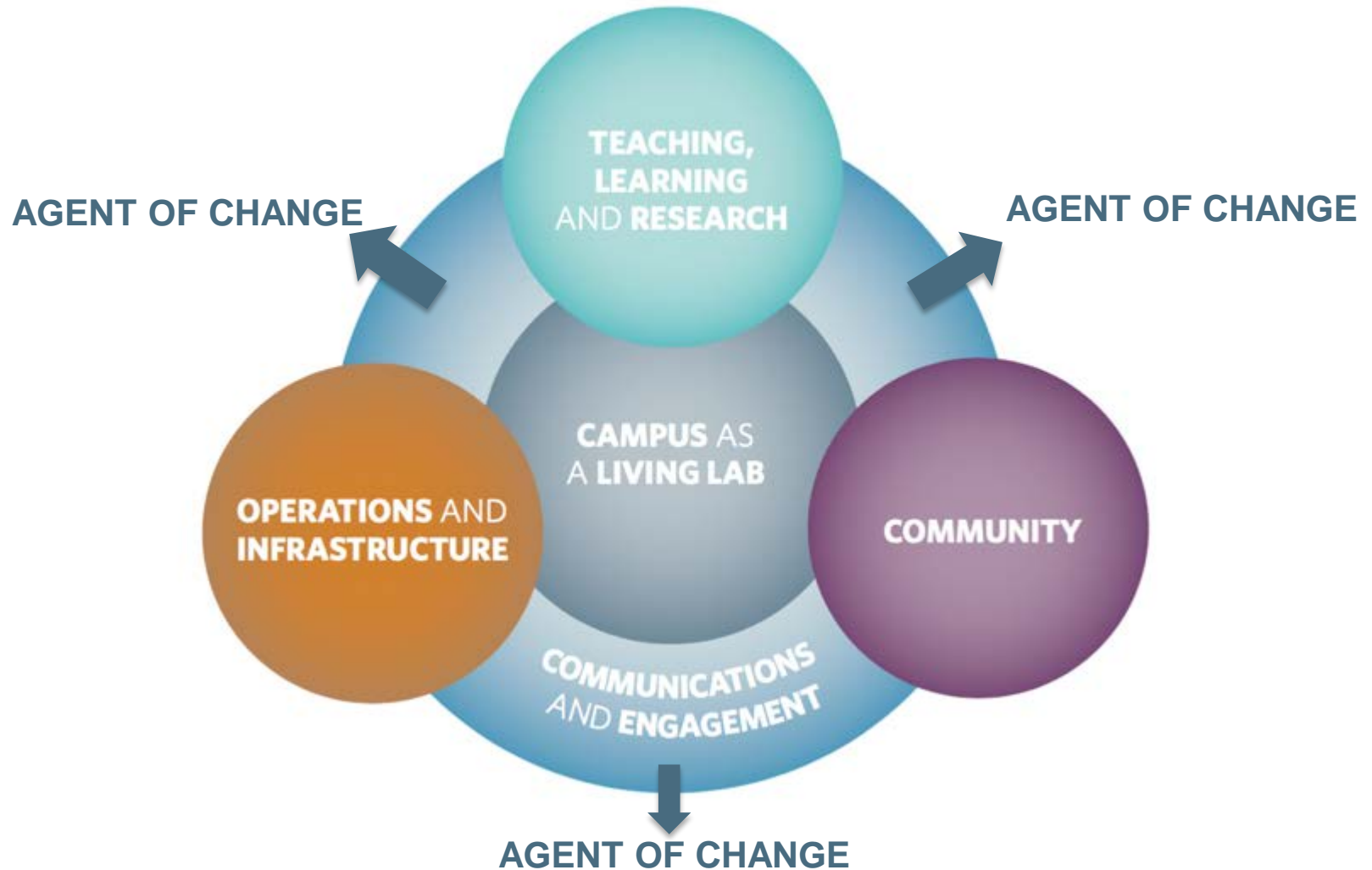
# 20+ Years of Achievement



# Our Targets



# Our Approach





# 2014/2015 Fast Facts

## Vancouver Campus



**22%**  
REDUCTION IN  
ABSOLUTE GHG  
EMISSIONS SINCE  
2007



**56%**  
REDUCTION IN WATER  
USE PER STUDENT  
SINCE 2000



**48**  
SUSTAINABILITY  
RELATED ACADEMIC  
PROGRAMS



**55**  
GREEN BUILDING  
PROJECTS



STUDENT BEDS  
INCREASED TO  
**9,989**

**66%**   
OF TRIPS BY SUSTAINABLE  
MODES OF TRANSPORT



**63%**  
OVERALL WASTE  
DIVERSION RATE



**3,100**  
STUDENTS  
ENGAGED THROUGH  
SUSTAINABILITY  
IN RESIDENCE  
PROGRAMMING



**636**  
SUSTAINABILITY  
RELATED COURSES



**38%**  
STUDENT POPULATION  
ENGAGED IN UBC  
RECREATIONAL  
PROGRAMS



**768**  
STUDENTS, FACULTY AND  
STAFF INVOLVED IN 100  
SEEDS PROJECTS





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# Teaching, Learning and Research

## FACULTY ENGAGEMENT

**636**

SUSTAINABILITY  
RELATED COURSES

**448**

FACULTY ENGAGED IN  
SUSTAINABILITY RESEARCH

**768**

STUDENTS, FACULTY AND STAFF  
ENGAGED IN APPLIED RESEARCH

LEARNING PATHWAYS

FELLOWSHIPS

GRANTS

COURSE  
CONSULTATION

INTEGRATION





# Operations and Infrastructure

## VANCOUVER CAMPUS

**22%**

REDUCTION IN ABS. GHG  
EMISSIONS SINCE 2007

**34%**

REDUCTION IN GHG  
EMISSIONS PER STUDENT  
SINCE 2007

**63%**

OVERALL WASTE  
DIVERSION RATE

CLIMATE ACTION  
PROJECTS

CAMPUS ENGAGEMENT

GREEN FLEET

GREEN BUILDINGS

NEIGHBOURHOOD  
ENERGY





# Climate Action Plan Projects

## Academic District Energy System



Expected 22% reduction in campus emissions.

## Bio-energy Research and Demonstration Facility



Achieved 11% reduction in campus emissions.

## Continuous Optimization Building Tune-Up



Will recommission over 70 buildings when complete.



# 2015-2016 Key Priorities

## Operations and Infrastructure

- Update the original Vancouver Campus Climate Action Plan to 2020, with positive financial business cases
- Develop a comprehensive Green Building Plan, with cogent roadmap toward net-positive design
- Complete the development of new Water Conservation Action Plan and initiate Campus Forest Management Plan development at Vancouver campus
- Complete the UBC Okanagan Whole Systems Infrastructure Plan and begin implementation
- Develop an Integrated Storm Water Management Plan at Okanagan campus

# What's next?

- Capture five years experience of living laboratory projects on campus in publications
- Renewables spending reached \$270bn in 2014 (BNN): on track with Stern
- Focused cluster on Cities of the Future combining multiscale urban modelling with complex systems approaches
- Create a professional designation for sustainability managers and curriculum





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