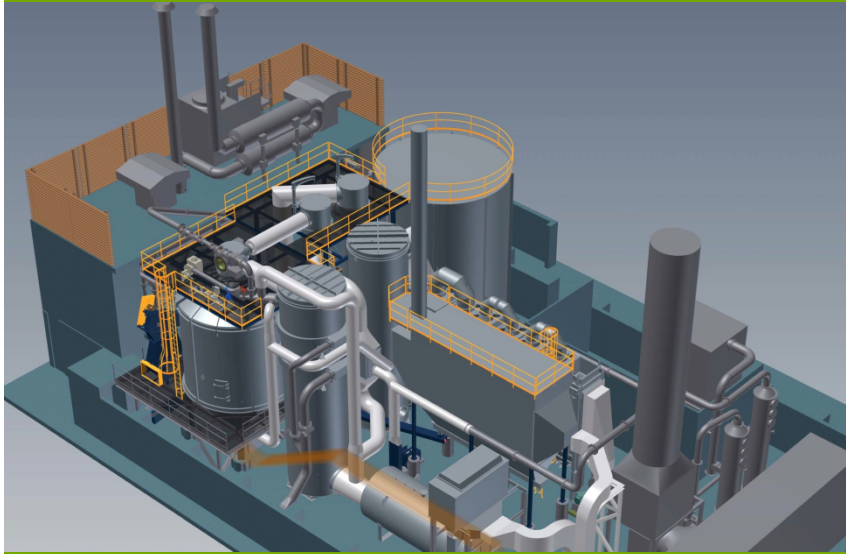


Continuous Optimization in Buildings

- Partnership with BC Hydro and Pulse Energy
- 72 large academic buildings completed in four phases between 2010 and 2016
- Energy conservation measures
 - “Tuning” the building automation system
 - Demand control strategies for laboratories
 - Improved behavior change programs
- Target: 10% GHG reduction



UBC Bioenergy Research & Demonstration Facility



Four story CLT building

Heating mode: 6 MW

Cogen mode : 2 MW(elec) + 3 MW(heat)

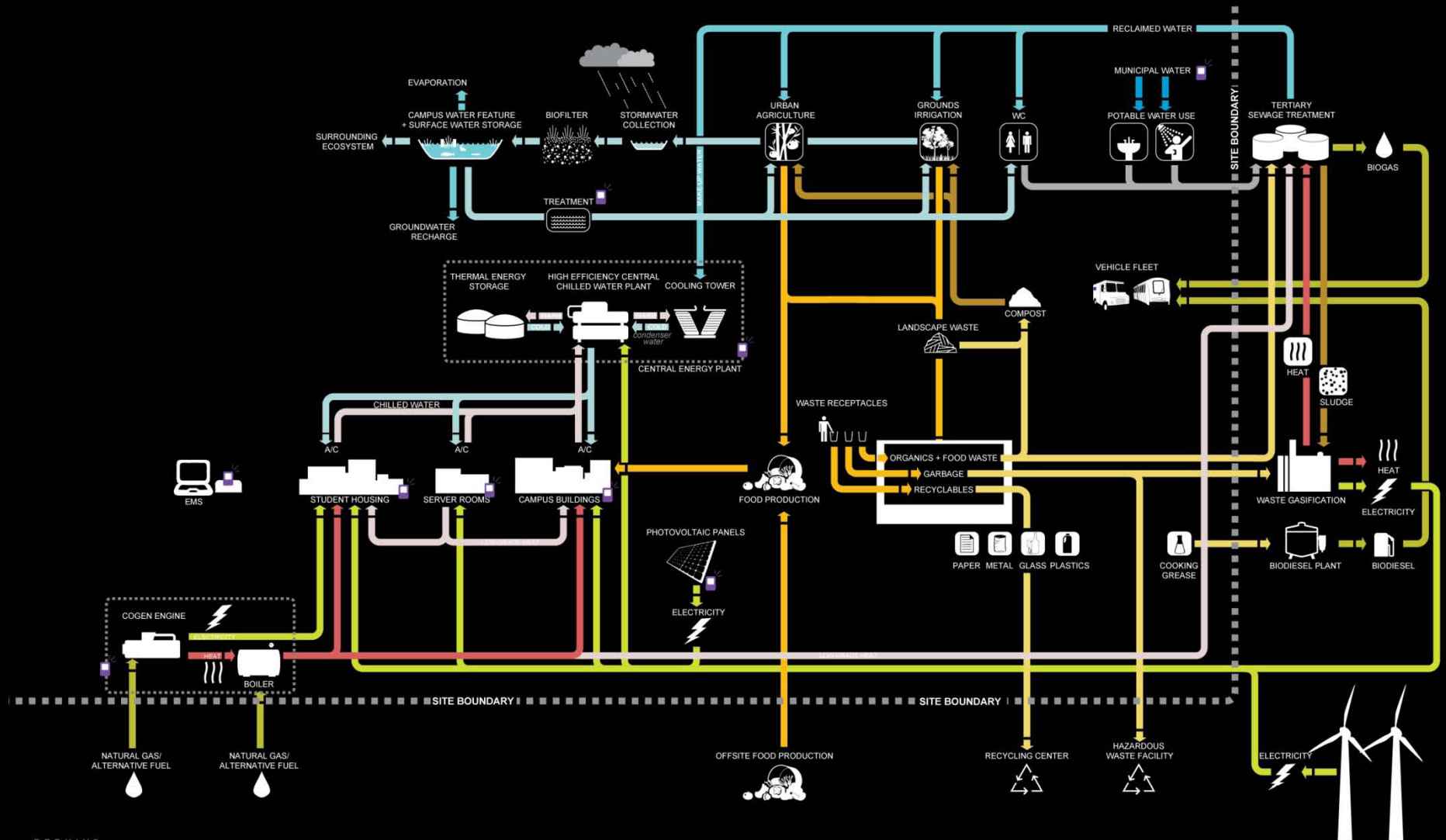
CO2 Reduc'n: 4,000 tpy of GHG

Steam to Hot Water Conversion

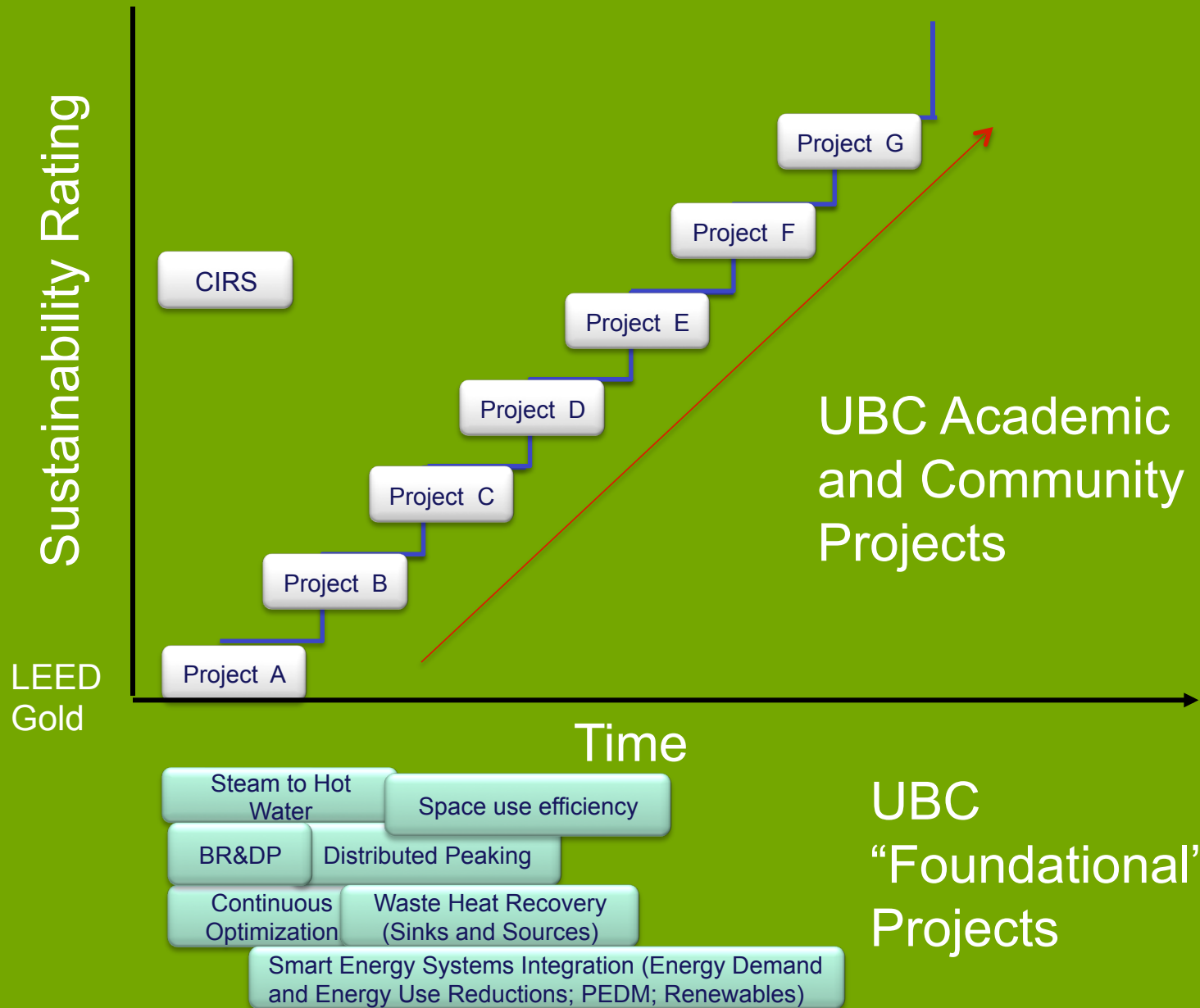
- One of largest Hot Water conversion in North America - \$80-90M
- 24% Energy and 22% GHG savings
- Replaces aging infrastructure with high operational and deferred maintenance costs
- Increases fuel source flexibility
- 14 km of pre-insulated EN 253 hot water distribution piping
- 131 Energy transfer stations in building mechanical rooms



Integrated Campus Systems –Energy, Water, Waste



Regenerative Sustainability Gradient

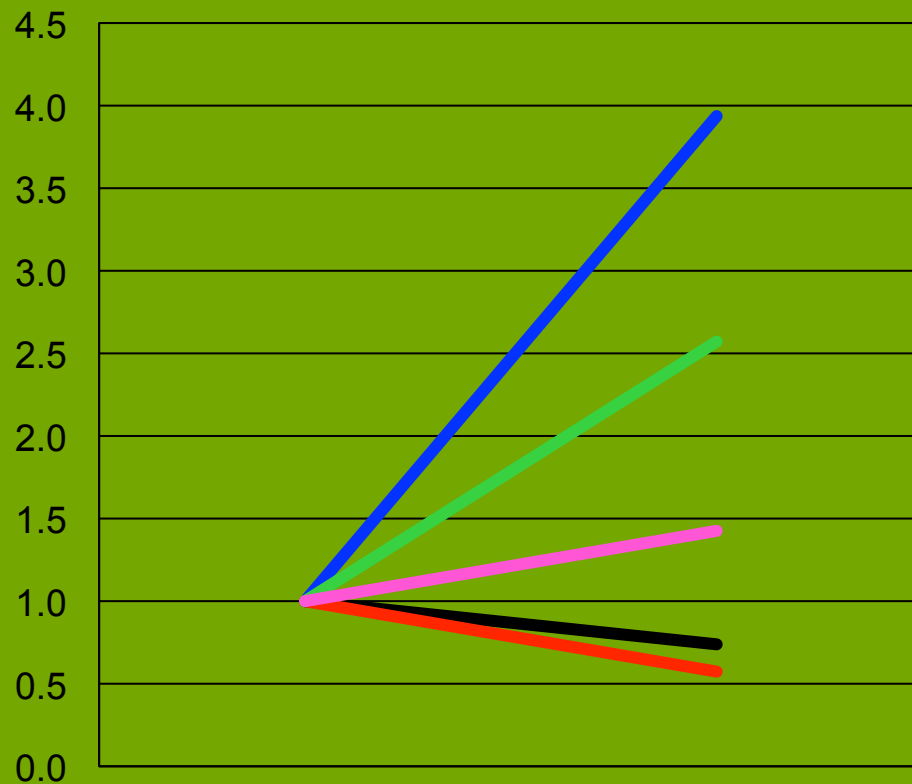


UTown@UBC

- From commuter campus to sustainable community
- More affordable housing for students & families to live on campus
- Enhance academic engagement, campus life and the environment



Sustainable Community Indicators



1997 2011

— Transit trips — Vehicle trips

— Parking spaces — Residents

— Daytime population



Utown Build-out



2001 Population: ~10,000

- 7,000 Students
- 700 Faculty/ Staff Rental
- 1,700 Family



2010 Population: ~16,500

- 8,500 Students
- 1,900 Faculty/ Staff Rental
- 6,000 Family/ Co-Development (2,100 are affiliated)



2025 Population: ~30,000

- 14,000 Students
- 3,300 Faculty/Staff Rental
- 12,800 Family Housing/Co-Development (4,750 are affiliated)

Social Sustainability | Family Housing

- About 10% of our full-time faculty and staff now live on campus, occupying half of the 2,200 apartments and townhouses that were built as of 2008
- 50% of all new family homes in UTown@UBC will have at least one member of the household who works or studies on campus



Social Sustainability | Family Housing

- 20% of all new apartments and townhouses on campus are rental, and half of these units are available at below-market rates
 - About 20% off comparable rentals in adjacent Vancouver areas
- Co-development opportunities save UBC faculty and staff up to 20% off market prices by reducing typical project management and promotional costs



An aerial photograph of the UBC Farm area. A large green field is on the left, and a multi-colored map overlay is on the right. The map uses various shades of green, yellow, orange, and red to delineate different land parcels and boundaries. A red line runs along the left edge of the map area. The background shows a highway, trees, and some buildings.

UBC Farm

Mission

To be a global leader in the creation of new patterns for sustainable and healthy communities integrated with their surrounding ecology

2011 User Engagement and Trends: 55,000+ Site Visits

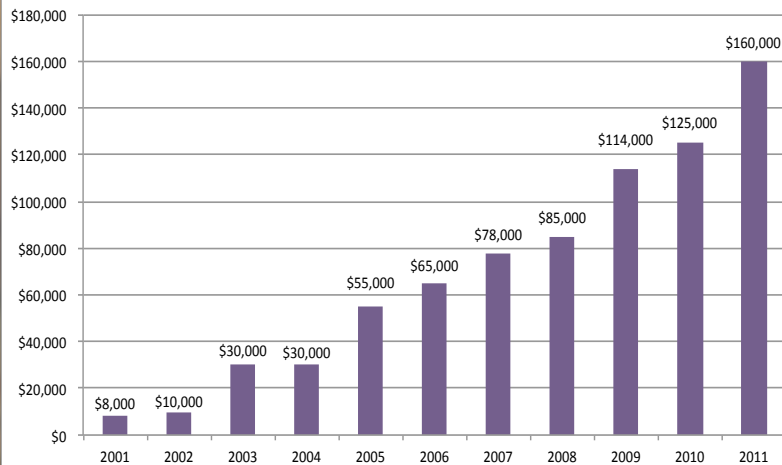
Partners

8 Faculties
37 UBC Departments
100+ Partners

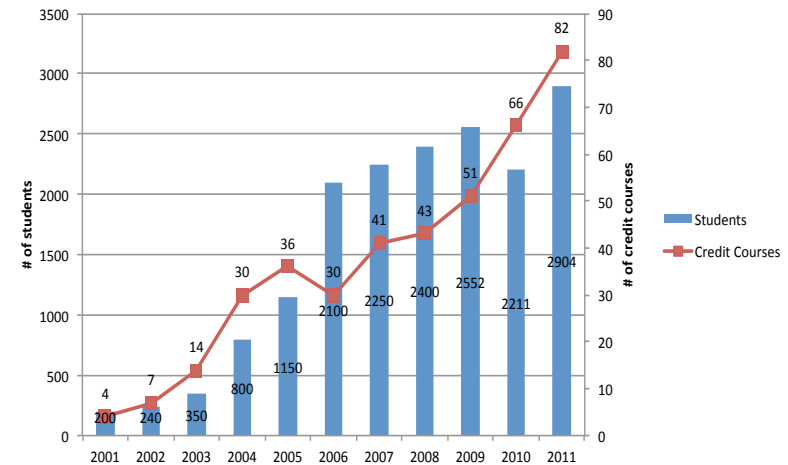
Projects

150+ Projects
50 UBC Courses
2,400+ UBC Students

UBC Farm Gross Farm Product Sales



Student and Credit Course Involvement at UBC Farm



a place of mind

SOUTH CAMPUS ACADEMIC PLAN



Agent of Change

The Role of the University as Agent of Change

“New forms of partnership between the private, public and NGO sectors should be a critical component of the sustainability agenda

. . . identify and flesh out new, more integrated models of interaction

. . . transform the institutional rules and processes that govern the universities’ relationships with the outside world.”

(Stephen Toope, Submission to Secretary-General’s Global Colloquium of University Presidents, New York University, Nov 28-29, 2007)

Strategic Alliance Partnerships



Energy systems, decision support



Smart energy system



Clean energy



Utown@UBC as living lab



Residential sustainability



Energy, engagement, mobility

Sustainability Pathways

