
Vancouver Island University

Sustainable Master Plan Overview

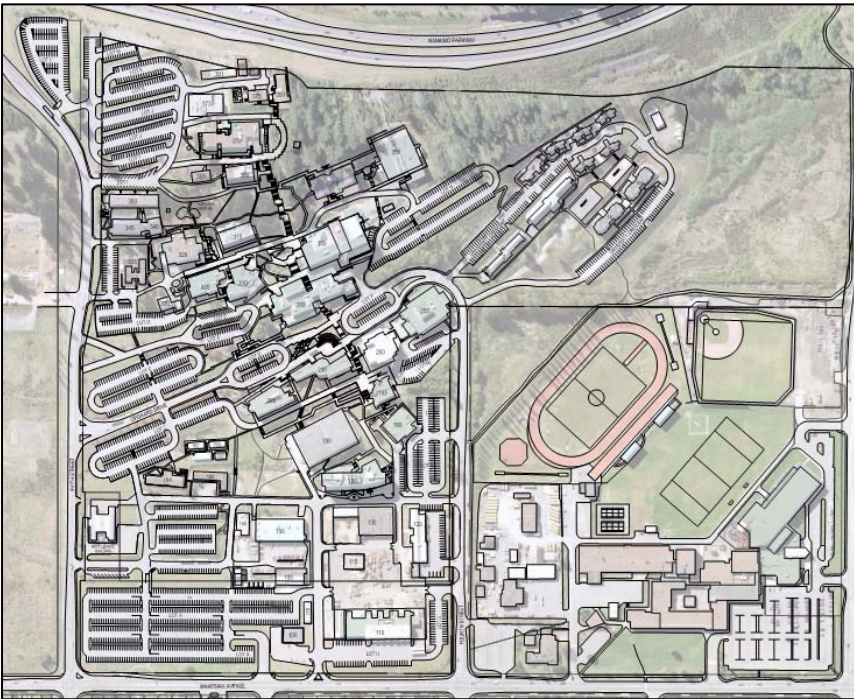
Presented by
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LEED® Accredited Professional
October 31, 2008

The logo for cobalt, featuring the word "cobalt" in a lowercase, sans-serif font, centered within a solid yellow rectangular background.

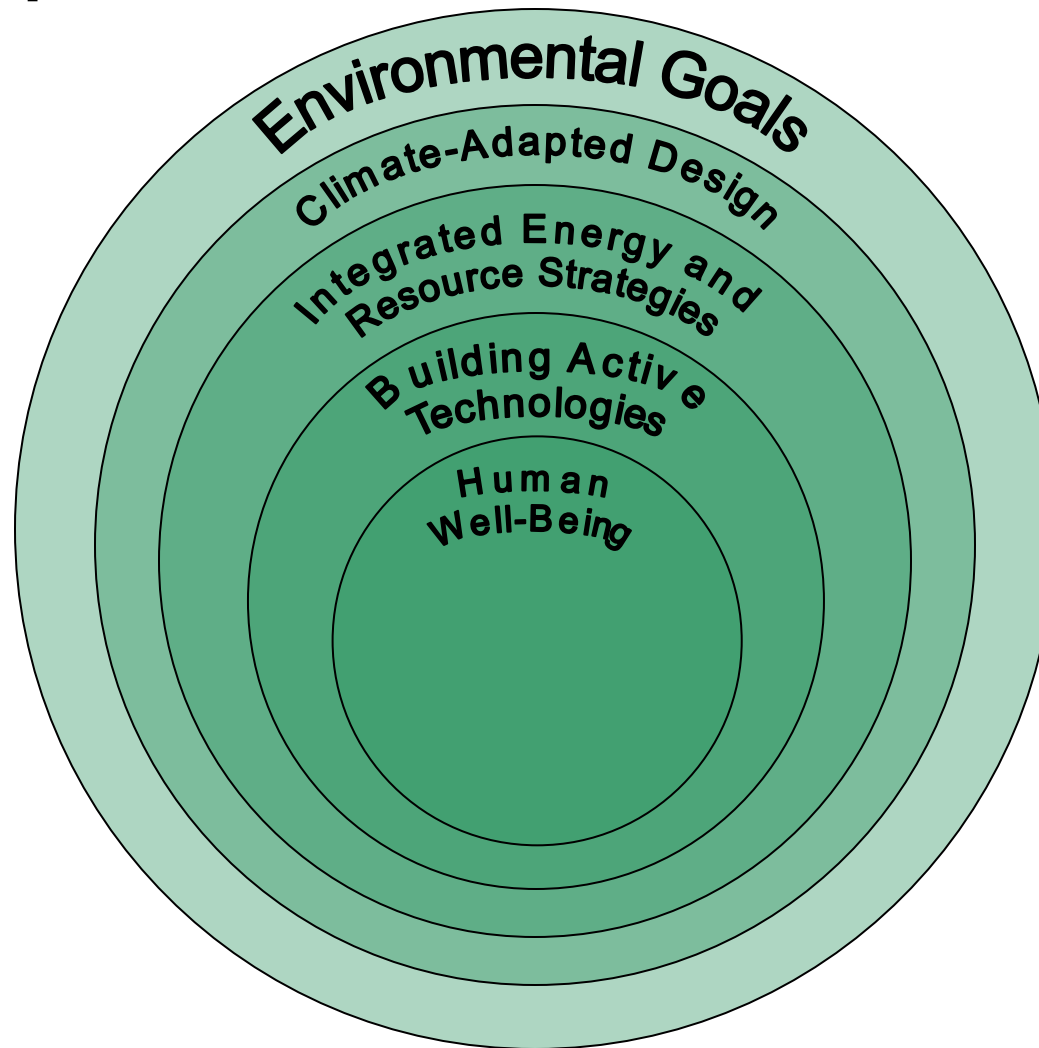
cobalt

Context

- Today's Campus
 - Many small buildings
 - Spread out
 - Limited residential capacity
- Future Campus
 - Fewer, larger buildings
 - More compact
 - More residential students

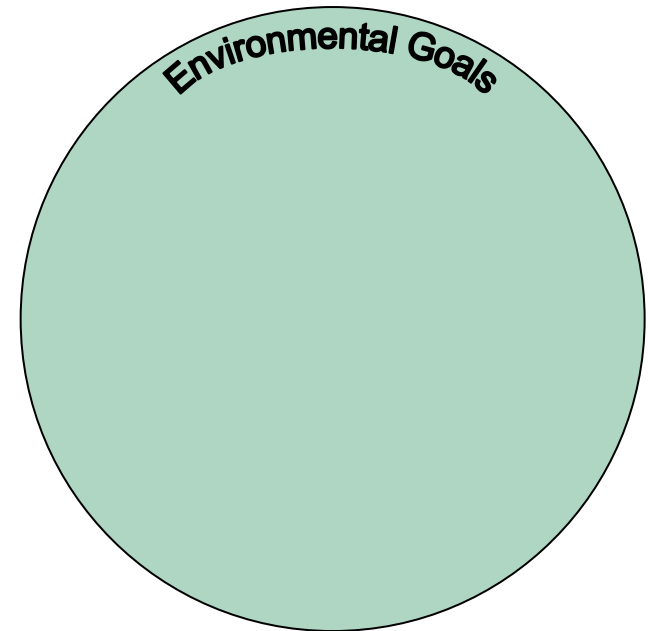


Our Approach



Environmental Goals

- Reduce demand
 - Energy
 - Water
 - Waste
- Improve comfort
- Enhance natural surroundings

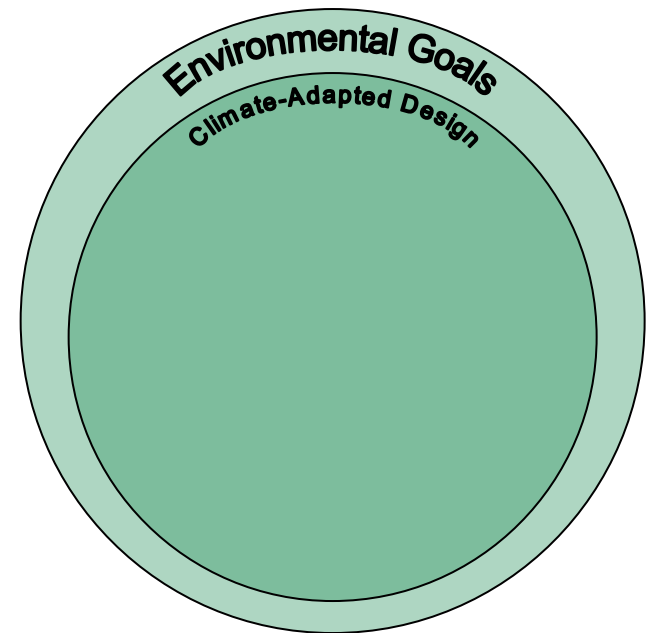
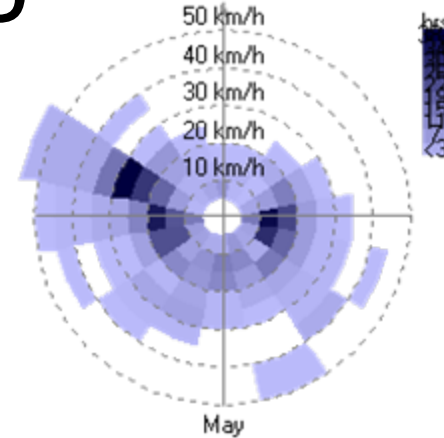


Climate-Adapted Design

- Campus weather station
- Microclimate analysis
- Site topography
- Passive design to minimize building energy demand

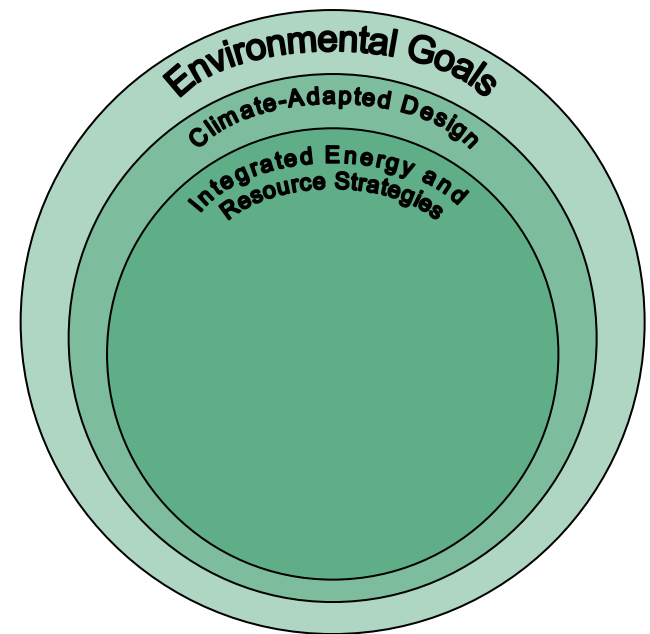
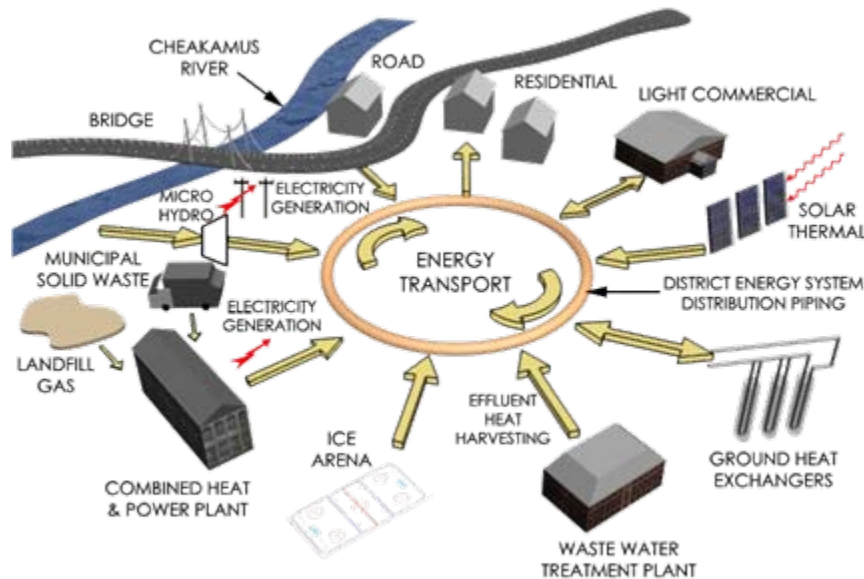


Weather station on Building 373, installed in 2005.



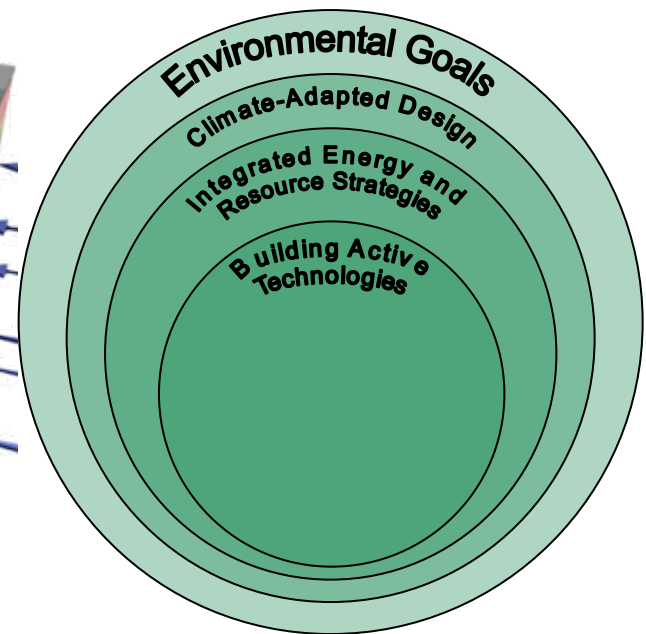
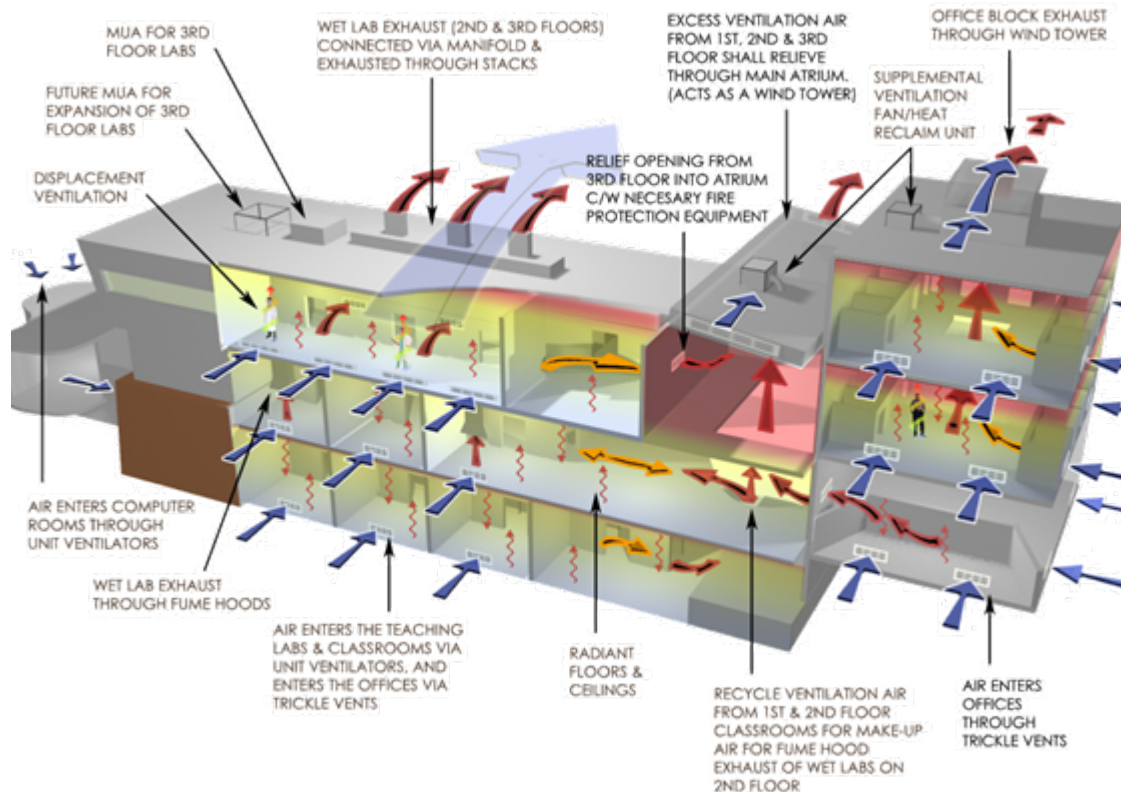
Integrated Energy and Resource Strategies

- Ambient temperature campus energy loop
- Onsite renewable energy
- Comprehensive waste management
- Onsite water treatment and reuse



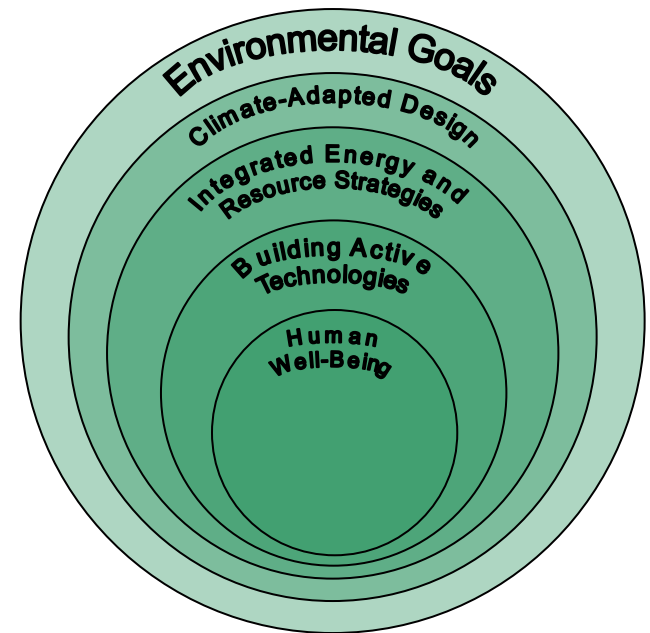
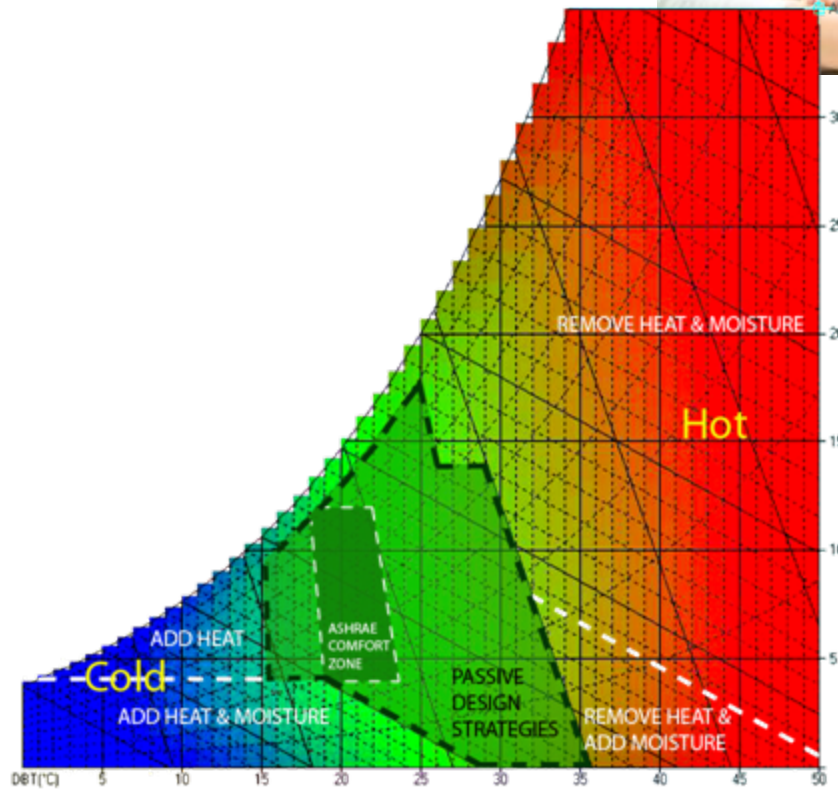
Building Active Technologies

- Efficient active systems to meet remaining building energy demand



Human Well-Being

- Thermal comfort
- Indoor air quality



Systems Options Matrix

	Option 1	Option 2	Option 3
Elements			
Benefits			
Limitations			
Costs			
Energy Intensity			
CO ₂ and GHG Reductions			
Etc...			

Opportunities and Challenges



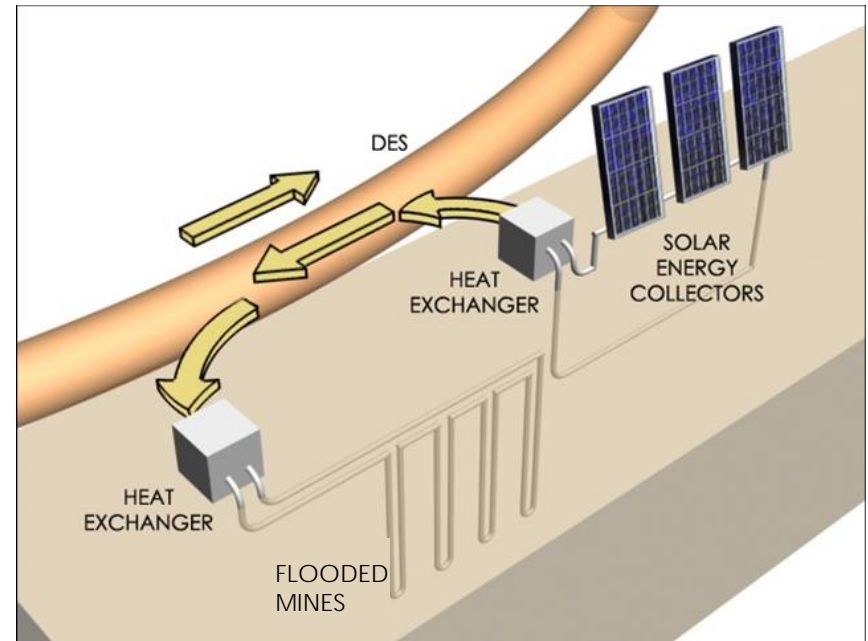
- Abandoned coal mines
- Sturgeon Centre wastewater outflow



- Lab exhaust

Abandoned Coal Mines

- Network of flooded coal mines
- Ambient temperature district energy system opportunity
- Water-to-water heat pumps
- Rooftop solar thermal for summer recharging



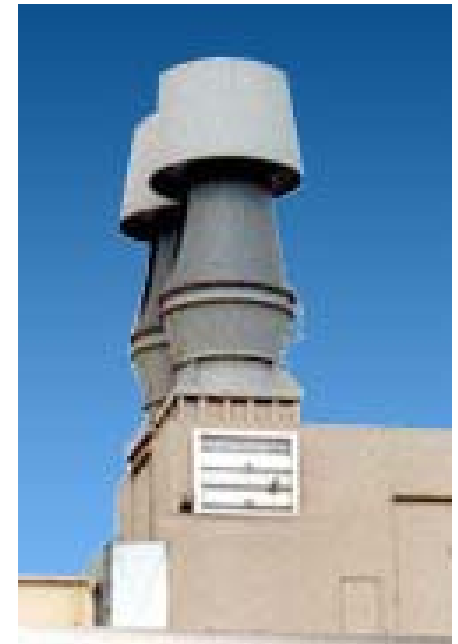
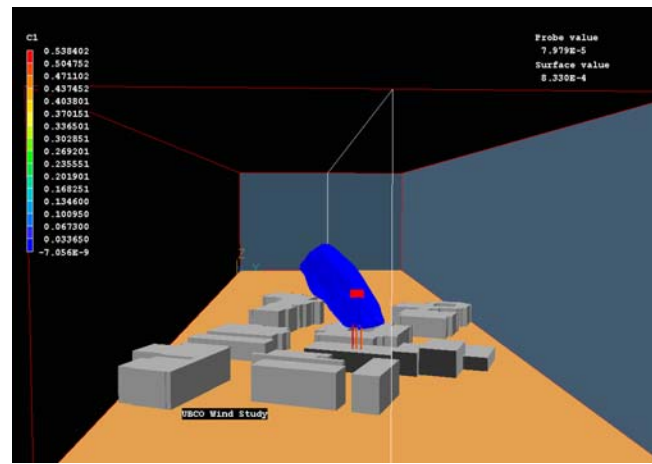
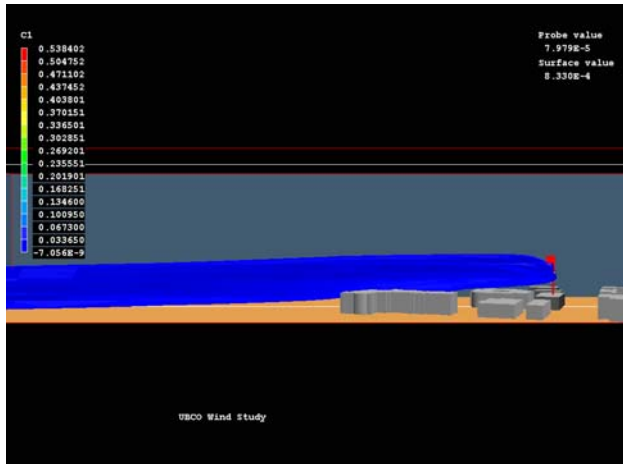
Sturgeon Centre Outflow

- Gravity-flow, nutrient-rich wastewater
- Living Machine treatment system
- Non-potable uses (e.g., toilets, irrigation)



Lab Exhaust

- Site-wide air quality
- Lab building location
- Exhaust fan type and location





Thank You