

UTSC Sustainability Update

January 8, 2025



UNIVERSITY OF
TORONTO
SCARBOROUGH

DEFY
GRAVITY



U of T named most sustainable university in the world

The QS World University Rankings: Sustainability 2024 placed U of T first out of more than 1,400 institutions across 95 countries



At A Glance: U of T Scarborough Implements the UN SDGs

View our flipbook documenting UTSC's contributions to the UN Sustainable Development Goals



New UTSC Student Residence: A Symbol of a Sustainable Future

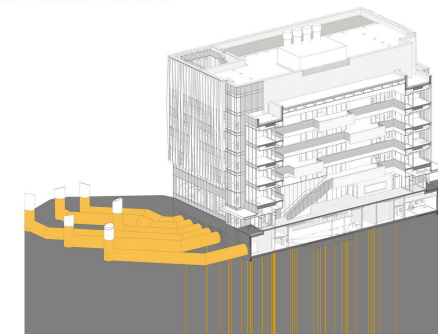
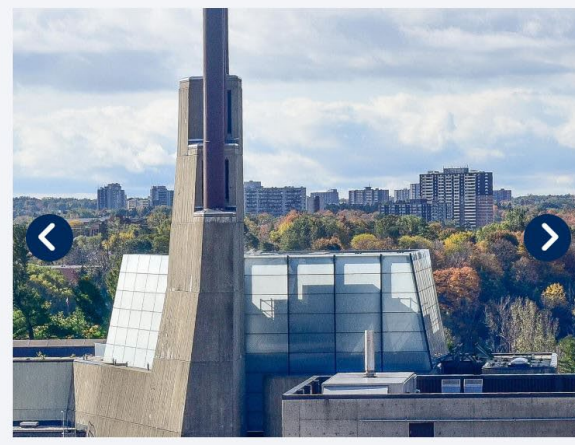


“ This building has a particularly innovative approach to solar shading, creating a dynamic façade and animating interior spaces. This approach carries through to the other environmental systems which are exposed to view, not simply to celebrate the technology, but to monitor performance, facilitate research and identify potential improvements.”

Jury Comments, 2018 Canadian Green Building Award

Read about UTSC's Plan to Reduce GHG Emissions

UTSC's Energy Conservation and Demand Management Plan (2024-2029)



Engagement & Communication

1000+ Students Engaged, 20+ Events

1000 Signups at UTSC BikeShare!

1000 Followers on Instagram

Year 1 of Waste Ambassadors Volunteer Program

For 2024- the year of 1000!



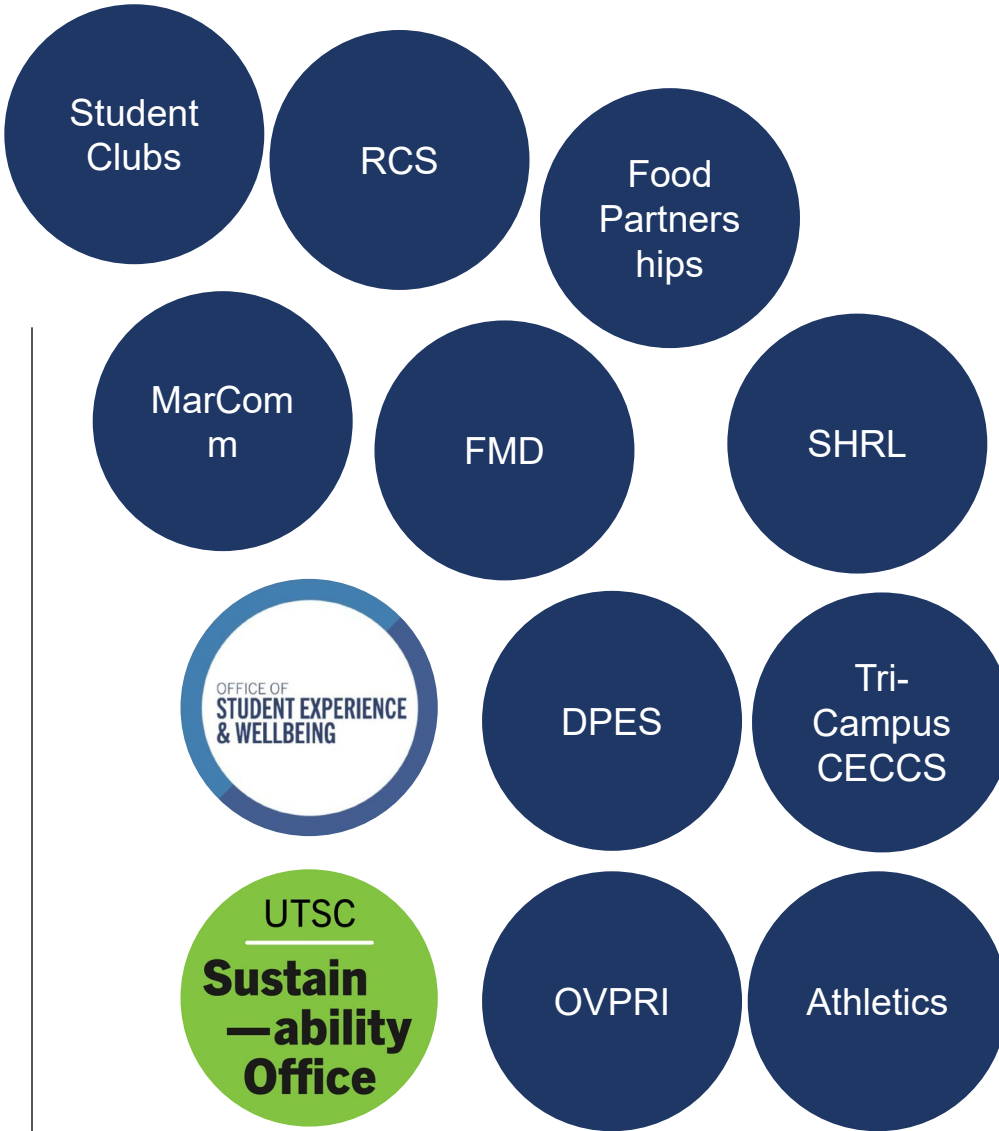
Sustainability Office



Engagement & Communication

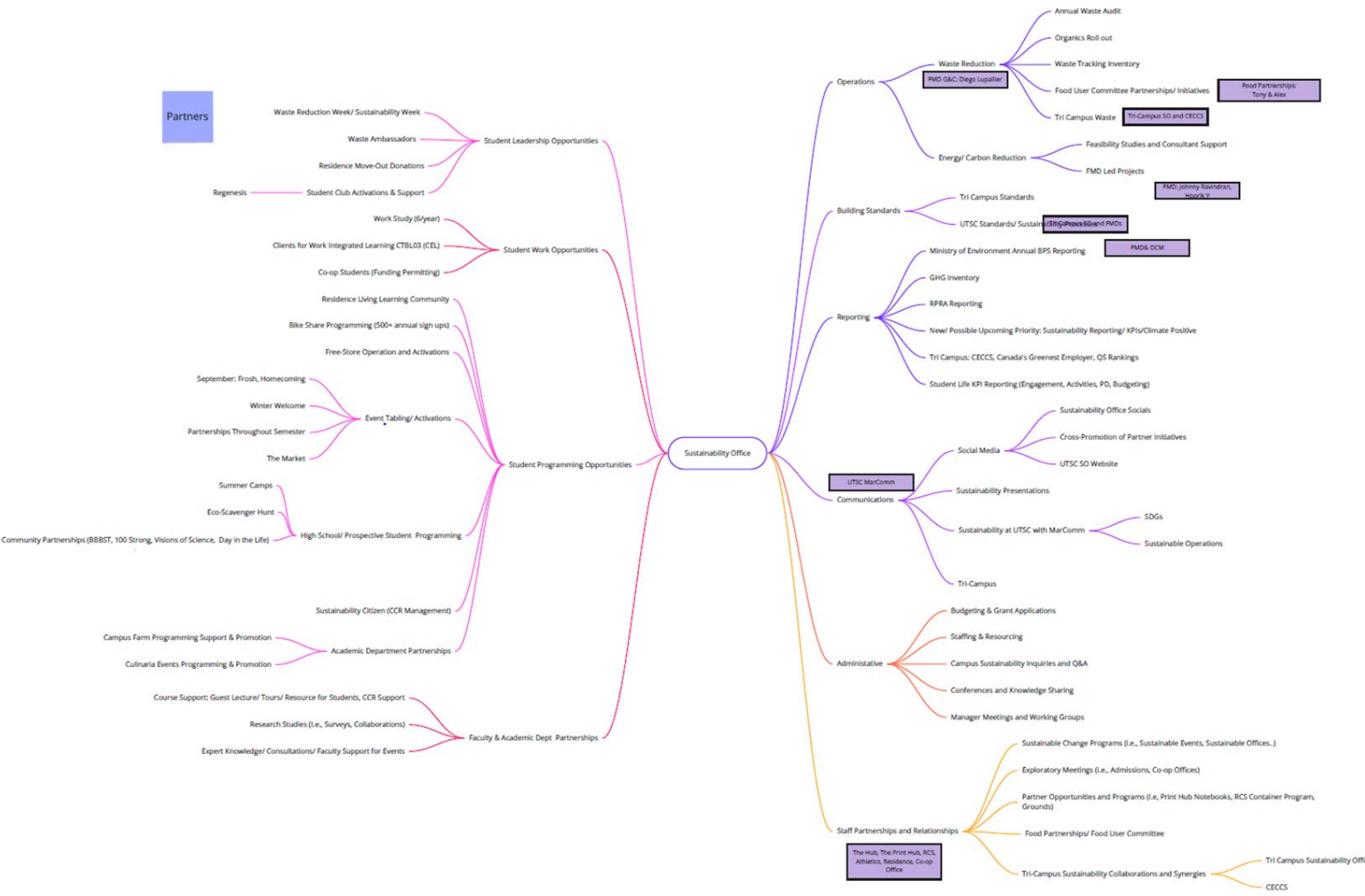


- Partnerships are critical*
- ❖ *Embed Sustainability*
- ❖ *Part of UTSC's Sustainability Story*



Servicing the Network, Organizing Priorities

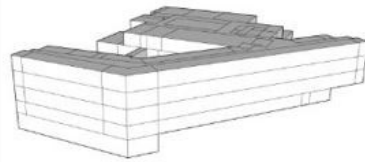
- Great work, but spread
- Topics are extremely Interdisciplinary



Sustainability Office

ADMINISTRATIVE & ACADEMIC ARCHETYPE

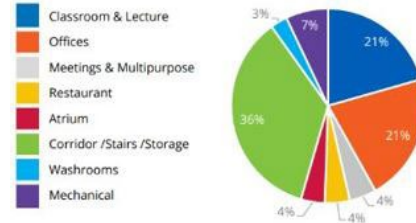
Reference Building: Instructional Centre 2 (Scarborough Campus)



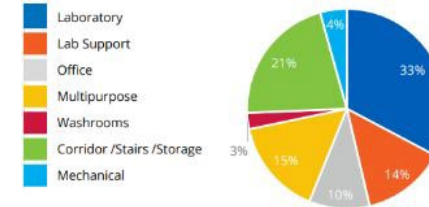
General Characteristics

Gross Floor Area	3,950 m ²
# Floors	5
Occupancy Schedule	M-F: 07h to 22h Sat: 07h to 17h Sun: None
Heating Set Point	22C, 18C during unoccupied
Cooling Set Point	24C, 26C during unoccupied
Outdoor Air Rate	Per ASHRAE 62.1-2013

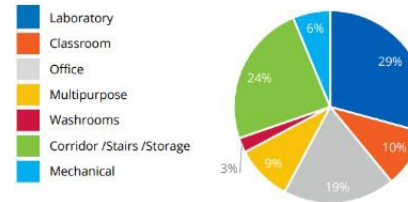
Space Breakdown



Space Breakdown

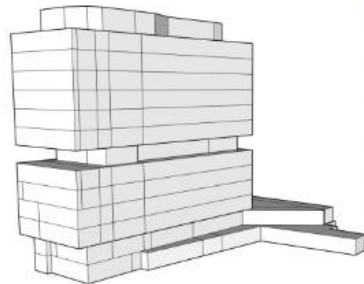


Space Breakdown



WET LAB ARCHETYPE

Reference Building: Terrence Donnelly Centre for Cellular and Biomolecular Research (St. George Campus)



General Characteristics

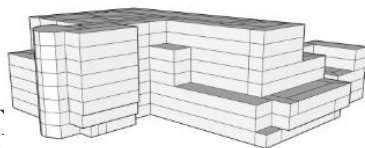
Gross Floor Area	16,940 m ²
# Floors	13 + PH
Occupancy Schedule	M-F: 08h to 22h S-S: 08h to 18h
Heating Set Point	22C, 18C during unoccupied
Cooling Set Point	24C, 26C during unoccupied
Outdoor Air Rate	Lab & Lab Support: 8 ACH Other: per ASHRAE 62.1-2013

1.14.1 New Construction: Targets for Scheduled Occupancy Dates between 2022 to 2026

Building Type	Thermal energy Source	TEUI	GHGI	TEDI - Heating	TEDI - Cooling
		ekWh/m ² /yr	kg eCO ₂ /m ² /yr	ekWh/m ² /yr	ekWh/m ² /yr
Academic	District Energy	97	15	37	23
	Non-District	75	5		
Office	District Energy	97	15	37	37
	Non-District	75	5		
Wet Labs	District Energy	470	46	95	95
	Non-District	395	28		
Dry Labs	District Energy	212	15	20	104
	Non-District	195	10		
Retail	District Energy	120	15	24	24
	Non-District	195	10		
Residence	District Energy	97	10	28	19
	Non-District	74	5		
Athletic	District Energy	103	15	38	33
	Non-District	78	5		
Library	District Energy	92	14	24	19
	Non-District	69	6		

DRY LAB ARCHETYPE

Reference Building: Bahen Centre for Information Technology (St. George Campus)



General Characteristics

Gross Floor Area	10,250 m ²
# Floors	8 + PH
Occupancy Schedule	M-F: 08h to 22h S-S: 08h to 18h
Heating Set Point	22C, 18C during unoccupied
Cooling Set Point	24C, 26C during unoccupied
Outdoor Air Rate	Per ASHRAE 62.1-2013

Targets and Planning



2024

June 2024
 Energy Conservation and Demand Management Plan (2024-2029)

2030

Low Carbon Action Plan Target

Tri-campus, reduce emissions 37% below 1990 baseline. Achieve 6900 tonnes eCO2/year for UTSC

2045

Estimated timeline to reduce operating emissions by 80%

<2000 tonnes eCO2/year for UTSC

2025

Tri-Campus Commitment Target Date 1

Target: Create and validate a plan to reduce absolute carbon emissions by at least 80% before 2050

Plan in progress- aiming to complete before the end of 2025

The time to act is now, and the University of Toronto is committed to doing our part to address the climate crisis and inspire further and necessary action around the world.

We choose to aggressively lead by example and see the benefits - for the university, for our community, and for the global environment.

- Cheryl Regehr**
 Vice President
 Provost
- Scott Mabury**
 Vice President
 OREP
- Alexandra Gillespie**
 Vice President
 Principal of UTM
- Wisdom Tetty**
 Vice President
 Principal of UTSC



2050

Climate Positive Target

Reduce operating Scope 1 and Scope 2* emissions to below net zero using renewable energy

Scope 1: Emissions from on-site combustion of fossil fuels (Natural Gas, Diesel, Propane)

Scope 2: Emissions from purchased energy sources (Electricity)

Climate Positive Planning

Goal: Under 2,000 tonnes eCO₂ annually by 2050

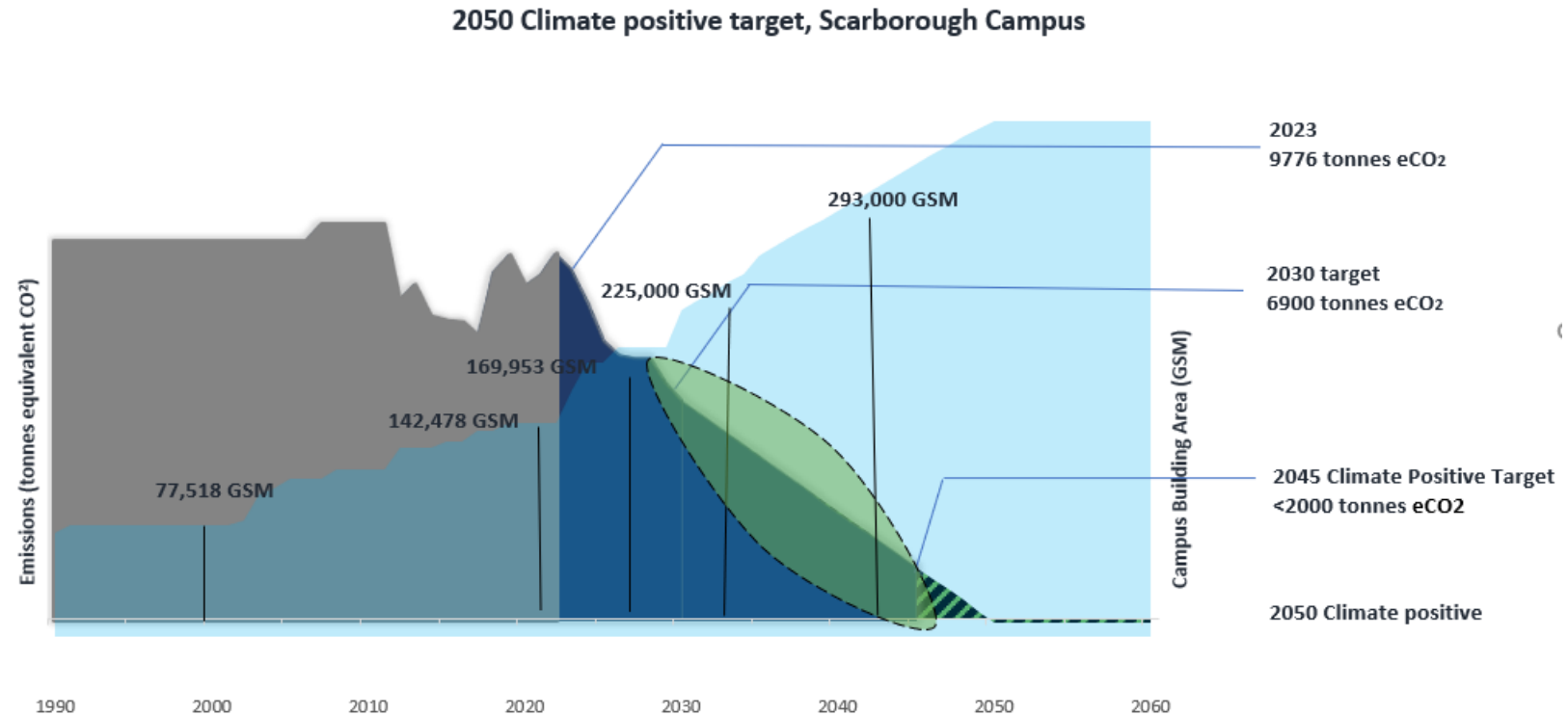
Planning for additional ~4,500 tonnes emission reduction projects

2030 to 2050 Helping us get there:

- Undertaking Metering and Utility Data Strategy to support planning and decision making
- Engaged industry partners for feasibility studies on innovative solutions, costing models

Challenges:

- Campus growth, electricity grid uncertainty



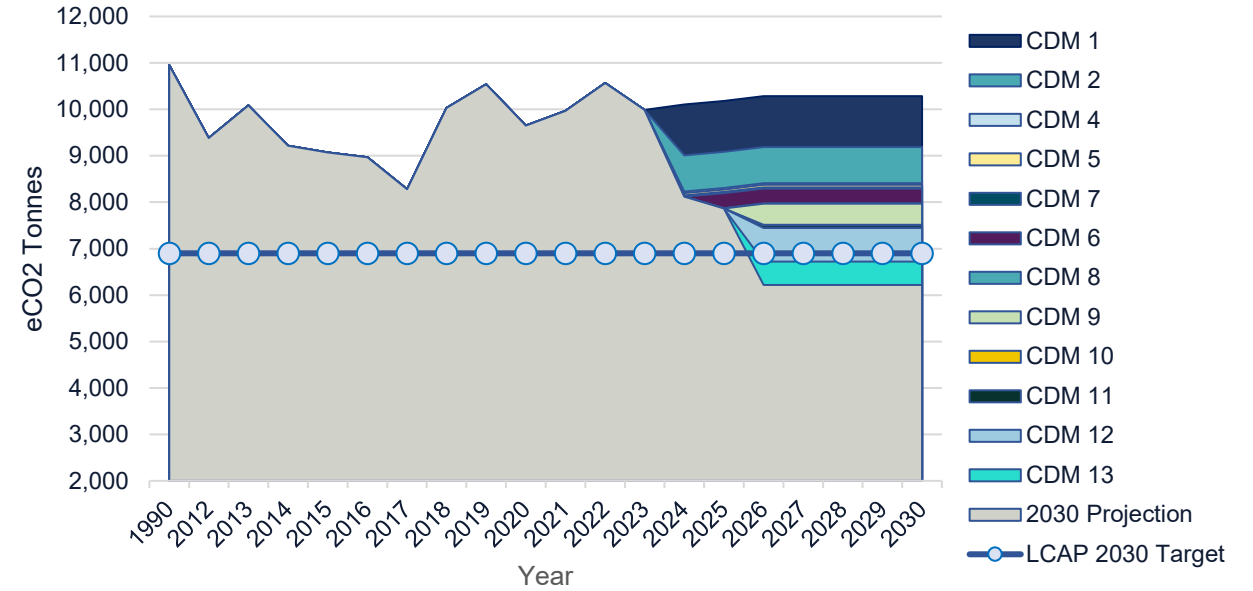
Energy Conservation and Demand Management Plan 2024-2029

Goal: Under 6,900 tonnes eCO2 annually

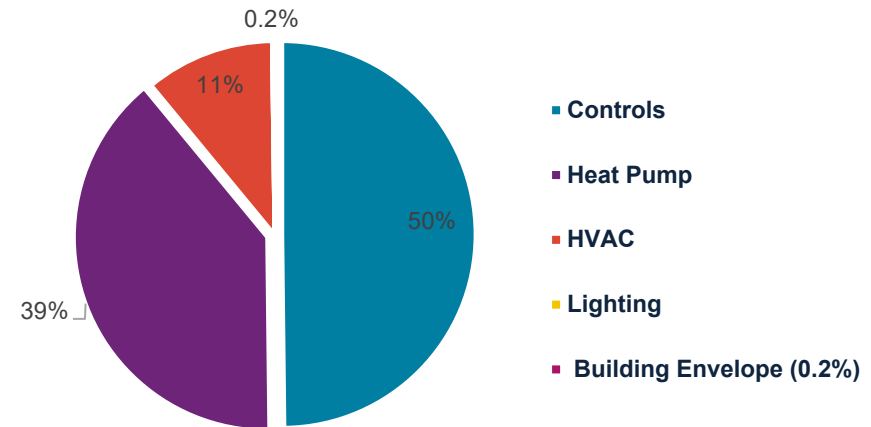
Cost of measures: \$38M for 13 Carbon Reduction Measures (CDMs)

GHG Reduction Measures: 50% Controls, 40% Heat Pumps

UTSC Annual GHG Emissions and CDM Plan Carbon Reduction Measures 2024- 2029

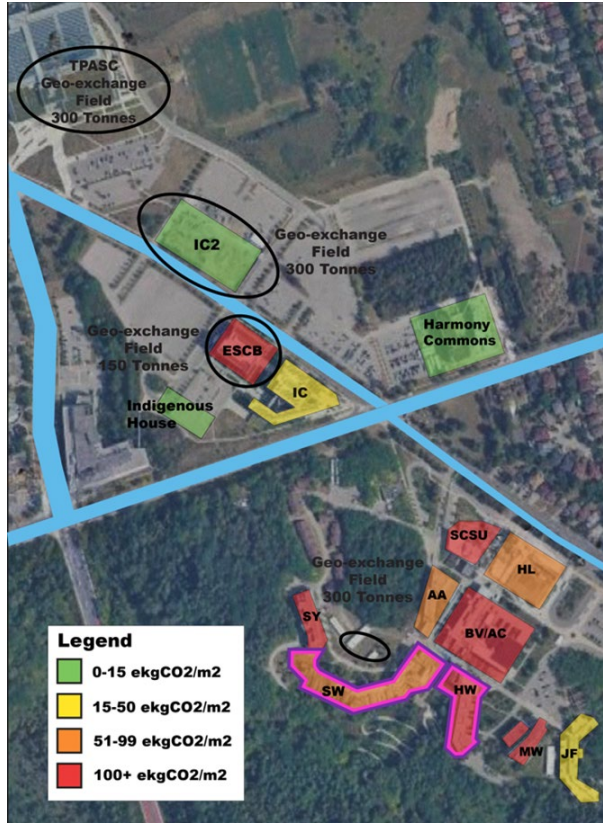


GHG Reduction by Category

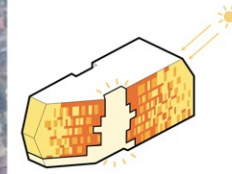
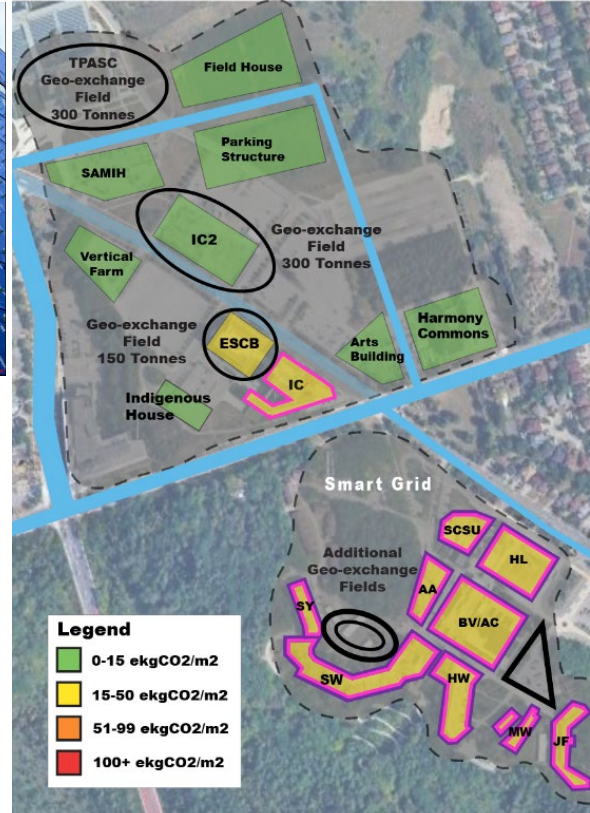


UTSC Campus

Climate Positive Master Plan



2025
169,953 GSM



2030
225,000 GSM



2050

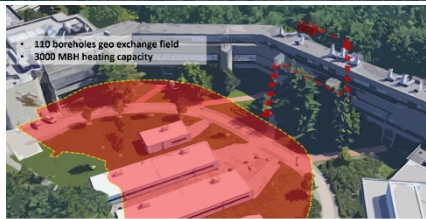


Figure 9

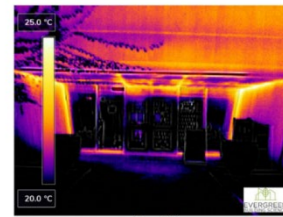
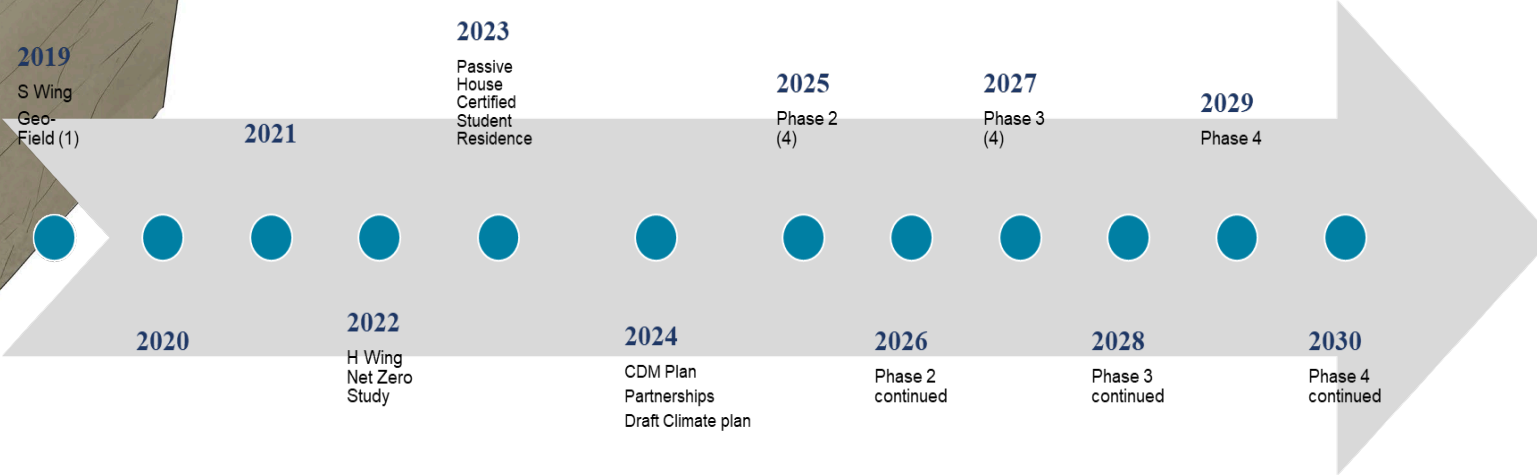
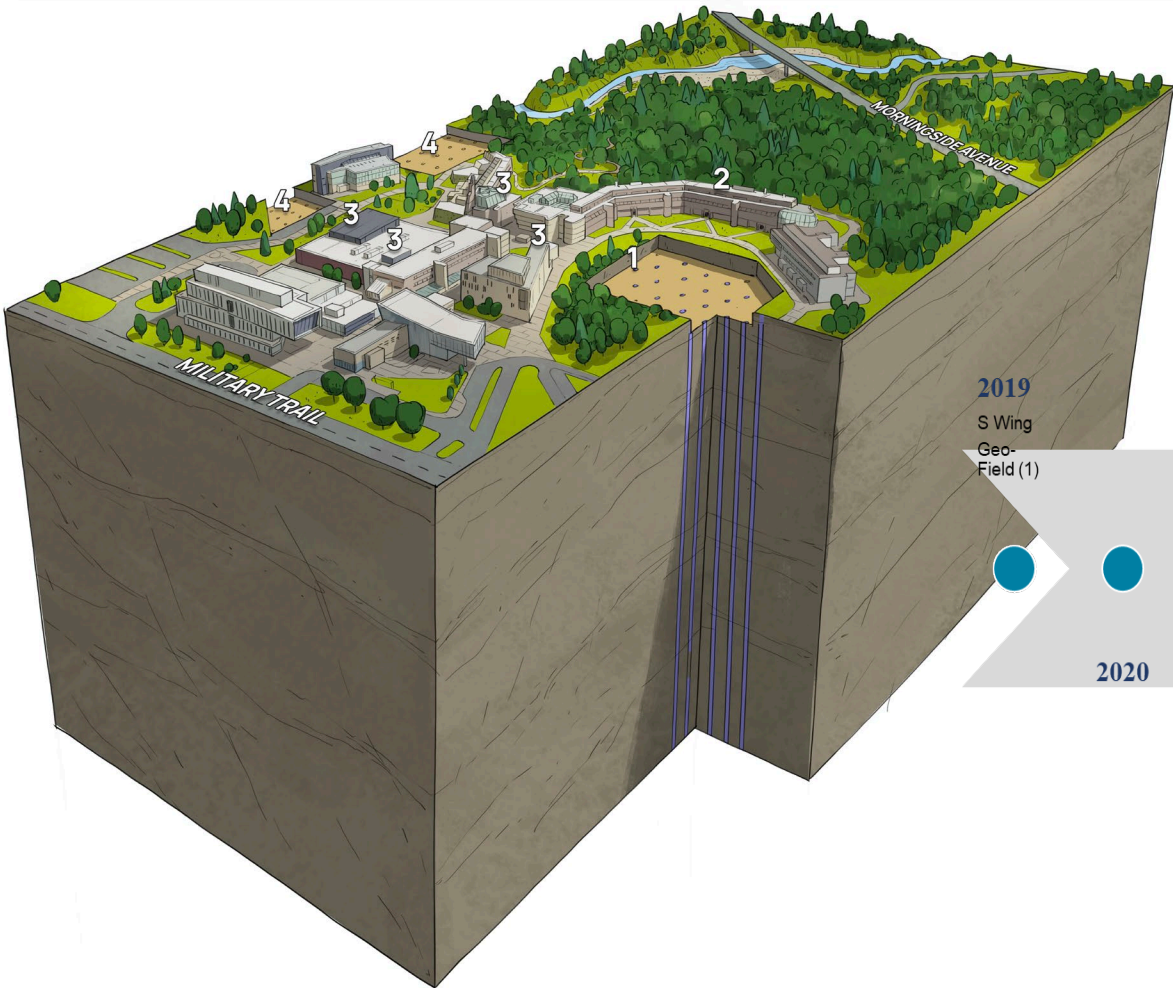
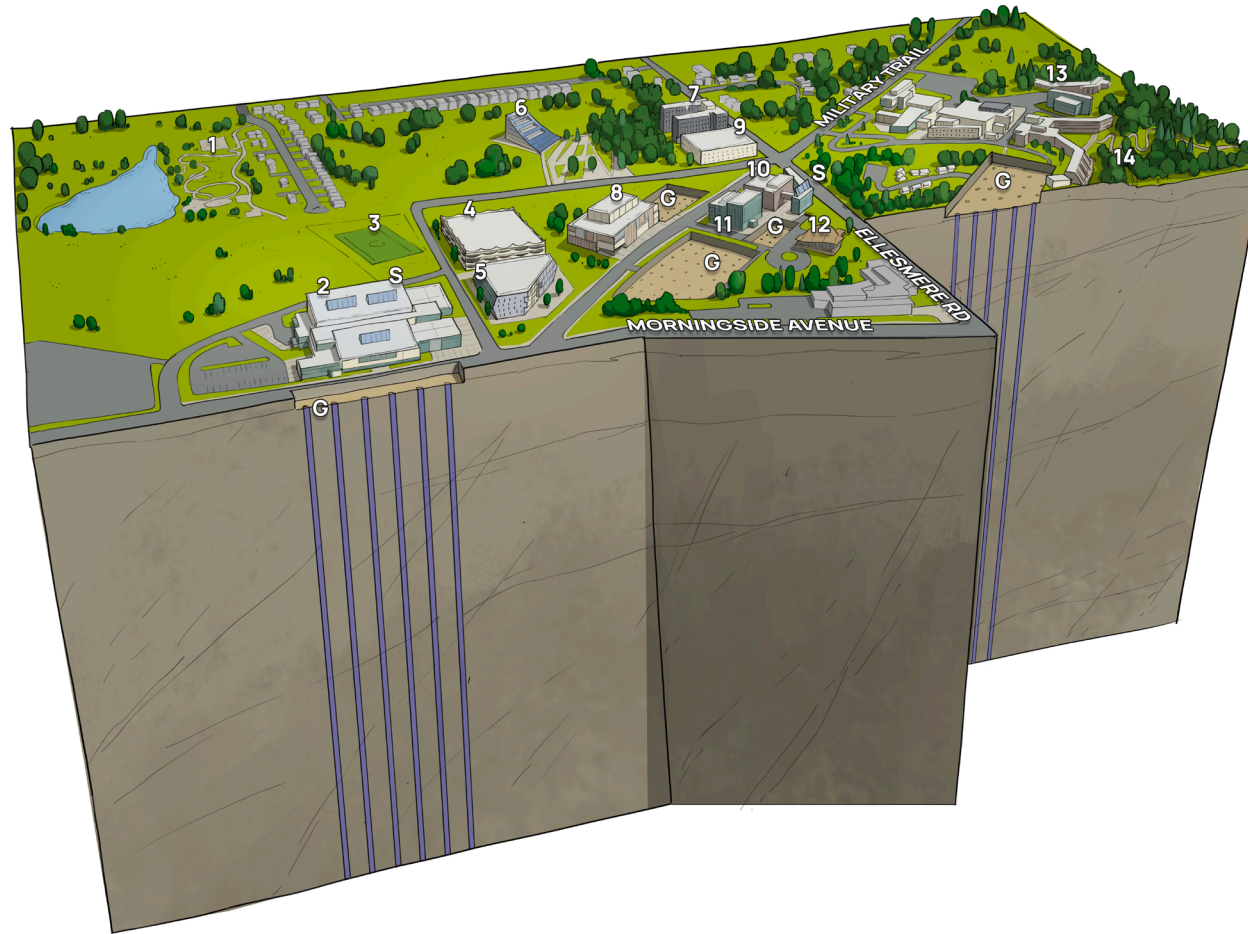


Figure 10

- 1 EXISTING GEO-EXCHANGE FIELD
- 2 PREVIOUS AND FUTURE PLANNED ENERGY CONSERVATION MEASURES IN SCIENCE WING MECHANICAL PENTHOUSE
- 3 FUTURE PLANNED ENERGY RETROFITS
- 4 FUTURE GEO-EXCHANGE EXPANSION





- | | | | |
|---|--|----|---|
| 1 | CAMPUS FARM | 9 | UTSC / SCARBOROUGH CENTRE FOR LITERATURES, ARTS, MEDIA AND PERFORMANCE (FUTURE DEVELOPMENT) |
| 2 | TORONTO PANAM SPORTS CENTER | 10 | ENVIRONMENTAL SCIENCE AND CHEMISTRY BUILDING |
| 3 | FIELD HOUSE (FUTURE DEVELOPMENT) | 11 | INSTRUCTIONAL CENTER |
| 4 | RETAIL AND PARKING COMMONS (2026) | 12 | INDIGENOUS HOUSE |
| 5 | SCARBOROUGH ACADEMY OF MEDICINE AND INTEGRATED HEALTH (2026) | 13 | SOUTH CAMPUS |
| 6 | EARTH (FUTURE DEVELOPMENT) | 14 | MA MOOSH KA WIN VALLEY TRAIL |
| 7 | HARMONY COMMONS | S | SOLAR PANELS |
| 8 | SAM IBRAHIM BUILDING | G | GEO-EXCHANGE SYSTEM |



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QUESTIONS

