

LEAPS & BOUNDS

St. George campus
Sustainability Office annual report

2023



LAND ACKNOWLEDGEMENT

We wish to acknowledge this land on which the University of Toronto operates. For thousands of years, it has been the traditional land of the Huron-Wendat, the Seneca, and the Mississaugas of the Credit River. Today, this meeting place is still the home to many Indigenous peoples from across Turtle Island and we are grateful to have the opportunity to work on this land.

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At the University of Toronto's St. George campus, we're taking action on climate change. That's why we're reducing our greenhouse gas emissions beyond carbon neutral. And why we're creating programs and services that mobilize students, staff, and faculty to act and make sustainable change in academics, research, and operations. It's all part of our commitment to become climate positive before 2050.

ABOUT THE SUSTAINABILITY OFFICE

The U of T Sustainability Office was formed over 15 years ago with a mission to embed sustainability into University operations and the on-campus experience.

Our team consists of 11 employees, including a director, a senior manager, project managers, energy managers, a sustainability coordinator, and an administrative assistant.

The Sustainability Office operates centrally on the St. George campus and works collaboratively with the Mississauga and Scarborough Sustainability Offices.

We aim to support and empower U of T students, faculty, and staff as sustainable change agents while acting as a leader in sustainability for other organizations.

Left to right, top to bottom: Scott Hendershot, senior manager; Chelsea Dalton, project manager; Kevin Leong, project manager; Kaitlyn Myles, sustainability coordinator; Larry Yang, energy manager; Vic Cassano, senior utilities reduction manager; Sherif Shakour, senior utilities reduction manager; Christie Anderson, administrative assistant; Ali Alnaggar, energy manager (**Donglin Que**)



2023 HIGHLIGHTS

#1 IN THE WORLD

The University of Toronto was named the most sustainable university in the world in the QS World University Rankings, a testament to our commitment to sustainable practices and initiatives.

PROJECT LEAP

After securing a design build partner, we launched Project Leap—an initiative that will cut our on-campus emissions in half by 2027—marking a significant milestone in advancing energy reduction projects at the University.

GREENEST EMPLOYER

For the tenth time, we were recognized as one of Canada's Greenest Employers by Canada's Top 100 Employers.

INCENTIVES

We secured almost \$13 million in grants and incentives to support energy efficiency projects on campus.

SUSTAINABLE CHANGE AGENTS

We awarded over 250 sustainable change certifications for offices, residences, events, labs, and courses across campus.



U of T Chief Operating Officer Ron Saporta and Director, Research Strategy & Excellence Simon Pratt at the QS World University Rankings (topuniversities.com)

AMBASSADORS

We launched the pilot of our Student Sustainable Ambassadors program with 10 student volunteers.

COMMUNITY ENGAGEMENT

We supported eight research and learning projects, presented at over 25 conferences and workshops, and hired eight co-op students to work within the Sustainability Office. Meanwhile, we increased our social media presence and continued to leverage Campus as a Living Lab and practicum courses to help solve on-campus sustainability challenges.

AIR TRAVEL EMISSIONS MITIGATION INITIATIVE

We celebrated the first anniversary of our Air Travel Emissions Mitigation Initiative and are currently focused on supporting the development of tri-campus projects that reduce greenhouse gas emissions.

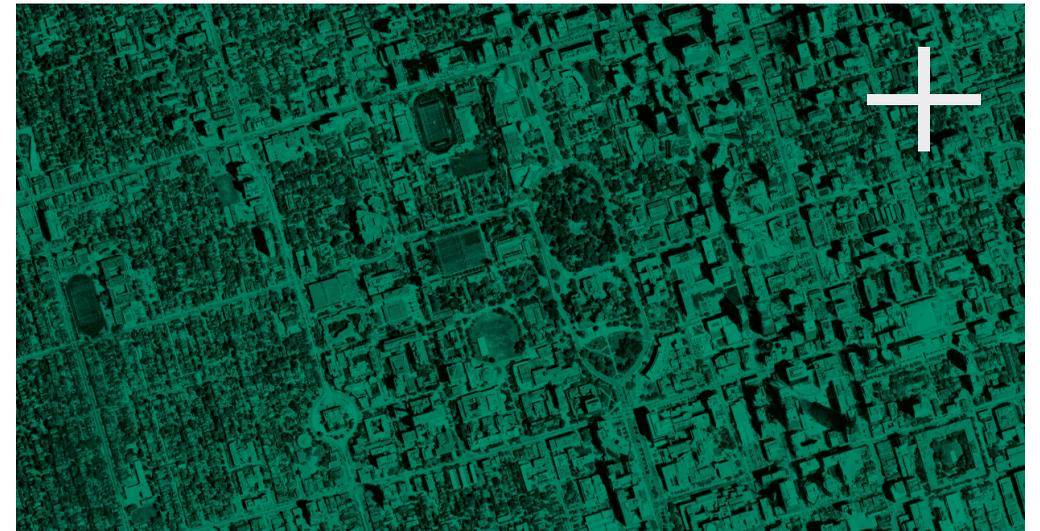
OPERATIONS

From raising performance standards to spearheading major infrastructure projects, the Sustainability Office is working to help U of T redefine what it means to be a leader in the field.



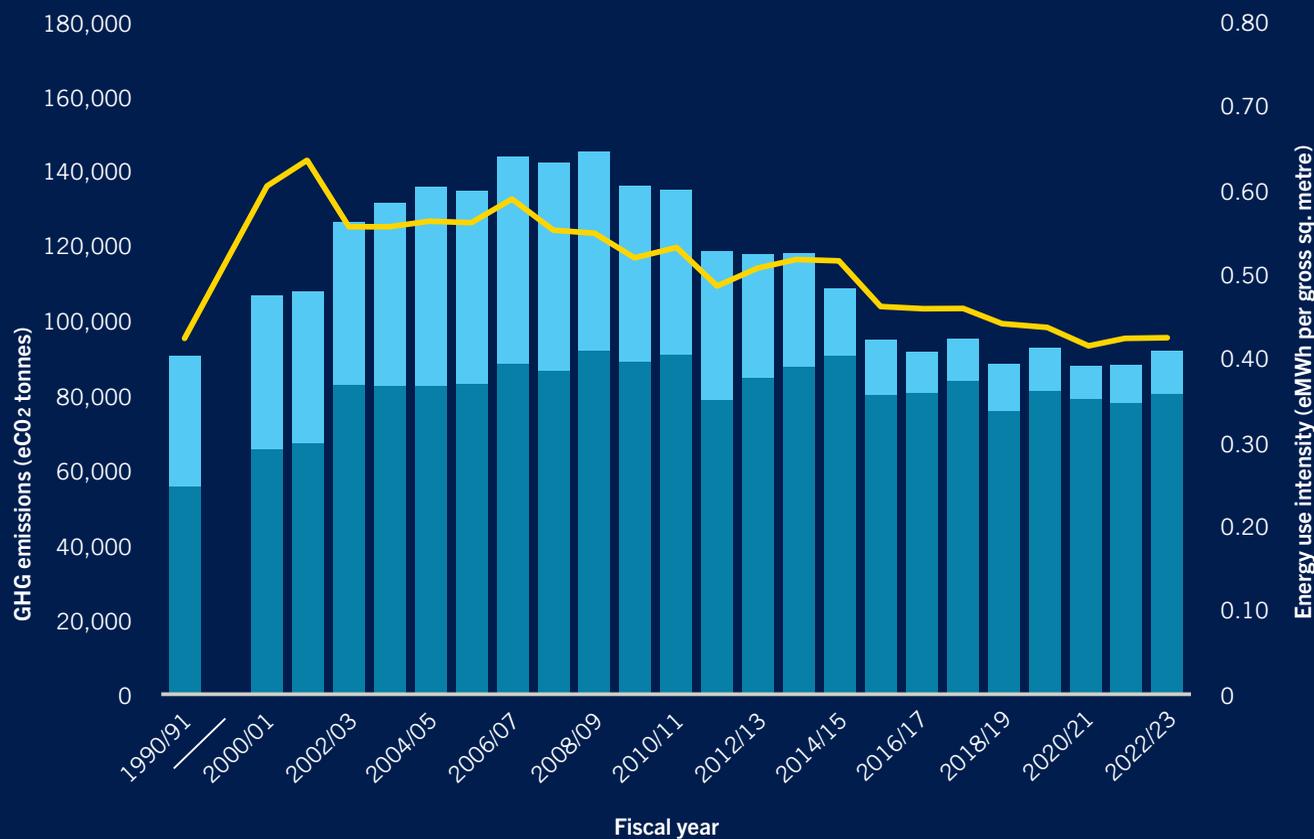
CLIMATE POSITIVE CAMPUS

In 2021, the St. George campus committed to becoming climate positive by 2050, benefitting the global community by cutting our greenhouse gas emissions. We are currently in the execution phase, actively working on large-scale projects on a path to achieving our ambitious goal.



Aerial view of the St. George campus (University of Toronto)

St. George campus: emissions vs. energy use intensity

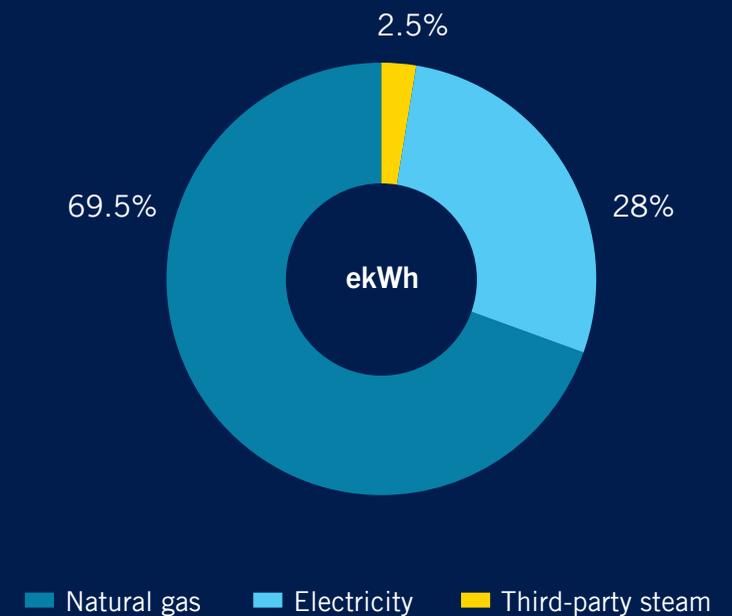


- Scope 1 emissions
- Scope 2 emissions
- Energy use intensity

Scope 1: Direct greenhouse gas emissions from sources that are controlled or owned by U of T

Scope 2: Indirect greenhouse gas emissions associated with the purchase of electricity or steam

Energy distribution by source



- Natural gas
- Electricity
- Third-party steam

PROJECT LEAP



Rendering of geexchange heat pumps and boreholes beneath King's College Circle (Nicolas Demers)

The first big step for the Climate Positive plan is Project Leap, a \$138-million infrastructure initiative that will cut campus scope 1 and 2 emissions in half by 2027 through a series of modernizations.

This year was a momentous one for Project Leap; we officially launched, securing financing and a design and construction partner. Over the next three years, we will implement key project elements—include replacing a natural gas boiler with electric, completing deep energy retrofits on energy-hungry buildings, modernizing our district energy system, and leveraging the full capacity of our urban geexchange system beneath King's College Circle.



The Central Steam Plant (Johnny Guatto)

KING'S COLLEGE CIRCLE GEOEXCHANGE

Our urban geoexchange is the largest of its kind in Canada and consists of 372 boreholes drilled to a depth of 250 metres. Once the site is operational in late 2024, it will remove excess heat from campus buildings in the summer—thus cooling them—and store that heat underground for use in the winter.

After integration with Project Leap, the geoexchange will form a vital component of the modernized district energy system and help reduce carbon emissions on campus by more than 50% by 2027.

After four years of construction, King's College Circle has been revitalized into a pedestrian-only green space with outdoor seating and study areas.

We are currently developing an educational underground display to showcase an interior view of the geoexchange system processes and provide a deeper understanding of its role in advancing University sustainability efforts.



Rendering of the King's College Circle geoexchange system (Nicolas Demers)

DEEP ENERGY RETROFITS

In 2022, we launched a new deep energy retrofit program to modernize our building energy systems. In 2023, we selected five buildings as the first wave of these retrofits: the Faculty of Dentistry, the Rehabilitation Sciences Building, the Health Sciences Building, 263 McCaul, and the Exam Centre.

This program will cut greenhouse gas emissions of each building by 80% and reduce energy consumption by 40%, while also modernizing the building automation systems, improving occupant comfort, and addressing critical deferred maintenance.

With a starting investment of over \$20 million, we anticipate similar substantial investments over the coming years.

A performance-based procurement model ensures maximum energy and carbon use reduction; it also allows us to guarantee emission reductions and energy savings for 25 years. Implementation is set to commence in early 2025.



The Health Sciences Building (Jason Krygier-Baum)

INCENTIVES AND GRANTS

Our team worked diligently to find and secure grants, incentives, and competitive financing rates across all levels of government and local utility distribution companies to support our sustainability projects. Meanwhile, we leveraged potential carbon tax savings in all our business cases.

In 2023, we participated in the Decarbonization Incentive Program (DIP), the Industrial Energy Efficiency Program (IEEP) by the Independent Electricity System Operator (IESO), and IESO's lighting incentive program. These efforts have culminated in securing approximately \$13 million in grant funding.



Greenhouse LED lighting (Donglin Que)

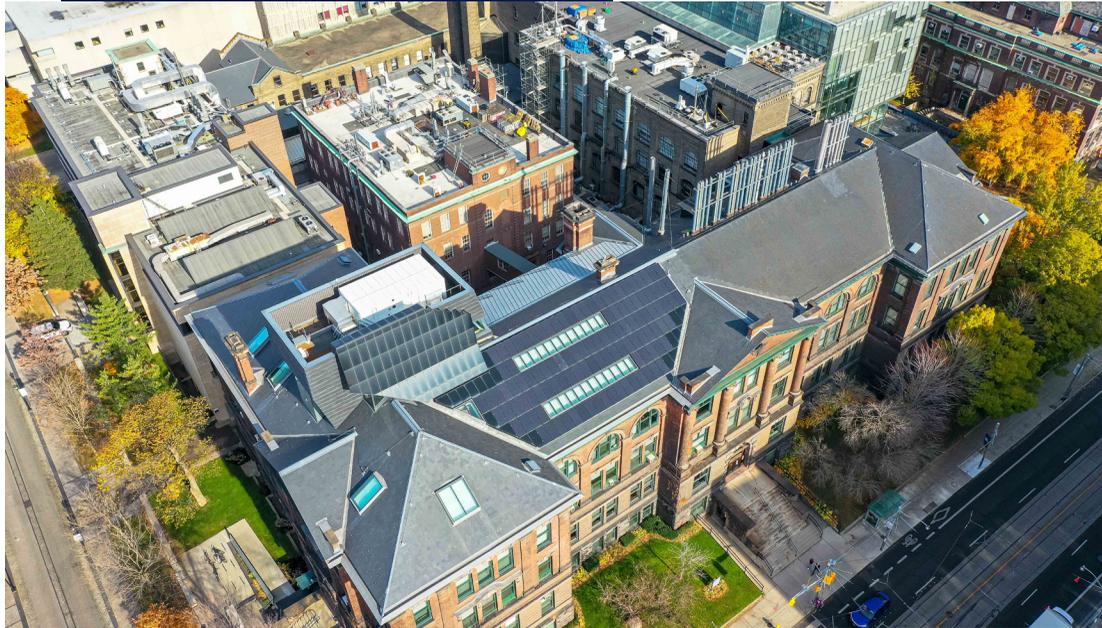
ISO 50001 ENERGY MANAGEMENT SYSTEM

We are working to achieve compliance with ISO 50001, an international systems standard designed as a benchmark for measurable and verifiable energy use reductions and improved energy performance.

In 2023, we developed a policy to govern the management of energy use both on and off campus, which requires continuously improving energy performance. We selected seven major buildings on campus as pilot sites for the ISO 50001 compliance process.



The Central Steam Plant (Johnny Guatto)



Lassonde Mining Building (David Lee)

ENERGY MODELLING AND PERFORMANCE STANDARD

In 2020, we developed a tri-campus energy modelling and utility performance standard to inspire innovative building designs while ensuring that all projects prioritize energy efficiency and produce minimal emissions.

The standard provides project-specific energy, carbon, and water efficiency targets for new construction and renovation projects, while streamlining required submission and approval processes.

In 2023, we made significant progress in putting this standard into use. Since its release, it has been applied to 104 capital projects. We are constantly updating the standard, looking to release a new version in 2024.

SUSTAINABLE BUILDING DESIGN STANDARD

In 2023, we evaluated and identified industry-standard requirements relevant to U of T, formed a tri-campus multi-disciplinary standards development team, and produced a draft sustainable building design standard. We are now consulting stakeholders and making revisions to publish the standard in late 2024.

TRI-CAMPUS WASTE WORKING GROUP

In 2023, we formed a waste working group by bringing together the tri-campus Caretaking Services teams and Sustainability Offices. Our goal is to collaboratively minimize waste and maximize waste diversion.

In January 2024, the group conducted a waste audit. For the first time, the audit used the same vendor and a standardized, detailed methodology across the three campuses. The audit results will be analyzed and used to identify collaborative opportunities across all three campuses.

AIR TRAVEL EMISSIONS MITIGATION INITIATIVE

Our Air Travel Emissions Mitigation Initiative (ATEMI) is a per-kilometre fee-based program created to mitigate business-related air travel emissions without purchasing third-party offsets. Instead, fees are collected in a central account and used to fund tri-campus greenhouse gas (GHG) emissions reduction projects.

We completed our first emissions mitigation project at the Koffler Scientific Reserve, planting over 2,000 trees—thus sequestering an estimated 500 tonnes of GHGs over 50 years.

In 2023, we asked staff, students, and faculty for project proposals that would reduce the University's carbon footprint. We are reviewing all 20 submissions to select the most feasible and impactful projects.



Sustainability Office staff in the field (Scott Hendershot)



Tree planting (Scott Hendershot)



UTL Downsview solar installation (Albert Triner)

U OF T LIBRARIES SOLAR

In 2023, we completed the second largest solar project in U of T's history, nearly doubling our solar capacity.

We installed 1,018 solar panels at the University of Toronto Libraries (UTL) Downsview storage facility, covering more than 40,000 square feet of roof space. These solar panels will produce up to 80% of the electricity required to run the building.

We will activate the solar panels in early 2024.

FLEET ELECTRIFICATION

We purchased three Kia Soul electric vehicles—one each for Caretaking Services, Campus Mail, and Campus Moving—and installed an additional charging station at 256 McCaul Street. Currently, 18% of our 55-vehicle fleet is electric and we have 10 charging stations.

We have recently acquired an electric Kia Niro for use by Grounds Services and a Ford E-Transit for use by Environmental Protection Services, who safely collect and dispose of hazardous waste across all three campuses.

We have a plan to grow the percentage of electric vehicles in our fleet, while reducing the overall number of vehicles, where possible.



Kia Niro EV on campus with updated brand elements (Scott Hendershot)

ENGAGEMENT

Our programs on the St. George campus bring sustainability into the lives of students, encouraging systemic change and promoting a University-wide approach.



SUSTAINABLE AMBASSADORS

SUSTAINABLE ACTION AWARDS

SUSTAINABLE CHANGE PROGRAMS



Student Sustainable Ambassadors (Scott Hendershot)



Sustainable Action Awards (Tory Grewar)



Sustainable Change Programs at orientation (University of Toronto)

Hundreds of students have historically sought volunteer opportunities with the Sustainability Office. In 2023, we responded by launching the Student Sustainable Ambassador program.

We opened applications in December, hiring and training 10 student volunteers at the start of 2024. They are off to a strong start, having already hosted booths to promote on-campus sustainability initiatives and helped events with waste sorting.

In March 2023, we hosted the third annual Sustainable Action Awards at the Adams Sustainability Celebration. These awards recognize individuals and teams who make substantial sustainability contributions at U of T.

We awarded six winning and five runner-up prizes to students, faculty, staff, and external businesses.

The Sustainable Change Programs use a self-assessment method to educate, engage, and empower the U of T community to actively follow sustainable practices in offices, residences, event planning, labs, and courses across campus. In 2023, 283 online certifications were completed. Over 100 events with a cumulative 50,000 attendees and 21 labs with 298 staff were certified. We also ran a summer-long certification challenge jointly with the Green Chemistry Initiative.

Meanwhile, we developed the Sustainable Student program, an opportunity for all U of T students to certify, which launched in February 2024.

COLLABORATION

The Sustainability Office consistently promotes awareness of ongoing sustainability programs and projects across campus. In 2023, we spoke at over 25 different conferences, panels, workshops, and guest lectures. We connected with government officials, corporations, and peer colleges and universities.

We also believe it is imperative to both inspire and learn from other institutional leaders around the world to ensure dramatic and timely sustainable action. In 2023, we presented at the 2023 Canadian Association of University Business Officers (CAUBO) conference and the Association for the Advancement of Sustainability in Higher Education (AASHE) conference.

We also hosted the Universities Canada Climate Workshop and the Carbon Neutral Cities Alliance annual meeting. Our COO, Ron Saporta, also presented on university sustainability to many audiences, such as the United States Consulate General.

SOCIAL MEDIA ENGAGEMENT

In 2023, we developed our targeted social media strategy. Our goals were to increase awareness for the Sustainability Office, champion University sustainability, and showcase our commitment to positive change.

The strategy has already produced impressive results; our engagement has grown by 24.4% and we have acquired 997 new Instagram followers. Throughout the next year, we plan to continue this trend and increase our engagement and influence within the community.



Scott Hendershot presents at the FASE Clarke Prize Environmental Design Challenge (Lisa Lightbourn)



Capturing content on campus (Kohen McBride)

ACADEMIC

The Sustainability Office collaborates with peers across U of T's many faculties to share knowledge and pool valuable resources in pursuit of our mission.



CAMPUS AS A LIVING LAB

Campus as a Living Lab (CLL) projects bring together faculty members, students, staff, and external partners to collaborate on developing sustainability projects that combine operational and academic activities.

The following projects were undertaken by students in 2023, responding to prompts we provided to the Campus as a Living Lab and practicum courses:

- climate risk analysis
- campus space optimization
- multi-campus waste audits and best practices
- assessment of Sustainable Change courses program
- biodiversity assessment of the St. George campus
- circular campus
- Air Travel Emissions Mitigation Initiative offset projects



Field work in the Earth Sciences Courtyard (Donglin Que)

WORK STUDY STUDENTS

Students bring a valuable perspective and input to our projects and programs. In 2023, we continued to create educational and flexible opportunities for them to work with us, hiring eight students to collaborate in a variety of areas, including research and development, marketing, communications, outreach and engagement, and carbon and energy management.



Work study students at the Sustainability Office (Donglin Que)

SUPPORTING RESEARCH AND LEARNING

We support U of T's research and learning mission by making connections and empowering students, faculty, and businesses to utilize the University's assets to achieve their academic and operational goals.

We remain dedicated to strengthening the link between our campus and sustainability through these research, learning, and commercialization ventures. Support of these projects increases innovation, fosters emerging ideas, contributes to sustainability research, and furthers the University's mission of providing a transformative educational experience.

In 2023, we had the opportunity to connect with dozens of groups and departments on campus regarding a diverse array of research and learning projects. More specifically, we worked closely with students and faculty to support multiple projects with topics including:

- wellbeing in the built environment on campus
- scope 3 emissions
- fugitive emissions
- an intelligent building digital twin
- thermal window coatings
- solar photovoltaic panel coatings
- thermal energy storage
- IT power management



U of T graduate students install self-cleaning solar panel coating at the Exam Centre (Donglin Que)

WHAT'S NEXT?

In 2024, we will continue to accelerate and expand our progress in many areas of sustainability while collaborating with key partners and increasing our community engagement.



WHAT'S NEXT?

REGENERATIVE SUSTAINABILITY

We are expanding our focus on energy and greenhouse gas emissions reduction to include other facets of sustainability. Our aim is to progress toward true regenerative sustainability at U of T; in other words, focusing on restoring rather than merely reducing harm.

ATEMI PROGRESS REPORT

We plan to develop a report in summer 2024 detailing the program's progress in its first year of operation.

BIRD SAFE CAMPUS

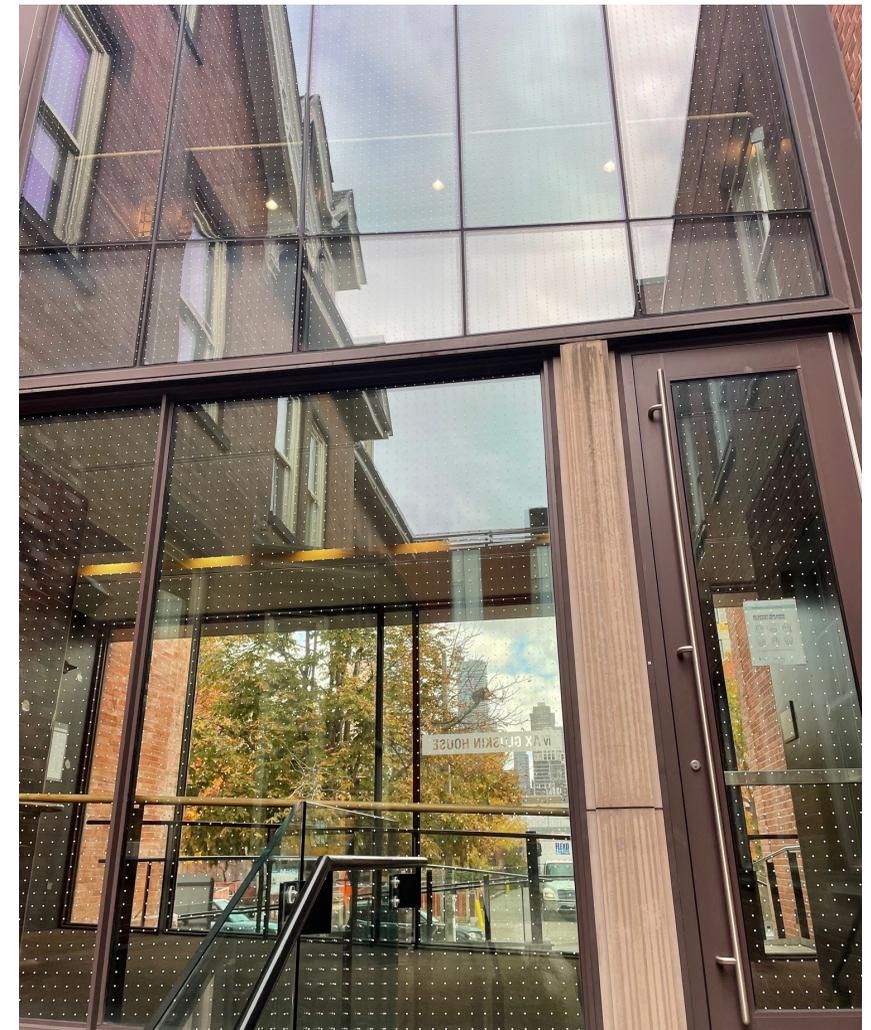
We are collaborating with local groups to mitigate bird collisions with campus buildings. We plan to add visible window markers to the Edward Johnson Building—in addition to those already in place at the Max Gluskin Building—thus tackling the two sites with the most significant number of bird collisions.

SOLAR ENERGY

We will grow our on-campus solar generation program by procuring solar panels for an installation on the Ontario Institute for Studies in Education building, while conducting more solar feasibility studies at off-campus sites.

DEEP ENERGY RETROFITS

We expect to conclude the procurement process for a construction partner in summer 2024 and begin implementation across campus in early 2025.



Bird safe window decals at the Max Gluskin Building (Chelsea Dalton)

ACKNOWLEDGEMENTS

Additional photo credits

Cover: David Lee

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