



BUILDING TOWARDS SUSTAINABILITY

St. George campus
annual sustainability report

2021

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, 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.

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.

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WHAT IS THE SUSTAINABILITY OFFICE?

The Sustainability Office connects, engages, and empowers students, staff, and faculty to become sustainable change agents. Our ongoing mission is to embed sustainability into the fabric of university operations, and the on-campus experience. While we are housed within Facilities & Services, our project portfolio extends far beyond buildings and retrofits.

We explore opportunities to integrate sustainability across campus and amplify all sustainability efforts at the university. We also work collaboratively with our colleagues from Mississauga and Scarborough for a more sustainable tri-campus experience.

Sustainability highlights

CLIMATE+

Release of the Climate Positive Campus Plan

We committed to make the St. George campus climate positive. We will reduce more greenhouse gas (GHG) emissions than we emit by upgrading existing infrastructure, adopting innovative carbon reduction technologies, and producing renewable energy. This plan builds off the 2019 Low-Carbon Action Plan goal of reducing GHG emissions by 37% by 2030 relative to 1990 levels.

CECCS

Joint operational and academic leadership of the President's Advisory Committee on the Environment, Climate Change, and Sustainability (CECCS)

We have a distinctly unique approach to sustainability at the university—the academic and operational limbs of the organization are integrated on sustainability issues and initiatives. This partnership is integral to meeting our GHG emission targets and achieving large-scale change. To deepen this partnership, Chief Operating Officer Ron Saporta became co-chair of this key committee alongside Presidential Advisor, Professor John Robinson.

GREEN EMPLOYER

One of Canada's Greenest Employers

The university was named one of Canada's Greenest Employers in 2021 for the eighth time—being recognized for excellence in sustainable building design, energy innovations, and sustainable transportation efforts.

GROWTH

Growing the Sustainability Office

We expanded the Sustainability Office team to make progress on our projects and build new programs. Team members bring diverse and complementary skill sets, and are passionate about creating sustainable change.

GEOEXCHANGE

Largest urban geoechange in Canada

We completed drilling and ground pipe installation for the largest urban geoechange in Canada. We drilled over 370 boreholes—each 250 metres deep—under King's College Circle to store surplus heat removed from buildings in the summer for reuse in the winter.

ENGAGEMENT

Social media

We ramped up our social media and communication channels to engage students, staff, and faculty on sustainability initiatives, programs, and events within the community. Since then, we have created over 205,000 social media impressions.

CHANGE AGENTS

Developed the Sustainable Change Programs

We began developing the Sustainable Change Programs—an evolution of our Green Suite, and our flagship vehicle for growing, connecting, and empowering sustainable change agents on campus. Through an extensive consultation process, we engaged over 40 stakeholders across multiple departments at all three campuses to support program development.

RANKINGS

34th overall in the Times Higher Education Impact Rankings

We scored fourth in Canada and 34th in the world in the ranking that assesses universities against the United Nations' 17 Sustainable Development Goals.

OUR CARBON REDUCTION ACCOMPLISHMENTS

Under the Low-Carbon Action Plan, we committed to being 80% closer to our 2030 goal by 2024 by reducing energy consumption, producing clean energy, and efficiently distributing energy at each campus. Being the largest contributor to the university's emissions, the St. George campus developed and executed numerous projects to support our GHG emissions reduction goals.



CARBON REDUCTION PROJECTS

Greenhouse Gas Campus Retrofit Program

| PROJECT | LOCATION | STATUS |
|--|--|-----------|
| Building automation upgrades | Clara Benson Building, Sigmund Samuel Library Building, athletic centre at the Warren Stevens Building | Completed |
| Chiller plant retrofit | Medical Sciences Building | Completed |
| Flue gas heat recovery system optimization | Central Steam Plant | Completed |
| Real-time building energy metering | Multiple buildings on campus | Completed |
| Solar thermal and photovoltaic installations | Clara Benson Building, athletic centre at the Warren Stevens Building | Completed |

Other carbon projects

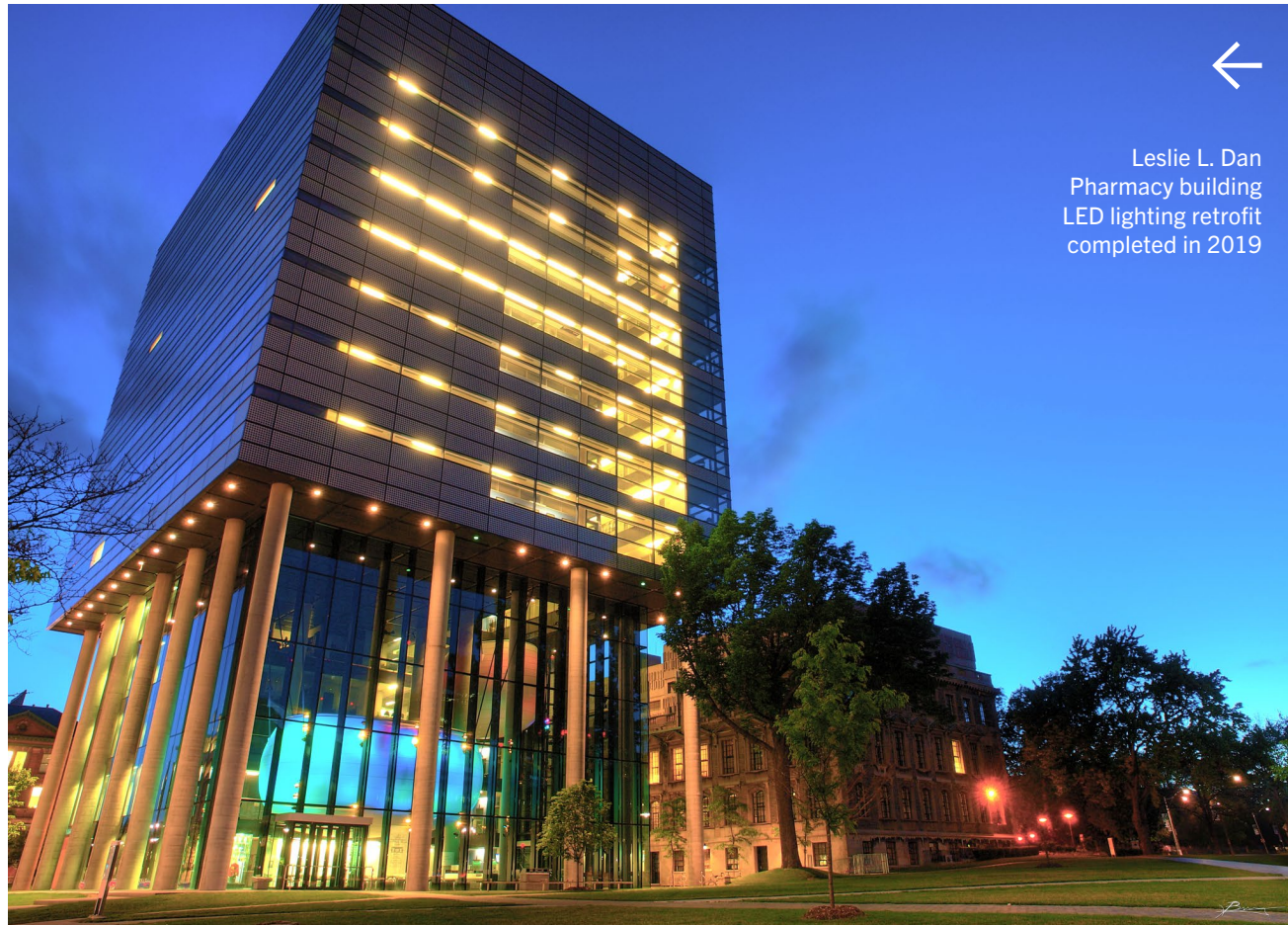
| PROJECT | LOCATION | STATUS |
|---|---|-------------|
| LED lighting retrofits | Multiple buildings on campus | In progress |
| Upgrading air conditioning units | Chestnut Residence and Conference Centre | In progress |
| Enhanced building energy design standards | All tri-campus new construction and renovations | Completed |
| Heat recovery chiller installation | McLennan Physical Laboratories | In progress |
| Spadina-Sussex Student Residence and Robert Street Field geoechange | Spadina-Sussex and Robert Street Field | In progress |
| King's College Circle geoechange | King's College Circle, Front Campus | In progress |



Solar thermal (heat) and photovoltaics (energy) panels on the roof of the athletic centre at the Warren Stevens Building.

Greenhouse Gas Campus Retrofit Program

We completed five major GHG reduction projects in various buildings across campus, including our Central Steam Plant. Together, these projects saw a significant reduction in our annual GHG emissions as part of our Low-Carbon Action Plan commitment. Projects ranged from waste heat recovery, to energy metering, to a combined thermal and photovoltaic rooftop solar system.



Leslie L. Dan
Pharmacy building
LED lighting retrofit
completed in 2019

LED Lighting retrofits

We replaced a significant amount of interior and exterior lighting to support GHG reduction goals on campus. Since 2019, we replaced and recycled over 40,000 inefficient light bulbs and saved over 1.7 million kWh annually through eight major lighting retrofit projects. For each project, inefficient bulbs were replaced with LED bulbs and occupancy sensors were installed to optimize lighting use. Lighting retrofits will continue to be an ongoing initiative to support our energy reduction goals.

Upgrading air conditioning units

We completed phase I and phase II of this project by replacing 531 air conditioning units at the Chestnut Residence and Conference Centre with energy efficient heat pumps. Phase III will see 206 units replaced by the end of summer 2022. We expect to save 446,410 kWh annually.

Enhanced building energy design standards

We launched new building design standards in 2020 to ensure that the latest energy performance and sustainability practices are incorporated into all new buildings and major renovation projects at all three campuses. Over time, our design standards will evolve—setting more aggressive sustainability targets for future buildings.

Heat recovery chiller installation

We installed a heat recovery chiller at the McLennan Physical Laboratories to capture excess thermal energy from its large data centre and use it to heat the building year-round. The upgrade has reduced winter heating needs by 50% and eliminated heating needs during the shoulder seasons.



Project highlight

SPADINA-SUSSEX STUDENT RESIDENCE AND ROBERT STREET FIELD

We are building an innovative residence with the lowest GHG footprint on the St. George campus.

The Spadina-Sussex Student Residence will be a 23-story tower designed and built to the highest sustainable building standards. In 2019, we drilled 153 boreholes for a geoexchange system and installed a

large rainwater cistern under the Robert Street Field. These underground components will conserve significant amounts of rainwater for reuse and make heating and cooling energy-efficient for the residence. Construction for the residence began in 2021 and is expected to be completed for fall 2024.

KING'S COLLEGE CIRCLE

An ambitious carbon reduction project is underway at King's College Circle: a geexchange system that will be working and reducing our campus GHG emissions by 2024. This will be the largest urban geexchange site in Canada and will capture excess heat from buildings in the summer for reuse in the winter.

We began excavation and drilling in 2020. By summer 2021, over 370 boreholes were drilled and u-tubes were inserted into the ground. This year will see the completion of most work below ground including the construction of an underground parking lot and a subterranean classroom.

By fall 2023, King's College Circle will be completely revitalized into a pedestrian-only green community space with outdoor seating and study areas.



GROWING THE SUSTAINABILITY OFFICE

We have grown the Sustainability Office to better serve the university community, including hiring staff, building cross-departmental relationships, conducting research, revitalizing programs, and creating student work and research opportunities.



GROWING THE SUSTAINABILITY OFFICE



From left: Vic Cassano, Kevin Leong, Larry Yang, Chelsea Dalton, Kayla LaChance, Scott Hendershot, Marc Couture

We grew our Sustainability Office to support sustainability projects, programs, and engagement on the St. George campus.

The Sustainability Office has a holistic portfolio dedicated to program development, engagement, research, energy management, and relationship building for new partnerships.

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Learn about our team on our website: fs.utoronto.ca/sustainability

New team roles and members

Director of sustainability & energy management

Focuses on leading the entire Sustainability Office and Energy Management team on all sustainability and energy management activities.

Senior sustainability manager

Responsible for the oversight of the Sustainability Office initiatives and staff including reporting, partnership building, and advocacy.

Project managers

Responsible for managing all projects and their deliverables including report writing, metric and target setting, and data collection.

Project coordinator

Supports project managers and the senior manager on all projects and programs and manages the office's communications strategy.

Energy managers

Supports energy performance and management goals through energy management and reduction initiatives, technical guidance, monitoring, benchmarking, and utilities data analysis.

Programs and projects



The Sustainability Office manages a portfolio of programs and initiatives that complement our large infrastructure projects. These programs engage and empower the community to take ownership of their impact and become sustainable change agents on, and off-campus.

Sustainable Change Programs

We have launched a suite of Sustainable Change Programs to help university community members identify, assess, and implement sustainable change across courses, events, labs, offices, and residences on the St. George campus.

Each of the five programs is tailored to different spaces and operations on campus. They were developed through extensive consultations, best practice research, and are aligned with the United Nations' sustainable development goals. These programs will promote, inspire, and recognize local sustainable action as well as support the university community with a certification process and resources to implement change.



Fleet vehicle electrification

We are electrifying the largest vehicle fleet on the St. George campus.

Today, Facilities & Services uses 56 gas and diesel powered vehicles to support Campus Safety, Campus Moving, Grounds Services, Trades Services, and Caretaking operations.

In 2021, we calculated the carbon footprint of each vehicle and prioritized their electric vehicle replacement based on age, emissions, and the availability of a suitable replacement. In early 2022, we began the gradual progress of fleet electrification with the purchase of two electric Kia Soul SUVs and a partnership with Electric Last Mile Solutions on a vehicle trial.

Above: Facilities & Services campus electric fleet vehicle

Air travel emissions mitigation initiative

We are launching an innovative initiative to offset business-related air travel GHG emissions with on-campus tree planting and forestry management—as opposed to purchasing third-party offsets.

This initiative will grow into a broader GHG emissions offset program by using additional on-site offset projects for all university air travel.

ENGAGING OUR COMMUNITY



Our people are the most crucial element in making our campus more sustainable. The Sustainability Office is helping build sustainable values, habits, and practices by engaging our students, staff, faculty, and external community.

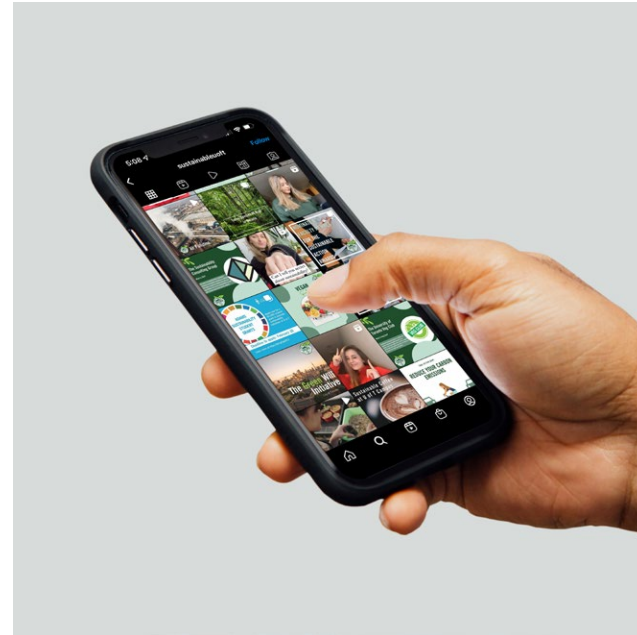
Creating partnerships for orientation

In partnership with U of T Food Services and the Faculty of Kinesiology & Physical Education, we provided over 2,300 students living in residence with welcome wellness packages that included an EcoContainer and reusable cutlery sets.

The Sustainability Office also sponsored the U of T Students' Union orientation, in partnership with the Waste Management and Recycling team and Campus Safety, gaining exposure to incoming students through virtual and small in-person events.

Tri-campus sustainability collaboration

We enhanced tri-campus collaboration on sustainability. We shared best practices and collaborated on new programs through a deeper partnership between the three Sustainability Offices and the Committee for Environment, Climate Change and Sustainability.



Social media and campus engagement

We re-engaged our campus community on Instagram and TikTok. We created over 205,000 social media impressions, reached over 79,700 accounts, and gained over 550 new followers using short videos and educational posts. Social media allowed us to connect and interact with students in a more dynamic and creative way.

Back to campus campaign

We hosted a month-long engagement campaign to welcome students back to campus in collaboration with Food Services, Campus Safety, the U of T Students' Union, and Waste Management and Recycling. Weekly themes, welcome packages, and social media giveaways engaged over 10,000 students on topics such as waste management and action on climate change.

City of Toronto Green Will Initiative

We committed to becoming a strong partner for the City of Toronto and to help support their TransformTO climate strategy to become net zero by 2040. Through the Green Will Initiative, we will collaborate with the City and its participants to share lessons learned and best practices on reducing emissions, and provide opportunities for students by creating living labs and community experiential learning projects.



Working with students

We provided students with as many professional and educational learning opportunities in sustainability as possible, so they may carry these learnings into their personal and professional careers.

Creating student sustainability employment opportunities

We provided educational and flexible employment opportunities for students in all areas of study. In fall 2021, we hired seven work-study students who supported the Sustainability Office on project research, communications, engagement, and digital media.

Campus as a living lab

We continue to partner with the Campus as a Living Lab course and other practicums, creating opportunities for students to work with on-campus operational sustainability projects. In 2021, four projects were conducted where students worked on assessing sustainability literacy on campus, commuting habits of employees, scope 3 GHG emission quantification, and linking the United Nations' Sustainable Development Goals to building planning and design.

WHAT'S NEXT?



Planning | Executing

Start Project Leap—a bold project that will eliminate over 50% of the campus's current scope 1 and 2 GHG emissions.

Launch our air travel emissions mitigation initiative to reduce travel and offset our unavoidable business-related air travel GHG emissions with additional on-site projects.

Double our on-site solar energy generation by installing solar panels that will generate 300 kW of solar energy on the roofs of the Bahen Centre for Information Technology and Koffler Student Services Centre.

Accountability | Transparency

Work towards our first St. George campus submission under the Association for the Advancement of Sustainability in Higher Education's Sustainability Tracking Assessment and Rating System, with a target of gold certification and to be recognized as a leader in sustainability.

Create and report on key performance indicators and sustainability metrics for our programs, services, and projects.

Learn more about our 2022 goals:
fs.utoronto.ca/sustainability

In 2022, we will focus on expanding campus sustainability programs and partnerships, measuring our sustainability successes, and driving our Climate Positive Campus Plan.

Engagement | Outreach

Mobilize the St. George campus community through the recently launched Sustainable Change Programs with initial targets of more than 500 certifications across campus in 2022. We will continue to collect and assess feedback to continuously improve program content and communications.

Partner with students and student clubs to promote and execute unique and engaging sustainability events, empowering them to create sustainable change, and amplifying their sustainability work on campus.

Research | Academics

Pilot a program in partnership with Procurement Services to test a framework to better address the social impacts of sustainability across our purchases and vendor contracts.

Launch the Sustainability Citizen program at the St. George campus in partnership with the Committee on the Environment, Climate Change, and Sustainability to recognize the sustainability efforts of students on their co-curricular record.



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