



Government of Canada Sustainable Development Goals Funding

The Office of Sustainability is pleased to share it has received a grant from the Government of Canada to advance the United Nations Sustainable Development Goals or SDGs. As result of this funding, there are stipends of \$5,000 each available to undergraduate and graduate students to engage in experiential learning and applied research that advances the SDGs at the University of Calgary.

Four \$5,000 stipends will be made available in the “open” category.

- This category supports students who have generated research ideas that support advancing the SDGs on campus.
- Students must identify a faculty member who will supervise their work.
- The research must be completed in advance of March 23, 2021.
- Preference will be given to students who intend to publish on their research results.
- Preference will be given to students who have partial funding for their research.
- Students will receive \$2,500 at the outset and \$2,500 upon completion of their research project.
- Students must submit a [Campus as a Learning Lab case study](#), be willing to be featured in social media, and align with other reporting requirements.

Four \$5,000 stipends will be made available in the “defined” category

- This category supports students to engage in research on identified research topics tied to advancing the SDGs through operational practices at the University of Calgary.
- The list of identified research topics will be posted shortly.
- The research must be completed in advance of March 23, 2021.
- Preference will be given to students who intend to publish on their research results.
- Students will receive \$2,500 at the outset and \$2,500 upon completion of their research project.
- Students must submit a [Campus as a Learning Lab case study](#), be willing to be featured in social media, and align with other reporting requirements.

To submit your application, complete the [“Getting Started” form](#). Decisions will be made on a rolling basis every two weeks until the stipends have all been secured.

Questions? Please contact rachelle.haddock@ucalgary.ca

Funded in part by the Government of Canada’s Sustainable Development Goals.

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UNIVERSITY OF
CALGARY



Project 1 – Life Cycle Assessment of MacKimmie

PURPOSE

To outline the scope of work for whole-building life cycle assessment in support of the MacKimmie redevelopment project LEED certification.

BACKGROUND

A whole-building life cycle assessment is required to support the project's LEED certification. Through this life cycle assessment, the project is looking to quantify the reduction in life cycle impacts compared to a baseline building.

SCOPE OF WORK DESCRIPTION

The scope of work includes a cradle-to-grave life-cycle assessment of the MacKimmie Complex redevelopment project's structure and enclosure that calculates the total impacts and reduction of impacts, compared with a baseline building, in the six impact categories listed below:

1. Global warming potential (greenhouse gases), in kg CO₂e;
2. Depletion of the stratospheric ozone layer, in kg CFC-11;
3. Acidification of land and water sources, in moles H⁺ or kg SO₂;
4. Eutrophication, in kg nitrogen or kg phosphate;
5. Formation of tropospheric ozone, in kg NO_x, kg O₃ eq, or kg ethene; and
6. Depletion of nonrenewable energy resources, in MJ.

The life-cycle assessment must include all envelope and structural elements, including footings and foundations, and complete structural wall assemblies (from cladding to interior finishes, including basement), structural floors and ceilings (not including finishes), roof assemblies, and stairs construction, but exclude excavation and other site development, partitions, building services (electrical, mechanical, fire detection, alarm systems, elevators, etc.), and parking lots.

In general, the baseline building will be defined following the methodology published in Whole Building Life Cycle Assessment: Reference Building Structure and Strategies (WBLCA Guide Special Working Group; Frances Yang). For the MacKimmie Tower portion of the project, the baseline will be the demolition and complete reconstruction of a structure equivalent to the existing and new structure as designed. For the Block and Link buildings, the baseline will be developed in coordination with the structural engineer following the methodology outlined in the aforementioned publication.

The baseline and proposed buildings must be of comparable size, function, orientation, and operating energy performance as defined in EA Prerequisite Minimum Energy Performance. The service life of the baseline and proposed buildings must be the same and at least 60 years to fully account for maintenance and replacement. Use the same life-cycle assessment software tools and data sets to evaluate both the baseline building and the proposed building, and report all listed impact categories. Data sets must be compliant with ISO 14044.

FINAL REPORT REQUIREMENTS

The final report must include descriptions of LCA assumptions, scope, and analysis process for baseline building and proposed building. The report must include:

- Life-cycle impact assessment summary, showing outputs of the baseline and proposed building
- Table showing the percentage change for all impact indicators between the baseline and proposed buildings.
- Description of the data sets used to represent each material or assembly (proxies may be deemed acceptable).
- Confirmation that the same data sets were used for both the baseline and proposed buildings and their materials and assemblies.
- Description of the characterization model used (e.g., TRACI) for all impact category characterization factors.
- The service life assumed for the baseline and proposed buildings.
- Source of data for product replacement for both the baseline and proposed buildings.

The above scope is based on the LEED for Building Design and Construction v4 Rating System credit Building Life Cycle Impact Reduction.



Project 2 – SDG Best Practices Review of THE UIR Top 25 Institutions

PURPOSE

The University of Calgary continuously aims to improve our performance in the UIR while advancing the SDGs. This purpose of this project is to analyse the UIR top performing institutions globally and in the U15, along with the ranking itself, to determine how UCalgary can learn from leading institutions and their practices in the coming years.

BACKGROUND

Times Higher Education (THE) has developed a ranking called the University Impact Rankings (UIR), which showcases how the higher education sector is working towards the United Nations' (UN) Sustainable Development Goals (SDGs). In 2020, the University of Calgary ranked 29th out of 766 institutions globally, which was significantly higher than our 2019 ranking. Each SDG in the submission has a series of metrics that are used to evaluate performance in that area. There are three categories of metrics within each SDG: research metrics derived from bibliometric data supplied by Elsevier; numerical data points to show the impact of initiatives (i.e. energy used, water used); and policies, initiatives, or programs that require universities to provide evidence to support their claims. Evidence must be publicly available (i.e. an institutional website or public document). Any university that provides data on SDG 17 and at least three other SDGs is included in the overall ranking.

SCOPE OF WORK DESCRIPTION

- Do top institutions have specific practices that may have helped them perform strongly?
 - SDG related leadership statements/commitments or institutional documents, strong operational sustainability, any other common themes between the top schools?
 - What are they doing to align with the SDGs?
 - Some leading universities of interest include:
 - University of Auckland
 - University of Sydney
 - University of British Columbia
 - University of Waterloo
 - Western University
 - [View more](#)
- Is there a way to determine which other schools are paying for a THE membership (some schools may not be comfortable with this question – is it appropriate to ask?)
 - If schools will share this information, is there any correlation between those paying and those who are ranked highly?
- Based on the findings above, are there any recommendations for UCalgary and its future UIR participation?
- Beyond the UIR submission, are there other recommendations for how UCalgary can further advance the SDGs within our current initiatives?