UBC SUSTAINABILITY SCHOLARS PROGRAM

The UBC Sustainability Initiative (USI) is pleased to offer current UBC graduate students the opportunity to work on funded sustainability internship projects. Successful candidates work under the mentorship of a partner organization, and are immersed in real world learning where they can apply their research skills and contribute to advancing organizational sustainability goals.

For more information about the Sustainability Scholars Program and to apply to work on this project, please visit the Student Opportunities page.

Please review the application guide (PDF) before applying.

Applications close **midnight Monday February 25, 2019**.

Research project title: Informing the development of a carbon-focused LCA methodology for UBC green buildings

Sustainability Goal or Operations Plan objective
This study is meant to support and provide insight for the implementation of UBC's Green Building Action Plan (GBAP): a new policy that outlines a holistic pathway for buildings at the UBC Vancouver campus to advance towards making net positive contributions by 2035. A priority action identified by the GBAP is to implement policies and develop strategies for reducing the embodied carbon of new buildings and major retrofit projects. through the use of whole-building lifecycle assessment (LCA). The results of this study will be used to inform how UBC and project teams should measure and calculate embodied carbon for campus buildings.

Outline scope of project and why it is of value to your organization. Describe how and when the Scholar's work will be actionable.
Whole-building lifecycle assessment (LCA) is an internationally accepted science that provides a framework to quantify potential environmental impacts of buildings as a performance outcome of design and construction choices. Embodied carbon – the carbon dioxide and other greenhouse gases emitted during the extraction, manufacture, transportation and installation of building products and materials - are one of the environmental impacts measured with whole-building LCA. However, these assessments can be complex and there are multiple approaches and techniques for calculating embodied carbon through an LCA study which can lead to varying results depending on the assessment

The scholar will undertake a study to review existing LCA tools and methodologies, and specific LCA requirements for new buildings from local municipalities (such as the City of Vancouver) and regionally-relevant green building standards (such as LEED v4 and the Zero Carbon Building Standard). The scholar will then draft recommendations on potential boundaries and assessment criteria for the application of LCAs to UBC institutional buildings. This study will help inform the creation of a carbon-focused LCA methodology tailored for UBC. The results will also support the development of future policies to measure, report and eventually reduce embodied carbon in campus buildings.

The study will be led by UBC Sustainability Initiative (USI), with collaboration from UBC staff in the Campus Planning department, to help direct the study results towards more effective policy and regulatory practices. The scholar will be able to leverage established partnerships with organizations such as Athena Sustainable Materials Institute and the City of Vancouver, to draw on existing methodologies, best practices, and current material databases in conducting the LCAs. This study will also build upon previous LCA work done by USI in collaboration with Athena Sustainable Materials institute, where we developed comprehensive Environmental Building Declarations (EBDs) of two campus buildings: Brock Commons Tallwood House and Ponderosa Commons Cedar House.

Deliverables

- A final research report, containing a summary of completed work with assessment of LCA requirements for building projects within the region and recommendations for LCA studies at UBC (for internal use only).
- A final presentation to key UBC stakeholders.
- An Executive Summary to be made public in the online Scholars Project Library.
- The scholar is encouraged to use a mix of text and visual graphics to communicate ideas throughout the deliverables.

Time Commitment

We would like for the scholar to complete the 250 hours between April 29 and August 12, 2019. The expectation is that the scholar will work on average 20 hours per week, and that part of the time will be spent on campus in the USI offices during regular business hours (9:00 – 5:00 pm, Monday to Friday), and some time spent working remotely. The specific schedule will be coordinated in consultation with the scholar at the start of the project.

Required/preferred Skills and Background

☒ Excellent research and technical writing skills
☒ Demonstrated interest in sustainability
☒ Familiarity with research methodologies and survey techniques
☒ Strong analytical skills
☒ Ability to work independently
☒ Project management and organizational skills
☒ Demonstrated time management skills
☒ Basic knowledge of building design (e.g. architecture, engineering)
☒ Intermediate knowledge of building lifecycle assessment (LCA)
☒ Familiarity with LCA tools, in particular Athena's Impact Estimator for Buildings is desirable but not required
☒ Basic knowledge of sustainability and green rating systems (e.g. LEED) is desirable but not required
☒ Interest in zero carbon buildings and embodied carbon impacts

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Apply here:
https://sustain.ubc.ca/student-opportunities

To learn more about the program here:
https://sustain.ubc.ca/ubc-sustainability-scholars-program

UBC SUSTAINABILITY SCHOLARS – PROJECT PROPOSAL TEMPLATE

Read the application guidelines to confirm your eligibility to participate in the program here:
https://sustain.ubc.ca/student-opportunities

Contact Karen Taylor at sustainability.scholars@ubc.ca if you have questions.