Summer 2022 Sustainability Scholars Program Internship Opportunity

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 sustainability across the region.

- Visit the Sustainability Scholars Program website to learn how the program works and to apply.
- Be sure to review the application guide to confirm your eligibility before applying.

Applications close at midnight on Sunday January 30, 2022.

Project Title: Research on the impacts of Innovative Fenestration Materials on the Embodied and Operating Carbon of Buildings

Project Background & Overview:
Some estimates place the global CO2 emissions of buildings at nearly 40%, representing a huge area for potential improvement in the effort to mitigate climate change.

One large contributor to a building's carbon impacts are windows, not only from the high embodied carbon of traditional fenestration materials but also the low energy performance of those materials over a building's lifespan.

Innovative high-performance fenestration products—specifically commercial-grade fiberglass—have been shown to reduce the carbon impacts of buildings, but research contrasting traditional vs innovative materials is lacking.

A robust comparative study into the embodied and operational carbon impacts of fenestration materials would help educate architects, policy makers and occupants about alternative fenestration options, and ultimate help speed up their adoption into built environments and help reduce the CO2 emissions of buildings.

Project description
This project would utilize the published Product Category Rule (PCR) for windows to determine the embodied carbon of commercial-grade fiberglass windows manufactured in British Columbia, Canada. This data would then be used to generate a cradle-to-gate Lifecycle Assessment (LCA) and a subsequent Environment Product Declaration (EPD) report through a third-party Program Operator.

This EPD data would then be correlated with existing operational energy performance modelling (TEDI & TEUI) reports to illustrate the potential impacts of high-performance fiberglass fenestration materials on the overall CO2 emissions of buildings.

Ultimately, this comparative study would help architects and other stakeholders in the Architecture, Engineering & Construction (AEC) space incorporate high-performance fenestration products into new building construction, as well as existing building retrofits.

Project scope

The project scope will include:

- Research and collect data from suppliers on the embodied carbon associated with the production of raw materials used in the manufacturing of fiberglass-frame windows made in Langley, BC
- Utilize the published windows PCR guidelines to calculate the total embodied carbon (cradle-to-gate) associated with fiberglass-frame windows manufactured in Langley, BC
- Coordinate the creation of a Lifecycle Assessment (LCA) and subsequent Environmental Product Declaration (EPD) with an industry Program Operator for fiberglass-frame windows manufactured in Langley, BC
- Research publicly available carbon data from traditional fenestration manufacturers—including aluminum and vinyl/UPVC—in North America and Europe
- Produce a report comparing the data sets of traditional and innovative fenestration materials, as well as their potential impacts on carbon emissions of buildings

Deliverables

- A final report containing a summary of the work completed
- A final report for the online public-facing Scholars Project Library

Time Commitment

- This project will take **250*** hours to complete
- This project must be completed between **May 2 and August 12**
- The scholar is to complete hours between **9am – 5pm, Mon - Fri**, approximately **16 hours per week**

Required/preferred Skills and Background

☒ Excellent research and writing skills
☒ Demonstrated interest in sustainability
☒ Experience conducting stakeholder engagement events, including facilitation skills, is an asset
☒ Familiarity with research methodologies and survey techniques
☒ Statistical analysis
☒ Strong analytical skills
☒ Ability to work independently
☒ Deadline oriented
☒ Familiarity with benchmarking methods and tools
☒ Comfortable interacting with strangers to conduct public/in person surveys

Applications close **midnight Sunday January 30, 2022**
Apply here: Click here to apply
Contact Karen Taylor at sustainability.scholars@ubc.ca if you have questions

Useful Resources

We are holding a special **resume preparation workshop for prospective Scholars** on January 19. Click here for details and to register.

Below are some links to useful resources to help you with your resume and cover letter (there are many more online). Some of these resources also provide information on preparing for your interview.

https://students.ubc.ca/career/career-resources/resumes-cover-letters-curricula-vitae

https://www.grad.ubc.ca/current-students/graduate-pathways-success

https://www.grad.ubc.ca/cover-letter-cv-resume-templates-ubc-career-services