Summer 2024 Sustainability Scholars Program Internship Opportunity

The UBC Sustainability Hub is pleased to offer current UBC graduate students the opportunity to work on sustainability internship projects. Successful candidates work under the guidance of a mentor from the partner organization, and are immersed in real world learning where they can apply their research skills and contribute to advancing sustainability across the region. These opportunities are paid. The pay rate for the summer 2024 program is $27.50/hour or $6,875 for a 250-hour project.

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

Applications close at midnight on Sunday January 28, 2024.

Project title: Deep Retrofit & Fuel Switch Projects for Existing Commercial Buildings: Case Study Development

Project Background & Overview:
On May 17, 2022, as a part of Vancouver's Climate Emergency Action Plan (CEAP), Vancouver City Council approved a report titled *Annual Carbon Pollution Limits for Existing Large Commercial and Multifamily Buildings*. In addition to establishing carbon pollution limits for certain building types, Council endorsed staff to research and consult on a Regulatory Roadmap of additional measures that would be necessary in order to meet Vancouver's 2030 and 2050 GHG reduction targets.

Based on this Council direction, City staff are researching regulations that would effectively require the replacement of gas-powered mechanical equipment with high efficiency electric heat pumps or dual-fuel systems in commercial buildings. Typical candidates for electrification are associated with the following systems: makeup air units (MAU), domestic hot water (DHW), and space heating. In order to comply with potential future equipment efficiency regulations, commercial building owners will need to initiate major mechanical retrofits, potentially triggering the need for concurrent upgrades, including utility service, electrical, structural, or civil.

There is a small, but growing number of early adopters in the Lower Mainland that have completed deep retrofit upgrades on commercial buildings, but the performance of these systems, including the user experience has not been documented and made publicly available. The documentation and dissemination of case studies will help showcase successful decarbonization projects and effective solutions, serve as a valuable resource for sharing insights and lessons learned, and illustrate the feasibility and positive outcomes of real-world decarbonization projects. The case studies will serve as educational tools to support commercial buildings decarbonization regulations being developed by the City of Vancouver in 2024/2025.

Project description

The purpose of this project is to identify commercial buildings in the Lower Mainland that have replaced gas-fired equipment with high-efficiency electric or dual-fuel equipment, and document both the retrofit process and performance of those systems in order to create a series of case studies. Building types of interest include office, retail, industrial or warehouse, and hotel or motel. The data gathered and the case studies prepared will be disseminated to City of Vancouver partner and collaborator organizations, including, but not limited to ZEIC, Metro Vancouver, the Province. The performance data may also used by City Staff during stakeholder engagement activities, as well as posted publicly in our online building retrofit resource hub.

Project scope

The Scholar will work with the Mentor to identify 3 to 4 deep commercial retrofit projects suitable for case study documentation, and collect relevant data and information to inform the case studies through interviews.

Specific tasks the Scholar will undertake to complete the project along with time allocation estimates are below. Adjustments to the allocated proportion of time spent per task may be made in discussion with the Scholar.

- Contacting equipment manufacturers, mechanical consultants and large property managers to identify buildings (City of Vancouver staff will provide support in identifying case study leads and contacts). (10%)
- Contact building owners and managers to recruit participants (10%)
- Prepare interview questions (10%)
- Conduct interviews to gather information and data (25%)
- Create draft case study documents (25%)
- Analyze and prepare a summary of the performance and cost data for all buildings (20%)

The case studies will contain the following types of information:

- Narrative description of the project, including the decision for undertaking it.
- Installation costs
- Installation considerations and challenges (e.g., access, space, existing mechanical system configuration)
- Pre- and post-retrofit energy use and performance
- Operational costs
- Business case based on actual costs and savings
- Other outcomes
- Photos and diagrams
- Commentary and quotes from the owner(s), manufacturer, or consultants involved.

At the conclusion of the project, the case studies that are developed by the Scholar will be given to the City of Vancouver Communications team for final copy-editing and layout prior to production of a printable, PDF version intended for distribution and public use.

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 1 to August 15, 2024
- The Scholar is to complete hours between 9 am and 5 pm, Monday to Friday, approximately 17 to 20 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
- Strong analytical skills
- Ability to work independently
- Deadline oriented
- Strong technical and drafting skills
- Demonstrated experience in building energy systems & mechanical design
- Comfortable interacting with strangers to conduct public/in person surveys
- Experience with financial modelling and analysis
- Design and layout skills, an asset

Applications close **midnight Sunday January 28, 2024**
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 23, 2024. 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