Summer 2021 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 31, 2021.

Research project title
Developing Guidelines for Energy Retrofits on Heritage Houses in New Westminster

Project description
Purpose
New Westminster is fortunate to have many heritage buildings which contribute to the landscape and identity of the city. The City of New Westminster is ambitious in its pursuit of the retention and protection of these community heritage assets. Yet, reducing carbon emissions, and improving energy efficiency for all homes is also an important objective for the City, as shown through the City's declaration of a Climate Emergency in 2019. The City also has developed a Community Energy and Emissions Plan (CEEP) and Energy Save New West program as part of the City's ongoing efforts to reduce its impact on climate change. The City is interested in exploring opportunities to balance these two programs: the goal is to improve the energy efficiency of heritage homes while still retaining their historic building materials and styles.

Through planning tools like Heritage Revitalization Agreements (HRAs), the City negotiates formal protection of heritage buildings, including the original materials and features which make them historic. After entering into one of these agreements, the applicant typically undertakes extensive renovations which commonly sees restoration of the building's exterior, modernization of the building's interior, and the construction of a character-sensitive addition.

The City understands that heritage buildings benefit from energy retrofits which both increase the livability of the building (private benefit), and reduce its carbon emissions (public benefit). However, it is our experience that many standard approaches to energy retrofits result in the loss of the very materials or design elements that the HRA is meant to conserve and protect. Rather than seeing these materials removed, and becoming waste, the City wants to identify new approaches and guidelines for heritage sensitive energy retrofits. Given the number of HRA projects the City undertakes ever year, we feel that there is a significant opportunity to implement a new approach with tangible outcomes. This information could also help inform the City's existing policies and may inform implementation programs through Energy Save New West.

This project will focus on wood-frame single detached dwellings built between 1880 and 1930. Following the implementation of this project, the City hopes to undertake future phases in order to consider more recently constructed homes. This project will build on the research completed by a previous UBC Scholar which focused on energy evaluations of existing homes in New Westminster.

Scope of Work

The Scholar will conduct research in order to develop recommendations on a new approach that supports owners and builders in protecting heritage features while undertaking energy efficiency retrofits.

Phase 1: Research and Summary of Findings.

In this phase the Scholar will:

- Attend a startup meeting with City staff to discuss the project objectives and scope of work.
- Explore the New Westminster context (both the physical context of the city and the policy priorities of the City).
- Research relevant topics such as: provincial best practices for energy efficiency retrofits, the benefits of retention of existing buildings, and international best practice on "greening" heritage buildings.
- Research literature, a scan of approaches in other municipalities, and conduct interviews.
- Build an understanding of the typical construction methods used in the region between 1880 and 1930.
- Identify obstacles, challenges and considerations for heritage renovation projects from both a heritage and energy performance perspective.
- If relevant, identify case studies projects in areas with a climate similar to New Westminster.

Phase 1 deliverables include:

- Project Proposal – including a project understating, proposed approach and schedule.
- Interim Report – summarizing the findings of the research phase.

Phase 2: Recommendations and Document Development.

In this phase the Scholar will:

- Based on the findings of Phase 1, develop recommendations on how to achieve the objective of improving the energy efficiency of heritage homes, while still retaining original building materials. These recommendations could include a list of suggested interventions (both minimal and complex). Recommendations should highlight how to overcome or mitigate the identified challenges, and highlight any specific advantages to implementing the proposed recommendations in the New Westminster context.

- Use source material to provide a high-level estimate of what the overall GHG impact could be to implementing some of these interventions.

Phase 2 deliverables include:

- Final Report – Building of the interim report, the final report should summarize key findings and outline recommendations for how the City can achieve both heritage retention objectives, while also increasing energy performance / decreasing emissions.

Deliverables

- Project Proposal – including a project understating, proposed approach and schedule
- Interim Report – summarizing research findings
- Final Report – summarizing research findings and outlining recommendations
- Final report [or executive summary] for the online Scholars Project Library

Time Commitment

- This project will take 250 hours to complete.
- This project must be completed between May 3 and August 13.
- The scholar is to complete hours between 9am-5pm, Monday to Thursday, approximately 15-20 hours per week.
- The scholar should be available, either via virtual meeting platform or by telephone, for the project start-up meeting, periodic status updates and presentations as required.

Required/preferred Skills and Background

☒ Excellent research and writing skills
☒ Demonstrated interest in sustainability and green building
☒ Some interest in heritage preservation, conservation, and restoration
☒ General understanding of renovation techniques for single detached dwellings
☒ Working knowledge of science and techniques for emissions or energy reduction in buildings
☒ Familiarity with research methodologies and survey techniques
☒ Strong analytical skills
☒ Ability to work independently
☒ Project management and organizational skills

Applications close **midnight Sunday January 31, 2021**
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