

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: Identifying Retrofit Design Options, Incentives, and Barriers for Low-Carbon, Climate Resilient Apartments

Project Background & Overview:

Apartment buildings in the Metro Vancouver region historically have not required cooling and are vulnerable to overheating under climate change. There is a growing urgency to address this vulnerability as extreme climate events become more common in British Columbia, as evidenced by a recent heat dome event that led to nearly 600 deaths, almost all in a residential setting. The IPCC warns that extreme climate events will increase even under optimistic scenarios, underscoring the need for rapid, deep cuts in carbon emissions to avoid the most dangerous outcomes.

Heat pumps offer an elegant solution to providing low carbon emission heating and cooling for homes under current and future climate conditions. However, heat pump retrofit options for individual apartment units are currently limited, potentially costly and subject to barriers for approvals. Further, apartment owners have poor understanding of available options, how to find installers, get building approvals, or access incentives. Poorly planned and implemented solutions may not be energy efficient leading to excessive energy costs.

This project will help apartment owners find technology options and installers, gain approvals, access incentives, and facilitate retrofits in apartment units in UBC residential neighbourhoods and across the region. The project will also identify gaps and barriers that will be valuable to policy makers and utilities to support program and incentive design.

Project Description

This UBC Sustainability Scholar project will undertake interviews and undertake a review of locally available reports and studies to identify heat pump retrofit options for individual apartment units currently available in the Metro Vancouver region, improve understanding of approval processes and identify incentive options. The project will also identify energy efficiency options, such as window coatings and external shading that can improve the energy performance of cooling and reduce energy costs. In addition, the interviews and review will identify short term options for acting to reduce overheating risks during a heat wave before a retro has taken place. These could include measures for reducing window solar gain, generating cross ventilation, and adding portable cooling effectively in an apartment setting.

The project will target strata apartment owners that reside in UBC's residential neighbourhoods on UBC's Vancouver campus, representing more than 5000 homes. The project will be undertaken in partnership with the University Neighbourhoods Association (UNA) who provide municipal services to residents. The UNA will support dissemination of study results to community residents. While the focus of the study are the UNA neighbourhoods, the results will be widely applicable to many thousands of apartment buildings found across the lower mainland. The study will be disseminated via the BC Hydro Sustainable Communities networks, such as the Local Government Retrofit Peer Network.

Project Scope

The Scholar will undertake a review of relevant technical reports and studies and other existing resource materials, including a review of incentive offers. The Scholar will also undertake interviews of local practitioners (engineering firms and contractors) and policy makers (local government, utilities and province) to provide up to date information relevant to the local market. Strata councils and property managers will be interviewed to better understand issues and supports required by strata councils to support approval of projects.

To achieve the project objectives, the student will:

- undertake a literature scan to identify heat pump retrofit studies that have been undertaken in the southwestern British Columbia region
- undertake interviews with practitioners, policy makers, strata association representatives and others that will be identified with support from the project mentor
- the review will include consideration of passive options that reduce apartment overheating and energy use by heat pumps (when present) in apartments during heat wave events.

Deliverables

- A final report
- A PowerPoint presentation summarizing project results
- Summary information that can be used to support web based dissemination of results
- 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 during standard office hours, approximately **17** hours per week.

Required/preferred Skills and Background

- Excellent research and writing skills
- Demonstrated interest in sustainability
- Ability to work independently
- Deadline oriented
- Project management and organizational skills
- Comfortable interacting with strangers to conduct public/in person surveys
- Design and layout skills are an asset
- Some technical understanding of residential HVAC systems is an asset

SUSTAINABILITY SCHOLARS PROGRAM

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>