

## Summer 2023 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 on the Apply page to confirm your eligibility before applying.

**Applications close at midnight on Sunday January 29, 2023.**

---

## Project title: Research to understand gaps in the BC Building Code as applied to high performance building design and construction

### Project Background & Overview:

The introduction of the BC Energy Step Code in 2018 allowed municipalities to opt-into a performance-based compliance model. This shift prompted the building industry to benefit from a wider spectrum of design and construction options to meet and exceed energy performance requirements while preparing for published elevated targets, culminating in Net Zero Energy Ready compliance, the provincial compliance target for 2032.

As the building industry has been adapting to and benefiting from a performance-based compliance framework, it is questioned if the British Columbia Building Code (BCBC) has inherent bottlenecks or even limits as innovative strategies emerge; this is in part due to what materials, methods etc. are permissible per the Acceptable Solutions sections of the BCBC and what must be considered for potential processing through the Alternative Solutions pathway.

Current building practices around the province have shown that builders building to the higher Steps of the Step code or equivalent programs may be selecting materials that are not recognized or approved by the BCBC through the Acceptable Solutions sections.

While the Performance Path leaves allows the builder to choose what the energy performance of a given component can be, which is in contrast to the Prescriptive Pathway 9.36.2 to 9.36.4, which sets a minimum, it also leaves assessment and compliance evaluations with regards to materials approvals for compatibility, safety, durability/life expectancy, and performance over time, to the Authority Having Jurisdiction (AHJ) to measure compliance with all areas of the BCBC. Understanding and evaluating materials that are not found in the Acceptable Solutions sections of the BCBC in areas outside of the Energy Step Code section can cause both delays in inspection and permitting processes. The research aims to uncover potential gaps and contribute to the improvement of the Acceptable and / or Alternative Solutions Pathway in the BCBC.

The research aims to uncover potential gaps and contribute to the improvement of the Alternative Solutions Pathway in the BCBC. And, to reduce the risk of unintended consequences caused by unknown

or non-approved material selection, per the Acceptable Solutions section of the BCBC to meet the upper steps of the Step Code.

## **Project description**

The Building Code, enforced through municipalities via building inspections or professional assurance, was developed to ensure health, safety, fire safeness, structural integrity, accessibility, and energy and water compliance, while allowing for the building industry to have a clear set of expectations and requirements that promote an equal competitive playing field. The BC Energy Step Code and its performance-based compliance model, allowed for relatively typical building design and construction practices to be maintained with minimal changes for the Lower Steps; however, as the Upper Steps of the BC Energy Step Code become required across B.C., it can be expected that non-typical strategies and materials will be appearing in building design and construction as enhanced performance measures to reach higher step levels which may require further processing to evaluate for BCBC compliance. While the BCBC lays out clear performance targets, the dramatic shift in design and construction materials required to meet the higher Steps leaves it to Building Officials and builders to learn, understand, and process new material specs and applications that may be necessary to achieve the higher performing targets.

These added processes, such as reviewing new materials for BCBC compliance, can result in delayed Building Permit issuance and / or inspections, with ultimately potential undesired outcomes or the use of materials and products that are not well understood, resulting in added risk to the builder, AHJ, and consumer.

The objective of this project is to identify up to 30 different materials (above ground wall assembly material components such as sealants, tapes, and air / moisture / vapor barrier membranes only) currently used or intended to be used to achieve Step 3 and up.

This list of measures, within the boundaries of above-ground wall environmental separators, will form the baseline of what will be compared against the BCBC. The measures will be sorted to identify which measures fit within Acceptable Solutions (i.e., accepted and approved materials as per the BCBC) and what would need to be examined through the Alternative Solutions pathway in the BCBC (i.e., materials used that require further investigation through the AHJ and thereby causing permit and inspection delays and increasing compliance and liability risk for AHJ and builders).

## **Project scope**

The Scholar will be tasked with seeking relevant data from stakeholders such as builders, envelope consultants, mechanical engineers, architects, vendors, suppliers or others who can consult on what materials are commonly being used in energy efficient, high performance new construction across the province today, particularly for Upper Step construction.

Working with the Green Buildings Team (GBT) with support from Permits Licences and Inspection Services department (PLI) Staff, the Scholar will:

- Review BC Building Code, and National Code for Buildings sections and pathways relevant to the project and become familiar with the compliance processes
- Conduct research to help inform the research methodology and question development for the survey
- Compile a list of candidate groups/associations/suppliers that can most effectively provide the information requested.

# SUSTAINABILITY SCHOLARS PROGRAM

- Review relevant sections of the BCBC to gain understanding of compliance processes
- Create a survey and conduct interviews with relevant stakeholders
- Summarize findings and cross reference against BCBC, starting with sections 9.36.2 to 9.36.4, 9.25.2, to 9.25.4, and 9.27.3 to 9.27.4 for compliance
- Analyse results and produce a report to showcase the outcomes of the research and provide recommendations. The report will be shared with the Province's Building Safety and Standards Branch, as well as other Authorities Having Jurisdiction to address new material challenges in their compliance processes for the BC Energy Step Code.

## Deliverables

- A final report containing a summary of the work completed
- A final report for the online public-facing [Scholars Project Library](#).
- An online or in-person presentation to Township Permitting, License, and Inspection Services department and an online or in-person presentation to our overarching building industry

## Time Commitment

- This project will take 250 hours to complete
- This project must be completed between May 1 to August 15, 2023
- The Scholar is to complete hours between 8:30 am and 4:30 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
- Familiarity with research methodologies and survey techniques
- Familiarity conducting focus group research
- Strong analytical skills
- Ability to work independently
- Deadline oriented
- Project management and organizational skills
- Strong technical and drafting skills
- Comfortable interacting with strangers to conduct public/in person surveys
- Technical background, design and construction experience, building code experience (any country/jurisdiction), or/and experience creating/analysing building specifications are helpful skills and experience, an asset

Candidates should be aware that this work is relatively cutting edge and can be conducted by students with a variety of academic backgrounds--buildings/technical experience is great but not necessary.

Applications close **midnight Sunday January 29, 2023**

Apply here: [Click here to apply](#)

Contact Karen Taylor at [sustainability.scholars@ubc.ca](mailto:sustainability.scholars@ubc.ca) if you have questions

## Useful Resources

We are holding a special **resume preparation workshop for prospective Scholars** on January 23, 2023.

[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>