# SUSTAINABILITY SCHOLARS PROGRAM

## Summer 2020

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 February 2, 2020.**

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## Research project title: Analysis of energy consumption of different architectural design decisions

**Sustainability Goal or Operations Plan objective**

Climate Leadership

Long Term Goal: Support the BC Energy Step Code to successfully reduce energy use of new houses

**Project description**

This project will model the energy intensity of houses having a variety of different architectural features (e.g. size, number of stories, articulations, open floor plans, window-to-wall ratio, etc.) in order to get an understanding of the impact of these choices on the thermal energy demand intensity in climates across British Columbia. The goal is to be able to generate a guide that would help educate stakeholders (architects, designers, builders) on the implication of these architectural design choices on the energy intensity, and hence the BC Energy Step Code.

**Scope of Work:**

- Conduct a scan to identify if there have been any other studies that have examined the energy intensity impact of architectural design choices on houses.
- Generate an Excel spreadsheet outlining the key architectural features to include in a model (wall area, roof area, window area, etc.). Using this data, develop a generic HOT2000 file for a house.
- For each of the different combinations of features outlined in the spreadsheet, update the generic HOT2000 with the various architectural features and combinations thereof (approximately 100 variations).
- Model the different house files in one location for each of BC's six climate zones.
- Perform analysis on the impact of the different architectural design choices in terms of thermal energy demand intensity.

**Deliverables**

- HOT2000 files for each of the combinations being modelled
- A final report, containing a summary of completed work with recommendations, complemented by a final presentation to key stakeholders.
- A final report for the UBC Sustainability Scholars online project library.

**Time Commitment**

- This project will take **250** hours to complete.
- This project must be completed between May 4 and August 14, 2020
- The Scholar will work primarily from home, with periodic update meetings with the mentor. The schedule can be flexible provided that the 250 hours are completed during the project timeframe.

**Required/preferred Skills and Background**

☒ Excellent research and writing skills
☒ Strong analytical skills
☒ Ability to work independently
☒ Demonstrated experience in building energy modelling
☒ Comfortable working with Excel
☒ Comfortable working with large amounts of data
☒ Comfortable performing data analysis
☒ Familiarity working with HOT2000 an asset

Applications close **midnight Sunday February 2, 2020**.

Apply here: http://sustain.ubc.ca/scholarsapply

Contact Karen Taylor at sustainability.scholars@ubc.ca if you have questions

## Useful Resources

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

The Centre for Student Involvement & Careers will host a resume & cover letter webinar tailored for graduate students on Tuesday, January 21, 2020 from 12:00-1:30. Registration will open approximately two weeks before the webinar, and can be accessed at Careers Online.