UBC Sustainability Scholars Program 2019

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 organizational sustainability goals.

For more information about the Sustainability Scholars Program and to apply to work on this project, please visit the Student Opportunities page.

Please review the application guide (PDF) before applying.

Applications close **midnight Monday February 25, 2019**.

Research project title: Calibrating the Zero Emissions Building Plan and BC Energy Step Code

Research supports the following City of Vancouver policies -

☒ Greenest City Action Plan. Specific goal area (s): Green Buildings
☒ Renewable City Action Plan.

Outline scope of project and why it is of value to the City of Vancouver and describe how and when the scholar's work will be actionable:
The City's Zero Emissions Building Plan and the provincial BC Energy Step Code set limits on energy use in new buildings. To show that a proposed building design meets these limits, an energy model is created, and that model has a number of energy use assumptions laid out in the City of Vancouver Energy Modelling Guidelines. The guidelines are available here: https://guidelines.vancouver.ca/E006.pdf

The scope of this project is to collect actual residential building energy use data from available sources, clean or parse the data as needed, compare it to the assumptions in the CoV Energy Modelling Guidelines or related standards and codes, and make recommendations for potential improvements where practical to the guidelines. Where discrepancies or other variations are found between actual data and assumptions, the scholar will be expected to conduct research and analysis to determine potential causes and develop recommendations, and this could include interviews with industry experts in building energy use.

Specific assumptions that could most benefit from further analysis include:

- domestic hot water use and energy use;
- elevators energy use;
- fireplaces;
- Suite lighting energy use;
- Suite plug energy use;

Further to the assumptions, the data collected may also allow analysis of historical trends in:

- Space and ventilation heating energy use;
- Space and ventilation cooling energy use.

Time permitting, a deeper dive into the variations typically seen in domestic hot water energy use and its potential causes, would be highly valuable.

Potential secondary sources of data include published literature and reports, CoV buildings, SEFC NEU connected buildings, and potentially other sources such as UBC or energy metering companies' data records. It may also be possible to collect primary data through interviews with building managers, and/or gaining access to building energy management systems. Recommendations received for improvements may be included in Version 3.0 of the Energy Modelling Guidelines to be published by the City of Vancouver in 2019 or 2020, and may be included in a proposed new national standard for energy modelling guidelines to be developed by the Canadian Standards Association with the CoV Energy Modelling Guidelines as a foundational document.

Deliverables

- A summary of data collected, sources, and permissions and packaging of the data itself for future use;
- Summary of findings and recommendations for potential improvements to the CoV Energy Modelling Guidelines or related documents;
- A public facing final report (or executive summary) for the UBC Sustainability Initiative website.

Time Commitment

- This project will take 250 hours to complete;
- This project must be completed between April 29 to August 12, 2019;
- The scholar is to complete hours between 8am-5:30pm, and Monday to Friday, approximately 20 hours per week.

Skill set/background required/preferred:

☒ Excellent research and writing skills.
☒ Demonstrated interest in building science or building energy use and efficiency
☒ Familiarity with research methodologies and survey techniques
☒ Strong data and analytical skills
☒ Demonstrated technical skills and data analysis with Excel
☒ Ability to work independently
☒ Demonstrated time management skills
☒ Project management and organizational skills
☒ Comfortable interacting with strangers to conduct in person surveys
☒ Familiarity with building energy systems would be an asset
☒ Skills related to building energy modelling would be an asset

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Apply here:
https://sustain.ubc.ca/student-opportunities

To learn more about the program here:
https://sustain.ubc.ca/ubc-sustainability-scholars-program

Read the application guidelines to confirm your eligibility to participate in the program here:
https://sustain.ubc.ca/student-opportunities

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