

## 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.**

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## Project title: Researching Innovative Strategies to Mitigate Overheating and Increase Resilience in Multi-Family Buildings

### Project Background & Overview:

Existing buildings account for nearly 60% of emissions in the City of Vancouver. Multi-family buildings (e.g. condos, apartments, rental buildings) account for a large portion of these emissions, and they also house vulnerable people most likely to be impacted by extreme weather events, such as heat waves.

To achieve our 2030 climate targets set out in the [Climate Emergency Action Plan](#), we need to retrofit our existing buildings at an unprecedented rate to reduce emissions. However, it is not enough to simply reduce greenhouse gases – the retrofit solutions must also prepare buildings to be resilient in the face of a more extreme and uncertain climate.

Fortunately, there are potential solutions that can address multiple City goals and priorities outlined in the [Resilient Vancouver Strategy](#), the forthcoming Climate Justice Charter, [Rain City Strategy](#), among others. One example is constructing ‘green roofs’ on existing buildings. This not only reduces emissions, but can also help protect residents in extreme heat, increase biodiversity, and improve rainwater management.

### Project description

Multi-family buildings in Vancouver (such as apartments, condos, rental buildings and co-ops) require major efforts to both reduce their emissions and adapt to a changing climate.

In general, older existing buildings use a lot of energy, which means a lot of greenhouse gas emissions, and higher discomfort and vulnerability in very hot or cold temperatures. This is because they have inefficient ‘envelopes’: the walls, roof and windows are typically thin and leaky. Envelope retrofits (fixing and replacing all these components) is often prohibitively expensive and can take years. We need scalable, quicker solutions to improve these buildings, with low cost and minimal impact to tenants.

This scholar project would seek to research and compare a range of cooling measures that effectively lower indoor temperatures, while providing other co-benefits. The focus will be on 'passive' cooling measures, as mechanical cooling (such as central air conditioning) is often expensive, technically challenging, and does not provide the resiliency and durability that passive measures can provide. Examples of passive measures include:

- Exterior shading
- White and green roofs
- Window films and treatments

This is particularly important for non-profit, rental, and social housing where tenants rely on landlords to make changes such as adding cooling.

## **Project scope**

The project is primarily research-based, and will include a combination of literature scans, site visits (as feasible) and interviewing experts – from cities and project owners who have implemented these ideas, Vancouver city staff, and companies that offer these products.

The research will be broken into 4 categories:

1. **Conduct a literature review to:**
  - a. Understand the range of passive cooling options that exist in the market today for existing multi-family buildings
  - b. Compare key factors of each: installation costs, energy and emissions reduction potential, and any resiliency co-benefits (e.g., collecting rainwater, improving tenant comfort, creating community spaces)
  - c. (if time permits) Document any global best-practices that encourage, incentivize, streamline or ultimately require these measures
  - d. (if time permits) Identify the most suitable building types for each recommended solution (e.g. low-rise vs. high-rise), or priority needs (e.g. below market housing)
2. **Conduct 3-5 site visits and interviews with project owners** (either locally or outside of Vancouver) to better understand real-world feasibility and actual outcomes. Have they successfully been done before locally? Internationally? Document findings as case studies.
3. **Work with City staff to understand the current barriers & actions needed to retrofit multi-family buildings with these green infrastructure solutions.** This will involve interviewing City staff and external industry to identify the current barriers and possible solutions (e.g., incentives, streamlined permits, education) to make it easier for buildings to install these systems
4. **Summarize findings and recommendations in a report**

## **Deliverables**

- A final report containing a summary of the work completed
- A summary presentation or discussion with the City's Green Building team
- A final report for the online public-facing [Scholars Project Library](#).

# SUSTAINABILITY SCHOLARS PROGRAM

## 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 9 am and 5 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
- Familiarity with research methodologies and survey techniques
- Strong analytical skills
- Ability to work independently
- Deadline oriented
- Project management and organizational skills
- Demonstrated experience in green building technologies
- Comfortable interacting with strangers to conduct public/in person surveys or informal interviews
- Experience with financial analysis

## Additional project note:

Any travel to site visits, or any costs incurred to interview experts, will be covered and facilitated by the City mentor

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>