Bren Legare

289-939-2546 | brenlegare@gmail.com | brenlegare.ca

Summary

I am a fourth-year Architectural Conservation and Sustainability Engineering student with experience in structural design and assessment of historic unreinforced masonry buildings, as well as new steel, wood, concrete, and masonry structures. Trained in a conservation-focused program that integrates code-compliant structural design, building energy performance, and heritage values to support building reuse and high-performance new construction.

Skills

- Structural Calculations
- Heritage Building Assessment
- Unreinforced Masonry Analysis
- Building Simulations
- Envelope Thermal Analysis
- CAD & 3D Modelling
- Engineering Economics
- GIS Mapping
- Building Fire Safety

Experience

Research Assistant **May 2025 – Aug 2025**
Drake Stormwater Research Group, Carleton University Ottawa, ON
Undergraduate research assistant focused on stormwater and green roof research through field construction, monitoring, and data analysis. Contributed to lab setup, experimental testing, and research reporting.

- Assisted in constructing Carleton's outdoor green roof and stormwater research lab.
- Calibrated *SoiLiNQ* soil moisture sensors through lab testing and presented results to industry partners.
- Led a 3-month green roof rehabilitation study using thermal imaging and soil quality analysis.

Admin Assistant **May 2024 – Aug 2024**
Homes to Zero
Worked on residential energy assessments by analyzing home efficiency, emissions, and upgrade savings. Contributed to assessment workflows, reporting, research, and client communication.

- Developed a process to calculate home energy efficiency and cost savings from appliance upgrades.
- Produced tailored homeowner reports and recommendations for energy efficiency improvements.
- Completed assessments using HOT2000, performing emissions and savings analyses.

Technology Assistant **May 2023 – Aug 2023**
Homes to Zero
Assisted with residential energy research focused on efficiency, emissions, and homeowner guidance. Supported data processing, analysis, and outreach materials.

- Researched household energy use, emissions, and costs to identify savings and sustainable solutions.
- Created tools, web content, and email templates to guide homeowners toward net-zero goals.
- Processed 1,000+ home images to train machine learning models for energy-efficiency classification.

Education

Bachelor of Engineering - Architectural Conservation and Sustainability, Carleton | Ottawa, ON
CGPA: 10.8 | Graduating in 2026

Awards & Involvement

NSERC USRA | Deans List 1st,2nd, and 3rd year | PMC Volunteer Note Taker | DesignLIFES Workshop