Hygrothermal performance and durability of building envelopes exposed to flooding

Record number : OPR-1029

Overview

RESEARCH DIRECTION

Dominique Derome, Professeure - Department of Civil and Building Engineering

INFORMATION

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ADMINISTRATIVE UNIT(S)

Faculté de génie
Département de génie civil et de génie du bâtiment

LEVEL(S)

2e cycle
3e cycle
Stage postdoctoral

LOCATION(S)

Campus de Sherbrooke

Project Description

The aim of the project is to develop and apply moisture damage risk models and sustainability assessment models taking climate change into account for the long-term assessment of building envelope behavior, and primarily of increased risk of exposure to flooding events. The project consists in studying the distribution and redistribution of water in envelope assemblies with experimental and computational means. Water is a major source of deterioration, and water distribution during the wetting and drying following a flood event can be critical. The project will provide appropriate assessment methods for much-needed interventions such as post-flood building envelope retrofit measures and the development of solutions offering greater resilience to climate change.

Candidates should have a background in building, architectural, civil or mechanical engineering, or applied physics. Candidates must be curious, creative, rigorous and highly motivated. Candidates will acquire knowledge in building physics, hygro-thermo-mechanical modeling, characterization of hygro-thermo-mechanical material behavior, environmental load, sustainability.

This project can accommodate one or more students in the following programs :
- Postdoctoral fellowship
- Doctoral thesis
- Research-type master's thesis

Discipline(s) by sector

Sciences naturelles et génie

Génie civil

Funding offered

Yes

Partner(s)

Architecture sans frontières Québec

The last update was on 24 July 2026. The University reserves the right to modify its projects without notice.