BECOR
Building Envelope Council Ottawa Region

Webinar Session: Wednesday, September 24th, 2025, Noon to 1:00 PM

A Low-Carbon Industrialized Below Grade Retrofit Solution

Deep retrofits often involve renewing the entire building enclosure to improve resilience and thermal performance. NRCan's PEER project has developed and demonstrated prefabricated panels for rapidly retrofitting above grade wall assemblies – particularly well suited for renewing occupied affordable housing units. Because the basements of these units are also occupied, a complimentary, industrialized approach to retrofitting below grade wall assemblies from the exterior is needed. NRCan has developed a concept for a novel, exterior below grade wall retrofit approach that promises to reduce material costs, labour and site disruption, improve drainage, and reduce waste and material emissions compared to current best practice. The proposed novel approach involves hydrovac excavating a roughly 12" wide trench, spray-applying water proofing membrane and backfilling using free-draining, insulating materials (such as perlite or foam glass aggregate) to provide both insulation and drainage below grade. This presentation will present a schematic design, associated construction details (paired with a panelized above grade retrofit), preliminary material test findings and an experimental design to evaluate system efficacy.

Hamish Pope – Natural Resources Canada – Advanced Building Envelope Specialist

Dr Hamish Pope is an Advanced Building Envelope Specialist at Natural Resources Canada working on for Canmet's Building Envelope research projects. His research is on improving industry confidence in novel, high-performance building envelope assemblies and prefabricated approaches to rapid retrofit. His research focuses on requirements for industrialized retrofits, as well as researching existing and novel low carbon building materials.