CABER
Centre for Advanced Building Envelope Research

Carleton UNIVERSITY

Postdoctoral Position- CABER

The Centre for Advanced Building Envelope Research (CABER) at Carleton University is accepting applications for a postdoctoral fellow (PDF). The anticipated start date is September 5th, 2023 (flexible – position can begin earlier if desired) and ending March 31st, 2025. The postdoctoral fellow will be involved in projects that focus on modelling and experimental evaluations of Canada's built environment. This includes improving energy performance, reducing greenhouse gas emissions, and increasing building resiliency.

CABER is a new research centre located on the CanmetENERGY-Ottawa campus in Bells Corners. The Centre was jointly funded by federal and Ontario provincial governments to increase capacity for experimental testing and modelling work to support Canada's transition to net-zero through an improved building stock. CABER's research objectives are to 1) improve understanding of heat, air and moisture transfer through advanced building envelopes and how these elements contribute to occupant health, comfort and building science risks; 2) draw upon advances in super-thin insulation materials, prefabricated construction and panelized retrofits, develop new approaches to constructing building envelopes that are thinner and cheaper and new methods for renovating existing buildings with less cost and less disruption; and, 3) support work on improving housing in northern and remote communities. CABER is equipped with three state-of-the-art pieces of equipment: a two-storey guarded hot box to examine the thermal and moisture performance of new and retrofit wall assemblies, a two-storey pressurized spray rack to assess moisture resilience, and in situ wall openings to examine the interaction between outdoors and the built environment. CABER simultaneously helps students and industry to address the technology gap, while providing students with high quality training on hands-on experimental research. More information on CABER is available at Carleton.ca/caber.

Research Project Supervisor and Principal Investigator
Dr. Cynthia Cruickshank

Research Project Overview
The PDF will be engaged in several research projects related to building energy and resiliency. The position will include a mix of experimental testing within the CABER facility and modelling work, looking both at thermal and hygrothermal performance of buildings, with the expectation that the PDF publish their results in academic journals and present the work at conferences. The PDF will be expected to: mentor and work with graduate and undergraduate students within CABER; manage research projects and programs; and help develop research funding proposals and programs. The following is a breakdown of the scope of work with approximate time allocations:

- Overseeing a new project entitled Creating Equitable, Resilient Low Carbon Canadian Community Housing that Enhances Social Welfare (30%) – A joint project between CABER, Carleton Economics and the University of Toronto on integrating energy, hygrothermal and economic modelling into a single optimization program focused on community housing retrofits.

- Contract work and testing (30%) – A range of contract modelling and experimental testing for industry and government projects
- Self directed research work of your own research interests within the general framework of building better, more energy efficient buildings with the possibility of undergraduate and MASc support (20%)
- Funding proposal writing and general administrative work (20%)

Salary

The postdoctoral fellow will be offered a salary of $70,000 per annum, with the additional ability to opt into an extended health and dental benefit plan. The postdoc will be considered unionized and will be a member of PSAC Local 77000. Information on this bargaining unit can be found here: https://psac77000.ca/.

Job Requirements

- PhD in Mechanical, Civil or Building Engineering or related fields
- Interest in academic research related to building energy, building envelopes and resiliency
- Experience in energy and/or hygrothermal modelling
- Experience in experimental work, instrumentation, data acquisition, LabView and/or uncertainty analysis
- Understanding of the construction industry, current building practices and retrofit methodologies
- Canadian Citizenship – This position requires the successful candidate to obtain a Reliability Security Clearance from the government of Canada and as such, only those with Canadian Citizenship can be considered
- Ability to commute to CABER - The successful candidate will work from the CABER lab, located at 1 Haanel Dr. in Bells Corners, approximately 20km west of the main Carleton University Campus.

Accommodations and Accessibility

Should you require a copy of this posting in an alternate format, please contact us as soon as possible and we would be happy to get one to you in a timely manner. We believe in the importance of supporting on the-job success for the incumbent and are pleased to discuss and/or provide specific tools, resources or other requirements for day-to-day work requirements, as needed.

About Carleton University:

Carleton University is a dynamic and innovative research and teaching institution with a national and international reputation as a leader in collaborative teaching and learning, research and governance. To learn more about our university and the City of Ottawa, please visit www.carleton.ca/provost.

Carleton University is committed to fostering diversity within its community as a source of excellence, cultural enrichment, and social strength. We welcome those who would contribute to the further diversification of our university including, but not limited to: women; visible minorities; First Nations, Inuit and Métis peoples; persons with disabilities; and persons of

any sexual orientation, gender identity and/or expression. Carleton understands that career paths vary. Legitimate career interruptions will in no way prejudice the assessment process and their impact will be taken into careful consideration.

We thank all applicants for their interest, however, only those selected for an interview will be contacted. If contacted for an interview, please inform us should accommodation be required, and arrangements will be made in a timely manner. All qualified candidates are encouraged to apply.

How to Apply

Candidates that would like to apply for this fellowship opportunity are invited to submit their cover letter (including a statement about their research interests and goals) along with a resume/CV (submit as a single file with the subject line "PDF CABER Application") to Dr. Cruickshank at Cynthia.cruickshank@carleton.ca by May 10th, 2023.