Postdoctoral Fellowship in Water Resources Engineering

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Postdoctoral Fellowship in Water Resources Engineering

School of Engineering
College of Engineering and Physical Sciences

Temporary full-time from March 1, 2018 to February 28, 2019
Hiring #: 2018-0065

Lot-level practices to reduce urban flood risk and mitigate basement flooding

Water damage due to basement flooding is one of the largest sources of home insurance claims in Canada. A drastic increase in economic damages associated with basement flooding has been observed in recent years. Today, it is estimated that approximately $1.8 billion in insured losses for water damage due to basement flooding is incurred every year in Canada. The sensitivity to basement flooding and increased insured losses are exacerbated by the increase in frequency and magnitude of extreme precipitation events, urbanization and changes in land-use, and the age and condition of municipal infrastructure.

Numerous factors influence the occurrence of basement flooding, including stormwater management infrastructure and lot-level technologies or approaches that protect homes from basement flooding. Lot-level approaches can include foundation drainage systems (e.g., weeping tile systems) to reduce the occurrence of infiltration flooding, low impact development measures (e.g., bio-swales, infiltration trenches, etc.) to reduce the occurrence of overland flooding, and backwater valves to reduce the occurrence of sewer backup. The goal of this research program is to evaluate the performance of various technologies and approaches to reduce the risk of occurrence of basement flooding. In particular, this research investigates the performance of backwater valves to reduce the risk of basement flooding due to sewer surcharge and evaluates the effect of low impact development measures on improved urban drainage and sewer network response to extreme events. Results from this research will assist in developing Canadian homes and communities that are more resilient to the adverse effects of urban flooding events and will seek to reduce the economic damages experienced as a result of basement flooding.

This Postdoctoral Fellowship position is for a duration of 1 year starting in March, 2018. The successful candidate will work closely with a graduate students working on projects in this research program, under the supervision of three professors in the School of Engineering at the University of Guelph (Dr. Andrew Binns, Dr. Bahram Gharabaghi, and Dr. Ed McBean). This research is being conducted in collaboration with the Institute for Catastrophic Loss Reduction and is supported through an NSERC Collaborative Research & Development grant.

The successful candidate should have:

- A PhD in civil engineering, water resources engineering, environmental engineering, or a related field.
- Experience (or strong interest in) in the areas of urban hydrologic and hydraulic engineering.
- A track record of publication in high-quality venues related to water resources engineering.
- Proficient oral and written communications skills.

The successful candidate should also collaborate well in a team environment, possess demonstrated supervisory and organizational skills and have high motivation for research in the water resources
engineering field.

Start date is flexible.

Applications including a CV, brief statement of research interests and three professional/academic references (with contact details) should be emailed or sent to:

Dr. Andrew Binns
Assistant Professor
Water Resources Engineering
School of Engineering
University of Guelph
Guelph, Ontario, Canada N1G 2W1
Email: binns@uoguelph.ca [1]
Tel.: (519) 824-4120 ext. 54011

Application deadline is February 23, 2018 or until a suitable candidate is found.

For more information:
University of Guelph: www.uoguelph.ca [2]
School of Engineering: www.uoguelph.ca/engineering [3]

All qualified candidates are encouraged to apply; however, Canadians and permanent residents will be given priority.

All qualified candidates are encouraged to apply; however, Canadians and permanent residents will be given priority. At the University of Guelph, fostering a culture of inclusion [4] is an institutional imperative. The University invites and encourages applications from all qualified individuals, including from groups that are traditionally underrepresented in employment, who may contribute to further diversification of our Institution.

Posting Date: 2018 02 16
Closing Date: Until Filled

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Links
[1] mailto:binns@uoguelph.ca?subject=Postdoctoral%20Fellowship%20in%20Water%20Resources%20Engineering