



Building Envelope Council Ottawa Region

**In-Person Seminar**

**Sala San Marco, 215 Preston St.**

Wednesday, June 29, 2022

**Lunch & Networking: Noon – 1:00 pm**

**Presentation: 1:00 pm – 2:00 pm**

**Using Fiber Reinforced Polymer in Upgrading Blast Resistance  
of Existing Reinforced Concrete Buildings**

Recent terrorist attacks on critical infrastructures using car bombs have heightened awareness of the need for blast resistance of structures. Blast design of civilian buildings has not been a widespread practice in structural design. For this reason, there is now an urgent need to mitigate the potentially devastating effects of blast shock waves on existing structures.

Until the early 1990s, the most common methods used for upgrading the loading capacity of reinforced concrete components were reinforced concrete jackets, grout-injected steel jackets or bonded steel plates. Although these strengthening techniques effectively increase reinforced concrete elements' load and deformation capacities, they are labour intensive and sometimes difficult to apply. The RC jacketing results in a considerable increase in the member size. Steel jacketing and bonded steel plates are often challenging to manage and prone to corrosion when used in bridges.

Fiber Reinforced Polymer used for strengthening blast-resistant reinforced concrete elements are increasingly being utilized instead of grout-steel strengthening. FRPs are composite materials fabricated from long, oriented fibers in the form of glass, carbon or aramid embedded in a polymer matrix such as epoxy. Besides being corrosion resistant and having high strength and stiffness-to-weight ratio, these materials are easy to manage and apply.

This presentation will discuss upgrading the blast resistance of critical reinforced concrete buildings using fiber-reinforced polymer fabric.

**Register on-line using BECOR's new web site: [Upcoming Events – BECOR](#)**

<b>Seminar fees</b>	<b>Premium Corporate</b>	<b>Individual and Corporate Members</b>	<b>Non-Members</b>
<b>Please Register by Noon on Tuesday, June 28, 2022.</b>	<b>Free</b>	<b>\$40.00 (includes HST)</b>	<b>\$65.00 (includes HST)</b>

**Bessam Kadhom, PhD, P.Eng.**

Dr. Bessam Kadhom is an associate research officer at the National Research Council Canada (NRC-CNRC), specializing in structural engineering. In his research, he focuses on studying the structural behaviour of as-built and CFRP-protected RC buildings and bridges subjected to blast loads or adverse effects of climate change. Dr. Kadhom completed his Master's and Ph.D. studies in structural engineering at the Civil Engineering Department/University of Ottawa. He has over 20 years of experience in research, dynamic analysis and design of structures subjected to earthquake or extreme blast loads, FRP rehabilitation/retrofitting of reinforced concrete structures, and project management.

This seminar is Eligible for 1.0 hours of structured ConEd Credits  
for OAA Members

**Whether a BECOR member or not, you must register to attend this seminar.  
We respectfully request that you register for this seminar no later than**

**Tuesday, June 28, at noon.**

**Please note that no refunds will be provided after this date.**