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## ILLINOIS SECTION AMERICAN SOCIETY OF CIVIL ENGINEERS

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### ASCE ILLINOIS SECTION STRUCTURAL GROUP JUNE DINNER MEETING

#### Load Testing and Reinforcement of a 1920's Vintage Reinforced Concrete Building

**Brian R. Greve, P.E., S.E. – Senior Associate at Wiss, Janney, Elstner Assoc.**  
**Adam Allan, P.E. – Midwest Regional Manager at Fibrwrap Construction Inc.**

**Synopsis:**

The subject of this presentation is the investigation, load testing, and repair of an 80 year old public school building located in Chicago. This school was one of thirty-two similar schools that were the subject of substantial controversy at the time they were built. Alleged defects included poor placement of the steel reinforcement, poor concrete consolidation, structurally significant cracking, and structural design and detailing deficiencies. At the time, the repair solution consisted of suspending the existing roof construction from a grid of structural steel beams spanning between the building parapets. The roofs have since been plagued with recurring leaks at hanger rod penetrations and parapet wall distress at the steel beam bearing locations.

Wiss, Janney, Elstner Associates, Inc. (WJE) performed an engineering study of the existing roof framing and supplemental steel reinforcement to determine if the existing reinforcement was necessary. Fiber-reinforced polymer (FRP) reinforcement, used for the first time in the Chicago Public School System, was chosen to reinforce concrete beams and joists. Fibrwrap Construction, Inc. successfully installed the FRP repairs. The presentation will cover the investigation of the building, investigation and comparison into various strengthening procedures and the structural analysis performed. Also included will be a discussion of the challenges encountered in the field and the advantages of using Fiber Reinforced Polymers (FRPs) for this type of rehabilitation.

**Speakers:**

Brian Greve is a Senior Associate with Wiss, Janney, Elstner Associates, Inc. He specializes in the assessment of structural distress and serviceability problems and has designed and specified repair solutions for a wide variety of structures. He has also performed full-scale load tests on a number of structures to verify the capacity of deteriorated and strengthened members. He is a graduate of the University of Illinois at Urbana-Champaign, with a B.S. in Civil Engineering (1998) and a M.S. in Structural Engineering (2000). He is a licensed S.E. and P.E. in Illinois, and is a member of ASCE and the Structural Engineers Association of Illinois (SEAOI).

Born in Scotland and educated in Montreal, Quebec, Adam Allan is a graduate of McGill University with a degree in civil engineering. He started his career in Eastern Canada as a project manager on the Montreal Olympic site. In 1977 he began working for Dywidag Systems International. His experience is in sales and marketing, and he managed offices in Toronto and Los Angeles before becoming the CEO for the Americas in 1999. He joined Fibrwrap Construction Inc. in 2007 as the regional manager for the Midwest. He markets the composite technology as well as concrete repairs, expansion joints and epoxy overlays. Adam is a licensed P.E. in California and Quebec. He has been a member of ASCE since 1994.

**Date & Time:** Wednesday, June 17, 2009; Cocktails at 5:30 pm; Dinner at 6:00 pm  
Presentation following dinner

**Location:** Pazzo's - 311 South Wacker Drive, Chicago, IL 60606  
Self-service parking is available south of the building for \$10

**Cost:** \$40 (\$20 for fulltime students) – RSVP on or before June 12, 2009  
\$45 – without/late RSVP

Make checks payable to ASCE Structural Group

**RSVP:** Victor E. Van Santen, [victor.vansanten@hdrinc.com](mailto:victor.vansanten@hdrinc.com), (773) 380-7966

**Sponsor:** Fibrwrap Construction Inc., [www.fibrwrapconstruction.com](http://www.fibrwrapconstruction.com), (630) 554-9800