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**ASCE ILLINOIS SECTION STRUCTURAL GROUP
DECEMBER DINNER MEETING**

An Overview of ACI's Anchorage to Concrete Design Procedure

Donald F. Meinheit, P.E., S.E.

Affiliated Consultant

Wiss, Janney, Elstner Associates, Inc.

Synopsis:

Fastening and anchoring into concrete is not a new innovation. Well-defined design procedures may not have existed 60 years ago but concrete anchors, mostly cast-in-place, were designed and used. The welded headed stud was likely the first anchor type to have a design procedure. Post-installed mechanical (expansion) anchors caused a change in the philosophy of how to design mechanical anchors. Anchorage to concrete design using welded headed studs and post-installed anchors is now a common occurrence. In 2002, the ACI Building Code introduced the first rational design procedures to the American design community. Now ACI's Appendix D provisions exist for cast-in anchors and post-installed mechanical anchors. Soon to be included will be procedures to rationally design adhesive anchors. The rational design guidelines are based on the Concrete Capacity Design (CCD) method with origins formulated in Europe. The CCD approach has replaced manufacturers' catalogs containing tabular values of capacity. This presentation will provide a basic introduction to the ACI 318, Appendix D design provisions. Topics will include: the behavior of anchors in direct tension and direct shear, the influence of nearby edges, adjacent anchors (spacing), cracking, combined tension and shear loading, and how an anchor is qualified for use will be covered.

Speaker:

Donald F. Meinheit is an Affiliated Consultant with Wiss, Janney, Elstner Associates, Inc. (WJE) in Chicago. Mr. Meinheit has 40 years of laboratory research testing, rehabilitation consulting, and failure investigation experience. He began testing concrete anchors in 1979 with the issuance of NRC 79-02. He is also a long-time member and current chairperson of ACI's Committee 355 - Anchorage to Concrete. Mr. Meinheit was the principal researcher of a laboratory research program initiated by the Prestressed Concrete Institute to develop design procedures for headed stud anchor groups. This research was used to write the new design provisions for headed studs in the 6th Edition of the PCI Design Handbook.

Date & Time: Wednesday, January 21, 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 (\$25 for Students) – RSVP on or before January 16, 2008
\$45 – without/late RSVP
Make checks payable to ASCE Structural Group

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