



2009 - 2010
March Meeting Notice
Minnesota Geotechnical Society

Mn/DOT's New Automated Landslide and Settlement Monitoring Program

Derrick Dasenbrock, P.E., Minnesota Department of Transportation

Recently, the Minnesota Department of Transportation (Mn/DOT) has been using an increasing number of automated sensing devices to monitor earth and water pressures, tilt, strain, and settlement. Most of these systems use data loggers that are periodically downloaded in the field. A recent addition to the expanding remote monitoring program, where data is recorded in the field and uploaded to a web server by cellular modem, is the ShapeAccelArray (SAA) which provides near-real-time monitoring of inclination or settlement. Since the first array was installed in Crookston in the summer of 2007, 14 additional arrays have been installed at six sites. Five sites are still operational; one was remediated and the instrument and data collection system was removed and repurposed at a new site.

A complete SAA system consists of several components, including the linear down-hole sensor group, up-hole data collection and uplink systems, and a web-based data storage system and user interface. Six short case histories will be presented, ranging from the study of a temporary contractor excavation to the settlement monitoring of a bridge approach fill over a compressible clay deposit. Data from two active case history sites will be examined and manipulated in real-time during the presentation with attention to the benefits of high frequency data collection, and near-real-time data reporting. Equipment, installation procedures, operations, performance, data presentation and software operation, costs, and adaptive system re-use, are compared with traditional manual inclinometers. The system benefits and drawbacks are discussed in project context.

Date: Wednesday, March 10, 2010
Location: Rose Vine Hall (downstairs at Grumpy's Bar & Grill)
 2801 Snelling Ave. N., Roseville, MN

Time: 6:00 Social Hour, Sponsored by Measurand Inc .

- 7:00** Dinner & Dessert: Salad, Rolls, Coffee/Soda and a choice of:
1. 10-Ounce Top Sirloin - Char-grilled and topped with bleu cheese garlic butter. Served with white cheddar mashed potatoes and a sautéed vegetable medley
 2. Feta Cheese and Sun-Dried Tomato Stuffed Walleye - Served over white cheddar mashed potatoes with a drizzle of lemon thyme butter sauce.
 3. Seared Chicken Parmesan - Tender chicken breast crusted with aged Parmesan cheese and rapidly seared until golden brown. Served over white cheddar mashed potatoes and a sautéed vegetable medley.
 4. Manicotti – Fresh Pasta tubes filled with ricotta, mozzarella and parmesan cheeses. Baked in marinara sauce and finished with melted mozzarella.

8:00 Presentation – Mn/DOT's New Automated Landslide and Settlement Monitoring Program
 by Derrick Dasenbrock, P.E., Mn/DOT

(One professional development hour toward continuing education requirements for Professional Engineers is available).

Cost: \$25.00 members, \$30.00 non-members, and \$5.00 Full-time students, payable to MGS at the door.

Reservations: Requested by 12 Noon, Friday, March 5, 2010
 Please register via the website at <http://www.mngeotechnicalsociety.com/eventsmpls.asp>

(When registering, please keep in mind that MGS is responsible for payment of all meals reserved. If you register and cannot make the meeting, please try and find a replacement so MGS does not have to cover the cost of the unused meal. Thanks!)

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