



The 12th International Workshop on Micropiles

Kraków, Poland, June 11-14, 2014



Welcome from the Chairman



I would like to welcome all of you to Kraków for three days of camaraderie and sharing. Whether you have been to every IWM since 1997 or this 12th Edition of the Workshop is your first, we want you to feel welcomed and comfortable to share your experiences, questions and insight. This gathering is a workshop and we depend on free and open dialogue to provide us all with the most benefit possible as we share micropile experiences over the next couple days. Let's not forget, however, that the friendships made or rekindled here go beyond just micropile experiences and I trust we will all find time to

enhance our personal and professional networks.

So, enjoy your time in Kraków with ISM.

Allen Cadden, P.E., D.GE

Chairman, International Society for Micropiles



Week-At-A-Glance

Wednesday, June 11, 2014

3:00pm-6:00pm Qubus Hotel Lobby	Registration
5:30pm-6:00pm Board Room	Session Chair Meeting
6:00pm-8:00pm Qubus Hotel - Jazz Club	Welcome Reception

Educational Agenda

Thursday, June 12, 2014

All Technical Sessions in Meeting Room A

Technical Session 1	Allen Cadden, Moderator , (USA), <i>Schnabel Engineering, Inc.</i>
8:30am-9:00am	Welcome - Allen Cadden, P.E., D.GE. (USA), <i>Schnabel Engineering, Inc.</i> ; Jakub Sierant, MSc. Eng. (Poland), <i>TITAN POLSKA Sp. Z o.o.</i>
9:00am-9:10am	Introduction of Lizzi Family - Fedele Lizzi
9:10am-9:20am	Introduction of Lizzi Lecturer - Jim Bruce, P.Eng., (Canada), <i>Geo-Foundations Contractors Inc.</i>
9:20am-10:10am	Lizzi Lecture: Micropile Life Cycle - Experiences in Mature Markets and Expectations for New Markets Nadir Ansari, MEng, P.Eng. (Canada), <i>Isherwood Associates</i>
10:10am-10:30am	Lizzi Scholarship Recipient Lecture: Assessment of Soil-Micropile Interface Parameters Using 3D Numerical Modeling Maciej Szczygielski (Poland), <i>AGH University of Science & Technology</i>
10:30am-10:45am	Break
Technical Session 2	Ernst Ischebeck, Moderator , (Germany), <i>Friedr. Ischebeck GMBH</i> Innovations
10:45am-11:15am	Design Parameters of Micropile in Permafrost Sandy Ground Changho Choi, Research Fellow (Korea), <i>Korea Institute of Construction Technology</i>
11:15am-11:45am	The Influence of Hole Surface Treatment and Confinement Level in the Behaviour of the Connection Between RC Footing and Micropile Joao Veludo, Ph.D. (Portugal), <i>Polythecnic Institute of Leiria</i>
11:45am-12:15pm	Computer Modeling of Micropile Systems with Zsoil Andrzej Truty, dr.hab. Inz., (Poland), <i>Cracow University of Technology</i>
12:15pm-12:45pm	Current Design and Construction Practices for Micropile Supported Foundations of Electrical Transmission Structures in North America Nickolas Salisbury and Steve Davidow, P.E., S.E., (USA), <i>Crux Subsurface Inc.</i>
12:45pm-1:45pm	Lunch Ogien Restaurant

Week-At-A-Glance

Technical Session 3

Jouko Lehtonen, Moderator, (Finland), *Turku University of Applied Sciences*

Design and Load Testing #1

1:45pm-2:15pm

Micropile Foundations for Vertical and Horizontal Loads - Design Examples and Load Test Results

Bjorn Ischebeck, Dipl.Ing (Germany), *Friedr. Ischebeck GMBH*

2:15pm-2:45pm

Design of High-Capacity Micropiles for 2,900-ft Long Caracas-La Guaira Viaduct

Jesús Gómez, Ph.D., P.E., D.GE (USA), *Schnabel Engineering, Inc.*

2:45pm-3:15pm

Micropile Lateral Load Testing in Charleston, South Carolina, USA

William Wright, P.E. (USA), *Terracon Consultants, Inc.*

3:15pm-3:45pm

Micropile Performance and Durability after 15 Years Under Load

Walter Vanderpool, P.E. (USA), *Terracon Consultants, Inc.*

3:45pm-4:00pm

Break

Technical Session 4

Tom Armour, Moderator, (USA), *DBM Contractors, Inc.*

Case Histories #1

4:00pm-4:10pm

Hybrid Energy Micropiles in Underpinning Projects - Combination of Load Bearing Structures and Geothermal Energy Field

Rauli Lautkankare, Lecturer, MEng (Finland), *Turku University of Applied Sciences*

4:10pm-4:20pm

Development on the Micropile for Applying to Artificial Ground Above Railway Site

Young-Eun Jang, Ph.D., Student (Korea), *University of Science & Technology*

4:20pm-4:30pm

Design-Build-Test Process for High Capacity Micropiles: Construction Case Study on Dutchess Rail Trail Bridge Foundations, Poughkeepsie, NY

Dan Barron, E.I.T. (USA), *Buffalo Drilling Company, Inc.*

4:30pm-4:40pm

Modernization of Historical Constructions for the Silesian Museum Construction

Natalia Maca, MSc.Eng. (Poland), *TITAN POLSKA Sp. Z o.o.*

4:40pm-4:50pm

Slope Stabilization by Micropiles on Existing Roads in Northwestern Tunisia

Selma Khediri, Ph.D., (Tunisia), *Hydrosol Foundations*

4:50pm-5:00pm

Regional Rail Link Melbourne Widening of Rail Bridge Flyover Structure

Tom George (Australia), *Wagstaff Piling*

5:00pm-5:10pm

Preventing the Tilting of a Four Floor Residential Building with the Assistance of Micropiles Beneath the Foundation

Chavdar Kolev, Assoc. Prof., Ph.D. (Bulgaria), *University of Transport*

5:10pm-5:20pm

Self-Drilling Hollow Bars: Ground Anchor, Tension Pile or Soil Nail?

Chris Irvin, Technical Director (UK), *DYWIDAG-Systems International*

5:20pm-5:30pm

Use of Micropiles to Rehabilitate a High Rise Tower Foundations in Vancouver, B.C.

Matt Kokan, M.A.Sc., P.Eng. (Canada), *GeoPacific Consultants, Ltd.*

5:30pm-5:40pm

The Use of Micropiles as a Form of Underpinning of Existing Commercial Buildings Development of Ikea Hall in Gdansk

Marcin Blockus, Dr. inz. (Poland), *Ingeo Sp. Zo.o.*

Week-At-A-Glance

5:40pm-6:00pm Panel Session of Technical Session #4 Speakers
(Evening On Own)

Friday, June 13, 2014

Technical Session 5 **Dan MacLean, Moderator**, (Canada), *Con-Tech Systems Ltd.*
World Cup Event

8:30am-8:50am North American Region - Sunrise Powerlink Project
Nick Salisbury and Steve Davidow, P.E., S.E., (USA), *Crux Subsurface Inc.*

8:50am-9:10am South/Central America Region - Construction of a Venezuelan Viaduct
Jesús Gómez, Ph.D., P.E., D.GE (USA), *Schnabel Engineering, Inc.*

9:10am-9:30am European Region - Silesian Museum
Natalia Maca, MSc.Eng. and Jakub Sierant, (Poland), *TITAN POLSKA Sp. Z o.o.*

9:30am-9:50am Oceania/Asian Region - Life Extension of Existing High Voltage Transmission Tower Foundations using Micropiles
Robert Bollman (Australia), *Piling & Civil Australia*

9:50am-10:00am Session Question Period

10:00am-10:15am Break

Technical Session 6 **Andreas Brandner, Moderator**, (Austria), *IB-Brandner*
Slope Stabilization / Excavation Support

10:15am-10:45am Double Nickel Micropile Landslide Stabilization
Tom Armour, P.E., D.GE. (USA), *DBM Contractors, Inc.*

10:45am-11:15am Students' Visions on Micropile Wall Applications: How to Construct a Large Diameter Pile or an Underpass
Jouko Lehtonen, D.Sc. Tech (Finland), *Turku University of Applied Sciences*

11:15am-11:45am Micropile Wall Supporting a Complex Environmental Excavation
Mark Spence, P.Eng. (Canada), *Isherwood Associates*

11:45am-12:45pm Lunch
Ogien Restaurant

Technical Session 7 **Jim Bruce, Moderator**, (Canada), *Geo-Foundations Contractors, Inc.*
Design and Load Testing #2

12:45pm-12:55pm Combined Effects of Embedded Angle and Pile Spacing on Load Responses of Micropiles in Sands
Doohyun Kyung, Ph.D. Candidate (Korea), *Yonsei University*

12:55pm-1:05pm Micropile Wall - An Option to Develop Energy Barriers
Jouko Lehtonen, D.Sc. Tech (Finland) *Turku University of Applied Sciences*

1:05pm-1:15pm Experimental Study for Load Transfer Characteristics of Reinforcing Pile
Seonghun Cho, Graduate Student (Korea), *University of Science & Technology*

Week-At-A-Glance

1:15pm-1:25pm	New Micropile Database for World Wide Use Jussi Hattara, Beng. (Finland)
1:25pm-1:35pm	The Use of Micropiles as Part of a Challenging Development on a Steep Hill-side Site in Salcombe, Devon, UK Mike Turner, MSc. Eng., CEng. (UK), <i>Applied Geotechnical Engineering</i>
1:35pm-1:45pm	Recent Examples of Micropiling in the United Kingdom Paul Woodfield, BSC, (Hons), CEng., (UK), <i>Technik Ground Solutions</i>
1:45pm-1:55pm	Application of Micropiles to the Stabilization of a Deflected Old Tenement House Krzysztof Sternik, Ph.D., (Poland), <i>Silesian University of Technology</i>
1:55pm-2:15pm	Panel Session of Technical Session #7 Speakers

Saturday, June 14, 2014

Technical Session 8	Allan Herse - Moderator , (Australia), <i>Piling & Civil Australia</i> Foundation Support
8:30am-9:00am	Micropile Underpinning and Seismic Foundation Retrofit, Veterans Administration Medical Center, Memphis TN John Wolosick, P.E., D.GE. (USA), <i>Hayward Baker Inc.</i>
9:00am-9:30am	Micropile Foundations for Suspension Bridge in High Alpine Andreas Brandner, Dipl.-Ing. (Austria), <i>IB-Brandner</i>
9:30am-10:00am	High Capacity Micropiles in Weak Dolomitic Limestone for Crane Foundation Support - A Case History in Temporary Foundations Terry Holman, Ph.D., P.E. (USA), <i>Geosyntec Consultants</i>
10:00am-10:30am	Foundation on Micropiles of SCR - Installation at Siekierki Power Plant in Warsaw Przemyslaw Wojtowicz (Poland), <i>Keller Polska</i>
10:30am-10:45am	Break
Technical Session 9	Mike Turner - Moderator , (UK), <i>Applied Geotechnical Engineering</i> Case Histories #2
10:45am-11:15am	A Case 2 Micropile Network Employed at a Rapid Excavation Railway Project Jim Bruce, P.Eng. (Canada), <i>Geo-Foundations Contractors, Inc.</i>
11:15am-11:45am	Application of Micropiles for Uplift Control and Foundation of Large Access Ramps of an Underwater Road Tunnel in Gdansk Oskar Mitrosz, M.Sc.Eng. (Poland), <i>Keller Polska</i>
11:45am-12:15pm	Development of a Design, Installation and Testing Feedback Model for Micropiles in Projects without Extensive Geotechnical Information Allan Herse, CPEng (Australia), <i>Piling & Civil Australia</i>
12:15pm-12:45pm	Micropile Foundation of a Large Bridge Structure on Weak Ground Jakub Sierant, MSc. Eng. (Poland), <i>TITAN POLSKA Sp. Z o.o.</i>
12:45pm-1:00pm	Closing Remarks

Week-At-A-Glance

Friday, June 13, 2014

3:00pm-6:00pm [Kraków Walking Tour](#)

Please meet in hotel lobby at 2:45pm

Kraków is the most interesting and one of the most often visited cities in Poland - located on the Vistula River, in the Cracow Gate, Nida Basin and Carpathian Plateau. It is one of the oldest Polish cities with more than thousand years of history, with many valuable architectural objects. It also operates a number of institutions and cultural institutions that collect priceless monuments. In the past, the town belonged to the Hanseatic League uniting the most important commercial centers in Europe. Until 1795, Krakow was the capital of the Polish and till 1611, the seat of rulers of the Polish state. In the years 1596-1795, until the third Poland partition, as the capital of the Republic it shared capital features with Warsaw, which finally became the city of residency King.



The Royal Route - the highlight of the Old Town, which begins at St. Florian's Church in the northern part of the Medieval Old Town, continues along Florianska, Grodzka, and Kanonicza Streets, and ends at Wawel Castle – the old residence of Polish monarchs, which was built in the 14th century. With a number of prominent historic landmarks on its way, The Royal Route is a true reminder of the golden age in Kraków's history.

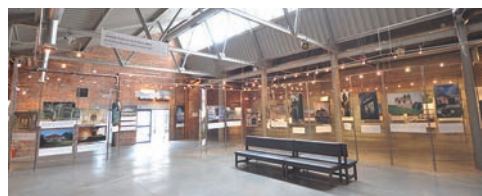
The tour also provides for the crossing of the Main Market Square with St. Mary's Church, City Hall and Town Hall Tower, Little Square and St. Mark's Square. Holy Spirit Square, Ancient Kraków city walls, Barbican, Florian's Gate, Kraków academic pride - Collegium Maius and Novum, Bishop's Palace, the Royal Route (Grodzka Street), Wawel Castle, Skalka Church, Corpus Christi Church, and Kazimierz together with Synagogues, Szeroka Street, Heroes' of Ghetto Square, Schindler's factory, and the Old Ghetto Walls.

This tour is included in your registration fee.

7:00pm-7:30pm [Awards Reception at the Jewish Museum Galicia](#)

Please meet in the hotel lobby for transportation to the Jewish Museum Galicia at 6:30pm

Please join us as we wrap up the Workshop at the Galicia Jewish Museum for the Awards Reception and Dinner. This museum exists to commemorate the victims of the Holocaust and to celebrate the Jewish culture of Polish Galicia, presenting Jewish history from a new perspective.



7:00pm-10:00pm [Awards Dinner](#)

Saturday, June 14, 2014

1:00pm-6:00pm [Wieliczka Salt Mine Tour and Lunch](#)

Please meet in the hotel lobby at 12:45pm. Please be sure to bring warm clothing as temperature underground can range between 14° - 16° Celsius (57°F - 60°F).

Magnificent chambers chiseled out in rock salt. Amazing underground saline lakes, majestic timber constructions and unique statues sculpted in salt. Almost 3 kilometers of meandering corridors, 800 steps to climb of which 350 have to be descended to reach the depth of 135 meters underground are the most amazing parts of main visiting route of "Wieliczka" Salt Mine which starts at the Danilowicz Shaft. Visitors will also have the opportunity to see a completely different image of the mine hearing the legend about Princess Kinga and how she brought the salt treasure to Polish land. Half way along the route you will see the wondrous chapel dedicated to her and the saline works of art decorating the chapel.



Note: You must have pre-registered for this event.

Thank You to Our Generous Sponsors!

Host Sponsor



Platinum Sponsors

ChemGrout[®]



Con-Tech Systems Ltd.[®]
Pioneering Geo-Support Solutions



GEO-FOUNDATIONS
A Subsidiary of Hayward Baker Canada, Ltd.



Gold Sponsor

ATKINS



Thank You For Attending The 12th International Workshop On Micropiles!

