Energy Foundations, Applications and Market Opportunities

Design Guidance, Standards and Contractual Procedures/Work Flow

Good Construction Practice and Successful Case Histories

This NEW webinar series will present the background, resources, applications, construction work flow and management considerations required to design and construct effective energy foundations. Results from recently conducted research will answer commonly asked questions about system design and effectiveness. Industry accepted design guidance and strategies for introducing energy foundation systems into project work processes will be highlighted.

Information will also be provided on long term management and operations of energy foundation systems to ensure the designed heating and/or cooling demands can be optimized to enhance return on investment.

Some highlights:
- Research results
- Use of Ground Source Heat Pump Association (GSHP) document for design,
- Energy foundations applications
- Bridge deck deicing opportunities
- GSHP mechanical systems
- Good working practice
- Work flow considerations

Who should attend?
- Local developers
- Facility managers of hospitals
- Educational facilities
- Local government representatives
- Architects
- Consultants (geotechnical, structural, mechanical and electrical)
Introduction and Overview of Energy Foundations, Applications and Market Opportunities

Tony Amis, M.Sc. | GI Energy
Guney Olgun, Ph.D. | Missouri University of Science and Technology

Definition of energy foundations, benefits and energy outputs, brief project examples, and estimated cost savings.

Current Research Conclusions on Energy Foundations

Peter Bourne-Webb, Ph.D., M.Sc., DIC | Cementation Skanska

Current research conclusions on common questions about energy foundation system efficiency and reliability.

Research Results for Tunnel and Slurry Wall Projects

Alessandro Rotta Loria, Ph.D., P.E. | Northwestern University

Analysis and design of energy walls and tunnels, including modeling, behavior and performance.

Q&A and Closing Remarks
**Wednesday | July 15, 2020**

11:00 a.m.-12:30 p.m. EDT | 3:00 p.m.-4:30 p.m. GMT

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**11:00 a.m. - 11:20 a.m.**

**Introduction and Design Guidance, Standards and Contractual Procedures/Work Flow**

*Tony Amis, M.Sc. | GI Energy*

Overview of generally accepted design guidance, defining design parameters and thermal loading, and considerations for long term management and optimization.

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**11:20 a.m. - 11:40 a.m.**

**Plastic Piping Materials and Equipment**

*Lance MacNevin, P.Eng. | Plastic Pipe Institute*

Descriptions of geothermal pipe materials and associated standards, tools and resources.

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**11:40 a.m. - 12:00 p.m.**

**Ground Loop Design**

*Ed Lohrenz, B.E.S., CGD | GEOptimize*

Input parameters and design processes for sizing ground source heat pump components to meet heating and cooling demands.

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**12:00 p.m. - 12:20 p.m.**

**Thermal Conductivity Testing of Energy Foundations**

*Fleur Loveridge, B.A., M.Sc., Ph.D., C.Eng., MICE, FGS, Cgeol | University of Leeds*

Definition, procedures and recommendations for thermal response and thermal conductivity testing of soils.

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**12:20 p.m. - 12:30 p.m.**

**Q&A and Closing Remarks**

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*Langan*
**Introduction and Good Construction Practice and Successful Case Histories**

*Tony Amis, M.Sc.* | GI Energy

Recommendations, roles and responsibilities and lessons learned related to installation, QC/QA, and laboratory and field testing of energy foundation solutions.

**Overviews of Successful Case Histories**

*TBA*

**Use of Geothermal Solutions for Bridge Deck De-icing**

*Guney Olgun, Ph.D.* | Missouri University of Science and Technology

Modeling, research results and performance of geothermal energy foundation systems used to melt snow and ice accumulation.

**Q&A and Closing Remarks**

11:00 a.m. - 11:40 a.m.  
11:40 a.m. - 12:00 p.m.  
12:20 p.m. - 12:30 p.m.

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