

Agenda

Presented by Jay Egg

Applying the Laws of Thermodynamics to Geothermal Heat Pumps and Indoor Thermal Comfort

- Applying the laws of thermodynamics to HVAC systems
- Understanding the refrigeration cycle
- Calculating heating and cooling loads
- The effect of air flow and insulation
- How comfort is measured
- Understanding efficiency

Understanding Earth Loop Systems

- Architecture of closed loop systems
 - Horizontal ground loops
 - Vertical ground loops
- Applications for open loop systems
 - Single well
 - Two-well systems
- Evaluating topography
- Measuring soil conductivity
- Environments for ground-loop systems: beneath yards, fields, parking lots, and buildings

Designing Geothermal Systems

- Determining loop type
- Making heat loss calculations
- Sizing the unit
- Sizing the loop

Choosing System Components

- Basic components of geothermal heat pump systems:
 - pump, compressor, heat exchanger
- Forced air systems
- Hydronic systems
- Domestic hot water options

Evaluating the Benefits of Geothermal Systems

- Incentives to use geothermal
- Measuring performance
- Calculating savings and cost
- Environmental benefits
- Tax credits, incentives and rebates

Maintaining Geothermal Systems

- Performing routine maintenance

Geothermal Heating and Cooling: Technology and Applications

Live, Interactive Webinar - Tuesday, November 17, 2020

Learning Objectives

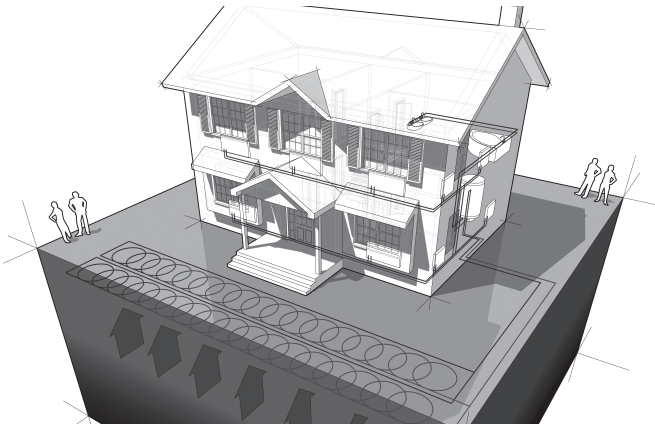
You'll be able to:

- Understand** the context and verbiage of the (geothermal) clean heating and cooling technology.
- Identify** the importance, adaptability, and benefits of the technology as vital to infrastructure and building construction.
- Understand** why the technology is important to health, human safety, and imperative industry goals.
- Internalize** our collective capability and responsibility to make these changes.
- Leave** with the intent to offer, specify, and apply the technology in every application going forward.

HalfMoon Education Online Learning

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| Understand earth loop systems | Explore vertical and horizontal closed loop systems |
| Identify the environmental and economic benefits of geothermal systems | Learn about designing forced air and hydronic systems |
| Learn how to make heat loss calculations | Discuss how to maintain geothermal systems |

Continuing Education Credits

- | | |
|---|--------------------------|
| Professional Engineers
6.5 PDHs | AIA
6.5 LU HSW |
| Architects
6.5 CE Hours | |

EggGeothermal is a voting member on the International Ground Source Heat Pump Association (IGHSPA) Advocacy Committee, and the Uniform Solar Energy & Hydronics Technical & the Uniform Mechanical Code Committee for the International Association of Plumbing and Mechanical Professionals (IAPMO). Mr. Egg is a training and curriculum writer/facilitator for IGSHPA and for the U.S. Department of Energy (DOE) and past technical advisor to the New York State Energy Research and Development Authority (NYSERDA) & the Province of Ontario, Canada on renewable heating and cooling.

Recordings of this webinar are available for purchase. See registration panel for more information and please refer to specific state licensing rules or certification requirements to determine if this learning method is eligible for continuing education credit.

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