

Geothermal Education Program – Houston, Texas

Get up to speed with state-of-the-art information about “Geothermal” technology and its applications

USING THE EARTH’S RENEWABLE ENERGY

Tuesday, March 6, 2012

Crowne Plaza Houston River Oaks

2712 Southwest Freeway, Houston, TX 77098

Ground Source Heating & Cooling for Residential and Commercial Properties
Latest Technologies, Economic Advantages, Environmental Impacts and Regulations



Presented by:

American Ground Water Trust (AGWT)

50 Pleasant Street, Concord, NH
501(c)(3) education organization



THANK YOU TO OUR SPONSORS:

Baroid IDP

ClimateMaster

Preferred Pump

Redding Linden Burr

Edge Geo LLC

GEO



In cooperation with:



GEO and International Ground Source Heat Pump Association

Continuing Education Credit

Architect Credits – 7.25 LUs (FOR HSW AND SUSTAINABLE DEVELOPMENT) THROUGH THE AIA

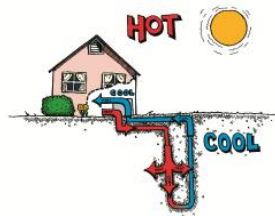
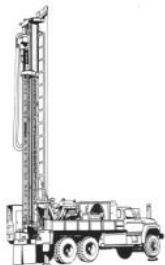
American Society of Home Inspectors – 7.0 ASHI® CE CREDITS

IGSHPA Accredited Installers – 0.75 CEU's

Texas Water Well Contractors – 8 Hours Approved by the TX Dept. of Licensing and Regulation (course 7219)

Green Building Certification Institute Provider – GBCI Continuing Education Hours Pending Approval

Call for details about other professions - 800-423-7748



WHO SHOULD ATTEND?

This program is geared to potential end-users and to professionals who design, install, inspect, approve, recommend or regulate geothermal systems. Geothermal is the technology of choice among those considering “green energy” options for commercial or residential installations.

Energy company engineers, architects, planners & conservation commissioners, building code inspectors, environmental health professionals, home inspectors, water well contractors, HVAC professionals, real estate agents, home builders and developers, town officials (Conservation, Zoning, Planning), water testing specialists etc. should not miss this opportunity to get up to speed with this technology. It will be coming to buildings near you!

WHAT IT IS ALL ABOUT

Geothermal, (Ground source heating and cooling) (GSHC) technology provides a proven method for saving energy costs for heating, cooling and hot water generation. Thousands of homes, businesses and manufacturing plants across the nation are already taking advantage of these energy-efficient conditioning systems. GSHC systems operate at significantly lower costs than traditional gas, oil or electric-based installations. National benefits from geothermal installations include less demand for energy generation capacity, reduction in green-house gas emissions and a reduced dependence on imports of fossil fuels. Installation of ground source systems involves accessing the sub-surface by excavation or by drilling vertical bores. Because the sub-surface heat-exchange process occurs near or beneath the groundwater table, environmental and water resource regulatory issues make it important to “do the job right.” Correct design, materials specification and installation are critically important to maximize efficiency and minimize risk. There is not a one-size-fits-all for geothermal.

- The Program will:
- ➔ Show the professional connections among designers, manufacturers and installers
 - ➔ Provide the “state of the art” in terms of design options and pay-back calculations
 - ➔ Demonstrate the environmental and strategic benefits of the technology
 - ➔ Explain the tax-breaks, incentives and subsidies available for installing geothermal
 - ➔ Dispel myths about the effectiveness, reliability & safety of ground source systems
 - ➔ Explain industry-accepted installation, operation and maintenance practices
 - ➔ Provide an update on state, local and regulatory oversight

The program draws on the experience & expertise of industry and agency professionals and will provide a unique opportunity for exchange of information among policy makers involved in energy issues and specialists involved with the design, construction and permitting of ground source geothermal systems for cooling and heating.

PROGRAM

7:15 – 8:00 REGISTRATION

8:00 - 8:15 ENERGY & WATER

Jacqueline Daoust, Environmental Specialist, American Ground Water Trust, Concord, NH

- Concept of Resource Sustainability
- Environmental Issues related to “Geothermal” technology
- Role of “Independent Education” in energy issue awareness
- The importance of “doing it right” for geothermal installations (No shortcuts – No one-size-fits-all)

8:15– 9:00 THE STATUS OF THE “GEOHERMAL” INDUSTRY

Tracy Tee, District Manager, ClimateMaster, Moore,OK

- Geographic distribution of geothermal installations
- Trends in the growth of geothermal applications
- Market potential and market predictions for the geothermal industry
- How the Geothermal industry is organized nationally, regionally and locally
- What appear to be the barriers to greater acceptance of geothermal installations?

9:00– 9:45 GROUND SOURCE EARTH COUPLING DESIGN PRINCIPLES

Jodi Hamlin, Territory Manager South Texas & New Mexico, WaterFurnace International Inc, Katy, TX

- Explanation of the methods:
 - Closed loop – vertical, horizontal (slinky)
 - Open system – to surface, to diffusion
 - Heat exchanger systems for surface water (ponds and lakes)
- Weighing positives and negative aspects of each earth coupling method
- Design considerations for geothermal wells in bedrock vs. shallow sand & gravel wells
- What makes one well more efficient than another for thermal transfer?

9:45 - 10:00 NETWORKING BREAK

10:00– 10:45 GROUND SOURCE HEAT PUMPS - THE FUNDAMENTALS

Greg Tinkler, Senior Geothermal Analyst, Redding Linden Burr Consulting Engineers, Houston, TX

- Understanding the basic physics of the heat transfer process
- Explanation of terminology (geoexchange, geothermal, ground source, BTUs, tons etc.)
- What happens to the heat transferred underground – where does it go?
- How to measure the efficiency of geothermal systems
- What makes a “good” system? What should a home inspector, Realtor or purchaser look for?
- Aquifer thermal energy – a technology whose time is imminent?
- Computer models available for geothermal design

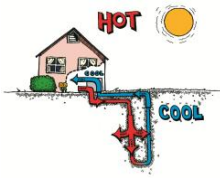
- 10:45 – 11:30 GEOEXCHANGE INSTALLATIONS-STATE and LOCAL RULES and REGULATIONS**
W. L. Stribling, Project Manager, Texas Department of Licensing and Regulation, Austin, TX
- Current state regulatory requirements
 - Permit application requirements for installation of a geothermal well/system
 - Well construction requirements
 - Licensing requirements for well and heat-exchange equipment installers
 - Environmental and health concerns from geothermal installation/ operation
- 11:30 – 12:15 STATE AND FEDERAL ENERGY INITIATIVES - GROUND SOURCE ENERGY OVERVIEW**
Pamela Groce, Program Manager, Innovative Energy Demonstration Program, Texas State Energy Conservation Office, Austin, TX
- Overview of Federal and state energy Initiatives
 - Reducing electrical energy demands and the need for infrastructure investment
 - Potential impact of geexchange technology on energy security
 - Ground Source technology to reduce CO2 emissions
- 12:15– 1:15 LUNCH**
- 1:15 – 2:00 GEOEXCHANGE SYSTEM INSTALLATIONS The LEED PERSPECTIVE**
Mike Langton, Associate Principal and Project Manager, Redding Linden Burr Consulting Engineers, Houston, TX
- Overview of the various Green Building rating systems:
 - United States Green Building Council (USGBC)
 - Overview of the LEED rating systems - Commercial vs. Residential
 - How is a building's heating and cooling system (energy-use) evaluated in the LEED rating system?
 - How do Ground Source Heating and Cooling systems achieve LEED rating points?
 - Role of Geothermal in energy-neutral design for commercial buildings
- 2:00 – 2:45 GEOEXCHANGE WELL / BORE CONSTRUCTION AND LOOP INSTALLATION**
Jeff Blinn, Senior Technical Specialist, Baroid, Houston, TX
- Criteria for selecting a drilling contractor for geothermal projects
 - Matching the drilling equipment and drilling methods to the geological and site conditions
 - Collecting geologic data for the geothermal designer
 - Installing the vertical loop into the drilled bore
 - Grouting material properties and options for geothermal projects
 - Techniques of grout placement to meet geothermal design specifications
- 2:45 – 3:00 NETWORKING BREAK**
- 3:00 – 3:45 FINANCING INNOVATIONS FOR GEOTHERMAL INSTALLATIONS**
Paul Bony, Director of Residential Market Development, ClimateMaster, Montrose, CO
- Best practices for implementation based on financing and geexchange programs
 - Consumer-friendly long term financing for "new" or "retrofit"
 - How utilities can establish geexchange by leveraging federal tax credits
 - On-Bill financing methods
 - Utility loop ownership – own the loop and recover cost over time
 - Payback calculations for geothermal
 - Making space conditioning costs a fixed expense
 - Thermal purchase agreements
- 3:45 – 4:30 CASE STUDIES OF SUCCESSFUL, LOCAL GEOTHERMAL PROJECTS**
Don Penn, Principal, Image Engineering Group, Grapevine, TX
- 4:30 ADJOURN**

Program Venue - Hotel Information

Crowne Plaza Houston River Oaks - 2712 Southwest Freeway, Houston, TX 77098

To obtain the special sleeping room rate of \$109 call: (713) 523-8448.

We have established a courtesy block of rooms under "American Ground Water Trust."



Another Education Program from:
American Ground Water Trust
 50 Pleasant Street (Suite 2)
 Concord, NH 03301



GEOHERMAL

Ground Source Heating & Cooling Workshop

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- ☞ **NATURAL GAS HAS ENVIRONMENTAL PRESSURES**
- ☞ **NUCLEAR ENERGY IS LESS CERTAIN**
- ☞ **OIL PRICES ARE RISING**
- ☞ **GEOHERMAL IS GROWING!**

!! DON'T GET LEFT BEHIND !!

GEOHERMAL PROGRAM - REGISTRATION FORM

Tuesday, March 6th 2012 - Crowne Plaza Houston River Oaks

Registration (General)	\$195	<input type="checkbox"/>
Registration (AGWT Members)	\$150	<input type="checkbox"/>
Registration (Government- fed, state, local)	\$150	<input type="checkbox"/>
Registration (Full-time Student) (ID required)	\$ 90	<input type="checkbox"/>
CD of Presentations	\$ 20	<input type="checkbox"/>
Exhibit Table (does not include registration)	\$200	<input type="checkbox"/>

TOTAL \$ _____

PAYMENT: Check *[payable to: American Ground Water Trust]*
 AMEX Visa MasterCard PO

Credit Card or PO No. _____ Expiration _____

Cardholder Name _____

Registration Name _____

Title/Position _____

Company/ Organization _____

Address _____

City _____ State _____ Zip _____

Phone _____ Fax _____ E-Mail _____

CANCELLATION POLICY

- Cancellations received in the AGWT office by 5 pm EST 5 days prior to event will receive a full refund less \$25.
- For cancellation 4-2 days prior to the there is a 50 % refund.
- Cancellations one day prior to the start of the event or on the day of the event are considered "No Shows" and no refund will be made - (substitutions gladly accepted).
- The Trust will not cancel a program because of bad weather conditions. Except that, as the result of an event cancellation resulting from, (but not limited to) circumstances such as a state mandatory evacuation or a fire at the program facility, the Trust will reschedule the event and honor registrations as payment for the new event.

Return by mail: American Ground Water Trust, 50 Pleasant Street, Concord, NH 03301

Return by fax: (603) 228-6557 Call to register (800) 423-7748

Register on line <http://www.agwt.org> (Conferences/workshops)