

CONTINUING EDUCATION

AIA ARCHITECT CREDITS - 6.25 LUS (FOR HSW AND SUSTAINABLE DEVELOPMENT) THROUGH THE AIA  
AMERICAN SOCIETY OF HOME INSPECTORS - 6.0 ASHI® CE CREDITS (PENDING RENEWAL APPROVAL)  
NY HOME INSPECTORS - 6.25 CREDITS PENDING THROUGH THE NY DIVISION OF LICENSING SERVICES  
CT HOME INSPECTORS - 6.25 CE HRS CREDIT PENDING THROUGH THE CT DEPT OF CONSUMER PROTECTION



**GO GREEN and reduce costs in New York City**  
USING THE EARTH'S RENEWABLE ENERGY

**GROUND SOURCE HEATING & COOLING FOR  
BUSINESS, COMMERCIAL, AND MULTIPLE  
OCCUPANCY PROPERTIES IN NEW YORK CITY**

Manhattan, Brooklyn, Queens, The Bronx, Staten Island

**Latest Technologies, Economic Advantages,  
Practical Applications and Regulations**

Presented by

**American Ground Water Trust**

50 Pleasant Street, Concord, NH

*Ground Water Information, Awareness & Education Since 1986*



*In Cooperation with:*



International Ground Source Heat Pump Association

Geothermal Heat Pump National & International Initiative



The American Ground Water Trust thanks:

**Building Owners & Managers Association of Greater New York, Inc.**

for distributing program information to its members

**Monday, October 5th, 2009 - 9:00 am - 4:30 pm**

**The Westin Hotel New York at Times Square  
270 West 43rd Street, New York, NY 10036**

**What's It All About?**

Over 50 properties in New York City now benefit from using ground source heating and cooling (GSHC) technology. It is a proven method for saving significant amounts of energy for heating, cooling and hot water generation. [GSHC is also referred to as GeoExchange and geothermal]. Thousands of homes, businesses, commercial properties 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 GeoExchange installations include less demand for energy generation capacity, reduction in green-house gas emissions, reduction in carbon footprint and reduced national dependence on imports of oil and other fossil fuels.

By definition, installation of ground source systems involves accessing the sub-surface by either excavation or by drilling vertical bores. The technology is changing rapidly, and with government

incentives, and more sophisticated designs available, building owners have a great opportunity to become more energy efficient in heating and cooling buildings and improve NY City's air quality.

***This one-day program will:***

- ➔ Showcase successful geothermal installations in Manhattan and adjoining Boroughs
- ➔ Explain the pay-back economics of switching to geothermal for heating & cooling energy
- ➔ Define the "state of the art" in terms of geothermal system design options
- ➔ Demonstrate the feasibility, reliability and safety of ground source installation in NYC
- ➔ Explain industry-accepted installation, operation and maintenance practices
- ➔ Provide an update on state, local and regulatory oversight recommendations
- ➔ Review new Federal Tax & Grant incentives

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

**Who Should Attend?**

This program will be of value to building owners and managers and to professionals who design, install, inspect, approve, recommend or regulate these systems. This technology has the potential to become the heating & cooling (HVAC) system of choice among those looking for cost savings and "green energy" alternatives for business, commercial and multiple occupancy building installations.

Energy company engineers, architects, mechanical engineers, planners, building code inspectors, HVAC professionals, real estate agents, developers, city officials (conservation, zoning, planning, energy) should not miss this opportunity to get up to speed with this technology. It will very soon be coming to a building near you!

**American Ground Water Trust**

The American Ground Water Trust is a national not-for-profit public education organization. The Trust's mission:

- ◆ Promoting efficient and effective ground water management
- ◆ Communicating the environmental and economic value of ground water
- ◆ Showcasing ground water science and technology solutions
- ◆ Increasing citizen, community and decision-maker awareness
- ◆ Facilitating stakeholder participation in water resource decisions

**Program**

8:00 – 9:00      **REGISTRATION and Continental Breakfast**

9:00 – 9:15

**BACKGROUND TO DEVELOPMENT OF GEOEXCHANGE TECHNOLOGY AND EDUCATION**  
**Andrew Stone**, Executive Director, American Ground Water Trust, Concord, NH

9:15 – 10:00

**SUCCESS STORIES FOR GROUND SOURCE INSTALLATIONS**

- ◆ **Jack DiEnna**, Executive Director, Geothermal National & International Initiative, Washington, DC
- Typical payback period and return on investment
- How geothermal installations add equity value to a property
- Servicing and maintenance needs and costs for geothermal systems
- The relationship among architect, system designer and installer (Who is selling to whom?)

10:00 – 10:15

**A GREENER GREATER NEW YORK**

- ◆ **Tate Rider, New York City Economic Development Corporation, Renewable Energy Program**
- Description of Mayor Bloomberg's PlaNYC 2030 Vision
- NYC Renewable Energy Initiatives

10:15 - 10:45

**GEOHERMAL APPLICATIONS IN NEW YORK CITY**

- ◆ **Alex Posner, NYC Department of Design and Construction, Long Island City, NY (invited)**
- NYC DDC, Office of Sustainable Design Green Building Initiatives
- Description of NYC DDC's geothermal projects
- NYC DDC's on-line Geothermal Heat Pump Manual

10:45 – 11:00 **BREAK**

11:00 – 12:00

**GROUND SOURCE EARTH COUPLING DESIGN PRINCIPLES**

- ◆ **Carl Orio, Principal, Water Energy Design, Hampstead, NH**
- Explanation of the methods available for New York City buildings
- Weighing positive and negative aspects of each earth coupling method
- Design considerations for geothermal wells in bedrock vs. sand & gravel wells
- Conditions necessary for effective and efficient thermal transfer
- Common misconceptions about geothermal earth coupling
- Examples of NY installations: General Theological Seminary (w/ John Rice and John Rhyner), 1400-5th Ave., redesign of the Statue of Liberty pavilion (with Andrew Collins), and others

12:00 – 12:15

**GEOHERMAL INSTALLATIONS IN THE CITY OF BERLIN, GERMANY**

- ◆ **Andreas Wicklein, pigadi GmbH, Berlin, Germany and Jim Bailey, Kleinfelder, Bellevue, WA**
- Typical design and operation of Berlin's geothermal installations
- Projections for growth of geothermal technology in Europe

12:15 – 1:15 **LUNCH** (provided)

1:15 – 2:00

**AQUIFER THERMAL ENERGY STORAGE (ATES)**

- ◆ **Lynn Stiles, IF Technology USA, Cape May, NJ**
- Background to the installation and operational success of hundreds of ATES installations in Europe
- Report on design, costs and benefits of an ATES installation in *Pomona*, New Jersey
- Feasibility of ATES in downtown and urban areas

2:00 – 2:45

**GEOLOGIC AND HYDROGEOLOGIC CONTROL ON SELECTING AND DESIGNING EARTH COUPLINGS**

- ◆ **John Rhyner, Senior Project Manager, P.W. Grosser Consulting, Bohemia, NY**
- Subsurface conditions due diligence
- Borough-by-borough review of earth-coupling options
- Significance of depth to groundwater and bedrock for standing column wells and closed loop systems
- NYC requirements for drilling near public water supply tunnels
- Lessons Learned from construction of standing column wells at the General Theological Seminary, Manhattan

2:45 – 3:30

**GEOHERMAL HEAT PUMP SYSTEM DESIGN FOR LARGE SCALE METROPOLITAN PROJECTS**

- ◆ **John Rice**, Partner, AKF Engineers, New York, NY
- What is a geothermal heat pump
- Types of indoor systems and equipment: Water-to-Air, Water-to-Water, Low Temp HW
- Rated capacities and efficiencies of geothermal heat pumps
- Case studies:
  - Closed Loop - Greenburgh Public Library
  - Open Loop - Brooklyn Navy Yard, Tuckahoe School
  - Standing Column Wells - General Theo. Seminary, Ossining Library, BPCPC
  - River Water – Battery Park City Authority Pier A

3:30 – 4:00

**GEOHERMAL OPEN LOOP WELL OPTIMIZATION**

- ◆ **Jim Schaefer**, Principal Hydrogeologist, Kleinfelder, Bohemia, NY
- Up-front exploration to confirm sustainable groundwater yield and quality
- Proper well design/construction
- Long-term well optimization
- Well rehabilitation techniques

4:00 – 4:25

**GEOEXCHANGE INSTALLATIONS - RULES and REGULATIONS**

- ◆ **Paul Kolakowski**, Project Engineer, NYS Dept. of Environmental Conservation, Albany, NY
- Which agencies (federal, state, local) have jurisdiction over geothermal installations?
- Current state regulatory requirements and “Paperwork” for installation of geothermal systems
- Environmental & water resources concerns from drilling, heat exchange or well failure
- Licensing requirements for geothermal well and heat-exchange equipment installers

4:25 – 4:30

**PROGRAM WRAP-UP, CEU SIGN-OUT AND ADJOURN**

Print Registration Page below

or

Register online at

[http://www.agwt.org/events/2009/09NYC\\_GSHC\\_Reg.htm](http://www.agwt.org/events/2009/09NYC_GSHC_Reg.htm)

**Registration Form**

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PRE-REGISTRATION	CHECK BOX
General	\$300 <input type="checkbox"/>
Government Employees: Federal, State, Local	\$250 <input type="checkbox"/>
AGWT Corporate Members \$250+Level	\$200 <input type="checkbox"/>
NY Building Owners Association Members	\$200 <input type="checkbox"/>
Student – ID required at registration check-in	\$150 <input type="checkbox"/>
Exhibit Table (does not include registration)	\$300 <input type="checkbox"/>

For more information about being a sponsor or exhibitor visit the conferences/ workshops section at [www.agwt.org](http://www.agwt.org) or call (800) 423-7748

Registration includes handouts, coffee breaks and lunch. Participants will receive (post -event) a CD with pdf versions of the PowerPoint presentations

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**Return by mail:** American Ground Water Trust, 50 Pleasant Street, Concord, NH 03301 Tel (603) 228-5444

**Return by fax:** (603) 228-6557 **Register on line:** [www.agwt.org](http://www.agwt.org)

**CANCELLATION POLICY**

- Cancellations received in the Trust office by 5 pm ET 5 days prior to event will be granted a full refund less \$25.
- Cancellation 4 days or less, prior to the event will receive a 50 % refund.
- Cancellations on the day of the event are considered "No Shows."
- Refunds will not be granted for "No Shows" (substitutions gladly accepted).
- The Trust will not cancel a conference 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.