



Thank you for considering Water Energy Design.

Since 1974 our design team has been providing responsible earth coupling and geothermal system design. Having been involved with over 15,000 successful projects since our inception we are uniquely qualified to provide you and your partners with an effective set of guidelines toward a geothermal system that takes maximum advantage of this highly-efficient technology.

Here is a typical list of the various design products we currently provide. Please call 603-329-8122; Erin Sweeny ext. 235 or Chris Orio ext. 223; also toll free 800-436-6017, for further information.

Phase I – Feasibility

- a. Coordinate Preliminary heating & cooling load for feasibility
- b. Estimate annual heating /cooling full load hours from federal local weather data and ASHRAE tables
- c. Evaluate local geology information for geothermal suitability
- d. Determine suitability of site for proposed earth-coupling deployment
- e. Recommend most appropriate geo earth-coupling method
- f. Include earth-coupling method concept schematic
- g. Prepare results/assumptions for estimated comparison between geoexchange and fossil based heating and cooling
- h. Determine present and estimated future energy unit costs based upon preliminary heat gain/loss information
- i. Estimate geothermal heat pumps costs as compared to a fossil based system
- j. Compute a ten-year cash flow estimate for heating, cooling, domestic water heating and maintenance for the project. Federal, local or utility incentives and rebates are not included in this estimate

Phase II - Geothermal system bid documents

- a. Review and adopt MEP published heat loss/gain of project (before starting any design activity)
- b. Specify number, depth and type of boreholes/earth elements based on load information furnished
- c. Identify borehole locations with project's civil engineer/architect after input from MEP
- d. Provide water flow & pump requirements – *earth-coupling portion
- e. Specify piping & flow component requirements for earth-coupling design
- f. Create recommended bid/design specifications and drawings for *appropriate earth coupling method
- g. Interface with *geothermal heat pumps as specified by mechanical engineer (schematic only)
- h. Interface with controls *as specified by mechanical engineer (concept)
- i. Create single line block diagram schematics for *complete geothermal system
- j. Provide earth-coupling, outside component specification and layout of outside portion of system
- k. Draft system operational sequence

Note: In-building schematics only. No in-building layouts

Water Energy Design is pleased to provide Phase III Construction Support and Phase IV Commissioning Assistance estimates once DD or CD documents are released.

Phase III - Earth-coupling construction support

- a. Advise on earth-coupling and qualified geothermal contractor selection
- b. Approve *earth-coupling specific component submittals
- c. Review well and associated component costs
- d. Assist owner with earth-coupling related permit application process
- e. *Modify earth-coupling specific designs as required by developing conditions
- f. Provide earth-coupling specific related periodic site visits
- g. Comment as required on earth-coupling related RFI's
- h. Comment as required on earth-coupling related change orders

III. A - *When Water Energy Design specified equipment is deployed through Water Energy Distributors, Inc.*

- a. Approve overall geothermal delivery system and related trim items submittals (Earth through heat pump output)
- b. Modify earth-coupling designs as required by developing conditions
- c. Provide final delivery system sign-off

Phase IV - Commissioning assistance

- a. Advise on commissioning of *earth-coupling installation and related pump selection
- b. Assist earth-coupling contractor in start up and balancing of earth-coupling system as applicable

IV. A - *When Water Energy Design specified equipment is deployed through our parent, Water Energy Distributors, Inc. at minimal or no cost*

- a. Advise on earth coupling, heat pump and related system elements through system output
- b. Provide comprehensive sequence of operations documentation for geothermal system through heat pump output point
- c. Assist various geothermal earth and heat pump contractors in start up and balancing of system through heat pump output

V - Knowledge based Geothermal Support

- a. General verbal and/or written support for questions on geothermal applications
- b. Review of existing geothermal systems – by HELP DESK – geothermal product blind
- c. Trainings, presentations, site visits and meetings
- d. Technical publications

**Water Energy Design employs various US produced geothermal heat pumps as design guide when defining all contracted design activity documentation. If another manufacturer's heat pumps are used by MEP as design guide, the specific earth requirements for the chosen heat pumps must also be provided. This required information includes, but is not limited to, design parameters such as flow rates, entering and exiting water temperatures, pressures and filtration requirements, etc.*

Earth related requirements of other manufacturer's heat pumps may necessitate design adjustments and effect validity of previously published design information from our office. This may generate the need for additional design activity beyond initial contracted project scope. Water Energy Design cannot identify, endorse or provide equipment related design specifications for others. When another manufacturer's heat pumps are used Water Energy Design can provide contracted earth-coupling design only, based on equivalent and comprehensive equipment data provided and endorsed through chosen equipment manufacturer via our contracted client.

Water Energy Design is a division of Water Energy Distributors, Inc., proudly distributing geothermal heat pumps for New England and nearby New York