

International Representatives



Committed to the promotion of
energy sustainability through the
cost effective deployment of reliable,
ground source heat pump technology.

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GROUND LOOP DESIGN

Geothermal HVAC Design Studio

Advancing the Art of Geothermal Design



Professional Power for Complex Commercial Design

See why Ground Loop Design is a must for the professional Geoexchange designer & engineer



Exceptional Functionality

GLD's unique Studio Link™ system connects the building loads/heat pump matching modules to the ground heat exchanger design modules. Once linked, changes made in either the loads or the heat exchanger modules are recognized automatically and the program instantly updates the other modules. **Design optimization has never been easier!**

Superior Flexibility

Imagine the flexibility of simultaneously loading custom heat pump data, calculating full load hours, managing hundreds of individual building zones and designing multiple heat exchanger options, all while observing every pertinent parameter on a single screen. **Design productivity has never been greater!**

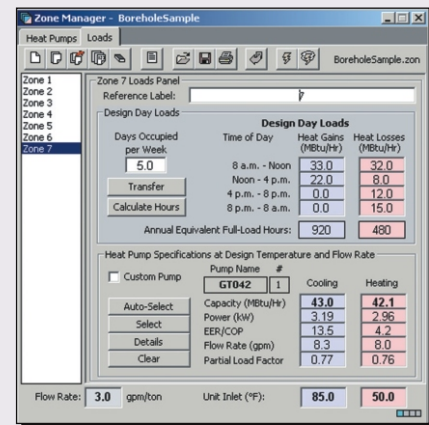
Unsurpassed Accuracy

GLD is a commercial grade heat exchanger design program which utilizes algorithms based on the most sophisticated mathematical models available to calculate long term thermally stable designs. **Design with confidence!**

Dependable Loop Field Designs in 4 Easy Steps

1) Start by choosing the best method of entering building loads data

Choose from several options: Quickly import data from Excel files and/or external load calculation programs such as the Trane System Analyzer, or input the loads directly into the program.



To match the widest possible range of users' needs, GLD Professional and LE Plus versions provide two different loads modules.

The **Zone Manager** loads module (shown) is a precise analysis tool for an unlimited number of zones and is crucial for complex design applications (such as those requiring the use of multiple heat pump manufacturers). Users input loads one zone at a time and match pumps automatically or manually.

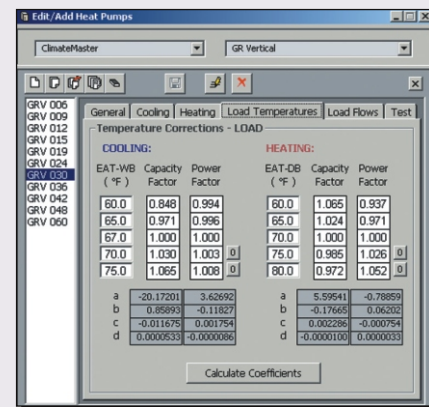
The **Average Block** loads module offers a rapid method of entering whole systems information for designers who do not desire to input loads data for a fully zone divided installation. Rather than matching specific pumps to each zone, this module uses a particular, user defined style of pump and matches it in an average way to the entire installation.

2) Go on to select a heat pump from GLD's library, or input your own

Included in both versions, Professional and LE Plus, is an extensive database of water-to-water and water-to-air heat pumps. Build designs utilizing the manufacturer and model you prefer or click "select" and GLD will instantly choose the best pump based on entered loads. If the heat pump you require is not listed or if you use a custom pump, override the automatic features and directly input custom specifications.

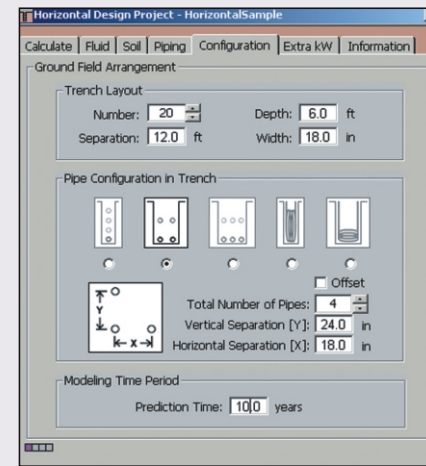
Included in GLD are full heat pump libraries from:

- Addison
- Florida Heat Pump
- McQuay
- Trane
- Climatemaster
- WaterFurnace
- Econar
- Plus, users can add additional pump libraries

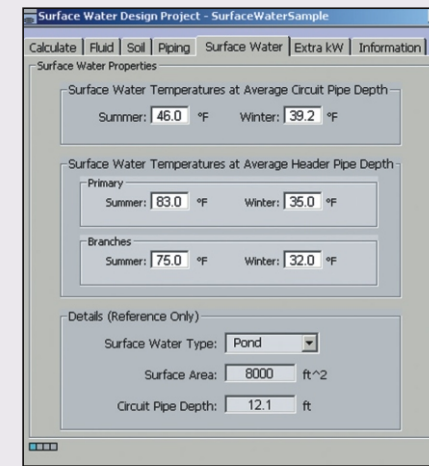


3) Now, design the heat exchanger and you'll realize why GLD is truly unique

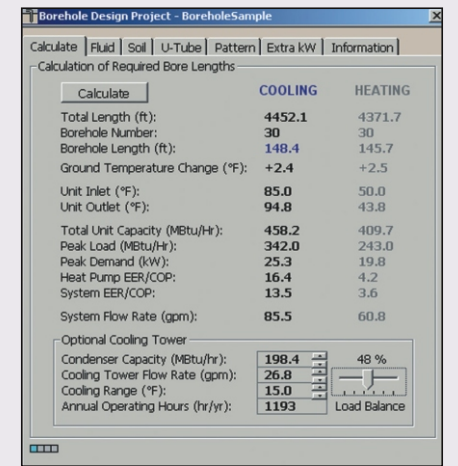
Purchase the power of GLD Professional and enjoy the flexibility of designing vertical bore, horizontal trench and surface water loops.



Horizontal



Surface Water



Vertical

The user interface offers outstanding functionality and ease of use: access and modify all design parameters instantly.

Open a horizontal, vertical or surface water module and "link" to the loads module. Unsure about which design is best for the site conditions? Open multiple heat exchanger modules, link them all to the loads, and simultaneously compare.

Borehole Design Project Report - 10/26/2003			
Project Name:	Borehole Design Sample Project	Project Start Date:	10/26/2003
Load File:	BoreholeDesignSample.zon		
Calculation Results		HEATING	
COOLING		HEATING	
Total Length (ft):	4452.1	Total Length (ft):	4371.7
Borehole Number:	30	Borehole Number:	30
Borehole Length (ft):	148.4	Borehole Length (ft):	145.7
Ground Temperature Change (°F):	+2.4	Ground Temperature Change (°F):	+2.5
Unit Inlet (°F):	85.0	Unit Inlet (°F):	50.0
Unit Outlet (°F):	94.8	Unit Outlet (°F):	43.8
Total Unit Capacity (MBtu/hr):	458.2	Total Unit Capacity (MBtu/hr):	409.7
Peak Load (MBtu/hr):	342.0	Peak Load (MBtu/hr):	243.0
Peak Demand (kW):	25.3	Peak Demand (kW):	19.8
Heat Pump EER/COP:	16.4	Heat Pump EER/COP:	4.2
System EER/COP:	13.5	System EER/COP:	3.6
System Flow Rate (gpm):	85.5	System Flow Rate (gpm):	60.8
Optional Cooling Tower			
Condenser Capacity (MBtu/hr):	198.4	Condenser Capacity (MBtu/hr):	48 %
Cooling Tower Flow Rate (gpm):	26.8	Cooling Tower Flow Rate (gpm):	
Cooling Range (°F):	15.0	Cooling Range (°F):	
Annual Operating Hours (hr/yr):	1193	Annual Operating Hours (hr/yr):	Load Balance

Ground Loop Design Professional is the only program with this feature.

Entering information into the heat exchanger modules is simple and straightforward. Please see the *Getting Started Guide* for complete details.

4) Next, communicate and present the finished product

Sending customized reports to vendors, customers, clients and colleagues as well as collaborating on a design with a coworker halfway around the world has never been easier. GLD offers a variety of communication tools to help you work effectively.

At any step in the design process, you can choose from a variety of professional reports including loads/zone and heat exchanger reports.

GLD includes many other advanced features, such as:

► A hybrid cooling tower system calculation tool (shown)

► Instant metric / English unit conversion (Professional version)

► Fully customizable reference tables for everything from thermal properties of soil & rocks to mean earth temperatures, to fluid properties, and grout conductivity values

► Calculators for circulating pump power, soil diffusivity, and equivalent hours

► Currently over 20 languages are available. Please visit our website for a complete list.

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