



Geothermal - Ground Coupled - Heat Pump Systems

Geothermal GHP / HVAC Systems -- Compared Solutions

Comparing Parameters		Hi-Level GHP Solution	Economical GHP Solution	Moderate GHP Solution
Ground Hydraulic Loop		Drilled Vertical VER 200 Ft - 300 Ft	Hybird Trenched HRZ + VER 200 Ft	Hybird Trenched HRZ + VER 100 Ft
GHP Heat Pumps	Flow	Variable	Variable	Constant
	VFD	√	√	×
	Enthalpy Wheel	√	√	×
	Heat Recovery	√	√	×
	Origin	USA	China	China
	Life-time	40 - 50 Years	30 - 40 Years	20 - 30 Years
	Warranty	10 Y	7 Y	5 Y
	% Whole Cost	60 - 65 %	35 - 40 %	30 - 35 %
Delivery & Distribution System	Radiant / Ducts	√	√	√
Control & Management System	DDC / BMS	√	√	×
GHP First HVAC System Cost	Per Ton	\$17,500.00	\$10,000.00	\$6,666.67
% Energy Used Reduction Compared to Traditional Electric	% Energy Reduced	65 - 70 %	50 - 60 %	30 - 40 %
% Energy Cost Reduction Compared to Traditional Electric	% Cost Reduced	30 - 35 %	20 - 30 %	15 - 20 %
GHP SAVINGS Per Year Compared to 1000 \$ / Ton Traditional	Yearly Per Ton	\$ 500 - 650	\$ 400 - 500	\$ 200 - 300
300 Ton GHP SAVINGS Per Year Facility Project Case Study 300 Ton	Example Savings Per Year	\$200,000 Per Year	\$150,000 Per Year	\$50,000 Per Year
Pay-Back Years	Years	4 - 6 Y	6 - 8 Y	8 - 10 Y