

VERTICAL SOIL HEAT EXCHANGERS (VSHE)

(FOR HEATING AND COOLING)



General:

Vertical heat exchangers can be used to utilise natural heat energy provided by geothermal gradient and groundwater encountered with increasing depth through soils and underlying rock. Simply put, the systems extract heat source energy during the cooler seasons and return heat generated above surface during warmer season in a replenishment cycle.

Using hydraulic pushing technology, vertical reverse open or closed circulation systems can be rapidly pushed into the ground and subsequently connected to a simple pipe and heat exchanger pump system.

Uses:

The VSHE systems can be used for partial or complete substitution of conventional heating and/or air-conditioning-cooling systems for both residential, industrial and leisure properties. Similarly, the systems can be used for sports surface conditioning to prevent freezing or water-logging.

VSHE Installation:

VSHE are most cost effectively installed using hydraulic pushing equipment used conventionally for Cone Penetration Testing.

Once at depth a flexible dual-flow pipe (DFP) is installed through and to the casing to the base of the casing. The casing pulled back to ground level, leaving the DFP in direct contact with the soil over the depth of the installation. The pipe is then connected to a network of DFPs laid within near-surface trenches, which are subsequently backfilled and the surface levelled.

The near-surface network is then connected directly to the central heat exchanger pump and then tested for operational performance.

Cost savings:

Depending on the system installed and technical considerations (soil type, environmental conditions, installation depths etc) significant long-term savings can be made following the installation of a complete durable closed-energy system. Following the initial investment of installation, immediately cost savings against conventional heating costs begin to be made. Once the investment has been cleared, significant savings become more clear.

The durability of the systems ensures that the cost savings are realised long-term in that their operational lifetime is considerably more than conventional heating systems.

Further information:

If you require further information on the capabilities of VSHE and other Lankelma products please contact:

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