
GEO AIR
HEATING COOLING
POWERED BY THE EARTH

GEOAIR™: THE FUTURE OF HEATING AND COOLING

GeoAir is an Australian designed and manufactured heating and cooling system that delivers the highest levels of energy efficiency at the lowest possible cost.

POWERED BY THE EARTH

GeoAir uses the earth's constant temperature free of charge for heating and cooling. GeoAir is the latest innovation in geothermal air conditioning. Applying direct exchange technology achieves cost savings and positive environmental outcomes.

While air temperatures fluctuate during seasons, below ground temperatures remain a constant. GeoAir is not affected by outside temperatures and is able to operate without the significant operational efficiency losses that plague conventional heating and cooling systems.

A proven energy saver.

THE GEOAIR™ ADVANTAGE

GeoAir delivers key advantages over other geothermal and conventional systems.

- Higher conductivity of geothermal loops requires far less loop field, reducing capital costs.
- Two stage heat transfer removes energy consuming water pumps reducing operating costs.
- Greater efficiency and energy saving.
- At QPS Geothermal we self-manage all works. We are a project partner with established and proven management systems, a strong balance sheet, and a history of delivering complex projects nationally.
- We know how to get the job done. We have a long and proven history of critical ground works across multiple disciplines.
- We use proprietory Geothermal loop design, grout and heat pumps. Internal works, fan coil units and controls are standard.
- We are industry recognised. We are members of the International Ground Source Heat Pump Association and the Green Building Council.

SAVE ENERGY AND MONEY

Air Conditioning can account for over 50% of a buildings energy use. A high efficiency GeoAir system will offer significant energy cost reductions over the life of the installed plant. Typical cost recovery on an installed GeoAir system provides a sound return on investment, well within most commercial requirements.

GEOAIR IS RELIABLE

GeoAir's high-quality geothermal loops will outlast building ownership. There is no maintenance to perform on installed loops. The GeoAir heat pumps are Australian designed and manufactured and all mechanical equipment is easily serviceable.

GEOAIR IS SUSTAINABLE

Using the constant temperature of the earth, a GeoAir system is a genuine sustainable solution. With significantly reduced energy consumption, a GeoAir system will reduce the carbon footprint of the air conditioning plant. GeoAir is incorporated within the BASIX (NSW) tool and will add considerable value to any Greenstar project.

GEOAIR IS QUIET

Operating at a low 51dB the GeoAir system overcomes noise issues associated with conventional mechanical plant. Through an integrated design process, GeoAir heat pumps can be concealed within building fabric.

GEOAIR IS COMPACT

All GeoAir heat pumps are compact in design and require no ventilation providing broad options for design locations.

HOW GEOAIR™ WORKS

Geothermal systems rely on the constant temperatures of the ground that are typically equal to average ambient temperatures. Conventional cooling and heating systems rely on air temperatures for heat transfer that vary on a daily basis whereas ground temperatures are a constant. Constant heat transfer provides both greater efficiencies and reliability in performance.

COOLING MODE

GeoAir circulates a refrigerant vapour into the earth to absorb the heat in the naturally cooler, and stable, sub surface temperatures.

With excess heat removed, the cooled refrigerant condenses into a liquid. This liquid expands through an expansion device, lowers the pressure, and causes the temperature to reduce even further.

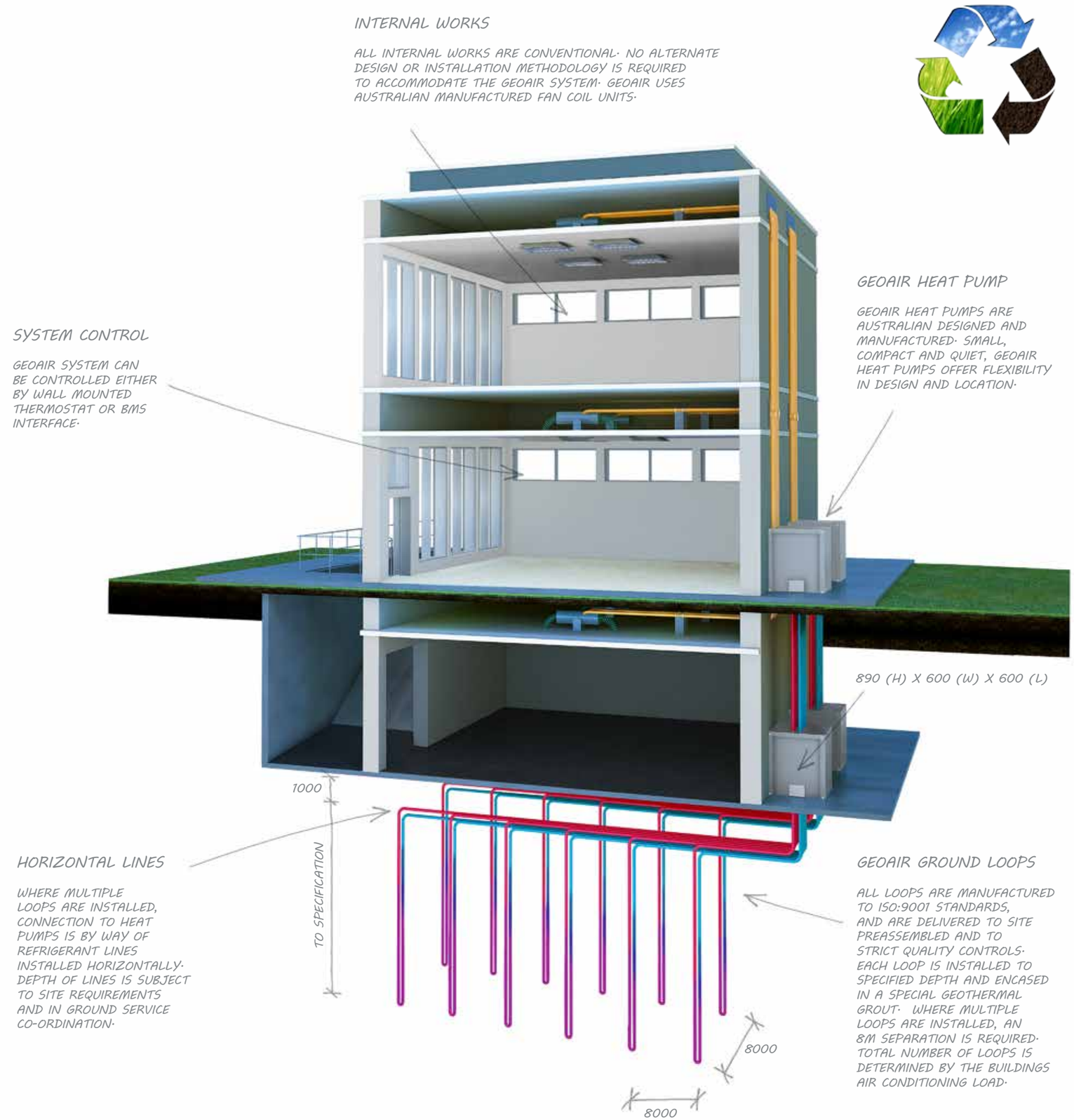
Refrigerant is then circulated through the fan coil unit cooling your home, building or office, and absorbing the excessive heat from the interior air. This causes the refrigerant to expand back into a vapour. The cycle repeats.

Due to these much lower condensing temperatures, the heat pump achieves both an uplift in capacity as well as a reduction in energy consumption. This combination delivers excellent system efficiencies.

HEATING MODE

When operating in heating mode, cold refrigerant is circulated within the geothermal loop. This absorbs the heat naturally supplied by the earth.

This heated refrigerant vapour is compressed, and circulated through the fan coil unit, heating the space. This removes the heat from the refrigerant, cooling it again. The cycle repeats.



GEOAIR™ APPLICATIONS

AIR CONDITIONING

GeoAir offers you more than standard reverse cycle air-conditioning. GeoAir can be your standard ducted system, but we also offer options that remove the need for cooling towers and boilers. Your designs will benefit with the flexibility of choosing the GeoAir configuration based on your project. We work with you to determine the most appropriate and cost effective configuration for your project.

CENTRAL PLANT

GeoAir can replace a conventional chiller with our central plant configuration. Modular in design, this system has high levels of flexibility in operation and efficiency. With automated controls integration, a central plant option is an excellent solution for medium to large projects.

POOL HEATING

Heating swimming pools is easier and cheaper with GeoAir. Through using either the primary heating or waste heat from an installed system, GeoAir is a genuine pool heating solution regardless of project size and scale.

WATER HEATING & COOLING

GeoAir can provide water heating and cooling for a variety of purposes. The system can be configured into a central plant primary heating for process or for potable water purposes.

POTABLE HOT WATER

Using waste heat from the GeoAir system, potable hot water can be generated at no additional operating cost. GeoAir can also provide dedicated hot water plant where larger volumes are required.

GEOAIR SYSTEM COMPONENTS

MAINTENANCE-FREE GEOTHERMAL LOOP

The main feature of the GeoAir system is the geothermal loop installed underground. GeoAir's condenser loop is permanently buried and is fully encased with a specialised grout and requires no servicing or future maintenance.

HEAT PUMP

Australian designed and manufactured, the GeoAir heat pump is developed for local conditions. Compact and quiet, the GeoAir heat pump is easily integrated into any design.

FAN COIL UNIT

Your design tasks are simplified by GeoAir's use of high-quality off-the-shelf fan coil units manufactured in Australia. The GeoAir systems requires no changes to conventional duct designs and layouts.

INTERNAL WORKS

Everything you already know applies because installing a GeoAir system is no different from conventional ducted systems. Provide your client with the most advanced heating and cooling system on the planet without having to change how the building operates.

CONTROLS

Wether it's a simple wall mounted thermostat or a more complex BMS integration, GeoAir will provide the right solution for your project needs. GeoAir has partnered with one of the worlds leading providers of control systems, ensuring we always deliver the most up to date control solutions.

ABOUT QPS GEOTHERMAL

QPS Geothermal is a wholly owned division of Queensland Pre Stress (QPS). QPS are one of Australia's leading ground engineering contractors, performing a large number of highly complex and detailed ground work projects. We have developed an operational capacity that focuses on quality and project delivery.

We have a modern fleet of drilling rigs including the only specialised, geothermal drilling rigs in Australia. This drilling equipment is designed for maximum production regardless of site conditions.

QPS established the GeoAir division to manage the growing demand for geothermal heating and cooling in Australia.

GEOAIR HEATING COOLING

QPS GEOTHERMAL

QPS Geothermal is the only company operating in the Australian market that self-performs all works.

This gives us complete quality control and ensures we deliver you the highest quality outcomes.

Our GeoAir system is Australian designed and manufactured creating local capabilities and employment.

GEO AIR
HEATING COOLING

QPS GEOTHERMAL

69 Fredrick St
Northgate QLD 4013

PO BOX 653
Virginia QLD 4014

Phone: [07] 3256 7092
Fax: [07] 3256 8251
Email: info@qpsgeothermal.com.au
Web: qpsgeothermal.com.au

POWERED BY THE EARTH