The world's most efficient heating & cooling systems, from the ground up.

Geothermal Industries

Capability Statement 2025

Geothermal INDUSTRIES
ENERGY EFFICIENCY IS OUR "CORE" BUSINESS

About us

From initial consultation through to project delivery, Geothermal Industries (GIA) brings proven expertise in geothermal drilling. With a strong track record across Australia, GIA has successfully delivered projects in a wide variety of geological conditions, including some of the country's most challenging formations.

Backed by an in-house fleet of owned drilling rigs and advanced technologies, our team delivers the specialist expertise and technical precision required to drill and complete geothermal wells efficiently, safely, and exactly as designed.

A bit about us

A leader of the geothermal industry, we deliver innovative energy solutions based on long-term reliability, sustainability and cost-efficiency. We have extensive experience in both residential and commercial sectors, on new buildings or upgrades to existing installations (retrofits). Through our network, we ensure the optimum application of the technology from initial consultation through to project completion and service.

4,000+

Thermal bores installed across Australia and New Zealand by our team.

2,140,410

Kilograms of CO2 total savings delivered by our systems.

1,502

Equivalent number of cars taken off the road through CO2 emissions saved.

3,480,000

Kilograms of coal burning eliminated through our geothermal technology.

359,520

Metres of geothermal loops drilled over our 10+ years of operating.

10+

Years operating, delivering exceptional results for our clients and partners.

Our difference

Experience

Largest range of International and local Geothermal installation experience in Australia.

Scale

Our global reach and extensive resource pool allow us to undertake projects of any scale, adapting to varying geological and environmental conditions with ease and expertise.

Accuracy

Accuracy is paramount in our services. We utilise state-of-the-art equipment and techniques to ensure precise drilling, crucial for the success and safety of each project.

Speed

We pride ourselves on our rapid response and swift project execution, delivering timely results without compromising quality or safety. All drills are owned and operated by Geothermal Industries means no subcontracting and more control.

Efficiency

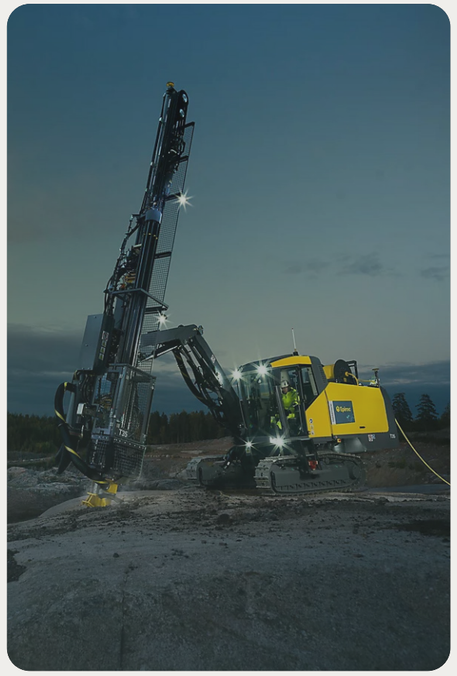
Our processes are optimised for maximum productivity. We combine advanced technology and skilled expertise to deliver high-quality results, reducing downtime and costs.

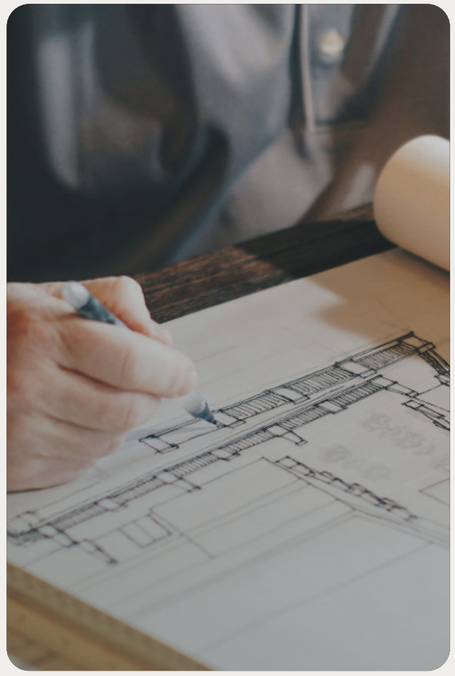
Innovation

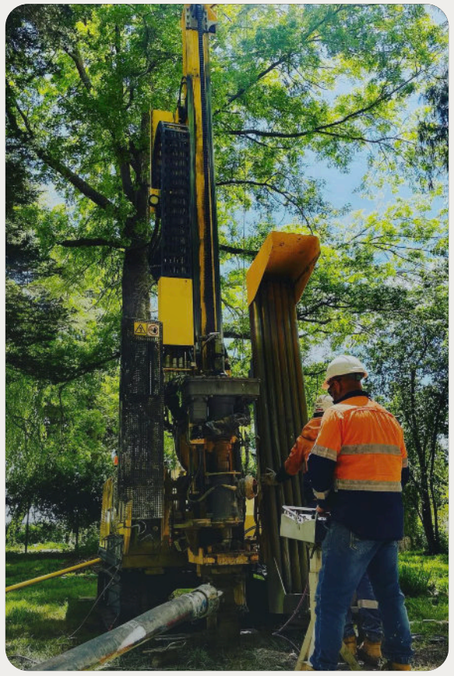
Innovation is at the heart of our operations. We invest in research and development to continually advance our drilling technologies, staying ahead in a rapidly evolving industry.

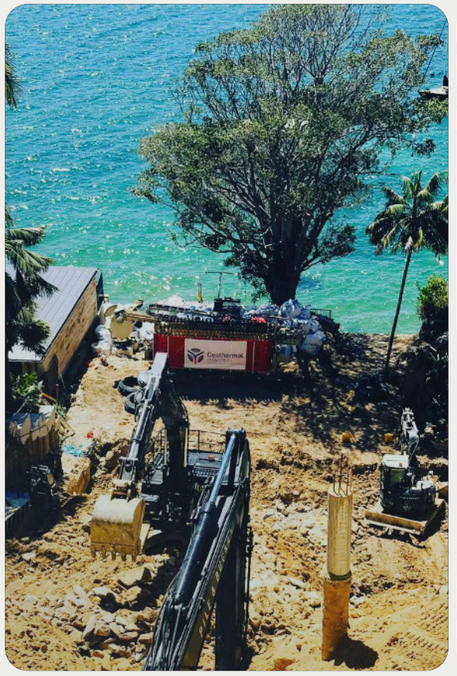
Our Services

At Geothermal Industries, our services cover the full spectrum of ground source energy delivery—from initial feasibility and design through to drilling, installation, commissioning, and system support. With an in-house fleet, specialised expertise, and a commitment to innovation, we provide end-to-end geothermal solutions that are efficient, sustainable, and built to perform for generations.









1 Geothermal Drilling

With a specialist fleet owned and operated in-house, we deliver precise, efficient, and reliable geothermal drilling across Australia. Our rigs are purpose-built for geothermal applications, enabling us to complete complex projects in diverse geological conditions with accuracy and consistency.

2 Thermal Conductivity Testing

Accurate thermal conductivity (TC) testing provides the essential data needed to design an efficient geothermal system. By analysing ground heat transfer characteristics through controlled testing, we ensure every installation is engineered for maximum long-term performance.

3 Geothermal Piping Install

From excavation to mechanical tie-in, our teams manage every stage of vertical and horizontal ground loop installation. Each system is rigorously tested, flushed, and purged, delivering a fully operational and trouble-free heat exchanger ready for commissioning.

4 Geothermal System Consulting

Comprehensive consulting services guide each project from concept through to completion. Our integrated approach combines technical expertise, collaboration, and innovation to deliver reliable, sustainable, and cost-efficient ground source energy systems.

5 Geothermal Equipment Supply

Through partnerships with global leaders including WaterFurnace and MuoviTech, we supply premium geothermal components and exclusive technologies across Australia and New Zealand—ensuring every project benefits from the best in system design and efficiency.

1 Geothermal drilling & our specialised drill rig fleet

At Geothermal Industries (GIA), our drilling operations are purpose-built to deliver precision, efficiency, and reliability across geothermal projects of any scale. Our in-house fleet combines advanced drilling technology with the expertise of highly trained operators, ensuring every borehole is completed safely and to specification.

Our dedicated geothermal fleet includes:

1 × Comacchio 909

1 × Atlas Copco Welldrill 3062

1 × Hütte 204

2 × Hütte 205

Each rig has been carefully selected and configured for geothermal applications, offering the versatility to adapt to diverse ground conditions and site constraints. Whether operating in confined urban precincts, basements of retrofit projects, or expansive greenfield sites, GIA's fleet enables the efficient delivery of both closed-loop and open-loop geothermal systems to depths of up to 300 metres.

By combining specialised equipment with industry-leading knowledge, Geothermal Industries consistently delivers projects on time, within budget, and with minimal environmental impact—laying the groundwork for a cleaner energy future.

Our fleet

Purpose-engineered for geothermal projects, our drilling fleet represents the latest in specialised equipment and innovation. Operated by experienced crews with extensive Australian and international geothermal experience, our rigs are capable of delivering high-quality bore installations in challenging formations and environments. Our dedicated fleet includes:

Atlas Copco Welldrill 3062

A robust, high-output rig designed for water well and geothermal drilling, the Welldrill 3062 offers excellent penetration rates and reliability, making it ideal for high-production environments and variable geology.

Comacchio 909

A powerful, multipurpose drilling rig ideal for large-scale geothermal projects, the Comacchio 909 delivers exceptional torque and pullback capacity - perfect for deep bore installations and demanding ground conditions.

Hütte 204

Compact yet highly capable, the Hütte 204 is designed for confined or low-access sites where precision and versatility are essential. Its small footprint allows efficient operation without compromising performance.

Hütte 205

A mid-sized, versatile rig engineered for geothermal and foundation applications, the Hütte 205 combines power, mobility, and stability - making it well-suited to complex urban projects and multi-bore installations.

2 Thermal conductivity testing

During the design phase of any geothermal project, understanding the thermal properties of the ground is critical to achieving a reliable and efficient system. Geothermal Industries provides this essential data through precise Thermal Conductivity (TC) testing, ensuring that every design is based on real-world subsurface conditions.

The TC test involves drilling a dedicated borehole and installing a high-quality geothermal loop, which is then grouted and connected to a small pump and heater module.

Over a 48-hour period, water circulates continuously through the loop, allowing data on ground temperature response and heat transfer to be collected and monitored. This raw data is then analysed by GIA's engineering team, who produce a comprehensive report featuring detailed graphs, interpretations, and recommendations.

This report provides an accurate measurement of the ground's thermal conductivity—an essential factor in determining the correct bore depth, loop spacing, and overall system design.

By integrating this testing process into the early stages of the project, Geothermal Industries ensures the system is engineered for optimal performance and efficiency, resulting in a geothermal installation that not only meets energy demands but will remain a thermal asset for the lifespan of the building and beyond.

3 Geothermal piping install

We provide a complete solution for both vertical and horizontal ground loop installations, managing every aspect of the process from excavation through to mechanical system handover. Our experienced installation teams supply all labour, equipment, and materials necessary to deliver a fully integrated geothermal ground heat exchanger system.

Each project begins with careful site preparation and excavation, followed by the installation of high-quality HDPE pipe loops, headers, and manifolds.

Our technicians complete full tie-ins to the mechanical system handoff point, ensuring seamless integration with the building's heating and cooling infrastructure. Every loop system is meticulously filled, flushed, purged, and pressure-tested before handover, leaving the system operational and ready for commissioning.

At GIA, quality assurance is embedded in every step of the process. Each installation undergoes multiple stages of inspection and testing to guarantee reliability, safety, and performance.

4 Geothermal system consulting

Geothermal Industries has evolved into a recognised leader in Australia's geothermal energy sector, providing end-to-end consulting services that encompass every stage of a project - from concept design through to construction and commissioning.

As an Australian-owned business specialising exclusively in ground source energy systems, we bring unmatched technical knowledge and practical experience to every engagement.

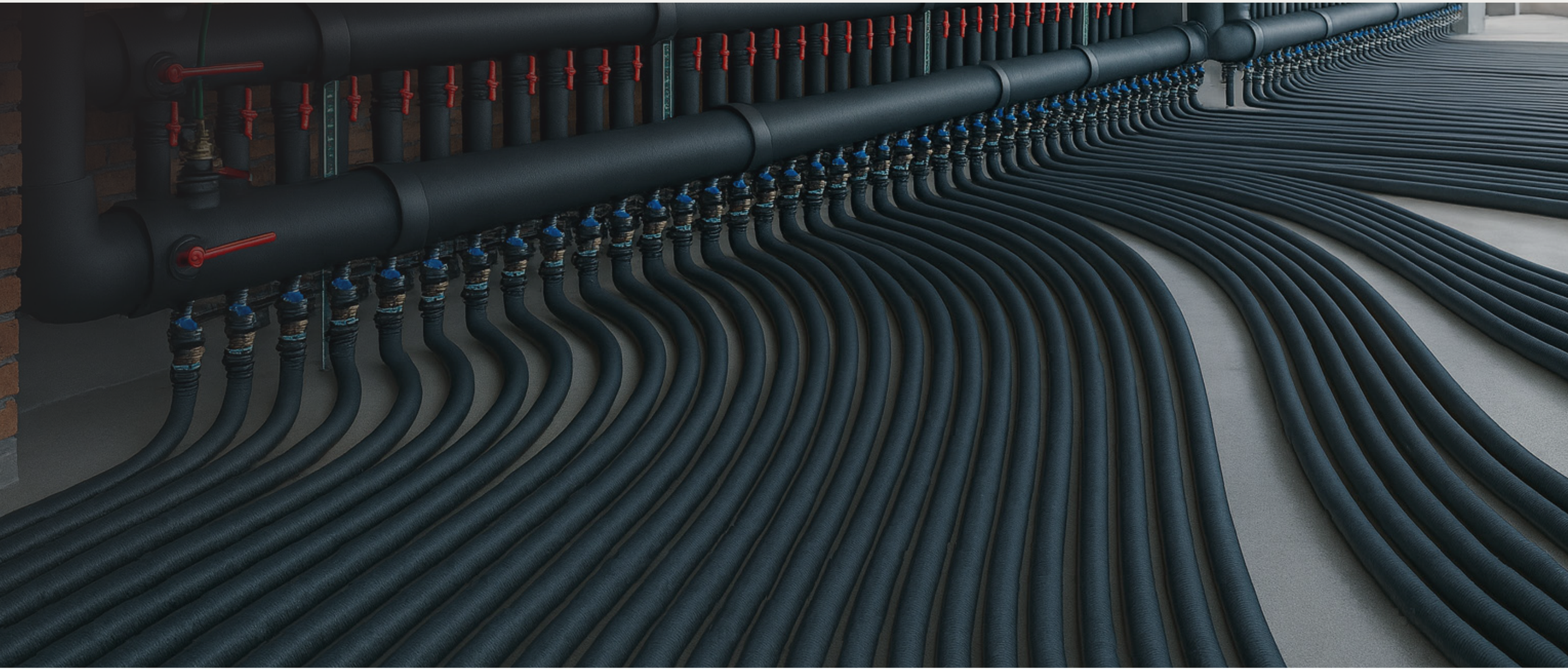
Our consulting services are built around three core principles: **long-term reliability, environmental sustainability, and cost-efficiency.**

We work collaboratively with engineers, architects, builders, and clients to ensure that system design, drilling, and installation are fully integrated and optimised for site-specific conditions. Whether working on a new commercial development, residential estate, or retrofit upgrade, GIA's team ensures every solution is engineered for lasting performance and maximum energy efficiency.

Through our extensive national network, Geothermal Industries is able to coordinate projects of all sizes - providing expert guidance from initial consultation through design, installation, and long-term system servicing. We take pride in treating every client as a partner in innovation, delivering renewable energy systems that not only meet current sustainability goals but also set a benchmark for the future of geothermal energy in Australia.

5 Geothermal equipment supply

Geothermal Industries is a proud distributor and technical partner of some of the world's leading geothermal equipment manufacturers, including **WaterFurnace and MuoviTech**. Through these strategic partnerships, we supply premium-grade geothermal components and systems across Australia and New Zealand, giving our clients access to the most advanced and efficient technology available globally. Our equipment supply capabilities cover every element of a geothermal installation - from heat pumps, buffer tanks, manifolds, and HDPE piping to specialised geothermal grout and fittings. Each system we deliver is tailored to the project's unique requirements to ensure optimal compatibility, performance, and long-term reliability.



A defining advantage of working with Geothermal Industries is access to our exclusive **MuoviTech TurboCollector system** — a patented ground loop technology. This advanced system redefines geothermal performance, combining precision engineering, innovative design, and certified quality.

Exclusive Access Through GIA

Geothermal Industries is the exclusive Australian and New Zealand distributor of MuoviTech's TurboCollector — the world's most advanced geothermal ground loop technology. This patented system redefines geothermal performance through precision engineering, innovative design, and proven reliability.

Engineered for Geothermal Performance

Developed specifically for geothermal applications, the TurboCollector maximises energy transfer between the ground and the circulating fluid. Its unique internal geometry, durable HDPE construction, and factory-tested assembly ensure long-term efficiency and consistent results across all ground conditions.

Turbulent Flow at Lower Flow Rates

The TurboCollector's ribbed interior generates turbulent flow at significantly lower flow rates — around 22% lower than conventional smooth-walled pipes (1,800 Reynolds vs 2,300). This early turbulence eliminates the insulating boundary layer that restricts heat transfer, resulting in faster, more stable energy exchange.

Up to 11% Increase in System Efficiency (COP)

Independent simulations show that the TurboCollector reduces convective resistance by up to 80%, improving the temperature of the collector fluid and delivering up to an 11% increase in the heat pump's Coefficient of Performance (COP) — meaning greater output with less input energy.

Designed for Modern Inverter Heat Pumps

Modern inverter-driven heat pumps operate across a wide range of flow rates throughout the year. The TurboCollector maintains exceptional performance in the Reynolds number range of 2,000–5,000, ensuring efficient heat transfer under all seasonal conditions and system loads.

Maximises Heat Transfer Efficiency

MuoviTech's patented fin design, with its alternating pattern, actively increases turbulence within the pipe. This design ensures maximum heat transfer even at lower flow velocities, making the TurboCollector the most efficient and reliable collector on the market.

Certified and Proven Worldwide

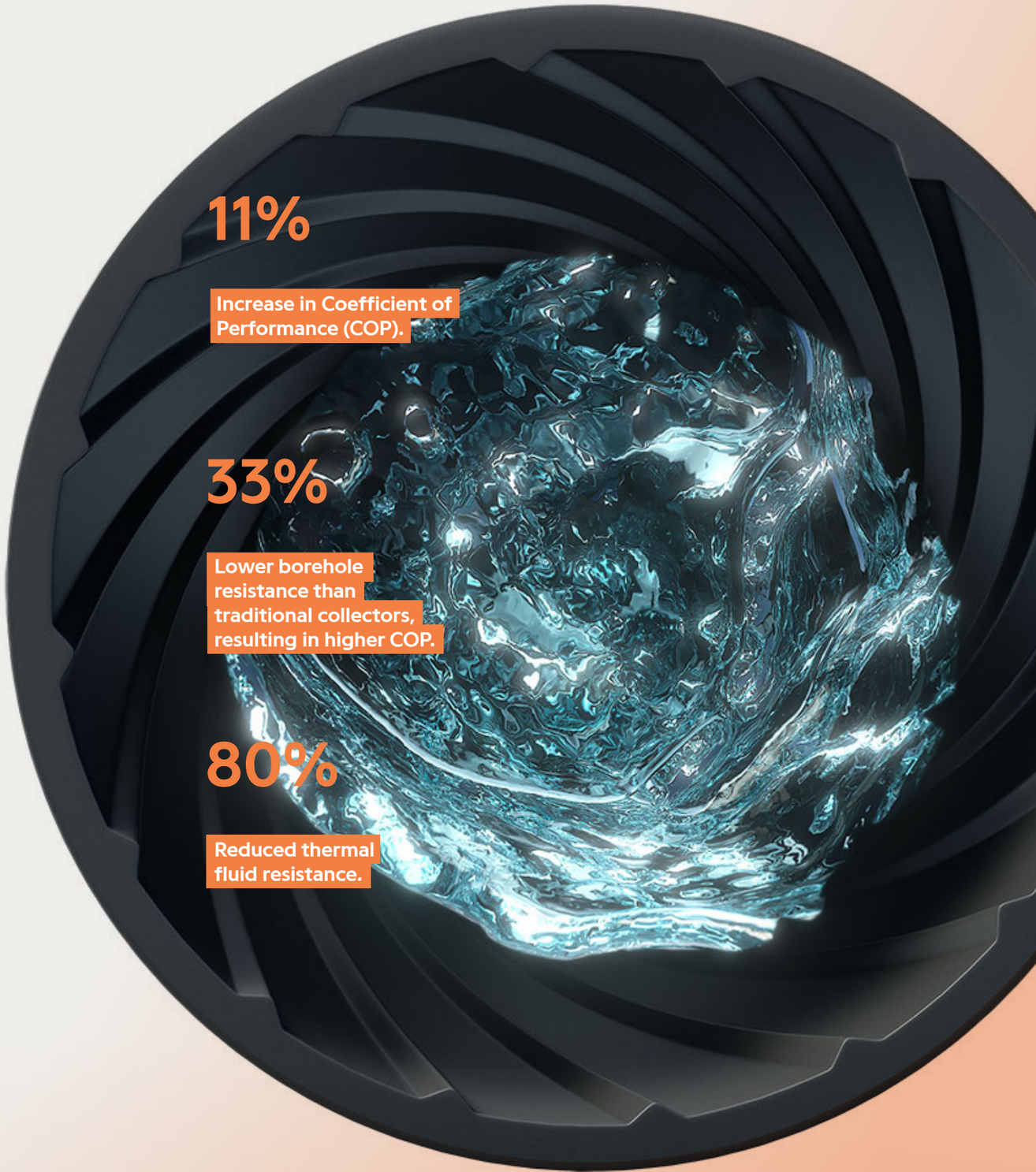
Since its introduction in 2008, more than 100,000 TurboCollectors have been installed across Europe and beyond. The system is backed by INSTA-CERT, KIWA, P-mark, and SKZ certifications — guaranteeing performance and compliance with the highest international standards.

Available in All Relevant Sizes and Configurations

The TurboCollector is available as single or double loops in 25mm, 32mm, 40mm, 45mm, 50mm, and 55mm diameters, and in MuoviTech's patent-pending MuoviEllipse design for elliptical applications. All collectors are factory-assembled, pressure-tested, and ready for immediate installation.

Complete, Verified Systems

Every GIA installation combines MuoviTech's pre-fabricated TurboCollector loops with high-thermal-conductivity (High TC) grout, enhanced with advanced additives for superior heat transfer and durability. Together with our rigorous in-house testing and commissioning, these components form a complete, verified geothermal system that outperforms conventional installations year after year.



OHS, Environmental and Quality Assurance

Having brought together the best equipment, staff and support team on your project we at GIA know that work must be planned, monitored and controlled to ensure safety quality and success.

All of our drillers hold national certification, with each qualified to Certificate IV level.

Our Safe Quality Work program covers step by step the work objectives and through the process of planning the works, risk assessment, controls; and management of site setup, manpower, equipment and material needs.

During the works it also covers the giving of instructions, effective monitoring of activities and response to events as required. All events and concerns are addressed and managed through our corrective action process and all activities are reported with progress updates and periodic performance reviews etc.

To the customer the benefits are a piece of mind in knowing that work will be performed to the highest standards of quality and safety; and that all activities are closely monitored and managed to ensure the project outcomes are achieved on budget and on time.

GIA is proud of our approach to delivering quality services and of our record of success in project outcomes and we would welcome the opportunity to show you our business systems, how they operate and how they will work to achieve the best for your project.

Proven experience

"Early on during the drilling phase challenging ground conditions were encountered. The team at Geothermal Industries utilized their professional knowledge and advanced equipment to ensure the target depths were achieved on the ground loop with zero issues.

Throughout the drilling phase it was clear to both Hutchinson Builders and our client that Geothermal Industries was a cut above rest and would settle for nothing less than what was promised. Without the proper contractors in place for this critical phase there is no doubt that the project wouldn't have been the success that it is today."

Hutchinson Builders
Marcel Van Vliet – Construction Manager

The company we keep

As a leader in Australia's geothermal industry, we're proud to work alongside many of the nation's most respected builders, developers, and end clients. Our reputation has been built on delivering innovative energy solutions founded on long-term reliability, sustainability, and cost-efficiency. With extensive experience across both residential and commercial sectors—spanning new builds and retrofit upgrades—our proven track record speaks for itself, with 89% of our projects coming from repeat clients who trust us to deliver, time and again.

HUTCHINSON BUILDERS

Built

HINDMARSH

ADCO

Buildcorp

COCKRAM

NATIONAL PARKS & WILDLIFE SERVICE NSW

STRONGHOLD CONSTRUCTION

PLUMBING INDUSTRY CLIMATE ACTION CENTRE

Australian War Memorial

Roc-Drill

CELESTINO

Parliament of Victoria

BUNDANON

AE SMITH

City of Wagga Wagga

Ingenia Lifestyle

DAWSON Heating & Cooling

Blatchford Renewable Energy

RHCS RADIANT HEATING & COOLING SOLUTIONS

mcnab

TRINITY COLLEGE THE UNIVERSITY OF MELBOURNE

Healthways

NSW GOVERNMENT

north BUILDING WITH TRUST®

Australian War Memorial

Geothermal Industries is proud to have delivered Australia's largest closed-loop underground geothermal heating and cooling system at the Australian War Memorial, as part of its landmark development and expansion program.

This pioneering project represents a national first and sets a benchmark for sustainable infrastructure.

Minister for Climate Change and Energy, Chris Bowen, welcomed the initiative:

"This is a great example of how the nation can reach net zero through smart, green technology. It's also a major step toward a net zero Australian Government."

The project is fully funded within the Memorial's existing development package and will harness the earth's energy to provide highly efficient heating and cooling. Minister for Veterans' Affairs, Matt Keogh, noted the symbolic significance:

"The Australian War Memorial is an iconic national institution, commemorating those who secured our future. It is fitting that this institution now leads the way in securing our energy future."

The Geothermal system is one of the largest of its type in the world, with the opportunity to install up to 128kms of pipe to decrease the Memorial's energy usage.

Further, it is the largest 'vertical closed loop' GHX system in the Southern Hemisphere.

Carbon Reduction

The installation will eliminate the production of up to 1,000 tonnes of CO₂ equivalent per year, a contribution equal to offsetting 87,500 return trips by students travelling from Sydney to Canberra.

The carbon savings are the equivalent of transporting about 87,500 students a year from Sydney to Canberra return to visit the Australian War Memorial carbon free.

Energy Efficiency & Cost Savings

By leveraging the earth's stable underground temperatures, the system will deliver more than 40% greater efficiency than conventional geothermal technologies, saving the Memorial approximately $1.3 million annually in heating and cooling costs.

Scale & Innovation

With up to 128km of underground pipe and 320 vertical closed-loop boreholes drilled up to 150 metres deep, this will be one of the largest geothermal installations of its kind in the world.

Matt Anderson, Director of the Australian War Memorial, emphasised the project's importance:

"By harnessing natural geothermal energy onsite, this project dramatically reduces energy costs and emissions while protecting the national collection. It firmly places the Memorial as a world-class building of the future."

Technical Delivery

The system has been designed in partnership with Sydney-based GeoExchange Australia and incorporates cutting-edge geothermal heat exchange technology.

The installation spans across the Memorial's Eastern Precinct, including beneath the Bean Building, bus park, and landscaped grounds.

A Legacy for the Future

In a place that commemorates the past, this project ensures the Memorial also leads into the future - demonstrating how sustainable energy solutions can honour history while safeguarding the environment for generations to come.

The Australian War Memorial's geothermal installation represents a landmark achievement in sustainable engineering and national leadership. By combining innovation, efficiency, and respect for heritage, this project demonstrates how world-class design and technology can deliver tangible environmental benefits. It stands as a testament to Australia's capability to integrate renewable energy solutions into culturally significant sites, setting a powerful precedent for future public infrastructure projects.

320	vertical closed-loop boreholes drilled to depths of up to 150 meters
1,400	of CO2 emissions cut each year through innovation
$1.3m	saved in energy costs per annum for the Memorial

Plumbing Industry Climate Action Centre

Project Overview

The Plumbing Industry Climate Action Centre (PICAC) at Narre Warren was designed as a state-of-the-art training facility and demonstration centre for clean energy technologies.

From the outset, it was identified that a geothermal system would provide not only substantial sustainability benefits, but also serve as an invaluable teaching tool for thousands of apprentices, students, and industry professionals.

Geothermal Industries Australia (GIA) was engaged from the earliest stages to deliver this vision, beginning with the drilling of a 100m test bore to carry out a Thermal Conductivity Test.

Challenges and Solutions

During the drilling of the test well, GIA encountered swelling clays extending to a greater depth than expected. This presented a significant challenge to conventional equipment. Recognising the need for a different approach, GIA invested in a new specialised Commachio drill from Italy, expanding its fleet to ensure the project could move forward.

GIA delivered 28 geothermal bores to 100m depth each. Despite difficult ground conditions, including swelling clays and variable formations, GIA successfully drove casing past the troublesome zones and delivered every borehole on schedule.

Geothermal Industries achieved a 100% success rate, with all 28 ground heat exchangers installed to full depth on the first attempt. In total, the team delivered 2,800m of vertical bores and 2,500m of energy pile piping, demonstrating both precision and scale. To ensure enhanced long-term performance, the systems were grouted with a thermally conductive grout optimised for efficiency. The completed geothermal installation integrates seamlessly with other clean energy systems — including solar PV, solar hot water, and water heat recovery.

Client Impact

GIA's contribution not only provided PICAC with a cutting-edge geothermal system that supports net zero energy objectives, but also delivered an educational platform. Multiple demonstration displays were installed throughout the centre, enabling students and visitors to see firsthand how geothermal energy is harnessed, stored, and reused.

"There is a genuine business case supporting geothermal energy as a source of heating and cooling. Interest in this proven technology in Australia will only increase as traditional energy costs rise and the shift to clean energy accelerates"– Clint Patzack, Managing Partner and General Manager, GIA.

28	**geothermal bores drilled to 100m each (2,800m total)**
2,500	**meters of energy pile piping installed with thermally conductive grout**
100%	**success – all ground heat exchangers installed to full depth on first attempt**


Geothermal

Parliament of Victoria

Geothermal Industries was proud to be selected for the drilling of 56 Geothermal bores to a depth of 100m below grade on this high profile commercial project. The drilling occurred in the base of the excavation prior to the basement slabs being poured.

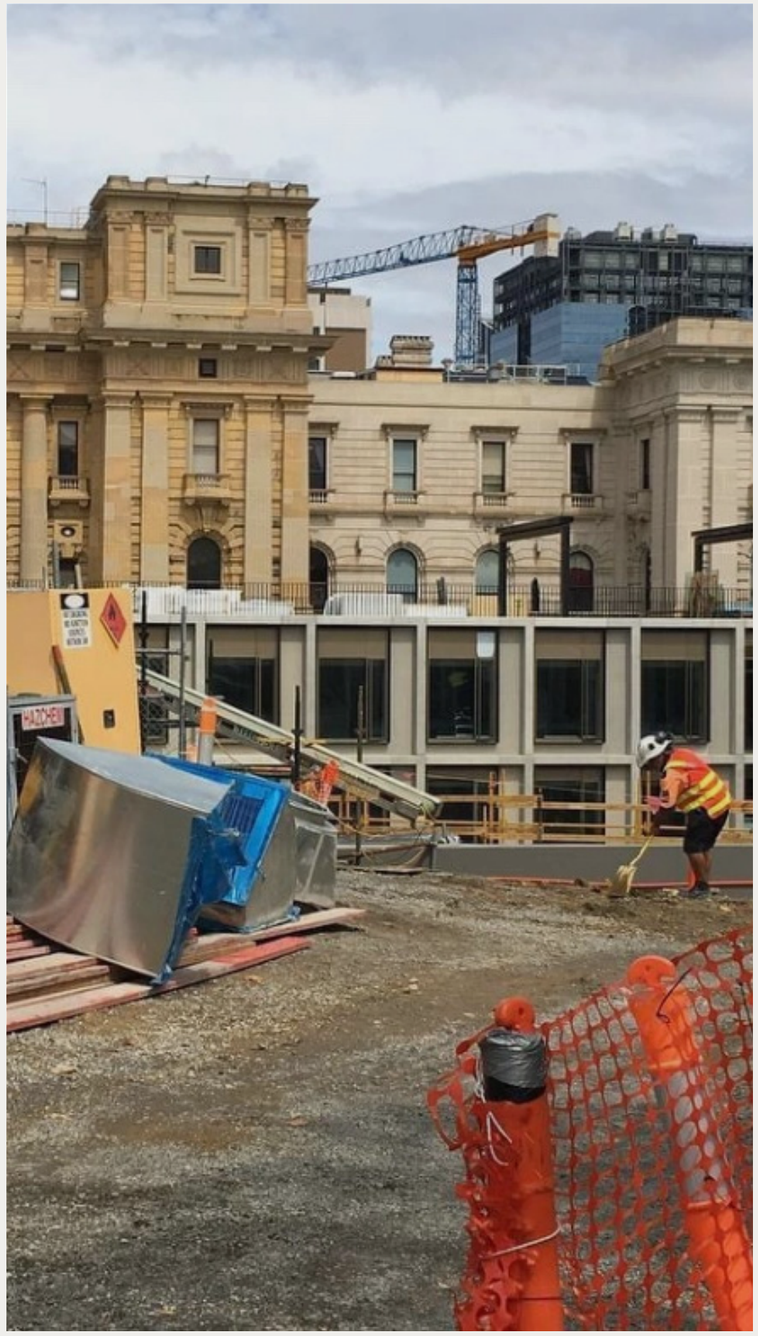
By having the geothermal drilling occur under the existing building footprint it took extra coordination both with the building programme and other building services. Geothermal Industries provided 2 of its purpose built geothermal drills to ensure there were no issues maintaining programme.

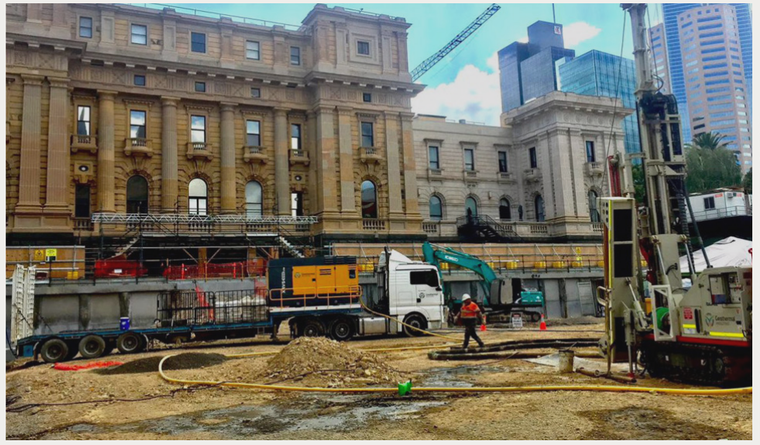
Geothermal Industries also deployed it's drill cutting containment system to ensure the site remained clean and free from drilling spoil allowing other trades to work alongside our crews.

In addition to the extra coordination, the site also presented some challenges with fractured rock at depths and large water bearing zones. Geothermal Industries was able to adapt and control the troublesome zones all while finishing the project on time.

Muovitech Turbo Pipe was used for each vertical heat exchanger installed to optimize the ground loop performance and maintain the system performance for years to come.

We successfully drilled 56 bores to 100m beneath the building footprint, deploying two purpose-built rigs and a drill cutting containment system to overcome fractured rock, water-bearing zones, and complex site coordination.





Darling Point

Located on Sydney Harbour's prestigious Darling Point peninsula, this project exemplifies both the versatility and technical capability of geothermal energy systems in complex residential environments.

The site presented unique logistical challenges - accessible only by barge and positioned just metres from the water's edge - requiring meticulous planning and precision execution.

The system design comprised of ten geothermal boreholes, each drilled to a depth of 120 metres. Working collaboratively with our client, CWL Group, we conducted extensive site coordination and pre-start planning to manage access constraints, environmental sensitivities, and sequencing with other trades.

Through detailed preparation and open communication, Geothermal Industries successfully delivered a high-performing geothermal solution in one of the most logistically demanding settings imaginable.

The Darling Point project stands as a testament to the adaptability of our drilling fleet, the capability of our team, and the reliability of geothermal technology - proving that if it can be done here, it can be done anywhere.

"Geothermal Industries has delivered time and time again. I can trust their professionalism, ability and attention to detail on each and every site I engage them on. Using Geothermal Industries has allowed us to eliminate challenges experienced with other contractors."

CWL Group
Clayton Long – Owner

Don’t take our word for it. Hear from our partners.

“Early on during the drilling phase challenging ground conditions were encountered. The team at Geothermal Industries utilized their professional knowledge and advanced equipment to ensure the target depths were achieved on the ground loop with zero issues.

Throughout the drilling phase it was clear to both Hutchinson Builders and our client that Geothermal Industries was a cut above rest and would settle for nothing less than what was promised. Without the proper contractors in place for this critical phase there is no doubt that the project wouldn’t have been the success that it is today.”

Hutchinson Builders
Marcel Van Vliet – Construction Manager

“Geothermal Industries exceeded our expectations with their professionalism and ability to deliver what was promised.

I would not hesitate to engage them on a project again and am already looking for the next opportunity to work together on.”

BUILT
Andrew Cheong – Project Manager

“The complexity of the Australian War Memorial project required a high level of coordination, precision, and strict adherence to environmental and heritage considerations.

Geothermal Industries not only met these challenges but exceeded expectations, by delivering a high-quality ground heat exchanger system. Their ability to work seamlessly with our team, adhere to project timelines despite challenging geological conditions, and uphold the highest safety and compliance standards was commendable.”

HINDMARSH CONSTRUCTION
War Memorial Project

“Geothermal Industries has delivered time and time again. I can trust their professionalism, ability and attention to detail on each and every site I engage them on.

Using Geothermal Industries has allowed us to eliminate challenges experienced with other contractors.”

CWL Group
Clayton Long – Owner

Thank you.

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