ENERCRET

Turnkey heating and cooling solutions

CONTENTS

ABOUT **ENER**CRET

ENERCRET was formed in Austria in 1981 as a family business. Since that time, we have gone on to deliver over 1,100 projects, across 26 countries, with our largest scheme delivering 14 MW of heat energy.

We operate throughout Europe, with offices in Austria, Switzerland, and the United Kingdom.

The UK office was opened in 2018 and has grown steadily to become a leader in the industrial and commercial heat pump installation market.

> **ENER**CRET have continued to deliver top quality projects for us, time after time. That is why we keep employing them.
>
> **Sarah Moore - AMERESCO**

COMPLETE SYSTEM DESIGN

- Bespoke ZORTSTROEM™ hydraulic shunt vessels
- Fully Level 2 BIM compliant
- Swiss EWS Borehole modelling
- Swedish IDA ICE thermal modelling software
- Automatic control system design

SERVICE AND MAINTENANCE TEAM

- JOBLOGIC™ management software for tablet based recording
- 4-hour rapid response team
- F GAS Certification qualified engineers
- Continuous energy and performance monitoring via our bureau

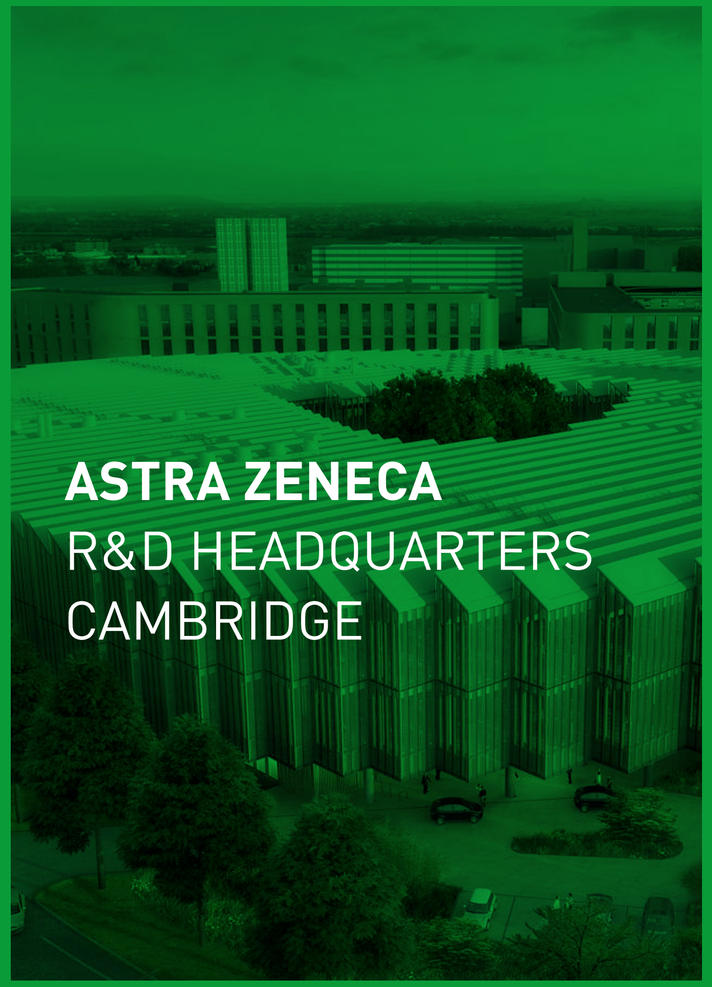
FULL TURNKEY INSTALLATION SERVICE

- Highly experienced UK drilling teams
- Digitally recorded header and manifold construction
- Full plantroom installations, including package & skids mounts
- High quality, German engineered heat pump technology
- Full automatic control system installation

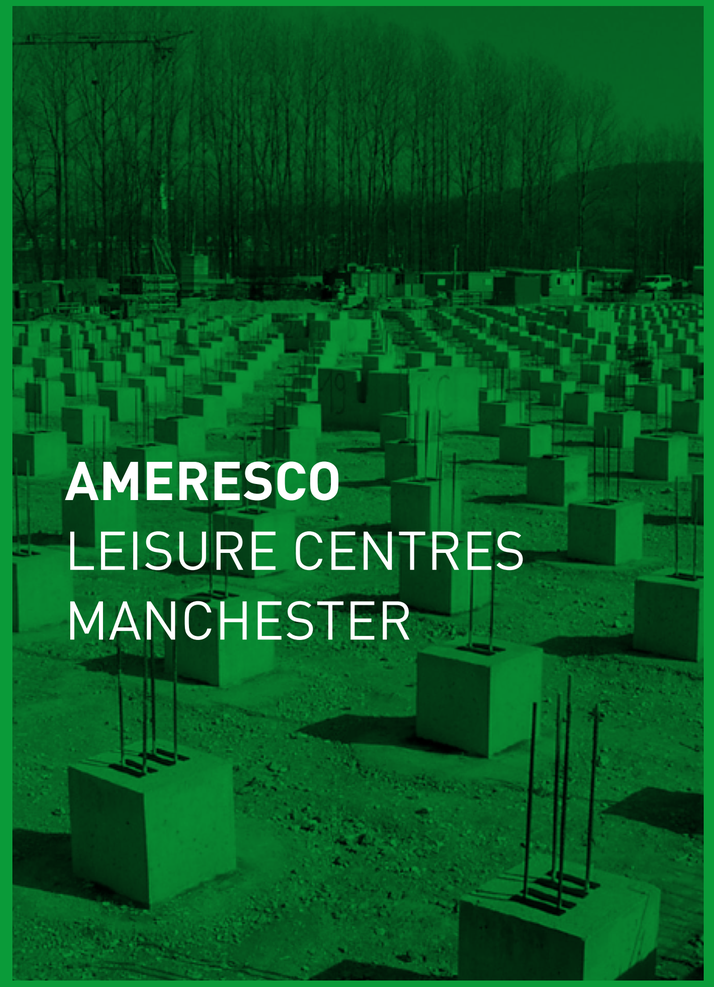
IN-HOUSE SPECIALIST CONSULTANCY SERVICE

- Industry renowned experts in control system design
- Building service installation trouble shooting
- Commissioning Management and Validation
- Legal expert witness for BMS control system disputes
- Energy optimization specialists

CASE STUDIES 1/2



ASTRA ZENECA
R&D HEADQUARTERS
CAMBRIDGE



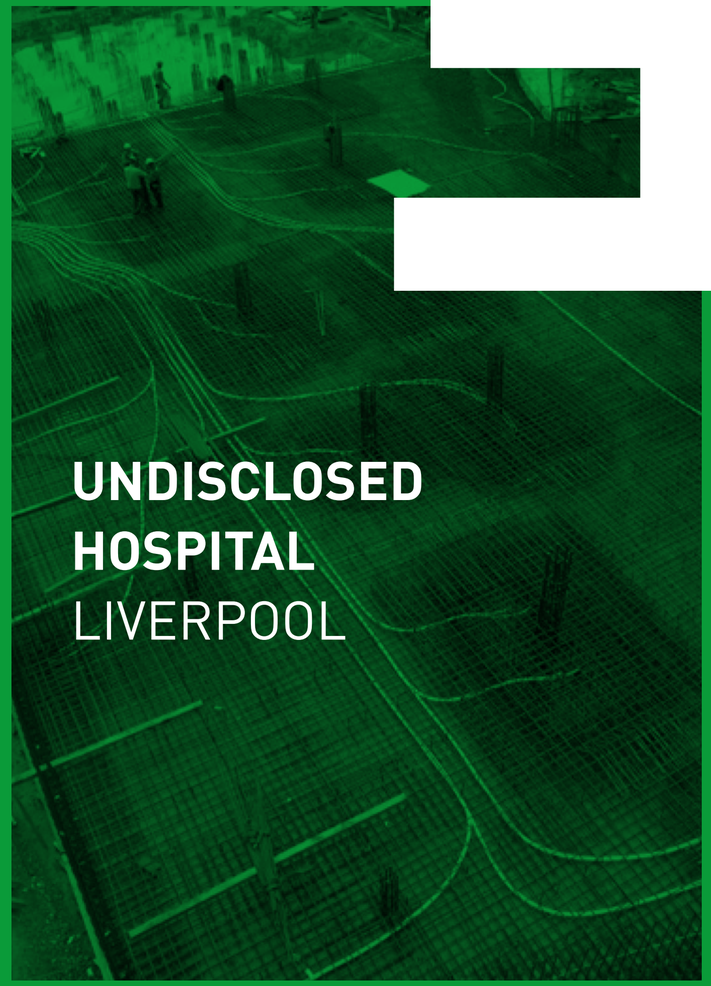
AMERESCO
LEISURE CENTRES
MANCHESTER

AMERESCO
METROPOLITAN
BOROUGH COUNCIL
BARNSLEY

CASE STUDIES 2/2

AMERESCO
COUNCIL BUILDINGS
ENFIELD

ROYAL PAPWORTH HOSPITAL
CAMBRIDGE



UNDISCLOSED HOSPITAL
LIVERPOOL

CUSTOMER
ASTRA ZENECA

ARCHIRECT
XXXXXXX

YEAR
2021

ASTRA ZENECA R&D HEADQUARTERS CAMBRIDGE

ENERCRET have delivered a full geothermal system for the facility, providing renewable heating and cooling energy from a heat pump-based solution. At the time of installation, the ground source solution was largest in Europe to our knowledge. However, this has now been topped by our colleagues in Austria who are currently delivering a mega project at Frankfurt Airport.

The geothermal installation supplies heating and cooling energy to the facility from high quality German engineered heat pumps supporting the base load. Conventional boilers and chillers support demand peaks but a sophisticated control system, designed and delivered by **ENER**CRET, minimising their use by maximising heat pump operation to charge thermal buffer vessels.

ENERCRET were involved in the detailed design and installation of the scheme, with commissioning due to take place later in the year. We are currently negotiating a long-term maintenance contract and three-year soft landings programme with the client.

The project has been designed to maximise returns from the Governments Renewable Heat Incentive scheme which provides payments for heat energy generated from approved energy sources. Astra Zeneca plan to utilise the money received from the RHI scheme to invest in further sustainable initiatives. **ENER**CRET have been appointed by the client to manage the RHI application process to maximise payments from the scheme.

ENERCRET's turnkey energy centre design will provide circa 2MW of heating and cooling energy simultaneously, with any excess generated stored within the borehole field for use in the opposing season. The borehole field consists of 170 bores, each drilled to a depth of 170m.

CUSTOMER
AMERESCO

ARCHIRECT
XXXXXXX

YEAR
2021

AMERESCO LEISURE CENTRES MANCHESTER

ENERCRET were employed by AMERESCO to carry out the installation of a combination of ground and air source heat pump installations across 5 leisure centre sites, operated by Manchester City Council.

Each of the centres remained fully operational throughout the duration of our works, with our works seamlessly integrating with the existing installations.

We were able to complete the projects on budget and in time, with huge constraints following the COVID pandemic, HGW driver shortages and BREXIT disruption.

We have showcased just two of the schemes, each of the following projects:

HOUGH END LEISURE CENTRE

We installed a ground source heat pump system comprising of three 50 kWt, Carrier units, operating on two selectable operating temperatures of 45°C or 65°C depending on demand conditions.

20 boreholes were drilled to a depth of 150 metres in the existing car park and surrounding land. Our works package included making good the car park following drilling works and interfacing with the existing heating / BMS installations.

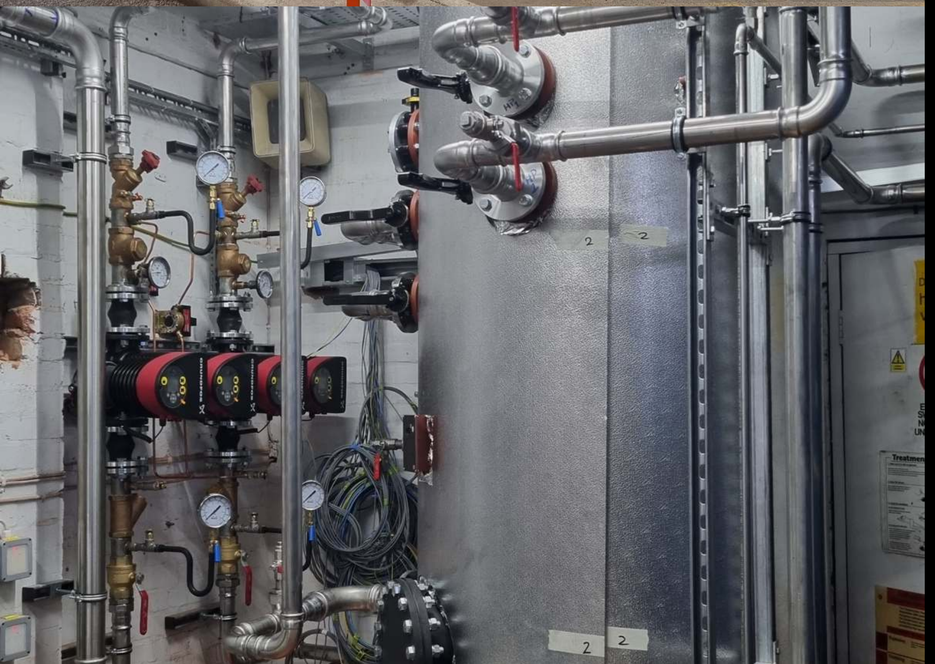
ARCADIA LEISURE CENTRE

The Arcadia Leisure Centre project incorporated 3 Carrier air-source units, each sized at 76 kWt.

Space constraints within the existing plant space meant that we had to provide an external plant housing to accommodate the off-site manufactured plant skids and heat pump units. Close proximity of the housing to the Manchester to London, West Coast rail line required specialist risk assessment and liaison.

We used out in-house manufacturing business, ENERLink to construct the buffer vessels which optimise heat pump operation and to minimise the number of run cycles.

www.enercret.uk | uk.sales@enercret.com



CUSTOMER
AMERESCO

ARCHIRECT
XXXXXXX

YEAR
2021

AMERESCO BARNSLEY METROPOLITAN BOROUGH COUNCIL

ENERCRET were employed by AMERESCO to carry out the installation of a combination of air source heat pumps and PV panels, complete with battery storage provision across a range of 6 sites.

The buildings comprised a mix of leisure centres and public buildings such as libraries, offices, and the Grade II listed Town Hall.

We faced a number of challenges, including complex logistics surrounding crane lifts and material deliveries, but regardless we were able to complete the projects on-time and on budget.

We were able to seamlessly integrate the PV and heating installations with each of the sites, without causing disruption to the day-to-day operation of the facilities.

www.enercret.uk | uk.sales@enercret.com

CUSTOMER
AMERESCO

ARCHIRECT
XXXXXXX

YEAR
2021

AMERESCO
ENFIELD COUNCIL

ENERCRET were employed by AMERESCO to carry out the installation air source heat pumps to complement existing heating installations across 5 sites within the Enfield Council estate.

Edmonton Green Library – 2 Carrier Air Source 50 kWt heat pumps installed on existing roof

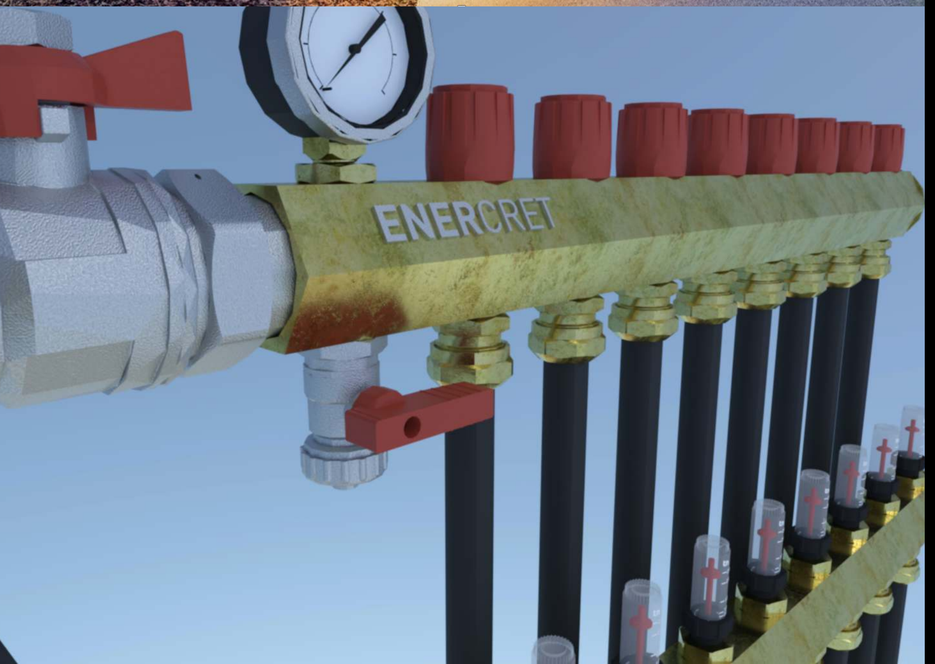
Edmonton Family Centre – 1 Carrier Air Source 40 kWt heat pump installed within a new packaged plantroom feeding the existing Domestic Hot Water and heating loads.

Enfield Civic Centre – 1 Carrier Air Source 100 kWt heat pump installed within an existing plantroom to serve Domestic Hot Water loads

Thomas Hardy – 2 Trane heat pumps, totalling 222 kWt operating on a cascade basis of air-to-water and then water to water to serve 80°C heating and hot water loads.

Ridge Avenue Library – 1 Carrier Air Source 40kw heat pump installed within an existing plantroom to serve heating and hot water loads

www.enercret.uk | uk.sales@enercret.com



CUSTOMER
ROYAL PAPWORTH HOSPITAL

ARCHIRECT
XXXXXXX

YEAR
2021

ROYAL PAPWORTH HOSPITAL CAMBRIDGE

ENERCRET's first major contract in the UK was the Royal Papworth Hospital, Cambridge. We delivered a full energy centre solution comprising of six high efficiency Waterkotte heat-pumps, three water cooled chillers and a bio-fuel CHP engine.

We provided the full, automatic control system for the energy centre, which we now monitor from our Manchester offices as part of our ongoing service contract with the hospitals FM partner. Our specialist automatic control system partner in Germany also support our team with fine-tuning activities to ensure that the system is highly optimised.

The Royal Papworth Hospital will continue for benefit from green, sustainable energy from many years to come thanks to shrewd investment by the trust in the proven technology.

The Papworth scheme is a real flagship project for **ENER**CRET, setting the standard for ground source energy within the UK. Our designs are unique to **ENER**CRET as we use a patented shunt technology to maximise heat pump efficiency. Research laboratory studies have indicated that the use of shunt technology improves overall system efficiency by up to 10% in a heat pump centred configuration.

We also been involved in the project recently to resolve ongoing commissioning and automatic control system issues on the wider hospital building services installation.

www.enercret.uk | uk.sales@enercret.com

CUSTOMER
LIVERPOOL HOSPITAL

ARCHIRECT
XXXXXXX

YEAR
2021

UNDISCLOSED HOSPITAL LIVERPOOL

ENERCRET's are currently onsite at a major hospital in the Liverpool area. Due to conditions of our non-disclosure agreement, we are not able to name the site, but the project includes the created of two major extraction and discharge wells to support an open-loop ground source heat pump solution.

The project is an extremely significant scheme, and we are extremely proud to be delivering this major project.

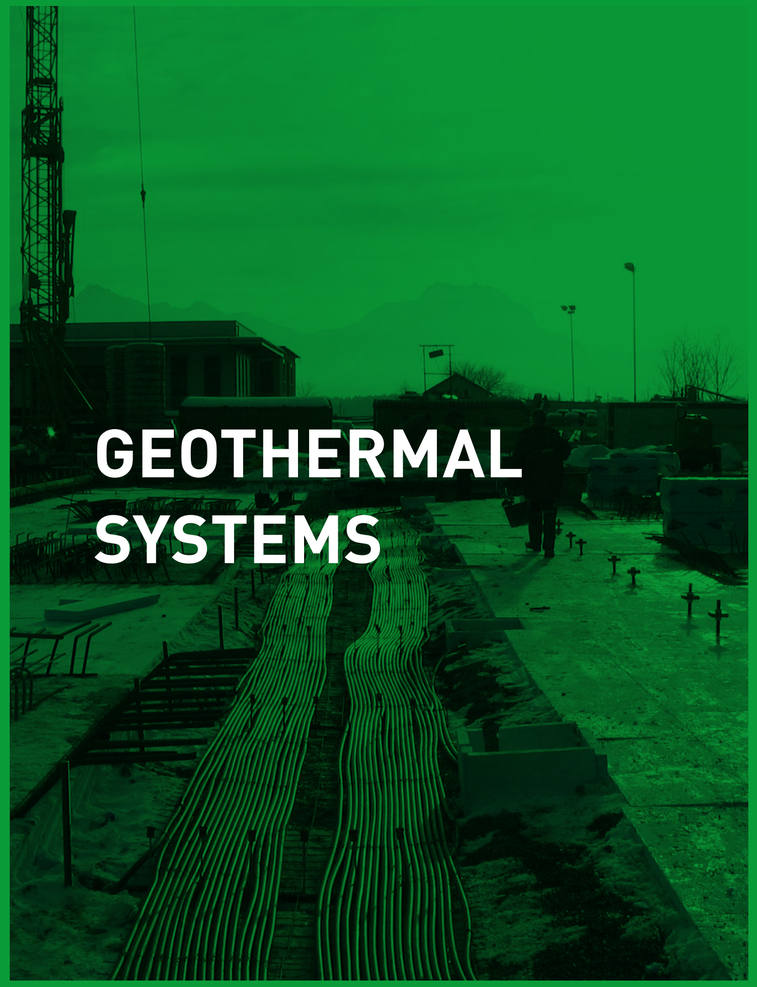
www.enercret.uk | uk.sales@enercret.com

“ **ENERCRET** have continued to deliver top quality projects for us, time after time. That is why we keep employing them. ”

Sarah Moore - AMERESCO

AMERESCO
Green • Clean • Sustainable

SERVICES


GEOTHERMAL
SYSTEMS


SERVICE &
MAINTENANCE


HEATING &
COOLING
SYSTEMS

GEOTHERMAL SYSTEMS

Enercret is one of the world market leaders in the field of constructing near the surface geothermal energy system for the heating and cooling of buildings.

Regardless of its size, our goal on any project is to plan and build an economic and energy-saving geothermal energy system. The foundation of a perfect geothermal heating system starts with a comprehensive consultation of the client, followed by the inclusion of all relevant climatic, underground, building recording and user data. Each of these factors are taken into account in the professional planning process, as well as the results of our simulation calculation, with which we determine the grounds renewable energy sources that are economically usable.

Through exact dimensioning of all system components - from the pipeline profiles, to the circulation pumps, to the heat pump - we save not only investment costs but also operating costs. Our expert assembly and decades of experience also allow us to significantly extend the statutory warranty periods.
Regenerative geothermal heat sources can ideally be combined with other primary energy sources (PV-systems, solar thermal energy, CHP, gas boilers and others).

For special cases, we also provide unusual solutions, as the example of the cable car pillar heating at the Rettenbachferner in Tyrol shows. You can find further information under the heading Special absorbers.

We further support every client in applying for subsidies and grant initiatives. Our planning is therefore developed in such a way that the client is granted the highest possible level of support.

Renewable energy provide from the ground under a construction is the most sustainable form of modern heating and cooling system. ENERCRET is the only company in the world with the capability to simulate, install and guarantee!

SERVICE & MAINTENANCE

Regular service and preventative maintenance is the key to ensuring that installations are both reliable and efficient

Our highly experienced service engineers we trained and qualified in multiple disciplines, including refrigeration, BMS Controls and Electrical testing.

All our our mobile engineering team are equipped with a wide range of tools and modern equipment to ensure that we provide the best possible service. We have invested in the latest technology to allow our engineers to provide onsite reports and quotations.

> **“ENERCRET have supported us on a number of large scale, complex projects. We can always rely on the team for expert technical advice.”**
>
> **Steve Marsh - ENER VATE**

HEATING & COOLING SYSTEMS

Complex multivalent heating and cooling systems are our business.

ogether with our partners ENERPLAN and ENERLINK we build heating and cooling power stations of all sizes.

Experience is everything! Whether it is the construction of new systems or the modification of existing systems - we build up the components "off-site" as far as possible in advance and therefore minimising the installation effort on the construction site. Therefore, errors can be found and eliminated even before installation.

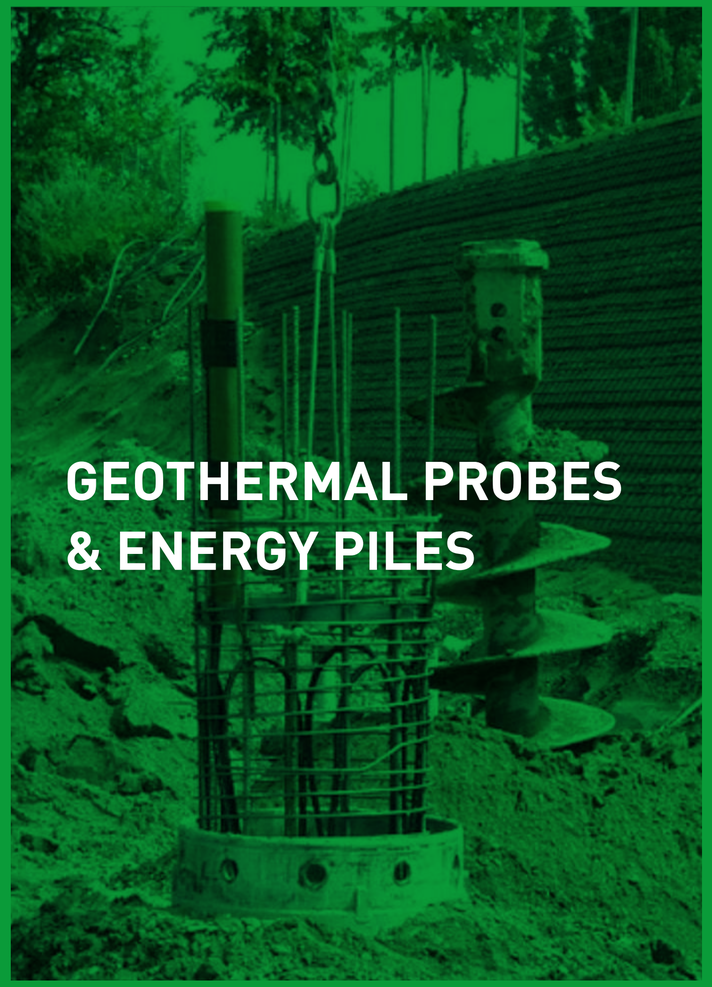
ENERPLAN develops 2D and 3D plans according to the relevant BIM standard and makes all relevant calculations. ENERLINK calculates, designs and manufactures hydraulic distributors which optimise energy storage and distribution.

We deliver systems in steel, stainless steel and plastic, we check and fill the system and commission our installations. Some customers require an operating contract, which we are happy to offer.

Since we deliver turnkey systems, you as a customer only have one contact; interfaces are eliminated or considerably simplified.

We exclusively use quality components from branded manufacturers and not cheap imports from the Far East.

TECHNOLOGIES 1/2

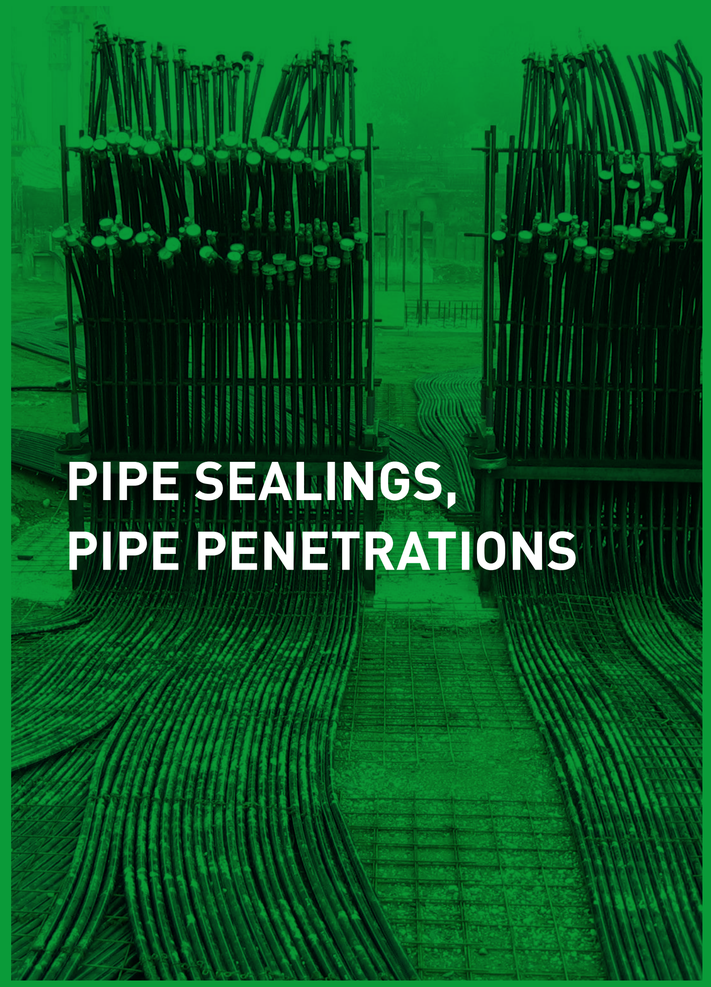


GEOTHERMAL PROBES
& ENERGY PILES

OPEN SYSTEMS
(WELLS)

SPECIAL
ABSORBERS

TECHNOLOGIES 2/2



PIPE SEALINGS,
PIPE PENETRATIONS

HORIZONTAL
CONNECTIONS
AND MANIFOLDS

HEATING &
COOLING STATIONS

GEOTHERMAL PROBES & ENERGY PILES

ENERCRET has been building horizontal connections and manifolds for more than 35 years.

Each construction site is different and presents special challenges for our team. All of our chief mechanics have been in the company for more than 20 years and therefore have the experience to help our customers to complete the project quickly and without interruptions.

From a simple connection to a domestic dwelling, through to a complex shopping centre, with more than 1000 energy piles installed, we have the experience to deal with all kinds of connections and manifolds.

Hydraulic optimisation is the primary focus of the design and construction of our connection and manifold systems. This is where most common errors occur, leading to a reduction of the energy absorbers performance. Our many years of experience helps us to eliminate mistakes.

OPEN SYSTEMS (WELLS)

ENERCRET uses wells and water as a source of geothermal energy.

Open systems such as wells or water (lakes, rivers, sea, drain pipes) are a showcase field in the utilisation of geothermal energy.

Concept design in this field of geothermal energy is particularly challenging as these energy sources are subject to natural influences such as drying out and seasonal fluctuations.

Wells are often used as the basic source of geothermal energy and supplemented by other regenerative sources. The hydraulic integration of these different energy sources is not always easy and requires a lot of experience.

We always work with a local geologist to partner us in developing optimum solutions for long-term utilisation of natural sources.

A well planned and properly designed open system is especially energy efficient and provides an impressive cost benefit ratio.

SPECIAL ABSORBERS

ENERCRET Special Absorber - Concrete

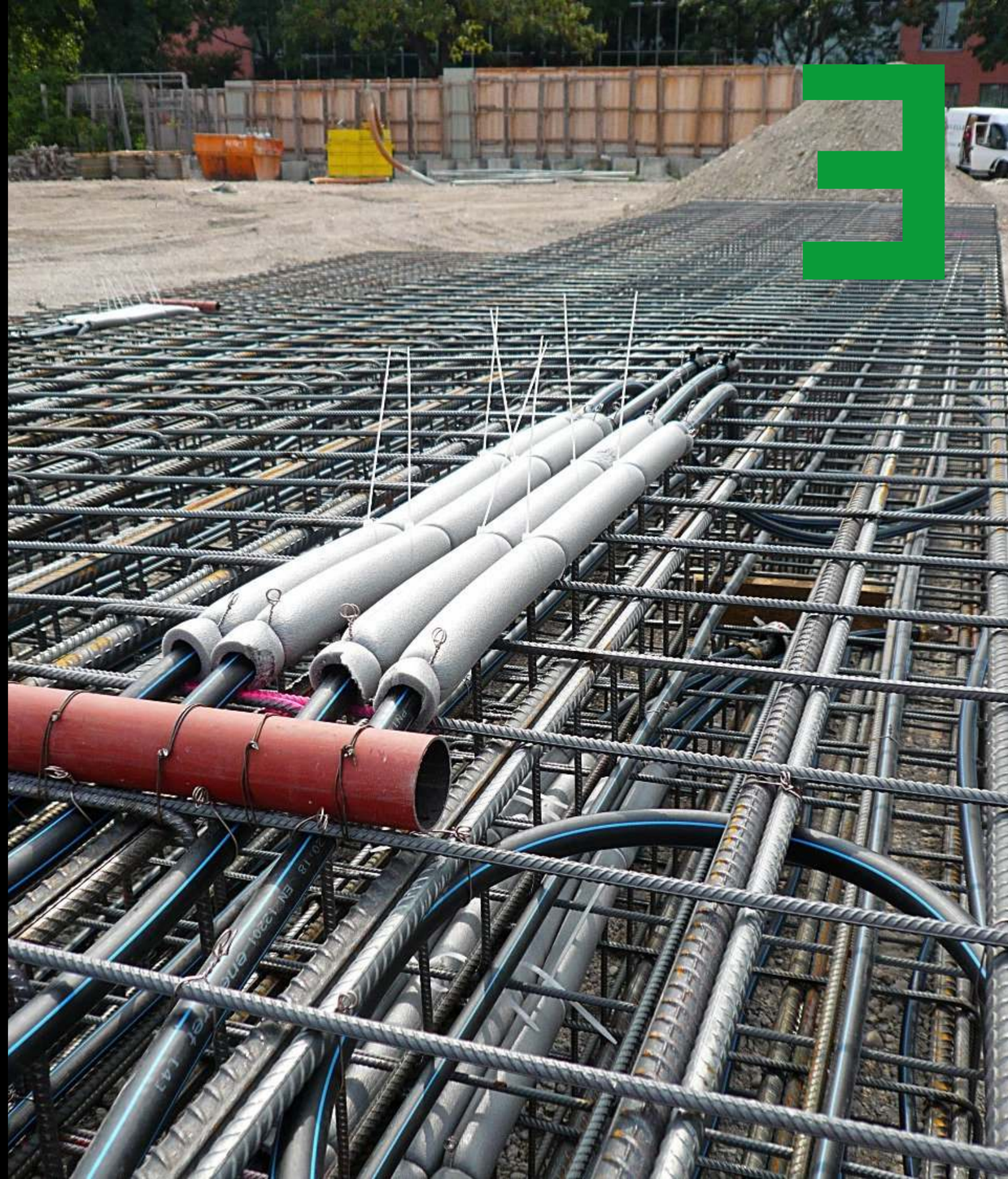
In principle, any kind of concrete can be used as an absorber in the subsoil: slotted walls, slope reinforcements, temporary pit supporting systems, tunnels (railway or metro), armature bores or simply baseplates under underground garages and basements.

Often we experience that the client is not aware of the many possibilities and therefore ignores ground-bonded concrete as an absorber.

We work in close collaboration with the structural engineer, to determine which absorber capacities can be used. We are highly experienced in the construction process and therefore work with the contractor to integrate our activities into the programme of works.

Hydraulically optimising the combination of circuits is challenging, especially in situations such as slotted walls. We have many years of experience in this field which allows us to deliver with confidence!

Talk to our experts about the possibilities! The allocation of special absorbers is cost-effective and can reduce the necessary costs for energy piles and probes.



PIPE SEALINGS, PIPE PENETRATIONS

ENERCRET has been building horizontal connections and manifolds for more than 35 years

Each construction site is different and presents special challenges for our team. All of our chief mechanics have been in the company for more than 20 years and therefore have the experience to help our customers to complete the project quickly and without interruptions.

From a simple connection to a domestic dwelling, through to a complex shopping centre, with more than 1000 energy piles installed, we have the experience to deal with all kinds of connections and manifolds.

Hydraulic optimisation is the primary focus of the design and construction of our connection and manifold systems. This is where most common errors occur, leading to a reduction of the energy absorbers performance. Our many years of experience helps us to eliminate mistakes.

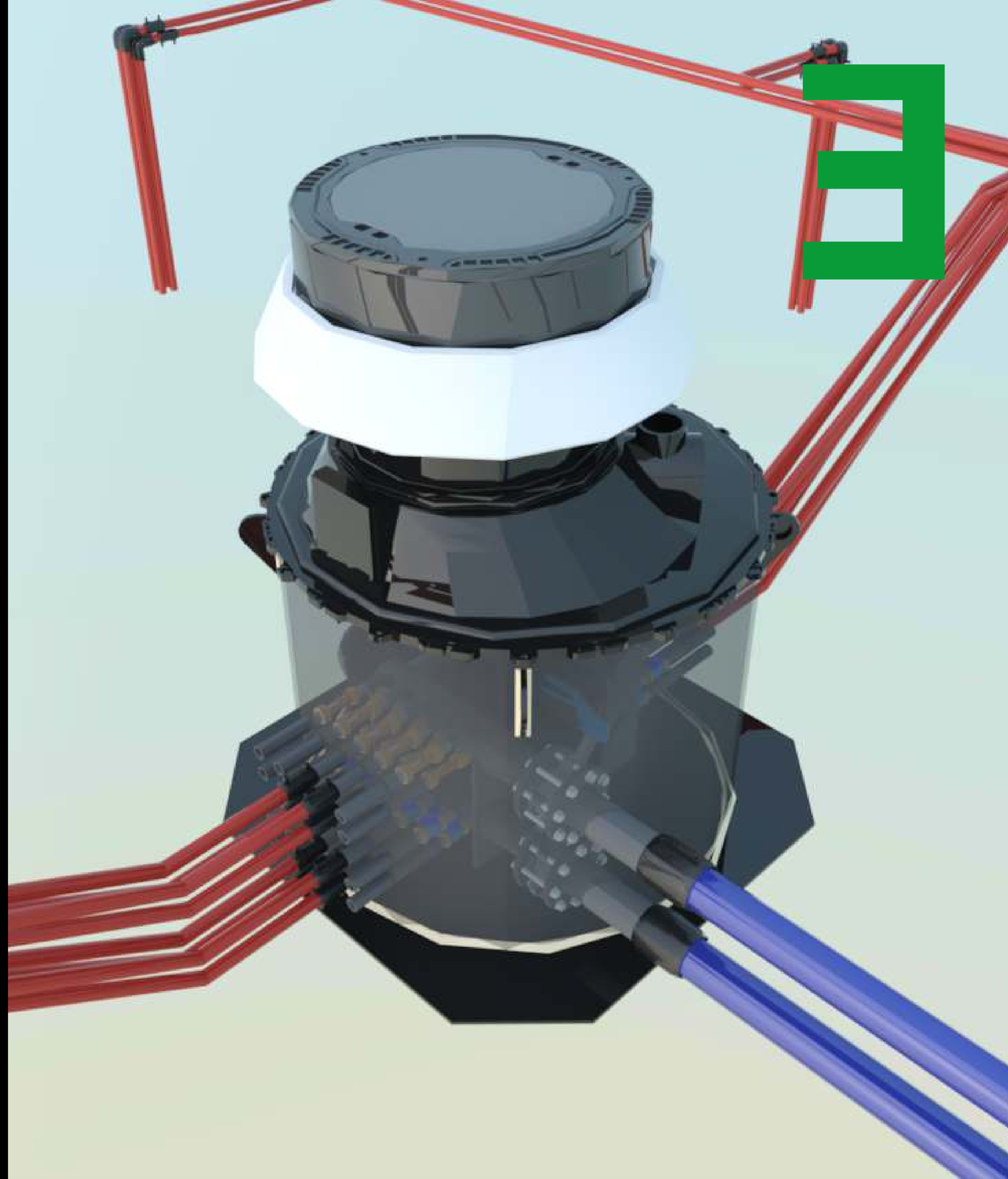
HORIZONTAL CONNECTIONS & MANIFOLDS

ENERCRET has been building horizontal connections and manifolds for more than 35 years

Each construction site is different and presents special challenges for our team. All of our chief mechanics have been in the company for more than 20 years and therefore have the experience to help our customers to complete the project quickly and without interruptions.

From a simple connection to a domestic dwelling, through to a complex shopping centre, with more than 1000 energy piles installed, we have the experience to deal with all kinds of connections and manifolds.

Hydraulic optimisation is the primary focus of the design and construction of our connection and manifold systems. This is where most common errors occur, leading to a reduction of the energy absorbers performance. Our many years of experience helps us to eliminate mistakes.



HEATING & COOLING STATIONS

ENERCRET installs heating and cooling stations in any desired size

A geothermal heating system needs a hydraulically optimised heating and cooling station. Starting with the transfer from the geothermal heat manifold to the interface to the building loads. System hydraulics must be carefully optimised and all secondary pumps operating speeds must be minimised. This is the only way to achieve efficient overall results.

Our partners ENERPLAN and Zortea support us in the design and lay-out of the hydraulically optimised heating and cooling stations.

We manufacture as much of the system off-site as possible. This allows us to minimise time spent on site and maximise quality. As a result, design and manufacturing errors are detected early and can be corrected before installation. This approach improves safety as manufacture occurs in a controlled environment.

We manufacture in steel, stainless steel and plastic. All system components, such as valves, pumps and heat exchangers come from well-known, reputable European suppliers.

Our special area are large multivalent systems with several energy sources (heat pump, solar, CHP, gas, chiller and dry air cooler).

MEET THE **TEAM**

Joseph Lowry
Project Engineer

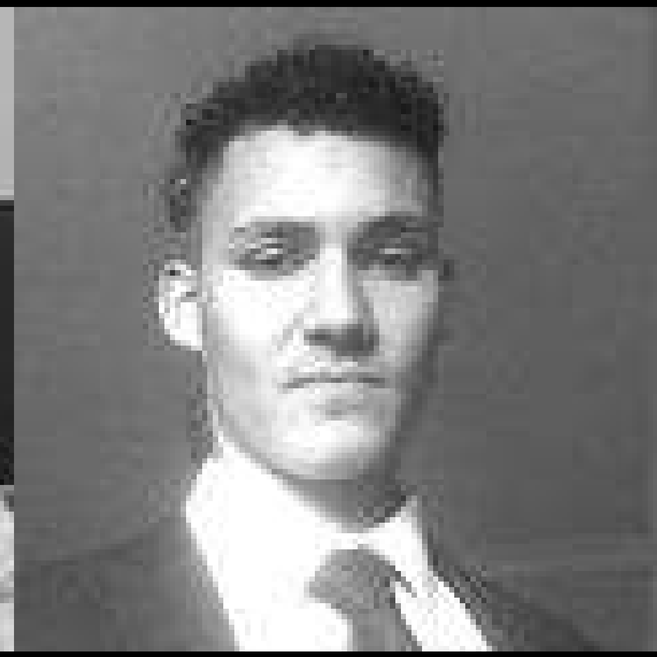
T +44 (0) 161 955 4718
M +44 (0) 7778 598691
joe.lowry@enercret.com

Hannah Schilling
Business Manager

T +44 0161 955 4718
M +44 07770 791088
hannah.schilling@enercret.com

Tony Worrall
Project Manager

T +44 (0) 161 955 4718
M +44 (0) 7974 642083
tony.worrall@enercret.com



Liam Humphries
Project Engineer & Service Lead

T +44 (0) 161 955 4718
M +44 (0) 7816 099321
liam.humphries@enercret.com

CONTACT

UK Office
ENERCRET Ltd
Suite 2, Hexagon House,
21-23 Gatley Road,
Cheadle, Stockport
SK8 1NZ

T 0330 333 9277
uk.sales@enercret.com