



UNIVERSITY
of York

Future Source

Our geothermal energy project



Annual report
June 2026



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One year at a glance



**£35
million funding**

Secured for the initial three-year phase (Phase 1) from the Public Sector Decarbonisation Scheme run by the Department for Energy Security and Net Zero, delivered by Salix Finance Ltd.



**78%
fossil fuel
reduction**

Target for the cut in fossil fuel consumption, part of the University's Sustainability Plan 2030 targets.



**Expected heat
generation in
2028**

The project is expected to begin generating heat, offering a resilient, clean alternative to support energy security and national priorities.

"It has been absolutely fantastic to assemble a high performing team of employees and contracted partners to achieve such rapid, **high quality progress in such a short period of time. It is wonderful to see the opportunity turning into reality piece by piece like a difficult jigsaw."**

Paul Bushnell, Project Director
University of York



**55m
drilling rig
max height**

Anticipated maximum mast height of the drilling rig, which will be on site for approximately one year (drilling anticipated in 2027).



**3 years
duration for
Phase one**

Funding secured for initial phase, focussing on generating heat for the majority of campus buildings through a district heating system.



**Maximising
potential**

Exploring future phases as a key part of York's wider energy transition vision, decarbonising and providing cheaper energy for the City sourced by deep geothermal heat.



**4km+
drilling depth**

The depth below the surface where the geothermal wells will be located.



**6-7 years
phase project for
Phase two**

Total projected time to explore electricity generation and expand heat capacity, integrating deep geothermal heat into other district heat networks.



**Unique
university
location**

Located on freehold land, placing a project of "UK significance" on a university campus, offering a living lab and inspiring a pipeline of future talent.

PART 1:

Project launch and progress

Vision in action

In Spring 2025, the University of York launched a landmark deep geothermal energy project, a cornerstone of our Sustainability Plan 2030, and serving as a blueprint for UK sustainable energy innovation.

By harnessing the Earth's natural heat, it aims to cut our fossil fuel consumption by 78% and drive a significant contribution to reducing the City of York's overall carbon footprint.

Project roadmap - maximising potential

The geothermal well, located on freehold land on York's Campus East, creates a project of UK significance on a university campus.

Phase one (first three years) funding secured

The initial three-year phase focuses on generating heat for the majority of university campus buildings. The project has already secured a £35 million government-funded grant to support this crucial first stage.

Phase two (total six to seven years)

Subsequent phases will explore electricity generation and expand heat capacity, maximising the potential of this renewable resource.

A pathway to clean, reliable energy for York

With further investment and collaboration, we could explore a city-wide geothermal heat network to deliver clean, reliable energy to residents. Creating a joined-up infrastructure serving the City's communities, including additional geothermal sites, we could deliver on a geothermal vision for York.

Funding the future

Our geothermal project is supported by a £35 million government-funded grant from the Public Sector Decarbonisation Scheme, run by the Department for Energy Security and Net Zero, and delivered by Salix Finance Ltd. The University of York is also contributing 12% of matched funding to the project.

"This project not only reduces carbon emissions, but also serves as a hub for research and education, fostering the next generation of renewable energy experts. Its community-focused approach will also contribute to York's broader sustainability goals, creating a greener, more prosperous future for the city."

Rachael Maskell, York Central MP



Fueling the transition: our progress so far (Year 1)

- **Site location:** A successful geothermal project requires an excellent location. This means options predicting favourable subsurface and planning long-term restoration. We have successfully planned to repurpose a disused velodrome for our well creation, working with British Cycling to build an exciting new cycling facility.
- **Project launch:** Our project was publicly announced in Spring 2025 with a series of briefings and announcements. We've been keeping stakeholders informed through a digital hub to share information, progress and FAQs to support understanding of the project's potential.
- **National conversations:** In June 2025, we presented at the UK Geothermal Task Force event and supported Salix as a guest speaker at the annual EAUC Conference to help raise the national profile of the project.
- **University innovation:** The project is acting as a catalyst for potential future research projects, creating a 'living lab' for research and inspiring the next generation about deep geothermal technology.
- **Community engagement:** Our first Open Day in June 2025 saw members of our local community come to find out more about the project and hear about the seismic surveys planned for later in the year. Attendees included local residents, sustainability champions, local government representatives and landowners.
- **Deep geothermal research:** In July 2025, we delivered our first deep geothermal research workshop. This brought together University of York researchers to explore and identify critical gaps in current UK and international geo-energy research.
- **Well design:** Collaborated with GeoScience to design the geothermal wells and confirm the exact well site location on Campus East.
- **Hydrogeological risk model:** We worked to model the hydrogeological risk of the project, as well as working closely with the relevant regulatory authorities.
- **Seismic surveys:** In Autumn 2025, we successfully completed our seismic survey with our delivery partners, Echo

"This geothermal project is more than just a sustainable energy initiative; it's a living laboratory that will drive research, educate our students and benefit communities.

The support from the Government is a vital catalyst for this transformative endeavour."

Professor Charlie Jeffery,
Vice-Chancellor and President, University of York

Geo Ltd. This essential early-stage work provided a detailed understanding of the geology beneath Campus East and the surrounding areas, helping to inform the project's feasibility and planning. We engaged the community by getting volunteers to host seismic sensors, referred to as 'gnodes', in the gardens.

- **Exploring geothermal with York Environment Festival:** In October 2025, we hosted several public open days across the City of York to share project updates, along with a geothermal public lecture to celebrate World Geothermal Day.
- **In conversation with Salix:** Paul Bushnell, project lead, shared the vision behind our geothermal project with Salix. Find out more from episode 32 of The Decarbonisation Dialogue podcast.
- **LED lighting upgrades:** As part of the project, lighting across the campus has been upgraded to energy-efficient LEDs.
- **Roofing upgrades:** As part of the project, our roofing upgrades across campus have been completed.
- **Scaling impact for York's geothermal energy with Energy Minister:** In February 2026, Rachael Maskell MP and geothermal project leaders met with the Energy Minister Lord Whitehead in Whitehall to discuss how we can decarbonise and provide cheaper energy for the City through district heat networks sourced by deep geothermal heat.
- **Partnering with our drilling contractors:** After undertaking a tender process, we announced our drilling partnership with Marriott Drilling Group in March 2026. A kick-off meeting took place with Geothermal Targeting and Well Design, Marriotts, British Geological Survey (BGS) and GeoScience.

- **Window sampling works:** In March 2026, we welcomed York Archaeology on site, undertaking window sampling to understand the layers beneath us and assess their archaeological potential.

- **Planning permission granted:** In April 2026, we were granted planning permission with no objections.

- **3D survey model being created:** The British Geological Society (BGS) is underway with interpreting the Seismic Survey and updating the 3D model.

- **District Heating Extension developments:** Vital Energi has been awarded the project. With challenging initial costs, the project team is working closely with Vital Energi to review value engineering options to bring the costs closer to budget.

"Our Salix teams have been onsite in York several times to see first-hand the determination and expertise powering the project. We're excited to support the next phase as drilling begins, and how this pioneering initiative will help lead the way towards a cleaner, more secure energy future for the UK."

Kevin Holland, Salix Chief Executive

PART 2:

Making connections

Scaling our sustainability goals with the City

This project is central to the University of York's Sustainability Plan 2030, targeting a 78% reduction in fossil fuel use. It will cut emissions, drive research, enhance teaching and benefit the wider community.

This is just the start. We are joining York and North Yorkshire's ambition to become the UK's first carbon net zero region, set out in the City's Local Plan and the Mayoral Combined Authority Growth Plan; both shaped with University expertise.

By working with local authorities, the Darlington Economic Campus and Whitehall, this project connects regional action with national sustainability and economic goals. It is a major step in place-based sustainable innovation as part of the UK's renewable energy goals.

"This multi-phased project does more than power our campus and potentially the wider community; it positions the region as a leader and pioneer. By fusing cutting-edge geothermal exploration with our world-renowned research and educational expertise, we are supporting the national transition to homegrown, secure, clean energy."

Professor Charlie Jeffery,
Vice-Chancellor and President, University of York

A UK innovation spotlight

The project is driving national clean energy leadership, new research and will become a vital national asset, generating data to unlock the potential of deep geothermal energy.

It positions Yorkshire and the North-East as an international centre of expertise and - by attracting public and private investment - it will support the UK's Industrial Strategy and Clean Energy Industries Sector Plan.

With its focus on innovation in securing clean reliable energy, de-risking future geothermal projects and creating high-quality jobs, it strengthens UK energy security, reduces reliance on fossil fuels, and informs the Government's Warm Homes Plan on sustainable heating and cooling.

Global expertise, UK excellence

The specialist nature of deep geothermal drilling presents challenges and the UK is not traditionally recognised as a centre of excellence for geothermal energy. The project has developed high-impact international partnerships, with specialist global expertise playing an important role in building UK deep geothermal knowledge and capabilities.

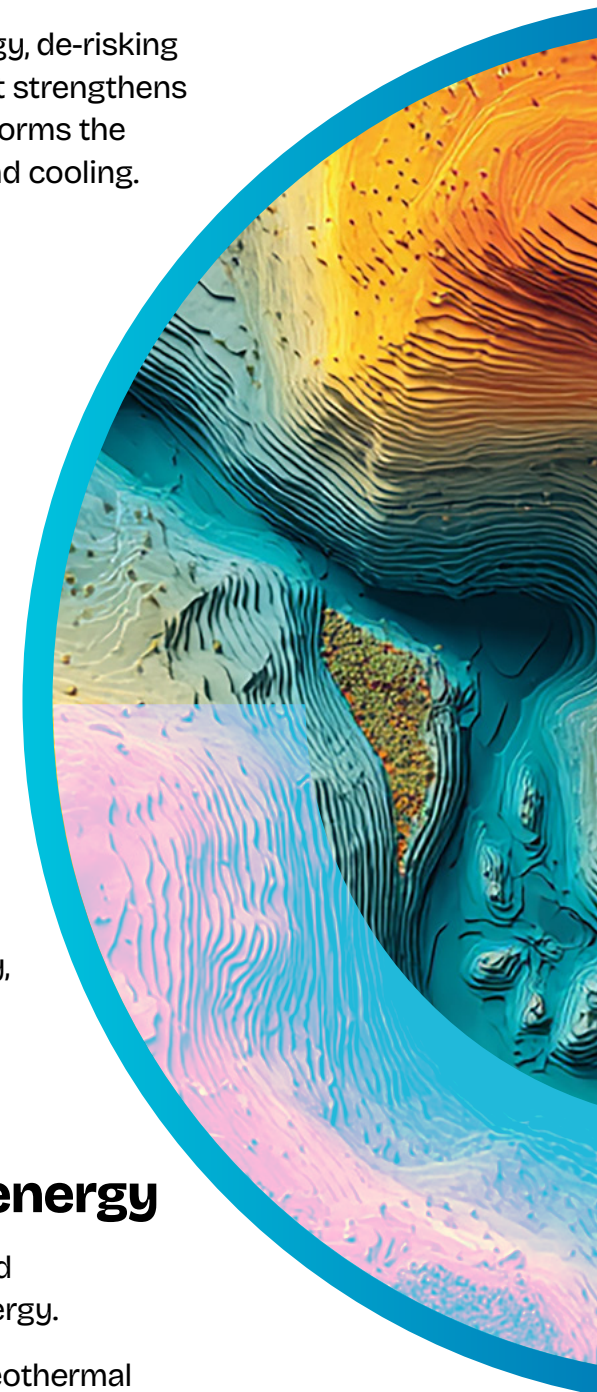
Regional research hub and skills for the future

With interdisciplinary expertise in science, engineering and policy, the University of York is well placed to lead a geothermal cluster, working alongside Durham University's Energy Institute and the University of Leeds' Living Lab. As the first deep geothermal project hosted by a UK university, it offers unique opportunities for teaching and training, and building the skilled workforce needed to deliver green growth and the UK's transition to clean energy.

The national conversation: clean energy

We're not only exploring new ways to power our homes and buildings, but we're changing how our City thinks about energy.

We're taking the conversation to residents, demystifying geothermal technology and championing a cleaner, more resilient energy future. We've brought together local communities, researchers, educators and government stakeholders, from packed public lectures and local library drop ins, through to engaging exhibitions and high-level ministerial policy briefings. Together, we have built a strong community of advocates and partners to share UK ambitions for energy innovation and security.





“This geothermal project will be an example of sustainable energy innovation as well as showing us how education, research and community can come together to tackle climate change.”

Ian Rodger, Director of Public Sector Decarbonisation at Salix Finance Ltd.



“University of York - not just accessing #ukgeothermal energy to heat the university, but also training the #geothermal experts of the future!”

“Really fantastic - great to see the University taking such strides to contribute to net zero targets.”

PART 3:

What is geothermal?

A transformative project

The University of York's geothermal project is an exciting and ambitious step towards a sustainable, low-carbon future.

As a transformative "blue ribbon" project, it unlocks the potential of deep geothermal energy to significantly reduce the carbon emissions while creating opportunities for research, education and long-term energy resilience for the City, region and the UK.

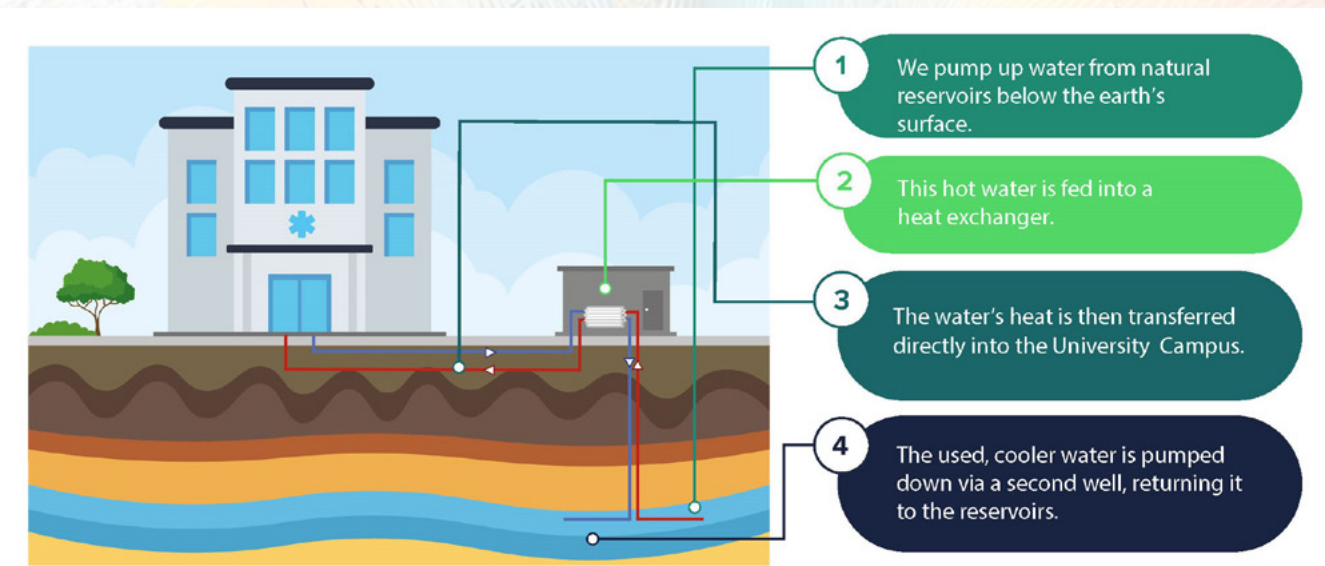
Turning up the heat

Energy exists in many forms, such as chemical energy (oil and gas) and kinetic energy (wind and waves). Geothermal

energy is different - it uses heat stored beneath the Earth's surface.

As you go deeper underground, temperatures increase because you are closer to the hot layers below. Heat moves up through the Earth's crust in two main ways: by conduction through solid rock and by convection through water trapped in underground layers called aquifers.

Geothermal energy, meaning "heat from the Earth," is a renewable and low-carbon resource that is continuously replenished by heat from the mantle. While it is easiest to access in volcanic regions like Iceland and New Zealand, it is found worldwide, including in the UK.



Today, around 90 countries use geothermal energy for heating, cooling, or electricity.

Accessing this heat usually involves drilling into the Earth's crust and using water to bring the heat to the surface. The heat is then transferred into systems for practical use, such as heating buildings or generating electricity.

Geothermal at York

At the University of York, we are aiming to tap into hot water stored deep underground. The plan is to drill two wells. Hot water will be brought to the surface through one well and passed through a plate heat exchanger, where it transfers its heat to the University's district heating system, which supplies most of the campus. The two water systems remain separate and do not mix.

The cooled water is then returned underground through the second well into the same aquifer. There, it heats up again before being brought back to the surface, allowing the cycle to continue.

York's campus already uses a district heating system, with potential to expand this heat capacity to the other networks; a proven, low-carbon "anchor" for local authorities looking to implement the Warm Homes Plan's vision of strategic local heat infrastructure.

Why geothermal energy?

We need energy that is locally produced, affordable and built to last. At the same time, urgent action is required to tackle energy security and climate change as we can no longer rely on fossil fuels. Geothermal energy has the potential to provide renewable electricity and heat 24/7.

What makes geothermal such a good energy source?

- **Renewable and sustainable:** Geothermal energy comes from the Earth's natural heat, which is constantly replenished, making it a long-term energy source.

- **Low carbon and environmentally friendly:** Unlike fossil fuels, geothermal energy produces little to no greenhouse gas emissions, helping to combat climate change.

- **A constant supply:** Unlike solar and wind, geothermal energy isn't affected by the weather. It provides a constant, 24/7 energy supply.

- **Improves national energy security:** By using geothermal energy, countries can rely less on imported oil and gas, improving energy security.

- **Cost-effective in the long run:** While initial setup costs can be high, geothermal energy has low operating costs and provides stable energy prices over time.

- **Efficient for heating and cooling:** Geothermal systems can heat homes, businesses, and even entire cities efficiently. They can also be used for cooling in summer.

- **Small land footprint:** Unlike large-scale wind or solar farms, geothermal plants take up very little space to generate power, making them suitable for urban and rural areas.

- **Supports economic growth:** Investing in geothermal energy provides a multitude of jobs in the green energy sector.

"While deep geothermal exploration carries technical and geological risks, the project is creating valuable knowledge and experience that will help shape the future of geothermal development in the UK."

Paul Bushnell,
Project Director, University of York

PART 4:

Powering the project: planning and partnership

“This project approach stands as a testament to what you can do with a proactive team, engaged public and unifying ambition.”

Matt Thompson, Project Manager (Geothermal), University of York

We've set the pace for progress and navigated an ambitious roadmap to bring our geothermal vision to life. We've worked with industry, local authorities, researchers and residents throughout the entire process, hitting every critical milestone on schedule.

In just one year, we've laid the groundwork for success through a series of high-impact public tenders and secured the expertise, support and buy-in required to transition from ambition to action.

Planning and procurement: milestones in motion

Progress has been anchored by key stages of our procurement journey, including planning approval and the critical appointment of our drilling partners. We've completed a complex, large-scale 3D seismic survey, and benefited from extensive public engagement that has inspired and engaged the community.

The detail:

- **The consultancy framework:** Structured across four specialist lots, each is aligned to key areas of technical expertise. A total of 19 organisations submitted bids, with many applying for multiple lots. The quality of submissions was exceptionally high. The framework was established jointly with the City of York Council, enabling both organisations to access specialist expertise as the project progresses.
- **Procurement for the main drilling contractor:** This followed a multi-stage process, reflecting the scale and complexity of the project. An initial Pre-Market Engagement exercise was undertaken with drilling rig providers to assess market capability and outline the proposed procurement approach, with

feedback obtained from the market which helped shape the procurement strategy.

- **Public tender process:** A formal three-stage public tender process was developed specifically for the project, acknowledging a novel approach would be required to move swiftly through a competitive process. The process commenced in September 2025 under the new Procurement Act 2023 (PA2023), including a selection stage, a legal negotiation stage and final tender stage which evaluated commercial and technical criteria. This concluded in January 2026, with three highly competitive bids. Submissions underwent detailed commercial assessment, supported by independent third-party review, alongside comprehensive technical evaluation involving specialist industry advisors. The strength and competitiveness of the bids demonstrated the high calibre of expertise within the sector, ensuring we are equipped with the technical excellence to deliver on our targets. This process involved a detailed Preliminary Market Engagement (PME) stage pre-tender, where the views of the market were sought and the procurement strategy tested, and the process designed in line with the market's views. The procurement approach was novel and developed so that it adhered



closely to the new PA2023, as well as being an exemplar process, navigating the new PA2023. The approach taken was developed due to the freedom to develop a novel procurement approach under the new PA2023, ensuring the process was both transparent and fair. Regular discussions were had with bidders to explain the approach being taken and to seek feedback. The novel approach taken meant that the procurement processes was delivered on time with a selected contractor and no challenge or requests for feedback.

- **Environmental Impact:** Although not formally required, the University chose to submit the application under an Environmental Impact Assessment (EIA) to meet the highest standard of assessment.

- **Planning transparency:** Working in partnership with Wardell Armstrong (SLR Consulting), we've bridged the gap between complex engineering and planning policy through close-knit collaboration with council officers and specialist consultants. By establishing this foundation of transparency, we've secured confidence and ensured the complexity of the scheme has been clearly understood by all stakeholders.

- **Public engagement:** A key part of the planning process, the project team has delivered open days, public lectures, pop-up exhibitions, and run dedicated briefing sessions with local councillors. We've maintained transparent contact channels to allow questions and concerns to be raised, with quick and direct responses from the team.

Seismic survey: testing the subsurface

A major milestone has been the completion of a large-scale 3D seismic survey.

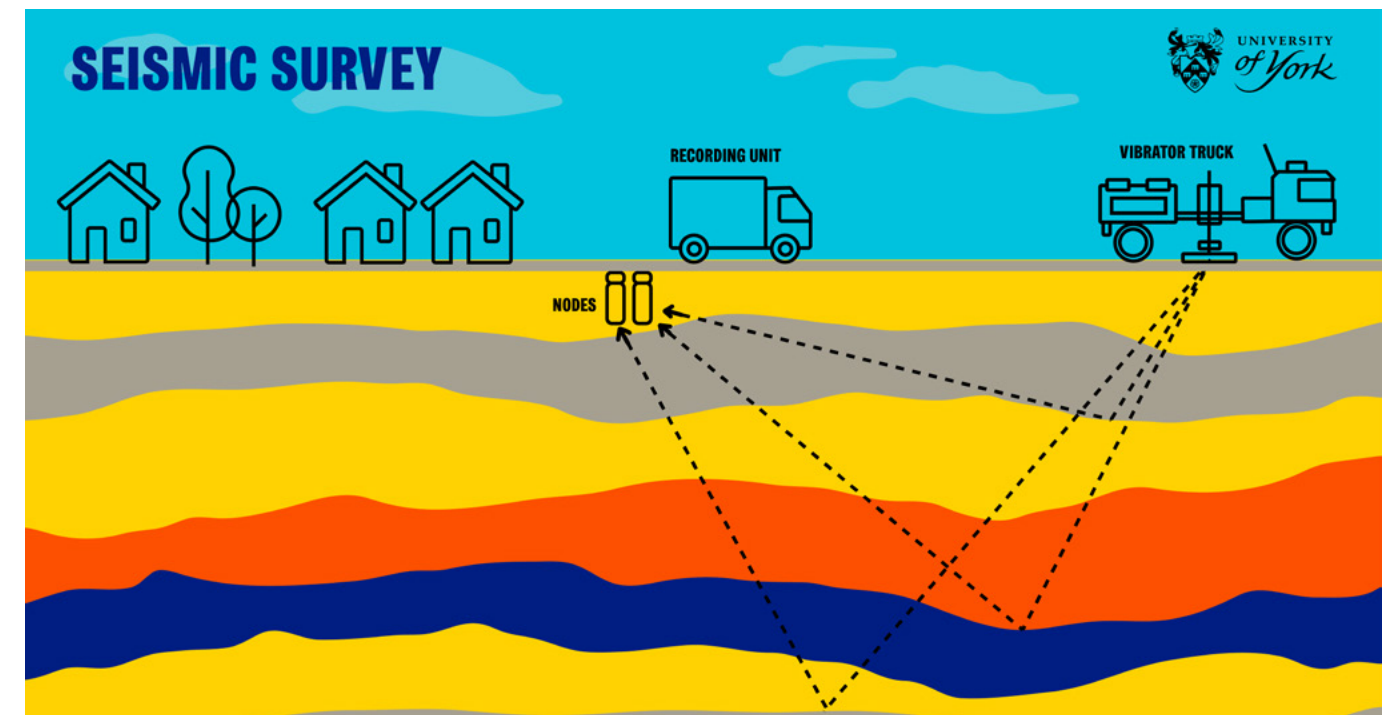
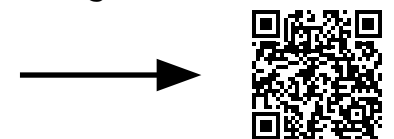
A 3D seismic survey is a geophysical technique used to map subsurface geology by sending sound waves into the ground and recording how they reflect from different rock layers.

Deploying thousands of highly sensitive recording nodes across the survey area and using vibroseis trucks to generate controlled sound waves

at thousands of pre-determined locations, we collected geological data beneath and around the University.

The resulting data was processed to produce a detailed map of the subsurface, supporting interpretation of the rock formations and structures at depth.

Scan the QR code to watch our video explaining why we carried out a seismic survey, what was involved, and why it was an important step in our geothermal journey.



The detail: Survey design and procurement

- The survey specification was developed by the British Geological Survey (BGS), drawing on their expertise in regional geology and the project's exploration objectives. Following a competitive procurement process, the contract to refine and deliver the survey was awarded to EchoGeo Ltd.
- Planning work began in May 2025 to ensure the survey could be completed within the project timeline and allow sufficient time for data processing and geological interpretation before the end of the year.

Test survey and technical development

- Before the main survey began, a smaller test survey was carried out on campus. This allowed the project team to assess operational impacts and refine the technical parameters needed to achieve high-quality deep imaging in an urban environment.
- The test survey demonstrated the importance of carefully optimising vibration sweep length, amplitude, and repetition to improve data quality. This was particularly important due to background noise from traffic and the specific geological conditions in the area. Data from the test survey was analysed to determine the optimal settings for the full survey.

Planning and logistics

- Delivering the survey required extensive coordination across a large and complex survey area. This included securing access agreements with landowners, planning routes for equipment, and coordinating traffic management arrangements with City of York Council and National Highways to lay nodes and use the vibroseis trucks. Extensive work was completed with EchoGeo and local landowners regarding access to fields and farm tracks.
- The work was particularly complex due to the need to operate around major city events during the Christmas period and ongoing works on the A64. Strong collaboration between project partners, local authorities, contractors, and landowners was essential in developing workable solutions.

Community engagement

- Public engagement formed a key part of both the planning and delivery of the survey. Open information sessions were held ahead of the works, alongside a three-day public engagement tour across the city. Dedicated contacts responded directly to questions and concerns from residents and stakeholders. Communications also included local flyering, newspaper coverage, radio announcements and social media updates.
- The survey also created significant opportunities for student involvement. Students from the universities of York, Leeds and Durham supported public engagement activities and delivered recording seismic survey nodes across the area.
- More than 100 residents volunteered to host survey garden nodes - known as 'gnodes' - resulting in the highest level of public participation our survey contractors had experienced on a project of this type.

“Meaningful community engagement is essential to the success of our geothermal project. The seismic survey works provided an important opportunity to share information, listen and work alongside our local community, helping to ensure the project delivers outputs that are understood, supported and valued by the community.”

Anna Morfitt, Sustainability Communications Lead
University of York



Survey delivery

- Data collection took place over a three-four week period in early November 2025. Operating from the University Energy Centre on Campus East, a specialist team of around 20 personnel worked seven days a week to complete the survey, supported by traffic management teams and technical engineers from the node manufacturers.
- To maintain data quality throughout the programme, nodes were collected and checked daily as part of an ongoing quality control process. Four vibroseis trucks were also deployed to provide operational resilience and minimise delays.

Data quality and outcomes

- A successful seismic survey depends on collecting clear, reliable data while minimising the need for repeat surveys. High-quality data improves processing accuracy and strengthens geological interpretation, helping to reduce uncertainty in later stages of the project.
- Throughout the planning and delivery of the survey, significant effort was made to maximise the quality of the information collected and provide the strongest possible geological understanding of the deep subsurface beneath the survey area.
- Work is now underway with interpreting the seismic survey and updating the 3D model.

Uncovering our heritage

In March 2026, we partnered with York Archaeology to help us understand the ground conditions and honor the underlying history as we prepare to tap into the Earth's natural heat.

The detail:

- We undertook a programme of window sampling to investigate the ground conditions beneath the campus and assess the archaeological potential of the underlying layers.
- Window sampling is a technique that involves plastic tubes in the ground

and extracting practically undisturbed samples of the soil profile. These can then be examined to determine what layers are beneath the site and whether they are likely to contain archeological material.

- This process is normally carried out anywhere from 5m-10m below a site and is a way of assessing a site without having to disturb large sections of ground via traditional excavation methods.



PART 5:

A brighter, smarter campus

Beyond the bulb

We've moved from fluorescent fittings to energy-efficient LED lighting, alongside the introduction of smart lighting controls to further reduce energy use.

The energy savings are a priority, but it also brings wider benefits, including helping to reduce eye strain and migraines in the workplace, supporting equality considerations, future-proofing our systems, and making emergency lighting monitoring simpler and more efficient.

This major overhaul was completed on time, within budget, and with minimal disruption to our campus buildings. The use of cutting-edge lighting has created a standout result, already inspiring other companies to consider making the switch.

Sealing in sustainability

As we tap into the heat below, we are securing the efficiency above by upgrading roofing insulation. The project funding has also enabled a major upgrade to improve the thermal performance across several key buildings on campus.

We have now completed this project, reducing heat loss and setting a new benchmark for campus energy performance.



While the geothermal project looks to the future, the funding secured so far has enabled major upgrades across campus to deliver immediate impact. Seeing the finished result has given me a real sense of job satisfaction, knowing this work will benefit staff and students for years to come."

Danny Carr, Project Manager (LED Lighting Upgrade), University of York

PART 6:

Geothermal research and education



A living laboratory

The University's unique location above a geothermal hot spot offers an unparalleled opportunity to combine geothermal exploration with academic inquiry.

We are bringing together the University's expertise in environmental science, engineering and policy to create a dynamic environment for research and education.

Resilience through research

Research programmes focus on reducing risk for future geothermal developments, building a strong foundation of scientific, technical, social science, environmental and policy knowledge.

We're developing a growing research and funding portfolio, resulting in

a number of proposals for funders and further funding applications are planned over the coming months.

Microwave drilling research

Our geothermal project is proving to be a catalyst for new and innovative industrial collaboration opportunities. For example, we are in discussions with a range of UK and US partners to use the University's renowned expertise in plasma physics to accelerate the deployment of advanced technologies in geothermal drilling.

Through exploring these potential partnerships, we have identified many parallels to the technologies required to enable nuclear fusion. This is forming an exciting number of ways to collaborate across the entire energy portfolio.

Facilitating research through industrial partners

Our project is already opening possibilities of enabling research directed to achieve financial benefit and efficiencies. We hope to expand on this in the coming years but we have already commenced work in the following:

- Using Artificial Intelligence to assist geological interpretation of seismic surveys.
- Processing of passive seismic data for future survey techniques in urban areas.
- Analysing the benefits of public engagement approaches in the delivery of seismic surveys.
- Effectiveness of gravitational surveys in urban areas.
- Enhanced efficiencies in generating electricity from geothermal heat sources.

A talent pipeline

The project will help inspire students from their labs and lectures into high-demand roles in renewable energy, policy and environmental engineering.

Our Master of Science in Renewable Energy Technologies can draw from first-hand exploration on its doorstep, supporting how we teach the technical and practical aspects of renewable energy technologies and policies, and helping develop the skills necessary to design, analyse and optimise renewable energy systems.

The University also has an award-winning "Sustainability Clinic", offering York students the chance to work with local organisations and education providers to tackle pressing sustainability challenges. Connecting project teams with this talented pool of students has already delivered valuable insights and support, helping other large organisations take their first steps on their geothermal journey. We have plans gearing up to help school pupils in York learn more about geothermal and sustainable energy innovation, all while helping develop students' employability skills.

"Far from being a standalone geothermal initiative, this project is already serving as a catalyst to create a powerful framework for collaboration, research and industrial connections across the sustainability energy ecosystem."

Dr Dave Diston, Head of Research & Innovation Development
University of York

PART 7:

Governance

Over the past year, our successful partnership has been defined by a clear line of communication and a shared commitment to ensuring that funding is utilised effectively to deliver this innovative scheme.

Claudia Head, Client Support Officer at Salix Finance Ltd

We hold ourselves to the highest standards, ensuring public funds are managed with absolute transparency to deliver a lasting, high-impact legacy.

- **Project governance:** The project is structured around four main workstreams: Science and Research; Community and Engagement; Governance, Risk and Finance; and Project Delivery. Each of these strands has a dedicated lead and focus on specific deliverables.

- **Funding governance and compliance:** We have developed a strong understanding of the grant funding

terms agreed with Salix Finance Ltd, which has been critical to the effective management and successful delivery of the programme. The project's first-year expenditure remained on track against the approved funding profile, demonstrating effective financial planning and programme control.

- **Integrated project delivery system:** Working with Spatial Ex, we have developed a range of specialist solutions to clearly manage the visibility of the project's progression and compliance. This provides the right information at the right time to all our project stakeholders.

Risk and complexity

A first-of-a-kind project

By targeting the UK's Carboniferous Limestone, this project serves as an exemplar to build national expertise, navigating significant technical, geological and commercial complexities.

Key challenges and mitigations

- **Geological uncertainty:** subsurface conditions remain unpredictable until drilling begins, presenting inherent risks that cannot be fully mitigated in advance.

- **Planning consent:** early stakeholder engagement successfully led to planning permission being granted in April 2026 with no objections.

- **Risk management and expertise:** the team engaged drilling partners early to secure specialist rigs, as well as utilising early warning procedures to resolve technical and land issues promptly. We have sought external expertise to assure decision-making and negotiated several potential issues without causing significant delays or additional costs.

1. Financial Overview

Committed Spend Tracker (Salix Year 1)



✓	Year 1 - On Target
	Invoices Received: £5,189k
	Orders Raised: £5,281k
	Grant Target: £5,153k
	Planned Spend (Salix): £5,153k
	Planned Spend (UoY): £37k
	Total Planned Spend: £5,190k
✓	Year 2 - On Target
	N/A
	N/A
	Grant Target: £13,979k
	Planned Spend (Salix): £13,979k
	Planned Spend (UoY): £839k
	Total Planned Spend: £14,818k
✓	Year 3 - On Target
	N/A
	N/A
	Grant Target: £16,018k
	Planned Spend (Salix): £16,018k
	Planned Spend (UoY): £3,917k
	Total Planned Spend: £19,935k

“Success of a project of this complexity and scale is underpinned by a clear governance framework designed for maximum accountability and precision.”

Jenny Roberts, Funding Lead and Delivery Manager
University of York

“With limited comparable schemes within the UK to learn from, the project plays an important role in building national capability and knowledge in deep geothermal expertise.”

Paul Bushnell, Project Director
University of York

PART 8:

A look ahead - what next?

This is just the beginning. In partnership with Marriott Drilling, the countdown has begun for the arrival of the drill rig. We are expanding our district heating network, planning even more public engagement, and pioneering new trials. Our Energy Centre is evolving into a Heat Utilisation Test Facility (HUT), where we will test creative ways to make the most of low-temperature heat sources, including converting waste heat into clean, renewable electricity.

We continue to push ambitions. Beyond delivering a heating scheme for the University campus, the project will continue to explore how we can generate electricity and supply heat to the City of York, and mitigate risks and lower costs for future projects through learning, innovation and research.

“We have a generational opportunity to build on our current progress and showcase how clean geothermal energy can power an entire city - delivered at speed. We are exploring multiple funding opportunities to maximise the potential scope of the project, which could be transformative for the region and beyond.”

Professor Charlie Jeffery
Vice-Chancellor and President,
University of York



2026/27: The year of exploration

Preparation for drilling

In partnership with Marriott Drilling, the countdown has begun for the arrival of the drilling rig in spring 2027.

Infrastructure and preparations to organise the construction of the drilling site are now well advanced.

Procuring in good time

The well planning process is now well underway with the design requirements for many subsurface components reaching the final stages of specification. This is an essential part of our planning to ensure that the right materials are all available in good time before they are required. In the words of one of our suppliers we want to be “looking at rather than looking for”.

District heating network expansion

We'll be extending our district heating system to feed a number of buildings currently heated by gas burning appliances.

Exploring the power in heat

In order to look ahead proactively, we are working in partnership with suppliers to understand the optimum options for converting heat to electricity. An example is FeTu, a company based in West Yorkshire developing new, innovative technology designed for high-efficiency, low-carbon applications. We are evaluating one of their units designed to save low grade heat into electricity. FeTu has also received funding from the Department of Energy Security and Net Zero, meaning we are helping create a powerful multiplier effect that maximises value for money in the UK's energy transition.

Education and engagement

We have plenty of plans in the pipeline to engage residents, schools and the local community.

- **York Festival of Ideas:** interactive activities designed to engage local families with geothermal energy and the University's project, part of the Discovery Zone at the York Festival of Ideas June 2026. This Festival annually draws more than 50,000 attendees across the fortnight.

- **British Geological Survey touring exhibition:** From September 2026 to March 2027, the University will host the British Geological Survey's touring exhibition Clean Energy Beneath our Feet on campus, as a new way to engage staff, students, schools and the wider community.

- **Projects with schools:** During the 2026/27 academic year, the geothermal team will work with the University's award-winning Sustainability Clinic module to engage local primary and secondary school pupils, learning about the benefits of geothermal energy and its potential in York.

Developing our a research

As a next step for the research strand of the project, our Geothermal Energy and Social Research Network will draw together expertise to connect researchers across ecology, social sciences, and the humanities to those working in geothermal engineering, geology, and energy systems.

Drill arrives on site

Following the site preparations later in 2026, we anticipate the drill rig to arrive on site in Spring 2027.

WHAT COULD BE: A GEOTHERMAL VISION FOR YORK

PHASE 1: University of York deep geothermal project

A £35m funded project to explore deep geothermal energy on campus as a transformative step to achieving Net Zero.

PHASE 3A: Extend University District Heating Network to support Eastern side of the City

Expanding University's district heating network to supply geothermal heat beyond the campus, supporting domestic and commercial uses on the Eastern side of the City.

PHASE 4: Development of an additional Geothermal site

Using the data from the University's geological investigations, York Central and/or City of York Council drill a geothermal well. Establishing additional western, major geothermal heat source for the city.

A phased
approach to
city-wide
geothermal
heat

PHASE 2: Expand geothermal capacity at University of York

Create a third well using the existing site and rig equipment to expand the University's geothermal capacity.

PHASE 3B: Geological investigations at new York sites (York Central and Civic Quarter)

York Central and/or City of York Council undertake geological investigations to assess the deep geothermal potential of additional city geothermal sites, informed by learning from the University's geothermal system.

PHASE 5: Joining East and West to create a city-wide geothermal heating network

The east and west geothermal wells are connected to form a city-wide district heating system. This integrated network would deliver clean, reliable geothermal heat across York, supporting households, public buildings and future developments while significantly reducing city-wide carbon emissions.



PART 9: With thanks - our partners and contractors

Over the last year, we've brought together a range of specialist partners and contractors with expertise spanning planning, drilling, geothermal engineering, project management, and subsurface surveying.

These organisations are supporting the delivery of one of the UK's most ambitious geothermal energy initiatives and helping advance the University's wider decarbonisation ambitions. Thank you.

SLR Consulting



Planning and environmental consultancy

SLR Consulting is a global sustainability consultancy specialising in planning, environmental assessment, and project delivery. With more than 30 years of experience supporting infrastructure and energy projects, SLR provides expertise across the full project lifecycle.

For the geothermal project, SLR has led the preparation and submission of the planning application, coordinating the technical reports and surveys required to support the process. The team continues to provide technical and planning support as the project progresses through the planning determination stage.

"I find geothermal technology really interesting, and believe that this hugely underutilised resource can offer massive benefits to the UK. I hope that the project will pave the way for other education facilities in the UK to achieve their decarbonisation goals with geothermal energy or heat."

Gilly Slater, SLR Consulting

Marriott Drilling Group



Deep geothermal drilling contractor

Marriott Drilling Group is a UK-based drilling contractor with 75 years of experience delivering geothermal, groundwater, mining, and subsurface drilling projects in the UK and internationally. Based in Chesterfield, Derbyshire, and recognised as the UK's only remaining truly British onshore drilling services provider, the company combines deep technical expertise with a strong heritage of integrity and reliability.

Marriott Drilling Group will lead the University's deep geothermal drilling works, providing expertise in well engineering, drilling operations, project management, and health, safety, quality, and environmental management, while also supporting educational engagement and public communication activities.

"The UoY's project has the potential to become a defining moment for deep geothermal in the UK."

Emily Barrie, Marriott Drilling Group

FeTu Limited



Geothermal heat-to-power technology partner

FeTu Limited is a West Yorkshire-based technology company developing innovative thermodynamic systems designed to improve the efficiency of heat pump and geothermal energy systems. Founded in 2017, the company designs and manufactures proprietary turbine technology aimed at enhancing heat recovery and power generation.

Working alongside the University, FeTu is co-funding and delivering a pilot heat recovery system designed to generate electricity from low-temperature geothermal resources – a potential world first. The technology could significantly reduce reliance on gas-fired combined heat and power systems currently used on campus.

“We both see geothermal energy as a critical element of the UK’s long-term energy strategy, and this initiative has the potential to become a defining example of that transition.”

John Fenton, FeTu Limited

Mace Consult



Project and programme management

Mace Consult is a global consultancy specialising in programme and project management for complex infrastructure and capital projects. Since its founding in 1990, the company has supported major developments across infrastructure, real estate, and the built environment.

Mace is supporting the University as external project manager for the Public Sector Decarbonisation Scheme (PSDS), helping coordinate delivery, governance, and programme management across the wider geothermal project.

“The potential for this project to open up the geothermal market in the UK and be a blueprint for future projects is very exciting.”

Charlotte Jones, Mace Consult

Echo Geo Ltd



Geophysical surveying contractor

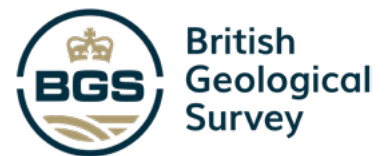
Echo Geo Ltd is a UK geophysical services company with more than 30 years of experience supporting geothermal, carbon storage, and renewable energy projects. The company specialises in advanced geophysical surveying technologies and subsurface data acquisition.

Echo Geo is delivering the project’s 3D seismic survey, bringing extensive expertise in the design, planning, and execution of complex onshore geophysical operations across both urban and rural environments.

“I have a passion for the subsurface and have been carrying out seismic surveys in the UK for 40 years.”

Mark Rees, Echo Geo Ltd

British Geological Survey (BGS)



Geoscience interpretation and advice contractor

The British Geological Survey (BGS) is the UK’s premier provider of objective and authoritative geoscientific data, information and knowledge. A world-leading geological survey focused on public-good science and environmental research, BGS data and expertise supports the responsible use of natural resources and improves understanding of earth and environmental processes.

For the University’s geothermal project, BGS is providing geological interpretation and advice to support the development of the geothermal initiative and inform project decision-making.

“The first deep geothermal borehole to be drilled into the Carboniferous Limestone in the UK.”

British Geological Survey (BGS)

UK National Geothermal Centre (NGC)



Geothermal energy advisory and advocacy support

National Geothermal Centre is the UK's independent, authoritative and not-for-profit geothermal energy advocacy and advisory organisation working to accelerate geothermal development in support of national energy and economic goals. The NGC focuses on five key areas - technology, research and innovation; policy and regulation; markets and finance; knowledge, education and skills; and infrastructure - while working across the sector to represent all forms of geothermal energy.

The NGC is providing audit, review and support from planning, through to execution and delivery of the University of York's geothermal energy project.

"Deeply buried Carboniferous Limestone is the target of York's geothermal project - a first for geothermal energy in the UK and yet a rock formation known to be productive for geothermal fluids from the pre-Roman discovered hot springs in Bath and the first ever oil well drilled in the UK in Derbyshire in 1919."

Professor Jon Gluyas, National Geothermal Centre

GeoScience

Applied geology, geomechanics and geothermal energy consultants



GeoScience is an independent consultancy specialising in geology, geomechanics and geothermal technology applied to the deep subsurface. Over the past 40 years GeoScience has assisted clients with projects around the globe in research, demonstration and commercial exploitation of all geothermal resource types.

GeoScience has been supporting the University of York with specialist advice and support from the initial stages of understanding the potential of the project through to the current developmental phases.

Ove Arup and Partners Ltd (Arup)



Arup is a global engineering and sustainability development consultancy providing engineering, design, and advisory services across the built and natural environment. With strong expertise in low-carbon energy and subsurface engineering, including hydrogeology, geotechnics, drilling, and energy systems for geothermal projects, Arup is serving as technical advisor for the University of York's geothermal project, supporting geological and seismic hazard assessments, well design reviews, and delivery of the deep geothermal system and associated above-ground infrastructure.

"This UK first of a kind geothermal solution is pushing boundaries and has the potential to provide a low carbon heat source for the University of York and neighbouring area."

Arup

MI Pathway

Bespoke Training Company



MI Pathway Ltd is a UK-based specialist drilling training and consultancy company with extensive global drilling experience. They are currently supporting the University of York's geothermal project management team by delivering specialist advice covering drilling operations, terminology, and critical risk avoidance. This valuable industry insight assists the York team in building the specialised knowledge required to deliver the project safely, efficiently, and economically.

Spatial Ex Ltd

GIS and data integration consultant



Working closely with the University of York, Spatial Ex has developed a bespoke hourly energy model and helped shape the grant application through to the late-night deadline. The model assessed heat, electricity, cost and carbon impacts across around 500 campus buildings, comparing geothermal, district heating, LED lighting, renewables, heat pumps and fabric improvements against the current baseline. Built on the University's spatial estates data, it now produces detailed reports and ArcGIS dashboards for future Net Zero scenarios.

PART 10:

Meet the team



Paul Bushnell - Project Director

Paul Bushnell is a Chartered Engineer with over 35 years of experience. He has led and managed numerous multidisciplinary engineering and infrastructure projects. He is Project Director for the University of York's Deep Geothermal scheme. His work is central to the university's decarbonisation strategy and the delivery of sustainable, low-carbon infrastructure.



Professor Andy Dougill - Dean of the Faculty of Sciences

Andy joined York in 2022 from the University of Leeds where he completed terms as the Dean for Global Development, the Executive Dean of Faculty of Environment and Head of School of Earth and Environment.

Andy has successfully built long-lasting partnerships across a range of African universities and partner organisations through a strong commitment to impact, capacity building and research training. He also holds a post as an Extraordinary Professor at the University of Pretoria and is committed to helping to build York's collaborations across Africa.



Charlotte Jones - Scheme Project Manager

Charlotte is a Chartered Building Surveyor and Project Manager with 19 years' experience in the construction and property sector. Charlotte is acting as the external project manager on the Public Sector Decarbonisation Scheme, supporting the internal University project managers across the range of projects being undertaken within the funded scheme. In recent years, Charlotte has also provided project management services to the University of York on other energy focussed projects across the campus including the construction of a new Energy Centre and a research centred Solar Farm for the Institute of Safe Autonomy.



Jenny Roberts - Funding Lead and Delivery Manager

Jenny Roberts is an experienced Technical Engineer and Asset Manager at the University, leading the digital transformation of site records. She is the Delivery Manager and Funding Lead, with a focus on funders requirements and governance, for the funded Public Sector Decarbonisation Scheme project at York. This includes the deep geothermal element as well as the extension of the district heating network and other building fabric improvement/energy efficiency measures. Jenny is a professional member of the Institution of Engineering and Technology (IET) and has many years of industry experience.



Matt Thompson - Project Manager (Geothermal)

Matt is the Senior Technical Engineer in the University of York Estates Department and Project Manager for the Deep Geothermal Part of the Public Sector Decarbonisation Scheme. He has a background as a Marine Engineer / Naval Architect and is now a Chartered Mechanical Engineer with the IMechE with over 10 years industry experience.



Danny Carr - Project Manager (LED Lighting Upgrade)

Danny is a Technical Support Engineer (Electrical) with over 20 years of experience across industrial, commercial, and campus environments. Since joining the University of York in 2013, he has gained extensive expertise in estates operations, compliance, infrastructure and project delivery. His work includes campus-wide solar PV installations, advanced lighting and control technologies, and smart building systems such as KNX, Casambi, and BMS, alongside operational safety management and mentoring technical teams.



Phil Dagleish - Project Manager (Roof Insulation)

Philip Dagleish is a Chartered Building Surveyor and is the Estates Building Manager responsible for planned and reactive maintenance of all the building fabric across the University Campus. He is responsible for managing £multi-million capital and revenue budgets. His expertise lies in strategic maintenance, health and safety compliance, and project coordination.



Alan Willits - Project Manager (District Heating Extension)

As Central Infrastructure Manager, Alan oversees the University's heat network that supplies heating and hot water to over 75% of the campus. His role involves managing two major energy centres across Campus East and West, ensuring the efficient operation of our heat and power generation plants. Additionally, Alan manages statutory assets across the estate, including natural and specialised gas systems, alongside fire suppression assets.



Sam Russell - CP1 Heat Networks Assessor (District Heating Extension)

Sam has worked at the University of York for just over three years. He has been involved with previous Salix funded projects involving Air Source Heat Pump (ASHP) retrofits on the campus and is currently part of the District Heating Extension project, helping to utilise the decarbonised heat energy the Geothermal project will provide.



Sam Snell - CP1 Heat Networks Assessor (District Heating Extension)

Sam started out working at the University of York four years ago as a Plumbing and Heating Engineer, since then progressing to a Mechanical Technician. Working closely with the Geothermal project teams, he offers mechanical support, focussing on making our campus more sustainable and safer, managing several projects, including installing Air Source Heat Pumps funded by Salix PSDS grants.



Stuart Smith - Building Services Engineer

Stuart Smith is a Building Services Engineer within the University of York Estates team. He initiated the University's geothermal project proposal after recognising the opportunity to apply the Engineering Council's sustainability principles to the decarbonisation of the campus. He continues to support the programme through technical input, stakeholder engagement, and as part of the multidisciplinary project team delivering the district heating extension, the deep geothermal development, and an Organic Rankine Cycle (ORC) system that will generate renewable electricity from recovered heat.



Tony Watson - Chief Engineering Lead

Tony Watson is a Chartered Electrical Engineer with the IET. Prior to joining the University of York, Tony worked in heavy engineering and petro chemicals in a variety of roles. He has also carried out consultancy work as Technical Author and Chief Examiner for various educational awarding bodies. Tony is the Engineering, Infrastructure & Utilities Manager at the University of York responsible for the Electrical, Mechanical, BMS and Energy teams.



Professor Sarah Thompson - Research Lead

Professor Sarah Thompson is the Pro-Vice-Chancellor for Research at the University of York and leads the University of York's Transformational Initiative on Building Industry Engagement and Income. She has previously held the roles of Associate Dean for Research in the Faculty of Sciences and Head of the Department of Physics at the University and served as Vice President of the Institute of Physics (Science and Innovation) from 2015-2019. Her research interests are in nanomagnetism and nanoscale thermal transport and she has also won awards from the Institute of Physics and the British Association for science outreach. In 2012 she was awarded an MBE for services to Higher Education.



Dr Dave Diston - Geothermal Research

Dr Dave Diston is the Head of Research & Innovation Development at the University with over 20 years experience in interdisciplinary environmental science. After an academic career working on issues of microbial/chemical pollution in a range of environments (primarily for the Swiss Government/ETH, Zurich), Dave moved to the University of York in 2017. Among many other things, Dave is responsible for developing the research portfolio related to the University's deep geothermal scheme.



Professor Lindsay Hamilton - Geothermal Research

Lindsay Hamilton is a Professor in the School of Business and Society within the Faculty of Social Sciences and a Fellow of the Oxford Centre for Animal Ethics. Her research interests lie in organizational analysis, particularly where there are intersections between humans, the environment and animals. Her books include *Animals at Work*, *Ethnography After Humanism* and *The Oxford Handbook of Animal Organization Studies*. She brings an enthusiasm to research the possibilities of geothermal and other sustainable energy sources as part of the UK's efforts to transition to Net Zero.



James Singleton (Spatial Ex Ltd)

James Singleton is Director of Spatial Ex Ltd, a specialist spatial data integration, automation and energy modelling consultancy. Spatial Ex has worked closely with the University of York's estates team to support the University's geothermal project.



Matt Kirk - Senior Programme Manager

Matt Kirk is the Senior Programme Manager for economic development within the Universities Reputation Economic Development & Advocacy (REDA) Directorate. He leads on supporting University engagement with regional authorities such as the York & North Yorkshire Combined Authority, the objective being to ensure there are strong supporting connections between the University and national and regional objectives and strategy at all levels particularly when focused upon economic growth and prosperity.



Professor Kieran Gibson

Professor Kieran Gibson was appointed as Associate Pro-Vice-Chancellor (Integrated Infrastructure) in 2024, tasked with helping deliver much of the capital infrastructure programme of the University. Among his responsibilities, he chairs the University Energy Management Group and is a member of the Sustainability Executive Board. His academic background is in the science and engineering of fusion energy – the energy that powers the sun and the stars – seeking to provide sustainable sources of energy for the future.



Rob Allan - Procurement Lead

Rob is the Procurement Category Manager (Estates) at the University of York, where he leads strategic procurement across capital projects, utilities, and facilities management, overseeing more than £50 million in annual estates spend. With over 25 years' procurement experience, including 13 years specialising in estates and construction, he has delivered major projects such as a 1,400-bed student accommodation development and the University's first geothermal drilling procurement.



Joe Connor - Finance Lead

Joe has been working at the University since 2009 in a variety of roles across Professional Services and Capital investments. A key part of his role is to provide financial support and guidance on all capital projects and programmes, including the geothermal project.



Rachel Barson - Communications and Engagement Lead

Rachel is the Director of Communications at the University, overseeing media and research comms, digital content, corporate events, and public and internal engagement. She ensures York has visibility for its most transformative projects and for geothermal, she supports publicity and stakeholder engagement, highlighting York's role at the forefront of sustainability and civic leadership.



Anna Morfitt - Communications and Engagement

Anna is the communications lead for sustainability at the University of York, where she engages staff, students and the wider community with the University's sustainability work across teaching, research, and campus operations. Alongside this role, she also manages communications for the University's geothermal project.



Lee-Anne Bull – PSDS Project Planning & Delivery Coordinator

Lee-Anne is the PSDS Project Planning & Delivery Coordinator within the University of York's Directorate of Estates & Campus Services, coordinating the delivery of the Deep Geothermal project. She has a background in high-stakes operations and compliance – including technical document control for complex engineering and construction projects, and large-scale commercial asset management – with over 25 years of industry experience managing complex, highly regulated projects.

FutureSource: inspiring potential

**Twelve months of progress.
One bold new identity.**

**We are proud to unveil the next evolution of our
geothermal journey:**

Future Source

The rebrand reflects the growing significance of the project, creating a clearer and more recognisable identity for the project's activities, research and public engagement. It also reflects the longer-term vision and wider impact that the project is expected to deliver in the years ahead.

FutureSource represents not only a future source of low carbon energy, but a future source of knowledge and learning in the delivery of deep geothermal projects; graduate talent for the growing geothermal and low carbon energy sectors; research and partnerships expertise that advance geothermal applications; and a future source of reliable, renewable heat and energy that supports national priorities and the Government's Warm Homes agenda.



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