British Geological Survey

2023 TO 2024 HIGHLIGHTS

# Environmental Sustainability report

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# Environmental Sustainability report

# Biodiversity gains at Keyworth

We continue to develop biodiversity at Keyworth. This year we have:

- planted over 1000 flowering bulbs, including the rare *Crocus nudiflorus*
  - » this flower also named the 'Nottingham autumn crocus', as it was once abundant in meadows alongside the River Trent prior to the expansion of the city
  - » this crocus is now a priority species under the Nottinghamshire local biodiversity action plan
- planted new heathers, lavender and trees
- installed five vegetable troughs for staff to grow their own produce
- installed two wormeries on site
- replaced bird feeders with squirrel-proof types

As in previous years, we had a summer (March to September) no-mow area of over 70 per cent of the grassy areas.

We continue to nurture trees on site, especially our *Wollemia* pine.

# Waste management

BGS continues to work alongside our waste contractor to identify innovations and improvements that can be made to our waste services. We closely monitor waste data through our contractor portal and we continue to divert 100 per cent of our waste from landfill.

In 2023:

- 70 per cent of waste was recycled
- 150.2 tonnes of waste was transformed into a new substance or product
- 30 per cent of waste was recovered
- 63.67 tonnes of waste was transformed into resources such as energy

We have also donated around 400 desktop monitors, boxes of cables, 100 meeting room chairs and other miscellaneous furniture through Cycle of Good to schools in Malawi, diverting a further 12 tonnes of waste from landfill.

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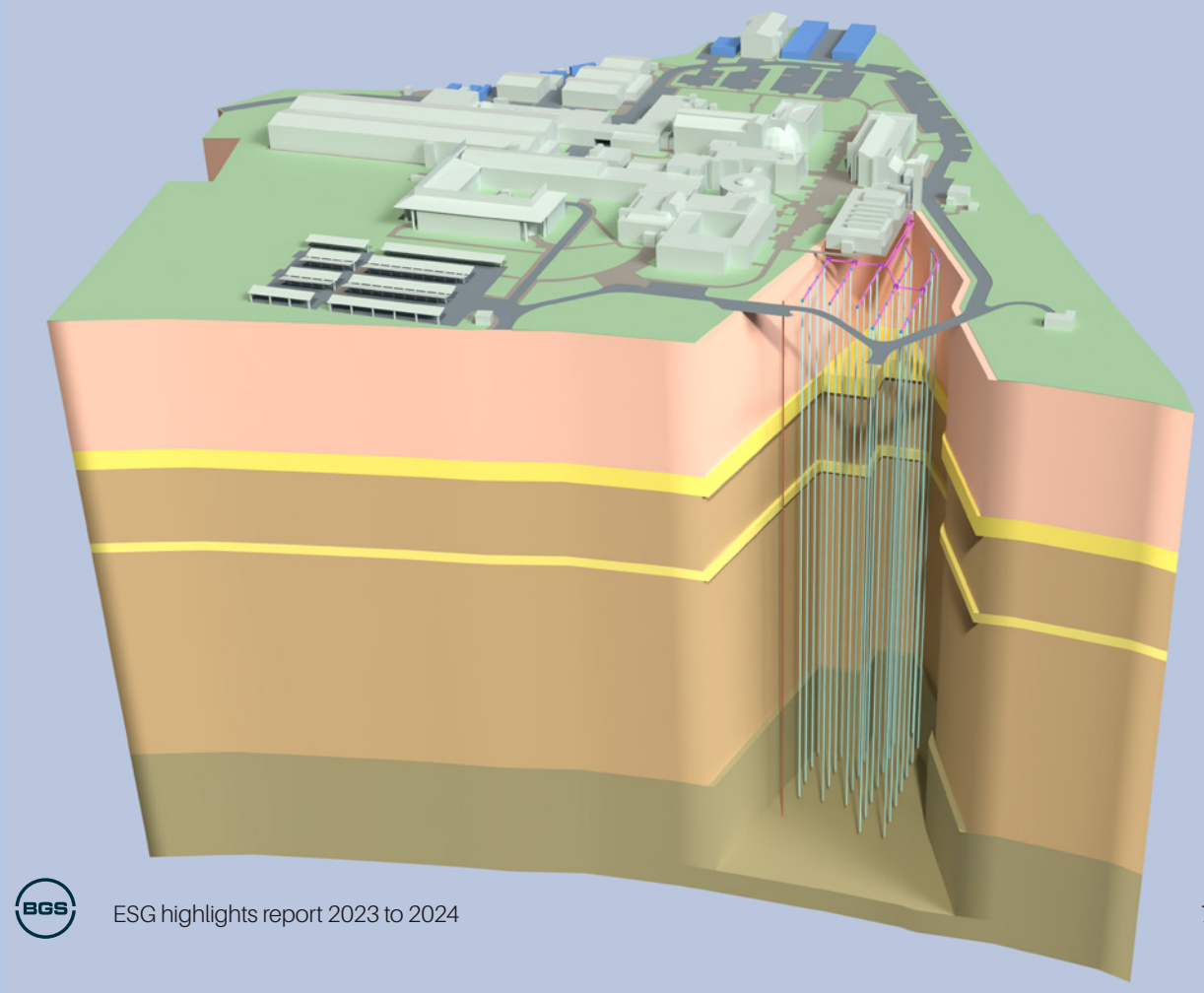
# More efficient ways of working

The laboratories at BGS require a constant supply of dry, pure nitrogen gas for instruments and experiments; in 2022, they used an average of 91 l of liquid nitrogen per day. One of our recent highlights was improving the sustainability of our nitrogen gas delivery. This had been supplied from the headspace of a 2000 l liquid nitrogen vessel; however, this system had become inefficient. This presented a direct cost implication; additionally, the liquification process for nitrogen is energy intensive and requires delivery to site by diesel tanker.

We moved to a high-capacity nitrogen gas generator, which filters compressed air and delivers high-purity nitrogen gas to the laboratories. Following installation of the nitrogen generator in spring 2023, use of liquid nitrogen decreased to 55 l per day and the laboratories are on track to reduce this further through 2024. This sustainability initiative will result in a 50 per cent reduction of liquid nitrogen use.

# Ground source heat pumps

In early 2024, BGS began the installation of a 28-borehole ground source heating system to heat decarbonise two of the buildings at the Keyworth site. This £1.7 million project replaces heat emitters and controls, and will eliminate gas heating. The boreholes will be 240 m in depth on a closed-loop system. There will be a 'living laboratory' within the system, containing five boreholes with sensors that will give us information on the overall performance of the system, covering the heat change in the ground over time and the performance of the buildings combined with our knowledge of how the buildings work. This is the first of its kind for a ground-source system and will provide incredibly interesting and useful information for a variety of stakeholders.




# Laboratory gains

In February 2024, the BGS Keyworth laboratories had a laboratory equipment sustainability audit, which was carried out by Green Light Laboratories Limited. The aim of the audit was to help us understand where our energy consumption and running costs can be improved and provide us with recommendations for areas that would benefit from local energy profiling. This is tied into to our LEAF Gold programme and our drive to continually improve our energy consumption profile. The auditor visited individual laboratories and assessed standard laboratory equipment, looking at age, condition and use to make their recommendations.

# More effective procurement

New equipment is receiving increased scrutiny earlier in the tender process in relation to environmental sustainability considerations. In line with UKRI's Responsible Procurement Charter, an impact assessment is now conducted to ensure we capture contracts that may have high environmental impact. The outcomes of such assessments are used to incorporate additional requirements into specifications where relevant, focusing on the conservation of resources, waste minimisation, reduction in carbon footprint, pollution prevention to the natural environment, and encouragement of further, positive environmental influence down the supply chain. A carbon reduction plan is now requested from suppliers for all high-value tenders, as part of the evaluation criteria.

# Computers

We have continued to replace old monitors, laptops and desktops (total 170) across all BGS sites, alongside a reduction in the number of devices through removing desktop computers and replacing them with laptops (20). A number of key IT infrastructure replacements are ongoing, including a database upgrade and a high-performance computing replacement.

# Business travel

We have finalised a scheme for meeting carbon targets for business travel. Targets for each part of the organisation will result in year-on-year reductions, based on an analysis of travel that has taken place this year. The permission to travel form has been modified to capture this information for each staff member. The scheme will start in spring 2024.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## Contact us

E enquiries@bgs.ac.uk
T 0115 937 3100

bgs.ac.uk