SCIENCE BRIEFING PAPER

The subsurface: our hidden asset

British Geological Survey

While often 'out of sight, out of mind', the subsurface is a natural habitat, a source of critical resources, and a space for the infrastructure that underpins modern economies; in the coming decades the drive for urbanisation, innovation and technology, the need to deliver climate change adaptation, and achieve net zero targets, places ever increasing importance on the subsurface and the services it enables.

GOVERNMENT OFFICE FOR SCIENCE (GO-SCIENCE) FORESIGHT PROJECT

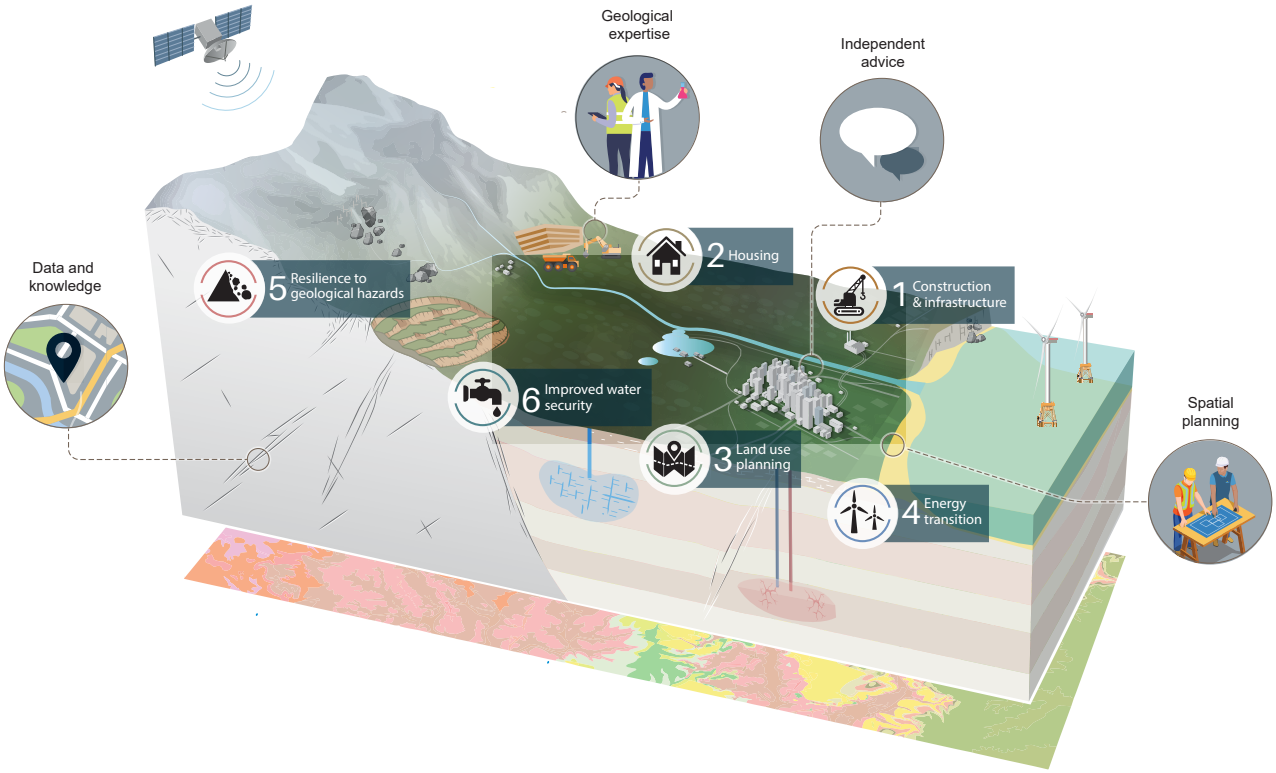
The British Geological Survey

The British Geological Survey (BGS), part of UK Research and Innovation (UKRI), is the UK's primary provider of authoritative geological and geoscience data and information. For nearly two centuries, we have been at the forefront of UK and international geological research and have provided fundamental data, information and expertise to local, national and international decision makers. We understand the importance of the subsurface in the delivery of sustainable growth and its role in:

- housing, infrastructure and land-use planning
- the energy transition
- resource security, including groundwater and critical minerals
- climate change
- disaster risk reduction

Why the subsurface matters: our role in delivering sustainable growth

- We are the national geological survey: we produce geological map data and 3D geological models for the UK onshore and offshore and run the National Geoscience Data Centre
- We provide data capture platforms and data delivery services to enhance the value of our geospatial data
- We provide world-leading observational and analytical facilities to address societal and environmental challenges
- Our knowledge of the subsurface is used to improve spatial planning decisions about how and where to develop land
- We provide independent and authoritative advice to the UK Government



How BGS geoscience knowledge and data supports the UK's policy priorities

Construction and infrastructure: our geological data and expertise are routinely used to inform the design and construction of new infrastructure projects. BGS is the national custodian of geological data and works with industry and the UK Government to unlock the value of UK ground investigation data, worth an estimated £1.2 billion a year to the UK economy. BGS data products and bespoke 3D geological services de-risk infrastructure development.

Housing: our data and expertise are used to help deliver new housing and ensure communities have a healthy and resilient future. Quality housing relies on good-quality ground for foundations, clean and healthy soil and water, adequate drainage, long-term ground stability and resilience to societally important challenges such as climate change.

Land use planning: our data and expertise in subsurface systems is used to inform the spatial planning system about topics such as groundwater, mineral extraction, geothermal energy, energy storage and waste disposal. We address the contested nature and technical complexity of underground developments and the challenges they present.

Energy transition: our research on geothermal energy, carbon capture and storage, energy storage and geological disposal supports the energy transition...

Resilience to geological hazards: we are experts in understanding natural hazards. Our work on hazard forecasting and our assessments of impacts, exposure and vulnerability are helping to make communities more resilient...

Improved water security: our groundwater experts are helping to ensure a safe, secure and resilient groundwater supply for the UK under a changing climate.