

Everything happens somewhere – even archaeology

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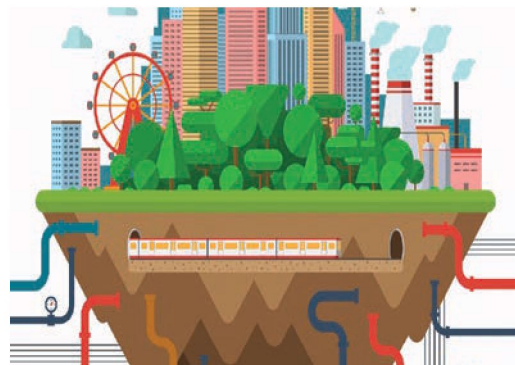
Every year archaeologists create a wealth of primary data documenting the location, extent, and characteristics of our heritage – irreplaceable evidence of the past. Despite considerable investment in data collection through to project delivery, the long-term potential of that data largely remains unrealised. With UK government and private sector investment in geospatial technologies in the context of decision making, there is an urgent need to harness the potential of this primary data to inform our decision making and research.

By creating the Geospatial Commission in 2018, the UK government recognised the importance and value of geospatial activity to society. The Commission aims to unlock the significant economic, social and environmental opportunities offered by locational data.

Unlocking the power of location. The UK's Geospatial Strategy 2020–2025 (Geospatial Commission 2020) sets out an ambitious vision:

- to promote and safeguard the use of locational data to provide an evidenced view of the market value of location data and promote better use of locational data
- to improve access to better-quality location data, ensuring it is findable, accessible, interoperable and reusable
- to improve skills, capabilities and awareness to meet the UK's future needs and support global development
- to enable innovation by maximising the commercial opportunities for innovation and promoting market-wide adoption of high-value emerging location technologies

The Commission is investing in coordinating a register of underground utility assets (cables and pipes) – but what about the wealth of known and unknown archaeological assets? © Crown Copyright, Open Government Licence 3.0



(left) Mapping the archaeological landscape of St Kilda with a Differential GPS. Archaeological detail from survey or excavation is all too often reduced to illustrations in a report. We need to realise the potential of that data beyond their original projects to contribute to the wider landscape. Credit: Historic Environment Scotland

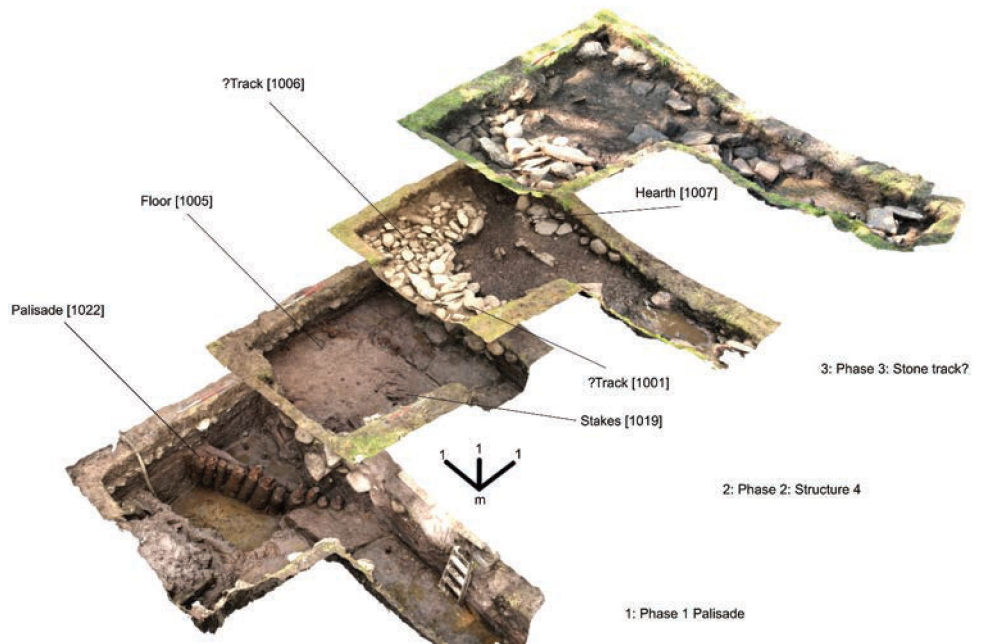
The National Underground Asset Register (NUAR)

The Geospatial Commission recognises the need for good quality geospatial data for the construction and infrastructure sectors, to improve efficiency and reduce risk for everyone working in the industry. Accessing data about the network of cables and pipes beneath our feet is currently hugely inefficient as many different organisations are responsible for these assets. Each asset holder needs to be contacted individually to access data. If provided at all, the data is delivered in varied formats, scales, quality and timescales. The risk of disruption through damaging infrastructure is high.

As the utility industry neither individually nor collectively bears the wider costs of disruption, and there are considerable commercial sensitivities to overcome, the Commission is providing strategic investment and coordination in developing the National Underground Asset Register, launched in July 2020.

Realising the archaeological potential?

The Commission is raising the bar for access and decision making about location, which is to be welcomed, but archaeology must not be left behind or left out. Sophisticated analytical and data-modelling techniques are already assigning value and cost to land and property. Ecosystem services models draw on a wealth of data to support policies and management practices aiming at environmental sustainability. Artificial Intelligence (AI) technologies analyse Big Data to categorise land and property information in a fraction of the time and cost of traditional approaches. But for archaeology, there are problems with this approach: at present we don't have the means for remote automated analysis of most of our data.



Exploded view of trench 10, Black Loch of Myrton in Dumfries and Galloway: curated geospatial data needs to routinely include spatiotemporal dimensions. Credit: AOC Archaeology Group 2020



Archaeologists often encounter underground infrastructure during fieldwork: Edinburgh Tram Extension 2020, GUARD Archaeology excavating the junction of Constitution St. and Baltic Street Junction, Leith. Credit: CECAS 2020

Archaeologists often encounter underground infrastructure during fieldwork: Edinburgh Tram Extension 2020, GUARD Archaeology excavating South Leith Parish Graveyard (c1300–1650). Credit: CECAS

Excepting Protected Sites, which can be accessed through View and Download services, most locational record data in Historic Environment Records are only available online through portals (including PastMap, Heritage Gateway, Archwilio and the Northern Ireland Historic Environment Map Viewer). Even then, data published in these browsers can only ever represent the tip of the iceberg. Most of our knowledge from fieldwork and research is contained in project reports, uploaded through OASIS and shared with the relevant records and often available through the Archaeology Data Service library or in academic journals. Much remains to be discovered and ensuring that ‘unknown unknowns’ are acknowledged by AI is challenging.

Initiatives like *Write Here! Write Now!* (ClfA 2020) recognise the value of data fossilised in project reports and are starting to address unlocking that potential. However, we need to make that data FAIR – Findable, Accessible, Interoperable and Reusable. Moreover, we



lack the archaeological spatial data infrastructure to coordinate, collate and contribute that data to deliver efficiencies for our profession, both for research into and stewardship of the historic environment and to contribute to the national geospatial infrastructure. As a sector, we need to acknowledge the ambitions of the Geospatial Commission, coupled with proposed reforms

of the planning system in England, and respond to them through improved stewardship of our own archaeological spatial data. This can be addressed through broad-brush mapping of sensitivities and risk, underpinned by detailed digital documentation of the archaeological resource to support properly informed decision making and research.

References

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