



Quarrying in depth

Archaeology

Some of the most exciting archaeological discoveries of our age have been made as a direct result of quarrying. The industry works to a strict code of practice and has contributed millions of pounds in funding to ensure that archaeologists have every opportunity to uncover the secrets of the past.

Key points

- Over recent years, the industry has contributed more than £10 million to archaeological projects on its sites
- The industry operates a CBI Code of Practice, designed to strike the right balance between the needs of archaeologists and quarry operators
- Archaeologists are involved on site before and during quarrying
- Artefacts uncovered as a direct result of quarrying range from a Bronze Age log-boat to a 7.28 hectare Roman vineyard
- The marine aggregates industry works with archaeologists to find the best methods of investigating and protecting wrecks and submerged landscapes



A Roman amphitheatre, a Bronze Age log-boat and a Saxon nobleman's helmet are just three of the archaeological treasures unearthed as a direct result of quarrying.

In recent years, the quarrying industry has demonstrated its commitment to archaeology to the tune of more than £10 million - but the contribution in terms of knowledge of our heritage is incalculable.

The artefacts - hailed by experts as some of the most significant finds of our time - and many more like them would probably still lay undiscovered today but for the constructive working relationships between quarry operators and archaeologists.

Quarry Products Association members subscribe to a CBI Code of Practice, which sets out recommended standards for consultation,



reconnaissance and co-operation designed to strike the right balance between excavation and preservation.

River valleys have always provided an attractive place for man to settle, thus creating natural sites of archaeological interest. They also contain some of our most valuable sand and gravel resources, which is why so many quarries have proved a prolific source of archaeological discovery.

Robin Jackson, project manager at Worcestershire County Archaeology Service, says: "Gravel terraces generally constitute the richest archaeological resource in a given area, so those quarries will usually be found to have some potential interest for us at an early stage."

New quarrying operations

The lion's share of archaeological involvement is in new quarrying projects. Minerals extraction is subject to the same planning procedures as any other type of development and conditions are likely to include provision for archaeological investigation.



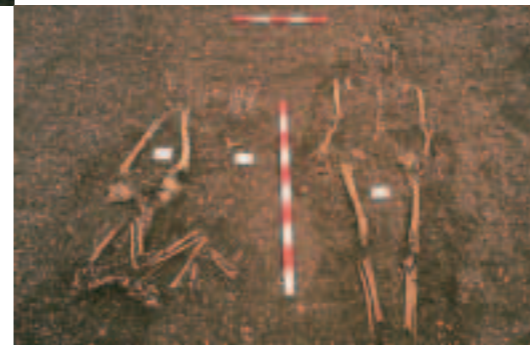
Desktop assessment - Archaeologists are usually involved from the outset of a project, making an important contribution to the development proposals. Existing records are consulted, including a sites and monument record - an index of all known relevant information on a given county held by the local authority.

Non-intrusive survey - Provided the desktop assessment does not produce evidence of a scheduled ancient monument, the next stage is to carry out evaluative, non-intrusive field work, such as a geophysical (remote sensing) survey or a study of earthworks at surface level.



Investigative trenching - Data from the preceding surveys is then used to determine the best method of investigative trenching. Archaeologists generally aim to sample around two to five per cent of the quarrying area through trenching.

Recommendation - At the end of this process, experts should have sufficient information to advise an operator of any significant archaeological features that are likely to affect the working of a site from the outset. The most common way forward, after planning permission has been granted, is through a watching brief involving archaeologists being present during the removal of soils. The archaeologists will usually also recommend a contingency provision for anything that might emerge once excavation work is underway. All of the archaeologists' recommendations are incorporated into the environmental assessment that operators submit with planning applications for mineral extraction.



Existing operations

If anything of potential interest comes to light during the lifetime of an existing quarry, architects are invited to investigate as a goodwill gesture as part of the industry's commitment to full co-operation and assistance.

Robin Jackson says that, while there is always the potential for a conflict of interest between the competing needs for excavation as opposed to preservation in-situ, the relationship between archaeologists and the quarrying industry is a positive one.

"I've had a very easy relationship with all the companies I've worked with," says Robin. "We recently discovered a Saxon water mill at



Wellington Quarry in Herefordshire that was a very important find. We've been working with the company there for many years and it all went very smoothly. This would definitely not have come to light without this quarrying operation and the work was entirely funded by the company."

Marine archaeology

The marine aggregates industry is keen to preserve its reputation as a responsible seabed user. The industry works with archaeologists in two major areas - wrecks and submerged landscapes - to help preserve and respect our marine heritage.

Operators strictly observe a jointly developed code of practice. This includes mapping of the seabed prior to dredging in order to establish the positions of any wrecks and debris as well as the potential for submerged prehistoric landscapes, the discovery of which results in localised dredging restrictions.

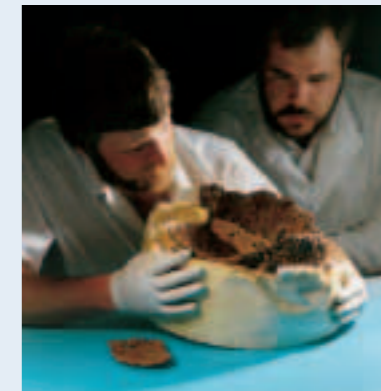
Industry experts consider archaeological implications as part of the environmental statement. If required, dredging activities take into account any specific guidance provided by marine archaeologists, including monitoring particular aspects of the seabed development.

Case studies



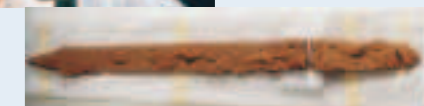
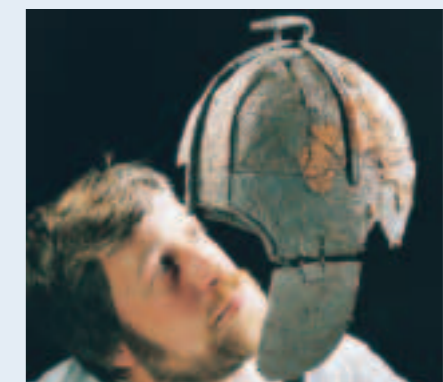
Saxon helmet

A Saxon nobleman's helmet unearthed at a Hanson site at Wollaston in Northamptonshire is one of only four discovered in this country and one of a pair that carry the emblem of a boar on the crown. This signifies that the wearer was a warrior king. A sword and a bronze bowl had also been buried beside him, all dating from the seventh century.



The same site also provided the first evidence of Roman viticulture in Britain when archaeologists uncovered an impressive 7.28 hectare Roman vineyard, thought to have been capable of producing up to 15,000 bottles a year.

Archaeologist Ian Meadows says: "It has made us realise that without mineral extraction, such finds would be rare."



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Farmsteads in the Thames Valley

Gravel extraction in the upper Thames Valley has enabled the Oxford Archaeological Unit to build a fascinating picture of the changing landscape over a period of some six thousand years.

It was the rich agricultural land that originally attracted the Romans to the area and they built one of their major towns at Cirencester.

Careful topsoil stripping by Hills Aggregates in the nearby Shorncliffe area of the Cotswold Water Park has exposed evidence of the 3,500-year-old villas and farmsteads complete with animal enclosures and wells.



Recommendation - At the end of this process, experts should have sufficient information to advise an operator of any significant archaeological features that are likely to affect the working of a site from the outset. The most common way forward, after planning permission has been granted, is

The investigations have also revealed landscape boundaries dating from around 500BC. One was made up of hundreds of pits and may have had a ritual significance. It was found running parallel to the

Gloucestershire/Wiltshire county boundary and only 10 metres from it - one of the oldest boundaries known in Britain!



Further information

- The Code of Practice for Mineral Operators - Confederation of British Industry
- Planning Policy Guidance: Archaeology and Planning (PPG 16) - Department of the Environment, Transport and the Regions
- www.qpa.org/her_ar.htm

Contact

The Quarry Products Association welcomes comments and requests for further information about the industry's work. To find out more about QPA policies and activities contact Elizabeth Clements, Jerry McLaughlin or Hazel Parsons.



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