

April 2018: The purpose of this briefing note is to aid understanding about geo-conservation and land use changes. More information can be obtained from sageologytrust@gmail.com

WHAT IS IMPORTANT ABOUT THE GEOLOGY OF OUR AREA?

The area covered by SAGT (Barnsley, Rotherham, Sheffield & Doncaster) lies on Millstone Grit and Coal Measure rocks, (327 to 306 Ma) overlain by Permian dolomitic limestones (around 255 Ma). These strata contain Europe-wide scientific reference points for sedimentary rocks of their type. Similar strata underlie the southern North Sea and form gas fields. They are also a significant source of raw materials, including stone for appropriate building conservation within the region, enabling a distinctive sense of place and authenticity to be maintained.

WHY DOES GEOLOGY MATTER?

Geology is the science of the structure and history of the earth and is fundamental to understanding the environment. The resources of the earth continue to support our existence and life on the planet, including fuels, fertilisers and constructions and other raw material. Geological science is relevant to a wide range of future careers and a large contributor to future scientific, and commercial activities, both here on Earth, and on other planets.

WHY ARE GEOLOGICAL SITES IMPORTANT?

They can become a local amenity and a focus for developing pride and identity within a place. They can also be an educational resource for nearby schools; a link to local industrial heritage; a record of great scientific interest (Did you know the delegates to the 10th International Conference on Fluvial Sedimentology (ICFS) visited sites in our area in July, 2013?) Some are internationally important sites for research into past life-forms and geological materials and structures.

WHAT IS GEOCONSERVATION FOR?

The purpose of geo-conservation is to identify, describe, record and help manage, sites of geological and landscape significance. The importance of a site may be related to its educational, scientific, historical or amenity attributes.

WHAT DIFFERENT TYPES OF LOCAL GEOLOGICAL SITES (LGS) ARE THERE?

SSSIs (Sites of Special Scientific Interest) are considered of national importance and so enjoy statutory protection. Locally we have **LIGS** (Locally Important Geological Sites) and **RIGS** (Regionally Important Geological Sites), that have no statutory protection, but even a small roadside exposure can be valuable. Their protection depends on the effective working together of local planners, landowners and geo-conservationists. None of the sites in South Yorkshire, visited by the ICFS in 2013, was an SSSI, most were RIGS.

HOW DOES SAGT GO ABOUT GEOCONSERVATION?

In the Sheffield Area SAGT regularly surveys and evaluates sites and records the geological interest. SAGT attempts to achieve geo-conservation of listed sites by working constructively with LAs, Planners, Parish Councils, landowners, local sites partnerships, schools, universities, museums and other groups.

DOES SAGT OPPOSE CHANGES IN LAND USE?

No. SAGT does not oppose rural or urban development as such, but, where permission to develop a site is given, it will strive to work with planning authorities, owners and contractors to attempt to mitigate possible damage to, or loss of, geological information at individual sites.

WHAT ARE THE OBJECTIVES OF SAGT?

Each site is considered on a case by case basis but SAGT aims to achieve the following goals:

1. to preserve the geological integrity of the site;
2. to preserve its visibility and availability for scientific and educational use;
3. to ensure workable, on-going access arrangements after completion, and;
4. to work to protect the site from any subsequent challenges from the new, or adjacent, land owners, tenants, or residents.



Rock face obscured by saplings

Online you can also read [THE GEODIVERSITY CHARTER FOR ENGLAND](#) by the English Geodiversity Forum

WHAT ARE THE PRESSURES ON GEO-SITES?

Our history of quarrying, mining and the regional transport infrastructure created a variety of old, and valuable, surface exposures **but** many of these are becoming lost to infilling, neglect and development in both urban and rural situations. This dwindling of exposures takes on added significance since the ending of coal mining has prevented underground study of faults and strata in three dimensions, thereby leaving surface exposures as the **main** source of primary evidence. Some compensation for loss of the sub-surface data can be achieved by applying new technologies and techniques to surviving surface exposures, creating in a wealth of valuable information on the geology and its local/regional structure.

HOW CAN A GEO-SITE BECOME LOST OR DAMAGED?

Sites can become infilled, used for tipping waste, used inappropriately (e.g. for burning waste against rock faces), planted over, damaged by vehicular use, or built on. Often this occurs as a result of a lack understanding, or of inadequate research or consultation before plans are drawn up.

Sites can change in ownership resulting in refusal of, access by the new owners.

WHAT HAPPENS IF PERMISSION IS GIVEN TO DEVELOP A SITE ANYWAY?

If modifying a damaging development is not possible, then SAGT will attempt to have the information at the site recorded by a suitably qualified geologist, using the best means available, including photography and sampling, before the loss of the site occurs. Information obtained by SAGT in this way, by the cooperation of the developer, will be shared freely with the local museum service and other publicly owned stakeholders, for the benefit of the wider community with geological interests.

WHAT KINDS OF DAMAGE TO GEOSITES CAN DEVELOPMENT CAUSE?

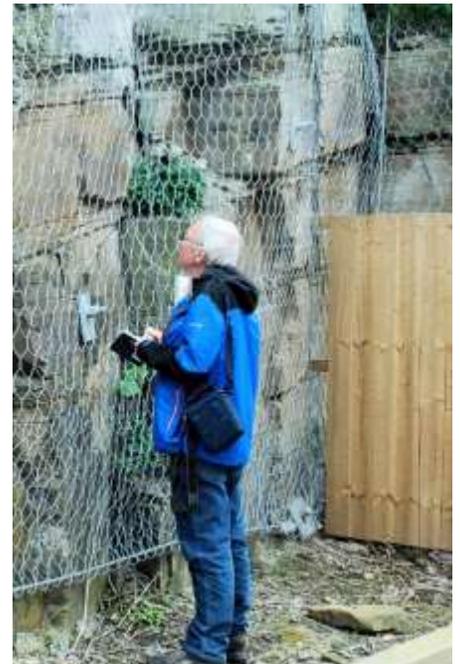
Each site and development is different and creates different situations. Advice should be canvassed before decisions are made. Sometimes a geo-site might be compromised during offsetting activities arising from a completely unrelated development. The most commonly occurring problems are caused by:

1. preventing access or dividing site ownership of a site (e.g. back gardens);
2. burying or obscuring the geo-site either during construction or landscaping (e.g. tree planting);
3. obscuring the rock by using unsympathetic slope stabilization techniques, such as steel mesh, shotcrete or placing a retaining structure across the face.;
4. unsympathetic layout (e.g. a road plan unsuitable for access to the geo-site.);
5. lack of adequate post-development arrangements for access to the geo-site;
6. the new owners being unaware of geo-site status due to inadequate details in the sale transaction information;
7. challenges, made after the construction, by the new owners, or new owners of properties on adjacent sites.

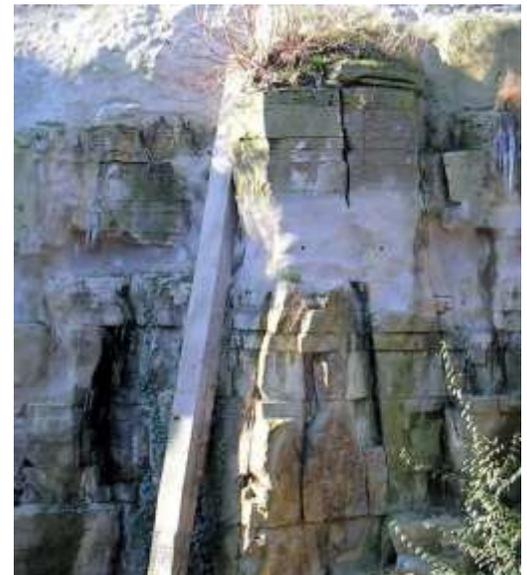
CAN ANYTHING GEOLOGICALLY USEFUL COME OUT OF DEVELOPMENT?

Yes. A lot.

Many geological features are poorly exposed, often because they are in “softer” mud rocks. New developments can provide very useful opportunities to study the temporarily exposed geology in boreholes, trenches or foundations, etc. SAGT aims to use such opportunities to record the scientific information before the site is covered or filled. To this end SAGT would work with the contractor in order to record any site while minimizing the impact on the progress or design of the development.



Rock face obscured by meshing and divided by property boundaries



Rock face obscured by shotcrete.