

LOCAL GEOLOGICAL SITES

BRAINTREE DISTRICT



BraG2 Bradwell Gravel Quarry, Bradwell

Site location: A working gravel quarry at Bradwell, near Braintree

Grid Reference: TL 819 215

Status: **Privately owned quarry with some public footpaths nearby. Access is only available with permission from the quarry operators**

Summary of the geological interest:

Bradwell Quarry is a working gravel quarry with fine sections through Kesgrave Sands and Gravels (Thames gravel) and boulder clay (till). The quarry has been the source of a large number of fossils from the till during successive organised visits by members of the Essex Rock and Mineral Society, mostly during the 1990s.



Site Assessment. *Local Geological Sites (LoGS) in Essex are assessed using criteria based on DEFRA guidance. An assessment form is used which asks key questions under four value categories: scientific, educational, historical and aesthetic. This site has been assessed and qualifies under these criteria.*

Scientific interest and site importance:

The quarry works the Kesgrave Sands and Gravels (Kesgrave Formation) which were laid down during the early Ice Age by the River Thames when it flowed through north Essex and Suffolk and out across what is now the southern North Sea to become a tributary of the Rhine. The gravel is mostly flint but also contains exotic pebbles of rocks from far upstream, some of which are ignimbrite (a volcanic rock) from North Wales.

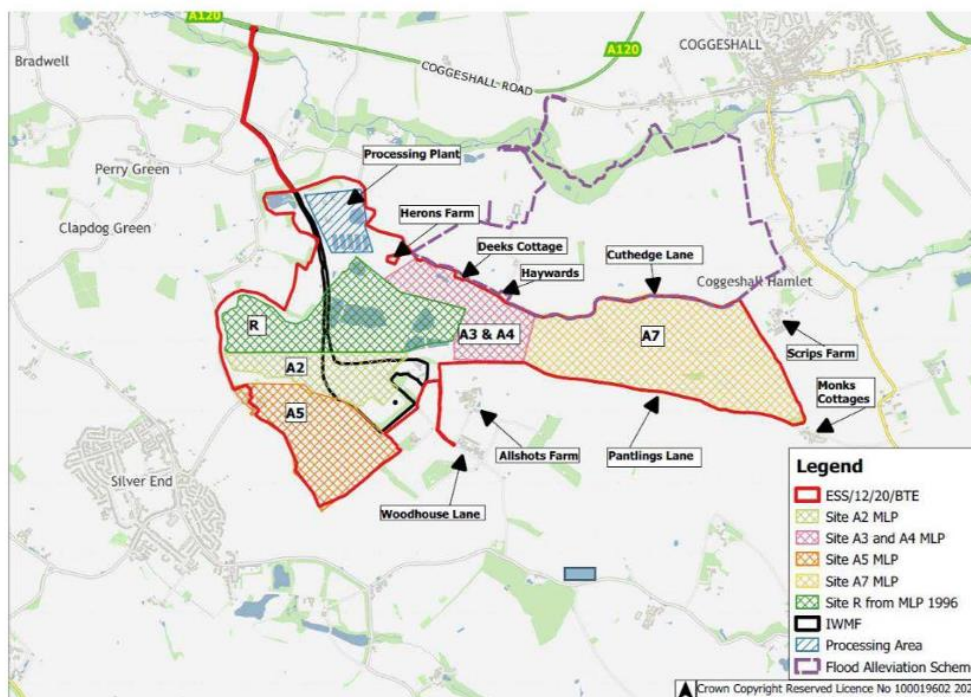
Above the Kesgrave Formation is a thickness of boulder clay, or till, which was laid down on top of these gravels about 450,000 years ago by an ice sheet during the Anglian glaciation, the most severe cold period of the whole of the Ice Age (Allen 1999).

Beneath the Kesgrave Formation is London Clay bedrock which is exposed in drainage trenches in the quarry floor. These have yielded fossils, mostly of pyritised wood.

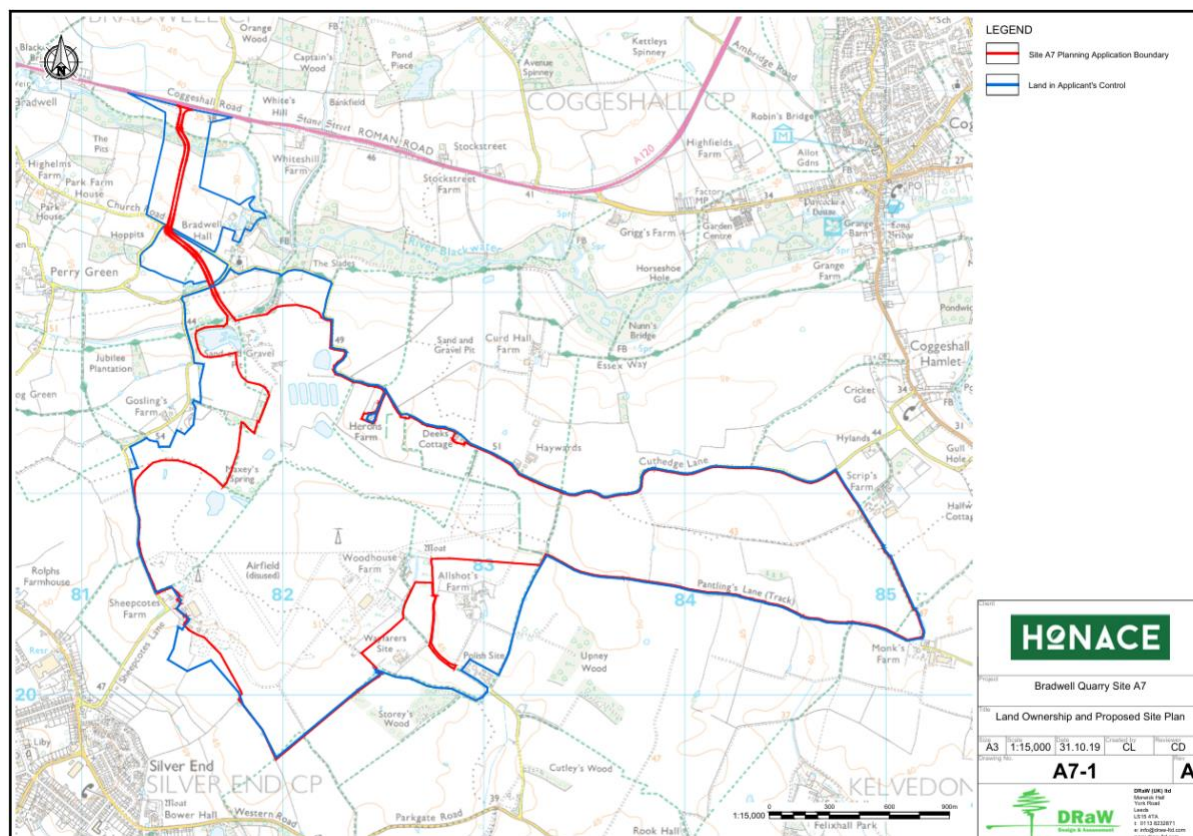


Bradwell Quarry. The photograph shows the Kesgrave Gravel being worked after the overburden of till has been removed. London Clay bedrock forms the floor of the quarry (photo: G.Lucy)

Bradwell Quarry is still being actively worked by Blackwater Aggregates – the site plans/maps below are from their latest ECC planning application (granted in 2022). The site is huge but only section A7 is being actively worked, the rest are in various stages of restoration. There is no access to the worked section, so no close ups photos of active faces is available at present. Section A7 is 94 hectares, 7.5m tonnes of sand/gravel to be extracted over the next 10 yrs. Re geological strata, the ECC report said average thickness of boulder clay 7.5m below which Kesgrave sands and gravels average 6m, then more than 70m of London Clay.



Bradwell Quarry 1 - site plan sections per ECC report 2020



Bradwell Quarry 2 - site map per ECC report 2020



Bradwell Quarry 3 looking west at OS82832127 across previously worked area A3&A4, Jan 2025 D Potts.



Bradwell Quarry 4 - looking SW at OS822214 towards SW part of processing area, Jan 2025. D Potts.



Bradwell Quarry 5 - looking SW at OS82042119 towards edge of previously worked area R, Jan 2025 D Potts.



Bradwell Quarry 6 - looking SW at OS83772101 across newly worked area A7, Jan 2025, D Potts.