

LOCAL GEOLOGICAL SITES

EPPING FOREST DISTRICT



EpG9 Oak Hill Pit

Site location: On the slopes of Oak Hill in Epping Forest, west of Theydon Bois.

Grid Reference: TQ 4384 9933

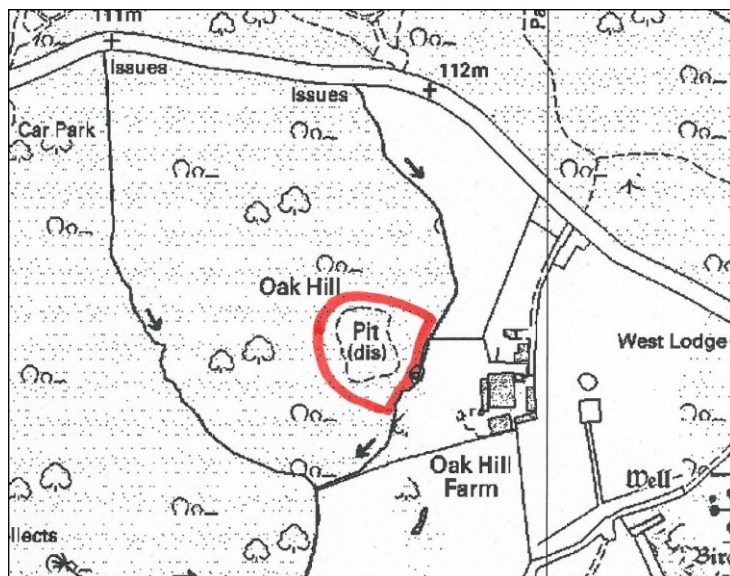
Status: Accessible at all reasonable times.

Summary of the geological interest:

This former brickworks pit in Epping Forest forms a deep amphitheatre in the forest with a 7 metre high slope covered in beech trees. The pit dates back to at least 1884 and is historically important as well as providing a potential exposure of Claygate Beds.

When in operation the pit was almost 10 metres deep and the face provided a fine exposure of the sandy clays of the Claygate Beds. However, this term did not come into use until 1912; prior to that these beds were referred to as 'Passage Beds', laid down as the London Clay Sea became shallower, the deposits passing from the stiff clay of the London Clay up into the yellow sand of the Bagshot Sand. The subtropical London Clay Sea covered much of south-east England during the Eocene period some 50 million years ago.

Although currently there are no exposures, the sandy clay and seams of sand are often visible in the roots of fallen trees and in heaps thrown out from animal burrows.



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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.

Access

Oak Hill is part of Epping Forest and is accessible at all times. There is a car park on the north side of Coppice Row (B172) at TQ 4385 9957. On the south side of the road a minor valley can be followed downhill to the site.

Scientific interest and site importance

Oak Hill Pit provides the best potential in the district to create an exposure of Claygate Beds. The pit is also of historical interest as the geology was recorded in detail at an early date (Robarts 1884). At that time an upper stratum of sand was considered to be Bagshot Beds but the entire section is now classed as Claygate Beds, with the Bagshot Beds outcropping in the forest on higher ground to the west.

Robarts recorded the following section. The depth of beds exposed being about 32 feet:

Sandy loam, with pebbles and subangular flints <i>(this appears to be hill wash from the beds above – i.e. from the Stanmore Gravel which outcrops higher up the hill to the west).</i>	Up to 4 feet
Reddish-yellow clayey sand.	3½ feet
Greenish pipe-clay, throwing out water from the sand above.	2 inches
Greenish sand.	2 or 3 inches
Mottled grey, reddish and fawn-coloured slightly sandy clay, with traces of lignite.	12 feet
Orange-coloured and white sand, with ironstone concretions and traces and casts of fossils	1 or 2 inches
Mottled grey, reddish and fawn coloured sandy clay, with a band of sandy ironstone and some black traces, probably lignite.	3 feet
Black sandy clay, changing in places to olive-green. Fossils said to occur, but only a cast of a shell in iron pyrites found. Pyrites abundant.	seen to 12 feet

Robarts also stated that at the brickyard, a short distance to the south-east, a light-yellow sand was exposed (the position of this being at the very top of the section beneath the hill wash) which he took to be Bagshot Sand but is now included in the Claygate Beds.

Whitaker, in his London Geological Survey Memoir (Whitaker 1889), recorded that he visited the pit in 1887 but “could not make out the distinct divisions noted by Robarts but was disposed to divide the beds in the large pit as follows:

Slight wash of sand and gravel.

Fine clayey sand, with thin layers of grey clay (several feet).

Stiff clay, weathered brown in part, but grey deeper down (and stiffer);
with decomposed septaria and ironstone.”

The above description of interbedded sands, silts and clays is typical of the Claygate Beds, their mixed nature being distinctive from the formations above and below. The Claygate Beds, as now defined, includes all the deposits above the base of the lowest fine-grained sandy bed which are significant enough to be distinguished from the thick, underlying relatively homogenous clays of the London Clay. The top of the Claygate Beds is taken at the base of thick fine-grained sands of the Bagshot Beds (Bristow et al. 1980).

Condition report. 21 August 2025

No exposures were seen during this visit. The northern bank of the former pit would offer the best area to create an exposure, but given its magnitude, it would require a machine to clear a section in the face.

References

BRISTOW, C.R., ELLISON, R.A. and WOOD, C.J. 1980. The Claygate Beds of Essex. *Proceedings of the Geologists' Association*. 91. Pages 261-277

ROBARTS, N.F. 1884. Notes on the London Clay and Bagshot Beds at "Oakhill Quarry", Epping Forest. *Transactions of the Essex Field Club*. 3. Pages 231-236.

WHITAKER, W. 1889. The Geology of London and of part of the Thames Valley. Volume 1 Descriptive geology. *Memoirs of the Geological Survey*. HMSO. Pages 258-259.



North side of Oak Hill Pit

Photo: P. Allen August 2025