

LOCAL GEOLOGICAL SITES

CHELMSFORD DISTRICT



ChG4 Danbury Common Gravel Pits

Site location: Northern part of Danbury Common, Danbury.

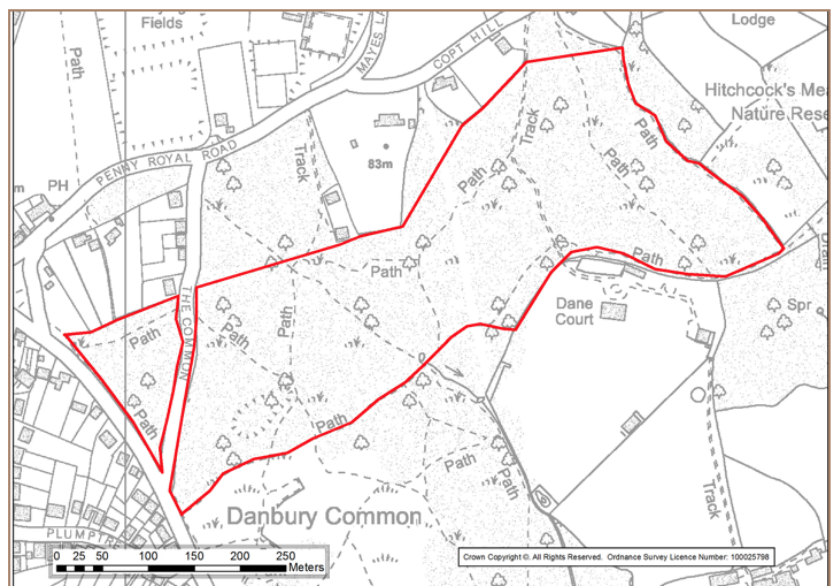
Grid Reference: TL 784 047 (eastern pits) and TL 781 045 (western pits).

Status: Accessible at all reasonable times

Summary of the geological interest:

In woodland in the northern part of Danbury Common are extensive disused gravel pits which formerly worked the Danbury Gravel, a thick layer of orange-brown sandy gravel that caps Danbury Hill. Several of the pits have very steep, almost vertical faces, providing a number of small exposures. The Danbury Gravel clearly dates from the Ice Age but its precise origin is still not clear, despite various investigations over the last 150 years. There are separate areas of gravel pits on the east and west sides of the common, each situated on separate tongues of gravel separated by a shallow valley which is underlain by London Clay bedrock.

During the Anglian Glaciation, 450,000 years ago, the ice was banked up against the north side of Danbury Hill, which formed a barrier to the southern advance of the ice sheet. It is thought that colossal torrents of meltwater were released which deposited a great thickness of glacial sand and gravel – the Danbury Gravel - on the high ground. However, this explanation may be too simplistic as the deposits are not always typical of ice-marginal features, and they occur at a very high elevation (sometimes over 100 metres). Some of the gravel bodies on Danbury Hill are also intensely deformed by ice pressure.



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

Scientific interest and site importance

Danbury Hill rises quite sharply above the surrounding plateau to a height of over 100 metres. The hill consists of London Clay almost entirely covered by Danbury Gravel. The origin of the Danbury Gravel is still controversial. What is clear, however, is that the Danbury-Tiptree Ridge, of which Danbury Hill was part, was a barrier to the progress of the Anglian Ice Sheet, although there is evidence that an early oscillation was able to by-pass the ridge to the south.

There have been several theories concerning the origin of the various gravel outcrops on Danbury Hill but from their character and composition there is no doubt that the gravel in the Danbury Common pits is glaciofluvial, in other words it is outwash gravel deposited by torrents of meltwater from the ice sheet.

The Danbury Gravels have been exploited in numerous other pits on the summit and slopes of the ridge but most of these have been infilled and the land developed. The pits on Danbury Common have survived without restoration and are therefore scientifically and historically important. There are two or three exposures where the gravel can be examined and there is the opportunity for creating better exposures with the permission of the landowner, the National Trust.

The thickness of the gravel varies considerably across the hill but a BGS borehole at Gay Bowers Farm, sunk in 1969, penetrated almost 10 metres of gravel before reaching London Clay. The borehole was at Danecourt (TL 7864 0456), only 250 metres south-east of the eastern pits on Danbury Common.

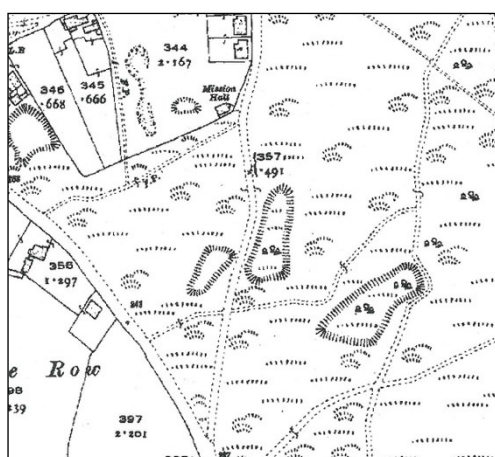
Other information

Danbury Common is an SSSI that has been notified for its biological importance. Most of the pits are deep with steep faces and many are very overgrown and impenetrable. The eastern pits are a popular venue for mountain bike users who have created trails through and over the edge of the pits. In June 1906, when the pits were in operation, they were visited by a party from the Geologists' Association and the Essex Field Club (Cole 1907).

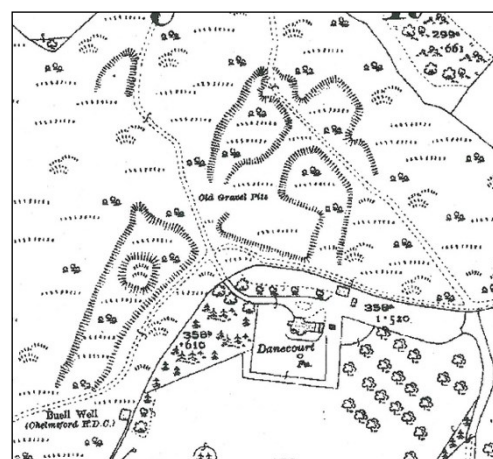
References

ALLEN, P. 1999. **The Anglian cold stage in Essex – a review.** *Essex Naturalist*. Vol. 16 (New series). p. 83-100.

COLE, W. 1907. **Meeting in the Danbury and Little Baddow Districts in conjunction with the Geologists' Association.** *Essex Naturalist*. Volume 14: Pages 260-264.



The western pits



The eastern pits

Extracts from 1914-1924 Ordnance Survey Map showing the Danbury Common gravel pits



*Looking into largest western pit. Photo Ros Mercer
November 2024*



Gravel in path. Photo Ros Mercer November 2024



*Gravel under tree near entrance. Photo Ros Mercer
November 2024*