

LOCAL GEOLOGICAL SITES

THURROCK DISTRICT



ThG15 Stanford Warren Sarsen Stone

Site location: Sarsen Stone at the entrance to Stanford Warren Nature Reserve, Mucking.

Grid reference: TQ 6856 8117

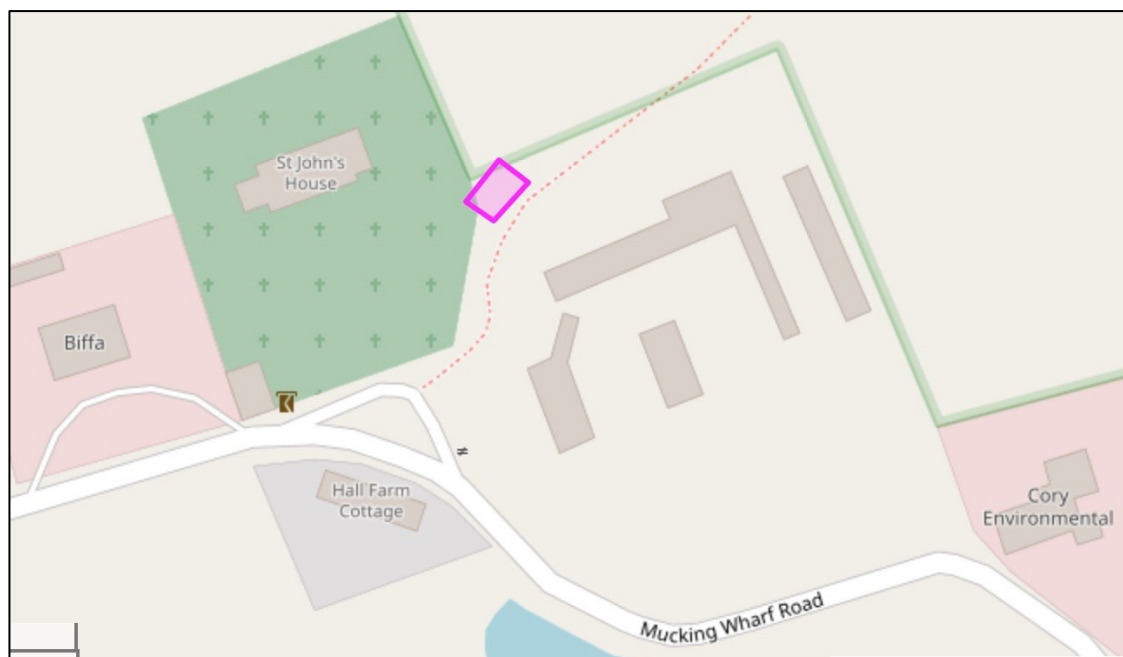
Status: Publicly accessible, adjacent to the footpath

Summary of the geological interest:

To the east of the former church at Mucking is a very large sarsen stone at about 2.2 x 1.3 x 0.6 metres in size. It is sitting by the path at the entrance to Stanford Warren Nature Reserve (Essex Wildlife Trust). The boulder was rescued from the large Mucking Gravel Quarry nearby which was landfilled in 2007.

Sarsens are extremely hard boulders of sandstone that are native to Thurrock and their formation has been the subject of recent scientific debate. Research has compared the conditions under which sarsens and puddingstones may have been formed with the present day climate in the Kalahari Desert and parts of Australia.

The sarsen stones of Thurrock are some of the best-preserved examples in the UK.



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.

The origin and formation of sarsen stones

The origin of sarsens appears to be the sands of the Woolwich and Reading Beds, which occurs above the Thanet Sand. At some stage these sands must have been exposed at the surface when the climate of Essex was extremely hot (probably during the Palaeocene Period some 55 million years ago) and during that time water with dissolved silica was drawn to the surface. The sand therefore became cemented by silica (in the form of quartz) to form a tough layer of sandstone called *silcrete*. Subsequently, when these beds were subjected to erosion and broken up, large blocks of these hard rocks remained.

Compared to sarsens elsewhere in Essex the sarsens of Thurrock have not been abraded and retain their remarkable 'mammilated' surfaces which are 'growth structures' formed as the quartz slowly crystallised between the sand grains. The preservation of these surfaces is due to the fact that, although the stones were picked up and transported by the Thames during the Ice Age, they have not travelled far.

This is a very fine example of a sarsen stone, one of very few that are publicly accessible at all times.



The Stanford Warren Sarsen Stone. Photo: G.Lucy.