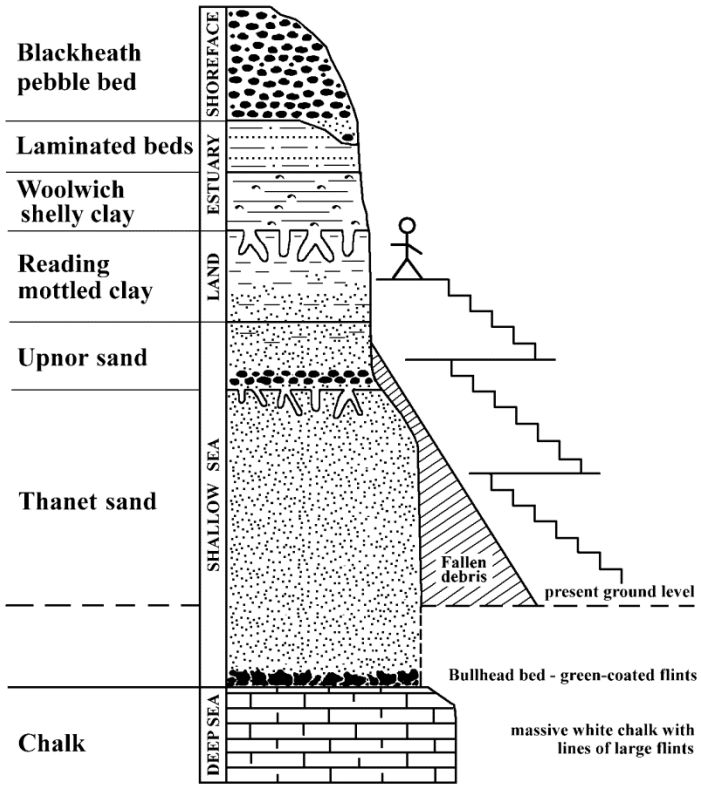
What did it look like when the pit was working between 1880s and 1938?

Gilbert's Pit in 1913

Gilbert's Pit was primarily worked for the Thanet Sand. Three different qualities of the sand were used. The lowermost units, were used for making moulds in which brass and iron could be cast for the adjacent Woolwich Arsenal.

The uppermost unit of sand was suitable for making amber coloured and green bottle glass. It was worked by the United Glass Bottle Manufacturers' Association until 1938.

After operations ceased the base of the pit was covered in wartime rubble and the clean quarry faces have been covered by vegetation and scree.



The strata at Gilbert's Pit tell a tale of changing sea levels. The Chalk at the base was formed about 85 million years ago at a time when seas covered about two thirds of the Earth's present land-mass. The seas retreated and much of the Chalk was eroded from the exposed land.

There is a period of about 25 million years for which we have no record but about 60 million years ago sea level rose and the Thanet sand was laid down in a shallow sea. This was followed by the marine Upnor sand which became exposed as land at the surface during a period that was very hot and wet when the Reading sands and mottled clays were formed. Fluctuating sea levels allowed the estuarine Woolwich beds to be laid down before the seas returned and the rounded black pebbles of the Blackheath beds at the top of the pit were deposited in coastal channels.

What can be seen in the cliff on the south face?

The Woolwich shelly clay can just be seen as grey layers near the top of the south face.

Below, the Reading mottled clay on this face is an orangey colour.

The greenish clayey Upnor sand can be distinguished from the pale grey fine silty Thanet sand below due to its darker colour and more stable behaviour, while the Thanet sand 'runs' more easily. These differences are important to engineers trying to understand the problems of tunnelling under London.

There is an interpretation board at the base of this face describing the section.

What was it like at Gilbert's Pit 55 million years ago?

From the fossils in the Woolwich Shell Bed we learn that the animals lived in an estuary in conditions similar to Malaysia today.

Brotia melanioides

Potamides funatus

Crassostrea tenera

Corbicula cuneiformis

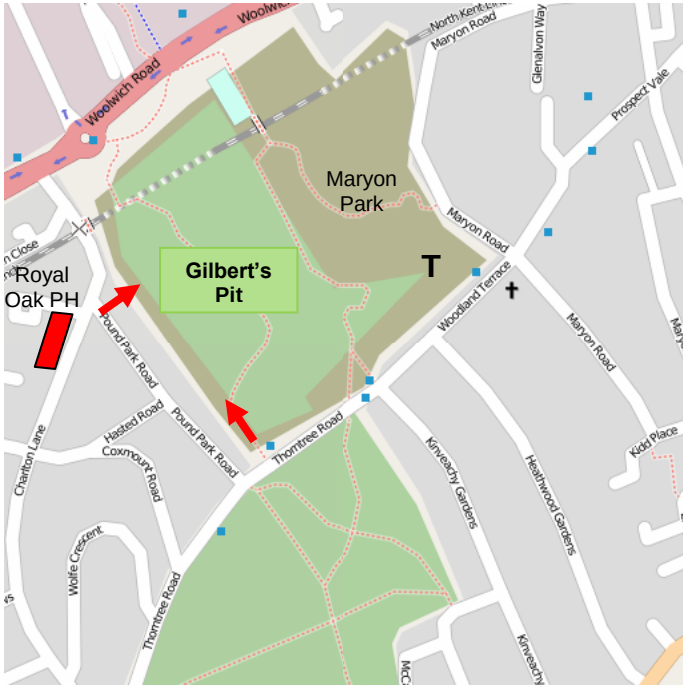
Polymesoda cordata

© Natural History Museum

Fossil plants (found elsewhere) from the overlying Blackheath pebble beds indicate that the climate was hot and wet with some seasonality. There were *Nipa* palms as well as Magnolia trees and amongst the fossils from the same strata at Abbey Wood nearby are fragments of very early mammals such as tiny horses the size of a dog as well as mammals that have no resemblance to any found today.

Reconstruction of an Early Eocene Forest from *The Book of Life* Ed. S.J. Gould

Where is Gilbert's Pit?



To gain access contact:

Park Rangers
parks@royalgreenwich.gov.uk
Telephone 020 8856 0100

For more information on the geology contact
London Geodiversity Partnership at
www.londongeopartnership.org.uk

Natural England at
https://designatedsites.naturalengland.org.uk/

Gilbert's Pit
Charlton

Site of Special Scientific Interest

Why have steps been built up to the former quarry face?

Gilbert's Pit is nationally important for the Woolwich Shell Bed which can be seen from the viewing platform at the top of the steps. Beneath, the mottled clays of the Reading Formation and the sands of the Upnor Formation can be seen. It is for these beds that it has been chosen as a Site of Special Scientific Interest. The same beds underlie London and are variable in thickness. Gilbert's Pit, therefore, is much used by engineers trying to understand the problems of tunnelling under London. It also allows schools, adult groups and the general public to view these important local strata.

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