

CHRISTCHURCH PARK

Springs and seepages issue from the slopes of the park where water-bearing Pliocene-age Red Crag sands overlie impermeable Eocene-age London Clay. Close to the Tudor Christchurch Mansion, the Round Pond is retained in its short valley by a dam which also serves as a footpath. To the left, a nearby collection pond drains a wet area and is overflowing across the path here on its way towards Brook Street, where it is culverted, and then on to discharge into the River Orwell.



The rockery in the Lower Arboretum is on the west side of the Wilderness Pond. Local rock has been used – sarsen stones dug up during the excavation of the dock basin (now the Waterfront) in the 1840s. Some have been laid horizontally, to resemble

sedimentary strata, others resemble slipped material. Sarsen stones are hard, very tough silcrete rock (silica cemented sandstone) from sand beds underlying the London Clay and above the Chalk. This specimen exemplifies the characteristic mammillated surface of interlocking rounded features. It is clearly displayed as a big local rock to be enjoyed.



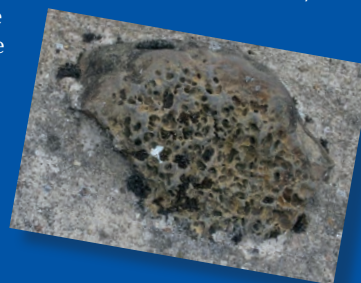
BLACKFRIARS



Walk in the footsteps of 13th century Dominican friars between the remaining low walls of Blackfriars (a Scheduled National Monument) which links Foundation Street and Lower Orwell Street. Most of the blocks are brown calcareous mudstone from the local London Clay and a few show shrinkage cracks infilled with calcite crystals as in classic 'septaria'.

Borings of various shapes and sizes seen in many of the mudstone blocks were made by 'modern' (i.e. Medieval) marine molluscs and worms. These are clues that the stone was obtained locally from the foreshore or submarine outcrops of London Clay. (Our local London Clay is within the Harwich Formation and is slightly older than the London Clay of the capital.)

A nearby blue plaque commemorates Nina Layard (1853-1935) whose work in Ipswich included excavation of the Pleistocene freshwater beds of Stoke Tunnel Cutting SSSI in Ipswich.



ST PETERS BY THE WATERFRONT

Admire the Carboniferous age Belgian Tournai Limestone 12th century font in St Peters – an early date for imported stone. The carved animals are quadrupeds with bird-like feet, maybe lions as imagined by a Medieval artist.

St Peters is open at specified times – please check.



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DISCOVER GEOIPSWICH

GEOLOGICAL AGES WITHIN WALKING DISTANCE



QUESTION

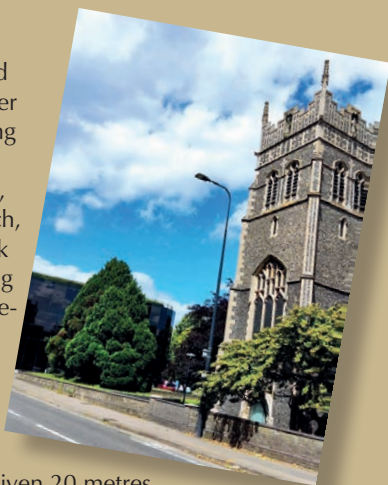
This 21st century sculpture is at the University of Suffolk Waterfront building. The light coloured rock is marble from Estremoz in the Alentejo region of Portugal. The dark coloured rock is 'Nero Assoluto' – dolerite from Rosario in the Colonia Department of southern Uruguay.



Nearby, to the left along the Waterfront, Coprolite Street is a reminder of a Victorian industry. Phosphate nodules ('coprolites') quarried from local Red Crag were manufactured into fertiliser on this site. Geology enthusiasts come from far afield to take their photograph in 'fossil dung street'. Take your own selfie!

ST NICHOLAS CHURCH

Much of the older part of Ipswich is on the sand and gravel of a Pleistocene river terrace, capable of carrying the weight of most of the buildings. Large buildings, such as St Nicholas Church, may start to crack and sink over the centuries, needing remedial action such as tie-rods. Beyond the church, the 1970s glass-clad (Grade I Listed) Norman Foster building has its foundations strengthened by more than 250 piles driven 20 metres down through the sand and gravel into Cretaceous Chalk. The same sand and gravel underlie much of the nearby Ipswich Town Football Club pitch and woolly mammoth bones have been discovered in nearby excavations.



Could there be a mammoth below the players and the cheering supporters?

The black flint work on St Nicholas Church was produced by knapping – splitting and squaring flint. A few display cones of percussion where striking them did not split them neatly.

The Medieval church is largely made from local building materials. The brown mudstone blocks are from the local

London Clay. The mudstone is cemented by lime, giving it some strength, and many blocks show cracking, characteristic of septarian nodules. The mortar often contains fragments of fossil shells, probably from the Red Crag sand. There is a lump of sarsen sandstone in the southwest corner wall.



IPSWICH CORNHILL



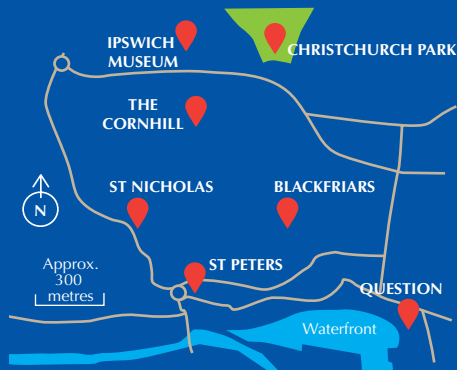
The late 19th century buildings surrounding the Cornhill owe their variety of British stones to the arrival of the railway in Ipswich in 1846. The Town Hall in the right foreground is made from Bath Stone, a yellow-brown Jurassic limestone, and grey Portland Stone, also a Jurassic limestone, from Dorset. The red sandstone pillars are Mansfield Stone from the Sherwood Forest area. Their rounded quartz grains and iron oxide colouring date back to Permian age desert Britain. The Old Post Office building beyond the Town Hall is made from Portland Stone and displays fine ornamental carving around its first floor windows.

The Portland Stone in the Town Hall has a surface created by masons, who have enhanced it to resemble weathered rock containing fossil burrows (perhaps of sea urchins).



SITE LOCATIONS

This sketch map shows the relative locations of the sites in this leaflet.



IPSWICH MUSEUM

Look up to see the terracotta 'fossils' high on the front pediments of the Museum in High Street (the road can be busy). Produced from high alumina Carboniferous age clays at the Doulton Works in Lambeth in 1880, Isaac Newton (and Hogarth) have gazed down at fossils, fauna, flora (and passers-by) for 140+ years. There are ammonites, bivalve shells, and more.



The terracotta 'fossils' were chosen by John Ellor Taylor, the Curator of Ipswich Museum. This helically coiled ammonite is depicted in gilt on the green cloth spine of his book, 'Geological Stories', 1873. Can you find it on the pediment of the Museum?



This large puddingstone (conglomerate) boulder, for many years in the courtyard of Ipswich Museum, was found in an excavation for gravel on the Tuddenham Road in 1890. It took John Taylor and a dozen men five hours to bring it in chains (it weighs around a ton and a half) to the Museum. And puddingstone? The flint pebbles (the plums!) and the silica-rich matrix (the dough!) resemble an old-fashioned plum pudding.