

Urban Geology: Two New Buildings at The Angel, Islington

The cross-roads at The Angel, Islington are where the Pentonville Road (running north) becomes the City Road (running south) and St John Street, running towards Clerkenwell and Smithfields, becomes Upper Street, the hub of Islington. Two major new office complexes, both owned by the property developers Derwent London have recently been completed which are of notable attention with respect to the geology of their building materials. Both buildings have been part rebuilds, part renovations of existing buildings, transforming their appearances. Start at the Ten Four Pentonville Road, with its striking brick façade.

Ten Four Pentonville Road

Situated at the start of Pentonville Road at the Angel, Ten Four Pentonville Road is a striking new office development, designed by architects Stiff + Trevillion and opened in late 2012. This is not an entirely new build, but it has renovated, restored and transformed the existing buildings, on either side of Angel Mews, without requirement for demolition. The architects have justly prided themselves on the use of natural materials and this is at its most striking in the brickwork cladding the front of the twin buildings. If you intend to spend time photographing this building, it is a good idea to ask permission and explain to the building reception what you are doing, so as not to arouse suspicions.

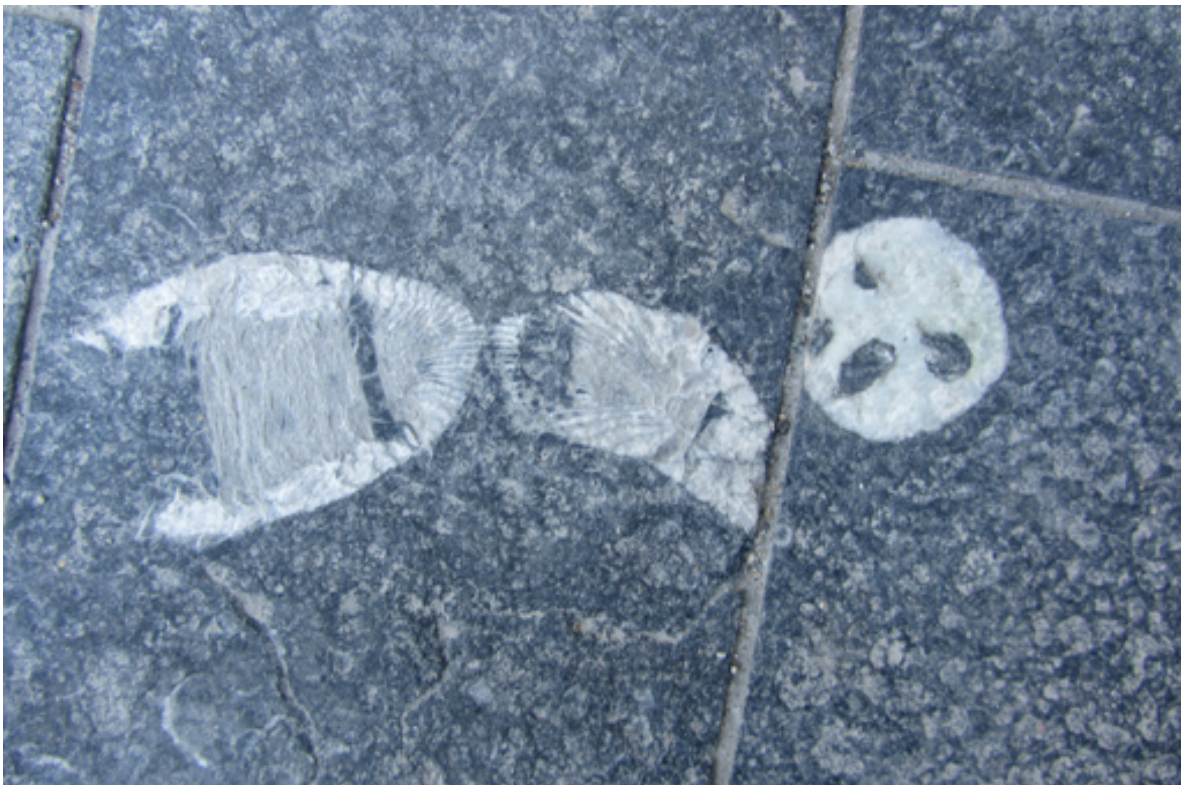


The bricks range in colour from palest dove grey to almost black. They are supplied by a family firm of traditional brick makers, Petersen Tegl (Petersen brick), based in Broager, southern Denmark. Petersen's make their bricks from the local glaciogenic clays. The peninsula of Jutland lay on the boundary of the ice sheets of the last glacial maximum 23-19 thousand years ago. As the ice retreated it left behind fluvial sands and then tills and boulder clays. Broager, NE of Flensted, is ideally situated to quarry brick earths with the correct combination of clay and sand.

Petersen coal-fire their bricks in carefully atmospherically controlled kilns, producing a range of colours. These grey bricks would have been made from iron-free clays fired in a reducing kiln environment.



Looking down to the pavement shows beautiful paving slabs and setts, best observed after a shower of rain. These are of a black bituminous fossiliferous Carboniferous limestone.

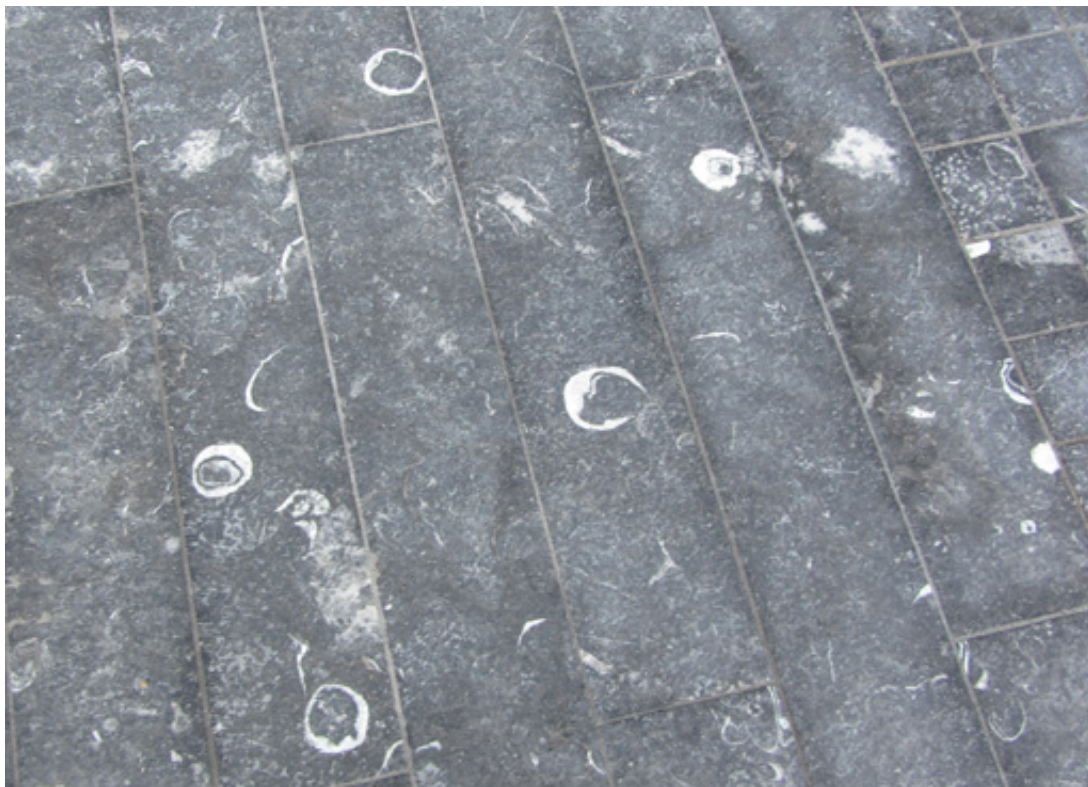


Solitary corals and a productid shell makes a scary face ...

The fossils are in sharp contrast and white. They include large, thick-shelled *productid* brachiopods, often showing 'bull's-eyes', as well as both solitary and colonial corals. The origin of these stones is unknown but they are very likely to be from the famous black Carboniferous limestones of Kilkenny, Ireland.



Colonial corals, field of view ~ 30 cm.



Sections, including 'bull's-eyes' through productid brachiopods.

The Angel Building

Cross the road to the Angel Building which occupies a large block on the corner of the Pentonville Road and St John's Street. Also owned by Derwent London, this building hosts extensive office space with restaurants at the podium level. The Angel Building was designed by architects Allford Hall Monaghan Morris and opened in 2010. Like Ten Four Pentonville Road, this too is a restoration of an otherwise unprepossessing 1980s office block. The façade is glass and dark grey aluminium and the building at first seems to be of little interest to the geologist, but look down to the paving setts which form the pedestrian areas on St John's Street and round the corner onto Pentonville Road.

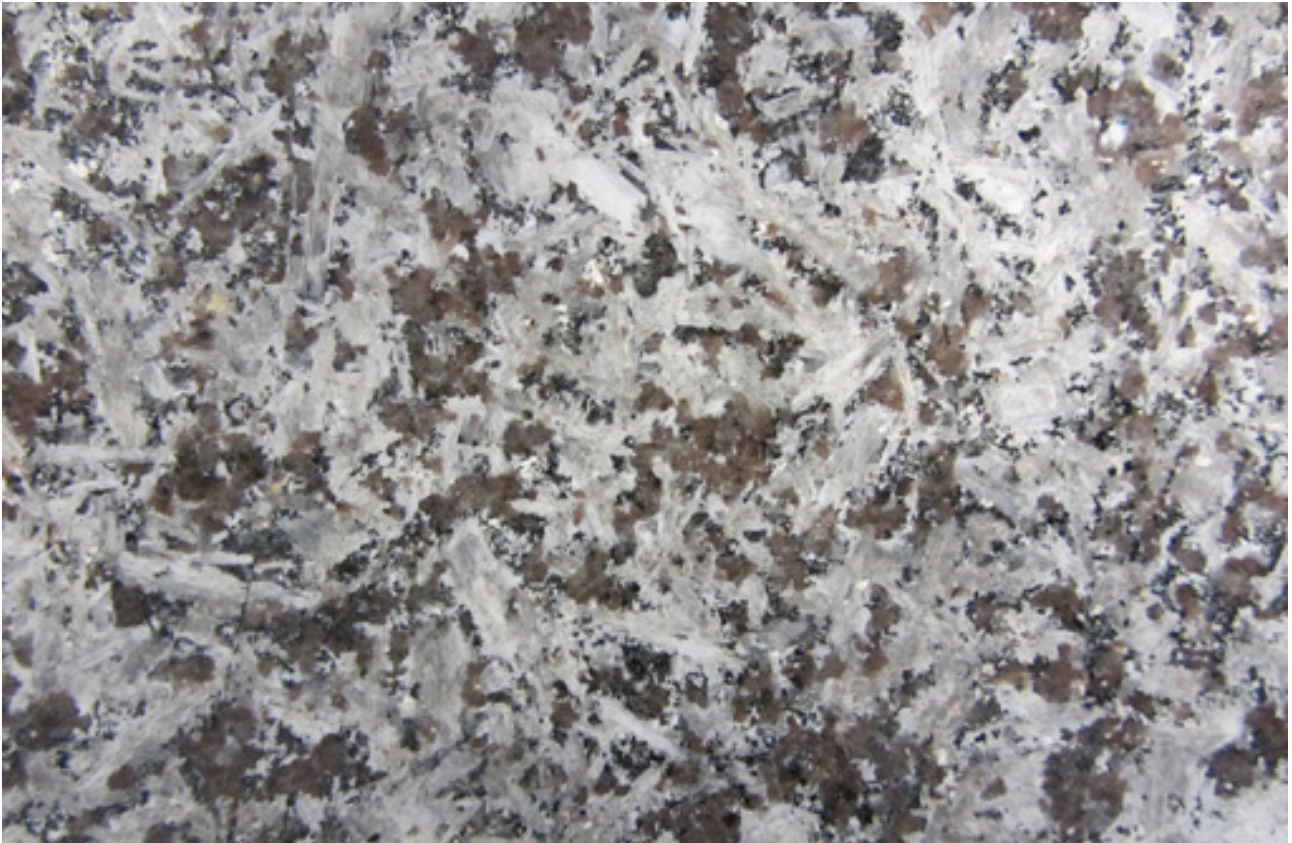


Foyaite setts on the pavement outside the Angel Building

Described as 'Portuguese Granite', this description is only half correct. The stone is indeed derived from Portugal, from the Monte Foia, near the town of Monchique in the Algarve. It is not a granite, it does not contain the pre-requisite defining mineral of granites, quartz. This rock is a nepheline syenite called foyaite. It is marketed under several names, primarily Monchique San Luis and Marron San Luis because of its chestnut brown hue, which is imparted by the mineral nepheline. However the feldspars are the most distinctive and decorative feature; they are white alkali feldspars, lath shaped and up to 15 mm in length, randomly orientated.

The Monchique Intrusive Complex is a large, elliptical (63 x 16 km) laccolith which forms the upland Serra do Monchique of the Algarve. It is predominantly composed of nepheline syenite and was emplaced into Cretaceous Marine sediments at c. 72 Ma. The main quarry is at the village of Nave, a few kilometers south of Monchique. A polished sample of this rock was presented to UCL Department of Earth Sciences, in the early 1970s by George Walker of Imperial College. He writes to Maurice Wells "*I thought you might like a piece of type foyaite from Monchique, Portugal. I collected a lot recently from there. Quite a handsome rock but used on only a very small scale as an*

ornamental stone.” It certainly is a handsome rock and it is good to see it livening up the streets of Islington.



Polished slab of foyaite (UCL Earth Sciences), Field of view is ~ 15 cm. The rock is composed of white alkali feldspar, brown nepheline, black pyroxene and mica.

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Sources and Further Reading

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Grange, M., Scharer, U., Merle, R., Girardeau, J. & Cornen, G., 2010, Plume-Lithosphere Interaction during Migration of Cretaceous Alkaline Magmatism in SW Portugal: Evidence from U-Pb Age and Pb-Sr-Hf Isotopes., *Journal of Petrology.*, 51 (5), 1143-1170.

Houmark-Nielsen, M. & Kjaer, K. H., 2003, Southwest Scandinavia, 40–15 kyr BP: palaeogeography and environmental change., *Journal of Quaternary Science*, 18(8) 769–786.

Petersen Brickworks; <http://en.petersen-tegl.dk/>