

Building London

A summary of building stone resources in London

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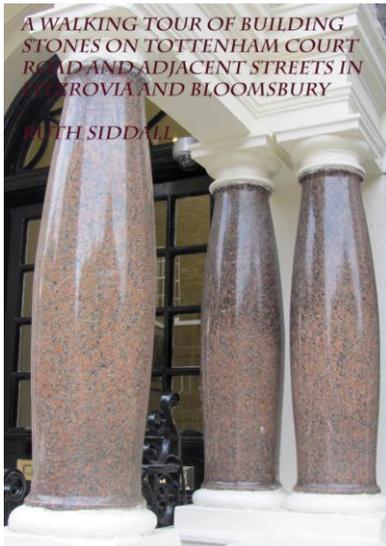
Introduction

It can often be difficult to observe geology directly in a built environment. However, in London we have a wealth of building stones, interesting cemeteries and geological collections that can help us understand the principles of geology and the properties of the stones used in the buildings. There are also walks that illustrate how important geology was in influencing the building of London. The London Geodiversity Partnership is committed to making more of these resources available to a wider audience. This is a summary of the resources currently available on the internet and in publications. This guide is regularly updated on the London Geodiversity Partnership website:

www.londongeopartnership.org.uk/buildinglondon.html

Building Stone Walks

The cut and polished surfaces of building stones present us with a window back into geological time, spanning millions of years and representing every geological process around the planet. The architects of London chose beautiful stones from



the environs, the rest of the UK and from all corners of the Earth and so it is an excellent place to take advantage of urban geology. There are now a number of fascinating building stone walks around the capital that have been written up. It is advisable to go equipped with

a hand lens and an awareness that the built environment is forever changing and the stones mentioned in the guides may have gone or have been replaced. Many of the walks are available through the University College London website.

Urban Geology

A series of Building Stone walks devised by Dr Ruth Siddall of University College London, based on her knowledge of marbles, the quarries they came from and with information from her former colleague, Eric Robinson:

www.ucl.ac.uk/~ucfbrxs/Homepage/UrbanGeology.htm

[1. UCL & the University of London](#)

A comprehensive look at the Building Stones both inside and outside on the UCL campus.

[2. Tottenham Court Road](#)

This guide is an update of Eric Robinson's walking tour, originally published in 1985. Tottenham Court Road has transformed since then, but many of the stones still remain and there are a few new additions. The final section describes the stones in more detail.

[3. Two 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.

[4. Hyde Park Corner](#)

A short geological tour of the war memorials on or near the traffic 'island' of Hyde Park Corner.

[5. St Pancras New Church](#)

A description of the building stones on the exterior and the interior of St Pancras New Church, on the corner of Euston Road and Upper Woburn Place. The church was consecrated in 1822.

[6. Gresham Street & the Guildhall](#)

Eric Robinson wrote his two 'London: Illustrated Geological Walks' books in 1984 and 1985. Both of these featured the Guildhall area; however this part of the city of London, just north of St Paul's

Cathedral, has been transformed since then, with few of the Buildings that Eric described still standing. Amongst these of course is the 15th century Guildhall, which was almost obscured from view in the 80s, the yard was opened up in the 1990s and a number of new buildings have sprung up along the western end of Gresham Street.

7. The Russell Hotel

The foyer and staircase of the Hotel Russell, Russell Square, are famous for their 'sumptuous' marble decoration and they make for a fine display of primarily French decorative stones.



8. Queenhithe

This short walk along Upper Thames Street, EC4, and the north embankment of the Thames from Southwark Bridge to the Millennium Bridge links Eric Robinson's walks around Southwark (Robinson, 1993) to St Paul's Cathedral (Robinson & Bishop, 1980). However it takes in a series of buildings with wide and geologically interesting selections of stones. The interiors of Vintner's Place and Thames Court are also of geological interest.

9. Regent's Place, West Euston

The Regent's Place development is nearing completion with the office blocks in the North East Quadrant almost ready for their new occupiers. The site is owned by British Land and occupies 13 acres and comprises offices, restaurants and bars as well as residential buildings and social spaces. The developers pride themselves on their use of natural materials and a number of stones are used here. This guide introduces the geology of the main stones used in the site.

10. Victoria Street

This walk starts at Westminster Abbey and follows the north side of Victoria Street, SW1 as far as Westminster Cathedral and then returns along the south side of Victoria Street back to Westminster Abbey.

11: Piccadilly

Piccadilly and its surrounding streets is an ideal place to study global geology in just a few hundred meters. Buildings on the street feature London's classic

building material, Portland Stone, as well as granites, gneisses and marbles from Scotland, Scandinavia, China, India and many other localities.

12. St Paul's Churchyard

This walk starts at St Paul's Underground station, and takes in a circuit around the Cathedral via Paternoster Square and St Paul's Churchyard and back to the tube station via the west end of Cheapside. Culturally and archaeologically this is one of the oldest, continuously occupied parts of the City of London, particularly as a religious centre.

13. Cigala Restaurant, Lamb's Conduit Street

This is a geological visit, rather than a walk, to the Spanish restaurant Cigala at 54 Lamb's Conduit Street in WC1N. The food at Cigala has much to recommend it and is a destination in its own right. However urban geologists should choose to eat their tapas from the outdoor tables on a Summer evening. This will give an opportunity to view its exterior, clad crazy paving-style in a wide variety of decorative stones.

14. Church's Shoe Shop, Regent's Street

The shop which now houses Church's shoe store at 200 Regent's Street W1 is a real gem with a spectacular façade clad in limestones, serpentinites and granite. Most striking is the red and white banded Campan Mélange from the French Pyénées which is not commonly seen on the exterior of buildings.

15. Lamb's Conduit Street

The starting point of this walk is Russell Square Tube Station and the tour is broadly circular, taking in Bernard Street, Brunswick Square, Guilford Place and Lamb's Conduit Street, returning to Russell Square via Great Ormond Street. The aim is to introduce the hydrogeology and building stones used in this quiet corner of Bloomsbury as well as a brief introduction to the history of this area.

16. Luxury Lithics on Bond Street

The stones in the shop fronts of Old Bond Street reflect the luxury goods sold inside. This is a constantly changing area of exotic building stones.

17. Waterloo & City

This walk, from Waterloo Station to St. Paul's Cathedral takes in the fossils to be seen in the Royal Festival Hall and details of Westminster and Blackfriars bridges. There is a brief stop at the Black Friar Pub to view the building stones amongst other things. Helen Gordon describes her experiences on this walk in the Economist's *Intelligent Life* article: <http://moreintelligentlife.com/content/features/helen-gordon/urban-geology>.

18. Urban Geology in Fitzrovia

A diagonal walk from Warren Street tube station, Tottenham Court Road finishing at Oxford Circus station. Several exotic stones will be encountered on the way including the recently discovered, spectacular 'Madagascan Blue Granite'.

19. Memorial to the Siege of Malta

A rather grubby, monolithic block of limestone stands just outside the church of All Hallows by The Tower on the pedestrianized Byward Street in EC3. This monument was erected almost 9 years ago on 15th August 2005 and the London climate and pollution have not been particularly kind to it. Nevertheless this stone is well worth a look both to the geologist and the historian of World War II. The memorial commemorates the siege of Malta during WWII.

[20. London's Pub Geology](#)

This is a spotter's guide to the geology of London's Victorian pubs. It begins with details of the stones used and finishes with a gazetteer of where they were spotted. It will be constantly updated.



Museum Geology

[Geology of the Eastern Desert, Egypt in the British Museum](#)

This brief guide takes the opportunity to use the beautiful stones of the Egyptian Sculptures in the Southern and Northern Egyptian Sculpture Galleries in the British Museum to discover the basement geology of Egypt within the comfortable climate of the Museum and an opportunity to see, at a macro scale, igneous and metamorphic textures on outcrop-scale blocks of stone. Written by Ruth Siddall, as a tutorial.

Westminster Abbey: Cosmati Pavement

[Analysis of the Mortars](#)

[Geology of the Stones: Part 1](#)

[Geology of the Stones: Part 2](#)

[An Introduction to Marble and Decorative Stones \(pdf\)](#)

Ruth Siddall describes the differences between limestones, igneous rocks, travertine, alabaster and true marbles.

More Building Stone walks via UCL

Wendy Kirk and the UCL Earth Sciences Department have devised and collected a number of Building Stone Walks and general guides which can be found on their website. Cemetery guides are listed separately below:

www.ucl.ac.uk/es/impact/geology/walks

British Library

A guide to the building stones in the courtyard and entrance lobby of the British Library, Euston Road by Eric Robinson.

http://www.ucl.ac.uk/es/impact/geology/walks/geology_of_the_bl.pdf

Geological Society desk, Burlington House, Piccadilly

17 slabs of British Rock were imported to create the novel Reception Desk, described by Eric Robinson

www.geolsoc.org.uk/Geoscientist/Archive/May-2007/Desk-job

Green Park

Naomi Stevenson describes Portland Stone new and old on her Green Geology site. The 'Green' refers to her use of public transport to get to the places she describes. The buildings she refers to are the station entrance at Green Park *Sea Strata* designed by John Maine with sculptures of the 'Portland Screw' and at Hyde Park Corner, the new Bomber Command memorial, the Memorial Gates erected for the Millennium and the old Wellington Arch.

www.greengeology.org.uk/#/green-park/4574706030

Details of building materials

A general guide from the programme for schools created by UCL Earth Sciences Dept.

www.ucl.ac.uk/es/impact/geology/london/ucl/materials/index

London's fossils: an ancient world hidden in the City

A short video from the BBC presented by Isobel Gilbert featuring fossils in the building stones of Westminster Bridge, the steps of St. Paul's Cathedral, BBC Broadcasting House and the concourse at Paddington Station.

www.bbc.co.uk/news/science-environment-19574619

Available online to members of the Geologists' Association

Eric Robinson has published a number of building stone walks in the *Proceedings of the Geologists Association*: Robinson, E., 1997. The stones of the Mile End Road: a geology of Middlemiss country, *Proceedings of the Geologists' Association*, 108(3): 171-176

Robinson, E., 1993. A geological walk in Southwark, *Proceedings of the Geologists' Association*, 104(40): 285-299

Robinson, E., 1993. The National Westminster Tower: a geologist's choice, *Geology Today*, 9(6): 227-229

Robinson, E., 1988. A geological walk in Clerkenwell, London, *Proceedings of the Geologists' Association*, 99(2): 101-124

Robinson, E., 1987. A geology of the Albert Memorial and vicinity, *Proceedings of the Geologists' Association*, 98(1): 19-37

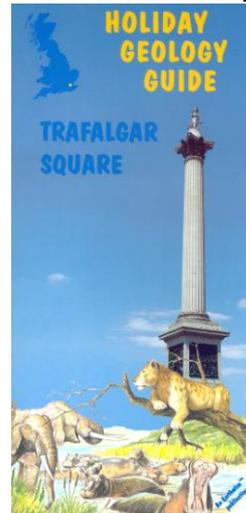
Robinson, E., 1982. Geological walks around the city of London – Royal Exchange to Aldgate, *Proceedings of the Geologists' Association*, 93(3): 225-246

Robinson, E., Bishop, C., 1980. Geological walks around St Paul's, *Proceedings of the Geologists' Association*, 91(4): 241-260

www.geologistsassociation.org.uk/

Publications:

Earthwise Holiday Geology Guides



The British Geological Survey (BGS) has published five A3 folded, laminated guides for London written by Eric Robinson in 1997: Greenwich, St Paul's, The Tower, Trafalgar Square and Westminster.

Available from the BGS shop at the Natural History Museum and the BGS online bookshop.

Building Stone Resources map of the United Kingdom (BGS) is a useful introduction to the variety and location of material quarried around the UK. Available from the BGS online bookshop.

Harrow and Hillingdon Geological Society (HHGS) www.hhgs.org.uk has designed walks and guides for the following areas: Central Harrow, Uxbridge, Ruislip, Pinner, Eastcote and the Pinner Chalk mine. These are currently being revised and will shortly be available from the Society.

Currently out of print, but worth purchasing if found

London: Illustrated Geological Walks Robinson, E., 1984. Books 1 & 2. Edinburgh: Scottish Academic Press. Even though many of the buildings have now disappeared, these 2 slim books give an excellent overview of the building stones of London, their source and uses.

In addition Eric Robinson has detailed a number of building stone walks and items of interest in the *Proceedings of the Geologists' Association* (see online access for members above) and in *Geology Today*:

Robinson, E., 2001. The Tate Modern as geology, *Geology Today*, 17(5): 199-200

Robinson, E., 1999. A geology of the road, *Geology Today*, 15(3): 110-113

Robinson, E., 1998. Geological monuments on the South Bank, *Geology Today*, 14(5): 181-186

Robinson, E., 1987. Euston arch-aeology revisited, *Geology Today*, 3(1): 11-12

Robinson, E., 2012. New Geology on the London Underground. *Geology Today*, 28(1): 6-7. Further details from *Art on the Underground: Sea Strata* by John Maine

<http://art.tfl.gov.uk/projects/detail/3948/>

Geology in cemeteries

The monuments and buildings within public cemeteries and graveyards are an easily accessible geological resource and are ideal for teaching about geology and the weathering properties of rocks.

Graveyard Geology

Dr Wendy Kirk (UCL) has created this generic guide which works for cemeteries in the London area.

www.ucl.ac.uk/es/impact/geology/walks/Earth_Sciences_Geotrail_Graveyard_Geology.pdf

City of London Cemetery

A Geological walk in the City of London Cemetery by David Cook and Wendy Kirk

A guide to gravestone geology and weathering features. A version of the same cemetery from the programme for schools created by UCL Geology Dept.

www.ucl.ac.uk/es/impact/geology/london/citycemetery

There is also an audio guide to specific graves:

www.ucl.ac.uk/es/impact/geology/walks/audio

St. Pancras Gardens

A guide to gravestone geology and weathering from the programme for schools created by UCL Geology Dept.

www.ucl.ac.uk/es/impact/geology/london/stpancras



Kensal Green Cemetery

A guided walk by Eric Robinson around the first of the *Magnificent Seven*.

www.ucl.ac.uk/es/impact/geology/walks/Earth_Sciences_Geotrail_Kensal_Green_Cemetery.pdf

Geology and London's Victorian Cemeteries

A personal overview of Victorian cemeteries in London, particularly from a geological perspective, written by David Cook.

www.ucl.ac.uk/es/impact/geology/walks/Earth_Sciences_Geotrail_Victorian_Cemeteries.pdf

Publications:

Geology from a Churchyard: a tombstone trail around St. Mary's, Hornsey by Eric Robinson (2000) is published by the Hornsey Historical Society and available via their website:

<http://hornseyhistorical.org.uk/w/index.php/bookshop/2-uncategorised/7-publications-list>

Geology in London's Parks and Open Spaces



Battersea Park
'Fake rock'
described by Eric Robinson and available on line to GA members: Robinson, E., 1994. The mystery of Pulhamite and an 'outcrop' in Battersea Park, *Proceedings of the Geologists' Association*, 105(2): 141-143

Crystal Palace Park – the 'Geological Illustrations'

An audio trail is now available which is downloadable as an iPhone app. It was created by Dan Boys Audio Trails from an initiative by Alister Hayes, London Borough of Bromley and explains the 'Geological Instructions' with the help of actors.

A map is available on the website <http://www.audiotrails.co.uk/dinosaurs/>
Further details of the park and proposed conservation of the Crystal Palace dinosaurs can be found on the Friends of Crystal Palace dinosaurs site: <http://cpdinosaurs.org/>
Doyle, P., Robinson, E., 1993. The Victorian 'Geological Illustrations' of Crystal Palace Park, *Proceedings of the Geologists' Association*, 104(3): 181-194

Green Chain Walk Geotrail

Designed by the London Geodiversity Partnership, the trail is a seven mile walk from the Thames Barrier to Lesnes Abbey. Twelve geologically interesting stopping points along the way have been selected featuring the SSSIs at Gilbert's Pit, Charlton, the Dog Rocks and the fossil beds in Abbey Woods.

http://greenchain.com/downloads/file/1/green_chain_geo_trail_guide

Hampstead Heath

A guide to the geology of Hampstead Heath with a mapping exercise from the programme for schools created by UCL Geology Dept.

www.ucl.ac.uk/es/impact/geology/london/heath

Thames Path Geotrail

Designed by South London RIGS group, the path starts at the Thames Barrier Information Centre and follows the Thames path national trail, with a short deviation along the Green Chain Walk, for 6 miles ending in Rotherhithe

www.ucl.ac.uk/es/impact/geology/walks/Earth_Sciences_Geotrail_Thames_Path.pdf



Britain's geological map

The British Geological Survey has made the geological map of Britain freely downloadable on their website and via an app. Details of both the solid and superficial rocks are shown.

<http://mapapps.bgs.ac.uk/geologyofbritain/home.html>

Geological Display in Highgate Woods

A small display is on public view in the information hut beside the restaurant in Highgate Wood. 4 story boards tell the story of the rocks beneath the local area and how they have been utilised in the past. The display includes minerals and fossils found in the London Clay as well as one of the experimental pots made on site.

www.londongeopartnership.org.uk/news.html

Guide to Important Geological sites in London

The London Geodiversity Partnership now has an interactive map on the website with links to descriptions of the selected Regionally Important and Locally Important Geological Sites (RIGS and LIGS) within the Greater London area.

www.londongeopartnership.org.uk/londonguide.html

London Geodiversity Partnership

www.londongeopartnership.org.uk

For specific information on the partnership contact David Brook (Chairman):
info@londongeopartnership.org.uk



Geological Collections, virtual field trips & Societies in London

London Geodiversity Partnership
www.londongeopartnership.org.uk

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Geological Collections

British Geological Survey

The BGS now has the National Building Stone Collection on line.

geoscenic.bgs.ac.uk/asset-bank/action/browseItems?categoryId=1547&categoryTypeId=1

The geological map of Great Britain is also available on line and as an iPhone App.
<http://mapapps.bgs.ac.uk/geologyofbritain/home.html>

Horniman Museum

The Horniman museum has a large collection of geological specimens, not only from Britain. It also houses Roman / Medieval building material in the collection, some of which is from the London area. None of the latter is on display or on the public database although details can be made available on request. Recently it has installed an interpretation panel at the view point over London within the gardens of the museum.

www.horniman.ac.uk/



Museum of London

There is currently a permanent exhibition entitled *London before London* which has links to some of the artefacts on display.

www.museumoflondon.org.uk/london-wall/whatson/galleries/london-london/

Natural History Museum

Geological exhibitions in the Earth Galleries, Dinosaur Gallery and Mineral Gallery and Earth Lab.

www.nhm.ac.uk/index.html

Details of British fossils, minerals and rocks in Earthlab are available online:

www.nhm.ac.uk/jdsml/nature-online/earthlab/

Angela Marmont Centre for UK Biodiversity offers an identification and advisory service for earth and life sciences with a browsing library and online resources such as ID forums. There are workshop and meeting room facilities and individual study space with easily accessible reference collections covering a wide range of UK rocks and fossils as well as life sciences.

www.nhm.ac.uk/visit-us/darwin-centre-isitors/marmont-centre/

University College London

Rock Room Museum (open Friday 1.00-3.00 and by appointment) features geology collections which were started in the mid-nineteenth century.

www.ucl.ac.uk/museums/geology



Virtual field trips

Pinner Chalk mines

Visits to the mine are not possible now as the London Borough of Harrow has closed it for Health and Safety reasons. However, Ken Kirkman has put details of the mine on the website so it is possible to make a 'virtual tour'. The mines were exploited for mixing chalk with the overlying Reading Formation clay for brick making. The top of the mine was roofed by Hertfordshire Pudding Stone which can be seen *in situ* down the shaft.

www.pinnerchalkmine.info/pinner-chalk-mine/

Chislehurst Caves

Details of public tours and photographs in the caves

www.chislehurst-caves.co.uk

Geological societies and organisations in the London area

Geologists Association

The parent organisation for Local and Affiliated Geological Societies throughout the UK.

www.geologistsassociation.org.uk/

Amateur Geological Society

Based in Finchley. Annual Bazaar held in November.

www.amgeolsoc.webspace.virginmedia.com/Live_Site/Home.html

British Brick Society

A history and archaeology group

www.britishbricksoc.free-online.co.uk/index.htm

GeoEssex

Based mainly in Essex but also knowledgeable about parts of East London that used to be in Essex

www.geo-east.org.uk/pp/essex/eppage.htm#ge

Harrow & Hillingdon Geological Society

www.hhgs.org.uk

Open University Geological Society

London Branch

www.lougs.org.uk

Ravensbourne Geological Society

www.ravensbourne-geology.org.uk

South London RIGS:

<http://wiki.geoconservationuk.org.uk/gcuk.php?contact=South+London&page=contacts>

Tertiary Research Group

www.trg.org

London Geodiversity Partnership



www.londongeopartnership.org.uk

For specific information on the partnership contact David Brook (Chairman):

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