

Wrexham is situated on a layer of sand and gravel deposited by meltwater during the last Ice Age and this overlies the sedimentary rocks of the Coal Measures. Although mining and the extraction of sandstone, limestone and clay for brickmaking has finished, the geological resources of the Wrexham area continue to provide an important source of sand and gravel for the building industry. Probably the most important building stone, which was relatively easily cut and quarried, is the Cefn Sandstone. It soon became a major building stone and it was quarried around Brymbo, Coedpoeth and Pentre Broughton. Other local building stones include Carboniferous Limestone (quarried at Minera and Eglwysyg) and the Cefn-y-fedw sandstone (quarried at Bwlchgwyn and Nant y Ffritth). The Ruabon Marl is a local clay used to make a wide variety of bricks, including fire resistant bricks for lining furnaces, as well as many examples of distinctive decorative brickwork. Wrexham's assorted buildings reflect the geology found in the area around and beneath the town itself, as well as some exotic rock types from elsewhere.



**Y creigiau y byddwch chi'n eu gweld o gwmpas Wrecsam:**

The rocks you will see around Wrexham:

**Creigiau gwaddod:** Mae'r rhain wedi eu gwneud o dywod, silt, llaid, cerigos a gweddillion planhigion ac anifeiliaid. Fe'u dyddodwyd ar wely moroedd ac afonydd neu ar ffurf twyni mewn diffeithdiroedd ac, ymhen hir a hwyr, wedi iddynt gael eu claddu dan bentwr o greigiau eraill, cawsant eu cywasgu a'u smentio gan greu'r creigiau gwaddod a welir heddiw.



**Sedimentary rocks** are made of sand, silt, mud, pebbles, and fragments of plants and animals. These were deposited in seas, rivers or as dunes in a desert, and, eventually, after burial beneath a pile of other rocks, are compressed and cemented into the rocks we see today.

**Creigiau igneaidd:** Ffurir y rhain wrth i graig dawdd (magma) grisialu. Caiff magma ei wthio ar hyd gwendidau yng nghramen y Ddaear, gan ddod i'r wyneb weithiau yn ystod echdoriadau folcanig.



**Igneous rocks** are crystallised from molten rock (magma) which is forced into weaknesses in the earth's crust, sometimes coming to the surface as volcanic eruptions.

**Creigiau metamorffig:** Mae'r rhain yn greigiau igneaidd neu waddod sydd wedi cael eu newid gan wres a/neu wasgedd. Er enghraifft, gall carreg laid newid i fod yn llechfaen, a chalchfaen yn farmor.



**Metamorphic rocks** are igneous or sedimentary rocks that have been changed by heat and/or pressure. For example, mudstone can be changed into slate, and limestone into marble.

**'Creigiau gwneud':** Mae'r rhain yn cynnwys briciau, a gynhyrchir drwy bobi clai, ac hefyd choncrit.

**'Man-made rocks'** include clays, which have been baked to form bricks, and also concrete.



Lluniau gan John Underwood. Llun clawr: *Alethopteris lonchitica*, rhedynen o Gystradau Glo ardal Wrecsam. Gan ddiolch i Amgueddfa Grosvenor, Caer a Dr J. Malpas am y fotograff.

Photography by John Underwood. Cover photograph: *Alethopteris lonchitica*, a fern from the Coal Measures of the Wrexham area. With thanks to the Grosvenor Museum, Chester and Dr J. Malpas for the photograph.



**The Rocks of Wrexham**

The origins of Wrexham stretch back at least 4000 years. It is thought to have been founded on the crossroads of two major trading routes and from the 14th Century onwards Wrexham's importance as a market town grew. The biggest growth came during the Industrial Revolution with exploitation of the mineral wealth of the area. For example, lead at Minera, lead and iron in clay deposits for brickmaking at Ruabon, limestone and sandstone for building, as well as coal underground, were all exploited. The Llay Main was at one time the deepest mine in Wales, if not Europe, employing the largest number of miners in Wales. The last coal mine to close in the Wrexham area

poeth a phentref Brychdyn. Ymhlith y cerrig adeiladu lleol eraill ceir Calchfaen Carboniferedd (a gloddwyd ym Mwynglawdd ac Eglwysyg) a thywodfaen Cefn-y-fedw (a gloddwyd ym Mwlch-gwyn a Nant y Ffritth). Clai lleol yw Marl Rhiwabon a ddefnyddid i wneud briciau amrywïol, gan gynnwys brics tan ar gyfer leinio ffwrneisi, yn ogystal ag enghreifftiau lu o friciau addurnol a thrawadol. Mae adeiladau amrywïol Wrecsam yn adlewyrchu daeareg yr ardal a natur y creigiau y codwyd y dreif arnynt, ond maent yn cynnwys hefyd greigiau estron a ddaw o fannau eraill.

**Beth yw RIGS?**  
Gall Safleoedd Ddaearegol/Geomorffolegol o Bwysigrwydd Rhanbarthol (Regionally Important Geological/Geomorphological Sites) fod yn unrhyw safleoedd, ac eithrio Safleoedd o Ddiddordeb Gwyddonol Arbennig, a gaiff eu gwarchod oherwydd eu pwysigrwydd addysgol, ymchwil, hanesyddol neu esthetig.

**Grwpiau RIGS**  
Gall unrhyw aelod o'r cyhoedd a chanddo ddiddordeb mewn cadwraeth Treftadaeth y Ddaear ymuno â grŵp RIGS. Mae'r grŵp yn dewis y safleoedd sydd wedyn yn cael eu gwarchod gan awdurdodau lleol. Gyda chydweithrediad perchenogion, datblygir rhai safleoedd at ddefnydd addysgol neu gan y cyhoedd.

**What are RIGS?**  
Regionally Important Geological/Geomorphological Sites (RIGS) are any sites, excluding SSSI (Sites of Special Scientific Interest) that are protected for their educational, research, historical or aesthetic importance.

**RIGS Groups**  
Any member of the public with an interest in Earth Heritage conservation can join a RIGS group. They choose sites which are then protected by local authorities. With the co-operation of the owners, some sites are developed for educational or public use.

Os hoffech ymuno â grŵp RIGS yn yr ardal hon, cysyllter â:  
If you would like to join RIGS in this area, please contact:

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Chester. CH1 4BJ  
Ebost – Email: c.burek@chester.ac.uk



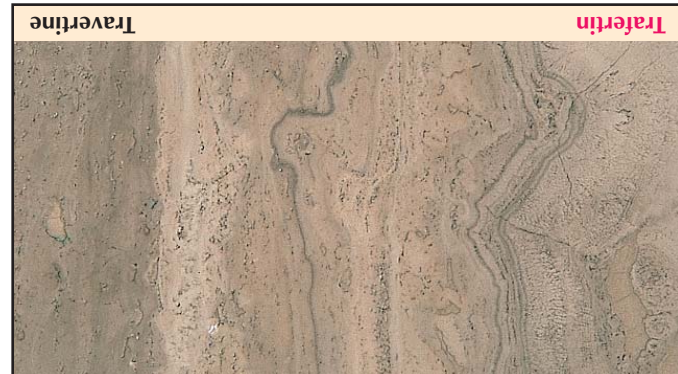
Mae Cyngor Cefn Gwlad Cymru yn cefnogi sefydlu Safleoedd Ddaearegol/Geomorffolegol o Bwysigrwydd Rhanbarthol.

The Countryside Council for Wales supports the establishment of Regionally Important Geological Sites.

Safeguarding Welsh Geodiversity  
Yn diogelu Geoamrywiaeth Cymru

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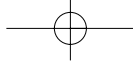
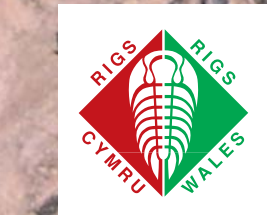
adeiladu, a'r gwythiennau glo danddaear. Ar un adeg glofa Llai, a gyfflogai nifer fawr o lowyr, oedd y pwll dyfnaf yng Nghymru, os nad yn Ewrop. Y llofa olaf i gau yn ardal Wrecsam oedd gloddfa'r Bers yn 1986. Codwyd Wrecsam ar haenau o dywod a graean a waddodwyd gan ddwr tawdd ar ddiwedd yr Oes Ia ddiwethaf, dyddodion sy'n gorchuddio creigiau gwaddod y Cystadau Cio. Er bod codi glo a chloddio am dywodfaen, calchfaen, a chlai ar gyfer gwneud briciau wedi dod i ben, mae adnoddau daearegol ardal Wrecsam yn dal i ddarparu ffynhonnell bwysig o dywod a graean ar gyfer y diwydiant adeiladu.



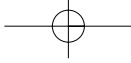
**Creigiau Wrecsam**

Er bod hanes Wrecsam yn ymestyn yn ôl dros gyfnod o leiaf 4,000 o flynyddoedd, credir i'r dreif gael ei sefydlu ar groesffordd dau brif lwybr masnachol, ac o'r 14eg ganrif ymlaen datblygodd pwysigrwydd Wrecsam fel tref farchnad. Bu'r tref yn ei anterth yn ystod y Chwyldro Diwydiannol wrth i ddiwydiantwyr fanteisio ar gyfoeth mwynol yr ardal. Er enghraifft, manteisio ar blwm Mwynglawdd, y plwm a'r haearn yn nyffryn Clywedog, y clai ar gyfer gwneud briciau yn Rhiwabon, calchfaen a thywodfaen ar gyfer cerrig

**Cerdded drwy'r gorffennol:**  
Taith ddaearegol o gwmpas Wrecsam  
**Walking through the past:**  
A geological trail around Wrexham







Yr Oes Iâ ddiwethaf

CAINOSŌIG  
Y Cyfnod Trydyddol  
Cwaternaidd

Milwolaeth y Deinosoriaid

Cretasig

Adar Cyntaf

MESOSŌIG  
Jwrasig

Triasig

248

Permaidd

Carbonifferaidd

Coedwigedd Cyntaf

PALEOSŌIG  
Defonaidd

Silwraidd

Ordofigaidd

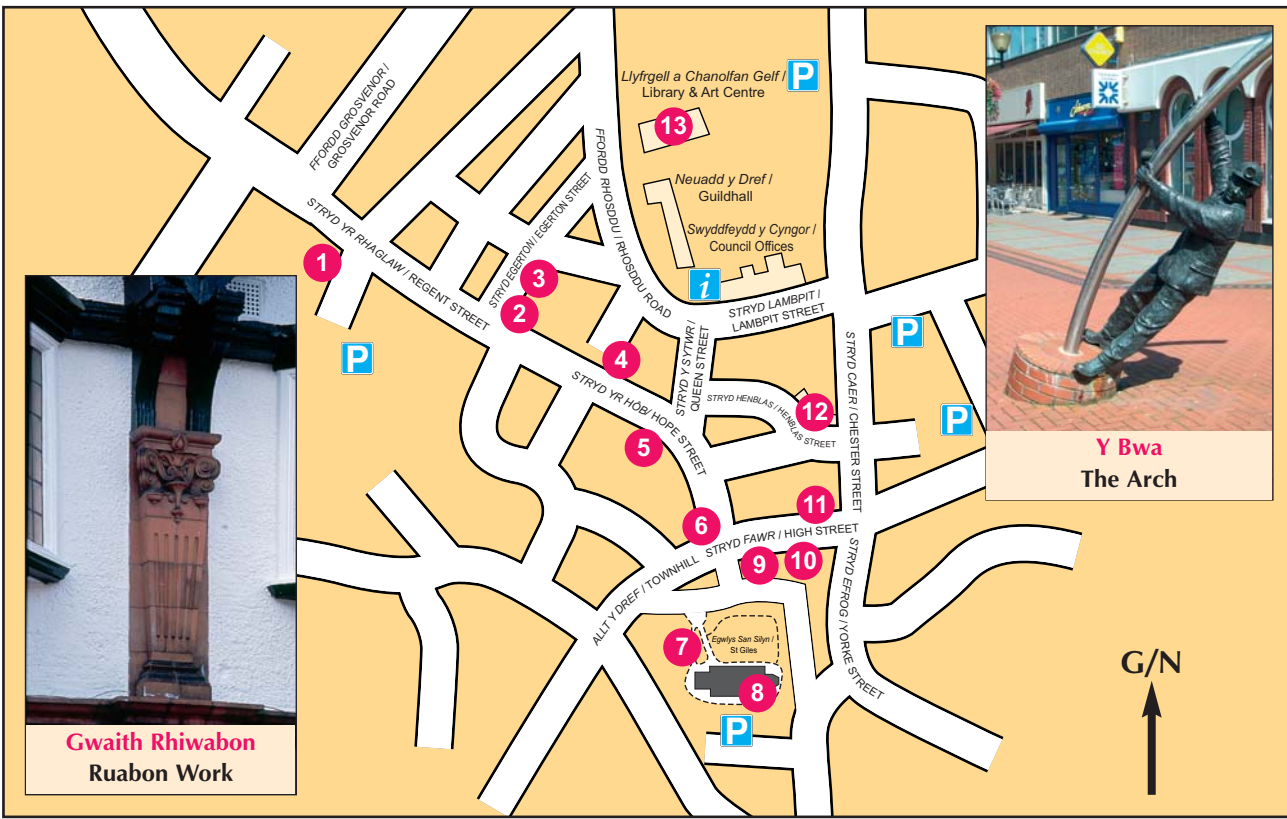
Cambriaidd

545

CYN-GAMBRIAIDD  
Y craigiau hynaf ym Mhrydain

3400

4600  
Creu'r Byd



Gwaith Rhiwabon  
Ruabon Work



Y Bwa  
The Arch

**1 Yr Amgueddfa, Stryd y Rhaglaw**

Adeiladwyd yr amgueddfa o dywodfaen Carbonifferaidd lleol. Yr adeilad hwn oedd pencadlys Milisia Brenhinol Sir Ddinbych yng nghanol y 19eg ganrif. Yn yr amgueddfa mae modd gweld enghreifftiau o'r gwahanol friciau a theils a wnaed o Farl Rhiwabon, sy'n glai lleol.



O'r amgueddfa, troi i'r dde a cherded tua'r dwyrain i ganol y dref.

**The Museum, Regent Street**

The museum is built of local Carboniferous sandstone. The building was the Headquarters of the Royal Denbighshire Militia during the mid 19th Century. Examples of the variety of colourful bricks and tiles made from Ruabon Marl, a local clay, can be seen inside the museum.

Turn right from the Museum and head east towards the town centre.

**2 Banc Lloyds, 28 Stryd y Rhaglaw**

Codwyd llawr isaf yr adeilad hwn o dywodfaen Carbonifferaidd llwyd a thywodfaen Triasig coch. Mae'r lliw coch yn ganlyniad ocsideiddiad ('rhydu') mwynau haearn mewn amgylchedd diffeithdir, ond dyddodwyd y tywodfaen llwyd mewn dŵr, ar ffurf delta afon, yn ôl pob tebyg.

**Lloyds Bank, 28 Regent Street**

The ground floor of this building is built of grey Carboniferous sandstone and red Triassic sandstone. The red colour is a result of oxidation ('rusting') of the iron minerals within a desert environment, while the grey sandstone was deposited under water, probably in a river delta.

**3 Cash Generator, Stryd Egerton**

Y drws nesaf i Banc Lloyds mae'r Cash Generator, lle y gwneir defnydd effeithiol iawn o wenithfaen lliw coch a du.



Dychwelyd i Stryd y Rhaglaw a throi i'r chwith.

**Cash Generator, Egerton Street**

Next door to Lloyds Bank is the Cash Generator, where a very striking red-orange and black granite is used to great effect.

Return to Regent Street and turn left.

**4 The Body Shop, 35 Stryd yr Hôb**

Serpentinit neu sarff-faen yw'r graig igneaidd wedd ac ynddi strimynnau trawiadol o gwards. Ym Mhrydain mae serpentinit yn brigo ar Benrhyn Lizard yng Nghernyw ac yn Ynys Môn, er mai o dramor y daw'r enghraifft hon.



**The Body Shop, 35 Hope Street**

This green igneous rock with its distinctive streaks of quartz is serpentinite. In Britain serpentinite occurs on the Lizard Peninsula in Cornwall and on the island of Anglesey, although this example is imported.

**5 Ernest Jones a'i Gwmni, 17-18 Stryd yr Hôb**

Mae arfbais y Gofaint Aur wedi'i gosod ar ddarn o farmor pinc caboledig a fewnoriwyd.



**Ernest Jones and Company, 17-18 Hope Street**

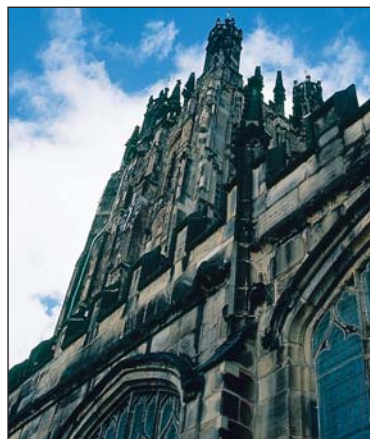
The Goldsmiths' crest is mounted on polished pink marble which was imported.

**6 Ar gyffordd Stryd yr Hôb a Stryd Fawr, edrychwch ar y cerrig sets o fric, gwenithfaen, microwenithfaen, basalt a thywodfaen dan eich traed.**

At the junction of Hope Street and High Street look down to see brick, granite, microgranite, basalt, and sandstone sets.

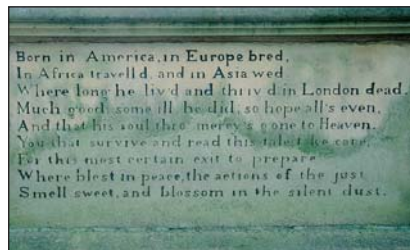
**7 Eglwys San Silyn**

Adeiladwyd yr eglwys o Garreg Cefn a ddaw o'r Cystradau Glo lleol. Yn ôl pob tebyg, cloddiwyd y tywodfaen lliw mël golau hwn ym Mrychdyn, nid neppell o'r dref. Yn y manau lle mae sment naturiol gwan yn cydio'r gronynnau tywod wrth ei gilydd mae'r tywodfaen wedi hindreulio, ac achoswyd y duo gan lygredd o simneiau diwydiannol sydd bellach wedi hen ddiplannu. Ar feddfaen tywodfaen mawr Elihu Yale, sylfaenydd Prifysgol Iâl yn UDA, ceir arysgrifen sy'n crynhoi hanes ei fywyd.



**St Giles' Church**

The church is built of local Cefn Rock from the Coal Measures. This pale honey-coloured sandstone, which can be cut easily into blocks, was probably quarried at nearby Broughton. Where the sand grains are held together with a weak natural cement, the sandstone has weathered away. The blackening is due to pollution from industrial chimneys, now gone.



The large sandstone tombstone of Elihu Yale, founder of Yale University in the USA, has an inscription summarising his life history.

**8 Eglwys San Silyn (tu mewn)**

Ceir nifer o wahanol fathau o gofobau marmor lliwgar ar y muriau tywodfaen. O ddiddordeb arbennig yw'r foneddiges sy'n dringo allan o arch. Mae'r gofeb hon yn cynnwys chwe gwahanol fath o farmor, oll o'r Eidal, yn ôl pob tebyg. Gall fod y marmor di-nam gwyn yn gynnyrch chwariell Carrara. Sylwer ar golofnau'r pulpud a gerfiwyd o 'farmor' Defonaidd coch.

Dychwelyd i'r Stryd Fawr a throi i'r dde.

**St. Giles' Church (inside)**

There are many colourful varieties of marble memorials on the sandstone walls. Of particular interest is the 'Lady climbing out of a coffin'. This memorial has six different types of marble, all probably from Italy. The flawless white marble may be Carrara Marble. Note the pulpit columns carved from red Devonshire 'marble'.

Return to the High Street and turn right

**9 Banc Barclays, 40-41 Stryd Fawr**

Daw'r llechfaen gwyrdd, sy'n rhan o Gyfres Folcanig Borrowdale, o Ardal y Llynnoedd. Amser maith yn ôl, hyrddiodd llosgfynyddoedd ludw i'r awyr, a disgynnodd peth ohono i mewn i'r môr. Claddwyd y gwaddodion folcanig hyn ac yna bu gwres a gwasgedd yn gyfrifol am eu metamorfforeiddio a'u troi'n llechfeini. Mwynau clorit, a ffurfiwyd wrth i'r lludw adweithio â dŵr môr, sy'n gyfrifol am y lliw gwyrdd.



**Barclays Bank, 40-41 High Street**

The green slate is found in the Borrowdale Volcanic Series from the Lake District. Volcanoes once ejected ash, some of which fell into the sea. These volcanic sediments were buried and then heat and

pressure metamorphosed them into slate. The green colour is due to chlorite minerals which were formed when the ash reacted with seawater.

**10 Jones Peckover, 33 Stryd Fawr**

Codwyd yr adeilad urddasol hwn o dywodfaen, calchfaen a gwenithfaen. Yn ôl pob tebyg daw tywodfaen coch y rhan uchaf o gyffiniau Lerpwl. Mae'r rhan isaf yn cynnwys blociau o wenithfaen crisialog, a Chalchfaen Portland ffosiliferaidd llwyd olau o Dorset.



**Jones Peckover, 33 High Street**

This distinguished building is built of sandstone, limestone and granite. The red sandstone of the upper section is probably from the Liverpool area. The lower section consists of crystalline granite blocks, and the light grey fossiliferous Portland Limestone comes from Dorset.

**11 Bar Lloyd (J.D. Wetherspoon), 14-15 Stryd Fawr**

Mae'r gwenithfaen o Bortiwgal y naddwyd y colofnau a'r slabiau addurnol ohono yn cynnwys ffelsbar gwyn, mica du a chrisialau cwarts di-liw. Mae o leiaf dau o'r slabiau yn cynnwys clytiau llwyd a oedd, o bosibl, yn ddarnau o greigiau gwahanol a draflyncwyd gan y gwenithfaen tawdd. Gelwir y fath ddarnau yn senolithau (gair sy'n golygu 'creigiau estron'), neu 'heathens' gan chwariellwyr yr Alban a 'furreners' gan chwariellwyr Lloegr. Mae'r crisialau mawr yn dangos bod y magma tawdd y ffurfiwyd y graig igneaidd hon ohono wedi crisialu'n araf.



Ar y gornel, troi i'r chwith a cherded tua'r gogledd ar hyd Stryd Caer, a throi i'r chwith i mewn i Stryd Henblas.

**Lloyd's Bar (JD Wetherspoon's), 14-15 High Street**

The Portuguese granite of the columns and decorative slabs contain white feldspar, black mica, and colourless quartz crystals.

At least two slabs contain grey areas which may be fragments of different rock which was engulfed by the molten granite. Such fragments are called xenoliths (literally foreign rock) or 'heathens' by Scottish quarrymen, or 'furreners' by English quarrymen - take your pick!

Large crystals indicate that this once molten igneous rock cooled slowly underground.

Turn left at the corner and walk north up Chester Street, left into Henblas Street.

**12 Y Farchnad, Stryd Henblas**

Ceir enghraifft wych o fricwaith a luniwyd o friciau lleol Rhiwabon uwchlaw'r brif fynedfa.

Dilyn y ffordd sy'n arwain ar hyd Stryd Henblas, Stryd y Frenhines ac i mewn i Ffordd Rhos-ddu.

**General Market, Henblas Street**

There is a fine example of the locally manufactured Ruabon brickwork above the main entrance.

Continue along Henblas Street, through Queen Street into Rhosddu Road.

**13 Y Llyfrgell, Llyn Isaf**

Mae slabiau tenau o galchfaen melynaid garw, dan yr enw traferin, yn addurno'r muriau allanol a'r mynediad. Ffurfir y graig hon fesul haen mewn ffynhonnau folcanig poeth. Dam o Galchfaen Carbonifferaidd lleol, sy'n cynnwys rhai cregyn ffosil a chrisialau porffor o ffloorsbar, (isod) yw'r maen hir. Lluniwyd y clogfaen gwenithfaen cerfiedig ar y glaswellt gan y cerflunydd Hideo Furuta.

Dyma ddiwedd y daith.

**Library, Llyn Isaf**

Thin slabs of rough yellowish limestone known as travertine decorate the outer walls and entrance. This rock is formed in hot volcanic springs, and is built up in layers.



The standing stone is local Carboniferous limestone which contains some fossil shells and purple crystals of fluorite, seen in the photo above.

The sculpted granite boulder nearby on the grass is by sculptor Hideo Furuta.

Here the trail ends.

Last Ice Age

Quaternary

Tertiary

CENOZOIC

Extinction of Dinosaurs 65

Cretaceous

First Birds

Jurassic

Triassic

248

Permian

Carboniferous

First Forests

Devonian

400

Silurian

Ordoevician

545

Cambrian

PRECAMBRIAN

3400

4600  
Oldest Rocks in Britain

Earth Forms

