Strategic Stone Study

A Building Stone Atlas of Derbyshire and the Peak National Park

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Introduction

Rocks which were deposited during the Carboniferous period (350 – 290 million years ago) underlie almost all of the Peak National Park and probably two thirds of the remainder of Derbyshire. Limestones (mainly in the White Peak) and sandstones (largely in the Dark Peak) comprise the main building stones. However, there are many variants within those broad categories, and a number of other minor rock types in the same area. In the north east of the county, Permian dolomitic limestones ([300] million years old) and in the southern third, Triassic mudstones, and softer sandstones (210–250 M years old) account for most of the remaining areas.

Both historically and in the present day, the area is seen as a major source of stone, both for local use and throughout Britain. For example, current refurbishment of buildings in Scotland relies in part upon sandstone quarries in this area.

Geologically the oldest rocks (of Lower Carboniferous, Dinantian, age) are found in the heart of the White Peak, in deep valleys in the west and central parts of the outcrop, extending into Staffordshire. Very generally, these older rocks (all limestones and dolostones) are encircled progressively by outcrops of younger rocks, rather like the layers of an onion. In the core of the area the Dinantian limestones and their associated igneous rocks are overlain by mudstones and sandstones of Upper Carboniferous age. The mudstones are exposed along the major valley bottoms while the sandstones form the oldest limestones and associated igneous rocks, all of Lower Carboniferous age. Wrapped around these are mudstones exposed in the major valleys and sandstones, (the latter often coarse) which form the bleak ‘edges’ and moors of Namurian age, traditionally known as the Millstone Grit. Beyond these, overlying the Namurian rocks is the Pennine Coal Measures succession of Westphalian age.

In the north-east and south of Derbyshire the younger dolomitic limestones, mudstones and sandstones of the Permian and Triassic crop out.

Rocks of later geological periods are almost entirely absent from the area until the great spreads of clay, sand and gravel deposited mainly to the south of the area by glaciers and rivers from the Pleistocene to the present. This simple model does not hold in all areas, for instance, there are examples of small Carboniferous Limestone and Millstone Grit outcrops south of the River Trent.
Carboniferous Limestone Supergroup (formerly the Dinantian)

In broad terms this rock succession is dominated by grey limestones, commonly fossiliferous and exhibiting a considerable range of bedding styles. They contribute considerably to the character of the built environment of the White Peak as they form the principal stone used in vernacular buildings and in the network of drystone field walls that crisscross the area. Again, to the outsider these limestones appear at first glance to be uniform in character, but subtle differences, for example, in colour, bedding and grain size, add considerable variety. With a few notable exceptions, the building limestones of the White Peak have seldom travelled far from their quarry source. Today only about 7000 tonnes of limestone are produced annually in the area as building stone (compared with 12.4 M tonnes for aggregates).

The lack of reliable water supplies, a consequence of the limestone dominated geology of the White Peak heartland means that there are few large villages. With the exception of Tideswell most of the area is served by a string of market towns around the edge of the limestone/mudstone outcrop, places towns such as Castleton, Buxton, Bakewell and Wirksworth.

In buildings a very common vernacular approach, addressing the intractable nature of many of the limestones, is to use the randomly coursed grey limestone, rubblestone, as a general walling material, with local pink or buff Millstone Grit sandstones used for door and window mouldings and for quoins, as can be seen in vernacular architecture in Tideswell village (below). Although this appears to fly in the face of some conventional views about not mixing sandstone and limestone, in general this style appears to suffer from no obvious weathering ill-effects. The sandstones were usually quarried from the nearest available sources outside the White Peak area (see Namurian Sandstones - Dark Peak).

Peak Limestone Group

Milldale Limestone Formation

Milldale Limestone

Only rarely were substantial limestone buildings constructed of ashlar or as rock-faced material trimmed back to near-ashlar plane surfaces. Sawn surfaces are even less common e.g. Castleton Hall (with the possible exception of Hartington – but do feature in chimney stacks). Much of the limestone won in the western valleys within the Staffordshire section of the Peak Park tends to be more muddy in character and mid to dark grey in colour. Alstonfield is a good example of a village constructed in part on these beds.
**Woo Dale Limestone Formation**

**Woo Dale Limestone**

The outcrops of the Woo Dale Limestone in the Derbyshire area of the Park, in the Via Gellia, near Hartington, Wye Dale and Peak Forest, are almost devoid of other settlements.

**Bee Low Limestone Formation**

**Bee Low Limestone**

In the central parts of the White Peak, the limestone beds are generally much thicker and produce a light grey and off-white stone from the Bee Low Limestone. These are some of the ‘cleanest’ calcium carbonates in the UK and are worked on a large scale on account of their chemical purity (accounting for over 50% of national requirements for this type of stone). The limestone beds are up to 10 metres thick and were not easily worked to supply the everyday building needs of local communities. Most of the drystone field walls will have been gathered in the course of surface stone clearance, augmented by ‘Enclosure Act’ quarries.

**Hopton Wood Stone**

The paucity of villages and the narrowness of the outcrop in this, the driest part of the White Peak, means that there are relatively few villages that consistently used this stone, although parts of Chelmorton and Hartington are examples.

One most notable exceptions to this generally limited local application have been the exploitation of the Bee Low Limestone in the south east of the outcrop to produce Hopton Wood Stone.

This is a consistent fine-grained, fossiliferous, crystalline, pale, cream coloured limestone, perhaps the UK’s most widely used decorative indigenous limestone. From the 18C onwards it has predominantly been used in interior work (staircases, floors, door surrounds, wall cladding) in grand houses and official buildings, notably Kedleston Hall and during the construction of the present Houses of Parliament. It was much in vogue from 1850 to 1950 and still is, although it is still available in small quantities, but much in demand. From the late 1920s to the present, it has been an important contributor to the work of the Commonwealth War Graves Commission and used as grave markers in their cemeteries across the World. It was sourced at various times from up to six quarries, in some instances this lead to High Court claims and counter claims disputing the use of the name. Hopton Wood was also a stone of choice for leading sculptors including Epstein, Gill, Moore and Hepworth. The great beds of the Bee Low Limestone Formation are commonly associated with coarsely fossiliferous reef knolls which provide a much more rubbly rock. However, their limited outcrop and proximity of more easily worked sandstones, means that it has attracted few users.
Higher in the limestone succession, the limestones of the Monsal Dale Formation comprise mid-grey shelly rocks in most areas, with thinner bedding than the Bee Low Limestones. They form extensive outcrops clustered around Monyash (from Elton to Litton) between Castleton, Tideswell and Wardlow and a smaller area around Biggin. They were widely used for building in these areas. The same limestone interval also includes darker varieties of limestones. These are more restricted in extent but are particularly important (together with the overlying Eyam limestones) in contributing to the character of buildings in Bakewell, Ashford and the Longstones. It has been identified in some construction of the town of Wirksworth (below). These limestones tend to be much thinner bedded, sometimes flaggy and although generally dark when freshly broken (and giving off a bituminous smell) may weather to a lighter grey. The presence of the chert bands and bituminous character of these limestones represent a gradual deepening of the limestone shelf at this time. Chert is relatively common in these darker beds, although insufficient and too brittle in character to be used in the manner of flint nodules as a building material in its own right. However, it is commonly seen in some villages within the wall stones as at Hognaston. This material does not lighten noticeably on weathering, giving the stone a mottled grey/black appearance. The chert has been mined to supply glazing material to the pottery industry.

### Ashford Black Marble

This dark coloured facies of the Monsal Dale limestones hosts two distinctive, decorative, materials, highly popular with the Victorians, namely Ashford Black Marble and Rosewood Marble. Both were quarried then mined to the south and west of Ashford-in-the Water until the early 1900s. The former has the appearance of ebony; the latter displays finely variegated but uneven mid/dark grey/black laminations like wood cut on the grain. Ashford Black was widely used as a setting for delicate inlaid stone ornaments, tables, mantle pieces (part of England’s Pietre dure crafts). A black limestone with occasional small white features (brachiopod fossils) known as Birds Eye Marble was also produced in this area.

### Dukes Red ‘Marble’

The other material is Dukes Red ‘Marble’. This is a blood red, iron-rich limestone. Its origins are much disputed but documentary evidence puts its source at Newhaven in the 1830s. The entire deposit was worked out and all stocks were held at Chatsworth. It was used most sparingly e.g. in Edensor Church (above) and in a floor set in the House of Lords.
Eyam Limestone Formation

Eyam Limestone

The limestones of this formation are rather similar to the dark Monsal Dale limestone beds being consistently thinly bedded (except in reef areas) and were worked down the eastern flank of the White Peak as a readily accessible source of limestone block. It was used in the construction of settlements such as Eyam, Youlgrave (right) and Bakewell (below).

There are some other important variants, for example, within the normal bedded Eyam limestone sequence which formed as isolated ‘patch reefs’. These reefs form relatively horizontal structures rising only slightly above the normal bedding as shallow domes, but are densely packed with fossils predominantly of crinoid and brachiopod (and to a lesser extent coral) debris. They were significant stone sources, having been worked at a number of locations, particularly around Monyash and in the Cromford - Wirksworth areas. They have been cut and polished to great effect for interior decoration, in some cases since about 1600.

These decorative stones are collectively known as ‘Derbyshire Fossil Marbles’ but individual sources are often difficult to identify, some varieties may even have been won from outside the area.

For a short period after World War II, Derby Dene (a variety of Derbyshire Fossil Marble) and Hadene (similar to Hopton Wood Stone) were quarried on a large scale at Cromford and used widely in post-war reconstruction in London e.g. the interior of the Royal Festival Hall. Varieties of ‘Birds Eye’ and some ‘Black’ marbles were also extracted and polished at Matlock, and near Middleton by Wirksworth.
Craven Group

Widmerpool Formation
‘Mixon Limestones’

At the very edge of the limestone outcrop are thin, very flaggy, dark grey, muddy limestones locally known as the Longstone mudstones. In general the outcrop is very narrow except around the Bakewell - Ashford - Great Longstone area where it was used locally and in the south, particularly in the Staffordshire Moorlands, where there are beds of comparable age (formerly the ‘Mixon Limestone Shales’). Between Butterton and Mixon these tend to include thin and limey calcareous sandstones, and have been used on a small scale for building, but elsewhere other local limestones or sandstones are favoured.

The Widmerpool Formation also has an irregular outcrop in the valley floor between Turnditch and Mackworth, but again, it is generally far too soft and friable to be employed as a building stone. An exception is the thin flaggy limestone dug from the Flower Lillies Quarry near Turnditch which, although mainly used as a hydraulic lime, did produce a natural stone, at first glance, not unlike concrete paving in appearance!

Igneous Rocks

Intrusive and extrusive igneous rocks occur at a number of locations in the White Peak area. They were used almost exclusively for roadstone in the early 1900s, but very occasionally for building and even then, only for field walls e.g. around Bonsall, Tissington and Peak Forest.

Two areas of dolomitized limestone extend from Parsley Hay to Masson Hill (Matlock) and from Royston Grange almost to Wirksworth. They are colloquially known as ‘dunstone’ and comprise a brownish honeycombed rock with a sugary texture which frequently appears in stone walls and occasionally in buildings such as Bradbourne Church (below).

Vein Minerals

Vein minerals, notably baryte, fluorite and calcite accompanying lead ore (galena), have been used for internal decorative work, especially inlaid work and also to line Victorian grottos and follies. They sometimes feature in rockeries and landscaping. This formed the basis (with the ‘marbles’ already mentioned), for a substantial local Victorian industry (the artists were known as ‘baublers’) and traded in the 19th century.
Blue John, Oakstone & Calcspar

The variety of fluorite known as Blue John and to a lesser extent barite, locally termed Oakstone, were especially popular. Although these minerals are still being processed for industrial uses, only Blue John and calcite (Calcspar or Derbyshire Spar) are used decoratively, the former for ornaments and jewellery (Castleton being a notable centre of production); pieces of the spar were commonly set in cement panels and external renders. These and other vein minerals also spawned a significant pigments industry in the Derwent Valley but what remains today relies upon imported raw materials. Unlike in other countries, these products do not appear to have influenced local architectural styles.

Namurian
Millstone Grit Group - Dark Peak

The term Millstone Grit was applied geologically to this thick interbedded succession of very coarse sandstones with mudstones and finer sandstones, first described in this area by Whitehurst in 1778. Its name reflected the significance of the moors between the Derwent and the Coalfield as a national source of abrasive stones from medieval, if not Roman times. There are documented references to quarrying in this respect from the 13C onwards. Early hand querns gave way to millstones and millstones to grindstones then to exported pulp stones to make wood pulp for the paper industry. The same physical properties also rendered these stones particularly suited for use as building materials. Collectively, the sandstones of this group worked in this area account for almost exactly a quarter of the sandstone building stone production in Great Britain (104,000 tonnes of 419,000 tonnes in 2007).

Hebden Formation
Kinderscout Grit

The Kinderscout Grit, the oldest of the Millstone Grit sandstone beds, forms the extensive area of the Kinder Scout - Bleaklow moors and tends to be a very coarse, hard sandstone; it dies out between Baslow and Bakewell. However it’s very hardness and the inaccessible nature of most of the outcrop means that this sandstone was seldom exploited. It was used locally in the Edale and Upper Derwent Valley. In the former, a finer grained variety is still produced at Shire Hill Quarry, Glossop and in the latter, at Stoke Hall Quarry, Grindleford (one of the last producers of pulp stones). It was previously worked at Teggs Nose Quarry above Macclesfield. Probably its main contribution to the built environment can be seen in Glossop (from which stone slates were also produced on a large scale at Glossop Low), the Longdendale Valley (particularly in the form of reservoir dams), Hayfield and in the scattered hamlets of the Eyam and Abney Moors.

Marsden Formation
Ashover Grit

The Ashover Grit (and its equivalents the Roaches Grit in the west, the Corbar Grit/Five Clouds Sandstone around Buxton and the Beacon Hill Flags/Heyden Rock in the north) has a much more sinuous and fragmented outcrop. In the Derwent Valley it is found as far north as Calver and runs down to Little Eaton. It has some decided advantages over the more prominent Kinderscout Grit below and the Chatsworth Grit above, namely in many areas, it is consistently fine to medium grained, often well bedded and frequently more easily accessed in the past by railways and canals and more recently, roads. In some areas the bedding is particularly massive, notably on Stanton Moor, around Whatstandwell and Little Eaton.
At the first of these, over many centuries, several hundred quarries have been opened up. Here and at Stancliffe (an isolated outcrop at Darley Dale) and Dukes Quarry (Whatstandwell) the stone has achieved a national reputation for its durability and aesthetic qualities – generally having a consistent buff, light orange or pink colouration.

Between Belper and Little Eaton there is seldom the space of a field between former quarries. Indeed the Ashover Grit accounts for the bulk of the area’s sandstone production, and for example, is often considered especially suitable by specifiers for prestige projects throughout the UK. However in at least two areas, Cromford (below) and Buxworth, the Ashover Grit is a strong pink, even red in parts and medium to coarse grained, giving local villages a distinctive character.

The Corbar Grit was a major contributor to 18th- and 19th-century Buxton including the Crescent (top right) and the Devonshire Hospital.

Chatsworth Grit

The Chatsworth Grit tends to be rather coarser than the Ashover but, like many of the younger Millstone Grit sandstones and even some of the Coal Measure (Westphalian) sandstones, is often difficult to identify with certainty in buildings. Although exposures are usually relatively narrow, it extends along both flanks of the Pennines (in the far north it is known as the Huddersfield White Rock and its counterpart in the Sheffield area is the Rivelin Grit).
Rossendale Formation

Rough Rock

The uppermost sandstones of the Millstone Grit form the Rough Rock. In some areas west of Sheffield the lower parts of this sandstone interval are differentiated as the Rough Rock Flags. The Rough Rock has a very long, noticeably faulted outcrop which encircles the whole of the Dark Peak. It was heavily exploited at Coxbench and Belper for building stone.

The Coxbench Quarries constituted the main source of building sandstone for the development of Derby and was used in the building of Kedleston Hall (below).

Further north, in the area between the upper Rivelin and Loxley valleys and on a more concentrated area north of Winscar Reservoir, the Rough Rock sandstone beds were riven (on a particularly large scale at Magnum Bonum) for stone slates serving markets on both sides of the Pennines. The western outcrops of the Rough Rock in the area were not widely worked.

On the west it runs as far south as the Roaches. In part for reasons of inaccessibility (most of the beds form high moorland). Chatsworth Grit has been exploited on a more limited scale, but was particularly important for the construction of the Victorian spas and villas of the Matlocks (above). The main quarries were high above the town to the east. Like the Ashover Grit, consistent buff evenly grained varieties were particularly (and still are) favoured. It was also a significant source of abrasive stones.
Westphalian
Coal Measures Sandstone

In most cases, the sandstones of the Pennine Coal Measures are thinner and usually regarded as being less robust than those of the Millstone Grit. None of the quarries in this area have achieved the national status of the Millstone Grit sandstone beds. However they have been very widely exploited locally, for example in colliery company housing and many of the smaller country houses in the main coalfield. Many of the former mining villages have road or place names referring to quarries, long after the workings themselves have totally disappeared. Although many former quarries have been filled and built over, or totally removed by opencast coal extraction, the trawl of documentary evidence revealed relatively few workings.

Pennine Lower Coal Measures Group

Three formations within the group were particularly significant, albeit only on a local scale.

Crawshaw Sandstone

At the very base of the formation, the Crawshaw Sandstone (Woodhead Rock in the north and west) was quarried at Stanage and on Holymoor (both west of Chesterfield) and Buxworth, and until recently, at Ambergate, Birch Vale/New Mills.

Wingfield Flags

The Wingfield Flags have a very narrow outcrop, but can be traced over a considerable area of the Pennine flanks and into the Derbyshire area. They form a marked scarp along the western edge of the main coalfield. The sandstones have been used locally at various locations and is often, as the name suggests, thinly bedded or flaggy, notably as seen at Wingfield Manor (top right). In contrast, it displays a more massive form near Wingerworth where it was once quarried as an important freestone.

Silkstone Rock

The only other sandstone of note as a building stone source in the coalfield is the Silkstone Rock, underlying a series of lofty escarpments of land between Dronfield Woodhouse and Eckington.

Many small quarries in this area supplied building stone for local building use and it was favoured by scythe makers for sharpening stones. Marsh Lane Quarry was probably the only operation of any scale.

Green Moor Rock
Grenoside Sandstone

The Green Moor Rock (or Brincliffe Edge Rock) and Grenoside Sandstone feature in a number of buildings in former parts of Derbyshire, almost all now absorbed into Sheffield. Elsewhere in the coalfield, apart from ‘community’ quarries, there were exceptionally a few major buildings which depended upon local sources. Notable examples include the considerable Sutton Scarsdale (above, precise source uncertain).
It was also used in the two Hardwick Halls (above), dating from the 16C (sandstone below the Clowne Coal), Renishaw Hall (sandstone above the Clay Cross Marine Band) and the medieval Codnor Castle.

On occasions, when attempts have been made to use large blocks of sandstone encountered in the course of opencast coal working since 1942 for building stone, the results have been inconsistent, possibly on account of the lack of careful selection but also possibly following fracturing by deep mining subsidence. None of the Coal Measure sandstones found in the South Derbyshire Coalfield nor in the parts of the North West Coalfield falling within the area, were worked on any significant scale, but were used for local building purposes.

Permian Zechstein Group

Cadeby Formation

The Permian dolostones or dolomitic limestones belonging to the Cadeby Formation, (previously known as the Lower Magnesian Limestone) occur in the north east of the county, east of a line between Hardwick and Barlborough. The beds represent a small section of a long narrow outcrop running from the Nottingham area to the coast in County Durham. It is typified by an apparently uniform buff coloured dolostone or magnesium-rich dolomitic limestones which generally weathers to a cream, grey or off-white colour. They were widely used within the outcrop itself and beyond, both as ashlar and as dressings for brick buildings.

The dolostones best known application was in the reconstruction of the Houses of Parliament in the mid 19C. After a trawl of stones throughout the UK, the committee concerned, recommended the stone used in Southwell Minster which was thought to be from Mansfield Woodhouse, Mansfield (both in neighbouring areas of Nottinghamshire) or Bolsover Moor. There is uncertainty as to whether the Bolsover source was ever used; eventually the bulk of supplies came from Anston just over the border in South Yorkshire.
In detail, the stone tends to be pink and sandy near the base and in the Pleasley Vale area (left), but elsewhere the stone picture is indeed relatively uniform in character. The pre-1850 cores of a number of the colliery villages and towns, (now largely surrounded by brick buildings), such as Bolsover (left and below), Clowne, Shirebrook, Whitwell, Langwith, Mansfield, Mansfield Woodhouse and Creswell are of this yellowish limestone contrasting with typical vermillion coloured pantile roofing.

**Triassic**

The Triassic rocks in the county all occur south of a line from Ashbourne to Stanton-by-Dale. Most of the Triassic formations seen in this area are often regarded as ‘too soft’ to constitute viable building stones, however, in some areas they have been used quite extensively for building purposes. The plethora of geological terms which have been applied to published maps of this and neighbouring areas are still being resolved. The fluidity and complexity of the present situation in this respect precludes a detailed account here. In essence, the older sandstone dominated beds belong to the Sherwood Sandstone Group above which is the red mudstone dominated succession, with thin discontinuous beds of pale coloured dolomitic ‘skerry’ sandstones, comprising the Mercia Mudstone Group.
Sherwood Sandstone Group

The sandstones which have historically provided building stone however, are principally to be found in the Sherwood Sandstone Group and were formerly referred to as the Keuper Sandstones and the Waterstones. The sandstones are very fine grained and range from off-white to greenish grey or pale pinkish red in colour.

The occurrence of Triassic building sandstone sources is limited to those few areas where they are sufficiently well cemented (indurated) to be a reasonably durable stone. The sandstones were quarried around Mayfield to supply Ashbourne.

Nearby but within the county, quarries at Clifton and Norbury produced stone from this group. The sandstone was also worked at Bowbridge Fields in Kirk Langley and elsewhere in that area. The Bromsgrove Sandstone Formation and the Polesworth Formation of the Sherwood Sandstone Group were quarried at Weston Cliff (Weston on Trent) in the Bretby and Stapenhill area near Burton-on-Trent, Repton and at Pistem Hill near Smisby.
From the records, it would appear that a relatively small group of quarry sites and mainly those just noted, provided the source for a remarkable number of significant properties, most notably including, Calke Abbey (right), Swarkestone Pavilion, and Foremark Hall. Workings at Repton are documented in the 13C and from archaeological evidence that long pre-date the written accounts.

These stones were widely deployed as dressings either with other harder stone used for walling as at Kedleston Hall, or complementing the pervasive brick of southern Derbyshire as at Sudbury (right), Elvaston (below) and Egginton. Use in vernacular building in the main applied as dressings, was also relatively widespread, but was often in competition with the Millstone Grit sandstones. The usage of such material, usually regarded as too soft for building construction, which have proved to withstand 200 years or more of weathering, appear to be testimony to the value of very careful selection and placing, presumably resulting from many centuries of trial and error.
Quaternary

Pleistocene

Tufa

Two further commodities were won on this area. Tufa (or calcareous tufa) from Matlock Bath, Via Gellia and Alport-by-Youlgreave. Examples of these include Marl Cottage (locally known as the Hansel and Gretel House on account of its gingerbread appearance) in the Via Gellia and Wormhill Church north of Buxton (below). It was also widely used in lining Victorian grottoes.

Post-Triassic

With the exception of very small scattered outliers of Neogene/Palaeogene clays and sands, all the more recent deposits belong to the Quaternary and comprise sand, gravels and clays with no building stone. However not only do these and their main source beds in the Sherwood Sandstone Group furnish large volumes of high quality fine and coarse aggregates, in the form of selected large liver-coloured pebbles, they are widely used in landscaping and occasionally for paving.
Glossary

Ashlar: Stone masonry comprising blocks with carefully worked beds and joints, finely jointed (generally under 6mm) and set in horizontal courses. Stones within each course are of the same height, though successive courses may be of different heights. ‘Ashlar’ is often wrongly used as a synonym for facing stone.

Calcereous: A rock which contains significant (10-50%) calcium carbonate principally in the form of a cement or matrix.

Carbonate: A general term used for sedimentary rocks consisting of 50 per cent or more of either calcite (calcium carbonate) or dolomite (magnesium carbonate).

Cementation: The digenetic process by which the constituent framework grains of a rock are bound together by minerals precipitated from associated pore fluids e.g. silica, calcite.

Chert: A granular microcrystalline to cryptocrystalline variety of quartz.

Dolomitic, dolomitised limestone: Descriptive terms for a limestone that has had some of its calcium carbonate replaced by magnesium carbonate.

Facies: A term describing the principal characteristics of a sedimentary rock that help describe its mode of genesis e.g. dune sandstone facies, marine mudstone facies.

Flaggy: A finely laminated, sedimentary rock that splits into thin sheets when exposed to weathering.

Fossiliferous: Bearing or containing fossils.

Igneous rock: Rocks formed when molten magma cools and solidifies. It includes extrusive rocks erupted from volcanoes (e.g. basalt) and intrusive rocks that cool beneath the Earth’s surface (e.g. granite, gabbro, granodiorite, dolerite).

Interbedded: Occurs when beds (layers or rock) of a particular lithology lie between or alternate with beds of a different lithology. For example, sedimentary rocks may be interbedded if there were sea level variations in their sedimentary depositional environment.

Limestone: A sedimentary rock consisting mainly of calcium carbonate (CaCO₃) grains such as ooids, shell and coral fragments and lime mud. Often highly fossiliferous.

Mudstone: A fine-grained sedimentary rock composed of a mixture of clay and silt-sized particles.

Outcrop: Area where a rock unit is exposed at the ground surface.

Quoin: The external angle of a building. The dressed alternate header and stretcher stones at the corners of buildings.

Rubble: Rough, undressed or roughly dressed building stones typically laid uncoursed (random rubble) or brought to courses at intervals. In squared rubble, the stones are dressed roughly square, and typically laid in courses (coursed squared rubble).

Sandstone: A sedimentary rock composed of sand-sized grains (i.e. generally visible to the eye, but less than 2 mm in size).
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Further Reading

Hughes, T. G. (1996). ‘The Grey Slates of the South Pennines; report of a study into the potential to re-establish the roofing slate industry of the region’, Vol 2. The Quarries and Slates (Geology and quarry research by I. A. Thomas), London: English Heritage, Derbyshire County Council and Peak Park Joint Planning Board.


(a) This publication contains a comprehensive list of buildings and stones used and is effectively ‘Volume I’
(b) This combines volumes I and II, but stone coverage is less consistent
(c) Contains extensive lists of quarries
(d) Although relating to Yorkshire, it sets a general context for Derbyshire
(e) Includes historical descriptions of quarries and companies