Historic England

Cornwall and the Isles of Scilly

Building Stones of England

The Building Stones of England

England's rich architectural heritage owes much to the great variety of stones used in buildings and other structures. The building stones commonly reflect the local geology, imparting local distinctiveness to historic towns, villages and rural landscapes.

Historic England and the British Geological Survey (BGS), working with local geologists and historic buildings experts, have compiled the Building Stones Database for England to identify important building stones, where they came from and potential alternative sources for repairs and new construction.

Drawing on this research, plus BGS publications and fieldwork, guides like this one have been produced for each English county. The guides are aimed at mineral planners, building conservation advisers, architects and surveyors, and those assessing townscapes and countryside character. The guides will also be of interest if you want to find out more about local buildings, natural history, and landscapes.

This guide was is based on research and text by Andy King (Geckoella Ltd).

First published by English Heritage August 2011 and republished by Historic England in 2017. This edition published by Historic England May 2023.

Please refer to this guide as:

Historic England 2023 *Cornwall and the Isles of Scilly. Building Stones of England*. Swindon. Historic England.

HistoricEngland.org.uk/advice/technical-advice/

Front cover: Port Issac. Delabole Slate and local building stones. © Gordon Bell / Alamy Stock Photo.

How to Use this Guide

Each guide describes the local building stones in their geological timescale order, starting with the oldest layers through to the youngest. The guide ends with examples of other notable building stones from other parts of England and further afield.

Geological time periods, groups, formations and building stones

Each building stone is listed under the relevant geological timescale, group and formation. A formation may be divided into members and where relevant these are referenced in individual building stone sections.

Middle Jurassic
↑— geological time period

Inferior Oolite Group, Lincolnshire Limestone Formation
↑— geological group ↑— geological formation

Lincolnshire Limestone
↑— building stone (alternative or local name)

Bedrock geology map and stratigraphic table

To help you with the geology of the area, there is a bedrock geology map and a stratigraphic table which shows the layers of rocks and the associated building stones in this geological timescale, group, formation order.

Page numbers for each building stone are included in the stratigraphic table for ease of reference. The page numbers are inverted to correspond with the geological age order.

Contents list

If you click on the page number for a building stone in the Contents list, you will go straight to the relevant section in the guide.

Building stone sources and building examples

A companion spreadsheet to this guide provides:

- More examples of buildings. Information is included on building type, date, architectural style, building stone source, and listed/ scheduled status
- A list of known (active and ceased) building stone sources such as quarries, mines, pits and delphs
- Additional information on building stones including lithology, grain size, sedimentary structures, key identification features, and notes on failure/weathering, and use.

The Building Stone GIS map allows you to search the Building Stones Database for England for:

- A building stone type in an area
- Details on individual mapped buildings or stone sources
- Potential sources of building stone sources within a given proximity of a stone building or area
- Buildings or stone sources in individual mineral planning authority area.

Further Reading, Online Resources and Contacts

The guide includes geological and building stone references for the area. A separate guide is provided on general Further Reading, Online Resources and Contacts.

Glossary

The guides include many geological terms. A separate Glossary explaining these terms is provided to be used alongside the guides.

The guides use the BGS lexicon of named rock units.

Mineral and local planning authorities

This guide covers the Cornwall and the Isles of Scilly mineral planning and unitary authority areas.

Contents

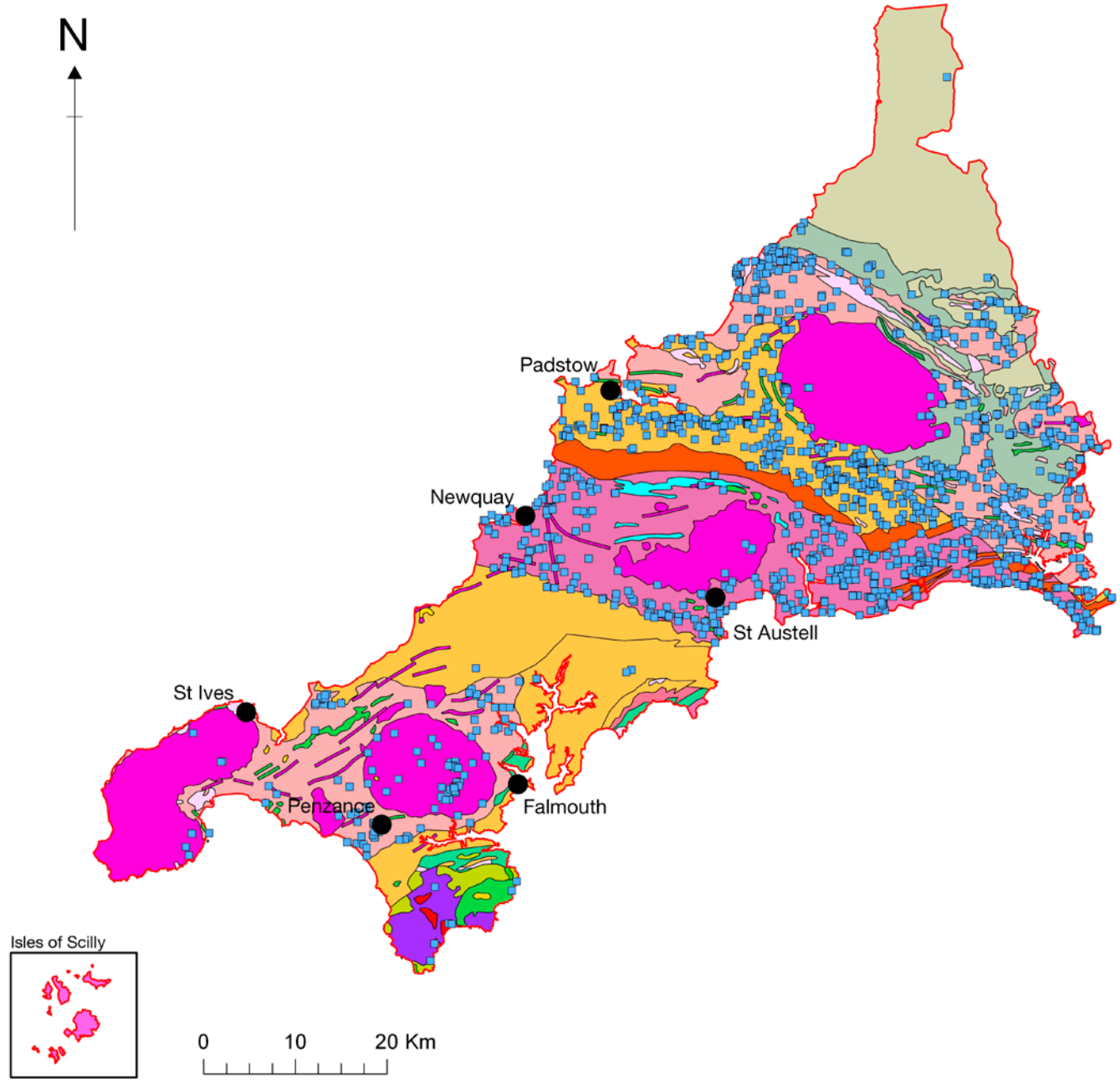
1 Introduction

Cornwall and the Isles of Scilly represent one of the most complex geological regions in England. Generally, the geology is dominated by Devonian and Carboniferous marine basin sediments, which have been affected by major tectonic events and have intruded into and been metamorphosed by large-scale igneous bodies (granites) during Carboniferous to early Permian times. These rocks have been further altered in places by other later-stage igneous intrusive and volcanic events, as well as by various hydrothermal and mineralisation processes. The Lizard peninsula provides the best example in Britain of an 'ophiolite complex', a suite of rocks originating from the oceanic crust and some of the underlying upper mantle. The Lizard rocks have also been affected by thrusting and faulting, partial melting and alteration into serpentine minerals (serpentinization). Many of these varied rock types have provided vernacular building materials.

All these events have contributed to creating the wide diversity of rock types and minerals that have shaped the Cornish and Scilly landscapes, and played such an important and enduring part in the economy of the area. Not surprisingly, this geology also includes a rich variety of very hard durable rocks of Devonian to early Permian age, suitable for building purposes. These are dominated by intrusive igneous rocks, principally the granites. However, their associated elvans and a range of smaller basic intrusions, greenstones and dolerites, as well as the rocks forming the Lizard complex, are also important. Extrusive igneous rock types are represented by Late Carboniferous and early Permian volcanic lavas, although these have a limited geographical occurrence.

High-quality slates suitable for roofing purposes and tough resistant sandstones occur in many of the Cornish sedimentary and metasedimentary sequences. An unusual stone used for building is the geologically very young and soft Quaternary sandrock, which is found at several locations on the north Cornwall coast. Many of these different stones are used locally and impart a strongly distinctive character to towns and villages; others have been widely exported nationally and internationally. Local stones are also used for the distinctive Cornish hedges. Typically, these are built as two-coursed walls with the core soil-filled, and tops capped with turf. For example, granites are used around Bodmin Moor, slates are used from the metamorphic areas such as Tintagel or Delabole, and minestone and veinstone from the mining areas such as St Agnes and Botallack. Where slate or large granite boulders are available, drystone walling is practised. Where flat, well-cleaved slates are used they are often laid in a characteristic herringbone pattern.

Bedrock Geology Map



Key

- Building stone sources

Dykes

- Mafic igneous-rock
- Felsic-rock

Bedrock geology

- Neogene rocks — gravel, sand, silt and clay
- Eocene to miocene rocks — clay, silt, sand and gravel
- Unnamed extrusive rocks, Permian — felsic lava
- Holsworthy group — mudstone, siltstone and sandstone
- Unnamed extrusive rocks, Carboniferous — mafic lava and mafic tuff
- Unnamed extrusive rocks, Carboniferous — mafic lava
- Unnamed extrusive rocks, Carboniferous — mafic tuff
- Unnamed igneous intrusion, Carboniferous to permian — felsic-rock
- Unnamed igneous intrusion, Carboniferous to permian — mafic igneous-rock
- Teign valley group — mudstone, siltstone and sandstone
- Upper Devonian rocks — breccia and metabreccia
- Upper Devonian rocks — mudstone, siltstone and sandstone
- Upper Devonian rocks — sandstone and conglomerate, interbedded
- Middle Devonian — mudstone, siltstone and sandstone
- Middle Devonian — sandstone and conglomerate, interbedded
- Lower Devonian rocks — mudstone, siltstone and sandstone
- Lower Devonian rocks — sandstone and conglomerate, interbedded
- Devonian rocks — hornblende schist
- Devonian rocks — limestone, mudstone and calcareous mudstone
- Devonian rocks — mica schist
- Unnamed extrusive rocks, Devonian — mafic lava and mafic tuff
- Unnamed extrusive rocks, Devonian — mafic lava
- Unnamed igneous intrusion, Devonian — felsic-rock
- Unnamed igneous intrusion, Devonian — mafic igneous-rock
- Unnamed igneous intrusion, Devonian — ultramafitite
- Unnamed extrusive rocks, Neoproterozoic — felsic tuff

Stratigraphic Table

Sedimentary building stones				
Geological timescale	**Group**	**Formation**	**Building stone**	**Page**
Quaternary	Beach and tidal flat deposits (undifferentiated)		Sandrock	34
Tertiary	British Coastal Deposits	St Erth Formation		
Carboniferous	Holsworthy	Bude Formation	Pigsdon Sandstone, Herdbury Sandstone	34
		Crackington Formation	Cansford Sandstone	34
	Teign Valley Group	Trambley Cove Formation	Trambley Cove Slates	34
	not defined	various		
	Tamar	Saltash Formation	Carnglaze Slate	33
Devonian		Tredorn Slate Formation	Delabole Slate Trevillet Slate (Tintagel Slate)	33 32
	Gramscatho	Porthscatho Formation	Portscatho Sandstone	32
		Porthtowan Formation	Porthtowan Sandstone	32
	Not defined	Grampound Formation	Treworgans Sandstone	31
	Meadfoot	Staddon Formation	Staddon Grits	31
		Bovisand Formation	St Issey Stone, Trevose Slate	30

Igneous building stones				
Geological timescale	**Group**	**Formation**	**Building stone**	**Page**
Permian	Elvans	various	Pentewan Stone (including Pentewan Stone types such as Penrice Stone)	27
			Newham Stone	27
			Tremore Porphyry (Tremore Stone)	26
			Warleggan Stone	26
Permo–Carboniferous	Granites	Bodmin Moor Pluton	Bodmin Moor Granite	23
			De Lank Granite	23
			Kit Hill Granite, Hingston Down Granite	23
		St Austell Pluton	St Austell Granite	22
			Luxulyan Granite, Luxullianite Granite	21
			St Stephen's Stone Granite	20
			Hensbarrow Granite	20
			Carn Grey Granite	19
		Carnmenellis Pluton	Carnmenellis Granite	18
			St Agnes Beacon Granite, St Agnes Granite, Cligga Head Granite	18
			Boswyn Granite	18
		Land's End Pluton	Land's End Granite	17
			Lamorna Granite	17
			St Michael's Mount Granite	17
			Tregonning-Godolphin Granite	16
		Isles of Scilly Pluton	Tresco Granite Isles of Scilly Granite	16 15
		undifferentiated	Moorstone	14
	Volcanic lavas	Kingsand Rhyolitic Formation	Kingsand Rhyolite	12
Devonian–Carboniferous	Greenstones (Blue Elvan)	various	Cataclews Stone (Catacleuse Stone)	10
			Tregongeeves Stone	10
			Serpentinite	10
			Polyphant Stone	9
			Duporth Stone	8
Cambrian–Devonian	Lizard Complex	ophiolite complex	Serpentinite (dunite serpentinite, tremolite serpentinite)	7
			Kennack Gneiss	7
			St Keverne Gabbro	6
			Hornblende Schists	6

Building stones in geological order from the oldest through to the youngest layers.

2 Local Building Stones

Igneous Building Stones

Cambrian–Devonian

The Lizard complex, ophiolite complex

The Lizard peninsula provides the best example in Britain of an 'ophiolite complex', which is a suite of rocks originating from oceanic crust and part of the underlying upper mantle. It includes ultrabasic peridotites, layered and massive basic gabbros, basaltic dykes, pillow lavas and associated cherts. On the Lizard, this sequence has been affected by thrusting and faulting and partial melting (producing the Kennack Gneiss), as well as serpentinisation, in which circulating hydrothermal water replaced original minerals (such as olivine and pyroxene) with minerals of the serpentine group. These altered rocks are known as serpentinites, and they are largely composed of serpentine with chlorite, tremolite and talc.

The variety of building stone in the villages on the Lizard reflect the diversity of the geology in a small area.

Hornblende Schists

Hornblende Schists cover considerable areas of the Lizard peninsula, especially coastal areas south of Lizard town, and around Landewednack and Traboe. Typically dark green to blackish rocks, rich in hornblende, with thin feldspar layers (folia), these schists split readily into thin, flat, parallel slabs suitable for rough walling. However, they are rarely sufficiently durable for use as a building stone.

St Keverne Gabbro

St Keverne Gabbro is a coarsely crystalline gabbro, often dark grey-green in colour, composed of dark bronze pyroxene, grey feldspar and greenish actinolite. A characteristic variety at Coverack (called troctolite) contains dark red serpentinite with white feldspar spots. The gabbro is quarried at St Keverne and is a hard, durable, resistant rock. Some is used locally as a general purpose building dimension and walling stone, but it is also employed as an armour stone (in gabions and sea defence works) as well as for aggregate.

Figure 1: Tower mill ruin, Lizard Peninsula. Elvans and serpentinite.

Kennack Gneiss

Kennack Gneiss is a pale greyish granitic gneiss, characteristically composed of alternating bands of dark (hornblende or biotite) and light (quartz and feldspar) minerals. Unlike typical Cornish granites, the quartz and feldspar components are seldom found in association with muscovite or biotite micas. Being closely jointed, this rock does not provide large blocks for building purposes, but it is used as a general walling stone at Erisey Barton and Gwendreath, and was formerly dug from pits in these areas. An intensely red-coloured variety occurs at Kynance Cove.

Serpentinite (dunite serpentinite, tremolite serpentinite)

Some Cornish basic (and ultrabasic) intrusions have been affected by hydrothermal alteration (known as carbonisation), in which the original olivine minerals have been altered to complex mixtures of talc, chlorite and carbonates. Such rock, called serpentinite, is a relatively soft, and typically quite soft and porous, and susceptible to frost action. Consequently, they are rarely employed for external building purposes. However, it is often attractively marbled and banded green and red and can easily be carved and polished so has been used extensively for decorative purposes and ornaments since the 19th century. The first serpentinite factory opened at Poltesco in 1866, making polished souvenirs for tourists, and craftsmen still work in the area today.

The church towers at Grade Ruan Minor and Landewednack are mostly built of large blocks of serpentinite, sometimes with accompanying granite. In particular, builders used the massive serpentinised form called dunite serpentinite. This is easier to work than tremolite serpentinite, which has a tendency to shatter when worked.

Figure 2: Former Wesleyan chapel, Mullion. Serpentinite with granitic quoins and lintels.

Devonian–Carboniferous

Greenstones (Blue Elvan), various intrusions

‘Greenstones’ is a convenient name for a variety of basic (low silica content), dark-coloured, intrusive igneous rocks that have a variety of mineralogies. They are often referred to as dolerites or diabases in geological literature. Greenstones contain significant amounts of dark ferromagnesian minerals and, consequently, they are often very dark green or dark blue, near blackish, in colour. Quarry workers, especially in western Cornwall, sometimes refer to such rocks as Blue Elvan. Greenstones commonly occur as intrusive dykes or sills in rocks. Where they cooled quickly or are affected by contact metamorphism around granites, they are finely crystalline and extremely resistant and characteristically form prominent features in the landscape. Greenstones were some of the earliest building stones used in Cornwall and they have been quarried extensively.

Duporth Stone

Duporth Stone is a carbonised rock that crops out as a sill-like feature in cliffs at Duporth Bay, near St Austell, where it has intruded into Lower Devonian Slates of the Meadfoot Group. Duporth Stone is paler than Polyphant Stone, usually greenish-grey in colour, and it has a coarsely speckled texture. It has been employed primarily for internal work, including for pillars at Truro Cathedral, the rood wall in St Paul’s Church at Charlestown and the north arcade in Holy Trinity Church at St Austell, for example.

Figure 3: Church of St Materiana, Tintagel. Stone rubble including Greenstone, slate, hornblende and felspar.

Polyphant Stone

At Polyphant, near Launceston, the carbonised intrusion has been worked since Norman times. However, as demonstrated at Launceston Priory and Castle, Polyphant Stone weathers poorly in external use, but it can be polished to give a dark green shiny stone that is very well suited to carving and internal decorative work. Many Cornish churches have interior features made of Polyphant Stone, notably the Boer War memorial in Truro Cathedral and the north porch arch at the Church of St Lalluwy at Menheniot. Polyphant Stone has also been used extensively outside of Cornwall, including for the tomb of Archbishop Frederick Temple in Canterbury Cathedral and some of the columns in Exeter Cathedral, for example.

Figure 4: Truro Cathedral, Truro. Polyphant and Bath Stone column dressings.

Serpentinite

As well as the Lizard Complex, serpentinite also occurs as a Devonian-Carboniferous Greenstone. Serpentinite has been used for internal features in local churches such as fonts, intricately carved lecterns and pulpits, as seen at St Grada and Holy Cross Church at Grade, for example, and it has also been used locally as a building stone. Serpentinite ashlar was used at the Church of St Melaine at Mullion. Other houses and buildings in Mullion, such as the former Wesleyan chapel, are constructed of large, roughly cut and dressed blocks of dark greenish and bluish serpentinite, often in combination with granitic quoins and lintels. Another good example is the Three Tuns public house, St Keverne.

Tregongeeves Stone

A series of doleritic intrusions occurs in the Pentewan Valley. The stone here is a very dark green, almost black, rock, rich in the ferromagnesian minerals hornblende and pyroxene. The stone was quarried at Tregongeeves. It was mainly used for aggregate however, some buildings in St Austell were constructed from the stone, including the former Public Rooms in Truro Road and the Masonic Hall in South Street.

Cataclews Stone (Catacleuse Stone)

One of the best-known examples of greenstone is Cataclews (or Catacleuse) Stone, which has been used as a building stone since Norman times. It is a very dark blue-green rock, sourced from a dolerite dyke intruded into coastal Devonian slates at Cataclews Point, Harlyn Bay. The grain size is variable, and the medieval stonemasons seem to have preferred the finer grained variety for carving and decorative work. Cataclews Stone has been used externally in a number of older buildings in and around Padstow, and also in local churches at Padstow and St Merryn. Where the stone has been employed for external carvings, it has demonstrated strong resistance to weathering.

Cataclews Stone has also been used for internal work, notably fonts, as seen at St Petroc's Church at Padstow, for example. The church tower at St Merryn is built of local Devonian slate (from the Trevose Slate Formation), with Cataclews Stone buttresses, quoins and decorative angels.

Figure 5: Font, St Petroc’s Church, Padstow. Cataclews Stone.

Figure 6: St Merryn's Church, St Merryn. Cataclews Stone.

Permo-Carboniferous

Volcanic lavas, Kingsand Rhyolitic Formation

Kingsand Rhyolite

Many of the older buildings in Kingsand and Cawsand are constructed of characteristic reddish-brown, fine-grained lava (rhyolite) and conglomeratic sandstones belonging to the Kingsand Rhyolitic Formation. The Kingsand Rhyolite extends over an area of nearly 1km^2, including along the foreshore, and gives a distinctive character to the parts of the villages where the stone is utilised. The stone is generally not very hard and can be trimmed for use as rubble masonry. Typically, it is used as coarse irregular blocks and rubblestone.

The Institute at the waterfront at Kingsand is an excellent example of this local building stone, using roughly coursed and squared blocks of distinctively red-coloured lava and sandstones. The dressings are of Devonian limestone, probably sourced from the Plymouth area. The sea wall is constructed from large dressed blocks and pebbles of Kingsand Rhyolite, standing partly on the natural outcrop of the Kingsand Rhyolitic Formation.

Cornish and Scilly Granites

Cornish and Scilly granites has been used very extensively for building in Cornwall since the late Neolithic or early Bronze Age, approximately 5,000 years ago, when standing stones (termed menhirs or megaliths), stone circles and chambered tombs were erected in and around the granite uplands. The Hurlers stone circles on Bodmin Moor provide a classic example. Later Bronze Age farmers used granite moorstone to build field boundaries and enclosures. During the Celtic Christianity and monasticism period, surface stone was used for carving inscriptions and the iconic Cornish Celtic crosses. Techniques for cutting and dressing granite moorstones commenced on a large scale in medieval times, when rocks were split using water-soaked wooden wedges. These were later replaced by iron wedges.

It was only in the 19th century that quarries opened to provide granite building stone, and the early use of quarried granite, primarily for churches, larger houses and bridges, rapidly expanded to cover other markets. This coincided with growing industrialisation, particularly the arrival of large steamships and the development of the railways. The latter not only created its own demand for stone for railway architecture, but also supplied a means of transportation.

The heyday of the Cornish granite quarrying industry was between 1840 and 1905, when the stone was in high demand, especially as a dimension stone for the construction of civic buildings, dockyards and harbours, railway engineering and lighthouses, including Eddystone and Bishop Rock. Many of the Cornish mine engine houses were also built of, or extensively dressed, with granite.

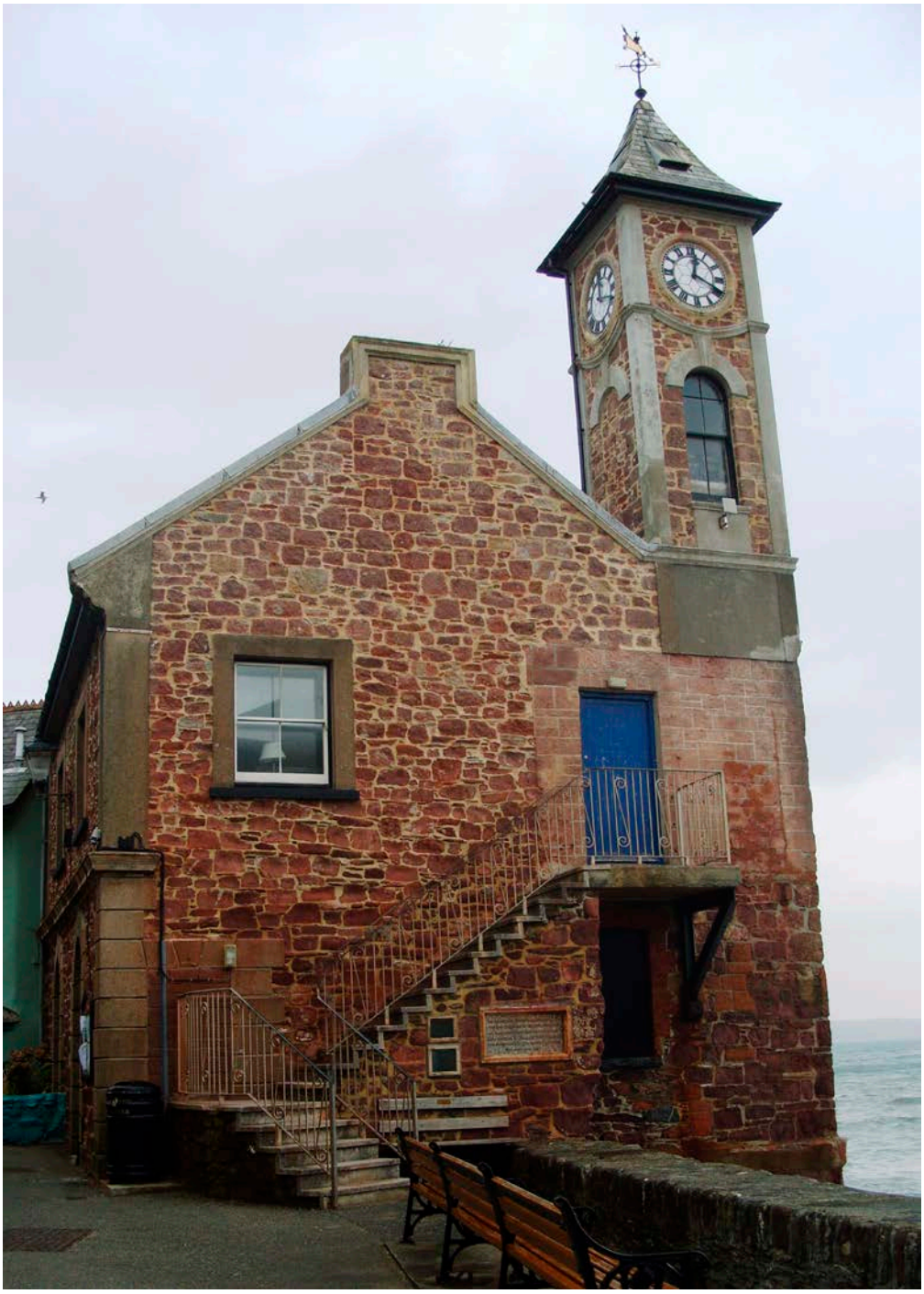


Figure 7: The Institute, Kingsand. Kingsand Ryolite and sandstone with Devonian limestone dressings.

The granite industry began to decline in the early 20th century, initially as a result of competition from imported Scandinavian granites and the impact of the First World War. The interwar years saw some minor revival for monumental work and crushed stone aggregate. After the Second World War, the advent of reinforced concrete and growing trade in other imported granites further reduced the quarrying of Cornish granite, other than for aggregate and cladding.

From west to east, the five main granite bodies (known as plutons) are the Isles of Scilly, Land's End, Carnmenellis, St Austell and Bodmin Moor. The Isles of Scilly consist almost entirely of granite. The available dating information indicates that these granites belong to the older group of Cornish granites, including Carnmenellis and Bodmin Moor. Much smaller satellite granites crop out at several other locations in Cornwall, including St Michael's

Mount, Tregonning-Godolphin, Carn Brea, Carn Marth, St Agnes Beacon, Cligga Head, Castle-an-Dinas, Belowda Beacon, Kit Hill and Hingston Down. At depth, these granites are all linked to a single intrusive parent body, the Cornubian batholith, which also includes Dartmoor. Apart from the surface exposures of the main granite plutons and satellite outcrops, the batholith is concealed under very thick sequences of Devonian and Carboniferous strata.

Cornish and Scilly granites are typically composed of crystals of white to pale pink orthoclase and plagioclase feldspars, grey glassy quartz, platy dark biotite mica and pale muscovite mica. Other minerals are invariably present depending on the granite type, and may include clusters or blisters of radiating or needle-shaped crystals of dark hornblende or tourmaline, or small pale yellow masses of zircon or topaz. Whatever the mineral composition, it is the texture of interlocking crystals that gives granites their great durability and the variation in colours that accounts for their decorative appeal.

Several different classification schemes have been developed for the Cornish and Scilly granites, based mainly on detailed mineralogical composition or the form and size of large crystals (megacrysts). Some generalisations about the granites can readily be made and are helpful when considering building stones. For example, the majority of Cornish granites are pale grey in colour. Also the most common form of granite in Cornwall and the Isles of Scilly is biotite mica granite, and this accounts for approximately 90 per cent of all granites encountered.

In comparison, lithium mica granites are confined to the St Austell and Tregonning-Godolphin areas. Furthermore, granite varieties with large megacrysts, those in which the granitic magma cooled slowest, permitting large crystal growth, are abundant and tend to occur within the Land's End and St Austell Granites. The Carnmenellis and Bodmin granites are generally more medium grained, with relatively few megacrysts. Fine-grained granite varieties occur in all the main granite plutons, with the exception of the Isles of Scilly.

Igneous granites, undifferentiated

Moorstone

Many of the smaller houses and buildings utilised local granite moorstone. These are loose boulders or erratic blocks of granite typically lying on granite moorland or tor areas, and they were collected as a readily available source of local building stone. An unusual use of granite is seen in the post office in Hugh Town, St Mary's, where large blocks of rough granite were used alternatively with finer granite. As these islands are small and have a limited supply of granite building material, reuse of stone has occurred. For example, stone from the ruined castles at St Mary's and Tresco was reused at the garrison (Star Castle), Hugh Town, and in Cromwell Castle. One other distinctive feature of the islands is the widespread use of high (often dry-laid) granite stone walls, typically built from loose weathered blocks and cobbles.

Igneous granites, Isles of Scilly Pluton

Isle of Scilly Granite

Isles of Scilly Granite is a coarse-grained biotite granite and is composed predominantly of pale-coloured quartz and feldspar, with approximately equal amounts of muscovite and biotite micas. Small feldspar megacrysts, less than 15mm long, typically comprise 5 to 9 per cent of the rock. This granite often weathers with a characteristic reddish or yellowish hue, due to the presence of iron oxide.

Isle of Scilly Granite exhibits little variation, although a central area of medium-grained granite (in which feldspar megacrysts are very rare) occurs on south-west Tresco and Samson as well as on the north-western isles, such as Mincarlo. This medium-grained granite contains more muscovite than biotite, and often weathers a pinkish colour. Elvans and fine-grained granitic dykes occur locally. Isles of Scilly Granite is unique in that the contact with metamorphosed Palaeozoic country rocks is not exposed anywhere on the present islands, and no significant metalliferous mineralisation is associated with it. Not surprisingly, granite has been the dominant vernacular building stone on the island, although some of the 19th-century buildings also include granite imported from the Cornish mainland.

Figure 8: Star Castle, Hugh Town. Isles of Scilly Granite with slate roofs, including Delabole slate.

Tresco Granite

A major period of building occurred during the mid-19th century, following the lease of land on Tresco from the Duchy of Cornwall to the Augustus Smith family in 1834. Tresco Abbey was built and extended between 1838 and 1891, using local Tresco Granite, some of which was taken from the promontory on which the house stands. The 18th-century harbourside cottages at New Grimsby, Tresco, are constructed mainly of Tresco Granite ashlar, with roughly coursed blocks for porches and walls.

Figure 9: Cottages, Tresco. Tresco Granite.

Igneous granites, Land's End Pluton

Tregonning-Godolphin Granite

The Tregonning-Godolphin Granite mass is relatively small, and it occurs in the Tregonning Hill and Godolphin Hill areas, extending south to the coast near Trewavas Head and Megilligar Rocks, where a spectacular very coarse-grained variety called pegmatite occurs. The granite mass is intruded by quartz porphyry dykes and it contains mineralised tin and copper veins. Two distinct types of granite make up the Tregonning-Godolphin Granite: Godolphin Granite is a fine-grained variety of biotite granite, containing small feldspar megacrysts; Tregonning Granite is a medium-grained, non-megacrystic, lithium mica granite. (The only other lithium mica in Cornwall is St Stephen's Stone, part of the St Austell Granite pluton.) Lithium micas are typically pale brown or pale mauve in colour; biotite mica is usually much darker.

Both granite types are generally pale coloured, often in attractive cream hues in which the quartz and mica minerals are prominent. They are also both highly valued and used for local building and memorial stonework.

St Michael's Mount Granite

Although not strictly part of the Land's End Granite pluton, St Michael's Mount is located very close to the main granite mass. St Michael's Mount Granite is a darkish, coarse-grained, biotite granite, often associated with mineralised veins. However, unlike the granites of Land's End, it contains smaller feldspar megacrysts, less than 15mm long.

Lamorna Granite

The main quarries were at Lamorna, Sheffield, Castallack and Castle-an-Dinas. High-quality Lamorna Granite dimension stone was formerly quarried at Lamorna Cove, on the southern edge of the Land's End Granite pluton. The granite was used in local buildings and also exported from the small harbour in the cove. This granite type was used for constructing the pier at Mousehole, the Wolf Rock lighthouse and the base of Sir Humphry Davy's monument in Market Jew Street, Penzance, as well as further afield at Embankment in London, for example. Sheffield Quarry produced stone mainly for local buildings. The finer grained granite quarried at Castle-an-Dinas was employed mostly for aggregate. The 18th and 19th-century cottages at Lamorna Cove, probably former quarrymen's cottages, are constructed of very local, large, roughly coursed and dressed Lamorna Granite.

Figure 10: Cottages, Lamorna Cove. Lamorna Granite.

Land's End Granite

This granite pluton consists mainly of pale to medium-coloured, coarse-grained, megacrystic, biotite granites, in which the feldspar crystals are large and conspicuous. Some forms are extremely coarse grained and contain feldspar megacrysts up to 200mm long. The only other Cornish granite to exhibit large megacrysts of this type is the Luxulyan Granite. Within the Land's End Granite pluton, such coarse-grained varieties are characteristic of the Lamorna and Castallack areas; finer grained granites, which are also megacryst rich, occur in the Castle-an-Dinas area.

Igneous granites, Carnmenellis Pluton

Boswyn Granite

This granite is a pale-coloured, fine-grained variety of the Carnmenellis Granite, poor in feldspar megacrysts. It only occurs in small outcrops at Boswyn and Praze, on the western edge of the main outcrop.

St Agnes Beacon Granite, St Agnes Granite, Cligga Head Granite

Very small satellite granites outcrop on the north Cornwall coast, at St Agnes Beacon and Cligga Head. Both are represented by coarse-grained, megacryst-poor, biotite granite varieties. A finer grained granite also occurs at St Agnes (St Agnes Granite).

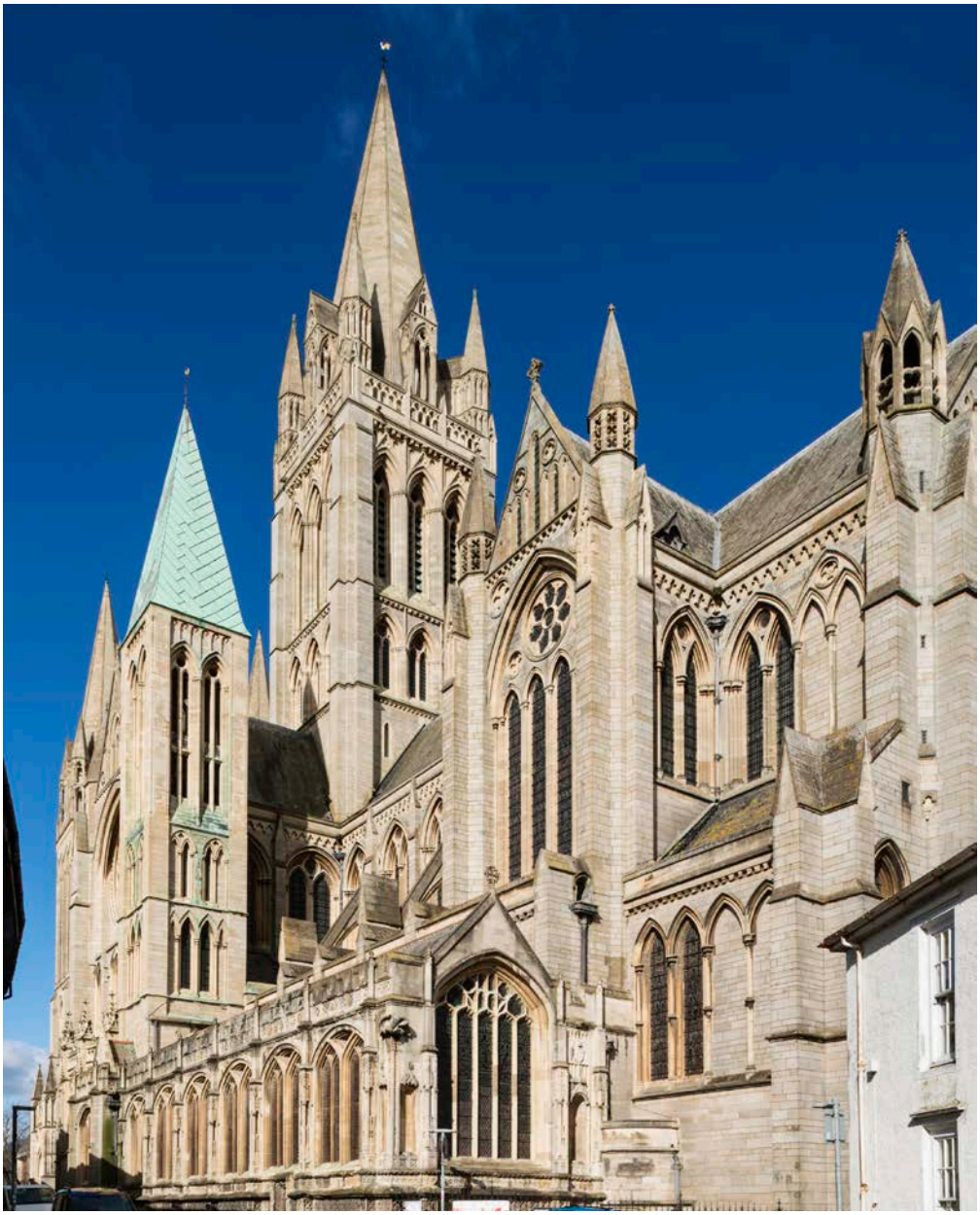
In addition, the granites at Cligga Head are renowned for their exposures of greisen veins and sheets. Both granites have been greisenised (the alteration of feldspar to a fine-grained mixture of quartz and mica) and mineralised, but only the Cligga Head Granite exhibits significant kaolinisation (the alteration of feldspar to clay minerals, including china clay). Both are mostly used locally.

Carnmenellis Granite

Carnmenellis is a roughly circular granite pluton, which also includes the satellite granite outcrops of Carn Brea and Carn Marth on its northern edge. The main Carnmenellis Granite is a coarse-grained biotite granite, containing numerous small feldspar megacrysts averaging approximately 20mm in length. Amounts of biotite and muscovite are roughly equal, and the biotite mainly occurs as aggregations of platy crystals. The central area of the Carnmenellis pluton is composed of a different granite. This is a medium-grained biotite, with relatively few feldspar megacrysts, in which amounts of muscovite exceed biotite.

Carnmenellis Granite has been quarried extensively from the south-eastern part of the pluton around the parish of Mabe, notably from Carnsew Quarry, which provided the stone for the exterior of Truro Cathedral. Carnmenellis Granite was also used in the construction of St Mawes Castle and Pendennis Castle in the 16th-century. Several quarries are still actively working the Carnmenellis Granite, but mainly for the production of crushed aggregate for general construction work.

Figure 11: Truro Cathedral. Carnmenellis Granite with Bath Stone tracery and ornament, with Pentewan Stone and Newham Stone in the older part.



St Austell Pluton

Carn Grey Granite

Carn Grey Granite is intermediate between Luxulyan Granite and St Stephen's Stone Granite; it is a pale grey, medium to coarse-grained, biotite granite that is poorly megacrystic. The feldspar megacrysts reach up to 40mm in length. Fine, evenly grained forms of this granite from Carn Grey Quarry were reserved for higher graded building work, and it is the predominant building stone used in St Austell. For example, the Market House was constructed from Carn Grey Granite ashlar, with vermiculated quoins and voussoirs (wedge-shaped stones) to the ground floor.

Figure 12: Market House, St Austell. Carn Grey Granite.

Hensbarrow Granite

This is essentially a variety of St Stephen's Stone Granite that contains the accessory mineral turquoise. It was quarried from between Hensbarrow Beacon and Stenalees, and it was used in the construction of St Paul's Church at Charlestown.

St Stephen's Stone Granite

In stark contrast to Luxulyan Granite is St Stephen's Stone Granite from the Nanpean and Hensbarrow areas in the western part of the St Austell pluton. This a non-porphyritic, pale-coloured, mainly fine-grained, lithium mica granite, which is typically whitish. It represents the palest coloured granite known in Cornwall.

St Stephen's Stone Granite is also slightly softer than other Cornish granites and is typically used in the construction of church towers in the Nanpean area and further afield. For example, the Church of SS Probus and Grace at Probus is built mainly of St Stephen's Stone and ashlar, with local slate and greywacke sandstone (from the Porthtowan Formation) used in some walls. The stone was also used for some of the older buildings in Lemon Street, Truro.

Figure 13: The Church of SS Probus and Grace, Probus. St Stephen's Stone Granite, and Delabole Slate roof.

Luxulyan Granite, Luxullianite Granite

Luxulyan Granite is a pale-coloured, coarse-grained, biotite granite from the eastern part of the St Austell pluton. It contains conspicuous large megacrysts of white feldspar. The only other Cornish granite to exhibit large megacrysts of this type is the Land's End Granite.

Luxulyan Granite was quarried extensively from the Luxulyan Valley, notably from the Tregarden, Carbean and Colcerrow Quarries. Many famous buildings and engineering structures were constructed from it, including Old London Bridge and Plymouth Breakwater. Within Cornwall, it was used in the exterior of Porphyry Hall, Fowey, and the construction of Par harbour. It was also one of the favoured building stones used in imposing Victorian railway viaducts, including the Treffry Viaduct and the Gover Viaduct. The latter is 210m long and 29m high. The original viaduct, built by Isambard Kingdom Brunel in the 1850s, had wood tops; its remaining granite pillars can be seen behind the present viaduct.

A striking and attractive variant of Luxulyan Granite is Luxullianite Granite. This rock consists of deep pink, orthoclase, feldspar megacrysts in a groundmass of fine black tourmaline crystals, with minor biotite. It can be cut and polished and is used primarily for interior ornamental work. Examples include Porphyry Hall, Fowey, and the Duke of Wellington's sarcophagus in St Paul's Cathedral, London.

St Austell Granite

The granite mass at St Austell is the most complex of all the Cornish granite plutons, and it contains the most varieties of the stone. Essentially, it consists of a central zone of coarse-grained, poorly megacrystic, biotite granites, with coarse-grained, megacryst-rich, biotite granites on its eastern and western margins. In addition, there are central outcrops of fine-grained granite and a western area of medium-grained, non-megacrystic, lithium mica granite. Small satellite granite cusps, comprising mainly fine-grained varieties, with some coarse-grained, megacryst-poor granite, also occur at Belowda Beacon and Castle-an-Dinas. The main granite quarrying areas were located on the edges of the St Austell pluton, in areas free from the effects of intense kaolinisation, which produced huge amounts of china clay. Locally quarried St Austell Granite can be seen in many buildings throughout St Austell and the surrounding towns and villages, such as Charlestown and Luxulyan.

Figure 14: Gover Viaduct, St Mewan. Luxulyan Granite.

Igneous granites, Bodmin Moor Pluton

Kit Hill Granite, Hingston Down Granite

The Kit Hill and Hingston Down granites lie between the Bodmin Moor and Dartmoor plutons. The quarries produced a small range of various granites, of which a fine-grained biotite granite is most commonly encountered. Two quarry areas occur in the Gunnislake area on the edge of the Tamar Valley.

Although relatively small, this quarry district was an important source of building stone for engineering, architectural and monument use, as well as for setts and roadstone, which were used locally and in Plymouth. Granite from Kit Hill was also used at Battersea Bridge and in the Thames Embankment, London.

De Lank Granite

De Lank Granite is a high-quality, hard, non-porphyritic, medium-grained, biotite granite, often with a light foliation, which has been used in many well-known constructions. It has also been used for granite setts and kerb stones. The nearby Tor Down Quarry produced stone for the Britannia Royal Naval College at Dartmouth, and Hantergantick Quarry produced stone for architectural and monument work, including the London Stock Exchange and Tate Britain, London.

Bodmin Moor Granite

This is a distinctive pale-coloured, coarse-grained, biotite granite, characteristically containing some (per cent) small feldspar megacrysts, ranging from 10 to 20mm in length. Occasionally, megacryst-rich varieties are also found. The small megacrystic form of Bodmin Moor Granite is characteristic, and it is only otherwise encountered in forms of the Carnmenellis and Isle of Scilly granites. Granites along the western margin of Bodmin Moor often exhibit slight foliation. Bodmin Moor Granite is extensively used in buildings both on the moor and surrounding areas. It is also widely exported and used outside the county. Formerly, there were 39 granite quarries on Bodmin Moor, but the main centres of production are at the Cheesewring Quarries (on the south-east edge of the moor near Liskeard) and the De Lank Quarries (on the south-west edge of the moor near Bodmin). The quarries below the Cheesewring supplied high-quality granite, which was taken for shipment at Looe via the Liskeard and Caradon railway. Examples of use in construction include well-known lighthouses (Eddystone, Bishop Rock, Beachy Head) and bridges (Tower Bridge and Blackfriars Bridge, London).

Figure 15: Cornish cross, St Neot Church, Liskeard. Bodmin Granite.

Figure 16: Porch, St Neot Church, Liskeard. Bodmin Granite.

Permian

Elvans, various intrusions

Elvans (not to be confused with the Greenstone Blue Elvans) are felsitic igneous rocks similar to granites in composition, but typically much finer grained. They occur in association with the granite intrusions, usually as dykes varying from a few centimetres to tens of metres in thickness. Elvan dykes are remarkably persistent and may be traceable along strike for many kilometres. Consequently, they may not always be related to the granite they are closest to.

Elvans vary from light grey to light buff or pink in colour and may include large crystals (phenocrysts) of feldspar (up to 30mm long) or crystal clusters (glomerocrysts) of quartz (up to 5mm across). These elvans are called quartz porphyry or feldspar porphyry, depending on the composition of the main phenocrysts. The matrix usually comprises very fine-grained (0.1 to 0.2mm, occasionally up to 0.5mm) quartz and feldspar. Granophyric or micrographic textures, caused by intergrowths of quartz and alkali feldspar, sometimes occur. Secondary alteration of elvans is common: for example, impregnation by iron oxides can cause local variants to have an attractive reddish colour.

Tourmalinisation (the replacement of feldspars and micas with tourmaline) or elvan also occurs in some elvans. However, kaolinisation provides the most widespread alteration to elvans, and locally this may be so pervasive that many elvans also had working claypits in close proximity. Elvans are no longer quarried, but their fine grain size enabled them to be easily worked, often in fine detail, and they are among Cornwall's most distinctive building stones. The non-porphyritic varieties are preferred for finer carved work. The best-known elvan quarries were in the Pentewan area. In medieval times, elvan was quarried from a dyke in the cliffs at Polrudden Cove, which can be traced inland for nearly 1km to a large overgrown quarry behind Pentewan village.

Warleggan Stone

Warleggan Stone, a porphytic elvan, was used extensively in Warleggan village and at the local church, St Bartholomew's. Most of the medieval building would have used locally derived moorstone before a quarry was properly opened. An elvan extending from Davidstow Woods to Rock, on the Camel estuary (a distance of approximately 24km), was quarried extensively and used for railway bridges between Camelford and Wadebridge, and for many village chapels and halls along its length.

Tremore Porphry (Tremore Stone)

A particularly attractive porphyritic elvan was quarried extensively at Tremore, near Withiel. It has prominent phenocrysts of white feldspar and quartz, set in a fine-grained red or pinkish matrix, with spherulitic growths of black tourmaline. Tremore porphyry has been used as an external building stone. A fine example is the front of West Hill Baptist Church at St Austell, built from very distinctive, roughly coursed and squared blocks of reddish Tremore Porphyry (elvan), with vermiculated quoins and dressings of St Austell Granite (Carn Grey type).

It has also been polished as a decorative internal stone, including at King Arthur's Hall, Tintagel; Porphyry Hall and Place House, Fowey; and Osborne House on the Isle of Wight. Cornish elvan dykes have been worked at many other locations: wherever a suitable stone occurs, it has often been quarried along its outcrop, producing an elongate excavation rather like a railway cutting. Other examples of the local use of elvan occur at Warleggan, St Agnes and St Columb Minor.

Figure 17: West Hill Baptist Church, St Austell. Tremore Porphyry.

Newham Stone

Another important elvan was quarried at Newham, just south of Truro. This is a pale yellow or creamish stone, extensively used in the 18th and 19th centuries. Many of the older buildings in Truro are constructed of Newham Stone, notably much of Lemon Street, the Royal Hotel and part of the early 16th-century Church of St Mary, now incorporated into Truro Cathedral.

Figure 18: Houses, Lemon Street, Truro. Newham Stone.

Pentewan Stone (including Pentewan-type stone such as Penrice Stone)

This is a pale golden-yellow elvan freestone, often tinged pink. It is generally resistant to rainwater and weathering, although prolonged exposure leads to the surface layers of the stone developing a honeycomb texture. Examples of its use include Charlestown Methodist Church, St Mawes Castle, the exterior of Place House at Fowey, Antony House at Torpoint and All Saints' Church at Pentewan. This last was built of (elvan) ashlar, with rubble and Pentewan Stone dressings. Particularly fine examples also include the porch of St Petroc's Church at Bodmin and the intricate carvings on the tower of Holy Trinity Church at St Austell.

Many buildings described as being built of Pentewan Stone are actually constructed of other similar elvan stones sourced from nearby locations, such as Polgooth, Sticker and Penrice. These are best referred to as Pentewan-type stone because they may differ significantly from Pentewan Stone proper: for example, by exhibiting small phenocrysts of feldspar. One particular example is the Georgian Penrice House, near Porthpean. This is built of Penrice Stone, a fine-grained whitish variety of Pentewan-type stone, the source of which has been traced to infilled quarries less than 1km away.

Figure 19: All Saints' Church, Pentewan. Pentewan Stone.

Figure 20: Carvings, Holy Trinity Church, St Austell. Pentewan Stone.

Figure 21: Penrice House, near Porthpean. Pentewan-type Penrice Stone.

Sedimentary Building Stones

Devonian–Carboniferous

Most of the sedimentary rocks in Cornwall were originally deposited in deep marine basinal areas during the Devonian and Carboniferous periods. Subsequently, many of these rocks have become metamorphosed, either by proximity to the younger granite intrusions, or by changes due to the thrusting and faulting caused by a period of intense tectonic activity called the Variscan Orogeny. The geology and stratigraphy of the sediments and metasediments are highly complex. Current evidence indicates that the sequences are related to the development of distinct basins that have been tectonically juxtaposed, and within which a series of main thrust sequences (termed 'nappes') occur.

However, for the purposes of describing Cornish building stones, it is simplest and most convenient to divide the relevant rocks very generally into slates, sandstones and limestones, and sandrock.

Cornish Slates

Slates (locally termed 'killas', especially in the mining districts) are used extensively in Cornwall for building, both for walls and roofing. They are the most convenient stone to use for such purposes outside of the main granite areas. Slates are produced by low-grade metamorphism of former mudstones, and their quality (dependant largely on the quality of the cleavage) varies from quarry to quarry, thereby reflecting the original differences in the source basin sediments.

Typically, an older Cornish house located away from a granite moorland is constructed of slate rubblestone, possibly with granite or elvan dressings. Slate-hung walls are a common feature on some cottages, particularly on west/south-west facing walls or on the upper parts of walls, to protect

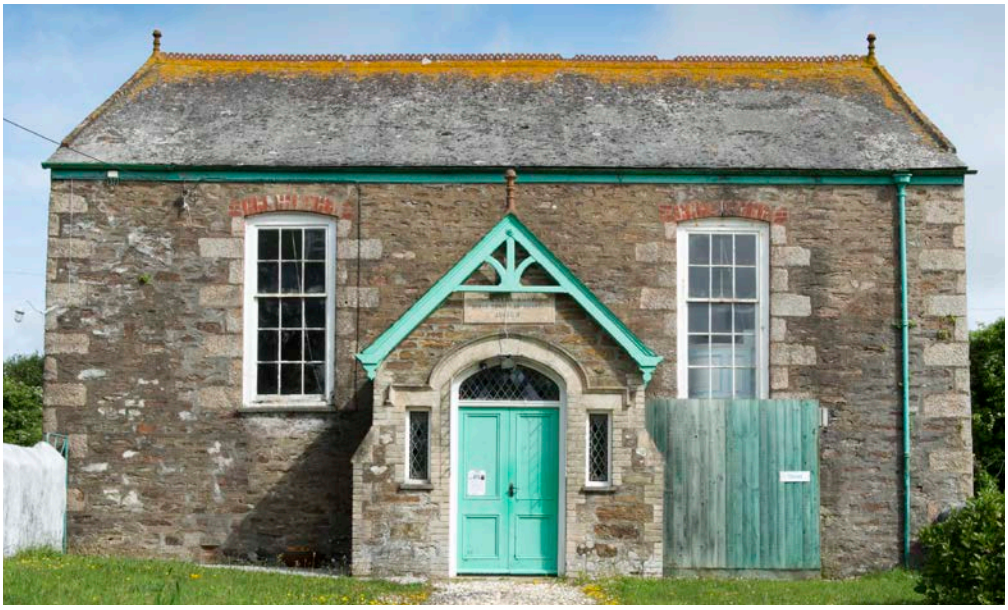


Figure 22: Wheal Busy Chapel, Chacewater. Cornish slates.

buildings from the prevailing rain-bearing winds. Other common uses for slate include roofing, porches, memorials and wall boundaries. In St Tudy, north-east of Wadebridge, large vertical slate slabs are pinned together with iron clamps to form boundary walls between adjoining gardens. Slate is still used in modern Cornish buildings, perhaps as often for decorative facings as for construction purposes. The modern vernacular apartment suite constructed at Headland Road, Newquay, uses local Devonian slates and sandstones as facing and building stone for walls. Slates employed for building purposes occur through much of the Devonian and Carboniferous succession in Cornwall.

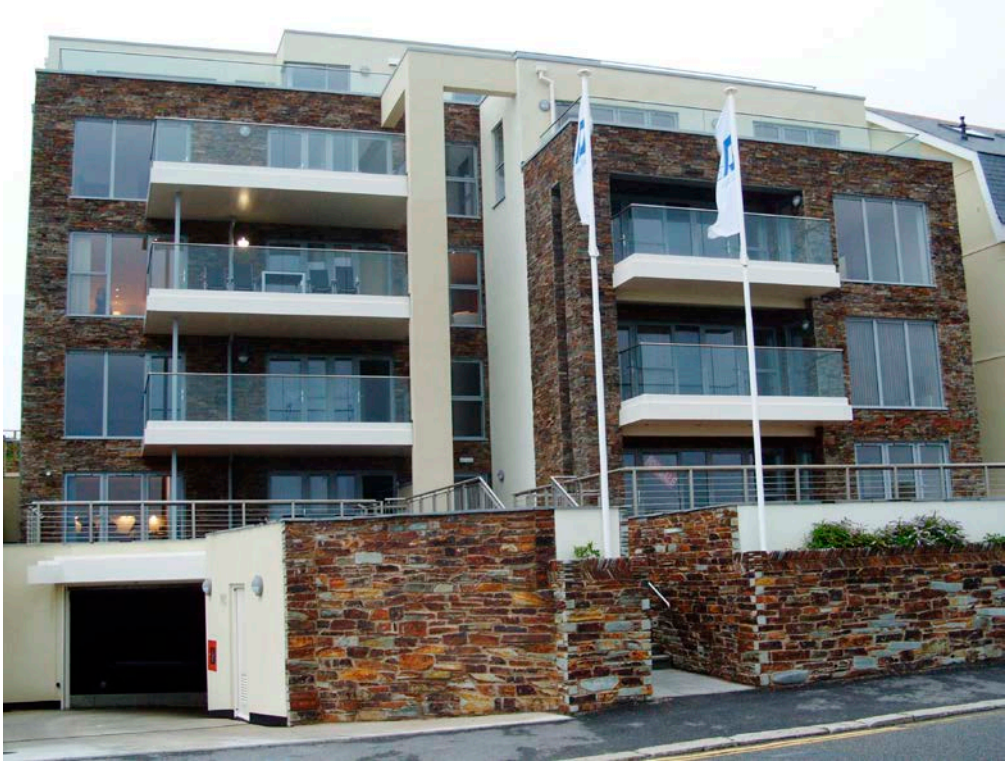


Figure 23: Apartments, Headland Road, Newquay. Cornish slates and sandstones.

Meadfoot Group, Bovisand Formation

Lower Devonian slates from the Bovisand Formation have been quarried from several locations around Newquay and the St Austell/east Cornwall areas. They are used locally, although they are not of high quality due to their pyrite content. Slates quarried from Holmbush, near St Blazey, have a distinctive reddish colouration (caused by iron oxides) and they have been used in the church at St Blazey and in St Blazey Gate.

St Issey Stone, Trevose Slate

Quarries around Wadebridge, including Tredinnick and Cannalidgey, near Padstow yield large quantities of Middle Devonian Trevose Slate. They are also the source of the famous St Issey Stone, a pale grey-green sandy slate that weathers to a distinctive rusty brown colour.

Many of the buildings in St Issey, including the church and former 19th-century chapel, are constructed of local Devonian slate (Trevose Slate Formation), including St Issey Stone. The slate is also much used for building Cornish hedges and alongside roads where a natural stone finish is required.

Figure 24: Former chapel, St Issey. St Issey Stone.

Meadfoot Group, Staddon Formation

Staddon Grits

In south-east Cornwall, Lower Devonian sandstones from the Staddon Formation have been worked on a small scale from quarries at Lower Clicker and Landlooe Bridge. They are used for local building and walling purposes in the Kingsand area, south of Polbathic and near Maker.

Group not defined, Grampound Formation

Treworgans Sandstone

Most of the older buildings in the village of Grampound and adjoining areas, as far north as Mitchell, have been constructed from Treworgans Sandstone. Much of this sandstone was probably quarried from Tredinnick, just north of Grampound. Freshly cut surfaces are bluish-grey in colour, but over time they weather buff-brown.

Figure 25: Thatched cottages, Fore Street, Grampound. Cornish slate and Treworgans Sandstone.

Gramscatho Group, Porthtowan Formation

Porthtowan Sandstone

The predominant building stones used in Mevagissey are greywacke sandstones (Porthtowan Sandstone) and slaty mudstones belonging to the Middle and Upper Devonian Porthtowan Formation. A mixture of Middle and Upper Devonian sandstones, derived from Ordovician-aged quartzitic sandstones and other rock types (including igneous cobbles and slaty rubble from the Roseland Breccia), has been used for older buildings in Veryan and Gorran Haven (along with Pentewan Stone in St Goran's Church).

Portscatho Sandstone

In south Cornwall, sandstones from the Middle Devonian Portscatho Formation and Grampound Formation have been employed as local, general purpose building stones. Portscatho Sandstone is very durable, and it has been used in St Gerrans' Church at Portscatho, Trewarthenick House near Tregony, and the 16th-century castle at St Mawes.

Figure 26: St Mawes Castle, St Mawes. Portscatho Sandstone.

Tamar Group, Tredorn Slate Formation

Trevillet Slate (Tintagel Slate)

Trevillet Slate (also known as Tintagel Slate) has been won from several quarries, including Trevillet, the Prince of Wales and Bolehill, from the 19th century. However, apart from Trevillet Quarry, all are currently inactive. The slates are distinctly greyish-green in colour, with brown oxide coatings on their cleavage and joint planes. The cliffside quarries between Tintagel and Trebarwith Strand provided a source of slate back to the 17th century, and good quality roofing slate was once extracted from this area. Other quarries in the Tredorn Slate Formation occur to the west of Boscastle. These yielded finer and harder greenish-grey slates from quarries at the base of the sea cliff. Extracted slates were hauled by cable to the cliff tops and then exported via Boscastle Harbour. Some were used locally.

Delabole Slate

The best-known and highest quality roofing slate in Cornwall is Delabole Slate, from the Upper Devonian Tredorn Slate Formation. Delabole Slate is hard and has a well-developed cleavage and a distinctive silvery-grey colour, with an almost silky lustre. Delabole Quarry has been the source of slate for more than 600 years and it is one of the largest slate quarries in England, at 130m deep and more than 2km in circumference. It has produced exceptional quality slate for local, national and international markets, and has been worked continuously since Tudor times. A considerable export trade for the stone already existed in 1602. Delabole Slate is employed predominantly for roofing across the Scillies.

Figure 27: Church Street, Padstow. Delabole Slate and Carnglaze Slate fronts.

Tamar Group, Saltash Formation

Carnglaze Slate

Mixed rusty and silver grey-coloured slates from the Saltash Formation are currently quarried at Westwood and Lantoom near Dobwalls, Liskeard. They are used locally for building and walling purposes. In the 19th century, slate from the Saltash Formation was also quarried from a series of three main underground caverns at Carnglaze, near St Neot. Carnglaze slate has a distinctively even, deep blue-grey colouration, and it was used primarily as a roofing slate over a wide area from Plymouth to Penzance.

Teign Valley Group, Trambley Cove Formation

Trambley Cove Slates

Very dark, blackish slates from the Lower Carboniferous Trambley Cove Formation were also quarried from near Boscastle and used extensively as building and roofing stone in the village and the surrounding area. Many former old quarries in the Launceston area, such as Bangor Slate Quarry, yielded slates and slate slabs from the Crackington Formation. These were used as general building stone in the Launceston area, although nearly all the quarries are now abandoned.

Carboniferous

Cornish Limestones

Limestones that can be used as building stone are almost absent from Cornwall, apart from a few very small Carboniferous aged outcrops in the Launceston area, and around Veryan and Trevone. However, here, the beds were mainly exploited in the 18th and 19th centuries to provide agricultural lime. Historically, Devonian limestones from the Plymouth area were brought into Cornwall for building purposes, especially in the towns and villages on the south coast, and also for burning to make lime for agricultural purposes.

Holsworthy Group, Crackington Formation, Bude Formation

Cansford Sandstone, Herdbury Sandstone, Pigsdon Sandstone

In north Cornwall, several quarries (some still active) work Upper Carboniferous sandstones from the Culm Measures succession. Much of the stone is now used as crushed aggregate, but formerly several sandstones were employed for traditional building purposes in the local area. These include Cansford Sandstone from the Crackington Formation and Pigsdon and Herdbury Sandstones from the Bude Formation.

Quaternary

Beach and tidal flats (undifferentiated)

Sandrock

The lack of lime-bearing rocks near the north Cornish coast was overcome by using local beach sands, which are typically fine grained and have a high bioclastic content. This type of sand forms the dunes north of Hayle, at Perranporth, and many of the beaches on the north coast.

In places, these Quaternary beach sands are cemented by calcium carbonate and they characteristically form a raised beach, notably at Godrevy Point near Hayle, at Harlyn Bay, in the Padstow estuary, and on the north side of Fistral Bay near Newquay. This sandrock is just about hard enough to be used as a building stone, and it represents one of the geologically youngest freestones to be employed in the UK. Sandrock has been used in the construction of some churches in these coastal areas, notably in St Carantoc's Church at Crantock. The original church tower at Crantock collapsed shortly after it was built in the 14th century, providing an unfortunate but apt lesson on the structural limitations of using sandrock as a building stone. It was constructed mainly of local Devonian slate and sandstone rubblestone, with roughly dressed Quaternary sandrock blocks and quoins and a Delabole Slate roof. The golden-yellow colour of the sandrock is best seen around the main porch and internal doorways. The source of this particular sandrock may lie behind Crantock beach, but it has been covered with blown sand since being worked in medieval times.

Figure 28: Doorway, St Carantoc's Church, Crantock. Sandrock.

Figure 29: St Carantoc's Church, Crantock. Sandrock.

Minestones and Veinstones

A significant amount of stone used in older buildings and walls in the Cornish mineralised areas comes as waste from metalliferous workings. Early medieval structures often use stones that have apparently originated from former tin workings; 18th and 19th-century buildings commonly use stones from underground mining. For example, an old wall at Sandy Hill, near St Austell, is partly composed of veinstone from the nearby Charlestown United Mine, and partly of tourmalinised killas from stream tin workings in the Sandy Valley. A white quartz stone is often used in buildings in Cornwall, north of the Camel estuary and south-west of Truro, around Kea. One possible source of this may be veinstone from the local area.

3 Further Reading

The Further Reading, Online Resources and Contacts guide provides general references on:

- Geology, building stones and mineral planning
- Historic building conservation, architecture and landscape.

There is also a separate glossary of geological terms.

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5 Acknowledgements

The series was developed by Geckoella Ltd (Andy King), the British Geological Survey (Don Cameron, Graham Lott, and Stephen Parry), and Historic England (Clara Willett).

Historic England and the British Geological Survey developed the Building Stone Database for England with advice from many local geologists and historic building experts and all these individuals are thanked for their contributions.

For this guide, Historic England would like to also thank Peter Scott, and Gilmore Hankey Kirke Ltd.

The Department for Levelling Up, Housing and Communities supported the development of the Building Stones of England database project.

Figures

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Product code: HEBSE07
Publication date: August 2011
Reissue date: December 2017
Reissue date: May 2023
Design: Historic England