Technical Paper M 3
Building stone

Cornwall Council
January 2012

N.B. This is a live document that will be updated.
Technical Paper 3
Building Stone

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Appendices

1. The geological background of building stone

1.1 The Cornish peninsula is underlain by a variety of rocks including slate and granite, which contribute to the special character of the county’s landscape and coastal scenery. Natural stone is the traditional building material of Britain and the built environment is perhaps the most visible aspect of our cultural heritage. The geological diversity of this country has meant that the variety of the rock types used is probably unmatched anywhere else in the world. The production and usage of stone peaked in the late 19th century and finally fell into serious decline in the 1960’s.

1.2 However greater emphasis is now being placed on the restoration and conservation of older buildings using sympathetic materials such as locally sourced stone. Sustainability considerations has meant there is greater demand for local stone for new buildings and townscape schemes and this is encouraged in the Cornwall Council Sustainable Building Guide: Retro-fitting existing buildings - see http://www.cornwall.gov.uk/default.aspx?page=21590 and in the Cornwall Design Guide which will be available later in 2011.

1.3 The Natural Resources team being mindful of this had commissioned a study to map the location of “heritage” quarries (disused local quarries that could be brought back into use) throughout Cornwall to enable local stone that was used in the past to be used in the future to safeguard and protect Cornwall’s unique historic environment.

1.4 The geology of Cornwall is very varied, with both igneous (e.g. granite, elvan, dolerite) and altered sedimentary rocks (shale/slate and sandstone-locally known as killas) combined with extrusive volcanic rocks (basalt). All apart from the granite have been metamorphosed (changed by heat and pressure) to a greater or lesser extent. At the Lizard there are a collection of rocks unusual to the British Isles caused by an ancient ocean floor having been obducted (thrust up) to the surface.

1.5 There are several rock types present in Cornwall which have been used for building stone; these are explained in detail below¹.

Igneous Rock: Granite

1.6 Granite is the most extensive igneous rock in Cornwall and occurs in four large intrusions or ‘plutons’ at Land’s End, Carnmenellis, St Austell and Bodmin Moor. In addition there are a number of smaller outcrops at Godolphin, St Michael’s Mount, Carn Marth, Carn Brea, St Agnes, Cligga Head, Castle-an-dinas, Belowda, Kit Hill, Hingston Down and Gunnislake. Typically the granite areas form the higher ground of Cornwall. The granites also give rise to the dramatic coastal cliffs, notably Land’s End.

¹ Based on information contained in BGS Mineral Resource Information for Development Plans (BGS, 1997) and Geology and Minerals Resources of Cornwall (Scrivener, R C, 2006)
1.7 There is considerable variation in the appearance of granite from one location to another, from fine-grained types to coarse-grained granites with individual feldspar crystals exceeding 10cm in length.

1.8 Other types of granite occur in dykes or veins of fine-grained rock which are mainly pale grey or cream colour. These are known as ‘elvans’ and have been used in the past as building material.

1.9 Granites have provided an attractive source of dimension stone and their historical importance as a building material is reflected by the large numbers of disused quarries. In the 19th and 20th Centuries granite was in demand for construction (civic, institutional and commercial buildings) and export. Smaller quarries provided local building material (and roadstone).

Basic Igneous Rock: Basalt, Dolerite, Gabbro and Picrite (known as Greenstones):

1.10 Basic igneous rocks such as basalt, dolerite and gabbro occur within the Devonian and Lower Carboniferous slate and sandstone. These are known as Greenstones and they tend to be harder than their slate hosts so they form landscape features such as Nare Head and Clicker Tor (near Menheniot).

1.11 Many Gabbro outcrops occur on the Lizard reflected in the many disused quarries showing the widespread use of the stone for building materials. There is considerable variation in lithology and technical properties between these basic igneous rocks.

Serpentine:

1.12 Serpentine occurs on the Lizard peninsula and on a very restricted scale in East Cornwall. It is highly coloured and soft. Polyphant stone has been worked since Norman times as an ornamental stone.

Sandstone and shale:

1.13 In Cornwall there are considerable volumes of sandstone particularly in the north and east of the County. These comprise alternating folded beds of shale and hard sandstone.

1.14 Sandstones vary in thickness, lateral persistence, grain size and strength. Fine or medium grained sandstone is known as ‘greywackes’.

1.15 A few small quarries extract sandstone for building materials alongside their main aggregate extraction.

Slates

1.16 Slates underlie much of Cornwall and are commonly interbedded with coarser-grained siltstone and sandstone. They are also known by the old miners’ term as ‘killas’ in some areas.

1.17 The slates in Cornwall are variable in nature and colour ranging from dark to light grey with green and red hues. Brown iron oxide staining is common, these are rustic slates.
1.18 Slates which can be split are used for roofing but their occurrence is more restricted. These tend to occur within extensive masses of less perfectly cleared material which accounts for the large waste material produced.

1.19 The County is an important source of roofing slate, including Delabole slate. Elsewhere operations are small-scale mainly producing rustic slate.

2. Current production methods and reserves of building stone

2.1 Average annual production of building stone over the last 10 years in Cornwall is approximately 37,520 tonnes.

![Total Building Stone Production](image)

*Figure1: Building stone production in Cornwall 2002-2008.*

2.2 Building stone is produced from some 8 operational quarries producing solely granite, slate and gritstone for building materials and 7 quarries that produce building stone alongside their primary aggregate production.
2.3 There are also a number of sites in Cornwall with planning permission which are currently inactive but could be brought back into production if necessary.
<table>
<thead>
<tr>
<th>Site</th>
<th>Status</th>
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<tr>
<td>Caradon (Gonamena) Quarry</td>
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<tr>
<td>Castallack Quarry</td>
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Table 1 Status of permitted building stone extraction sites in Cornwall
3. Markets, transport and use of building stone

3.1 Building stone production in Cornwall mainly serves local needs for construction, walling and roofing but there have been some exports to other areas in the UK and some quarries have produced stone for prestigious constructions e.g. De Lank granite for the “Seed” sculpture at the Eden Project, the Tower Bridge in London and the European Parliament building in Brussels.

3.2 With the acceptance of Climate Change the whole life carbon footprint of buildings is more relevant today than in previous decades. Therefore the use of local stone both in repair and for new build has become a more viable option although the initial cost may be more expensive than imported stones.

4. Government planning policy and guidance for building stone

Mineral Policy Statement 1 (MPS1): Planning and Minerals (CLG, 2006) and associated practice guidance

4.1 Minerals Policy Statement 1 sets out government policy for minerals planning. In terms of building stone the policies aim to

• source mineral supplies indigenously
• recognise the important role that small quarries can play in providing historically authentic building materials in the conservation and repair of historical and cultural buildings and structures.

4.2 Key policy objectives are:

• to encourage re-use of building and roofing stone for the conservation and preservation of historic monuments/buildings
• to assess the need for small-scale extraction for conservation and preservation of historic monuments/buildings.

4.3 Annex B (Natural Building and Roofing Stone) makes reference to the safeguarding requirements for building stone and these are discussed further in the section on safeguarding building stones.

4.4 Supply of building/roofing stone for conservation and restoration should have regard to local, regional and national need for stones for conservation and restoration of England’s historic buildings where aesthetic or technical properties are specified especially by English Heritage because of:

• Proven durability
• Aesthetic/technical properties, especially where building is taking place within older buildings
• Design requirements set out in local design guides etc

4.5 Local planning authorities should identify quarries of importance to the built heritage and where an exact match of stone is not possible, alternatives should be considered.
4.6 Policies and planning conditions should be appropriate to the scale of proposed operations, "building stone quarries tend to be small-scale with fewer impacts; noise, dust etc".

4.7 MPS 1 advocates a flexible approach to long duration of permission reflecting intermittent working. There is potentially scope for using planning agreements limiting extraction to building stone purposes to facilitate long term availability. In terms of restoration and after-use, consideration of the potential for partial restoration before expiry of planning permission to retain future access to supplies of stone is required.

4.8 The practice guide accompanying MPS 1 states that many traditional quarries have closed following a reduction in production due to competition from cheaper man-made materials, increased labour costs and inexpensive imports. Subsequent demand has stabilised.

4.9 The practice guide goes on to set out the main markets served by building stone quarries and that there are currently over 300 active quarries and mines in England producing building stone. However, some of these are worked intermittently. These intermittently worked sites often re-vegetate naturally and can become important sites for nature conservation, thus inhibiting their re-use for quarrying.

4.10 Due to the small-scale and generally slow-working nature of building stone quarries, the local environmental impacts may be significantly less in terms of land-take, noise and dust than other types of quarrying. Traffic levels may be lower as well, although if a centralised processing site is used for several quarries traffic to and from that processing plant may be generated. Access may be an issue at many existing building stone quarries which should be improved where necessary, if a new planning application is submitted.

4.11 Waste material may be suitable for use as an aggregate but some former building stone quarries are now used solely for aggregates, therefore the use of waste materials needs careful consideration.

4.12 A government funded study\(^2\) recommended mineral planning authorities considered identifying ‘heritage quarries’, as suggested by stakeholders and supported by English Heritage. These are often small inactive local quarries which should be safeguarded so that the locally distinctive stone can be used in both restoration and new building projects. It also recommended measures to ensure that building stones are not squandered for inappropriate uses and pointed out the need for further information on regional and local demand, need and scarcity.

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\(^2\) “Planning for the Supply of Natural Building and Roofing Stone in England and Wales” ODPM, March 2004. Symonds Group Ltd. This reviewed and analysed policy and background information building mineral aspects of planning.
South West Regional Spatial Strategy (RSS) Policy

4.13 Although national mineral planning policy (Minerals Policy Statement 1 2006) requires that minerals which are of national and regional significance should be identified and policies for them included in the Regional Spatial Strategy (RSS), the government has recently indicated its intention to abolish the RSS’s) through legislation. However, a recent Court of Appeal has ruled that Council Development Plans would be unlawful if they were based on the government’s stated intention to abolish Regional Spatial Strategies.

4.14 Regional Spatial Strategies (which incorporates Regional Transport Strategies (RTS) are intended to provide a broad development strategy for each region for a fifteen to twenty year period. The RSS also informs the preparation of Local Development Documents (LDDs), Local Transport Plans (LTPs) and regional and sub-regional strategies and programmes that have a bearing on land use activities.

4.15 Following the Panel’s report on an Examination in Public of the Draft RSS, a submission was made to the Secretary of State in early 2001 and the Secretary of State published a revised document with proposed modifications in July 2008. These modifications have not been finalised to date: a further Sustainability Appraisal is being undertaken to test reasonable alternatives to the modifications concerning housing, business and other development.

4.16 The Secretary of State’s proposed modifications relevant to minerals and minerals transport are not fundamental. Therefore it is unlikely that these are likely to change significantly as a result of the additional Sustainability Appraisal.

Update

4.17 In July 2011 the Government published the Draft National Planning Policy Framework. This includes a section on Minerals and makes specific reference to defining Mineral Safeguarding Areas for minerals of national and local importance, including kaolin. The Draft National Planning Policy Statement can be viewed at http://www.communities.gov.uk/planningandbuilding/planningsystem/planningpolicy/planningpolicyframework/

4.18 In addition, the Localism Bill is progressing through Parliament. The aims of the new legislation include decentralising and strengthening local democracy, empowering communities and the introduction of neighbourhood planning. Information on the Localism Bill can be viewed at https://www.gov.uk/government/topics/local-governmentalisation
5. Cornwall local policy development history for building stone

5.1 The Cornwall Minerals Local Plan (CMLP) adopted in 1997 contains planning policies for the development of building stone quarries and related development. The primary aim of the CMLP is to ensure the stable and long term production of the Cornish mining and quarrying industry. Chapter 12 is dedicated to building stone and slate and sets out a policy relating to the re-use of dormant or disused building stone quarries for heritage purposes.

5.2 Following the reform to the development plan system work began on the Cornwall Minerals Development Framework, with an issues and options consultation taking place in 2004 and subsequent preferred options consultation in December 2006. A revised preferred options report was published for consultation in 2008, following changes to guidance on Core Strategies. This document maintained the need for specialist building stone quarries and the principle of heritage quarries was maintained. A summary of the consultee responses to the Cornwall Minerals Core Strategy Revised Preferred Options Report concerning building stone is included at Appendix 1.

5.3 Following creation of the unitary authority for Cornwall in April 2009, minerals planning policy is now being prepared for inclusion in the Cornwall Local Development Framework Core Strategy, although it is anticipated that a specific Minerals Development Plan Document will be prepared following adoption of the Core Strategy.

6. Future needs and likely patterns of supply for building stone

6.1 Encouragement of local distinctiveness is increasing; this will require the use of local stone. However, cheap imports and expensive local alternatives threaten the use of local stone, especially in the current economic climate. The need for new buildings to comply with certain sustainability criteria may also impact upon the use of local stone as will the implementation of new hard landscape particularly in areas of historic importance or regeneration areas such as Hayle and Camborne, Redruth and Pool. In addition the conservation and restoration of historic buildings will also require local stone. However predicting the tonnage of any particular stone needed in the future is very difficult due to variability of the market, existing viable levels of reserve and achievable outputs. The Council is intending to undertake a survey of local building stone and slate producers seeking to ascertain reserves and annual sales of different types of building stone and slate.

6.2 In 2006 a study was commissioned by the Council to identify quarries in Cornwall which are or may become important for architectural and heritage purposes\(^3\). The study identified operations, recently operated

\(^3\) “The Building Stones of Cornwall, Heritage Quarry Analysis, Cornwall Minerals Development Framework, Safeguarding of important building stone quarries in Cornwall” Prof Colin Bristow, 2006
and disused quarries, including those linked to stone used in culturally
important buildings, structures and settlements, by analysing information
about Listed Buildings, and information from the “Buildings of England:
Cornwall”, Pevsner, 1951. A methodology was developed to assess the
each quarry’s potential as a source of stone for heritage purposes, this
involved examining the characteristics of the stone, planning status and
which significant buildings had used the stone in order to ascertain a
‘heritage value’. The Cornwall Minerals Development Framework Report
on Preferred Options, 2006, identified a total of 24 Heritage quarries and
these included elvan, dolerite, granite, slate and serpentine quarries. All
these sites contained stone of a limited distribution and either did not
have extant planning permission for extraction or were classified as

6.3 During 2009 English Heritage commenced a study to identify sustainable
stone resources for building and conservation purposes and to provide
evidence of their importance. English Heritage, BGS and local geologists
worked together to collate a catalogue of local building stones, their uses
and identified significant buildings and villages and their stone sources.
English Heritage’s strategic stone study built upon the work undertaken
by the mineral planning authority in 2006.

7. Safeguarding the resource and associated infrastructure for building stone

7.1 It is considered important to safeguard stone associated with Cornwall’s
historic buildings/structures and with vernacular building styles.

7.2 Granite is found in extensive areas within Cornwall and the South West
region. Although it used as a building stone it is not considered to be a
scarce resource and safeguarding could be focused on existing quarries
and “heritage” quarries. Within or associated with the granite areas are
minerals of notable and distinctive characteristics, such as luxullianite
and elvan. These are considered to be scarce as they occur in limited
areas within the County and should be safeguarded where possible.

7.3 There are relatively limited deposits throughout Cornwall of Greenstone
(basic igneous rocks such as basalt, dolerite and gabbro) which can be
used as a building material. Appropriate deposits should be safeguarded.

7.4 Appropriate deposits of serpentine and picrite should be safeguarded.
These minerals are quite scarce and are predominantly used now as an
ornamental stone.

7.5 As sandstone is interbedded with shale, slate and siltstone, the
opportunities to exploit it as a building stone are limited, therefore a
sandstone quarry with beds of sufficient depth and frequency to be
worked as a building stone could be considered to be scarce and worthy
of safeguarding

7.6 Quality slate for roofing and architecture is more restricted and can
therefore be considered to be scarce and worthy of safeguarding.
8. Key considerations for planning policy development for building stone

8.1 Consideration 1 – To safeguard important and rare building stone deposits for future use and prevent their direct and indirect sterilization by other development.

8.2 Consideration 2 – To maintain a sustainable and efficient supply of building stone to meet the needs for locally distinctive building materials. This may require the re-opening of disused quarries in sensitive locations in appropriate circumstances (eg for small scale or short term working) where harm to the environment and amenity can be mitigated satisfactorily.
Appendix 1


Since the reform of the planning system (as required by the Planning and Compulsory Purchase Act 2004), work has been undertaken to replace the Cornwall Minerals Local Plan. Initially, Cornwall County Council was working towards the production of a separate Cornwall Mineral Development Framework. However, since the amalgamation of the former County and District/Borough Councils for Cornwall to form the unitary Cornwall Council minerals policy for Cornwall will be included in the Cornwall Local Development Framework.

To progress this work consultations/ stakeholder participation has been undertaken to date on the following publications:


Following the consultation on the Cornwall Minerals Development Framework: Core Strategy Revised Report on Preferred Options, 2008, a report detailing the comments received, Mineral Planning Authority considerations and officer recommendations was considered by Cornwall Council’s Cabinet, Planning Policy Advisory Panel in November 2009.

http://democracy.cornwall.gov.uk/Published/C00000663/M00002120/$$ADocPackPublic.pdf

Comments received from key BUILDING STONE stakeholders and others about BUILDING STONE and related issues have been transcribed in detail in this Appendix.

In summary, policies for safeguarding and permitting quarries to provide stone for locally distinctive development (especially heritage quarries) were well supported. Restoration schemes should contribute towards biodiversity and geodiversity.

Table 6.1a Issues, Problems and Challenges to be considered in developing the Core Strategy for Minerals in Cornwall
Mr Langdon

Comments
You cite as a problem 'creation of locally distinction buildings will require access to traditional building materials'. On a greenfield site this will not commonly be a problem. A typical tract of Cornish land which may have undergone above ground removal of surface stone, will usually nevertheless contain lumps of soil-embedded stone of sufficient quality and variety to construct a two-storey dwelling. If stone after sorting and grading is insufficient for any particular purpose it can be augmented or substituted by sub-soil, itself usable as mortar, plaster, screed, render, as cob, or as rammed-earth. The 'average' site will likely yield stone suitable for falling walls (min of one flat surface) for raising walls; for quoining (min 2 rt-angled faces); for flooring (fairly regular tamped edgeways); for cobbled paths and hard standings etc. Roofing stone will not likely be available from dug sources. The obvious alternative is site-dug turf on extra site thatch on hedgerows - cot spars or from coppices. Larger timber is available from local woodlands. The challenge is to make people aware of the fact that the building materials they require are beneath their feet on any greenfield development site, without any recourse to quarrying.

Suggested amendments
None.

MPA considerations
Noted that this may be the case for buildings set in rural locations or those within larger plots. However, in most cases the use of "dug stone" is likely to be considered impracticable (e.g. other than for single dwellings or other buildings, to be constructed within large plots where loose stone is available on the surface or within the soil), particularly given the prevalence and policy preference of grouping buildings often to a high density within urban areas and villages. The Council does encourage sustainable construction through its statutory functions, but also through its imminent publication of Guide to Sustainable Building in Cornwall which is supportive of the comments made by Mr Langdon.

Officer recommendations
Information about traditional building techniques and the Council’s stance on sustainable construction should be included within the Core Strategy evidence base.

Table 6.1b Issues, Problems and Challenges to be considered in developing the Core Strategy for Minerals in Cornwall

Mr Langdon

Comments
Accessing traditional building materials on any greenfield development site which has received planning permission, will not presumably be a problem using the site-dig method. This traditional method of gleaning building materials relies on simply digging the ground on site of proposed structure
retaining the turf for roofing on other purpose; topsoil for/as growing medium; subsoil for use as mortar, plaster, render, screed, cob, or rammed earth; stones for use as building material after sorting into usage categories. There is no need for any further quarrying of general building stones. Huge quantities are daily discarded on landfill sites throughout Cornwall, rubble stone being entirely unappreciated and yet it constitutes the single most significant contribution to Cornwall's architectural heritage. The challenges are; to spread knowledge of traditional stone-dig protocol, the only method by which an unrenuwarable material can be used renewably or be available for subsequent recycling; to intercept stone & reusable subsoil destined for landfill; to encourage landfill operators to reclaim this resource; to facilitate retrieval from restored & reclaimed landfills.

**Suggested amendments**

**MPA considerations**
It is not accepted that materials for the projected growth in development in Cornwall can be sources from "site-dug" and re-use of materials alone.

In most cases the use of "dug stone" is likely to be considered impracticable (e.g. other than for single dwellings or other buildings, to be constructed within large plots where loose stone is available on the surface or within the soil), particularly given the prevalence and policy preference of grouping buildings often to a high density within urban areas and villages.

The Council does encourage sustainable construction through its statutory functions, but also through its imminent publication of Guide to Sustainable Building in Cornwall which is supportive of the comments made by Mr Langdon.

**Officer recommendations**
No changes are required in response to these comments.

**Table 8.2 Spatial strategy for building, roofing and ornamental stone in Cornwall**

**Cornwall AONB Partnership**

**Comments**
paragraph 8.1.9 - Wording does not do enough to identify the "exceptional circumstances" which might encourage permission in the AONB.

para 8.1.11 - It is recognised that working for building, roofing and ornamental stone should not be precluded in the AONB, but there should be a robust process to ensure that the requirement to conserve and enhance the areas natural beauty is respected. With regard to larger operations the wording "not be encouraged" does not reflect, in terms of strength of wording, the potential harm these forms of development could bring the AONB.

Option 2 - Further consideration needs to be given to "small operations". This approach is justified in the context of scarce building stones, but for general
building stones it needs to be demonstrated that "exceptional circumstances" apply.

Suggested amendments
None.

MPA considerations
Paragraph 8.1.9 - these exceptional circumstances are set out in Minerals Policy Statement 1: Planning and Minerals (Paragraph 14).

Paragraph 8.1.11. Minerals Planning Statement 1: Planning and Minerals : Practice Guide (Paragraphs 95 to 110) provides a helpful guide to the nature of operations for building and roofing stone operations which tend to have lesser impacts upon the environment and amenities than other types of quarry. Consider an amendment to text to address concerns.

Officer recommendations
Include a section in the evidence base regarding the exceptional circumstances where major minerals development may be permitted in Areas of Outstanding Natural Beauty which are set out in Minerals Policy Statement 1: Planning and Minerals (Paragraph 14) and add a phrase to the effect of "or permitted unless appropriate mitigation measures are adopted".

CPR Regeneration

Comments
Option 2 is generally supported as providing the greatest potential benefit to the county.

Suggested amendments
None.

MPA considerations
The support of Camborne Pool Redruth Regeneration is welcomed.

Officer recommendations
No change.

Royal Society for the Protection of Birds

Comments
Preferred Spatial Strategy for building, roofing and ornamental stone for Cornwall - Option 2

Policy 2: This Option will have an impact on a number of SSSIs or sites with BAP habitats. It is unclear what the area of the protected area of habitat is compared to the other options. The RSPB recommend that the area of SSSI or BAP habitats be calculated for each option.

Suggested amendments
Mitigation: The RSPB has the following recommendations to mitigate the impacts of this policy:
*Habitat recreation and restoration targets should be set at the application stage as identified in the relevant SNA.

*Compensation may also be required to offset losses of habitat outside protected areas.

**MPA considerations**

The spatial strategy conveys a broad concept and it is not anticipated that the strategy would set out all the mitigation measures relating to all the impacts of potential developments which would have to be assessed on a case by case basis. However, the comments and suggested changes are very constructive, and it is intended to incorporate these into the detailed assessment within the Sustainability Appraisal as well as within the "Design Operation and Reclamation of Mineral Sites in Cornwall" Supplementary Planning Document. The current overlap between mineral workings and key designations is recorded in the Cornwall Annual Minerals and Waste Monitoring Report 2007/2008 through Local Output Indicator (LOI5).

**Officer recommendations**

There should be no change to the Preferred Option (which is for the increased export of secondary aggregates). However, the constructive comments made should be incorporated into the detailed assessment within the Sustainability Appraisal and as well as within the "Design Operation and Reclamation of Mineral Sites in Cornwall" Supplementary Planning Document. In addition, they should be used when formulating the detailed policy for this area in the ensuing Mid Restormel (Clay Country Action Plan).

**Cornwall RIGs Cornwall Wildlife Trust**

**Comments**  
8.1.13 Table 8.2 Option 1

**Object**

RIGS favours option 1 because it better reflects the close relationship between the built and local natural environment.

**Suggested amendments**

None.

**MPA considerations**

Option 2 is the preferred option of the Mineral Planning Authority. Option 1 is considered to be unrealistic, as a small number of large quarries already exist which serve both local and wider markets (and which provided important employment opportunities in rural areas) and these complement a range of smaller existing/potential future quarries which could supply local and niche markets.

**Officer recommendations**

No change.
Mr Langdon

Comments
My involvement with conservation and with waste recycling has impressed upon me the extent of wastage of all categories of material, usable rubble stone being no exception. In fact it is only within the last two decades that it has become customary to reclaim dressed stone, and then only if it is sold or 'placed' by demolition contractors before the time line allowed for clearance of site. Once at landfill such stone if it is reclaimed at all; it is generally crushed into hard aggregate or as a course bulk fill material along with concrete bricks etc.

Rubble stone is usually just buried and yet that is the stone that comprises most circa pre-19th century Cornish Buildings and several newer ones. People have it but builders in general aren't using it.

Given the potentially widespread availability of general building stone on hitherto undeveloped sites available by the site-dig method, i.e. by retrieving soil-embedded stone but without disturbing bedrock, and the wide spatial spread of restored, reclaimed and active landfill sites - Please take account of these in your range of options.

Suggested amendments
None.

MPA considerations
The mineral planning authority wholehearted agrees with recycling of construction and demolition waste and the reclamation of building stone, and provision is made in Policy 15 for the co-location of facilitating development at waste disposal sites and operational quarries.

Officer recommendations
No change to the existing policy is needed.

Policy 2 Preferred spatial strategy for building, roofing and ornamental stone in Cornwall

Government Office for the South West (GOSW)

Comments
These policies use the phrase "where local circumstances are appropriate". This policy wording is unclear and imprecise and should be clarified to make clear to the reader exactly what is intended.

Suggested amendments
None.

MPA considerations
Noted. The policy should be reviewed and its precision should be enhanced. e.g. “where local circumstances are appropriate” could be replaced with "where
there are no significant adverse impacts upon the environment, amenity and highways”.

**Officer recommendations**
The policy should be reviewed to eliminate the phrase “where local circumstances are appropriate”.

**North Cornwall District Council**

**Comments**
Minerals Development Framework - Core Strategy Revised Preferred Options

Policy 2 Preferred Spatial Strategy for Building, Roofing and Ornamental Stone for Cornwall

All options envisage that scarce building stones can only be worked where they occur. For the extraction of general building stone, development would be favoured outside the Area of Outstanding Natural Beauty (AONB) and the Cornwall and West Devon Mining landscape World Heritage Site (WHS)

**Suggested amendments**
None.

**MPA considerations**
Noted.

**Officer recommendations**
No changes are required in relation to these comments.

**South West Regional Assembly**

**Comments**
Policy 2 Building, Roofing and Ornamental Stone for Cornwall

Spatial Strategy Option 2 for Building, Roofing and Ornamental Stone in Cornwall is supported. With regard to building stone quarries we would only like to suggest liaising with Natural England and English Heritage to discuss the prospect of future working of sites, as required by MPS1. When planning for new sites the proximity principle should be taken into account, and travel distances minimised when materials are to be transported to the point of use.

**Suggested amendments**
None.

**MPA considerations**
The support for Option 2 is welcomed. Natural England and English Heritage have been consulted about the Report on Preferred Options and will be consulted when a development proposal is made which affects an old building stone source to provide an opportunity for its significance to be assessed. The policy on sustainable transport of minerals should include provision for the minimisation of travel distances where local markets are being served.
Officer recommendations
"and where possible, travel distances should be minimised where extraction is serving local markets" should be added to Policy 6 on the Sustainable Transport of Minerals. Paragraph 8.1.13 which deals with the use of waste rock at building, roofing and ornamental stone quarries for aggregates should cross refer to the policy on the sustainable and efficient supply and use of minerals.

Cornwall RIGs Cornwall Wildlife Trust

Comments

8.1.11 Building, Roofing and Ornamental Stone

Support

This view is realistic and supported by RIGS.

Suggested amendments
None.

MPA considerations
The support is welcomed.

Officer recommendations
No change.

Cornwall RIGs Cornwall Wildlife Trust

Comments

8.1.8 Bullet point 2 - Object

This does not do justice to the diversity of building stones in Cornwall. There is no mention of greenstones (Helston, St Ives etc.) or serpentines (Lizard).

8.1.8 Bullet point 3 - Object

This statement as it stands is misleading. That general building stones such as granite, coarse slate and sandstones are used across the county for building stones may be true of modern practice but it is not true in the historic sense. Most local buildings/hedges are diverse and were built from locally available stone, creating local character.

8.1.8 Bullet point 4 - Object

Why is serpentine qualified with (serpentinite and, confusingly, picrite)? Also, why is serpentine referred to as a freestone? Freestone is a building stone term, but the paragraph goes on to say that serpentine is used for carving and ornamental purposes. Serpentine as a building stone has never been scarce on the Lizard, although there are currently no working quarries.

Suggested amendments
None.
MPA considerations
Noted.

Officer recommendations
The first bullet point should be amended to read: "Cornwall has a huge range of building stone which is quarried for special architectural and artistic qualities and which is an important resource for Cornwall's environment and economy".

Restormel Borough Council

Comments
The Spatial strategy here is an 'intermediate' one, neither highly dispersed nor concentrated. There will be a few large workings with several smaller ones meeting local need.

Observations
This again would appear to be the sensible option keeping open the option of specialist workings with several smaller ones meeting local need.

Suggested amendments
None.

MPA considerations
Noted.

Officer recommendations
No change.

Cornwall AONB Partnership

Comments
Policy 2: Approach to "Scarce building, roofing and ornamental stones" quarries needs further explanation in the context of the national policy advice for AONB's, as outlined in paragraph 8.1.8. In particular with regard to the wording "where the proposed scale and duration of extraction is considered to be appropriate.

Suggested amendments
None.

MPA considerations
Minerals Planning Statement 1: Planning and Minerals : Practice Guide (Paragraphs 95 to 110) provides a helpful guide to the nature of operations for building and roofing stone operations which tend to have lesser impacts upon the environment and amenities than other types of quarry.

Officer recommendations
Include further clarification about "where the proposed scale and duration of extraction is considered to be appropriate" within the text.
Table 8.10 options for safeguarding infrastructure associated with the production of building stone/stone products

South West Regional Assembly

Comments
Building, Roofing, and Ornamental Stone Production and Associated Infrastructure

With regard to Safeguarding infrastructure and preferred Option 2, we have no evidence which would indicate otherwise and we therefore support this option.

Suggested amendments
None.

MPA considerations
The support is noted.

Officer recommendations
No change is required in relation to these comments.

Policy 13 Heritage Quarries

Cornwall AONB Partnership

Comments
8.3.16 Wording needs altering, it is not the quarries that "gave the built environment much of its local character", but the material derived from them.

Policy 13 - clause (i) the wording "outweighs any material harm such extraction might cause to matters of acknowledged importance" needs more explanation in the supporting text.

Suggested amendments
None.

MPA considerations
Address comments as per recommendation.

Officer recommendations
Amend 8.3.16 to address concern. Add to the text in 8.3.19 to qualify that support will be given where the need for the stone outweighs any material harm such extraction might cause to matters of acknowledged importance. Retain the principles of the policy in a revised combined policy.

Historic Environment Service, Environment & Heritage

Comments
We welcome the inclusion of policy 13.

Suggested amendments
None.
MPA considerations
Noted.

Officer recommendations
No changes are required in relation to this comment.

The principle of this policy should be retained within the Cornwall Minerals Development Framework.

Highways Agency

Comments
The Agency would welcome reference to the need for designated heritage quarries to be acceptable in highway terms.

Suggested amendments
None.

MPA considerations
The policy currently refers to "small scale and/or short term extraction".... "subject to suitable assessment" and where a "need" for the building stone which "outweighs any material harm such extraction might cause to matters of acknowledged importance". Reference to "suitable assessment" and "material harm to matters of acknowledged importance" are all embracing terms aimed to encompass assessment of highways issues. The background text should explain the breadth of "matters of acknowledged importance as well as the nature of suitable assessments.

Officer recommendations
Clarification should be incorporated in the background text and evidence base to the Cornwall Mineral Development Framework Core Strategy concerning the breadth of "matters of acknowledged importance" as well as the nature of "suitable assessments" which makes explicit the need for proposals to be acceptable in highway terms.

Cornwall RIGs Cornwall Wildlife Trust

Comments
Policy 13 - Development Management policy: Heritage Quarries

Object
The fact that there are 5000 plus abandoned quarries and delphs in Cornwall, which potentially form a resource in their own right, should be acknowledged (Spalding et al 2000).

Suggested amendments
None.

MPA considerations
Agree.

**Officer recommendations**
Insert "In fact, there are more than 5000 abandoned quarries and delphs in Cornwall which potentially form a resource" after the first sentence in 8.3.16.

**Cornwall RIGs Cornwall Wildlife Trust**

**Comments**
Policy 13 - 8.3.17 Development Management Policy: Heritage Quarries

**Support**

The introduction of "Heritage Quarries" is welcome. Quarries which produced stone for historic building or monument e.g. Cataclews, would also fall under the selection criteria for County Geology Sites.

**8.3.17 - Object**

The use of the term "small" in the first paragraph is not appropriate for all potential Heritage Quarries

**Policy 13 - overall support**

Cornwall RIGS supports the policy on Heritage Quarries.

**Suggested amendments**
None.

**MPA considerations**

The support is welcomed.

**Qualify the use of the term "small" in 8.3.17.**

**Officer recommendations**
The word "predominantly" should be inserted before "small disused historic quarries" in 8.3.17.

**Mr Langdon**

**Comments**

Whilst I appreciate the concerns and desirability of conserving Cornwall’s historic built heritage, it should be recognised that quarrying has only been extensively significant for the last 200 years approx. Buildings older than that were generally built using site-dug stone, either stone existing on the surface or embedded in the soil layers. Recourse to quarrying would generally only be resorted to for the construction of very important buildings such as for instance, Cathedrals and the carved stone elements in churches. Put simply general building stone could be 'dug', dimension stone was obtained by quarrying. Heritage Quarries therefore have a role only in so far as they can provide such dimension stone for existing historic buildings. New buildings can be constructed to completely harmonize with their environs by using site dug stone
and clay on hitherto substantially undisturbed sites or by using excavated material of similar type and composition which has at some time been landfilled, previously developed sites.

An alternative sustainable method of new construction is timber framing sourced from locally grown hardwoods with cob panel infill; or using cob or rammed earth as a building material in its own right.

Please therefore impose a prescription against the reopening of inactive 'Heritage' Quarries.

**Suggested amendments**
None.

**MPA considerations**
Mr Langdon's comments about the historic source of building materials is helpful and will be further explored within the evidence base which supports the development of heritage quarries. However, in most cases the use of "dug stone" is likely to be considered impracticable (e.g. other than for single dwellings or other buildings, to be constructed within large plots where loose stone is available on the surface or within the soil), particularly given the prevalence and policy preference of grouping buildings often to a high density within urban areas and villages. The Council does encourage sustainable construction through its statutory functions, but also through its imminent publication of Guide to Sustainable Building in Cornwall which is supportive of the comments made by Mr Langdon.

**Officer recommendations**
Information about traditional building techniques and the Council's stance on sustainable construction should be included within the Core Strategy evidence base.

**English Heritage**

**Comments**
A commitment is welcomed to the inclusion and use of a policy for Heritage Quarries and their inclusion in a Development Plan Document.

**Suggested amendments**
None.

**MPA considerations**
The support is welcomed.

**Officer recommendations**
No change is required in relation to this comment.

**Policy 25 Working building, roofing or ornamental stone within the Area of Outstanding Natural Beauty and World Heritage Site**

**Cornwall AONB Partnership**
Comments
Where paragraph 8.3.47 refers to "exceptions" a further sentence should be added to state that- "in addition, it would need to be demonstrated that the primary purpose of the AONB, that is the need to conserve and enhance its natural beauty, is adhered to".

Clause (ii) need to add that stone "could not be sourced elsewhere".

Suggested amendments
None.

MPA considerations
The suggestions are accepted in principle.

Officer recommendations
Address the concerns within a revised combined policy and associated text.

Highways Agency

Comments
The Agency supports the need for all minerals development proposals to include a comprehensive assessment of potential impacts on the local and strategic highway network. Therefore it is important that policies 23 to 27 covering different types of mineral extraction and processing should include criteria to ensure that negative impacts on these networks are avoided.

Suggested amendments
None.

MPA considerations
Noted. The need for site-specific applications to include comprehensive assessments of the potential impacts on the local and strategic highway networks is critical and is fully accepted. However, this matter will be addressed elsewhere in the Cornwall Minerals Development Framework Core Strategy policies and in the "Design, Operation and Reclamation of Mineral Sites in Cornwall" Supplementary Planning Document. It is not necessary, therefore, to re-iterate the policy relating to the sustainable transport of minerals within other policies of the Cornwall Minerals Development Framework. (In relation to any proposed development, the Policies of the Development Framework, and complementary regional and national policies should be considered as a whole, where each policy must be balanced in the context of all other policies).

Officer recommendations
The need for minerals development proposals to include transport assessments, and where appropriate, travel plans, together with information about the criteria to avoid negative impacts on the networks, should be addressed elsewhere in the Cornwall Minerals Development Framework Core Strategy and in the "Design, Operation and Reclamation of Mineral Sites in Cornwall" Supplementary Planning Document.

English Heritage
**Comments**
We welcome this policy.

**Suggested amendments**
None.

**MPA considerations**
The support is welcomed.

**Officer recommendations**
No changes are required in relation to this comment.

**Historic Environment Service, Environment & Heritage**

**Comments**
We welcome the inclusion of Policy 25 Development Management Policy 'Working building, roofing or ornamental stone within the Area of Outstanding Natural Beauty and World Heritage Site'.

**Suggested amendments**
None.

**MPA considerations**
The support for this policy is welcomed.

**Officer recommendations**
The principles of this policy should be retained within an amalgamated policy for building, roofing and ornamental stone.

**Mr Langdon**

**Comments**
If disturbance of bedrock is intended, it should not be permitted.

Alternative sources of supply include:- on site digging of soil borne/soil embedded stone, architectural salvage, restored, reclaimed or active landfill sites, materials substitution i.e. roofing slate made from slate dust bound with epoxy (marley), roofing slate closely resembling Cornish Slate made from rubber reclaim.

**Suggested amendments**
None.

**MPA considerations**
Whilst the mineral planning authority supports the re-use and recycling of building materials and the use of alternative building products, it acknowledges the need for ongoing extraction of primary building, roofing and ornamental stone extraction to meet society’s needs. Therefore, it does not accept Mr Langdon’s views that primary extraction of bedrock should not be permitted.

**Officer recommendations**
An amalgamated policy should be formulated which strengthens and gives greater prominence to the prudent, efficient and sustainable use and supply and minerals.