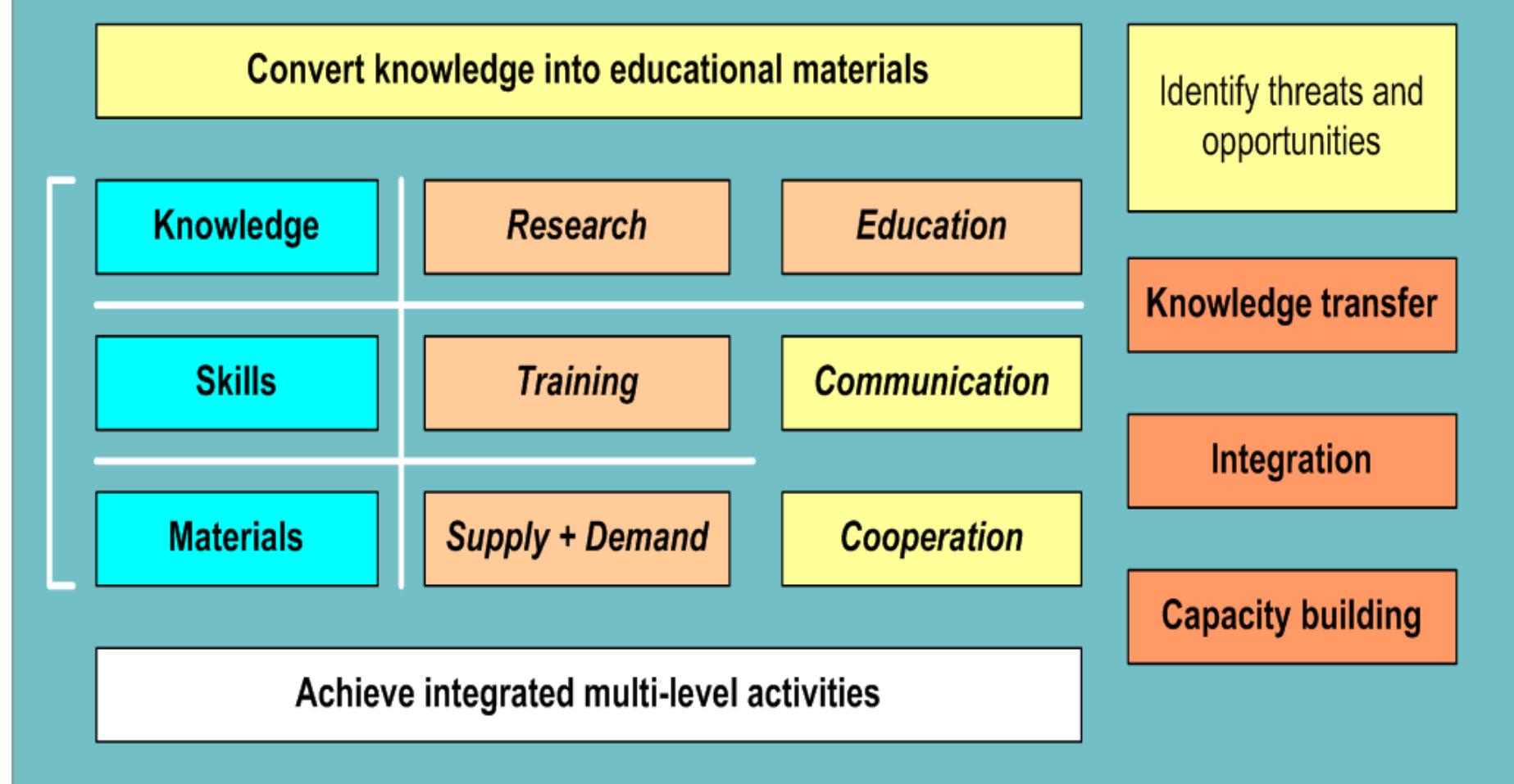


COTAC Insight 2k:

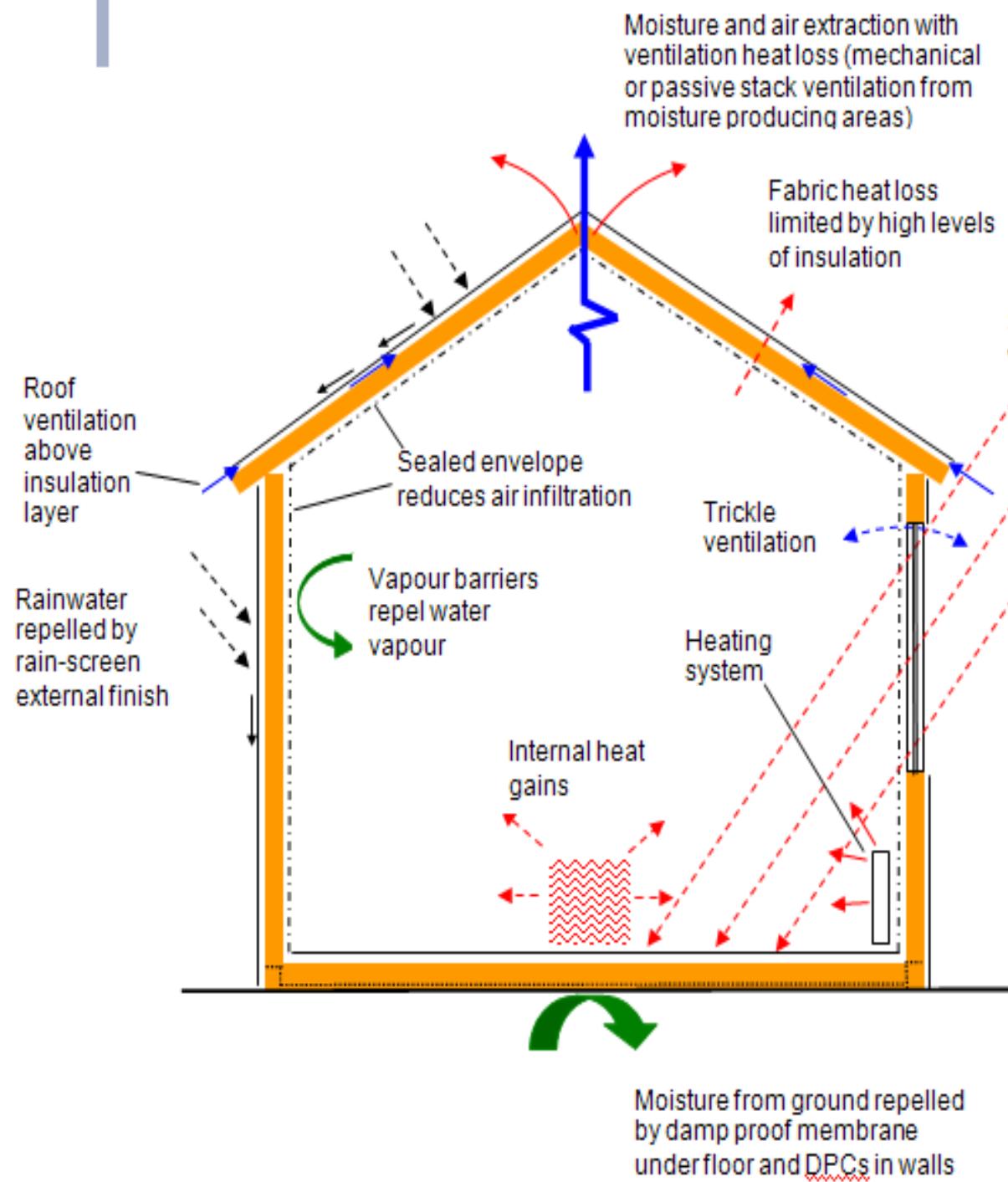
The Need to be Aware of the Built Heritage

Exploring ICOMOS Education and Training Guideline (k): Give expert advice on maintenance strategies, management policies and the policy framework for environmental protection and the preservation of monuments and their contents, and sites

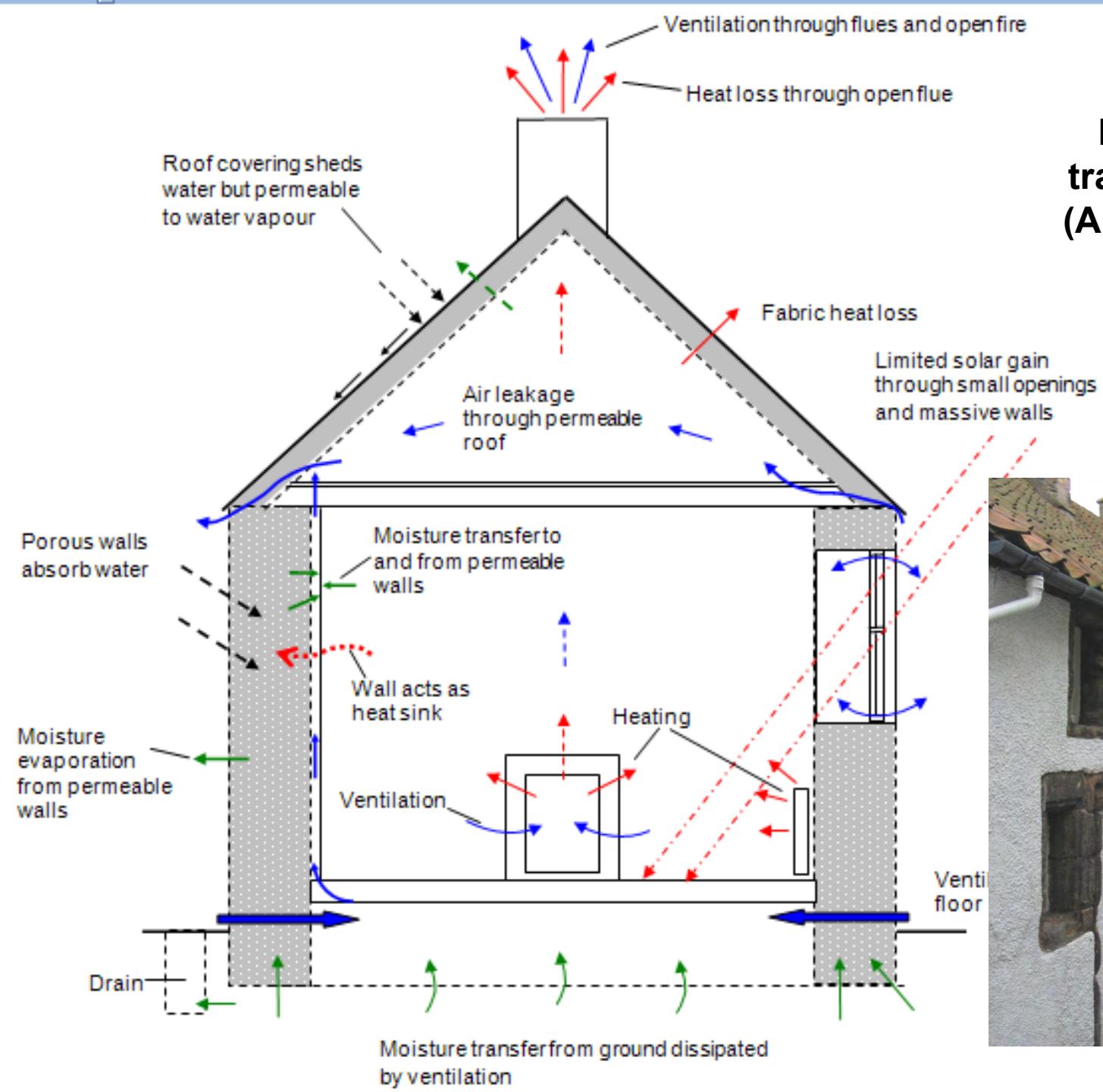


Integration of practical considerations should underpin any approach when offering advice on management of maintenance strategies and policy direction. Dealing with built heritage requires integration of a number of key factors within a multi-level framework set against a variety of threats and opportunities; all requiring good communication and cooperation. With some 6 million traditionally constructed buildings in existence across the UK much information may need to be relearned to deal with them effectively in the future.

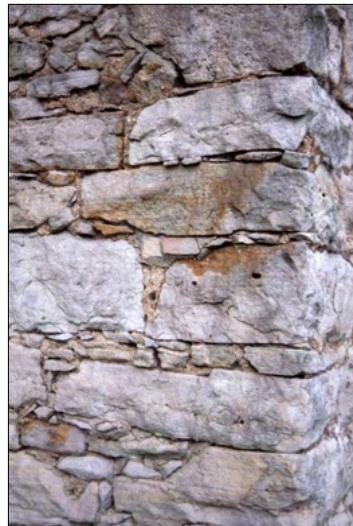
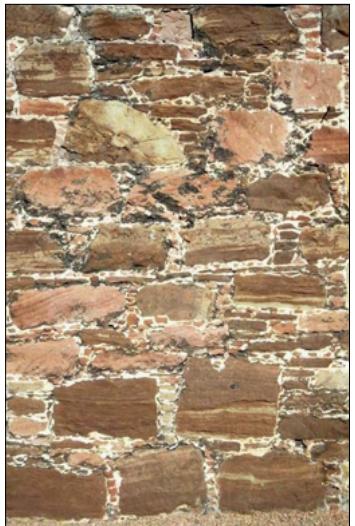
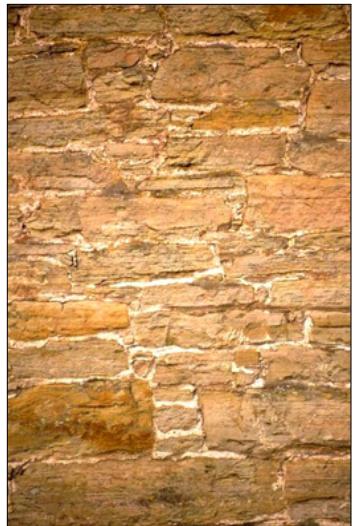
Performance of a modern building (Hermetically sealed)



Performance of a traditional building (A breathing entity)





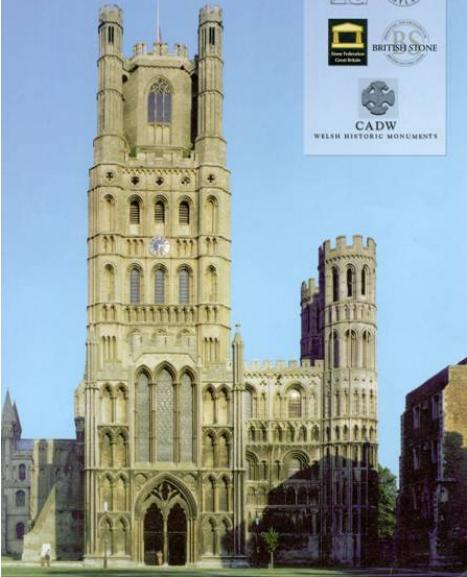


Considerable geological diversity exists across the UK; such multiplicity in available stone is reflected in regional diversity of traditionally constructed buildings. Each geological variant requires an understanding of how well it has performed and how its inherent qualities contribute to the sense of a place through indigenous colour, texture and how it was used.



Masonry buildings in particular can suffer from a variety of serious problems, including significant surface erosion and foundation settlement. Total loss may require adjacent premises to be temporarily supported until a more permanent solution can be found. Numerous factors need to be considered depending on the severity of each circumstance. Finding relevant information about any affected material is essential.

Building Stone Resources of the United Kingdom



A PHOTO USED WITH THE PERMISSION OF A MEMBER OF STAFF AT BORIS AND MONICA'S

Caithness & Orkney

The sedimentary rocks of Caithness and Orkney belong to the Old Red Sandstone strata which were deposited during the Devonian period, some 400 million years ago. They form a massive continuous mass of rock stretching from the northern tip of Scotland down to the north coast of Caithness and the whole of Orkney. The rocks are dominated by fine grained, siliceous sandstones, siltstones and mudstones, although conglomerates occur in the basal parts of the succession.



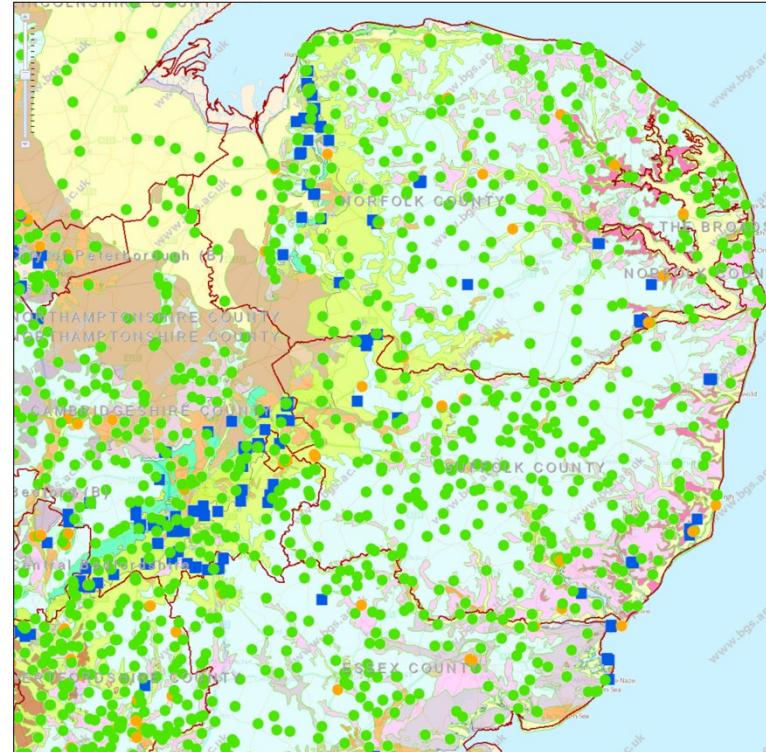
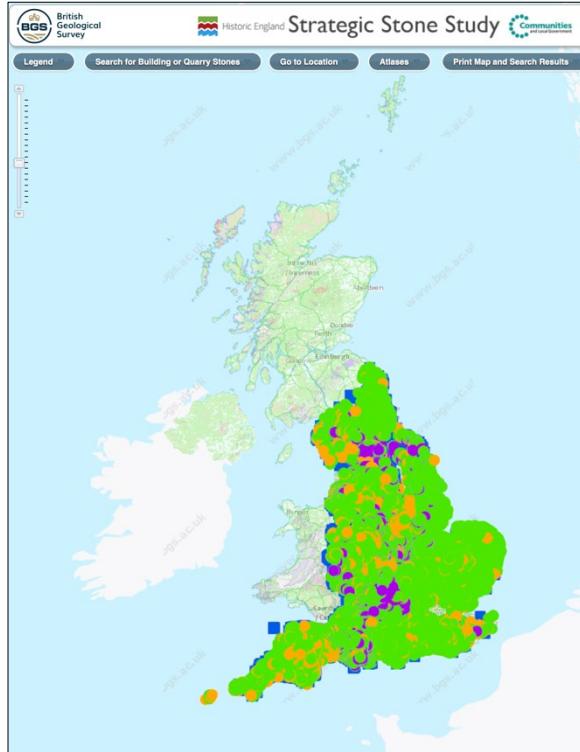
Caithness Flagstone is highly variable, with bedding plane joints. The rock splits very easily along these natural bedding planes and is found in layers rich in mineral and organic material. This makes it relatively easy to quarry, producing a suitable material for building and paving.

This fundamental geological property influences the way the stone can be used, and is very strongly reflected in the design of the town.

Outcrop of Caithness Flagstone, showing how the geological form is reflected in the building style. (Fisherman's huts at Skippi Gres, Brough Head, Orkney).

(See 17. A specimen demonstration page from a popular Building Stones of Scotland publication illustrating the location of quarries and building stone in the Caithness & Orkney area. BGS and Images: British Geological Survey © BGS 2011)

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Providing an overview of quarry locations and their influence, the *Building Stone Resources of the United Kingdom Map* was published by the British Geological Survey as a joint venture with Historic Environment Scotland and other principle heritage and industry bodies. See:

<https://www.historicenvironment.scot/archives-and-research/publications/publication/?publicationId=94442e91-ccac-4ba5-935e-a5ca00fee02c>

Specifically covering England, the *Strategic Stone Study*, is a joint initiative between the British Geological Survey and Historic England. Its GIS application allows user to investigate the quarrying of buildings stones and their use by local authority area. Overlying the Geological map, the detailed County Atlases offer additional information about building stones within each area whilst locating relevant villages, buildings and the quarries. See:

<http://mapapps.bgs.ac.uk/buildingStone/BuildingStone.html>

These, and many other regional sources, provide relevant technical information to assist in offering advice.



Geological diversity also determines regional diversity in the material, colour and texture of traditional roof coverings. Combined with the essential function of maintaining a weather-tight cover, a fundamental understanding of the application of appropriate craft skills is also required in offering guidance to ensure longevity of the various techniques that were adopted.



ROOFING TRADITIONS IN BRITAIN AND IRELAND

A photograph of a small, round stone building with a thick, rounded roof covered in traditional stone slates. The building appears to be a well-preserved historical structure.

Holy Well, Strand, Co Down Ireland. Mass mortar roof formed on wattle like work.

We of the long term, we who have faith in the future, we who play our minor role in the eternal drama of the significant stone, which will last eternities without us, we who want to know what our small part of forever feels like.

Philip Terman

- [STONE ROOFING ASSOCIATION](#)
The history, geology and use of stone slates or tiles/stones.
- [HISTORIC ROOFING IN BRITAIN AND IRELAND](#)
Traditional slate, stone and tile roofs. The materials and methods of the British Isles.
- [ENGLISH STONE FORUM](#)
Supporting the production and use of English building stone.
- [ECONOMIC HISTORY OF WELSH SLATE](#)
Article on the Welsh slate industry written by Dylan Pritchard MA FSS of the University of Wales at Bangor for Quarry Managers Journal between 1942 and 1945

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GEOLGY

- [Stratigraphy of the tilestones and their locations](#)
- [Stone Slate Tour. Introduction: Stone-slate geology](#)
- [Tilestone geological map of England](#)
- [Rocks and climate](#)
- [Cretaceous - Wealden](#)
- [Jurassic](#)
- [Permian and Triassic](#)
- [Carboniferous](#)
- [Devonian - Old Red Sandstone](#)
- [Silurian; Pridoli - The Tilestones](#)
- [Ordovician](#)

STONE ROOF WORKING GROUP

- [A template for regional stone roofing guides](#)
- [Mineral Planning Guide](#)
- [Stone roof conservation best practice Advanced notice](#)

STONE ROOFING ASSOCIATION

- [Appearance of stone slates](#)
- [Selecting a Stone Slate](#)
- [Slate weights and roof loadings](#)
- [Manufacturers - Limestone](#)
- [Manufacturers - Sandstone](#)
- [Members](#)
- [Testing stone slates](#)
- [Testing metamorphic slates](#)
- [Suppliers of pegs, laths etc](#)
- [Search UK slate and stone roofing websites](#)

LIBRARY AND OFFPRINTS

- [Bibliography](#)
- [Glossary of Stone Slate Roofing pdf download](#)
- [Roofing Materials Through the Ages T Eastwood](#)
- [Northamptonshire Slatestones Dr D Sutherland](#)
- [Halifax Stone Roofs Thomas F Ford](#)
- [Caithness Flagstones Cramton & Carruthers](#)
- [Collyweston slate making in 1875 Judd and Woodward](#)
- [Working the Elland Edge Flags Walton](#)
- [Rossendale stone slates Arthur Baldwin](#)
- [Stone tiles or slates H.R. Woodward 1894](#)
- [Country Contentments M Westerling](#)
- [Gauging sticks](#)
- [Links](#)
- [Copyright](#)
- [Observations at Box in 1722 Woodward J](#)
- [Books on slate and stone roofing](#)
- [Stone roofing in NW Clare, Ireland](#)
- [Guide to Horsham stone roofing Updated August 2009](#)

HISTORIC ENGLAND (Formerly English Heritage)

- [Historic England Home](#)
- [English Heritage Transactions vol 9 Stone roofing](#)
- [English Heritage Transactions Stone Roofing pictures](#)
- [The Roofs of England](#)
- [Stone slate technical advice note](#)
- [Stone Slate National Briefing Report](#)

OTHER INFORMATION

- [Slate and flag fences](#)
- [Plumgate](#)

Establishing relevant technical information about the various materials used in roofing is equally important when considering what advice might be given regarding their maintenance and future performance. The Stone Roofing Association and its established links offer a ready source of material whilst other sources provide information of clay tile applications. See:

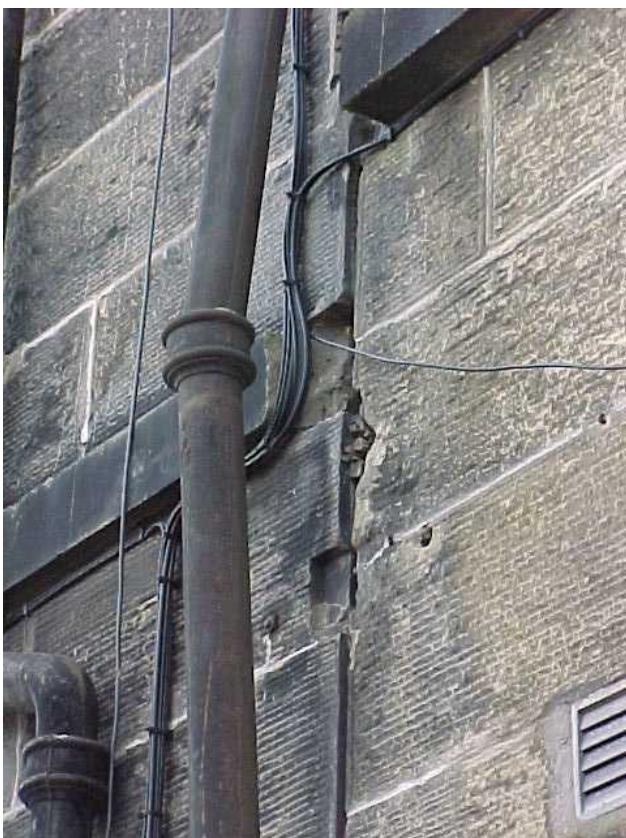
http://www.stoneroof.org.uk/Traditional/Roofing_traditions.html

<http://www.stoneroof.org.uk/cnts.html>

<https://www.buildingconservation.com/articles/claytile/claytile.htm>

Understanding the skills required in undertaking roofing work is as important and varies dependant upon the materials used.

But, as with all building elements, roofing work is also prone to damage during its operational lifetime, creating potentially dangerous situations at high levels with loose or dislodged elements which could easily fall on bystanders below. Here, a condition requiring regular inspection and immediate remedial action is called for when advice is offered.



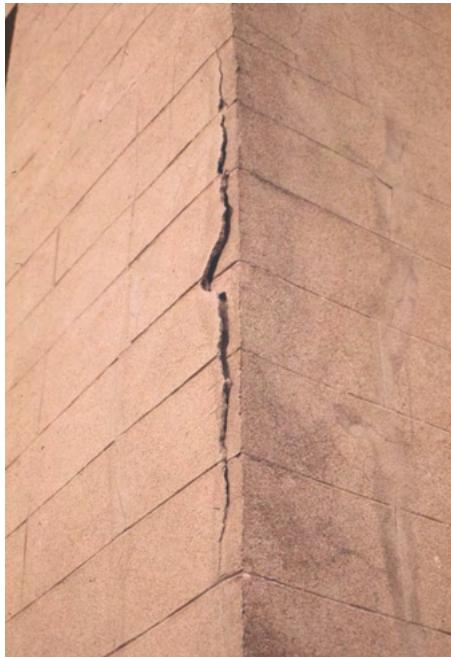
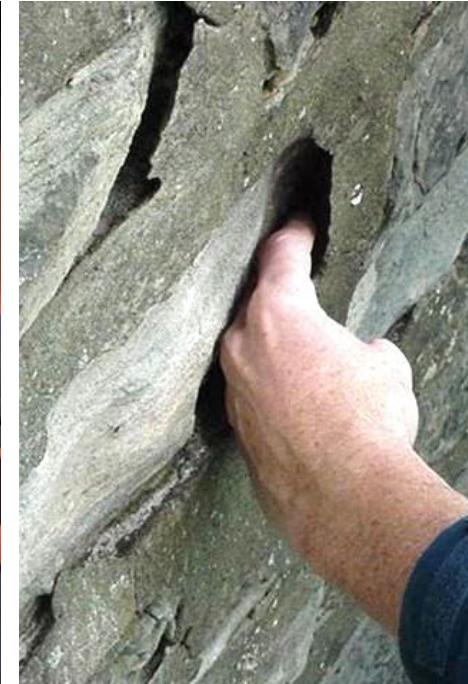
Offering advice on effective maintenance must include checks that rainwater collection and discharge systems are working properly and are not blocked. A tell-tale sign of malfunction is the growth of vegetation in gutters and hoppers. Equally obvious would be missing or dislodged parts of the rainwater disposal system. Both require remedial action and any 'policy' advice offered should be that the system must be regularly checked, cleaned and overhauled – simple measure to do, but potentially detrimental and costly if left unattended.

Images courtesy of CEC



Storm damage can exacerbate existing conditions and lead to dangerous safety situations through dislodging loose and exposed masonry and other roofing elements to the point of collapse. Policy guidance of the frequency of routine inspections and reporting processes could help mitigate against such concerns. On quinquennial inspection advice for Churches see:

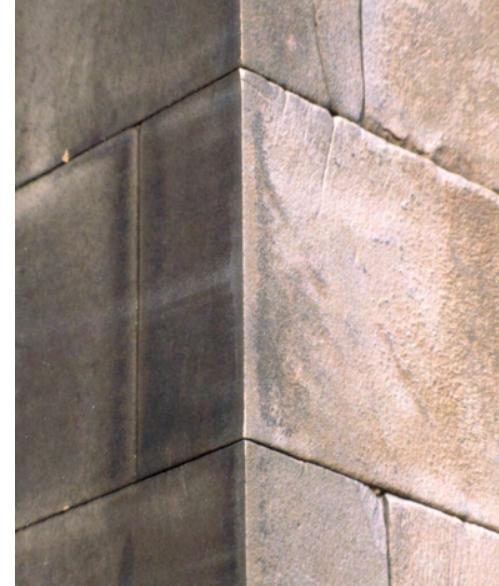
<https://www.churchofengland.org/resources/churchcare/advice-and-guidance-church-buildings/quinquennial-inspections>



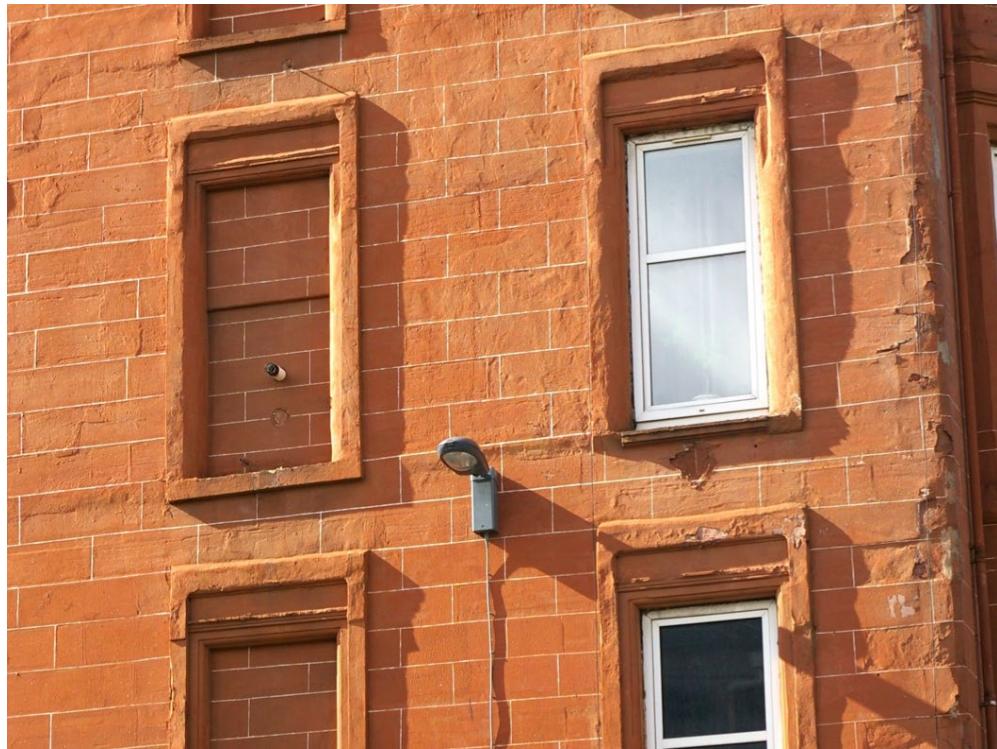
Until the recent awareness of the benefits of using lime-based mortars for conservation work, almost universally the adoption of cement for repointing and wall face rendering has been somewhat widespread. This approach lacked awareness of the consequences of using and applying a material of insufficient porosity and excessive strength directly on or against traditional building materials that need to 'breathe'. Inevitably, this has created additional problems that need to be addressed, often by exacerbating underlying conditions. These need to be understood in any given maintenance work advice.



The hardness and ‘scythe-like’ sharp feather edged nature of detached and unrestrained cement render repair patches is a common feature of their failure. Falling from a high level off a building can be potentially fatal should the pieces strike a bystander below. Such concerns re-emphasise the need for any related advice to be guided by informed and detailed inspections



Originally well intentioned as a means of breathing new life into urban centres, the promoted policy of stone-cleaning was universally pursued without considering how the adopted cleaning techniques could impact on different types of stone. Sandstone fared particularly badly, with the most aggressive physical and chemical methods being used at the outset of the adopted approach. The consequential significant surface and aesthetic damage created then remains today to offer a stark reminder that the potential implications and results of promoted policies regarding the care and maintenance of the built environment need to be fully thought through before their implementation.



Similar to the inappropriate application of cement renders, the adoption of non-breathable 'plastic' paint coverings to traditionally constructed walls is also prone to failure. Promoted with an ability to keep moisture 'out', the same properties also keep moisture 'in', resulting in disruption to the applied 'bond' then flaking and progressive surface disaggregation. Care needs to be exercised in any advice to promote such treatments.



 Historic England

**Energy Efficiency
and Historic Buildings**

Application of Part L of the Building Regulations
to Historic and Traditionally Constructed Buildings



Driven by climate change, energy efficiency and sustainability concerns the industry is responding to an emerging and significant raft of new policy directions. Whilst each is justifiable in its own right, how the various measures are implemented and advised upon will be critical and need to be considered holistically. Before and after external aesthetic changes are inevitable with over-cladding techniques and the use of solar panels. The insertion of ground source heat pumps and micro systems might impinge on archaeology and are amongst a range of concerns the will need to be considered as future practical advice is compiled and offered.

Web-sourced images



© Collaborative Efficiency



© Selfbuild



© J. Dassie - <http://archaero.com/Arch%9ologie-a%9rienne.htm>, CC BY 2.5

With pressure to improve energy efficiency and the adoption of ground source heat-pumps, care needs to be exercised to ensure that 'unknown' archaeological remains are not unwittingly destroyed.

Web-sourced images.

In pursuing the need to appreciate '*Guideline (k) Give expert advice on maintenance strategies, management policies and the policy framework for environmental protection and the preservation of monuments and their contents, and sites*', accessing numerous technical publications can be revealing as to what might be considered and taken into account, these include the six Units of COTAC's *Insight 1 The Need to Appreciate the Built Heritage* and its five incorporated *Image Sets*

In addition a number of Guideline-specific URL links are offered on the COTAC Global website under the Menu tab '*Digital Bibliography*' at '*k. Maintenance strategies*'. See: http://www.cotac.global/digital_bib/



COTAC Council on Training in Architecture Conservation

COTAC Insight 1
The Need to Appreciate the Built Heritage
Units 1-5 Learning Handbooks
© Barry J Bridgwood and Ingvil Maxwell: February 2021
ISSN 2753-9083

To access and download "Insight 1 Learning Handbooks and Image Sets" go to:
www.cotac.global > Menu > COTAC Learning > COTAC Insight 1 (Which opens the underlined page) > Click on each 'Unit' and 'Image Set' thumbnail front page to source the relevant PDF.

COTAC Insight 1: Intentions for Users

With a focus on assisting *The Need to Appreciate the Built Heritage*, the Insight 1 series of six Units have been compiled by Barry J Bridgwood and Ingvil Maxwell in furtherance of COTAC's Educational Aims and Objectives. The target audience covers a wide range of cohorts including students, the general public, crafts, trades and professionals who wish to gain an appreciation of practical heritage conservation, its associated challenges, working practices and the philosophy which underpins it.

Each of the six Unit Learning Handbooks and the separate Image Sets of 24 full page illustrations are offered in downloadable pdf format. The first five Units adopt a similar approach and intentions to that found on the www.understandingconservation.org (UC) site – to which links are provided. To underpin information on that website, Units 1 and 2 purposely repeat the UC site intentions and text in a more accessible form, whilst Unit 6 helps enhance that appreciation through creating an emphasis on what might be gleaned from a closer inspection of what is being looked at. Each of the Units 1-5 also contain a relevant set of Question and offered Answers that are incorporated within the Unit texts.

From a User's perspective, the focus of all six Units is to help in gaining a comprehensive understanding of what the built heritage is all about. This can be a complex process involving many actors. It is the intention of the Units to inform readers about appreciating how the Built Heritage can be better protected: thereby helping to facilitate its on-going sustainable use whilst it remains and continues to offer a tangible record of our past.

Insight 1 Unit 1 Learning Handbook: What is Special and Why?

Understanding construction, design, period, setting and location is important and necessary in order to be able to recognise what had occurred in the past. Significance, value and position in the landscape are essential aspects of a complete understanding of Worth. Support for cultural identity, the tourism industry and the economy is facilitated by the diversity and continuity of the Heritage.

Insight 1 Unit 2 Learning Handbook: Is Appearance and Appeal Important?

A range of traditional and locally available materials have been used historically to create the structures that exist today. A much greater variety of materials became available with the coming of the canals and railways. Until ca.1919, buildings were, in the main, constructed from this variety of wide-ranging material supplies. These materials contribute to many different distinctive colours and textures affecting how buildings looked.

Insight 1 Unit 3 Learning Handbook: How Does a Building Work?

A building has to withstand a lot of physical abuse during its lifetime of use and through poor or minimal maintenance. The effects of weather can also play a large part in the destruction of its architecture and detail by breaking down the material from which it is built. This generates a need to understand how it was first built alongside what has happened to it since and resulting from various and progressive changes.

Insight 1 Unit 4 Learning Handbook: What Needs to be Thought About?

Important heritage buildings and sites can be formally identified, recognised and classified in a variety of ways. Determining the needs of buildings and sites within a system of tiered value is essential: it is important to recognise that different conditions and considerations will apply to their future wellbeing.

Insight 1 Unit 5 Learning Handbook: How Does What We Do Affect the Heritage?

In determining what has to be done the question arises as to who needs to be involved in taking matters forward. Following on from gaining a comprehensive understanding of the building an appropriate and correct method of carrying out the proposed work has to be decided: Who should be involved in doing it properly and who should be responsible for ensuring that owners get what they have agreed to, all within budget and subject to necessary approvals.

Insight 1 Unit 6 Learning Handbook: Seeing What You are Looking At:

Using full-page viewing and under close scrutiny of the Units 1-5 Image Sets a lot is potentially revealed about the subject building, site or structure including how it was constructed, its use of materials and how they have performed in use. Interpreting the illustrated information requires an ability to 'read' what is being looked at and leads to greater understanding and appreciation. This Unit explores how supplementary information might be gleaned from the Image Set illustrations by offering pointers, in the form of notes entitled Additional Considerations set alongside an outline indication of what the various images might reveal.

The COTAC Insight 1 Learning Handbooks' progressive aim is to avoid misunderstandings and encourage a developing respect for the past via an appreciation of the Heritage its values and future. Each Handbook leads on to the next whilst remaining a comprehensive teaching component in its own right. The intention is to emulate the built heritage which similarly demonstrates a continuum reflecting history, development and influences that have formed society, whether at a local, national or international level.