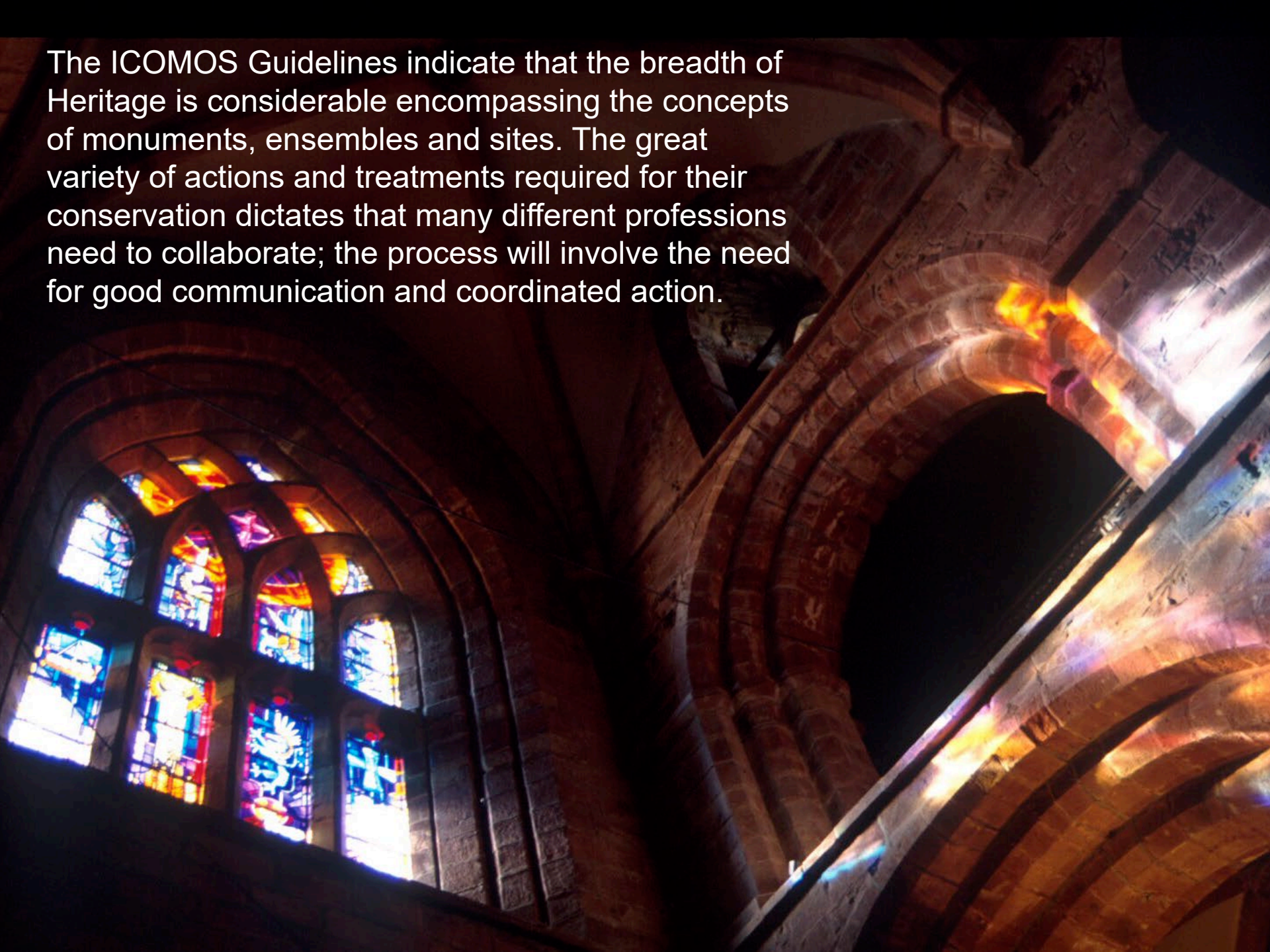
ISSN 2753-9083

COTAC Insight 2m:
The Need to be Aware of the Built Heritage

Exploring ICOMOS Education and Training Guideline (m): Work in multi-disciplinary groups using sound methods

COTAC

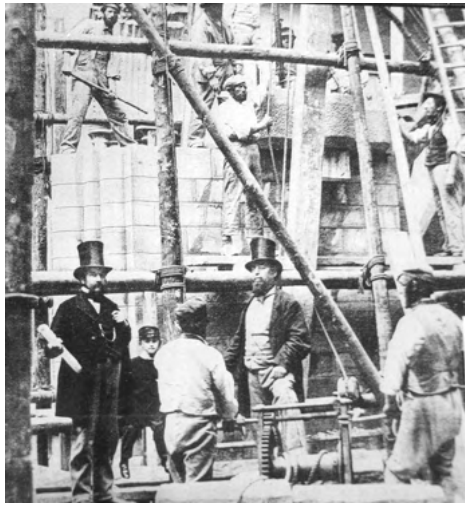
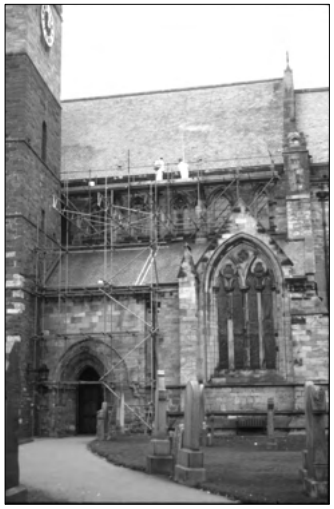


The ICOMOS Guidelines indicate that the breadth of Heritage is considerable encompassing the concepts of monuments, ensembles and sites. The great variety of actions and treatments required for their conservation dictates that many different professions need to collaborate; the process will involve the need for good communication and coordinated action.

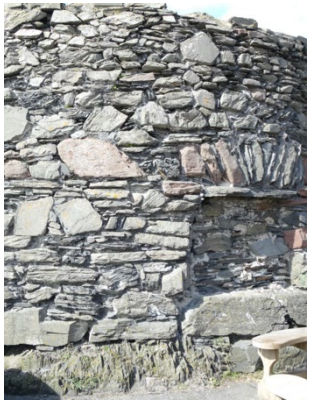
Very High Value	Neutral	Slight	Moderate / Large	Large / Very Large	Very Large
High Value	Neutral	Slight	Slight / Moderate	Moderate / Large	Large / Very Large
Medium Value	Neutral	Neutral / Slight	Slight	Moderate	Moderate / Large
Low Value	Neutral	Neutral / Slight	Neutral / Slight	Slight	Slight / Moderate
Negligible Value	Neutral	Neutral	Neutral / Slight	Neutral / Slight	Slight
	No Change	Negligible Impact	Minor Impact	Moderate Impact	Major Impact

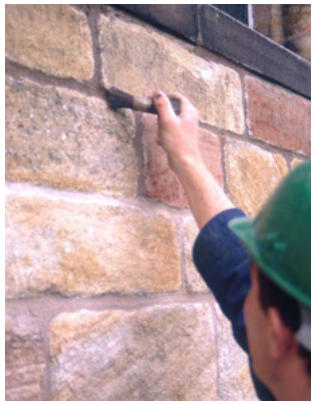
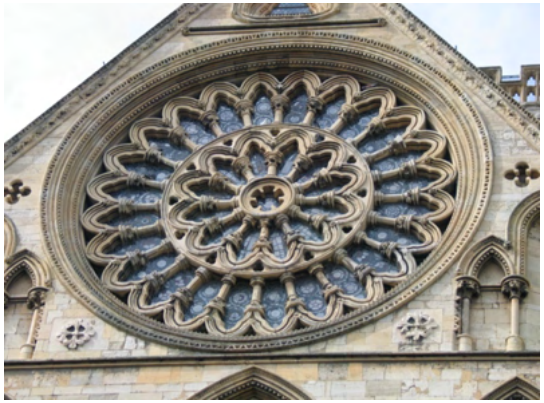
In any multi-disciplinary evaluation the level of impact of change should be assessed in relation to the significance and value of the historic building. See BS7913: 2013 Para 5.6.5



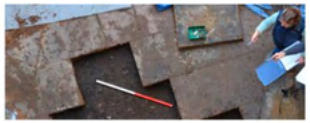




Aspects of working with the Heritage can be challenging, especially when works access is required to ensure its future viability. Central to this is the need to fully comply with all current Health and Safety Legislation.




Since medieval times the process of extracting, transporting, hewing and building masonry has remained virtually unchanged requiring various skill sets in the process. The scale of operations, however, has developed considerably. The 20th C move to a '*dimensioned stone*' industry is wasteful; much material is discarded whereas previously, every piece of stone extracted was used in the building process.

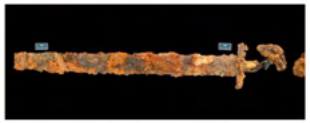


Excavation

Archaeological excavation is the controlled examination and removal of the buried deposits and features that make up archaeological sites,

Scientific Dating

Scientific dating uses biological and physical methods for assessing the time when things happened in the past. We offer advice and conduct research.



Archaeological Conservation

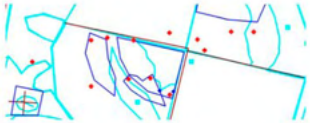
Archaeological conservators carry out investigative and remedial conservation from well-equipped laboratories. We offer advice and conduct research

Materials Science

Our experts study the production of metal and glass objects and associated waste (slag). We curate reference collections and offer advice

Archaeological Archives

Archaeological archives consist of the records and finds made during an archaeological project



Computers & Archaeology

An overview of how Historic England use computers for their archaeological excavations.

Zooarchaeology

Zooarchaeologists study archaeological animal bones. We develop methods, conduct analyses and curate a modern comparative collection.

Environmental Archaeology

Our environmental archaeologists include experts in the disciplines of archaeobotany, geoarchaeology, palaeoecology, zooarchaeology and human remains

Geoarchaeology

Geoarchaeologists use earth sciences to understand archaeology. We develop methods, conduct analyses and offer advice

Archaeobotany

Archaeobotanists study archaeological plant remains. We develop methods, conduct analyses and curate modern comparative collections

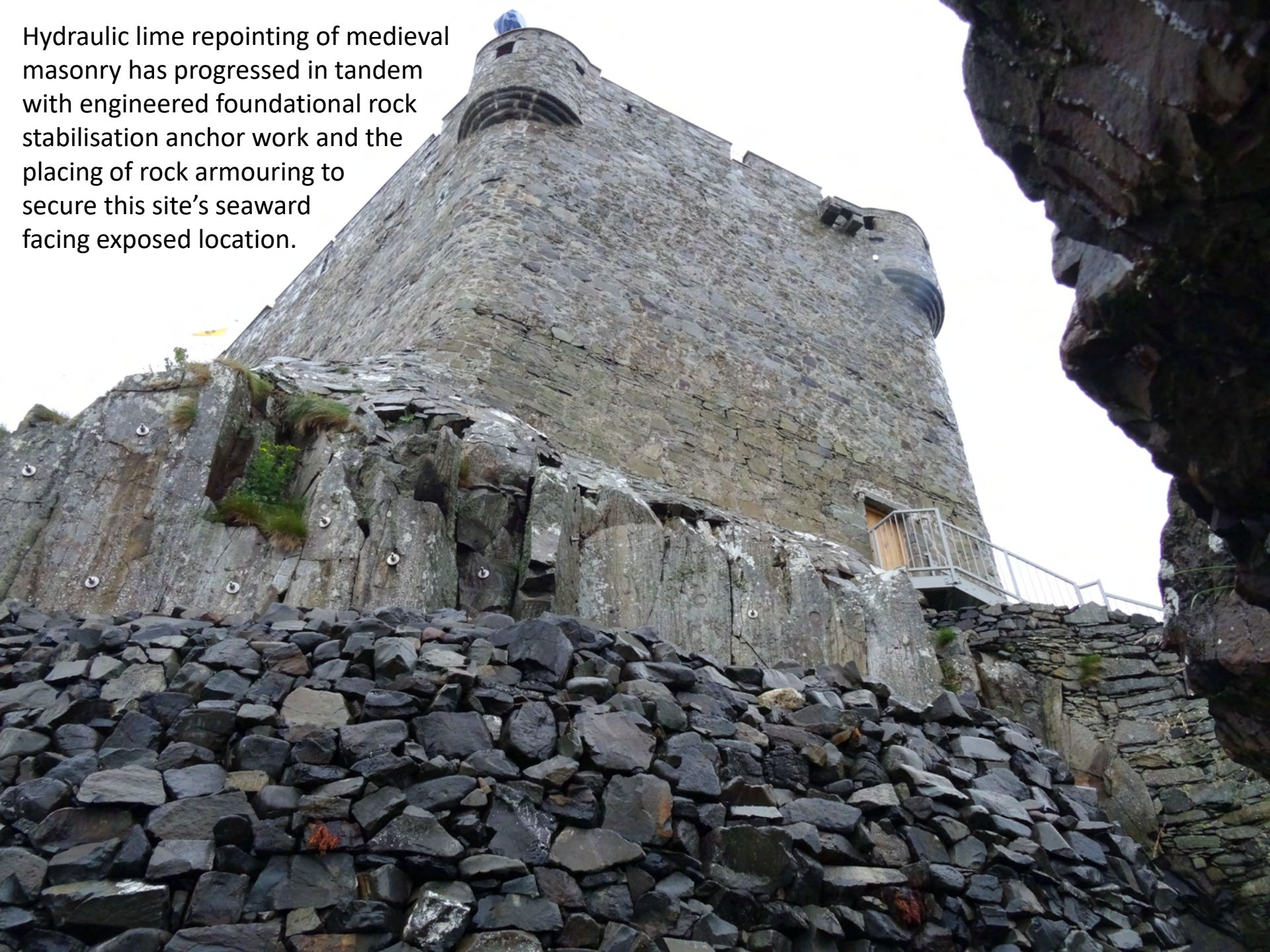
Human Osteoarchaeology

Osteoarchaeologists study archaeological human bones. We offer advice, conduct research and curate collections of Roman and medieval remains

Non-invasive archaeological survey work can offer much information. Invasive archaeology is intrusive when investigating past remains. Collectively, a variety of methods and techniques can be used to interpret deposits, samples, features and finds, adding much to an understanding of an asset and assisting in determining what course of action might be adopted in the future.

https://historicengland.org.uk/research/methods/archaeology/

From early times the malleable nature of lead has offered an ideal material for roofing, requiring effective detailing and skilled craftwork to accommodate its its properties.

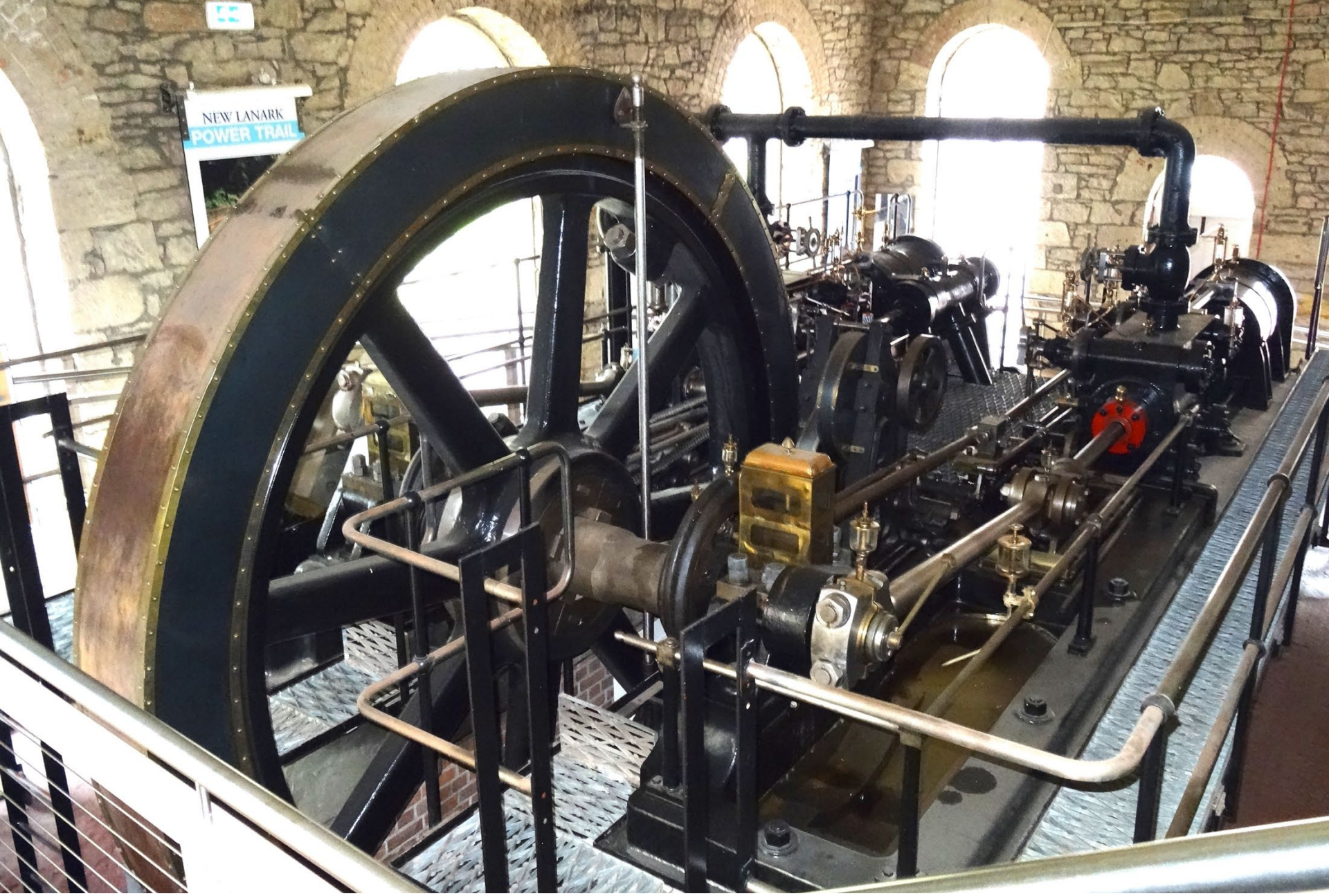


Hydraulic lime repointing of medieval masonry has progressed in tandem with engineered foundational rock stabilisation anchor work and the placing of rock armouring to secure this site's seaward facing exposed location.

The care, cleaning and conservation of corroded or deteriorated historic stained glass requires the expertise of professionally qualified stained glass operatives, supported by a fully equipped specialist conservation studio providing and offering a wide range of investigative and remedial treatments.

During and after extensive and specialist conservation of decorated surfaces a detailed and integrated range of environmental conditions and concerns will need to be considered. How these matters are resolved will depend on what future functions the site will offer.

With a varied history, in 1871 this iconic structure was dismantled and moved by barge from its original home in Coulport to Glasgow where it was reconstructed and enlarged with a dome and transepts in 1873. Between 2003-06 its curved wrought iron frame and cast iron beams and columns were once more dismantled and the corroded metal work restored off-site in Yorkshire, prior to being re-erected in Glasgow. Both moves made possible by an understanding of the applied skills and nature of its original engineered design and modular construction.

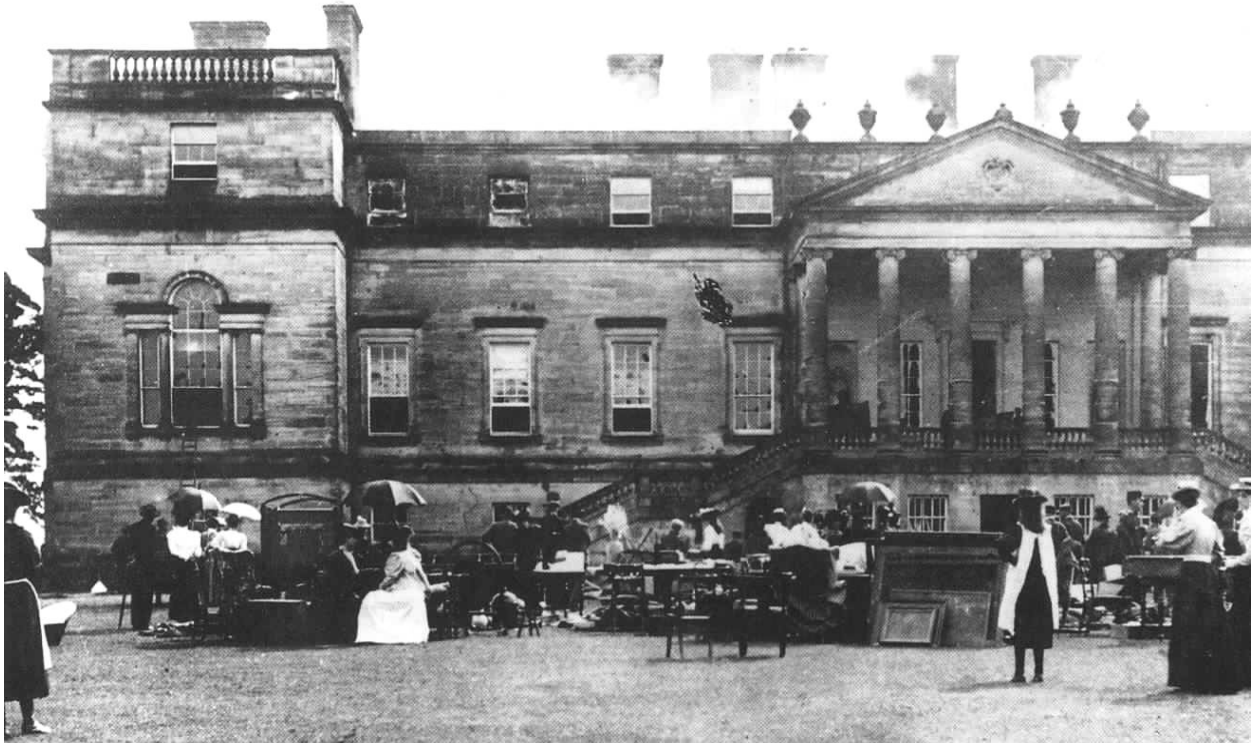


Industrial heritage requires the skills to be able to service, maintain, operate, locate faults and rectify or repair a variety of propulsion systems and mechanisms: frequently in association with built heritage needs.

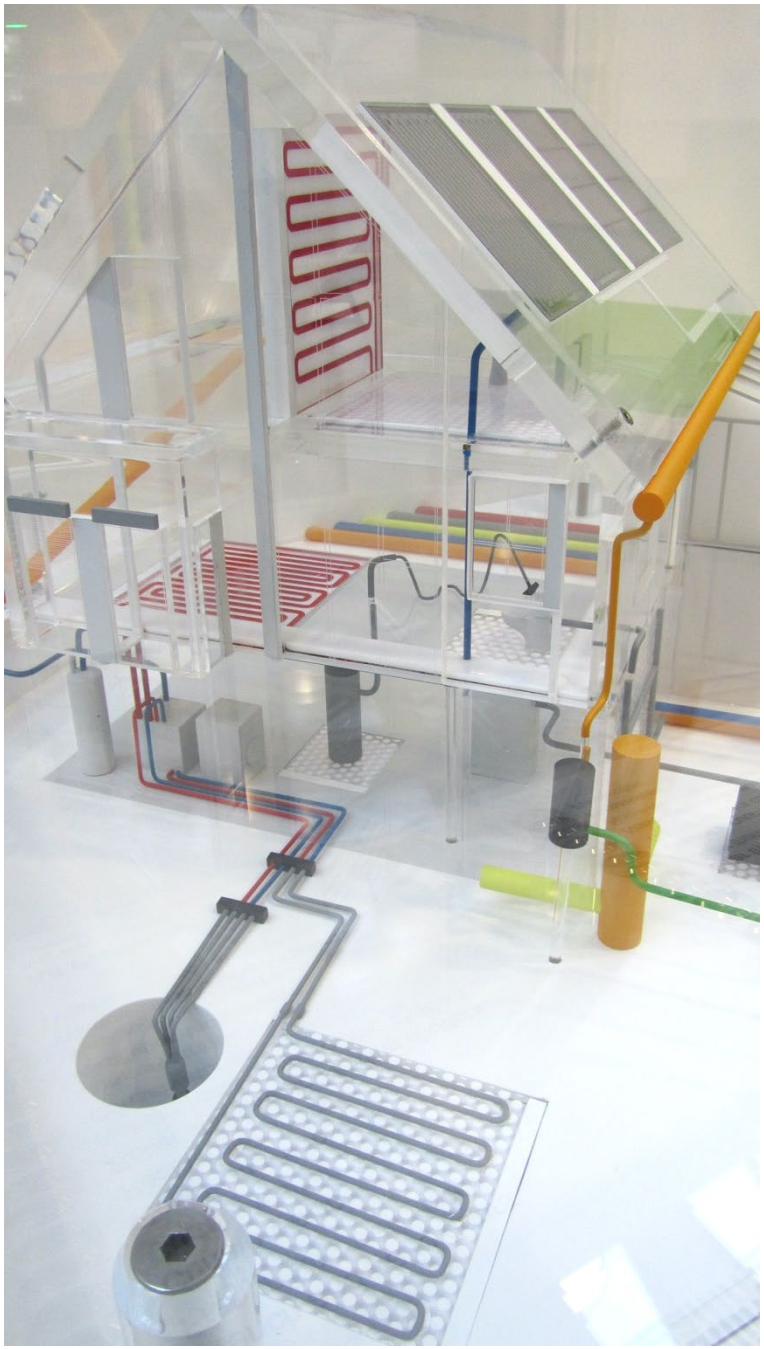
Illustrating industrial or renaissance heritage has increasingly called for realism. This requires multi-disciplinary research and study spanning across time in order to produce effective displays. Behind these are the need to incorporate modern services within the confines of historic fabric.

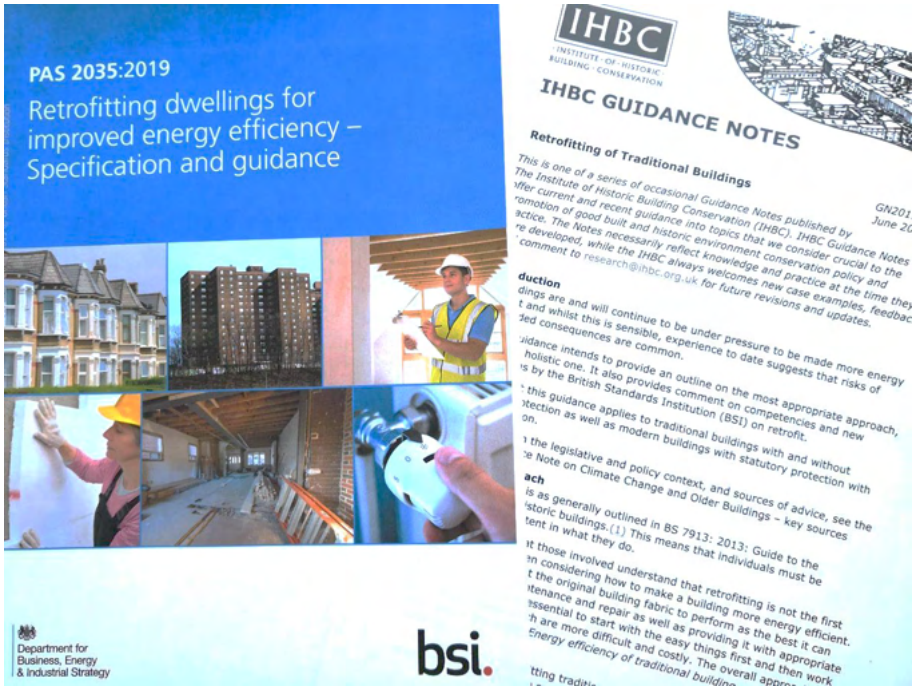
Subject to the constraints of legislation, and in order to achieve modern accommodation within a listed building, a wide range of consultations will be required to achieve a satisfactory outcome.

Transport heritage requires a variety of multi-disciplinary skills to be able to maintain a range of different assets in good condition.



The overall loss of historic buildings to the effects of fire has been considerable and consistent throughout the years, persistently raising the need for a greater introduction of compartmentation and alarm and suppression systems. Advice on management matters can also assist, as can regular multi-disciplinary training exercises carried out in conjunction with the local Fire and Rescue Services.





PAS 2035:2019

Retrofitting dwellings for improved energy efficiency – Specification and guidance

Department for Business, Energy & Industrial Strategy

bsi.

IHBC

INSTITUTE OF HISTORIC BUILDING CONSERVATION

IHBC GUIDANCE NOTES

Retrofitting of Traditional Buildings

This is one of a series of occasional Guidance Notes published by The Institute of Historic Building Conservation (IHBC). IHBC Guidance Notes offer current and recent guidance into topics that we consider crucial to the promotion of good built and historic environment conservation policy and practice. The Notes necessarily reflect knowledge and practice at the time they are developed, while the IHBC always welcomes new case examples, feedback and comment to research@ihbc.org.uk for future revisions and updates.

GN201
June 20

duction

dings are and will continue to be under pressure to be made more energy t and whilst this is sensible, experience to date suggests that risks of ded consequences are common.

uidance intends to provide an outline on the most appropriate approach, holistic one. It also provides comment on competencies and new s by the British Standards Institution (BSI) on retrofit.

this guidance applies to traditional buildings with and without tection as well as modern buildings with statutory protection with on.

the legislative and policy context, and sources of advice, see the e Note on Climate Change and Older Buildings – key sources

ach

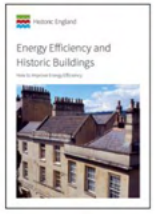
is as generally outlined in BS 7913: 2013: Guide to the storic buildings.(1) This means that individuals must be tent in what they do.

t those involved understand that retrofitting is not the first n considering how to make a building more energy efficient. t the original building fabric to perform as the best it can tenance and repair as well as providing it with appropriate essential to start with the easy things first and then work h are more difficult and costly. The overall appro

Energy efficiency of traditional buildin

tting tradit

PAS 2035: 2019: Retrofitting dwellings for improved energy efficiency – Specification and guidance is the overarching publicly accessible specification for retrofitting dwelling of all ages and types. It does not take a totally holistic approach. Its scope is retrofit and it does not address other means by which homes can become more energy efficient. It stipulates several roles each with particular membership, training and qualifications: such as the Retrofit Advisor; Assessor; Co-ordinator and Designer. Whilst PAS 2035 provides guidance on minimum requirements which should ideally be adopted, these needs to be considered against the guidance of BS7913:2013 and other conservation orientated publications.



Energy Efficiency and Historic Buildings: How to Improve Energy Efficiency

Published 29 June 2018

This guidance is for anyone who wishes to improve energy efficiency in an historic building.

Learn more

Energy efficiency and traditional homes

This guidance is intended to help owners and applicants, as well a local authorities, planning and other consultants and other interested parties in making decisions about energy improvements. It considers the 'whole building approach' advocated in our 'How to improve energy efficiency' guidance (above) alongside the policy and regulatory context for designated and non-designated heritage assets.

Energy Efficiency and Traditional Homes

Published 7 July 2020

Energy efficiency improvements to those traditional homes which are described as heritage assets within the planning system.

Learn more

Building Regulations and energy efficiency

Our guidance Application of Part L of the Building Regulations to historic and traditionally constructed buildings provides advice on resolving potential conflicts between the requirements of Part L and the conservation of historic buildings. It also acts a second tier guidance to the Approved Documents L1B and L2B.

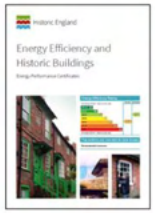
Energy Efficiency and Historic Buildings - Application of Part L of the Building Regulations to historic and traditionally constructed buildings

Published 8 December 2017

This guidance provides technical advice to help prevent conflicts between energy efficiency requirements in Part L of the Building Regulations and the conservation of historic and traditionally constructed buildings.

Learn more

Guidance is also available on Energy Performance Certificates, which includes the type of information included in an EPC, how it is calculated and its limitations as an assessment method when applied to older buildings.

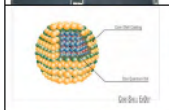


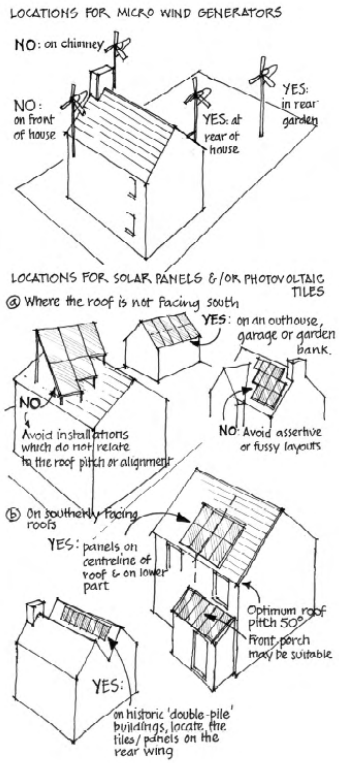
Energy Efficiency and Historic Buildings: Energy Performance Certificates

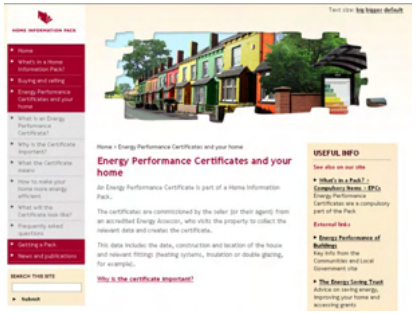
Published 14 May 2015

Advice for homeowners and those managing or renting historic or older buildings who may need to commission an EPC.

Learn more

Photo	Technology
	Mono-crystalline Silicon This is the most efficient converter of light into electricity; however it only converts around 30% of the incident light into electricity. Single crystals of silicon are expensive to grow, and are the feedstock of the silicon electronics industry, so the price is volatile.
	Multi-crystalline Silicon This is a less efficient converter of light into electricity, due to electron re absorption at the crystal boundaries. Multi-crystalline silicon is cheaper than mono-crystalline silicon.
	Amorphous Silicon Amorphous silicon can be used as PV devices by properly controlling the conditions under which it is deposited and by carefully modifying its composition (hydrogenation). Amorphous Silicon is made as a thin film; it has a poorer conversion efficiency compared to crystalline silicon but can absorb more of the visible light spectrum.
	HIT (Heterojunction with Intrinsic Thin layer) This is a combination of mono-crystalline and amorphous silicon technologies that provide the highest conversion efficiencies of all the available technologies.
	CIGS (Copper Indium Gallium Selenide) This is one of several thin film non-silicon based semiconductors which it have poorer conversion efficiencies compared to crystalline silicon but can absorb more of the visible light spectrum.
	Quantum dots (NanoCrystals) Quantum dots are tiny (2 micron diameter) semi-conducting crystals which can be tuned to absorb light at different band gaps. In theory this allows the opportunity to absorb more of the sun's rays in a thin film pv application. It is a potential technology for the future.
	Organic pv PV system based on artificial photosynthesis that can be realised on glass or metal substrates. They are realised by screen printing and are suitable for continuous production processes. The technology is a photoelectrochemical cell, using a wide bandgap semiconductor. It is a potential technology for the future.

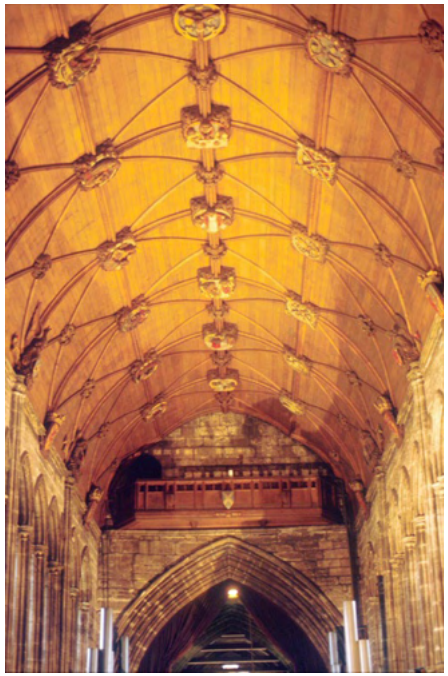




https://historicengland.org.uk/advice/technical-advice/energy-efficiency-and-historic-buildings/

https://www.historicenvironment.scot/archives-and-research/publications/publication/?publicationId=179c1909-3679-4486-9583-a59100fa98c1

With external and internal consequences, increasing demands for energy saving measures and efficiency are creating compliance pressure on existing built heritage. In response a number of advisory publications are emerging and need to be consulted. The hazard for heritage is that, as new forms of energy generation are being developed their impact on historic fabric can be disfiguring. This is a danger area for heritage should performance certification become a more stringent requirement.



Historic buildings need to breathe. Their fabric must be able to absorb and release moisture. Impervious wall coverings, renders, modern plasters and insulation materials are unsuitable for use. This creates a challenge for heritage buildings in order to make them more sustainable within a developing agenda. A number of emerging publications and websites offer a range of views that could be beneficial.

Conserving your Historic Building

Sustainability and Historic Buildings

A guide for owners and occupiers

Energy use in buildings accounts for 46% of the UK's carbon dioxide (CO_2) emissions, with about a third of this produced in our homes. The Government has set targets to reduce CO_2 emissions, and believes National Parks should lead the way in promoting sustainability.

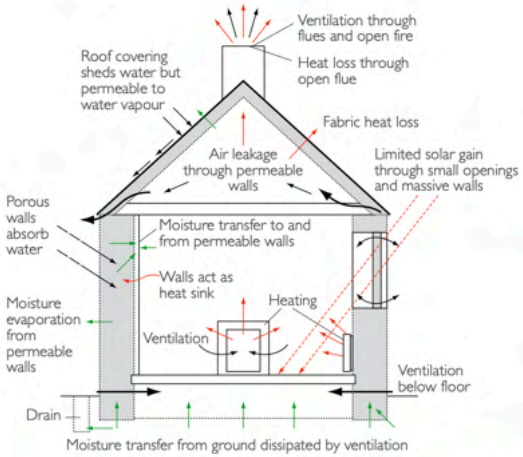
www.peakdistrict.gov.uk

PEAK DISTRICT NATIONAL PARK AUTHORITY

Heat loss in historic buildings

Heating accounts for most of the energy use in our homes. In traditionally constructed buildings: 60% of heat loss is through walls and roof (35% and 25% respectively); 15% is due to draughts; and only 10% is through windows.

Improving thermal efficiency to reduce heat loss, for example through draught-proofing and insulation, is crucial. With historic buildings special care should be taken to ensure that such measures avoid damaging either their character or fabric.



Moisture, air movement & thermal behaviour of a traditional building
© Crown Copyright, image reproduced courtesy of Historic Scotland

Insulating materials in historic buildings

Historic buildings need to breathe. Their fabric must be able to absorb and release moisture.

Impervious wall coverings, renders, modern plasters and insulation materials are unsuitable for use in historic buildings as they can trap moisture inside the building's fabric, increasing the risk of damp and timber decay.

Natural insulation materials such as sheep's wool and hemp fibre are permeable and therefore suitable for use in historic buildings. They have good thermal properties, enable the movement of moisture and prevent condensation.

The energy hierarchy

National planning policy has prioritised action on energy use in buildings, as follows:

Priority 1: Reduce the need for energy

Priority 2: Use energy more efficiently

Priority 3: Use low carbon and renewable energy

Reducing energy use and improving energy efficiency are much more cost-effective than renewable energy measures. They also have minimal impact on a building's character.

Draught-proofing

This is one of the best and least intrusive ways of reducing heat loss, with little or no change to the property's appearance. In historic buildings, the main sources of draughts can be easily tackled:

- Suspended timber ground floors – insulation can be installed beneath these (avoid insulation on top of timber floors, which can lead to rot).
- Open chimneys – these can be blocked using inflatable chimney balloons (leaving a small gap to ventilate the flue).
- Gaps around windows and external doors - draughts can be reduced or eliminated by adding draught-stripping.

Insulating external walls & roofs

Adding insulation to solid external walls can cause problems and must only be done with care.

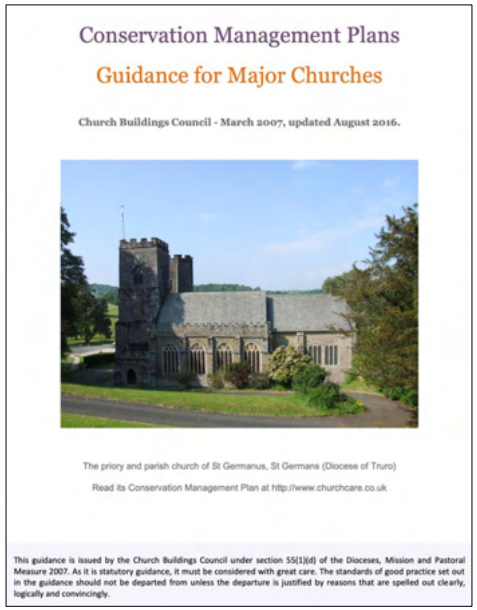
On the internal face of solid external walls, insulated lime plaster is currently the only wall treatment that can be recommended unreservedly: modern insulating linings can lead to damp and rot, and can also alter the character of the room, compromising original internal features such as fireplaces, architraves and skirtings. Insulating the outside of solid external walls is more effective, but is only an option if the house is rendered.

Adding insulation to roofs is the most cost-effective option, the outlay being recouped by savings in heating bills in as little as three years. Adequate ventilation must be provided above the insulation layer, however, to protect the roof structure from damp and rot.

http://www.special-eu.org/assets/uploads/Sustainability_and_Historicbuildings_by_Peak_District.pdf

In pursuing the need to appreciate '*Guideline(m): Work in multi-disciplinary groups using sound methods*', accessing a range of published guidance on the preparation of *Conservation Plans* and *Conservation Management Plans* publications can be of considerable help in framing up the approach.

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



Conservation Management Plans

Guidance for Major Churches

Church Buildings Council - March 2007, updated August 2016.

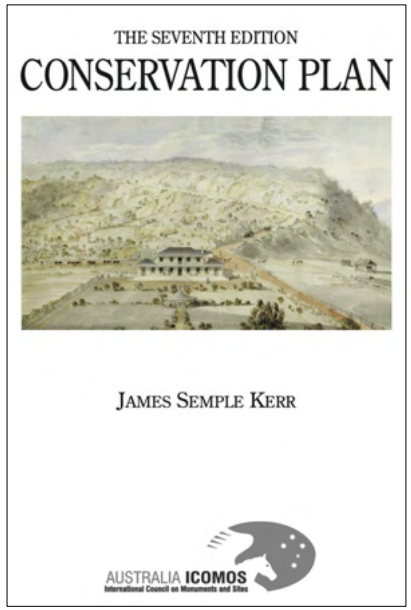
The priory and parish church of St Germanus, St Germans (Diocese of Truro)

Read its Conservation Management Plan at http://www.churchcare.co.uk

This guidance is issued by the Church Buildings Council under section 55(1)(d) of the Dioceses, Mission and Pastoral Measure 2007. As it is statutory guidance, it must be considered with great care. The standards of good practice set out in the guidance should not be departed from unless the departure is justified by reasons that are spelled out clearly, logically and convincingly.

This guidance has been written to help churches which are either engaged in the CMP process, or are considering whether a CMP is relevant to their needs. It is intended to be concise and useful, and builds on the premise that there is now a general consensus on the basic format, function and use of a CMP.

https://www.churchofengland.org/sites/default/files/2018-11/CCB_Conservation-Management-Plans.pdf



THE SEVENTH EDITION

CONSERVATION PLAN

JAMES SEMPLE KERR

AUSTRALIA ICOMOS

International Council on Monuments and Sites

This guide is about gathering, analysing and assessing information that bears upon policy decisions and on the processes of making decisions. It offers a common ground for debate, a method and a common language to help resolve differences and achieve a balance between the old and the new.

https://australia.icomos.org/wp-content/uploads/The-Conservation-Plan-7th-Edition.pdf