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GENEALOGISTS AND INTERNATIONAL
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HISTORIC
ENVIRONMENT
SCOTLAND

Webinar with Fraser and Fraser

Presented by

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Hosted by

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Fraser and Fraser

Our Services

- Confirming whether or not owners of empty properties are in occupation
- Tracing empty home owners to their new address
- Identifying and locating executors of next-of-kin deceased owners
- Helping Empty Homes Officers navigate GDPR, procurement and legal
- **Empty home stuck in probate?** We can help move the process forward





Traditional Buildings: Repair and Upgrade Considerations

15 May 2024

Dr Moses Jenkins MCIQB

Project Manager, Historic Environment Scotland

What do we need to think about when repairing and upgrading empty traditional buildings?



We need to...

- Understand the inherent sustainability, durability and adaptability of traditional buildings
- Understand the materials and methods of construction used
- Ensure repairs are carried out appropriately
- Make sure the building is able to withstand a changed climate
- Retrofit for energy efficiency in a way which works in accordance with the building fabric
- Ensure relevant standards are understood and met in an appropriate way



Traditional buildings are durable and adaptable

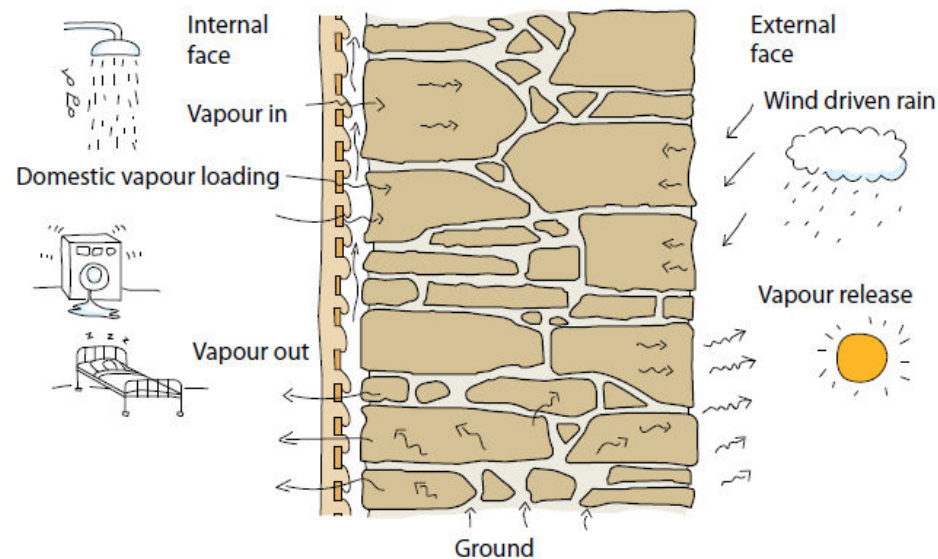
The re-use of buildings is the epitome of the circular economy



- 1822 – Bank
- 1873 – Hospital
- 1928 – Library
- 1970's Offices
- 2009 - Hotel

Must understand the buildings we are working with:

Sources of moisture in a traditional building



- Moisture in buildings is often the product of habitation such as showers, cooking etc
- Building defects are a further cause of moisture entering a building and should be rectified
- No wall should ever be constantly wet

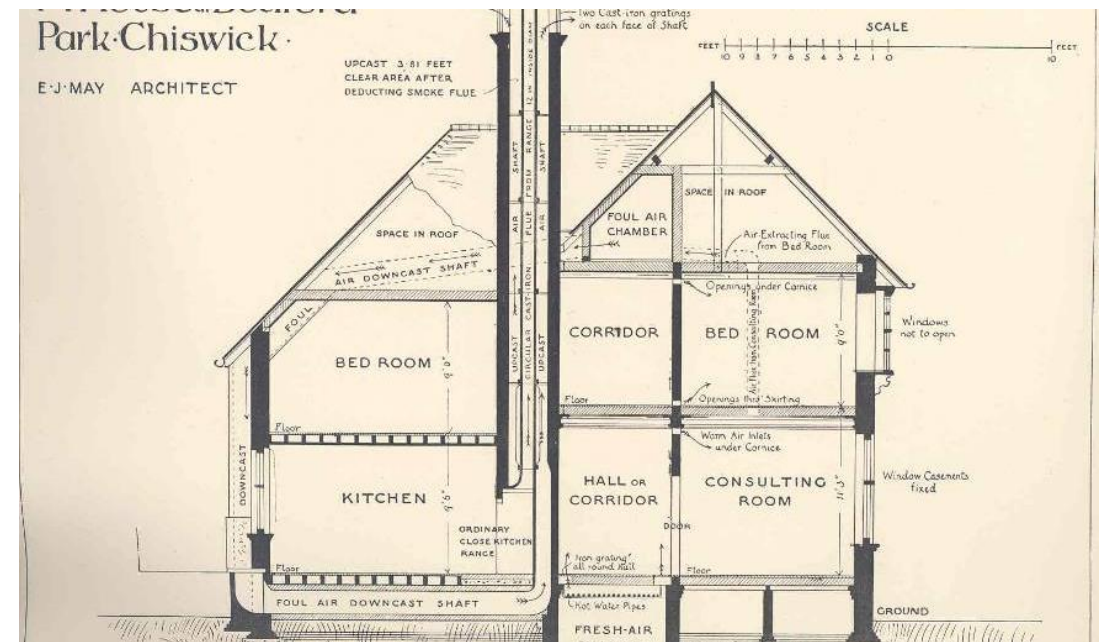
Why we must think about traditional buildings differently

- Traditional buildings allow moisture to travel through building fabric
- Moisture can enter, be held within and then leave building fabric such as sandstone, brick, lime mortar, plaster and timber
- Moisture diffuses internally and to the external environment
- Restricting the movement of moisture can often lead to problems later



THINK

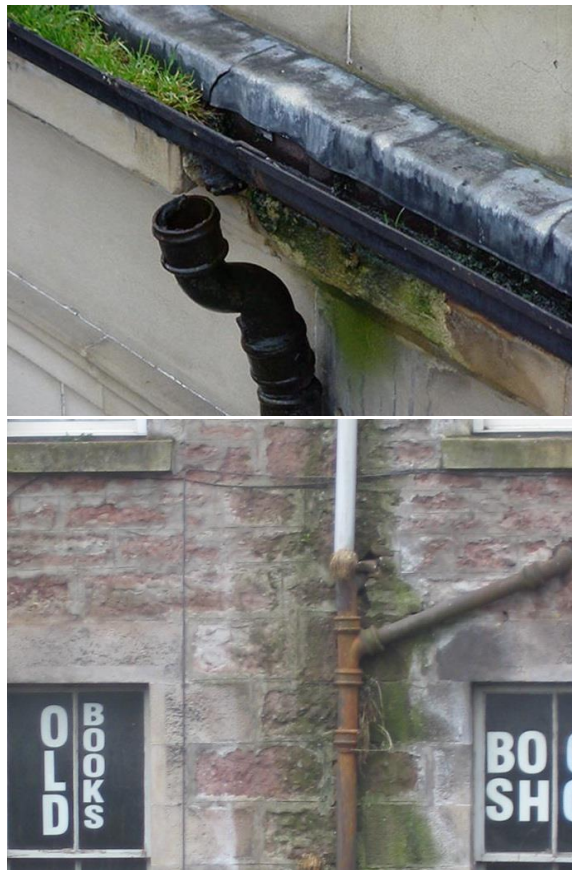
Air movement and ventilation critical to how traditional buildings work



Repair and Maintenance tasks need a good understanding of building fabric



What can appear a small problem can have significant implications





Try and tackle repair and maintenance issues
before they become serious

Picture attribute: IPVANISH

Understand the materials you are working with



For pointing and harling, a lime based material likely to be most appropriate



Understand areas of particular vulnerability: _____

Damaged chimneys will let in significant amounts of moisture but cement capping will also cause problems



Buildings will need careful retrofit using appropriate materials to reach energy efficiency standards



Retrofit as a driver for bringing empty homes back into use



Retrofit as a cause of empty homes



Building Standards may be applicable if the building is being converted

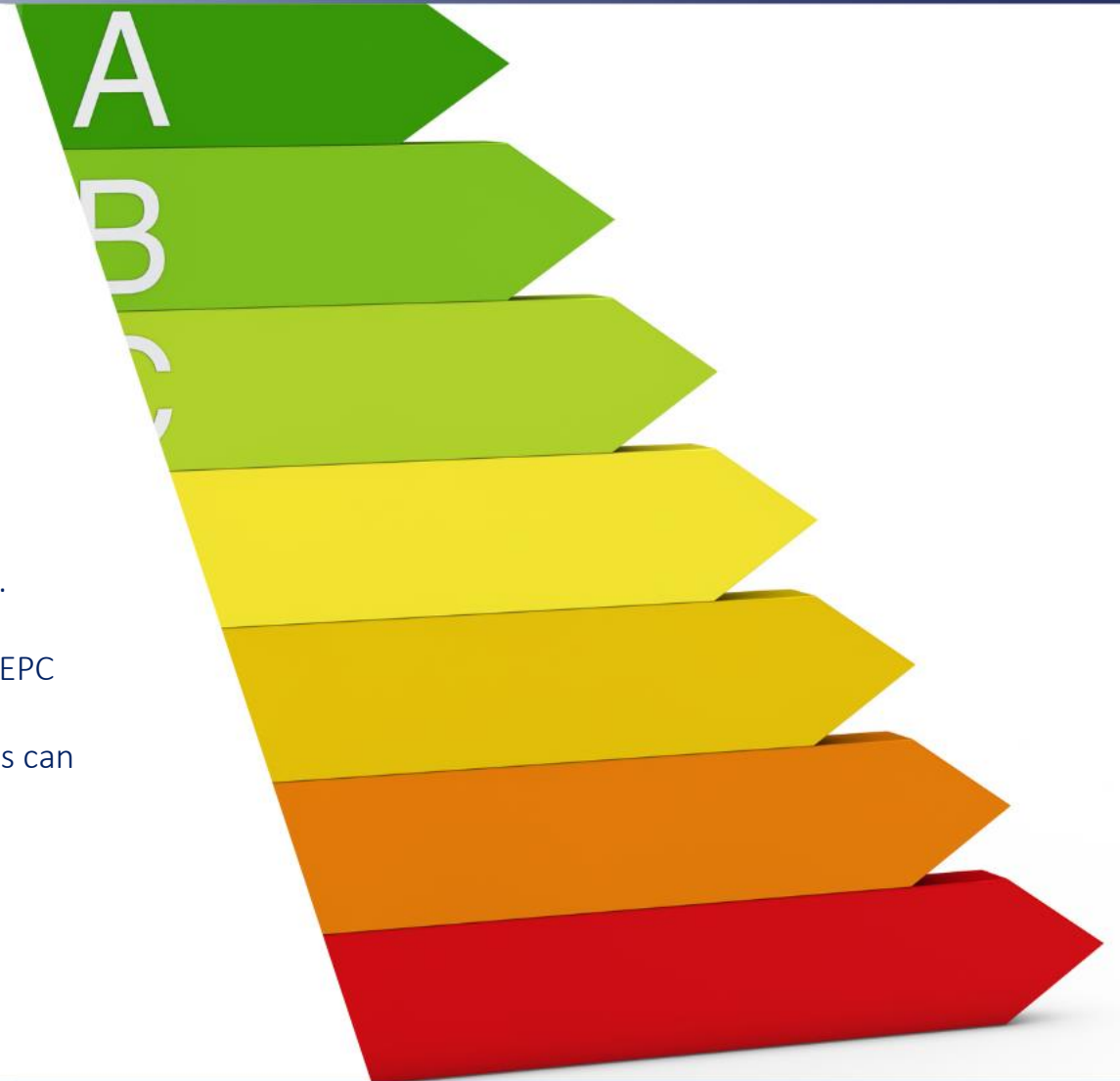
Type of element	Area-weighted average U-value (W/m ² K) for all elements of the same type			HES Case Study Result Achieved
	(a) Maximum U-values for conversion of heated buildings	(b) Maximum U-values for conversion of unheated buildings	(c) Individual element U-Value (W/m ² K)	
Wall (Solid)	0.3	0.22	0.70	0.15 80mm cellulose (KoC) 0.19 80mm WFB (Kild) 0.22 100mm Hemp (SS) 0.29 100mm cellulose (SS) 0.3 50mm bonded bead (Laur) 0.32 50mm bonded bead (SS) 0.32 50mm Aerogel Board (SS)

Always important to fully understand what standards are asking...

- “Every building must be designed and constructed in such a way that there will not be a threat to the or the health of the occupants as a result of moisture caused by surface or interstitial condensation.”
- There is no requirement in either the building standard or in the referenced British Standard BS 5250 to use a vapour barrier
- The requirement to reduce the risk of condensation can be met by using a variety of strategies such as hygroscopic buffering or ventilation.

Energy Performance certificates increasing part of standards and compliance

- The cost of the survey can be significant in terms of outcome
- If measures cant be seen, then the owner has to show evidence for them.
- Record all retrofit work that is done in sufficient detail to be recorded on EPC
- Unexpected factors such as a baffle in a fire place can gain SAP points, this can be the difference between a C and a D



— Important to ensure the building is able to withstand a changed climate – robust details already in place...



... but some adaptation may be needed



Climate change adaptation

Sand Haa, Shetland



Downie's Cottage, Braemar, Category A listed vernacular building, an empty home



Repair to the building fabric



Lime concrete floor, incorporating heating loop



Insulated lime plaster, first and second coats



Ground Source Heat Pump (400 meters of collector loop to be buried approximately 1.2 meters below the surface.)

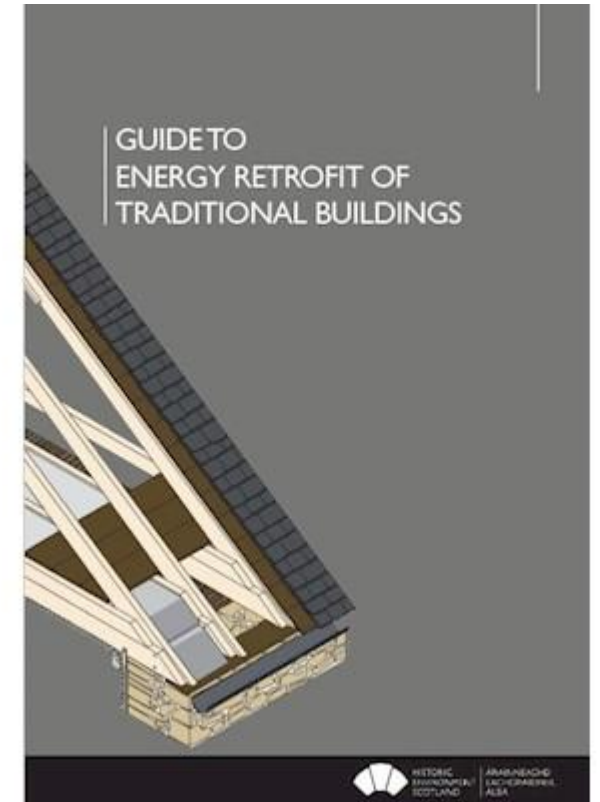


The building following the work, considerable improvements made, all in keeping with the heritage and technical performance of the building



Conclusions

- We must understand traditional buildings if we are going to bring them back to use
- We must also upgrade our buildings for energy efficiency in order to meet climate change targets
- They may also need adaptation to meet the challenges of a changed climate
- Traditional buildings are a valuable resource
- Lots of guidance on topics covered today on the HES website
- Moses.jenkins@hes.scot



Questions?





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