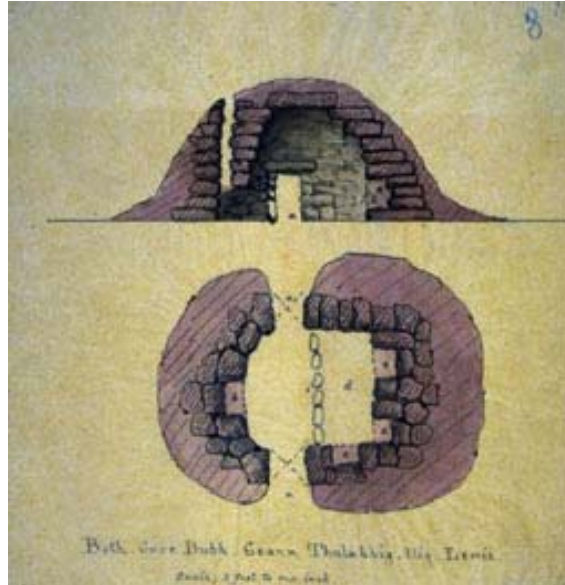


## EXTRACTION BUILDING WITH LOCAL MATERIALS

In the past, and in some remote areas until recent times, people's material needs had to be met from local resources. Without access to imported timber, brick or glass, they had to look to local sources for the materials to build their homes. This is how they did it.

Early antiquaries were struck by just how primitive some Scottish buildings seemed. This ***shieling* (summer pasture) hut**, recorded in **Lewis** in the 19<sup>th</sup> century, used construction materials and methods found in the Neolithic tombs of thousands of years previous. An inner layer of stone, corbelled out to form a dome, was covered by turf and earth. Nothing else was used in its construction. A sleeping area (d), wall niches (e), a simple hearth (b) and a cross-passage (a-a) were its only features.



The basis for most buildings was a frame, to carry the roof at a suitable height above ground. This was formed from pairs of angled wooden timbers, each rising to wall height before bending inwards to reach each other at the top; these timbers were termed *crucks* or *couples* and the frame formed by them a *cruck frame*. Big timbers, preferably of oak or Scots pine, were used to build one such house, now partially rebuilt in the Museum of Scotland. Where only smaller, more twisted branches, such as birch, were available, they were lashed together so that several sections formed one arch. This **ruined house at Gairloch, Ross-shire**, has crucks made from two timbers pegged together.



In parts of the Hebrides, another solution evolved, with the inner edge of thick, load-bearing walls carrying short timbers (often driftwood) which met at the roof

ridge. On top of the roof timbers were smaller branches and a layer of turf; good insulation, recyclable and freely available locally. The outer coating of *thatch* could be made from a number of plants. Reed – still harvested in the Firth of Tay – could be sown straight onto the roof timbers without an under-layer. Heather, preferably in long, young shoots, took a long time to gather but, once in place, lasted for twenty-five years or more. It could also be twisted into rope, to help hold roofs in place. Marram grass (known as *bent*) was used as a thatch near the sandy coasts where it grew. Here, at **Smerclete, South Uist**, it is being used to patch a thatched roof.



Rushes, found in the all too many wet habitats of Scotland, were another thatching material.

In Buchan, Aberdeenshire, the thatch was smeared with clay to improve its durability. The ropes which held the thatch in place were also home-made from local materials, weighted with more of the ubiquitous stones as here (below, left) on **Eriskay, Western Isles**.



A few areas, notably Caithness and Orkney, were lucky enough to have hard flagstone rock, which could be split into thin sheets without their cracking. Here (previous page, right) at **Park**, on the island of **Hoy, Orkney**, the size of these slabs is clearly apparent.

Many materials were used for the walls. Stones were to be found almost everywhere and could be held together with local clay mortar or inter-layered with turf. Turf could also be used to form entire walls, given that

the frame, rather than the walls, carried the load of the roof. The upper part of this internal gable, at **Hunspow, Caithness**, has been built from turf. The turf under-thatch can also be seen in section. Besides clay mortar, clay was also used alone or with stones in a kind of concrete.



Internal partitions, screens and chimney-heads could be formed from heather, or other plants, interwoven between sticks, sometimes with a finishing of clay.

***To find out more:***

Fenton, A. and Walker, B. *The Rural Architecture of Scotland*, Edinburgh, 1981

### **Building with local materials – THEN and NOW**

1. Ruins can be a useful way to understand previous peoples' building techniques. Look at the picture of a ruined house at Gairloch, Ross-shire (on page 1).

**(a) How do you think a roof would have been held up?**

**(b) Consider what materials were available to the people who built this house. Can you guess WHEN this house was built?**

2. Shielings were areas where livestock were taken, in the summer, to distance them from growing crops. Shieling huts were the homes of the people who went to tend the animals.

Look at the drawing of a shieling hut (on page 1). It is based on a 19<sup>th</sup> century hut in Lewis, Outer Hebrides, and uses age-old methods of construction, using stone, turf and earth.

**What simple methods do you think have been used? Have the people made the most of the materials to hand?**

**Is the sleeping area – (a), (b), (c) or (d)?**

3. Imagine you are in the middle of nowhere in the Highlands of Scotland. All around you is heather. Nearby is a small forest of birch trees. It is the 17<sup>th</sup> century. There are no modern building materials, methods of insulation, weather-proofing, let alone any power tools!

You need to build shelter for you and your family. Look around you. What could you possibly use to build a house?!

**You must consider what is readily available. What could you use to fashion into a shelter?**

**Answers**

1. (a) The roof would have been held up by the timber frame, known as the 'cruck frame'.  
(b) Locally available materials included timber – such as birch. The house was built in the 19th century (c. 1825).

2. The hut uses age-old methods of construction: comprising an inner layer of stone, corbelled out to form a dome, covered by turf and earth for insulation.

The sleeping area is (d) on the drawing.

3. (*Own responses*)