

# BUILDINGS AT RISK

## Building with stone – and marbles – on northern plain

Buildings at Risk looks at our built heritage – buildings and structures, how they have evolved, and their place and role in the landscape. In this instalment, Dave Martin of the Isle of Man Natural History and Antiquarian Society looks at stone used for construction and its regional character.

**R**ecent articles have looked at the use of clay and lime in construction, how lime was processed for building purposes, and the benefits of using lime in new construction as well as in repairing or conserving older buildings.

Lime was for centuries complementary to the main construction material – stone; whereas clay had increasingly modest use until the growth in use of brick and tiles.

Construction material, to build houses for both two- and four-legged inhabitants, and their stores, equipment and food, varies not just through time, but varies regionally across the island, giving the distinctive tapestry of regional character which helps keep the island an attractive place to live and work.

There are geological differences which we will look at, but there is another vital distinction, that between rich and poor.

Not just, or even primarily, in financial terms – more in terms of availability of materials, although of course wealth or power could overcome some deficiencies.



A shore-stone wall

Stone, if used, would come from as close as possible, which explains the vast numbers of small quarries across those parts of the island where bedrock is accessible; some of those quarries may only have supplied a single dwelling or farmstead.

Where stone was easily available, it would certainly

be used, and there's probably nowhere where that can be seen better than the top of South Barrule; where not only was stone used to build the stone ramparts, and potentially form low walls around each hut – dozens and dozens of them; though both the ramparts and probably the huts show signs that stone

was re-used over time.

In many areas though, some of the earliest dwelling may have just had turf walls – slabs or strips of turf would be cut and just laid on top of each other until the wall was high enough. The fibrous roots would provide a measure of reinforcement and, if kept dry, turf walls can have a surprisingly long life.

If kept dry and undisturbed, the fibres in turf can be discerned long after they were laid; indeed when burial mounds are excavated, such as that at Berk, in Kirk Michael, you can sometimes discern individual layers of turf laid thousands of years ago.

In house walls though, exposure to moisture and air from without and within, it can be hard to decide if a wall was made of turf or just rammed earth.

We don't have surviving

external wattle and daub walls on the island, but it was used sometimes for internal walls, hanging chioillagh fire-hoods etc.

**E**arth (or turf) walls are very vulnerable to damp and the weather, so several strategies arose. If the walls were just 'mud', then a high proportion of clay would be used which when dried would reduce water penetration.

Another approach is to try and stop rain before it gets into the wall, and this gave rise to the apparent incongruity of an earthen wall being painted white when whitewash / lime-wash was used to try to seal walls as it was thinner and cheaper than rendering.

Earthen walls are also poor to take spreading loads, such as from a roof. Lowland

Manx farm hedges are typically formed with facings of local stone on either side, then infilled with earth, pebbles etc. The same approach was taken to strength building walls, and some Keeills have low walls faced with stone and infilled with earth – the same will have been done with dwellings.

There is no evidence in the island though of major hollow-walled structures, such as Scottish Brochs.

Nor are there any known examples in our island where instead of earth, the gap between the two stone faces was stuffed with straw, as was discovered at Arnol on the Island of Lewis. This straw acts as insulation, helping the building to retain heat, much like modern cavity insulation.

Especially where it wasn't prolifically available, precious stone was used spar-



Shore-stone building walls with stone corners (left) and brick corners (right)





A near two metre long chiollagh lintel worked from a granite erratic boulder



Ship's timber lintel in a shore-stone walled farm building

ingly. So, for example the lower portion could be stone faced to both help take the load and also provide a measure of protection against ground damp, then continued up as just turf or earth. Whilst those in-tune with nature would try and situate dwellings in sheltered locations, some of those most blasted by the prevailing (SW) wind driving rain, used stone for the windward wall(s) and earth for the sheltered ones.

Whilst early Manx houses may well have just had a smoke-hole in the roof, as in the Black Houses of the Western Isles, even when

stone was scarce it could be used to build a stone chimney in an earthen-walled house.

**SHORESTONE**

There is a major divide in the island's geology in terms of resources available for building that roughly follows the northern edge of the hills – the TT course from Kirk Michael to Ramsey.

North of that line, everything is 'the gift of the glaciers' – there is no quarry-able building stone. Everything on the surface is glacial debris – mostly shore-stone but some glacial erratics. Glacial erratics are the name given to usu-

ally larger boulders or chunks of stone carried by and then dropped by the glaciers.

The main stone available for building on the northern plain is 'shore stone' – the name used by those on the north of the island to described water-rounded stones, effectively big pebbles, sometimes also described as cobbles. This is the first of the Isle of Man's very distinctive building stone types.

Because of the random nature of stones left by the glaciers or found on the beach, any large ones would be reserved for corners, in more recent centuries



Above a doorway in a shore-stone building – the outer 'slate' lintel survives, but the inner wooden one has failed and the inner leaf of shorestones has fallen to the ground

bricks would be used to form corners and door/window openings, and the random shore-stones would be laid to achieve best fit.

Shore stones are not great material to build with. Quarried stone tends to have flat faces which can bed together, as seen for example in a dry-stone wall on the Manx hills. Building a wall from shore stone though is more akin to trying to build a wall from marbles or tennis balls.

At the very least, building a wall from these rounded stones needs packing in between the stones, even if it isn't adhesive, and this is sometimes described as 'earth mortar'. Whilst gaps between stones could be filled with earth or mud, it would tend to wash-out with the Manx climate, so some earth-mortar walls would be pointed with clay.

Where clay was more readily available, it would be used as the mortar, hence 'clay bonded' walls. The clay not only filled the gaps twixt the shore stones, and held them together, it also provided a vertical damp proofing. There are clay-bonded shore-stone walls still standing in the island which are many hundreds of years old, and some still retain their water-proof nature to this day.

As described above, building with shore stone needs lots of mortar to not only bond but also pack between the stones; so whilst shore stone was relatively easily

available, as was earth or mud for earth mortar, and clay was sometimes available – if you wanted to use lime mortar it could take many times as much lime mortar as a wall made from quarried stone; so as a generalisation shore-stone buildings tended to be later adopters of lime mortar.

Whilst wall-building stone was used from as local a source as possible, there is absolutely minimal stone on the northern plain which is suitable for lintels.

At first sight, lintels in older shore-stone buildings on the northern plain are similar to other pre-industrial ones elsewhere in the island – 'Manx slate' or wood; sometimes both – 'slate' on the outer side where exposed to the weather, wood on the drier inside. Prior to the 1739 Bridges Act, most access from quarries in the foothills south of the Sulby River and the Curraghs meant dragging any stone through fords, so timber was preferred in the North, and any bounty

such as ships' timbers found on the shoreline would be highly prized.

Most of the glacially-deposited stones on the surface of the northern plain are small – bigger ones are of a size to be a nuisance when cultivating the land, so were moved to sides of fields and perhaps used to face fields hedges or for building walls.

There is a scattering of bigger boulders, which can be found used, for example, to form corners in Keeills and newer buildings on the Northern Plain.

Very rarely, a glacial erratic boulder would be found which was big enough to span a doorway, window, or chiollagh opening.

Whilst stone such as 'Manx slate' can be cleaved along bedding planes, these erratic boulders would have to be carefully chipped away to form flat faces (see picture).

● Next time we will look at some of the other types of stone used in the island.



A shore-stoned faced Manx hedge



Shore-stones near the ground, earthen walls above