

# Britain & Ireland's Walling Treasures:

## Redrawing patterns

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"That which we call a rose, By any other name would smell as sweet." Romeo and Juliet (Act II, scene ii).

This article is an edited version of articles previously published in the Waller and Dyker, and Stonecat Magazines.

What's in a name? (That which we call...). In the Spring 2011 article I briefly mentioned the angled layers of the walls of Purbeck. This is technically known as inclined stonework, not to be confused with inclined walling which is sometimes used to refer to building walls on slopes. In Britain (outside of Purbeck) it's not something I've come across, or heard tell of that much.



A recently rebuilt inclined wall, Purbeck

Purbeck's inclined stonework can be found primarily in a strip along its southern edge, between Worth Matravers and Swanage. Slightly further afield there are other Dorset examples in Abbotsbury, and Portland, but these are scant at best and possibly just sporadic copying of the Purbeck ones. There are occasional examples elsewhere, for example most of the remains of Thomas Stevenson's ill fated Wick breakwater in the Scottish highlands (built in the mid nineteenth century and washed away not long after), is very steeply inclined stonework. The sloping stonework of the North Pier at Eyemouth in the Scottish Borders dates back to the 1770s. Vertical stonework (ultimately inclined?) is far more widespread in single walls in Scotland and

Ireland and also in banks and retaining walls in Wales and parts of the south west. That found at other harbours such as Castlehill near Thurso, (glossed over in the original 'Patterns'), is worth more of a mention in its own right, but will have to wait, and the inclined work of the harbours is probably more relevant there than here...

The Purbeck walls are something of an enigma, I have been unable to unearth anything particularly solid about their history although I have heard a fair few 'urban myths' about them. One story goes that they were built by Napoleonic POWs. A familiar chestnut, everywhere seems to have its Napoleonic wall story. Even if this one is true you'd still have to ask why they slope... Perhaps they originate from an area in France, and the pattern arrived with prisoners. However when you analyse the structure you realise that working on a long length rather than sequentially from one end where you have something to build up against, to lean your stones on, is a problem. So it would probably have required very few prisoners on a one to one basis with their guards. Other counter arguments include high unemployment and low wages in the area at that time, so prisoner labour would not have been appreciated/tolerated, or that the walls predate that period of history anyway, then again do the walls predate that period or is it just the boundaries. An important distinction when there are a lack of records (that is even if a wall has been between 2 fields for 100s of years how do we know it was not completely rebuilt at some point?). For every theory there seems to be a counter one.

Maybe they are just the lifetime work of one or two wallers. But then if that was the case I'd like to think that maybe names would have been passed down through oral history (more so than if it was a pattern that almost any local waller did), but this does not seem to be the case, and whilst (I'm told) the norm is for an incline of around 30 degrees, there are many examples of different inclines, styles of coping and footings. Why would one or two people vary it so much? Of course we can also ask why vary it anyway?

It could be a method of major repair, stripping as you go. This process is a little difficult to visualise, but efficient in terms of dismantling and rebuilding, essentially you only have to handle the stone once. You can in effect stand in the footings and build both sides, although this is more problematic towards top and for shallower inclined stonework. As a theory it more or less implies that the walls are essentially rebuilds, which is always a possibility. I've not quite got my head around this one!



Steeply inclined Purbeck stonework

Another suggestion is that the more vertical the stonework the more problems sheep have if they're trying to scale the wall. We could be getting into sheep psychology here, one of my favourite discussions. In the interests of 'brevity' my observations suggest sheep frequently run at walls at a slight angle and so if they head from the right direction it might actually help. Maybe Welsh sheep are more intelligent than Southern ones, they are certainly not as fat and probably more agile!

Meanwhile, the man in the Langton Matravers Stone Museum suggested that one theory was the walls lasted better if undermined by rabbits. That is the stones slip into the holes more without really affecting the structure, whereas flat laid stone would be more likely to collapse. Would this actually be the case, how much slippage/accommodation of movement would there be? Then some of the walls are on flat laid footings, and most show no signs of rabbit activity, has it always been thus? An interesting but specious theory?

Not all the walls in a Purbeck local field pattern have inclined stonework, so they might have been used as a method of marking a boundary between two properties. Something that needs a bit of research (fraught with problems) before it's dismissed, although with changes over the years, copycat walling, removals and newer subdivisions, 'concrete' conclusions are unlikely.

The one substantive written reference to inclined fencing I have found is not British, it is in Carolyn Murray-Wooley and Karl Raitz's "Rock Fences of the Bluegrass" referring to "edge fences"- in many parts of America they refer to walls as stone/rock fences. I have only seen one short section in the flesh, and photos of others. By and large these seem to have the stone set more vertically than is the rule on Purbeck. Murray-Wooley describes the building process and says the stones are set at an angle of 30-45 degrees (p.44) however the photos suggest most are angled much closer to the vertical than even 45 degrees.



Kentucky Edge fence, courtesy Mark Jurus

Beyond the anecdotes there is usually a sound structural reason, utilising available stone and local conditions (often adapted by economics) for a wall type. Edge fencing in Kentucky is most common near streams or on steep slopes. Gerald Alvey in “Kentucky Bluegrass Country” suggests (p.42) that they are less costly to construct and so utilised on less valuable land – low-lying wetland or steep slopes. Many Purbeck wallers will tell you they take longer to build and so are more expensive. This could of course be down to an individual’s skill or familiarity/experience, or Alvey might be thinking of single stone thick edge fences.

really apply to the Purbeck variety - although many do run at right angles to the coast where there is more of a slope to the land. I have heard it suggested that those near watercourses resist flooding better. This might make some sense and we’ll deal with this more when I look at harbour walls. However we’d all be in trouble if the Purbeck ones needed to resist rising water. I’m fairly confident we can discount that theory here.

On slopes Murray-Wooley/Raitz argue “for the same reason that coping rocks of a flat-coursed fence lean downhill so that its weight is directed perpendicularly into the hillside.” (p.44). I’m not sure the reasoning is right here and not everyone would agree that coping should be sloped downhill. This said there are sound applied mathematics arguments in favour of sloping downhill however this is very different from the perpendicular argument, which I suspect is specious. Ignoring the fact that the photographic evidence suggests the stones generally aren’t perpendicular to the slope, it is unclear why it would be important. Gravity has the same effect on a wall on a slope as on the flat, how the foundations interact with the slope will have far more implications for the wall than the stonework itself. If the footings are flat then the slope has little relevance. In most respects the wall is independent of it. This said my own thoughts are that the angling introduces lateral forces along the wall as well as vertically towards the base. In a normal flat laid wall there is very little force binding adjacent stones other than some friction and the tying effect of ‘1 on 2’. However the physics all gets a little complicated and not really the stuff of this series

This could also be said of another idea forwarded in “Rock Fences...” relating to the climate. It is suggested that during frost heave the angular nature of the stone and the inclined build means that any frost heave “simply locks the fence tighter” (p.46). Again this is an argument which on the surface might have some credibility, but it is far from clear how its importance, or the physics, ‘stack up’ under analysis. As far as we can be sure of anything consistent frost heave has not been, and is not likely to be, a problem in Purbeck (in the near future anyway)! There is an associated idea that “the upright courses provide no place for rain and melted snow to collect and freeze”. Very possibly true although not everyone would agree as to how serious water penetration might be. Ever taken down a wall that is not dusty inside? A similar idea is put forward for the walls in Purbeck, with the angle helping them to drain. However the stone there does not seem as friable as it might be in say the Cotswolds, it’s also not exactly a wet area compared to many walling areas. It does not really seem a credible explanation. Even allowing for stone type, if this is truly a method devised to cope with rainfall wouldn’t you expect it to be a little more widespread?

Alvey mentions the edge fence presence on Irish Ridge an area Irish Catholics settling the area in the 1840s there with the implication that they are Irish in origin, adding “Since they were erected in relatively poor areas, most edge fences in the Bluegrass were probably do it yourself projects, no doubt modelled after similar fences in Britain and Ireland.”(p.42) What walls in Britain and Ireland? My (limited) Irish contacts suggest that inclined walling (as opposed to ‘vertical’ walling which is quite widespread and herringbone) is relatively rare with sporadic/isolated examples only – although when you look at the size of Purbeck it would not be that difficult to miss a whole area in somewhere the size of Ireland. Alvey also mentions that they have no footing simply and are simply built on the ground and mentions a flat cope. Clearly he has not noted the same variety as in “Rock Fences...”. So as to the British connection, does he know something, or is he another one just making it up as he goes along...!!



Back in Purbeck looking at these walls being a local pattern, they of course vary between themselves. We have already noted that the angle of incline can vary, but as can be seen in these two examples. The angling is not necessarily consistent within a wall, often taking on more of a meandering nature than a regimented 30, 45 degrees, or whatever, as can be seen above. It can be difficult to tell if they were built this way or have been subject to numerous repairs, although sometimes it is somewhat more obvious that the wall has been repaired 'correctly' as would seem to be the case right. This can be an alarming tendency with highly localised patterns as those working on them might not be capable of replicating the original method or maybe just completely oblivious to them, perhaps even determined to 'put things right'.



This said inclined stonework does level off occasionally and deliberately. This is the Purbeck method at gateways. It would be technically challenging, to say the least, and arguably structurally unsound to end a wall with sloping stonework. Consequently the end is built flat layed as per a 'normal' wall with a metre or two of flat laying before the stonework is gradually tilted to merge with the sloped layers, as can be seen left..

Coping also varies on Purbeck walls, it is often little more than rubble. Rarely do the walls have a neat organised coping as seen earlier in the recently rebuilt wall. It is sometimes slightly more organised and covers can be found on older walls too, as seen on the next page.

As was noted in the original article (doubled) walls tend to be categorised as random or coursed, and with tens of thousands of miles of random wall you would expect to see variations. By and large these variations remain glossed over, often unrecognised and by and large undefined. As a result 'random' tends to be used as catch all. Somewhere down the line I hope Walling Treasures will get to terms with this,

as local patterns if not recognised are easily lost. For now we have to content ourselves with (hopefully) just a little eye opening.

There is a lack of readily accessible source material on this aspect of our craft, as with many (most?) areas come to think of it. It is easy to get caught up in 'Chinese whispers'.



Anyway I'd be grateful for any snippets of information, even urban myths, on any of the subjects I cover. Help me to make it up as I go along...please!

Thanks to Nick Aitken, Mark Jurus, Richard Tufnell, Andrew Rawson, and everyone else who's 'ears' I bent on this one.

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