



dry stone walling



Course participants building a wall using A-frames and string.

what is it?

It's the building of walls from natural stone with no adhesive (i.e. cement or mortar). Dry stone walling techniques go back many thousands of years – the Pyramids, for example, were built using a form of very precise dry stone walling. There are walls on the island of Menorca dating from 1500BCE.

In the British Isles, the Celts were expert stone builders, and around 1200 there was an expansion with the building of the monasteries. They employed masons to erect perfectly square stone walls around monastery land. The main impetus for the dry stone walls we see today was the Enclosures, as landowners started grabbing previously common land and building walls and hedges around it. The main building period was 1800-1850, when labourers and out-of-work miners were employed to build walls. Miners used the same techniques in the pits – any spare stone dug out was used to wall around the wooden pit props to give extra strength. Most dry stone walls we see today date from at least 1850, and have been subsequently repaired.

At least 35 countries have dry stone walls, including France, Switzerland, Nepal, Australia, the US and Canada – but the UK is the epicentre. Stone walls are mainly found in higher areas. Most are found along the Pennine backbone of the country, but also in the Cotswolds, Cornwall, Devon, Scotland, Wales, the Lake District, Northumberland and also Ireland.

There are around 180,000 miles of dry stone walls in the UK, but around 85-90% are in need of repair and unfit for keeping stock. So there's a lot of work to do!

There are many different kinds of walls, depending on the stone used – but the basic techniques are the same. Any kind of stone can be used, but the most common are sedimentary rocks such as sandstone and limestone

(predominant in the Peak District and the Cotswolds), and metamorphic rocks such as slate (Cornwall and Wales). They are easy to work, and can be split to reveal flat faces. Styles vary due to the properties of the stone. In Scotland (where dry stone walling is called 'dyking'), there are lots of granite walls. Granite is an igneous rock, and much harder to work, so walls tend to have massive boulders at the base, and a double-skin wall on top of these boulders.

what are the benefits?

- Durable: should last for over 100 years without much attention.
- Local: can be built using local materials and local labour, reducing transport distances, and therefore fuel.
- Beautiful: they add beauty and a unique character to a landscape.
- No cement: or its associated pollution and CO₂ emissions.
- Use what's available: hedges are more suited to lowland areas, but are more difficult to grow over 200m.
- Natural: no manufacturing / factories required.
- Wildlife: walls are a haven for mice, voles, birds, lizards, toads, newts, insects, mosses and lichens.
- Windbreaks: walls can provide shelter in harsh upland conditions for livestock; also, draughts coming through a wall can help dry sheep huddling next to it.



Dry stone wall before and after repair.



Dry stone walls provide field boundaries and shelter for livestock, and they blend into the landscape because they are made of local, natural stone.

what can I do?

You can create livestock-proof boundaries on your land, and you can repair existing walls. You can also build dry stone features such as sculptures, arches, cairns and even sheds or bothies. You don't need planning permission for dry stone structures. A professional waller will put up about 2.5m of wall in a day, but the decision about whether to do the work yourself or hire a professional will probably depend on what you have more of – cash or time.

If you're lucky, there will be plenty of natural stone on the land. This is obviously the most environmentally-friendly option, as the stone doesn't have to be transported. The next best option is to contact your nearest quarry and arrange a delivery. You will need about a tonne of stone per metre of wall.

The recommended spec. for walls is usually 28 inches (71cm) wide at the base, 14 inches (36cm) wide at the top, and 52 inches (132cm) high. There are no regulations covering dry stone walling; the main recommendations come from the Dry Stone Walling Association. Tools required include mattocks, picks, specialist walling hammers (developed by wallers to save labour, shaped to cut and chip away at stone), shovels, crowbars etc. You also need poles or rods to make A-frames (or batter-frames) to get the angle and straightness of the wall right. A typical incline on a wall is 1 in 8.

First, sort your stones. Pull out suitable stones to be the half-round cope stones at the top; through stones – long stones that go through the whole wall every metre or so to hold it together; and different sized building stones, starting with large

ones at the bottom, and getting smaller as you get higher. Clear a shallow trench for foundations (or strip the wall down if it's a repair job). As long as there is firm earth, you can start building straight on top of it. Put a couple of A-frames in first, with a string between them. Build the first lift up to 20 inches (50cm) from the ground, using the large stones, then through stones, then smaller stones to the wall height required, and then put cope stones on the top. You will be trying to present a flat face at the outside of the wall. There should be a hollow centre, filled in with very small stones called heartings.

There are lots more techniques involved in building dry stone walls, such as pinning and wedging to hold stones in place, bridged joints to ensure the wall's strength, and trimming stones to shape and size. These skills are probably best obtained by doing rather than reading, and so attending a course is probably a good idea. Other features can be incorporated into walls, such as stiles for people and holes for sheepdogs; and there are other styles of wall, such as single-skinned retaining walls, and Cornish and Welsh varieties that have turf or even hedges on top.

Grants are available to farmers to build or repair dry stone walls under the Environmental Stewardship scheme. Grants vary according to location, farming activity etc.

resources

- lowimpact.org/dry-stone-walling – for more info, links, contractors, courses, books, including:
- Andy Radford, *A Guide to Dry Stone*
- TCV Handbooks, *Dry Stone Walling*
- Charles McRaven, *Building Stone Walls*
- dswa.org.uk – UK association; listing of wallers
- dswai.ie – Irish association



This burial chamber with dry stone walls on the island of Menorca is around 3500 years old.

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