

INFORM

INFORMATION FOR TRADITIONAL BUILDING OWNERS

Dry Stone Walls



Special features:

There are also a number of special features which can form part of dry stone walls including:

- Stiles: These can take a variety of forms and allow access for people to cross the wall without damaging it. They take the form of steps built into the wall with an opening sometimes left in the cope.
- Lunky Holes: These are openings which are large enough to allow sheep to pass through but not cattle.



Stile built into dry stone wall

- Smoots: These are smaller openings in the wall which allow the passage of either water or in some cases rabbits through a wall.
- Squeeze stiles: These comprise of gaps in the wall which are narrower at the base than the top allowing people to pass through but not livestock.
- Bee Boles: These are small alcoves built into a wall to house beehives.
- Shooting Butts: These are small round enclosures to provide shelter for game shooting or bird watching.
- Pens: These are sometimes built against dry stone walls to provide a corral or shelter for livestock particularly in exposed areas.

Where such features appear they should be maintained as they often still serve a practical use. Such features are also important historical evidence of former practices and are worthy of conserving in their own right.

Causes of deterioration of dry stone walling:

Small trees and other vegetation growing through or close by dry stone walls may seriously destabilise the structure of the wall. Unchecked tree growth will eventually lead to stones being dislodged, or the wall being slowly pushed out of line and eventually areas of collapse.

Large animals such as horses, cows and deer may rub against a dry stone wall and dislodge top stones. Burrowing animals can cause problems by destabilizing the ground beneath the wall. The provision of a badger gate or lunky hole can help prevent this.

One of the biggest threats to dry stone walls is deliberate destruction. This can be brought about due to the enlargement of fields, the cost of upkeep, and changes of use from pasturage to arable farm land.

People are by far the most likely cause of damage to a dry stone wall. Walkers trying to cross a wall can dislodge stones, particularly coping. Walls are also sometimes pillaged to obtain stones for rockeries, land fill and other building purposes.

If there is inadequate drainage water may undermine the foundations of a wall leading to collapse. Flooding is a threat where there is a stream close to, or passing under a wall where an appropriately sized gap has not been built into the structure.

If mortar has been inappropriately introduced to a dry stone wall, water ingress and frost damage can occur to the stones themselves. It is therefore advisable not to introduce mortar to a wall originally of dry stone construction.

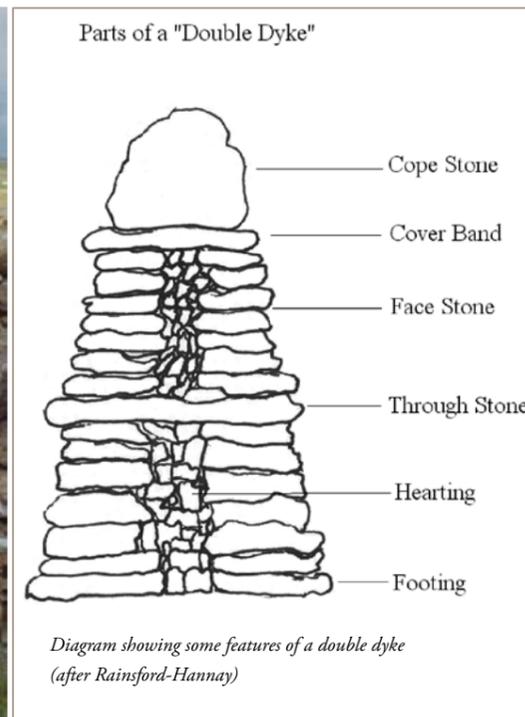
Even where a lack of maintenance has led to collapse repair is always possible and can utilise much of the fallen material



Introduction

Dry stone walls, or drystone dykes as they are commonly referred to in Scotland, are an integral part of the built heritage and landscape of Scotland. Despite the many thousands of miles of dry stone walling which can be seen forming field barriers and related structures it is a much neglected and misunderstood part of the built heritage.

Dry stone walls perform several vital functions and there are numerous arguments for their upkeep. The repair of dry stone walls is a job which is best performed by a competent dyker but there are some maintenance tasks which an owner or manager can undertake to reduce or limit the need for large scale repair. This INFORM aims to broaden the awareness of the importance and complexity of dry stone walling in Scotland, and offers an indication of the maintenance tasks which can be performed to prolong the life of such walls.



The construction of a dry stone wall

There is more to the construction of a dry stone wall than simply randomly setting stone upon stone. The skill required to properly construct a wall without mortar which will last for several hundred years is considerable. A correct understanding of the basic rules followed when building walls is vital to their proper upkeep. It is impossible here to describe all the complexities of building a dry stone wall but the following points should be borne in mind when considering the upkeep of such walls.

- The top 150mm (6 inches) of soil is normally cleared prior to building.
- The first layer of stones (known as the footing) consists of the largest stones, flattest side up
- Subsequent layers are laid across the joints formed by the course below

- Stones are placed with their long edges into the dyke rather than along it. This helps give added strength.
- To help prevent water ingress and for added stability sedimentary stones should be laid with their grain horizontal
- No stone except throughstones should project beyond the layer below, so that an “A” shape is maintained in cross section. This is called the “batter”.
- Where a double dyke (discussed later) is being built the hearting (small stones which fill the volume between the two walls) should be carefully packed and not simply thrown in loose.

- Double dyking should also incorporate “through stones” which span the width of the wall, and sometimes include a cover band at the top. Galloway Dykes should have a through stone where the double dyke section ends.
- The stones which make up a wall should be carefully “pinned” from behind using small wedged shaped stones to fill gaps and take the weight of unusual shaped stones.
- Cope stones laid along the top of the wall, are to hold down the building stone and shed rainwater. They are well shaped stones which fit tightly together set on edge usually vertically.

Corners and wall heads

These parts of a dry stone wall require some extra comment. Wall Heads are constructed where a wall is to start or end. They provide strength and stability for the wall and are built:

- Where Gates or other opening are taken through a wall
- Where a new wall abuts an existing one and cannot be tied in
- Where extra strength is required, for example if a wall is built on a steep slope

The wall head is the section that is most vulnerable to damage and should, therefore, be built of the largest, most regular stones. If rebuilding a damaged wall head it is good practice to take down the wall some way away from the head as well so that the repaired head can be tied into the rest of the dyke.

Where a wall has a corner it is important to ensure that through stones are used to ensure its strength is maintained. Likewise, where two walls meet in a T Junction, it is vital to tie the two walls in together rather than simply butt one against the other.



Single wall or boulder dyke

Styles of dry stone walling

Double dyke:

This kind of wall consists of two stone walls built parallel to each other and the core then in-filled with smaller stones. Through stones and top stones are used to hold the two facing walls together. This style of building produces a thick and substantial wall and is the most common style encountered in Scotland.

Single wall or boulder dyke:

A single wall is one which is only a single stone thick. Such walls are often built of stones cleared from fields. They are most commonly associated with areas where granite is the predominant stone type such as the South West and North East.

Galloway dyke:

Also known as a half-single dyke, the lower half is of double dyke construction and the upper half is of single. Galloway dykes feature a cover band half way up the build where the section of double dyke ends and the single dyke begins.



Caithness flag fences:

A regional variation of dry stone walling is the Caithness flag fence. This consists of large slabs of local sandstone set into the ground and overlapping to form a continuous fence.



Caithness flag fence



Two regional variations showing how local geology influences walling style

Maintenance of dry stone walling

Walls should be regularly inspected (at least once a year) and the following maintenance tasks carried out:

- Potentially damaging vegetation which has begun to establish itself should be removed as early as possible. A strip on either side of the wall should be kept free of encroachment by trees and shrubs.
- Cope stones which have been dislodged or removed should be replaced.
- Likewise, where other damage has occurred to the structure of the wall, repair should be carried out as soon as possible to prevent such deterioration spreading.



Rebuilding a section of dry stone walling, note batter frame and wall head

Contacts and further reading

- F. Rainsford-Hannay, *Dry Stone Walling*, (Dumfries, Faber, 1976)
- British Trust for Conservation Volunteers, *Dry Stone Walling, a Practical Handbook*, (BTCV 1986) <http://handbooks.btcv.org.uk>

There are a series of free leaflets available from the Dry Stone Walling Association at http://www.dswa.org.uk/Publication_frames_page.htm

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