

The HMAC is a Cork County Council Committee consisting of a range of external members, elected representatives and the relevant in-house staff. The HMAC is keen to promote an appreciation of the historic attributes of County Cork and this leaflet is one of a series that gives practical advice and information regarding the County's architectural and archaeological heritage.

There may be potential sources of funding from time to time, please contact the Heritage Unit for advice in this regard.

#### Useful Contacts

<b>Heritage Unit</b> 021 427 6891	Cork County Council, Floor 3, County Hall, Cork <a href="https://www.corkcoco.ie/arts-heritage">https://www.corkcoco.ie/arts-heritage</a>
<b>National Monuments Service</b> 01 888 2169	Department of Culture, Heritage and the Gaeltacht, Customs House, Dublin 1. <a href="http://www.archaeology.ie">www.archaeology.ie</a>
<b>The Heritage Council</b> 056 777 0777	Church Lane, Kilkenny. <a href="http://www.heritagecouncil.ie">www.heritagecouncil.ie</a>

design: www.kunmerrandierney.com

Where repointing is deemed to be a priority the following should be observed:

- The area to be repointed should be clearly defined.
- Joints should be raked out to remove friable material. Any large voids within the wall should be packed with mortar and packing stones.
- The joints should be brushed out, then dampened using several applications of a fine mist of water.
- An appropriate lime-mortar should be applied to the joints using proper pointing tools.
- Keep mortar off the surface of the face stones.
- Pinning stones can be inserted in the wider joints at this stage.
- Pointing mortar should be finished slightly proud of the stone surface and later brushed/tapped back using a stiff brush.
- Pointing mortar needs to be protected against extremes of weather conditions. This ensures slow consolidation of the mortar rather than a rapid set.

**Repair** Where the wall is leaning or structurally damaged it should be assessed by a suitably-experienced conservation expert and depending on the degree of damage a conservation engineering report may be required. A leaning or collapsed free-standing wall can often be the result of damaged or disturbed foundations or wash out of the lime mortar.

**Re-building** The features of historic masonry walls should be understood and respected when re-building. This is done by careful observation of the original masonry style and its appearance. The correct stone type (preferably reuse of the original stone from a collapsed or dismantled section at least for face stones), appropriate horizontal bedding, packing of wall core, lime mortar, pinning where appropriate, coping and suitable finish technique are all key to effecting successful masonry wall repairs. Mix new stones with old. Seek quotations from an experienced stonemason.

#### Legal Status

Some walls are part of an archaeological monument (see [www.archaeology.ie](http://www.archaeology.ie)) which are subject to statutory protection under the National Monuments (Amendment) Act 1994. Under this legislation any works, outside of routine maintenance, requires two months notification to the Minister of Culture, Heritage and the Gaeltacht. The wall could also be within the curtilage of

a Protected Structure, these are buildings of special interest identified by the Local Authority in the County Development Plan. For any works associated with either, please contact the Heritage Unit for advice and guidance.

#### Do

- > Get permission from the owner prior to works.
- > Gather information on the wall's form, fabric, function, legal status and date.
- > Make a photographic record of the wall.
- > Prepare a long-term plan in accordance with best practice and outline the programme of works to achieve the plan.
- > Repair to match existing original masonry wall.
- > Retain wall-friendly flora and fauna - minimal intervention is best practice.
- > Nip in the bud – only remove tiny saplings/light vegetation that will cause problems if left unchecked.
- > Get expert conservation advice where necessary.

#### Do Not

- > Do not use concrete.
- > Do not place face stones vertically.
- > Do not pull ivy/vegetation off masonry walls.
- > Do not clean moss/lichen/ferns from wall joints unless joints need repointing.
- > Do not carry out conservation works on masonry walls without seeking advice from a conservation specialist/contractor and permission from owner.

#### Planning

It is strongly recommended that a plan is prepared prior to commencement of works.

The plan should include:

- Location
- Legal status
- Survey of the wall form, fabric, function and date
- Provide information on the historical context which should include a review of historical sources, historical maps and local information
- Photographic record
- Seek professional advice where necessary
- Determine a program of works according to best practice:
  - > Plan of wall identifying proposed works
  - > Tools and material to be used
  - > Method
  - > Time frame
  - > Team Members

## Care of Historic Stone Walls

## Introduction

Old stone walls are an integral part of the built heritage of County Cork. Though often taken for granted, these features are testimony to the skilled craftsmen who built them and are an important link to the past. Traditional stone walls were built for a variety of reasons. These include boundaries to old farm yards and graveyards, lining the roadside and forming entrances into towns and villages. Where possible, such walls should be retained and conserved. However, many old stone walls are in varying states of preservation and some have been subjected to inappropriate repairs which has had a detrimental impact on both their visual appearance and physical condition.

Many local community groups have recognised the importance of stone walls and have taken an interest in their repair and maintenance. This leaflet has been prepared by the **Historic Monuments Advisory Committee** of Cork County Council to raise awareness of the heritage value of these stone walls and to provide practical advice and best practice for their ongoing maintenance and repair.

## Stone Walls

There are many varieties of stone walls ranging from dry-stone rubble walls to formal coursed ashlar (blocks of cut stone) usually seen on more formal buildings. There are many regional differences that give a distinctive character to an area. In Cork, the most typical boundary wall is of random rubble construction. These are built of uncut or roughly shaped stones bonded by lime mortar. It is this type of vernacular wall that is the subject of this leaflet though the same principles apply to all lime-bonded walls.



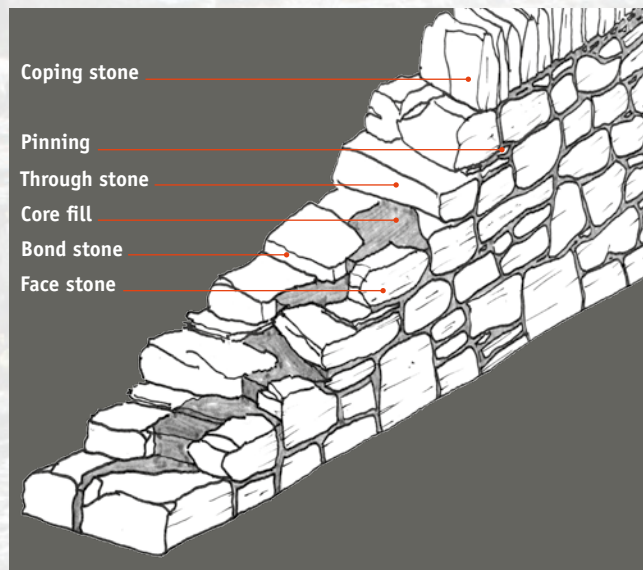
Maidenhair  
Spleenwort



Navelwort

Ivy-leaved  
Toadflax

## Key features of a traditional random rubble stone wall



<b>Rubble stone:</b>	uncut or roughly shaped stones with rough vertical outer face
<b>Face stones:</b>	stones forming outer face of wall, laid horizontally on its natural bedding plane
<b>Core:</b>	small stones used in the centre of the wall as filling, also called hearthing
<b>Joints:</b>	gap between two adjacent stones on wall face
<b>Through stone:</b>	a stone that reaches through full width of wall to tie wall together
<b>Bond stone:</b>	a stone that goes in at least two-thirds of the wall
<b>Coping:</b>	stones along top of wall to protect the wall
<b>Pinning:</b>	small stones inserted between larger stones in wall face
<b>Lime mortar:</b>	material to bed stones in, made primarily of lime, water and sand

The most common traditional building stones used within the County derive from the predominant naturally occurring stone types of the region. There are three main types:

- Sandstone/Mudstone
- Limestone
- Shale

The wall, built by a skilled craftsman who carefully selected rubble stones, laid them horizontally with an outer vertical facing

on both side and a rubble core. The stones were bedded in lime mortar. Most walls were laid in a series of horizontal courses (lifts) and each course was allowed to dry before the next lift was laid. A horizontal line often shows the height of each lift. Once reaching the desired height the wall was topped by a coping course. This usually consisted of vertically set stones designed to protect the wall from excessive water ingress preventing mortar being washed out through the joints. Most stone walls built in this fashion in the 18th and 19th centuries have a thickness of two feet (c. 61cm); a much thicker wall is likely to be medieval in date. Some walls such as those associated with farmsteads were given added protection with whitewash or plaster.

## Lime Mortar

Lime mortar has been used in wall construction for over 1,000 years in Ireland. It is used to bed the stone and not necessarily to hold the wall together. In fact, many old vernacular buildings use mud as a mortar with the external joints protected with lime mortar or simple lime wash. Lime mortar is an ideal bonding material for stone walls as it is flexible, porous, permeable and durable. The advantage of this is that it allows the wall to breath by allowing moisture to move through the thickness of the wall. In addition, the inherent flexibility of lime mortars allows minor movements in the wall to be absorbed through the network of joints. To make the mortar, lime is mixed with water and an aggregate (usually sand) is added to control shrinkage.

The three main types of lime recommended to make lime mortar are:

1. Lime putty or 'fat lime'
2. Natural hydraulic lime (NHL) – a lime that sets through the reintroduction of carbon dioxide
3. Quick lime (hot lime) – traditional lime produced by burning limestone

**The use of cement mortar to repair or re-point stone walls has the opposite effect to lime mortar.** Cement-based mortars are water-impermeable, and much stronger, harder and more brittle than lime mortars. The use of cement traps water within the wall leading to dampness, and its hard brittle properties cause structural stress with shearing and cracking of individual stones.



## MAINTENANCE

Many rubble walls have stood in good condition for over a hundred years and in numerous cases for much longer. Whilst some old walls require maintenance to prolong their lifespan, intervention is often unnecessary and can create more problems than it solves.

**Vegetation** Old stone walls are home to a variety of wild plants and animals that do no harm to the wall. However, there are some deep rooted plants which, if left get a hold, can damage the wall and lead to its ultimate collapse. Examples of these are ivy, trees and bushes, and even Valerian. For these plants, regular inspection and removal of small saplings and shoots is critical. If such vegetation has taken hold it should **not** be removed or weed-killed. Instead vegetation should be trimmed back to approximately a hands depth. This will reduce the strength of the plant, lighten the load and allow closer inspection of the wall. The removal of the remainder of the vegetation should only be undertaken once an approved conservation plan is prepared and can be acted upon. This may include repointing, repair of joints and/or rebuilding. These works should only be carried out by or under the supervision of a suitably experienced contractor with proven experience in the repair of historic walls and the use of lime mortars.

**Re-pointing** This is the process of renewing the mortar in the joints of the masonry on the external face of the wall. Over time, weathering and decay can cause voids in the mortar allowing the undesirable entry of water into the core. This will cause damage through frost weathering and from salt dissolution and deposition. Mortar failure is often confined to discrete areas and comprehensive re-pointing is rarely necessary over the entire surface. Serious mortar joint wash-out is the result of a particular cause which should be identified and addressed before repointing commences.