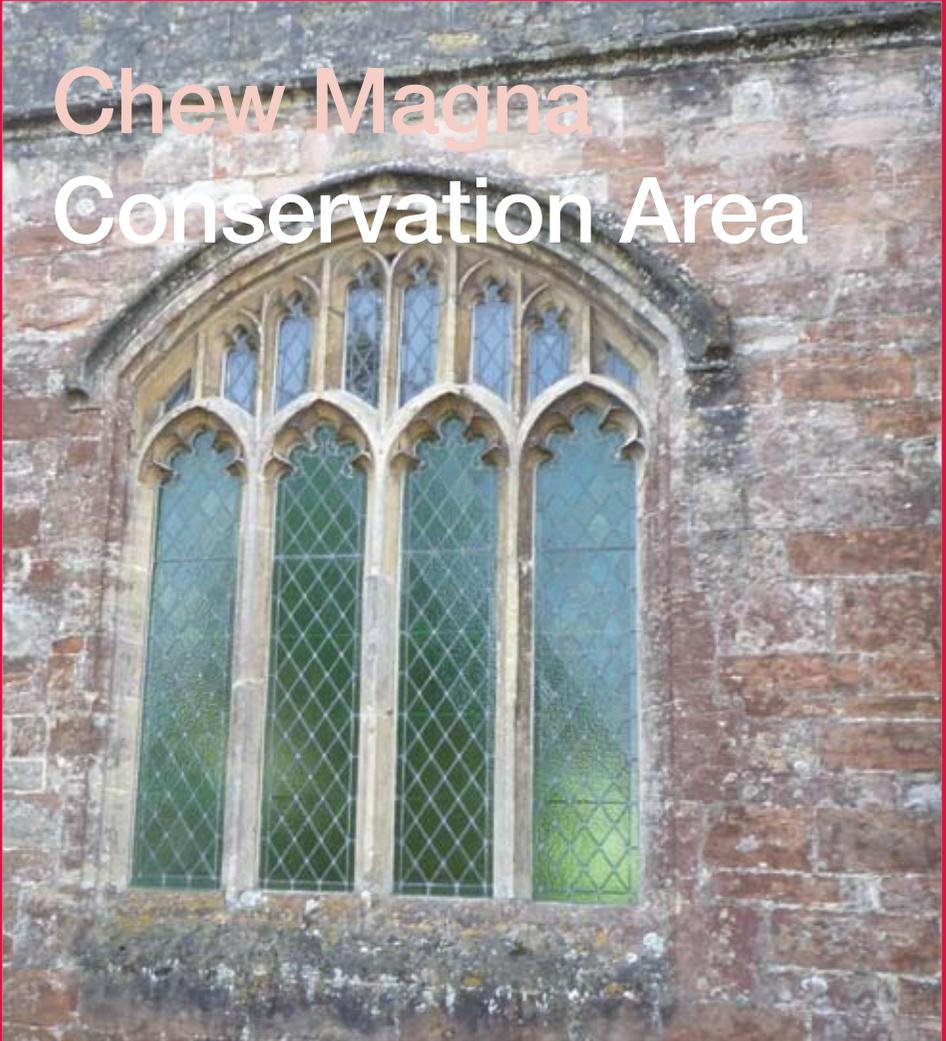


Chew Magna Conservation Area



**The maintenance and
repair of stone walls**

**Bath & North East
Somerset Council**

Introduction

In Chew Magna historic walls, whether they are boundary or building walls, are significant and highly visual structures that help provide a sense of place. Usually they are constructed in local materials: blue and white lias or most commonly red sandstone and form a harmonious and an important element of the village's essential character. Wherever possible they should be retained and conserved. However, as with many historic places, the walls are in varying states of preservation and many have been subjected to inappropriate repairs that have had a detrimental impact on both visual appearance and physical condition.

Bath and North East Somerset Council and Chew Magna Parish Council are specifically concerned that many of the walls are still being re-pointed with hard cement mortar in a style commonly called strap pointing which protrudes from the face of the wall.

This guidance leaflet briefly discusses the problems that have been identified and offers advice and guidance on best conservation practice for the care, repair and future maintenance of traditional walls. It is aimed at property owners, contractors, developers and anyone interested in historic building conservation.



Traditional materials and construction

The traditional construction of most historic walls would have originally been undertaken using lime mortars. Lime mortars are one of the most important materials used in building conservation. Regrettably with the development of Portland cement in the 19th century it gradually supplanted the use of lime mortars during the 20th century. The use of cement on traditionally constructed historic buildings and walls has had disastrous consequences due to its hardness and dense structure.

Solid wall construction requires that moisture should be able to move through the entire thickness of the wall. This process is aided if the wall is constructed using lime mortar which is a porous, permeable material. Specifically this means that moisture can move freely through the joints to then be dispersed by evaporation on contact with the wind and sun.

Fortunately a renaissance in the awareness, use and availability of lime since the 1970s means that there should not be any difficulty in carrying out appropriate repairs using lime.



Recent cement mortar strap pointing above, and (right) extensive decay taking place on a wall re-pointed with cement mortar (cover: historic lime pointing on the mediaeval St Andrew's Church)

Problems associated with using cement on historic buildings

If cement mortar is used to repair and re-point traditionally constructed structures this mechanism is compromised because cement is:

- impervious
- too hard
- too strong
- brittle
- inflexible
- of a poor appearance

These particular characteristics of cement have varying detrimental consequences and indeed these can be witnessed on the historic walls in Chew Magna. Qualified contractors may be able to remove it, although a trial area should be chosen using appropriate hand tools and techniques that should not include abrasive wheels. A cautious and sensitive approach is important because removal may cause an unacceptable level of damage.

Lime: types, technical aspects, benefits and advantages

Lime has been used in construction for millennia and was widely used in construction until the early 20th century. Lime for use in mortars is available in essentially two forms:

- lime putty or 'fat' lime
- naturally hydraulic lime (NHL)

Lime putty requires exposure to carbon dioxide in the atmosphere to set and is supplied submerged in water in plastic tubs. Naturally hydraulic lime (NHL) has naturally occurring pozzolans, usually clay, that means it predominantly relies on an internal chemical reaction to achieve a set and can even set when submerged under



Example of recent correct and neatly re-pointed coursed stonework

water. It is supplied as a white powder in bags (not to be confused with hydrated lime sold in builder's merchants as a plasticiser for cement mortars). It principally comes in three different strengths: NHL 2, NHL 3.5 and NHL 5. The different strengths relate to the percentage level of clay and each type should be used according to the specific circumstances relating to position and the type and condition of the substrate material.

Because the traditional stone buildings and boundary walls would have been constructed using lime mortars, repairs should also use lime mortars so as to provide continuity with the past and to allow newly introduced materials to age and weather at the same rate as the original and existing historic fabric. More specifically the main benefits and advantages for the use of lime are:

- relative softness
- flexibility
- permeability
- self-healing
- non-polluting

Lime putty is regarded as the most superior type of lime because slaking (soaking in water) for a long period of time produces a very fine product that is suitable for almost

all work on historic buildings. It is now sold premixed with a variety of different grits and other aggregates by the many producers that now operate in the UK. However NHL is also a very good material and suitable for work on historic buildings particularly when used to repair masonry in damp areas and is slightly easier to use than lime putty. However it is extremely important that the correct strength is chosen:

- NHL 2 is suitable for friable and weak stone and is relatively equal to a lime putty
- NHL 3 is a good all-rounder
- NHL 5 achieves a strong set and should only be used where the substrate stone is equally hard or harder. Subject to this it may also be suitable in exposed positions where a softer mortar would not be appropriate

NHL can be added to suitable grits and other aggregates to make mortars and the ratio depends on position and substrate building material. Both these types of lime are also used for external renders and internal plasters to produce outstanding results where paint finishes can be applied.



The need for consent

Minor repairs and maintenance do not generally require listed building consent. However significant areas of re-pointing to listed buildings and their curtilage boundary walls may require a listed building application to be made to the Local Planning Authority. If in doubt it is good practice to seek the advice of the Historic Environment Team at Bath and North East Somerset Council.

Contact details

**Bath and North East Somerset Council
Historic Environment Team
Planning and Transport Development**
for advice regarding:

- Listed Buildings and Listed Building Consent: 01225 394171
- Archaeology: 01225 477651
- Unlisted Buildings and Conservation Area Consent: 01225 394171
- Planning Permission: 01225 477722
- Planning Policy: 01225 477548
- www.bathnes.gov.uk

Chew Magna Parish Council

14 Tunbridge Close, Chew Magna,
Bristol BS40 8SU
Tel: (01275) 331373
Email: Chewmagna.pc@btinternet.com
www.chewmagnapc.co.uk/

Detail of historic lime
pointing on the mediaeval
St Andrew's Church

The wall of a historic
building in Chew Magna
Conservation Area requiring
appropriate repair