

Care and conservation of carved stone

Carved stone is found in many forms – it can be sculptural, architectural, ornamental or simply functional. It can usually be thought of as any piece of stone which is cut in three dimensions to form an irregular shape. For the purposes of this guidance note, carved stone does not include masonry such as mouldings although many of the characteristics of care and conservation are applicable to both.

In a secular situation, carved stone can be found in embellishments such as fire surrounds, or as capitals, pediments, friezes and even individual decorative objects. There is also a wealth of garden ornament which, because of its location can be particularly prone to decay. In ecclesiastical buildings, carved stone exists in all areas of the building including features such as monuments, fonts, pulpits, corbels, label stops and statuary.

The extent and range of carvings is matched by the variety of stones from which they are made. Limestone and sandstone are the principal materials but within each of these categories, there is a substantial variation both in appearance and behaviour. Many other stones such as granite, marble and alabaster have also been used depending on geography, availability and cost.

- Stone conservators have a wide range of knowledge about stone and related materials and can help by identifying the type of stone and recommending storage, protection or treatment options accordingly.

Carved stone is often delicate and is thus more susceptible to decay than bulk masonry. Consequently it also requires more care and attention. Observation and vigilance are the most crucial initial steps as, more often than not, early recognition of decay (through whatever mechanism) can help to prevent serious or even terminal damage.

Whether a carving deteriorates or not depends on a number of factors including the type of stone, its location and its maintenance. Although stone is generally considered to be a hard material, it is subject to a number of decay mechanisms:

Environmental decay

This is usually - but not always - found on external stonework. It is caused by weather erosion, the effect of pollutants, salt crystallisation, biodeterioration, and by repeated wetting/drying cycles. For obvious reasons, it is not easy to control and harder to reverse, but stone that is kept in a damp or exposed environment may be particularly susceptible. The most important thing you can do is to identify, be aware of and monitor any carved stone - often it is part of a larger construction and thus is not as immediately visible or accessible as a stand-alone object. Once identified, simple checks can be made to see if it is cracked or showing signs of decay or damage. Remember, decay is usually a slow cumulative process, so regular inspection is an invaluable tool.

- A stone conservator can carry out an initial survey for you and give you advice on an appropriate inspection and maintenance regime.

Mechanical decay

This can be due to poor quality stone, expansion of fixing cramps, bedding planes in the wrong direction or settlement. In most cases, a poor quality stone will crumble on all faces and lose its shape whereas a stone which shears in one direction is likely to be suffering from decay along its bedding plane. Physical damage caused by the corrosion and expansion of iron cramps used to secure the carving is very common, particularly with monuments and other items exposed to a damp environment. These problems are usually manifested by a crack appearing in the stone.

This type of decay can - depending on the location of the stone - present a safety hazard from sections of stone breaking off and falling to the ground.

- Stone conservators have the skills and access to appropriate materials to carry out repairs and consolidation of stone in situ or in the workshop.

If your stone carving is deteriorating because it is being kept in a damp location or somewhere directly susceptible to the weather, you could consider re-locating the item or protecting it. Great care should be taken when moving stone, as the carved areas will be delicate. In many cases, however, because of the location or bulk of the stone, it will not easily possible to prevent the degradation and in situ repair will need to be carried out.

- Do seek a conservator's advice on assessing the risk in moving a large stone object – most stone conservators are experienced in moving heavy items safely and they may also be able to suggest alternative means of treatment or protection from poor conditions.

Applied decay

This is most commonly brought about by inappropriate repair and vandalism. For all types of stone, the use of a hard repair medium such as cement can be detrimental and lead to accelerated decay of the original; this is often found as a powdering of the stone adjacent to the repair. Vandalism and graffiti are increasingly prevalent causes of damage brought about by social problems, lack of lighting and insufficient protection.

- It is best to seek advice about pointing, repair or fixing materials before using these yourself. Stone conservators are trained to use both traditional materials (e.g. lime) and the latest modern synthetics. They are also able to remove most graffiti or advise you on how to do this yourself.

"Dirt" and cleaning

Surface dirt on a stone is not usually a problem except from an aesthetic view. Many carved stones suffer from the accumulation of a black crust on the sheltered undersides of the carving; this may lead to decay in the future but can be completely stable and protective. It can even help the definition of the carving by accentuating the shadows. Moss and lichen grow readily on stone and do not usually cause decay except through water retention and the subsequent action of frost. Such growths can contribute to the patina of the object.

The surfaces of carved stones should therefore not be regularly cleaned, as the action of cleaning can cause accelerated deterioration (especially to sandstones) or re-soiling by opening the pores of the stone.

- Any cleaning should be carried out using gentle means such as bristle brushes and water but not aggressive detergents; a stone conservator can advise you on how to do this and whether specialist intervention is needed.

Consulting a conservator

The decay of carved stone is a complex area to which prescriptive rules do not apply. It is therefore important to get specialist advice. This need not be too detailed but a conservator with experience in stone conservation will be able to:

- Identify the type of stone
- Ascertain what decay mechanism is going on and why it has happened.
- Recommend and carry out preventive and remedial works as necessary
- Provide advice on future care, protection, replication and maintenance

The materials and processes used at each of these stages will depend on the type of stone and the context - it is important that they are compatible and correct for each individual situation. Such work should be carried out using the skill and experience of a conservator.

Use the Conservation Register to [Find a conservator](#).

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