Care and conservation of carved stone

Carved stone is found in many forms – it can be sculptural, architectural, ornamental or simply functional. It can be thought of as any piece of stone which is cut in three dimensions to form an irregular shape. In 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 secular surroundings, carved stone can be found in embellishments such as fire surrounds or as capitals, pediments, friezes and even individual decorative objects or sculptures. There is also a wealth of garden ornament which can be particularly prone to decay because of its location. In ecclesiastical buildings, carved stone can be found everywhere, including features such as monuments, fonts, pulpits, corbels, label stops and statuary.

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

- 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 therefore more susceptible to decay than bulk masonry. Consequently it also requires more care and attention. Observation and vigilance are the most crucial initial steps, since, more often than not, early recognition of decay 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 found on external stonework but internal stonework can also suffer from it. It is caused by weather erosion, the effect of pollutants, salt crystallisation, biodeterioration and by repeated wetting/drying cycles. 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 may not be 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, such as a powdery or friable surface, or a change in colour. 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, settlement or structural issues. 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 the appearance of cracks or a joint opening up. This type of decay can present a safety hazard from sections of stone breaking off and falling to the ground.

© Humphries & Jones Ltd

Carved Beer stone detail from a 16th century church monument

© Humphries & Jones Ltd

Early 16th century church monument carved in several limestones including Ham and Beer stone with later polychromy (applied paint)

© Humphries & Jones Ltd

Cleaning general soiling from limestone using a latex poultice

Find a conservator by using the conservation register

The Register is free to use; it provides detailed information on conservation-restoration practices based in the UK and Ireland including contact details, referenced examples of previous work and the qualifications of members of staff. It is searchable by specialist skill and geographical location and each business has been required to meet rigorous criteria which include professional accreditation of the lead conservator of the business; the information is regularly updated..

www.conservationregister.com

THE INSTITUTE OF CONSERVATION

- 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 kept in a damp place or somewhere directly susceptible to the weather, you could consider protecting the item or, as a last resort, re-locating it. Moving stone requires great care, as the carved areas will be delicate. In many cases, however, because of the location or bulk of the stone, easy prevention of the degradation will not be possible 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 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 if it is light, except from an aesthetic view. In fact, sometimes it can help define the carving by accentuating the shadows. But heavier deposits are not only visually disfiguring, they can also obscure detail and mask underlying problems. Many carved limestones suffer from the accumulation of a black crust on the sheltered undersides of the carving, which may lead to decay in the future but can be completely stable and protective. Moss and lichen grow readily on stone and although minor growths can contribute to an object's patina they may retain moisture in the stone and cause damage by frost action.

Historic decorative schemes may be present on carved stone. This may be mistaken for dirt if the history of the object is not fully understood. Prior to any cleaning it is important to understand what the dirt is and to ensure that it is indeed 'dirt'. The surfaces of carved stone do not require regular cleaning, hence the need to be clear about the nature of the dirt and the reason for cleaning. Cleaning is a major intervention and 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. Solvents and detergents should be avoided unless recommended by a conservator. A stone conservator can advise you on how to clean carved stone and whether specialist intervention is needed.

Consulting a conservator

The decay of carved stone is a complex subject where prescriptive rules do not apply. For repairs and conservation to be effective it is vital to understand and identify the problems affecting the stone. 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 mechanisms are active and why it has happened
- Recommend and carry out preventive and remedial works as necessary
- Provide advice on future care, protection, maintenance and replication if required.

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.

Icon, the Institute of Conservation

Working to preserve the things that people care about

Icon is the UK's leading voice for the conservation of cultural heritage. We raise public awareness of the cultural, social and economic value of caring for our heritage and champion high standards of conservation.

Icon is a charity. The support of our members, partners, donors and sponsors is critical to our ability to represent the conservation profession and those who support its mandate.

www.icon.org.uk

THE INSTITUTE OF CONSERVATION