

## Method Statement for Ashlar Indent Repairs

Ashlar stones are used at Church House to form all the structural edges such as quoins at exposed edges such as the buttresses and the corners and for the edges of all openings such as archways and windows. They are also used to tie back large areas of flint-work by forming ledger stones. All of these are built into the solid brickwork that is the structural wall of the elevation.

The stone used may be a generic bath stone which is an oolitic limestone which was in very common use in the nineteenth and twentieth centuries. As such it would normally be a freestone which means it would not necessarily need to be 'bedded' in the building in the same orientation as the sedimentary layers lay in the ground. It is clear that a couple of stones used in fairly exposed and important structural locations have lost sections of face. In the case of the stone a) providing triangular weathering to a buttress and b) a face stone forming the corner of the same buttress it was noted that the stones are exposed and steadily disintegrating probably under the action of frost damage on moisture locked within the stones which are no longer shedding water efficiently. Repair is appropriate to retain not just the stones but the integrity of the buttress and it would be preferable to retain as much of the existing stone elements as possible and just replace discretely the damaged profile especially where it is a water-shedding element. This can be done discretely because the new work would not be on the public display face of the buttress.



It is quite possible that stone b) has been laid end-bedded so that the exposed side face has become face-bedded allowing most of the face to be worn back nearly an inch.

For indents the damaged surface must be carefully prepared. Lack of surface preparation and lack of adequate reinforcement or armature are two of the most common causes of failure of past repairs. The stone surface should be cut back to sufficient depth that the indent will remain safely in place and the edges of the repair cavity undercut to hold the repair.

Although it is often possible in the case of larger indent repairs to use mechanical (disc) cutters to remove the bulk of the damaged stone, the final dressing of the repair cavity, the back and sides, should be done by hand with sharp masonry chisels to form well-cut, neat edges to the repair. The interface between a stone indent and repaired stone should be very fine, not a masonry joint, for maximum durability. Good indent repairs require a high level of masonry skill.

Historic masonry joints must be followed in all repair and replacement work. If repairs bridge masonry joints, evidence of the original construction (joint details) will be lost, and there is a risk of the repair fracturing along the joint lines.

Stone indents to exposed edges, for example on the nosings of cornices, steps, and copings, should be dovetailed in place to secure them. In general, indent repairs should be anchored by dowels (normally corrosion resistant stainless steel or phosphor bronze) inserted into fine drillings into the indent and the back of the repair cavity, and bonded with resin designed for this application. Resin should be used in the drilling only and not smeared across the stone surfaces at the interface.

Lime grout is the appropriate material for bonding the stone interface, which must be completely filled to avoid rainwater penetration using grout specifically designed to suit the exposure, stone type and colour.

Stone indents should follow the original profile of mouldings as far as these can be determined. This can be difficult with weathered surfaces and evidence should be sought in the least weathered areas and profiles recorded onto a permanent template, such as zinc.

## Shelter Coat

The sand-stone ventilation stones at the base of the building are very badly decayed. The proximity of the tarmac below and projecting plinth edge built in limestone above has concentrated a lot of damp into these unprotected stones and it is probable that there has been some reaction between the different stones. Their original appearance can be deduced from the crisp ventilator stones at first floor level however these may also be cut from superior stone. It is proposed that these be given a shelter coat. Lime treatments and shelter coatings can be applied to a surface to act as a sacrificial layer after repairs and treatment have taken place. They should be breathable and can be colour tinted to match the weathered stone.

Shelter coats are ideal in extreme environments since they provide a sacrificial layer designed to weather and protect the underlying stone, therefore halting decay and prolonging life. It is essential to keep shelter coatings in good repair with regular maintenance. Apply a lime wash with a carefully matched pigment mixed with sieved stone dust.

## Bibliography

Building Conservation Articles:

[Decorative Masonry Repairs](#)

[Stone Consolidation halts decay and prolongs life](#)

[Matching Mortars for Pointing](#)

Practical Building Conservation (Vol 1) English Heritage Handbook

[Stone Masonry](#)

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