



INTRODUCTION

Decay caused by vegetation is rarely a serious threat to a building and often contributes to the attractive appearance of an historic structure. However, where it is allowed to grow freely vegetation can cause damage to the fabric, particularly on areas of brick and stonework.

This information leaflet outlines the types of problems associated with vegetation on buildings, the extent to which damage can occur and where necessary, recommends methods of remedial action.

Picture opposite shows stonework at risk of damage due to poor control of vegetation

BOTANICAL DAMAGE

Ivy and other types of creeper plant can cause the disintegration of mortar joints and vulnerable masonry. They are particularly destructive in maturity and their growth therefore needs to be kept in check. The aerial roots of the ivy search for moisture and darkness as they grow, securing footholds in cracked masonry and open joints causing the displacement of stone or bricks.

Typical problems associated with large creepers are persistently damp walls, disturbance of footings, plinths and eaves courses, restriction of maintenance and inspection, scouring of soft wall surfaces, disturbance and blocking of rainwater goods. Also the suckers and tendrils of creepers secrete acid substances that contribute to surface decay, especially of mortar.

Where ivy or other creepers threaten the building fabric it is important to kill the ivy by cutting a length of the main stem at a convenient height above ground level. After cutting, peel back the outer skin from the cut edge, then coat all exposed surfaces with a paste made from ammonium sulphamate crystals. Once the plant has died it loses its adhesive strength and can then be removed. A well-established plant may survive for up to two years after such an operation, so to accelerate the process it may be sprayed with a systematic herbicide. The temptation to remove a well-established live plant must be resisted as any weak surface of brick or masonry is likely also to come away also.

Spraying with an appropriate gardener's weed killer can kill small plants growing in joints or pockets of masonry. It is important to kill the roots and remove any humus that may encourage future growths. Any remaining voids should be filled with the appropriate lime mortar.

In a building in which joints are sound with no cracks or fissures it is not necessary to remove the ivy but its progress should be monitored. Some wall creepers, such as the Virginia creeper, do not damage masonry directly but they still need to be kept away from eaves and gutters to avoid blockages.

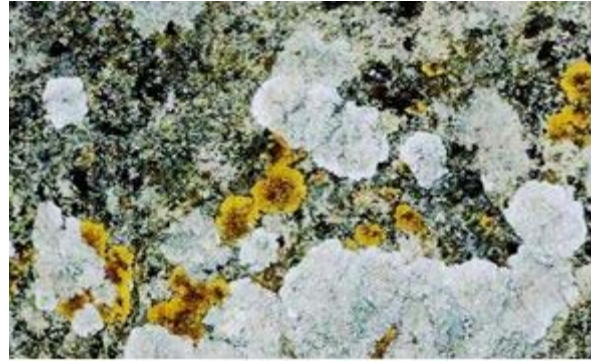
Creepers and climbing plants often look very decorative on an historic building and therefore sensible attempts should be made to preserve good plant specimens but not at the expense of the building.



Picture shows the destruction of masonry by a mature creeper. Woody root growths have penetrated lime mortar joints and with the gradual increase in their girth, have jacked apart substantial limestone blocks. The control of such growths is essential and sometimes complete removal is the best solution.

BIOLOGICAL GROWTHS

Lichens secrete acids that can cause decay by chemically reacting with the stone surface. However, this effect is limited to a very thin layer immediately below the lichen and is unlikely to cause any serious decay. Algae, moss and lichens all grow on brick and stone masonry and cause the build up of humus in which larger and more damaging plants can grow. Such growths contribute to the build up of moisture and the clogging of pores, making some stone surfaces more vulnerable to frost damage. Stone tiled roofs are particularly vulnerable as any dampness also causes wooden pegs and battens to rot. It is therefore important that any build up of moss is removed otherwise the lifespan of the roof can be reduced considerably.



Picture shows lichen growth on a stone surface

Mosses and lichens can also become detached from some surfaces during periods of dry weather, blocking gutters and causing the build up of material in cracks and crevices.



In some circumstances for the purposes of appearance or maintenance it is necessary to remove biological growths. The following method is recommended for the removal of algae, lichen, mosses and small plants from stone surfaces (J Ashurst, 1988, pp20-22):

- Remove as much growth as possible by hand using a blade, spatula, stiff bristle or non-ferrous brush.
- Fill a pneumatic garden sprayer two thirds full with a correct solution of quaternary ammonium-based biocide and apply flood coat by moving across area horizontally to allow approximately 100mm run down and repeat moving across the previous run down.
- Leave treated area for one week and then brush off dead growth.
- Prepare solution of proprietary biocide based on a quaternary ammonium and repeat the above process
- Then allow the surface to absorb the solution and then carry out a second application.

Picture shows algae growing on the surface of a building

Avoid spilling any solution on plants situated near to the treated area. Where there are ponds, it is best to use mechanical cleaning methods to avoid any contamination during treatment. This also avoids any indirect contamination through the ground due to leaching of the biocide. 1 litre of biocide will treat approximately 1.5 m². Only mix the amount as can be used in one day. Any application of biocide should be avoided during periods of rain. On relatively sheltered sites, re-treatment may be required at intervals of 5-10 years and on exposed sites, after 3-5 years.

Only use a surface biocide bearing a current Health and Safety Executive number and approved especially for the purpose. If in doubt about safety matters, the HSE Pesticides Registration Division may be contacted at Magdalen House, Stanley Precinct, Bootle, Merseyside L20 3QZ, Tel: 01519 514000.

BIBLIOGRAPHY

Practical Building Conservation: Stone Masonry – J Ashurst , 1988, pp 20-26, English Heritage. *Conservation of Historic Buildings* – B Feilden, 1982, pp131-132, Butterworth – Heinemann. *Removing lichens from surfaces* – <http://www.argonet.co.uk/users/jmgray/mmade.htm>
Control of Lichen, moulds and similar growths - Building Research Establishment Digest 139

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