Figure 5.1a Scaffold tower used for inspection of church roof structure. Safety considerations include use of fully extended outriggers, locked wheel castors, fixed internal access ladder and platform trapdoors. Protection should be provided beneath wheel castors where there is a risk of damage to floor surfaces

Figure 5.1b Powered-access platform used for inspection and maintenance tasks to chimney stacks and rainwater goods. With a maximum working height of 21.2 m, unrestricted working outreach of 13.2 m and gross vehicle weight of 6.1 tonnes, this platform could be driven across a paved terrace with reduced risk of damage to poorly supported stone paving slabs.

Figure 5.1c Telescopic mast-mounted camera used to record high-level fabric in a restricted urban setting (Credit: Aerial Viewpoint).

Figure 5.1d Inspection of cracking in the now floorless Great Hill Hall at Hardwick Old Hall (Derbyshire) as part of a full assessment of plasterwork condition (Credit: Joe Picalli of Conservation Solutions).

drip moulds. Weatherings used to protect such features may be defective and hold water in contact with the stone.
    - Saturation of walling, such as brickwork under a projecting feature without drips or water checks.
    - Displacement of gable coping caused by vegetation growth, failure of mortar bed, corrosion of iron fixings or detachment from kneeler mortice.
    - Removal of copings, cornices, drips, label moulds or other projecting courses, often for reasons of economy in repair, causing rainwater to run down the face of the wall rather than be thrown clear. Projecting courses are often seen cut for downpipes, together with the resultant localized saturation and staining. Replacement with an incorrect profile, following the eroded line of others, can prove ineffectual and channel the water rather than disposing of it.
- Efflorescence: soluble salts in solution migrate to the surface where the liquid evaporates and salts crystallize out. Such salts may be present in the wall materials or ground, or are introduced by activities such as former meat salting, animal urine, fertilizer storage or road salting, and can be set in motion by leaking services or a failed damp-proof course.
- Crypto-efflorescence: soluble salts may crystallize within the body of the walling material, setting up internal stresses and causing surface spalling.
- Frost action: moisture within porous walling materials expands on freezing, setting up internal stresses and causing surface spalling. Where dense mortars based on artificial cements are used, evaporation is forced to take place through the walling material rather than the joint, giving an increased risk of surface disintegration through salt crystallization and frost action. Projecting 'strap' or 'ribbon' pointing,

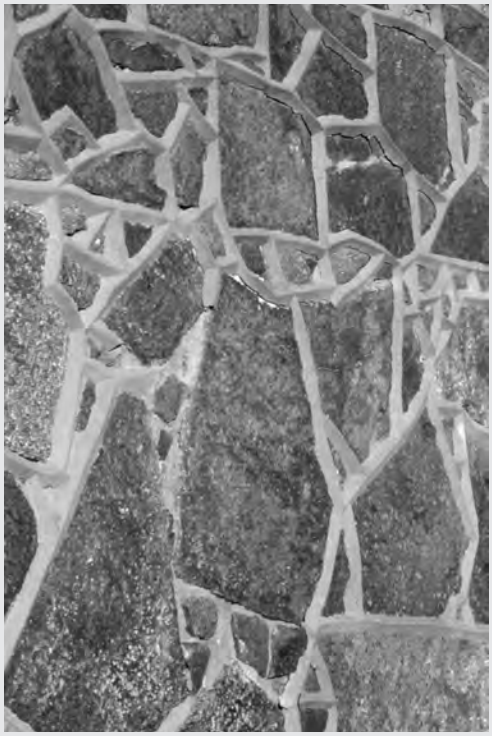

Figure 9.10 Strap or ribbon pointing. While requiring some skill, it is misplaced as such a technique is both technically and visually incorrect. Used with a dense igneous stone, any moisture trapped through the wall cannot dissipate through such joints.

Surface disintegration of stone

- Incorrect selection of stone for use and/or location (Figure 9.12).
- Inherent weaknesses, such as soft clayey or poorly bound beds.
- Moisture retained by mosses and lichens, causing localized saturation and staining.
- Build-up of droppings from feral pigeons. Chemical compounds within the faeces can attack the stone.
- Atmospheric pollution, including tars and chemical compounds, can lead to surface deposits that block the pores of the stone and attack calcite binders. The effects of historic pollution from industrial sources often still prevail with continuing decay (sometimes referred to as the 'memory effect'), while current problems relate typically to vehicle emissions. Limestones and sandstones

Figure 9.12 The Mansfield red dolomitic sandstone chosen by Sir George Gilbert Scott for the tall one-piece shafts to St John's College Chapel, Cambridge (1866–69) failed. The reason for this was that the stone had to be used with the bedding planes set vertically due to the shallow stratum from which the stone was taken.

Figure 9.13 Contour scaling of sandstone caused by atmospheric pollution and cycles of wetting and drying.