DIOCESE OF ROCHESTER

CHURCH WINDOW GUARDS - A REVIEW OF COMMON TYPES

1. INTRODUCTION

1.1 Origins

This brief paper, dealing with the protection of church windows against vandalism, is based on consultation with those who have gained experience on the subject over many years. It also draws upon other papers, written or presented at conferences and on discussions with architects, structural engineers, stone-masons, stained glass studios and with members of DACs and PCCs on the associated problems.

N.B. It is important to distinguish between the protection of windows against casual vandalism, with which this paper deals, and deterring deliberate criminal entry. This latter topic is not covered by the present paper. It is a mistake to assume that window guards will prevent burglary.

1.2 Motives and Aims

Consideration of guards comes about as the result of a desire to protect windows in the best available way. Responsibility for the building is paramount and any system of protection used must show the greatest regard for the architecture and must do as little harm as possible to the fabric, both in the short and long term. A good test of the latter is to look hypothetically forward to happier times when guards could be taken down again. At that future time there should be little trace of there ever having been guards in place. The process should be 'reversible'.

It should always be established at each church whether it would be feasible *not* to have any guards at all. All guards compromise the architecture to a greater or lesser extent; the only real solution to the problem of vandalism is to attempt to re-educate those responsible; to involve them in the life of the church and so on. There is evidence to support the theory that attempts at providing security actually encourage the acts of destruction. For example, if some, but not all, windows are guarded, the attacker's interest is drawn to those unguarded.

2. WIRE GUARDS

2.1 Galvanised Ferrous Metal

Whilst in many ways wire guards provide a useful solution to the problem, the following points should be taken into account:

(a) Unless regularly maintained, they will rust (see para. 2.3) and this can cause serious staining to stonework. The damage can be irreversible, short of major stonework repairs. Cases are known where rust staining has penetrated 1¼" (32mm) into the stonework.

(b) They can be visible from the inside, looking out; in the case of leaded-lights, the building becomes a 'cage'; and in the case of stained glass, lightly painted windows can be compromised by a grid of unwanted lines.

(c) If fitted over whole multi-light windows, including mullions, tracery, etc., the appearance is dreadful; they should always be fitted to each individual light, and within the tracery.

(d) They reduce transmitted light.

(e) They do not give protection against someone armed either with an air-gun or with a hammer in one hand and spike (e.g. screwdriver) in the other.

2.2 Non-Ferrous Wire Guards (generally stainless steel)

The additional points to make about guards in non-ferrous wire are as follows:

(a) The cost of guards in stainless steel is higher than those in galvanised steel but in turn will last much longer.

(b) Stainless steel wire guards secured with stainless steel fittings and screws eliminate the staining problem.

(c) A word of warning about stainless steel guards is that, because the raw material is more expensive than galvanised wire, manufacturers will sometimes skimp on the specification and produce a guard lacking in rigidity. (List of manufacturers available from the DAC).

2.3 Powder-Coated Wire Guards

The technique known as powder-coating gives good protection to ferrous-wire guards and offers a longer life-span than the galvanising process. There is a real architectural advantage to the black finish of powder-coated guards. The outer surface of stained glass naturally has an overall black appearance and so the guards to some extent 'disappear'.

The 'top-of-the-range' wire guard is one made of stainless steel *and* powder-coated in black, as preferred by the DAC.

3. POLYCARBONATE GUARDS

3.1 Early mistakes

When shields of polycarbonate sheet were first introduced, a number of grave mistakes were made, both in the design of the guards and the fittings.
Amongst these were:

(a) It was fitted in large sheets, covering stonework as well as glass, which was aesthetically and technically unacceptable. Sometimes sheets of only 4mm thickness were used. (See para.3.2).

(b) The large coefficient of expansion (0.5%) was not considered, so that buckling and damage occurred. Although polycarbonate is virtually indestructible by the action of external forces, it can break up if restrained by the internal forces of expansion.

(c) The buckling led to dreadfully distorted reflections of light.

(d) The fittings used were of poor quality materials, such as aluminium.

(e) The sheets were sealed into the wall or into the frames, thereby producing unventilated cavities. Often the frames were of poor quality materials. (Possibly the function of protection against damage was confused with that of double-glazing.) Sometimes the polycarbonate was introduced as a misguided alternative to restoring a leaking window.

(f) The large sheets, fitted by contractors with all their equipment and manpower, were difficult to remove for access.

3.2 An Attempt at Overcoming the Technical Problems

The design of polycarbonate guards can be greatly improved, technically and visually, if the following standards apply:

(a) The guards are made of 6mm thick polycarbonate sheet.

(b) The guards are cut to exactly the same shape as the 'sight-size' of the glazing; all stonework is exposed and the area of reflection is reduced to a minimum.

(c) They are fixed on brackets of unpolished stainless steel with fittings of stainless steel and nylon. The fittings allow for the expansion of the polycarbonate.

(d) The guards are fixed so that they may be removed for access if needed. The position of the guards should allow for a free upward flow of air between the guard and the window. This helps reduce condensation and the growth of organic matter.

3.3 Remaining Problems

There remain drawbacks, as follows:

(a) The reflection of light gives the building an unpleasant 'blind' look. This is somewhat more acceptable if the plane of the sheet material is preserved and the reflections undistorted. The problem is not so apparent at the more sheltered windows of the church. Even if not yellowing, they attract dirt very quickly, which cannot be removed.

(b) The polycarbonate sheet can be deliberately scratched or disfigured with graffiti. It will also melt.

(c) Unlike wire guards, the long-term properties of polycarbonate are not known. Possibly they will last 20 years. An investment in these might well be not as sound as an investment in stainless steel wire guards which are likely to put in at least 100 years' service.

4. THE OPTION OF NOT GUARDING

The deliberate policy of leaving windows unguarded is a sensitive matter and each case must be taken on its merits. At the two extremes, leaded-lights could well be left unguarded, whereas particularly rare or beautiful stained glass should be guarded. Again, guarding is more appropriate in some locations (and localities) than in others.

Statistically, most damage is caused by a young age-group; this area of activity, touching as it does on sociology and pastoral matters, is beyond the scope of the present paper. It could well form the subject of research.

5. SUPPORTING MEASURES

Whether or not guards are fitted, the following supporting measures are paramount:

(a) The PCC should have in safe keeping a thorough photographic record of the stained glass in the church, preferably in the form of colour slides, both of overall views and details. This procedure is being increasingly recommended by the insurance companies and might one day become mandatory. There is now a plan to set up a national archive of all such photographs. It is both more feasible, sometimes vital, and less costly to repair a stained glass window if good photographs exist. In addition, all inscriptions would be recorded.

(b) The Churchwardens and cleaning volunteers should be made aware of the importance, following a breakage, of collecting and saving every fragment of broken glass and lead, both from inside and outside. This needs to be 'written into the constitution' so that the principle is not lost as personnel change.

(c) The church should regularly review its insurance cover.

6. CONCLUSIONS

6.1 Preferred Methods of Protection

No design of guard is perfect. The only completely acceptable state of affairs would be to have unguarded windows in the context of a society whose members were not reduced to causing damage.

The order of preference is:

(1) No guards at all;

(2) Stainless steel wire guards (preferably black-finished);

(3) Black, powder-coated steel wire guards;

(4) In exceptional cases, correctly designed polycarbonate guards.

7. SUBMISSIONS FOR WINDOW PROTECTION TO THE DIOCESAN ADVISORY COMMITTEE

7.1 In order to properly assess a request for window guards (especially polycarbonate), the DAC considers the following criteria:

(a) Historical importance of the glass;
(b) Architectural/visual amenity (the location of the window and its prominence);
(c) Incidents and type of vandalism;
(d) Density of colour and extent of design or figurework in the windows in question.

7.2 In support of these considerations, the Committee requires the following documentation:

(a) Details of windows concerned:-

(i) Type and size of window(s).
(ii) Period or approximate date of window(s) and name of artist/manufacturer (if known). The date gives a key guide to type - the artist to quality.
(iii) Subject, i.e. figurework, heraldry, ornamental, lead glazing.
(iv) Photographs.

(b) Ground plan of church identifying windows to be protected and indicating direction of main view of church and general levels of visibility.

(c) Details of vandalism.

<u>Bibliography</u>

"The Repair and Maintenance of Glass in Churches" by Jill Kerr (Council for the Care of Churches: £4.50)
"Church Building" (Issue 34 pp 23-26 illustrated technical feature by David Lawrence entitled "Church Window Guards". Published by Gabriel Communications Ltd., 1st floor, St. James' Buildings, Oxford Street, Manchester M1 6FP.

Diocesan papers on Stained glass window repairs.
Guidance notes on producing photographic records of stained glass for repair and archive purposes.

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