

# **London Diocesan Advisory Committee**



## **PROTECTION FOR CHURCH WINDOWS**

---

1. **[INTRODUCTION](#)**
  2. **[MATERIALS](#)**
  3. **[DESIGN](#)**
  4. **[FIXINGS](#)**
  5. **[ISOTHERMAL GLAZING](#)**
  6. **[PERMISSIONS AND CONSULTATIONS](#)**
  7. **[CONCLUSION](#)**
- 

### **1. INTRODUCTION**

(a) Some churches suffer from deliberate vandalism to their windows. This is far from being a new problem. The combination of vulnerability and visibility has always made windows the first target for those wishing to attack a building, for whatever reason.

(b) Therefore, the most important feature of any system for the protection of church windows is its effectiveness at its job. However, this is not the only factor to be considered. Poorly designed window guards can be detrimental to the appearance of a building in just the same way as broken windows.

(c) The fitting of guards to church windows requires consideration by the Diocesan Advisory Committee and the granting of a Faculty. In cases of emergency this can be arranged swiftly by contacting the [Diocesan Registry](#) directly and copying details of the proposal to the DAC and the relevant archdeacon for consideration at the same time. ([Back to top](#))

## **2. MATERIALS**

(a) The chosen material and its finish affect the aesthetic impact of window guards and their suitability for each building. Traditional window grilles are made from galvanized mild steel. If they are not painted regularly they corrode, causing brown staining on masonry, and eventually they will disintegrate. Mild steel can be powder coated (usually with a black finish) which considerably increases its lifespan. In the past copper has also been used, which does not corrode with the same speed, but does stain masonry, in this case bright green.

(b) The best material from which to make metal grilles is stainless steel. This does not have to be bright-finished and can be painted. It will not corrode in normal conditions, and the Council for the Care of Churches estimates that stainless steel grilles should have a life of at least a hundred years.

(c) A more modern solution to guarding church windows has been found in the fitting of transparent polycarbonate panels. In the early days of this technique it was common for large, thin polycarbonate panels to be fitted in air-tight frames. This was done under the misconception that transparent polycarbonate would be invisible and that air-tight frames would reduce heat loss.

(d) In fact, the transparent panels reflect light from certain angles and can become scratched and cloudy with age, having just as strong a visual impact as metal grilles. Any heat-loss prevention was far outweighed by the build up of condensation and resultant damp problems. Therefore polycarbonate should be fitted in such a way as to allow free passage of air through the space between the polycarbonate and the glass. Large flat sheets should be avoided where this is likely to obscure the design of a window.

(e) There is not yet enough long-term data on the performance of polycarbonate in this context. The [Council for the Care of Churches](#) estimate its likely lifespan to be twenty years. A longer-lasting, but much more expensive option is toughened or laminated glass window guards. The latter can also suffer from discolouration over time and both are very heavy, requiring more substantial fixings than polycarbonate.

[\(Back to top\)](#) [\(This section only\)](#)

## **3. DESIGN**

(a) The best design for both polycarbonate guards and metal grilles is one that refers directly to the design of the windows it is to protect. Many medieval and Victorian churches have gothic bar tracery, each window being

composed of several, sometimes many, separate panels, curved and often curvilinear. In such windows the principal external visual element is the tracery.

(b) It is therefore desirable that window guards (either polycarbonate or grilles) are made to fit in within the individual lights of the window, allowing the continuity of the tracery bars to be maintained. If the cost of making individual panels is prohibitive, thought will still need to be given to layout and a drawing included with the DAC application for faculty (see [Permissions and Consultations](#) below). Aesthetically, black painted, or powder coated grilles are thought to be the most appropriate solution for gothic buildings.

(c) Many classical churches were built with clear glazed windows with relatively large square panes of glass. In these windows the principal visual element is the regularity of the square glazing bars. Internally, due to the clear crown or cylinder glass often used in these windows, any guards fitted to the exterior of the church will also be visible from the interior. Larger sheets of polycarbonate can occasionally be justified in buildings such as these, as they allow the glazing bars to be seen and are less visually intrusive within the building. It should be thick enough to prevent warping (at least 6mm), and must be fitted so as to allow for air to flow freely between the polycarbonate and the glass.

[\(Back to top\)](#) [\(This section only\)](#)

#### **4. FIXINGS**

(a) The method of fixing window guards is another important consideration. Guards need to be strongly and securely mounted. However, in historic buildings especially, this should be done with the minimum disturbance to the fabric of the building. It is also important to allow for access between the guards and the glazing for inspection, cleaning and repair. This can be facilitated by mounting the guard on hinges and securing with locks.

(b) The materials used for the fixings should also be carefully considered. In the case of galvanized mild steel, due to the risk of corrosion already referred to, fixings should always be stainless steel or non-ferrous. Junctions between different metals which can chemically react should be avoided. Over time the build-up of corrosion where fixings are embedded in masonry is likely to expand to the point where it cracks the masonry. The best materials for fixing guards into masonry are the correct grade of stainless steel or bronze.

(c) If old guards are being replaced, existing fixing holes should be re-used if practical. Where guards are being fitted for the first time holes for fixings should be made into mortar joints rather than masonry, if this is practical. For polycarbonate panels it may be appropriate to use intermediate nylon fixings between the polycarbonate panel and stainless steel masonry fixing. ([Back to top](#)) ([This section only](#))

## **5. ISOTHERMAL GLAZING**

(a) This is a developing technique used for protecting glass of the greatest historical significance, usually found in highly graded listed buildings. It is very expensive and involves considerable alterations to the existing glazing. It may be used in circumstances where the only alternative action would be to remove the historic glass altogether, but this is a controversial solution, requiring all the factors each way to be weighed before deciding to adopt it.

(b) The original glazing, and any associated metalwork, is removed from its frame and a replica is made in clear glass, reflecting the design of the original. This new window is fixed in the old frame and the historic glass is mounted inside the replica, sitting slightly proud of the original frame. This provides maximum protection for the old glass, whilst preserving the sight-lines and the internal appearance as far as possible.

([Back to top](#)) ([This section only](#))

## **6. PERMISSIONS AND CONSULTATIONS**

(a) A [faculty](#) will be required for both new window protection and the total replacement of old window protection. This process should be begun by sending details to the DAC, to include drawings and specifications of the proposed method of protection, and a [statement of need](#) outlining the reasons why the proposed solution is being adopted. If the church is listed then a [statement of significance](#) will also be required.

(b) As window protection is visible from outside the church building, local authority planning permission may be required. The local planning authority should be consulted early in the process.

(c) If the church is listed then other consultations are likely to be needed. The Care of Churches team at Diocesan House can advise whom to consult. Generally the relevant [amenity society](#) will be among the consultees. Sometimes when a church has more than one important phase of construction it may be necessary to consult with more than one amenity

society. If the church is listed grade 2\* or 1 ("B" or "A" in the old listing categories) then it is also usually necessary to consult with [English Heritage](#).

(d) Depending on the details of the proposal the DAC may also choose to consult with the [Council for the Care of Churches](#).

[\(Back to top\)](#) [\(This section only\)](#)

## **7. CONCLUSION**

There is no ideal solution to the problem of guarding vulnerable windows, but provided that due attention is paid to the architectural language of the building and its effect internally as well as externally, an appropriate way of protecting windows can usually be found. [\(Back to top\)](#)

**Diocese of London  
Care of Churches Team  
October 2007**