

TECHNICAL NOTE No. 14

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Conservation of Historical Glass

1. Introduction:-

Every attempt should be made to keep the original glass, lead, ferramenta and surrounding timber or masonry of an historic window. As little as possible should be done to the glass. Because of the history of the last thirty years much historic glass has been lost. All that survives should be cherished.

Complex windows should be cleaned in situ. If dismantling is required due to decay in historic leads, then these should be melted down for re-use. Dirt and corrosion products should be removed, lead or rust lines which have been added should be taken out and missing features replaced using backing plates. If present lost iconography should be reconstructed only were based on documentary evidence and specialist advice should be obtained. All techniques used on historic glass should be reversible.

A full record of decorative glass should be made before work commences and at every stage of the process. This should be both photographic and written, including diagnosis and analysis of decay and damage. If the glass is to be removed, a pre-dismantling lead-rubbing should be made were applicable. Defects most commonly experienced are buckling, paint loss, organic growth, cracking, water penetration and condensation.

2. Cleaning:-

The use of detergents, chemicals and any form of harsh abrasives or high pressure jets must be avoided. Distilled or deionized water applied by means of soft brushes or cloths may be all that is required. Reagents such as Calgon and EDTA may be used and follow-up techniques can include ultrasonic cleaning and use of glass fibre brushes, dental drills, laser beams and air abrasive pencils.

3. Paint Loss:-

Missing detail can be copied and fired onto thin modern glass which is moulded to exactly match the contours of the original. It is then plated by glazing onto the exterior of the original glass. The two surfaces must not be glued together but should be sealed with mastic within the lead comes. Missing pieces can be matched as closely as possible. It is important to ensure that the repair is not irreversible. The modern glass should be signed and dated.

4. Cracking:-

The use of self-curing silicone glues for edge-jointing has been successful particularly when combined with plating. The glue should be colour-matched with the glass. Physical methods involving lead or copper are more intrusive.

5. Special Problems:-

Plain handmade glass and quarry glazing should always be retained and must never be replaced with modern machine-made glass. Salvaged panes may be available and

it is now possible to obtain handmade material from Europe.

Appliqué glass, made up of coloured plastics and glasses fixed to a base by means of epoxy based resins, has not been entirely successful as through time the components may become detached.

Dalles de verre, which employs thick faceted slabs of glass set in concrete or epoxy/cement, has failed occasionally because of rusting steel cramps or because of thermal behaviour differences between the glass and the surrounding material.

6. External Protection:-

External protection should be discussed with PHB. As an alteration to the appearance of a listed building, Listed Building Consent will normally be required. Consider the use of the building and threat to the windows. Is guarding likely to highlight a problem of under use to vandals? Can a temporary shutter installed after office hours provide sufficient protection?

In successful schemes the protection provided should match the shape of the window. The use of external glass panels as a protection is rarely acceptable except on church windows. Where grilles are proposed all fittings should be non-ferrous and caulked with lead into existing joints where available. They should be galvanized after fabrication or made from stainless steel. The pattern of a grille is often an important to its impact upon the historic building. An arrangement, which follows the existing lines of the window, is often the least obtrusive. Where sheet materials are proposed they should be glass to maintain the quality and appearance of the listed building. Plastic used in the past is no longer acceptable. Good ventilation must be provided at top and bottom. Chemical coatings must not be used as a protection.

7. Isothermal Glazing:-

The window is removed and placed in a new interior frame. The original opening is glazed with modern white glass, cut and leaded to follow the main outlines. This is sometimes proposed for church or very rare glazing. Good conservation practice is to retain the glass in its historic location unless there is a pressing reason for such a change.

Conclusion

It must be emphasized that patterned pressed glass, ready made commercial double-glazed units or plate glass with integral diamond quarry designs should not be used on historic buildings. Historic glass is an important part of the character of many buildings. The history of the last thirty years in this region has resulted in a massive loss of this material. Where it survives it should be cherished and preserved.

Reference:-

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