



Pugin, Hardman & Powell

Artists in Stained Glass, Metalwork, Antiques & Ecclesiastical Decorations

Manufacture and Installation of a traditional stained glass window

Location	Alton Towers, Staffordshire
Windows	Oratory quatrefoil window
Date of Origin	new
Artists / Studios	Pugin Hardman & Powell

1: Manufacture

- A:** Produce a scaled watercolour design to the brief required
- B:** Once agreed produce full size cartoon drawing for approval
- C:** Select mouth blown antique glass to match the colour palette using either, English Antique Glass, Alvechurch or Lamberts Glass, Germany
- D:** A cut-line will be drawn-out to dimensions of the template
- E:** Cut the glass to the required shapes based on the full size cartoon
- F:** Translate the coloured design onto glass through stained glass painting techniques
- G:** Fire the painted pieces in a kiln at the required high temperature to industry standards
To make the paint become a permanent part of the glass.
- H:** Glaze (Lead) the painted glass pieces together using various sizes of lead cams (using Heaps, Arnold & Heaps Lead)
- I:** Cement the finished panel to give strength as well as to make water-tight
- J:** Polish the finished panels
- K:** Pack the finished panels and deliver to site

2. Delivery & Installation:

- A:** Glass to be delivered on site
- B:** Temporary boarding will be removed.
- C: Secondary Glazing (photos attached):** Having reviewed the stone profiles and the security issues involving potential damage to the stained glass window we believe that the following isothermal glazing system should be used.
 - 1: To insert laminated kiln distorted antique mouth blown glass into the original stained glass groove. This glass will have a half inch perimeter lead to absorb any future movement in the stone. Make water tight with appropriate lime mortar mix to match original stone.
 - 2: Encase the stained glass quartre foil within a perimeter manganese bronze frame with attached fixing points.
 - 3: The stained glass panel held in a purpose-made bronze frame is subsequently fixed to the inner edges of the window apertures using 30mm bronze screws. For a window this size approximately 8 fixing points will be needed.
 - 4: The bronze frame is provided with lead flanges which fit tightly to the masonry, leaving only a few gaps at the bottom and top of the stained glass for air to enter the inter-space between the protective glazing



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and the art glass layer to prevent moisture from being trapped there.

D: A qualified stone mason will point the window in using sympathetic hydraulic lime mortar.

E: The glass will be wiped down and left clean.

F: The work area will be tidied removing all debris, materials and tools.

Please contact us should you need any clarification.

Pugin Hardman & Powell Ltd



SUMMER

AUTUMN

WINTER





