

THE V&A MUSEUM - CASE STUDY 1: STAINED GLASS AND SACRED SILVER GALLERIES

THE RECENTLY OPENED PERMANENT GALLERIES DISPLAYING THE FINEST COLLECTION OF STAINED GLASS IN THE UK HAVE BEEN ILLUMINATED BY VBK LIGHTING CONSULTANTS. THEIR TRADEMARK INTEGRATION OF HARDWARE AND THE CLIENTS' INSISTENCE FOR THE GARDEN TO PLAY A FACTOR LED TO AN UNUSUAL APPLICATION...



The V&A's insistence on retaining views to the garden led VBK to use LEDs instead of daylight to illuminate the stained glass exhibits

application was installed, with the lighting conditions relating to the daylight coming in through the west wall. A newly formed cavity wall houses a series of dimmable fluorescent lamps which illuminate the wall behind the exhibits. These separated circuits automatically cycle through intensity and colour temperature over a 24 hour period.

DESIGN DEVELOPMENT Stained Glass to West Elevation

The skeletal framework mounts of the exhibits conceal a miniature linear lighting system which wraps around the perimeter of each piece of glass. To achieve required intensities T5's were discounted, with Luxeon LEDs with elongation lenses being specified instead. "The industry seems to be pushing LEDs for each and every lighting application imaginable, and until this project we had resisted that drive," commented Max. "This particular situation does however demonstrate that there are indeed situations where, due to their physical size, and that of the control gear required, they are a useful addition to the armoury from which we can draw."

On initial inspection the installation appears to be a simple light box but that overlooks the detail as daylight and sunlight also play their part. Rather than directly light the stained glass, a spun theatrical scrim was placed 90mm behind each glass panel to achieve

The new exhibition designed by Ronayne:Design comprises two former galleries on the first floor which have been knocked through to form one long gallery. The museum's vast collection of exhibits required that all available elevations be used in the mounting of the stained glass. The two main elevations running the length of the galleries tell their own stories: The West Elevation is a 'Chronology of Glass Production' through the ages, while the East Elevation houses other key pieces of Stained Glass. The west elevation faces the garden with full height windows running the length of the two galleries. While that meant daylight could be used for the exhibits on this elevation, the museum decided that the views to the new garden required direct lines of sight past the exhibits. As Max von Barnholt of VBK says, this led to some issues: "The problems became evident early on into the project. The Garden was being

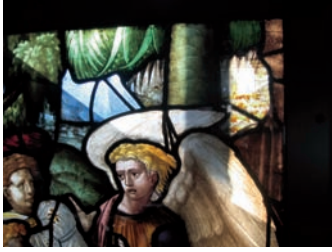
refurbished when the galleries were being considered, and it was clear from the museum that this was to become a focal point of their long term Masterplan regeneration of the site. They were insistent that views to the garden should be made possible from the galleries. Our original concept worked on the basis of utilising natural light, but with the exhibits set into a solid wall against the windows. They would become the only portals to the outside world, as seen in their natural setting within a church or cathedral, imparting their colours through into the galleries with all the dynamics that daylight offers."

A series of screens to support the stained glass exhibits in front of the window bays was therefore required. Wendy Ramshaw was appointed by the museum to the team to design these and immediately the conflicting design criteria became apparent. As Max points out: "With the solid walls gone the light fittings would be visible,

and the skeletal framework meant that any and all spill-light would be sent spewing into the gallery causing all sorts of visual clutter and discomfort."

The external mounting of light fittings was abandoned there and then, sending the lighting scheme back to the drawing board. VBK were adamant that the screens should accommodate the lighting but they were also concerned with the amount of daylight that would enter the gallery. Fortunately the museum now viewed this as a positive change, welcoming the gallery as a brighter space with a more contemporary atmosphere, rather than the usual darkened museum environment.

During daylight hours natural lighting is the principle source of illumination of the exhibits on the west elevation, supplemented by artificial lighting which becomes the sole source of illumination after dusk. With no daylight available through the East wall a backlighting



Shadows cast without scrim



Shadows dissipated with scrim applied



1:1 Mock-up showing LED Backlighting OFF



1:1 Mock-up showing LED Backlighting ON



Prototype showing one object backlit



The completed screen

various objectives. The scrim is a vital part of the application, providing not only the reflective backdrop against which the light is cast, but also minimising shadow lines while allowing daylight to pass through to the stained glass. Angela von Barnholt explains: "The scrim performs a specific task of diffusion during the day when the artificial lights are off, but then it becomes the reflector once the lights are activated. Visit during a summer afternoon and the pieces are solely lit by daylight. The LEDs then take over for the evenings and gloomy winter days."

False Wall – East Elevation

The false wall uses a conventional technique but the balancing of lighting levels and colour temperature necessitated the introduction of two circuits of differing colour temperature lamps. Colour rendering being critical, Philips CRI 90+ series T8's were used rather than T5's. Warm and daylight lamps on dedicated dimmable circuits were linked to a Lutron satellite time clock, and programmed to fade through different conditions throughout the day. A scrim was also applied to the back of the glass exhibits to conceal trunking and ensure the wall was not visible through transparent pieces of glass.

Showcases

A more conventional approach to the illumination of the silver and associated reliquaries has been installed. Entirely lit by fibre optics these are integral to the cabinet design and supplied by Goppion, the showcase manufacturer. Metal halide projectors housed within the false wall feed a series of applications; regular arrays of small 1mm heads in a grid in the roof of the cases; a series of adjustable spotlights to the leading edge for accent lighting of key pieces; and bespoke posts with integral light points. This ensures a high degree of uniformity with key objects highlighted.

A few stained glass pieces are

set into the showcases and these have been lit by a series of edge lit polymer panels by Crescent Lighting to provide local backlighting.


VBK's only concern is the inclusion of a few light sensitive objects in a couple of the showcases.

These have been separately filtered but still require rotation. "It is a shame that we couldn't reposition these as they necessitated the reduction of light levels to all the showcases."

Graphics

The graphics mounted onto the screens were integrally illuminated, using a low output LED cluster lighting through polymer backing. "We didn't want spotlights from the ceiling for all sorts of reasons so this seemed the logical route to maintain continuity in the screens."

Overview

True to their ethos, VBK have been able to illuminate two galleries containing thousands of objects with little visible hardware save for a single length of track and a handful of spotlights. "Yes, but you should have been at the meetings where we were fighting the suggestions that 'surely we can do something easier here'. We experienced some nightmares with the LEDs during which the client naturally enough wanted to ship the lot back to the US... it was a challenge to keep the scheme on track. The manufacturers provided fantastic feedback and support to enable the scheme to be carried through." 

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technical information

MINIATURES GALLERY

Exhibition Designer: Ronayne:Design
 Lighting Designer: V B K Lighting Consultants Ltd
 Lighting: Crescent Lighting LED to Frames and Graphics; Philips Lighting False Wall; Goppion Showcases Fibre Optics; Concord Lighting Track & Spots; Polylite Wall Hung Lightboxes; Lutron Control System