

Lighting Up History: Revisiting the Lee Chapel Museum

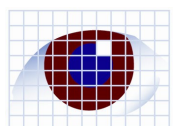
Absolute *Action*

Designers of Fine Fibre Optic Lighting



Of all the options available to lighting designers today, few bring such reliable solutions with so little risk of danger, damage or intrusion as fibre optic lighting. The benefits of this lighting mostly stem from the system's ability to drive multiple light outputs from a single light source which is remote from the artefacts being illuminated. Consequently, there is no heat or electricity at the light output; the light which travels along the fibre is also filtered from all damaging ultra violet and infra red rays. Light outputs are also extremely small and unobtrusive and can therefore be easily accommodated into existing display structures for glare free, sympathetic and safe lighting. And where maintenance is necessary for lamp replacement, the remotely located projector is easily accessible without any disruption to displays and exhibits. Consequently, fibre optics is an intelligent choice of lighting of the curator or collector of artefacts.

A case in point is the **Lee Chapel** at Washington & Lee University, in Lexington, Virginia, which was named a National Historic Landmark in 1961 and is dedicated to the memory of Robert E Lee, the General who led the Confederate Army in the American Civil War. Situated in the chapel's crypt is a museum designed to commemorate the life and achievements of General Lee and, in 1998, a major renovation of the Lee Chapel Museum was undertaken in order to celebrate the university's 250th anniversary in 1999. The lighting scheme was designed and installed by Absolute Action Ltd as part of the 1998 renovation to great acclaim. In fact, Thomas V Litzenburg Jr, project director of the University until 2003, was clearly delighted with Absolute Action's fibre optic lighting scheme: "The opening of Lee Chapel continues to elicit rave reviews and **it's not uncommon for us to be told that it is the lighting that sets the exhibit apart**'. So, when the Washington & Lee University decided to renovate the museum and create an entirely new exhibition in 2007 to commemorate the two hundredth anniversary of General Lee's birth, Absolute Action's help was enlisted again, almost a decade later, to illuminate a newly renovated chapel and its new exhibition.



Back then ...

Back in 1998, Absolute Action had designed a lighting scheme that involved no less than 600 fibre optic light outputs finished in milled brass within both the showcases in the main exhibition and in a room replicating Lee's office. A diversity of exhibits from the General's life and times, ranging from bullet-torn uniforms to personal letters and watercolours, from pistols and heraldic brass insignia to intricate navigational and surgical instruments, were all illuminated perfectly within 22 custom-built display cases in the main exhibition. These varied from large recessed wall cases to free standing glass topped cases as well as angled display cases around the circumference of the room. Each case had its own dedicated fibre optic lighting, featuring a low voltage 50 watt halogen light source, the Spectralux 3000, which powered up to 34 optical light heads per system.

Whilst a degree of standardisation was possible, the range in size and sensitivity of exhibits required a very high degree of on-site customisation. A combination of the miniature Articulate system (enhanced to allow flexibility in future rearrangement of exhibits) and a recessed miniature plate and ball fixture with interchangeable lenses were the fixtures selected for the exhibition. With the exception of a small amount of subdued ambient lighting, the majority of 'light life' within the main exhibit space emanated from the display cabinets themselves.



In the case of the replicated office of Robert E Lee (left), in which books, furniture and papers were left exactly as found after his death, a Spectralux 6000 150w metal halide light source with a colour temperature of 3000 degrees K was used for the entire room. Fibres and light heads were contained within tracking, located behind a ceiling beam or concealed behind a mesh ventilation grille at one end of the room. The entire space required only 12 fibre optic outputs.



A decade later, Absolute Action were invited back to light a new exhibition in the redesigned chapel crypt interior in 2007 to commemorate the 200th anniversary of Robert E Lee's birth. The longevity of the fibre optic lighting system that had been installed in 1998 was hugely evident on Absolute Action's return visit. The original ten year old fibre in the display cabinets in the main exhibition, for example, could all be reutilised. In fact, the light sources, the two Spectralux 3000s that had been installed in 1998 to illuminate the lightheads in the display cases (left), only required a maintenance overhaul, and could still be used to light the display cases going forward, thus saving the Museum much needed funds for the dramatic change that they were planning to the ambient lighting in the Orrery.

In 2007, the Museum's directors wished to replace the ceiling mounted pendant light fixture in the Orrery with 24 fibre optic down lighters pinpointing its circumference while, in turn, perfectly illuminating the plaque on the floor

(above). Three 150W Spectralux 6000 illuminators were hidden in the adjacent ceiling void above the Orrery with their own ceiling hatch access should maintenance be required at a later date and were used to power the 24 downlighters, fibre optic mini tracks (attached vertically to the bottom of each of the four columns supporting the Orrery ceiling), and an additional 24 fibre

optic downlighters around the very edge of crypt ceiling (of which 20 were original to the 1998 lighting scheme). The overall effect was to create a very modern display of some very delicate, heat and UV-sensitive artefacts in a way that draws the visitor instinctively towards each and every display with minimal distraction.



Meanwhile, the ambient lighting in the replicated office of General Lee continued to be lit with the 150W metal halide Spectralux 6000 light source, albeit on a dimmer setting, while a dichroic 250W Spectralux 2000 was used to illuminate the four fibre optic track lights which were installed in a newly constructed bulkhead to accurately pinpoint accent points in the room, such as the original 150 year old papers on the table and various writings on the desk. Both light sources were housed within the new bulkhead with a 10" x 10" flush access panel built in to enable hassle-free future maintenance.

Flexibility, adaptability and longevity



The Lee Chapel Museum therefore provides a perfect example of the flexibility, adaptability and longevity of fibre optic lighting for conservation and display purposes. It is not only the safest option: it's the most effective.

Absolute Action Limited is the world's pioneer in fibre optic lighting, with over 30 years' experience in designing, manufacturing and installing bespoke fine glass fibre optic lighting solutions for countless applications around the world.

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