



CASE STUDY: ChristChurch Cathedral lighting upgrade

ChristChurch Cathedral is an icon for the city of Christchurch, and one of New Zealand's most photographed landmarks. The illumination of the Cathedral is a big part of its dramatic appeal.

DESIGN + ENGINEERING

www.connetics.co.nz

PROJECT SCOPE

Christchurch City Council and the Anglican Diocese contracted Connetics to undertake a full lighting upgrade of the Cathedral exterior, to enhance its architectural features at night and improve the overall environment of the Square.

The client required lighting in keeping with the heritage character of the building. The upgrade also needed to consider the control of glare and to minimise risks of vandalism.

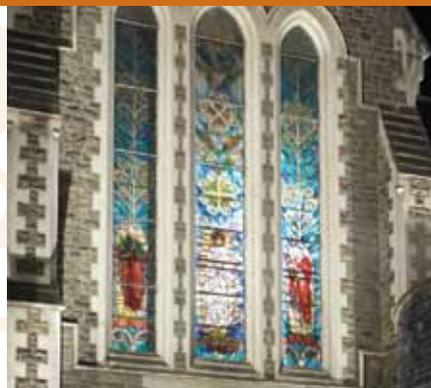
OUR RESPONSE

Connetics assembled a dedicated technical team which worked on the project for more than two years, from concept design to completion.

3D computer modeling was used to graphically represent the lighting concept. This helped to keep stakeholders informed, and helped with the resource consent process. Several different products were trialed to identify optimum performance, fittings and placement.

Connetics based the design on three lighting levels:

- the upper spire is illuminated from poles located at a distance to achieve the required height and angle;
- the middle section is lit from close-in poles or attachments on the building;
- the lower section, entrances and vertical columns are illuminated from recessed in-ground up-lights.



CHALLENGES

The heritage status of the Cathedral introduced specific constraints. No new poles or attachments to the building were permitted, and protected trees had to be considered.

The completed installation needed to comply with AS/NZS1158 P6.

SOLUTIONS

Heritage lanterns around the building were retrofitted with new metal halide lamps, integral electronic control gear, and diamond optic reflectors, with reinforced polycarbonate to replace the glass lens. This reduced upward spill and provided more light on the ground.

New floodlights were fitted to existing lighting poles using custom-made mounting brackets. Lower weight lamps made for easier mounting and ensured reduced visual impact.

The existing fittings for lower level and ambient lighting were replaced with pole mounted fittings and recessed in-ground lights. Use of in-ground fittings also enabled us to illuminate feature trees while also preserving car-parking space.

RESULTS

The project has achieved a stunning transformation. The lighting highlights the Cathedral's scale, architecture and history, and provides subtle, safe amenity lighting for a prominent civic space.

Significantly, while the total number of lights has increased from 67 to 131, the use of new technology has reduced energy consumption by 58 percent. The result was recognised with an energy efficiency award at the 2007 IESANZ Lighting Awards.

Connetics completed the upgrade within budget, on schedule and in time for the lighting to be a central feature of the Cathedral's 125th anniversary celebration in 2007.

"Connetics met the challenges of a complex lighting brief with creative practical solutions, and undertook the installation in a professional, safe and efficient manner. The result exceeded our expectations, was delivered within budget, and uses considerably less energy than the previous lighting. The project has made an enormous difference to the nighttime appearance of Christchurch's most iconic building - it now looks truly spectacular."

Ross Herrett
Christchurch City Council