



CASE STUDY: Harper Avenue street lighting upgrade

Harper Avenue is a significant arterial corridor in Christchurch, linking northwestern suburbs to the central city and bisecting picturesque Hagley Park. Balancing high traffic volumes with a high profile made this a challenging project.

DESIGN + ENGINEERING

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PROJECT SCOPE

Connetics was appointed by the Christchurch City Council to undertake a full lighting upgrade on Harper Avenue. This included replacing older-style lights and poles with a system that meets current standards and performance requirements.

The project was complicated by high traffic volumes, pedestrian usage and crossings, the presence of large trees on both sides, a narrow median, bridges, and complex intersections.

OUR RESPONSE

Connetics' role began with a comprehensive project assessment. Early in the design process we made a recommendation to retain the lighting system in the existing median strip to reduce the disruption of relocating trees and other infrastructure.

The Connetics team also managed the liaison with residents and stakeholders, made regular checks with the City Council, and gained necessary approvals from electricity network operator Orion. Connetics was also responsible for the initial 12-month maintenance period.

TECHNICAL CHALLENGES

Retaining the median location required existing cabling to be reused in existing locations. Some poles were also reused, while the location of new poles had to be carefully planned in relation to trees, bridges and other structures.



Managing the logistics was also a challenge. As a category V2 road, Harper Avenue carries some of the city's highest traffic volumes.

SOLUTIONS

Connetics carried out straight-road and curve-road lighting calculations to ensure maximum spacing between lights while achieving full compliance. Computer modelling was backed up with on-site assessment and measurement.

The use of high-efficiency lighting technology achieved a dramatic reduction in energy use over several circuits. Most luminaires were reduced from 250 watts to 150 watts. With integrated control gear, these also provide significantly longer life and lower maintenance costs. On-site work was carried out in sections, with extra resources assigned to safety, lane control and traffic management.

RESULTS

The new lighting provides high standards of visibility for road users and enhanced the visual appeal of Harper Avenue as a prominent gateway to the central city. Trees, bridges and other features are well protected and illuminated, pedestrian lighting enhances public safety and parkside vistas have been retained.

Overall lighting levels are excellent with good uniformity, no obvious shadow areas and very little 'zebra' effect (alternating light/dark). The upgrade is also fully compliant with the City Council's draft infrastructure design standard. Increased energy efficiency and high performance specifications have contributed to lower operational and maintenance costs.

"Connetics' project management on this upgrade was excellent. They developed an appropriate and effective design, and carried out the installation to a high standard. This was a difficult site to design for and to work on, but Connetics' expertise ensured our requirements were fully met. They resolved unforeseen problems quickly and kept us well informed at all stages throughout the project."

Geoff English
Asset Engineer, Christchurch City Council