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energy solutions

Lights, control, action...reaction.

How a smart lighting system provided resiliency to a major institution.

The story

Pulling the trigger on an end-to-end, energy-efficient lighting solution is never a casual decision. With continuous and rapid advancements in technology, it can be tempting to wait just a little longer, when the value proposition might be that much more compelling.

But for a major Canadian institution, a smart lighting system was long overdue. The dated lighting in its large and heavily used parkade was no longer meeting its needs. The existing high-pressure sodium lamps were delivering increasingly inconsistent lighting, and accelerating failure rates were driving up both maintenance costs and user complaints. High energy consumption was another major concern - not only because of rising energy costs but because the client was determined to make all of its asset management strategies more sustainable.

An LED conversion project was the obvious solution, but the path forward required careful consideration.

Glare is an aesthetic consideration, but also an important safety issue in a parkade since it can distract drivers needing to be alert to pedestrians. It was time for a fresh perspective and a wider range of options.

After carefully considering the client's needs and priorities, Envari proposed testing a new range of LED lighting options in the parkade with a relatively new-to-market candidate among them. While the new-to-market option came from a well-established supplier, with extensively tested and well-proven internal components, it also incorporated innovative and glare-reducing "waveform" technology.

With their advanced optical engineering, these energy-efficient lights effectively mitigated glare while efficiently and evenly distributing light.

Once the test installation was in place, its merits were obvious to the client's project manager and other key decision-makers. But this option came at a higher price point in terms of the initial capital investment.

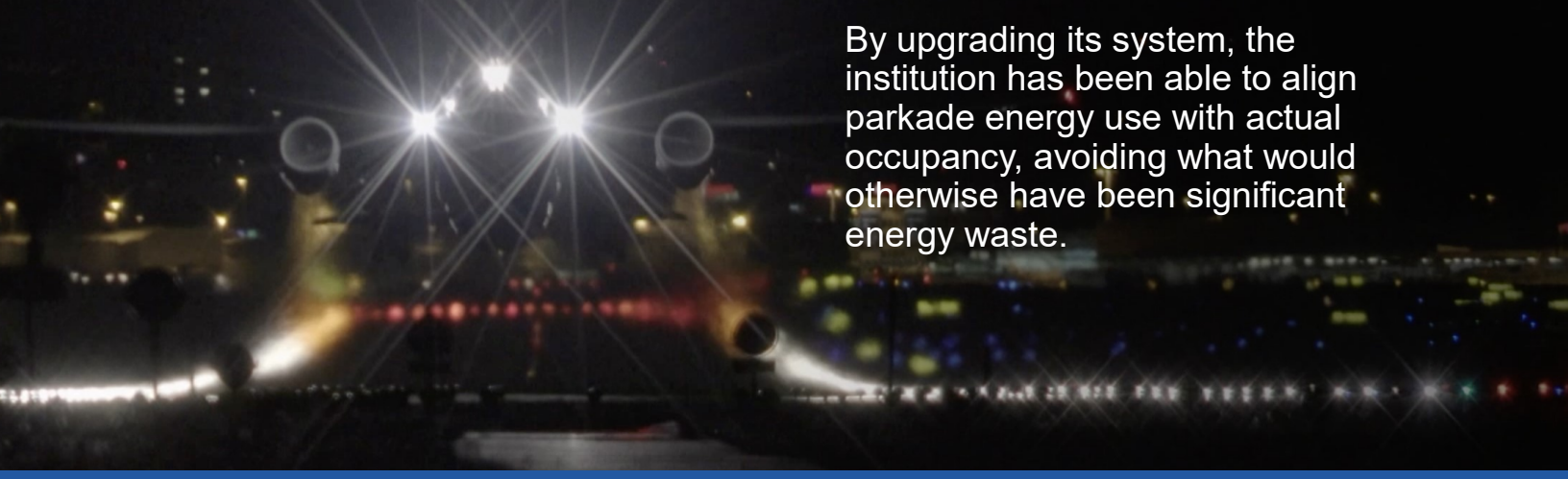
The key to overcoming that hurdle lay in the adaptive dimming, connected controls system included in the lighting solution.

It could generate higher electricity savings by enabling the client to discontinue always-on lighting in the parkade, thus reducing energy use and extending the life of the hardware.

The client took a broad and long view, assessing the options on a total cost-of-ownership basis. It also incorporated expected maintenance savings as well as escalating electricity savings over time as energy costs rise. Working from a detailed engineering review of the range of options provided by Envari, the combination of waveform technology and embedded automation was shown to in fact represent a similar payback outcome to the alternatives.

Higher upfront capital costs were offset by the additional electricity savings arising from the ability to dim lighting by half in unoccupied areas of the parkade.

Today, glare is being avoided, and the new smart lighting controls system is evenly distributing vertical lighting to keep pedestrians visible. The client has also leveraged the new system capabilities to further optimize lighting use and electricity savings by turning off lighting in peripheral areas of the parkade when there's enough natural daylight.



By upgrading its system, the institution has been able to align parkade energy use with actual occupancy, avoiding what would otherwise have been significant energy waste.

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