Case Study 2

Royal North Shore Hospital

EFFICIENT ENERGY SYSTEMS

The Royal North Shore Hospital, founded in 1885, is a major public teaching hospital located in Sydney, New South Wales. It serves as a teaching hospital for the University of Sydney and has 740 beds. The hospital is a leading research and trauma centre with a particular interest and expertise in cancer diagnosis and treatment, cardiovascular disease, spinal cord injury, severe burn injury, neonatal, intensive care, neurosurgery, pain management and anesthesia.

The Project

Energy Performance Contracting (EPC) made this project possible. Tarong Energy undertook this Energy Performance Contract with funding provided by the New South Wales Treasury. The energy savings would be used to repay the Treasury loan, with any shortfall in the energy savings made up by Tarong Energy.

The Challenge

The lighting at the Royal North Shore Hospital consisted of old technology, halo-phosphate tubes with rapid start ballasts. Deterioration of the painted surface on the light fittings resulted in poor lighting output, compounded by high failure rates and ongoing maintenance costs necessitated an upgrade of the lighting system.

The challenge here was to reduce the overall energy consumption, as well as improve light output, indoor environmental quality and reliability of the new lighting solution.

The Solution

In order to minimise disruption to the existing spatial separation of the light fittings, it was decided to upgrade the existing light fittings by retrofitting these with high performance KW/2 mirror reflectors. The KW/2 reflectors feature a high reflectivity value and are more effective, placing light in a downwards direction and where it is needed.

The 2x40W, halo-phosphate tubes were replaced with a 1x36W tri-phosphor tube and the rapid start ballast was replaced with a low energy, high efficiency electronic ballast. This resulted in energy consumption being reduced from 110W to 42W per fitting, which is equivalent to an energy saving of over 60 per cent.

The new lighting scheme resulted in improved lighting levels and reliability. The tri-phosphor tubes exhibit a useful life of over 15,000 hours compared with only 8,000 hours for halo-phosphate tubes.

The Savings*

The energy saving from the lighting upgrade was 875,000 kWh per annum, while greenhouse gas emissions were reduced by 927 tonnes, with an annual cost saving of $78,750.

The lighting upgrade formed part of the total upgrade at the Royal North Shore Hospital. The total energy savings were measured at 6,940,000 kWh, greenhouse gas savings of 4,145 tonnes and annual cost savings of $266,575 (details provided by SEDA).

*Energy and cost savings for lighting alone have been estimated by assuming a 16 hour operational day.

The Facts

Energy savings	875,000 kWh
Annual greenhouse gas savings	927 tonnes
Annual energy cost savings	$78,750

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