

Case study

Energy Savings: Parking Lot Lighting

Mater Health Services (Australia)

GGHH Agenda Goals

- Energy

Mater's goal

- Energy is a major theme of the *Sustainability at Mater* program and vital to gaining support and raising awareness of Environmental Sustainability (ES). A project to change the lighting to be more energy efficient was seen as an energy reduction opportunity and as an engagement opportunity for staff to become visually aware of an initiative that is linked to the Environment platform.

Achievements

- 2,993 florescent tubes changed from T8 tubes to a T5 with specialised adaptor to negate the need to change light fittings in Mater Car Park
- 32.4% energy reduction
- 2 year return on investment
- Approximately 25% funding received from Energy Provider through their Peak Load Reduction project

The Issue

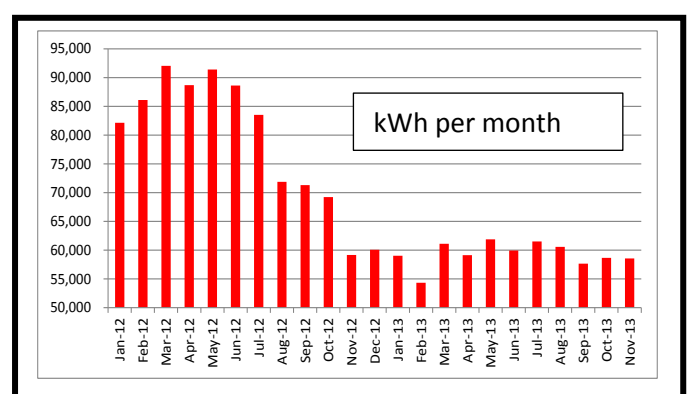
The Director of Environmental Sustainability was approached by numerous energy and lighting companies offering energy efficient lighting products. Following a number of discussions with companies to provide proof of energy savings, a vendor was identified who offered to fit 50 lights for free on site to prove energy savings. The area chosen for the first lighting project was one of Mater's car parks that is separately metered, so a change could easily be measured through a consumption and price drop on monthly invoices. The test involved changing from T8 fluorescents to long life T5 fluorescents with specialised adaptors negating the need to change the existing light fittings. A temporary meter was set up to measure energy use in the designated area pre and post installation and proved that a reduction of more than 30% was achieved.

Sustainability Strategy Implemented

Following proof of concept with the 50 light trial, the full roll out commenced with 2,993 lights changed to the long life T5 fluorescents. The vendor noted that with retrofitting there may be times when the tombstone ends needed replacing, due to the heat and UV concentration making the tombstone loose or decayed. Included in the scope of works was replacement equivalent of 1% for free and any other replacements were noted for approval before being changed for a nominal cost. There were a number of tombstones identified and the additional replacement cost was agreed and addressed during the project change over.

Tracking progress

The installation of the tubes and adaptors commenced in August 2012 and was finalised in November 2012. As can be seen from the graph, the kWh consumption per month dropped by more than 30% as a



result of this retrofitting initiative. From a cost perspective, comparing the July 2012 invoice to the July 2013 invoice, Mater saved \$2,702.48. In a separate initiative, negotiations with Electricity contracts have improved this position with additional savings of \$1,308.55 on the July 2014 invoice.

Challenges and lessons learned

Retrofitting tubes and brackets into existing 20 year old fixtures has proved difficult, especially as there is a lot of floor vibration from vehicle traffic and the new tube and specialised adaptor is slightly heavier than the preexisting T8 product. As a result there have been occasions where tubes have come out of their fixtures and the tombstones ends have also been found to be very loose which has also contributed to a perception of tube failure, where it is actually the fixture that has caused the problem. In areas where we have not had the vibration issues (such as normal office lighting) Mater has not encountered the same issues. Any future lighting upgrades that will occur in other car parks will include a full light replacement and fitting to reduce maintenance replacement time linked to the older fixtures.

Next steps

This was the first lighting project undertaken as part of the *Sustainability at Mater* program, and it was very successful from an energy, emissions and cost reduction initiative. This proof of concept has led to a number of lighting projects being identified and implemented. A number of T8 tube replacement projects continue to be instigated with the more energy efficient T5 tubes. In other areas of the hospital a project aimed at replacing round compact fluorescents lights with an entirely new LED light has delivered energy savings of approximately 70%. It is expected that the full replacement of lighting will take another 2 to 3 years to complete.

Demographic information

Mater Health Services comprises several hospitals, health centres, a world-class medical research institute and pathology and pharmacy businesses—all with one aim—to provide exceptional care. Our concerted pursuit of innovation—to discover, improve, adopt and adapt—differentiates Mater as a leader in the areas of health, education and research. By integrating these fields into the delivery of exceptional healthcare services, Mater is committed to the development and maintenance of healthy communities.

Mater is dedicated to providing healthcare services through a sincere commitment to our core Values of Mercy, Dignity, Care, Commitment and Quality. A Catholic not-for-profit ministry, we are committed to an holistic approach to healthcare in response to ever-changing community needs. We continually strive to improve how we deliver patient care, keep our knowledge and skills relevant, advance our understanding of illness and health and manage resources effectively.

Keywords/topics

Energy, Car park