Easily LED: lighting the way at the Civic Centre

A recent electricity audit revealed that lighting in our Civic Centre building was consuming a disproportionate amount of energy, and so we began to look for an alternative to the old fluro twin tubes that were currently lighting the way. A bit of experimentation showed that we could cut down on the number of fluro tubes by a vast amount as long as we made sure we had appropriately targeted lighting in work areas.

This project is a small part of Kingborough Council’s Climate Change and Energy Action Plan 2009–12.

Balancing energy saving with comfort

When it comes to experimenting with lighting you can’t focus on just one aspect such as energy consumption or cost; you need to consider how people use the areas that are being lit and how pleasant and safe the environment will be. It’s a balancing act of using the lowest amount of energy possible while ensuring that the space remains light and welcoming (the Australian Standard describes a minimum light level for office spaces as 320 lux).

With the aid of a simple light meter (usually used during food premises inspections) and one of the Southern Tasmanian Councils Authority’s Regional Climate Change Initiative’s Home Energy Audit Toolkits (a take-home kit with some useful gadgets such as an energy meter) we were able to measure current baseline lighting levels in a trial area before testing different lighting options.

LED testing

There are two types of LED lights: one gives off a direct beam, the other a more diffuse light. These different types can be combined to give effective spot lighting or task/ambient lighting depending on the need. We played with different combinations in our trial area and sought feedback from the people using the room.

The results have been excellent and met all expectations; feedback on the LEDs is that they give a nice clean light which is pleasant to work under.

As well as testing LEDs, we installed some power-saver fluorescent lights, but we found that these are far more energy hungry than LEDs and so didn’t continue along this path.

A trial doesn’t need to cost much

Costs for the trial were very low. We used an existing audit toolkit and light meter and tried all the various lighting options in one trial location. Unfortunately LEDs aren’t cheap – we’ll need $40,000 to buy them for the rest of the Civic Centre. That said, they typically last 10 to 20 times longer than fluros, so in addition to the long term savings, not to mention the reduction in our carbon footprint, we’ll spend a lot less time up a ladder changing bulbs. Quantifying the energy saving is a simple matter of gauging energy consumption at the meter box.

Our advice to anyone undertaking lighting trials is to proceed in small, quantifiable steps. There’s no doubt the savings are there, but the total cost of
large scale replacement can be daunting. Ideally, such a trial would be part of an overall climate action plan, which most councils run in any case.

Next steps
A full changeover of all of the Civic Centre's lights to LEDs will be done, section by section, as funding becomes available. Then we'll address the other buildings in the Kingborough municipality, and expand the trials to include minimising water usage and using alternative energy sources. One of our plans is to develop demonstration sites so our community members can see for themselves the various energy saving technologies in operation and the potential benefits to their homes and workplaces.