



Energy Efficiency Measures in Nakhle Shirtmakers, Parramatta

Background

Nakhle Shirtmakers was established in 1986 and has operated in the current Parramatta premises since 1993. Bespoke shirt making is a traditional artisan craft requiring great technical proficiency in pattern-making and sewing. Master shirtmaker, Charles Nakhle, has lots of passion for his craft. Nakhle Shirtmakers make shirts from high quality Egyptian cotton. Nakhle Shirtmakers employs 5 staff and had annual energy bills of over \$4,000.

The rising cost of electricity was a concern to the business owner, Charles Nakhle. Due to a lack of knowledge and time constraints Charles was unable to find energy efficiency measures to implement.

Charles Nakhle, participated in one of the 3E Project Energy Efficiency face-to-face workshops in 2012 and subsequently had an energy audit completed. The audit revealed that there were significant savings to be made from lighting upgrades, which were acted on.

The lighting upgrade was carried out and the result was:

- Improved street appeal of the shop
- Better lighting quality for customers making colour choices
- Less shadows for machinists when sewing which improved productivity
- Reduced air conditioning load as the 150 W halogens operating at over 150 degrees C have been replaced by 32W LED shop lights operating at less than 40 degrees C.
- \$980 savings in annual lighting energy bills, plus further savings on air conditioning
- Reduced maintenance costs for light replacement of \$300 -\$600 per year
- Increased sales as customers can now appreciate the colour and quality of the fabric.
- Staff are more comfortable working in a cooler workplace with better lighting.



Measures Implemented

The energy efficiency measure undertaken was to replace the 150 W halogen shop lights with 32 W LED luminaires. The energy savings results from the greater efficiency with which the LED converts electricity to light compared to heat. The halogen lights produce a lot of heat and are often referred to as “very efficient heaters which give off some light”.

The full cost of the upgrade would have been \$3,690 with annual savings \$980 and a payback of 3 years 9 months. The value of NSW Energy Savings Certificates fully accounted for the capital cost, thus providing an instant return.



The LED upgrade also resulted in a saving in maintenance costs. The halogen lights have a life expectancy of 5% of the LED's. Charles, the proprietor, would call an electrician to replace the lights, due to the 6m height, at a cost of \$300 per visit. This was an annual cost and sometimes there would be blown lights for several weeks which reduced the shop appeal. The LED lights should last well over 16 years with the current business hours.

Outcomes

Nakhle Shirtmakers have been extremely pleased with the outcome from a financial and business image perspective. In his own words he says "there is nothing to lose". Charles found that the information provided by the 3E team allowed him to make a sound decision and the assistance gave him some confidence to carry out the project.

Customers have found the shop more noticeable from the street, brighter and are now able to see the true colour of the fabrics they are choosing.



Staff have better lighting around their workstations with less shadow. This has improved the WHS compliance and provided a more productive work environment. The comfort levels have increased as well with the reduced heat load. Having 18 halogen lights consuming 150W each is equivalent to having a 2.7kW heater running all day.

The business has seen an increase in "drop in" customers who are quoted as saying "is the shop new, I have never noticed it before". Charles is finding that he can run the air conditioning less which is further reducing his energy bills and has found the savings valuable to his bottom line as a small business operator.

The project methodology allowed Charles to overcome his lack of knowledge regarding energy efficiency via the workshop. This was bolstered by an audit report which detailed the potential savings and gave him some confidence that the opportunity was genuine.

A key outcome for this project is that the initial motivation for the project, to reduce energy costs, has become less important to Nakhle Shirtmakers now that all of the other benefits of the lighting upgrade have been illuminated.

Another outcome is that now Nakhle Shirtmakers is not only an energy efficient business but also has become a Carbon Champion and advising his business colleagues about the benefits of being energy efficient.

Website Address: <http://3eproject.org.au/>

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