action matters for business

Photo: Thomas Klocseth/OEH

The savings achieved exceeded our expectations and we have already started installing the solar reflective coating on other buildings.

Kim Pilosio, GoGreen Lead APAC, DHL Supply Chain

DHL: reflecting on energy efficiency

The solar reflective coating applied to the roof reduced our energy use by over 25%, saving us more than $40,000 a year.

ABOUT US

DHL is a global market leader in contract logistics. Our services include warehouse design, implementation and operations along with transport services for the aerospace, automotive, retail, technology, consumer and healthcare sectors. We have over 3200 employees working at over 47 sites across Australia.

OUR SITUATION

The temperature controlled warehouse at Arndell Park is 15,850 square metres and is divided into two operational zones, with a wall separating them. Warehouse A, which is twice the area of warehouse B, is cooled by six air conditioning units, and warehouse B by four units.

We have an annual energy bill of about $300,000, of which the major proportion is for operation of the air conditioning system (HVAC). We wanted to find ways to reduce this energy use and, of course, to save money.

BY THE NUMBERS

Implementation costs:
approximately $180,000 (less discount for ESCs)

Cost savings:
approximately $40,000 per year

Energy savings for warehouse A:
390MWh per year – more than 25% reduction in HVAC electricity use

Simple payback:
3 years (allowing for ESC discount for 3700 ESCs)

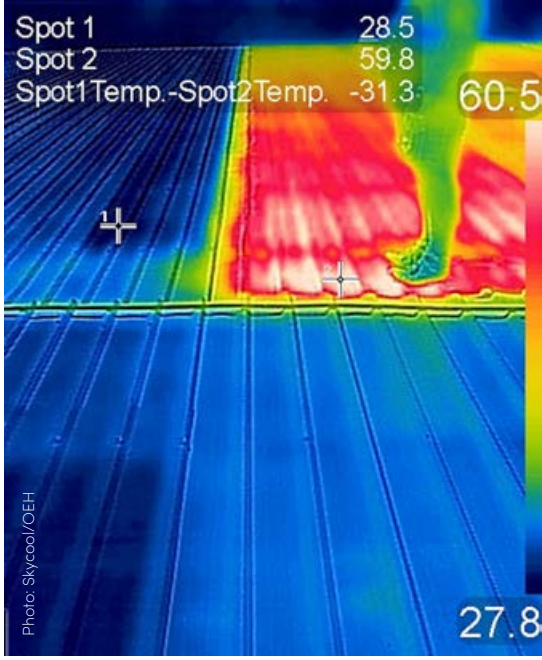
THE TECHNOLOGIES

Solar reflective coating

The solar reflective coating used in this project was developed in Australia and has been applied to many large roof surfaces such as warehouses and shopping centres.

NSW GOVERNMENT Office of Environment & Heritage

Warehouse A roof with solar reflective coating



Coated and uncoated roof temperature variation

WHAT WE DID

Our project involved applying a specialised heat reflective coating to the external roof area of warehouse A. We expected the coating to significantly reduce the heat absorption of the building and reduce the heating load that the air conditioning units have to manage. We hoped to see a reduction in the amount of energy used by the air conditioners of at least 10%.

At the beginning of the project we engaged an Accredited Certified Provider (ACP) and three months after applying the coating they provided a measurement and verification (M&V) report with the objective of assessing the impact of the reflective coating as well as providing base data for the calculation of energy saving certificates (ESCs) associated with this project.

THE RESULTS

Immediately after the coating was applied to warehouse A, we saw a significant fall in the total power at the meter servicing it, with no such fall occurring at warehouse B's meter. Based on the M&V quantified savings over the six months of the project, we estimate an annual energy reduction of at least 25%, saving us more than $40,000 a year for warehouse A.

The capital cost of the project was reduced by the 3700 energy efficiency certificates (ESCs) generated by the project.

It works by reflecting a large percentage of the sun's heat from the roof, as well as radiating heat reaching the roof from within the building – effectively 'drawing heat out'. It has been shown to dramatically reduce the heat load in buildings.

Measurement and verification (M&V)

M&V provides a tool for businesses to independently monitor the impact of energy conservation measures (ECMs), and when designed and executed correctly, it can accurately quantify and allocate savings to ECMs. Savings are determined by comparing post-retrofit performance against a 'business as usual' forecast.

TAKE ACTION

To find out more about saving on your energy costs, contact the Energy Efficient Business team at the Office of Environment and Heritage.

EMAIL

energy.saver@environment.nsw.gov.au

CALL

1300 361 967 (ask for the Energy Efficient Business team)

VISIT

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