action matters for business

Measurement and verification (M&V); energy savings certificates (ESCs); Building Upgrade Finance (BUF); heating, ventilation and air conditioning; lighting

Photo: A Hollingworth/OEH

We estimate the savings from the energy upgrades work over 10 years will be around $2.9 million.

Braith Williams,
Executive Director,
Intrasia Oxley Real estate

Readers Digest Building: measuring and verifying success

ABOUT US

Intrasia Oxley Real Estate provides funds management and a range of real estate advisory services to clients including public and private corporations which own or lease real estate, and to real estate trusts, developers and related businesses.

OUR SITUATION

We purchased the iconic Readers Digest Building in Surry Hills in March 2014. It is a three storey commercial building with our current tenants being the online wine retailer Cellarmasters and the William Angliss Institute, a food, hospitality and tourism college. The building had inefficient lighting and an outdated and inefficient heating, ventilation and air conditioning (HVAC) system.

OUR ENERGY SAVING PROJECT

We carried out a $1.2 million energy efficiency upgrade of the entire building, funded through an Building Upgrade Finance (BUF) with the City of Sydney, with the finance being repaid through a Council levy imposed on the building. You can watch this video about how it worked.

BY THE NUMBERS

Cost of efficiency actions:
$1.2 million

Verified energy savings from HVAC upgrade:
237 Megawatt-hours (MWh) – 24.3% reduction

Estimated total savings from HVAC and lighting upgrade:
643MWh – 60% reduction

HVAC operating cost savings:
$35,580

Estimated total cost savings from HVAC and lighting upgrade:
$293,000 per year

Estimated energy savings certificates: 2350

NSW GOVERNMENT Office of Environment & Heritage

Photo: A Hollingworth/OEH

The exterior of the Reader's Digest Building


Photo: A Hollingworth/OEH

Energy efficient water-cooled glycol chiller

The project involved a heating, ventilation and air conditioning (HVAC) upgrade including replacing two aging chillers and installing variable speed drives (VSDs) on water pumps, and a complete lighting upgrade which involved changing more than 1500 fluorescent lights to energy efficient light emitting diode (LED) lights while maintaining the aesthetics and ambience of the building. We also installed a state-of-the-art energy monitoring system to support a new building management system (BMS).

WHAT IS MEASUREMENT AND VERIFICATION

Measurement and verification (M&V) provides a way for businesses to calculate energy savings from efficiency projects using internationally recognised standards. Savings are determined by comparing energy use before and after a project is implemented whilst closely monitoring its key drivers. When designed and implemented correctly, M&V quantifies energy savings with high accuracy. The Office of Environment and Heritage (OEH) has more information.

WHY DID WE MEASURE AND VERIFY?

We needed to measure and verify the energy savings from the HVAC upgrade to confirm with a high degree of confidence, the return on our investment, and be able to claim energy savings certificates (ESCs).

OUR VERIFICATION PROCESS

The consultant used 12 months' energy consumption data and temperature and humidity data from the Bureau of Meteorology, to develop baseline and operational energy use models for a typical year of operation. When these were compared, the consultant could calculate our energy savings for a typical year.

INFORMATION

Creating energy savings certificates (ESCs) using an accredited certificate provider

Businesses wishing to claim ESCs under the Energy Savings Scheme should engage a suitable accredited certificate provider (ACP) who is familiar with the scheme and its requirements, and the energy efficiency project. The ACP manages the certificate creation process from start to finish, including all the administrative and M&V requirements established by the scheme regulator. The ACP's fee is often success-based and typically quoted as a percentage of the certificates with the balance traded and payable to the business. The NSW Government has a list of ACPs.

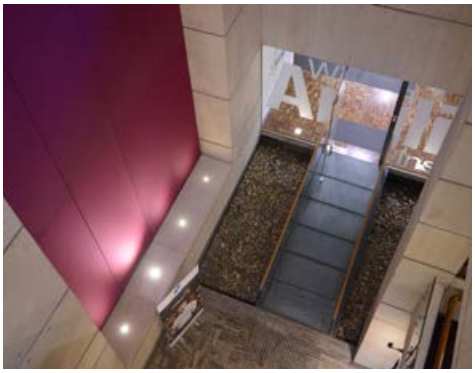
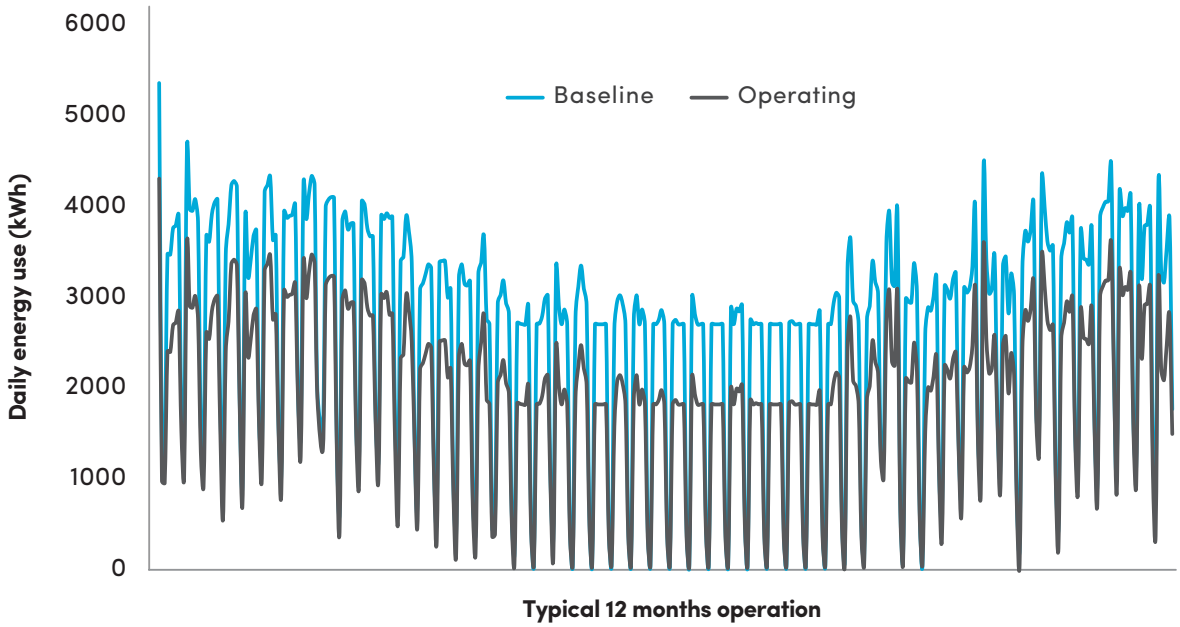


Photo: A Hollingworth/OEH

Energy efficient lighting in the foyer

Graph comparing baseline and operational energy use for a typical year



THE RESULTS

The M&V analysis verified annual savings from the HVAC upgrade of 237MWh or 24.3%, representing HVAC cost savings of $35,580. When we factor in potential future energy price rises, replacement costs, reduced maintenance costs and CPI increases, we estimate the overall savings from our entire building upgrade to be in the order of $290,000 each year or a 60% saving. The project generated approximately 2350 energy savings certificates (ESCs) which will reduce our capital costs significantly.

As well as the significant energy savings, we have reduced the building's greenhouse gas emissions by more than 400 tonnes per year. We have virtually eliminated lighting maintenance for the first seven years, while improving the quality of lighting for our tenants, and helped to future-proof the building against energy price rises.

TAKE ACTION

To find out more about reducing energy costs, contact the Business Support team at the Office of Environment and Heritage.

EMAIL

energy.saver@environment.nsw.gov.au

CALL

1300 361 967 (ask for the Business Support team)

VISIT

environment.nsw.gov.au/business

Office of Environment & Heritage 59 Goulburn Street, Sydney. PO Box A290, Sydney South NSW 1232
Phone 1300 361 967 **Fax** +61 2 9895 6465 **Email** energy.saver@environment.nsw.gov.au
Website www.environment.nsw.gov.au/business

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