



## Beyond Energy Solutions

### Better energy balance for buildings with smart UV technology

**Beyond Energy Solutions, an Australian company providing sustainable energy solutions, have applied innovative Heraeus UV technology to successfully improve the energy balance of a large commercial building.**

#### **Description of the initial situation**

Beyond Energy Solutions' client operates a large commercial building, which is open to the public 24 hours per day, 365 days per year. BES were requested to reduce the buildings energy and emissions profile, whilst simultaneously increasing the effectiveness of the HVAC (Heating, Ventilation and Air Conditioning) system. With Heraeus Noblelight, they found a reliable partner to develop a suitable UV solution.

#### **Development of a new solution with UV light**

UVC is effective in destroying biofilm and restoring a HVAC's system to near original performance characteristics. Heraeus developed Cold Air Disinfection (CAD) lamps to provide a high dosage of UVC light whilst operating in a cold airstream (4-7°C). After a successful trial, UVC was installed in all 46 of the building's HVAC Air Handling Units.



HVAC Air Handling Unit in use  
Photo: Beyond Energy Solutions

#### **Features**

- Significant reduction of buildings energy and emissions profile
- Improved indoor air quality
- Extension of HVAC lifespan
- Reduction in maintenance costs
- Reduced compressor operating times (through improved heat transfer)
- Reduced fan operation and speed (through increased airflow through the coils)
- Increased entering chilled water temperature (to achieve heat transfer)
- Reduced chiller and compressor operations (through faster achievement of temperature and humidity parameters)

#### **Technical Data**

- CAD lamps
- Low pressure lamps

After just 3 months of operation, CAD units have delivered a minimum of 20% improvement in airflow, heat transfer and energy savings. Furthermore, IAQ (Indoor Air Quality) has been dramatically improved and manual duct and coil cleaning has been eliminated. The CAD lamps provide a very high UVC output and are maintenance free. Beyond Energy Solutions have provided an innovative UV solution with a short return on investment - with multiple benefits for their client.



HVAC Air Handling Unit before UVC installation  
Photo: Beyond Energy Solutions



HVAC Air Handling Unit after UVC installation  
Photo: Beyond Energy Solutions

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