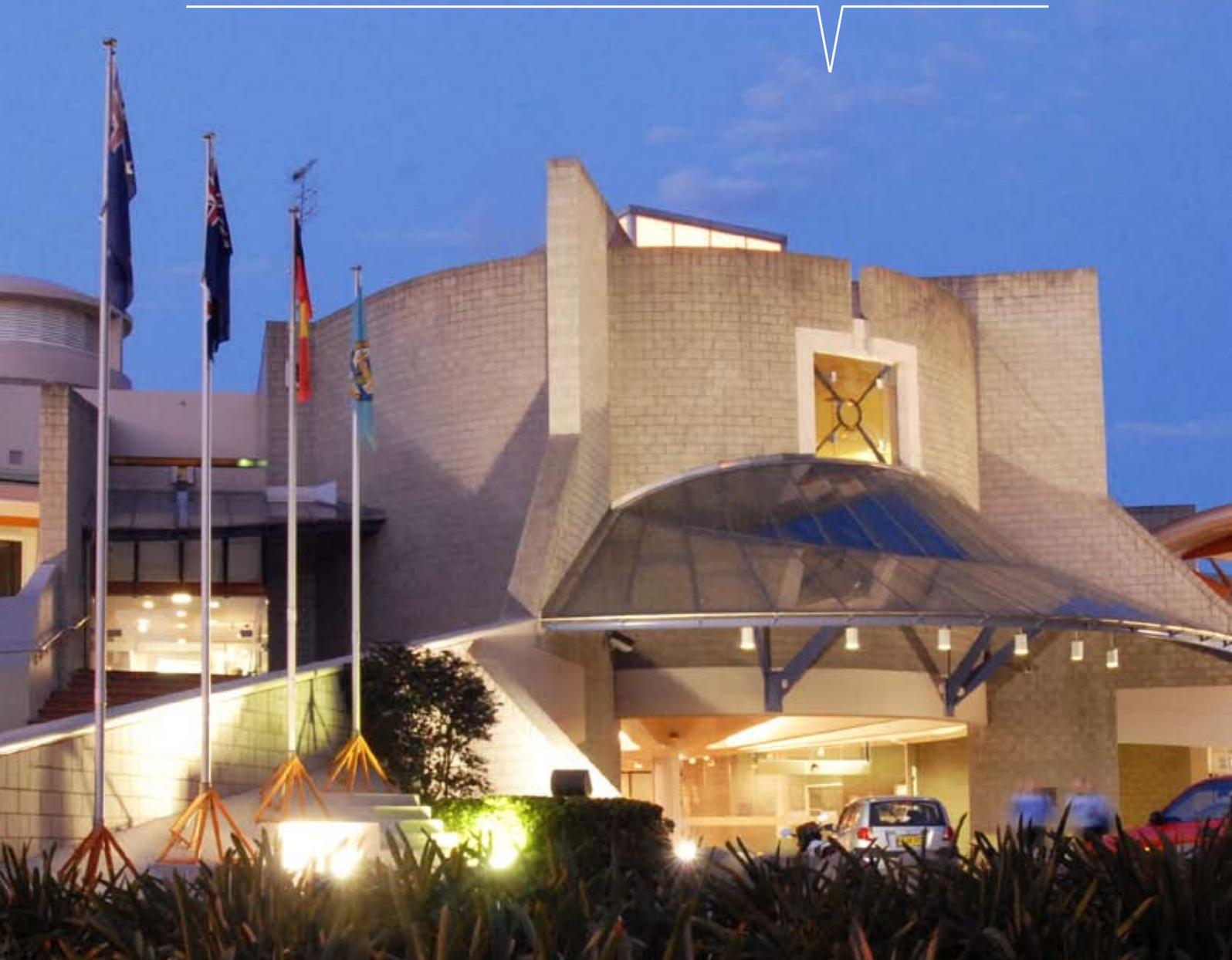


How can I reduce my facilities running costs and carbon footprint while mitigating financial risk?



## The Siemens Answer: Energy Performance Contracting.

Siemens energy performance contracting can provide our clients with a reduction in energy consumption and therefore reduce their carbon footprint while also providing the security that their investment will deliver the agreed savings.

The aim of the energy performance contract with **Penrith City Council** was to provide a self funding solution that could be financed over a five year term and to provide guaranteed savings to underwrite the financial risk of the project.

The energy performance contract was established to optimise the energy efficiency of existing systems and to install new equipment or systems where cost effective. The project focused on lighting, heating, ventilation, air conditioning, energy management systems, environmental system controls, motors, domestic water heating, air distribution systems and water consumption.

Innovation for generations.

**SIEMENS**

“With the systems performing at up to 171% of contracted expectations, we know we made the right choice by partnering with Siemens”  
 - Penrith City Council



Above: Penrith City Council Civic Centre, New South Wales

### BUILDING AUTOMATION SYSTEM

The existing electronic controls were replaced with the Siemens Apogee™ Building Automation System (BAS) which incorporated:

- Chiller sequencing, loading and unloading sequencing
- Night purge of air conditioning system
- Time scheduling of mechanical ventilation systems
- Fan coil unit systems to be controlled by building management system
- Demand kW management
- Outside air reset of space temperature set points
- Alternative scheduling for reduced occupancy on air conditioning plant
- Daylight lighting control
- Integrated control of all mechanical plants and equipment
- Occupancy and standby modes for areas served by fan coil units
- Integrated power metering to provide comprehensive data on the electrical usage, peak demand, KVA and more
- Comprehensive and real time reporting on energy consumption through the facilities including electrical, gas and water usage

### ENERGY MONITORING & CONTROLLING

Siemens provided the Energy Monitoring and Controlling (EMC) package which encompassed a web-based user interface. The powerful energy analysis program automatically generates the various

consumption and emission reports, which can then be accessed by Penrith City Council at any time and from any location via the Internet.

### 3 YEAR PERFORMANCE RESULTS

The savings achieved greatly exceed those levels guaranteed as a part of the energy performance contract; ensuring that Penrith City Council, in turn, exceeds their objectives for their Sustainable Penrith Program.

Siemens delivered per year up to:

- 167% of guaranteed electricity savings
- 171% of guaranteed greenhouse gas reduction

In just three years, the Council has paid back its internal loan, saved more than \$640,000 in electricity and water charges and well over 4,000 tonnes of carbon emissions which is equivalent to taking 1,000 cars off the road or supplying enough power for an additional 850 new energy efficient houses.

These results are based on 2001 baseline figures and usage patterns, staff numbers have since increased, which make these results even more impressive.

Below: Energy Monitoring & Controlling (EMC) software screen displaying a view of monitoring greenhouse gas emissions.



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