

Penrith cost savings exceed guarantee by 67 percent

CO₂ reduction exceeds guarantee by 71 percent



City of Penrith said project results far surpassed expectations, confirming Siemens was the right choice

Council paid back its loan in just four years and reduced CO₂ emissions by 4,000 tons

■ Pay-back period shortened by one year

The aim of the Energy Saving Performance Contract with Penrith City Council was to provide a self-funding solution that can be financed over a five-year term and to provide guaranteed savings to underwrite the financial risk of the project. The Siemens Energy Saving Performance Contract was established to optimize 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. Within four years, the savings achieved greatly exceeded the guaranteed levels – by 67 percent for electricity savings and by 71 percent for greenhouse gas reduction.

With Energy Saving Performance Contracting, Siemens helps customers bridge the gap between

rising energy costs and limited system engineering budgets. As part of its commitment to helping customers achieve environmental goals, Siemens guarantees energy savings based on detailed engineering analysis. The guarantee provides extra assurance that helps municipalities move forward with extensive energy retrofit programs. Siemens offers a broad portfolio of green products and solutions, from energy-efficiency retrofits to renewable energy applications. Siemens believes that working with proactive, forward-looking cities such as Penrith is a key to ensuring a positive impact on the environment.

In more than 1,900 projects around the world, Siemens has helped customers save more than 2 billion euros in annual energy costs. This allows customers to invest the money saved in other areas and also benefits the environment. By reducing more than 2.4 million tons of CO₂ emissions each

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Penrith installed new energy-efficient equipment and systems without investing capital

year, Siemens demonstrates impressively what it means when it talks about sustainable energy savings. And Siemens guarantees the results.

■ Energy cost savings relieve burden on public-sector budgets

Siemens assessed every system at the selected sites to determine the most cost effective and efficient methods of reducing energy and water consumption for Penrith City Council. A comprehensive modernization program was financed by the contract to replace aging, inefficient equipment that wasted energy and water and required large capital expenditures.

As part of the contract, Siemens installed an Apogee™ Building Automation and Controls System that incorporates chiller sequencing, loading and unloading sequencing, and night purge of air conditioning system. It allows for time scheduling of mechanical ventilation systems and demand management. Fan coil unit systems can be controlled by the building management system, which can also use outside air to reset space temperature set points.

The building automation and controls systems includes alternative air conditioning scheduling for reduced occupancy, occupancy and standby modes for areas served by fan coil units, daylight lighting control, and integrated control of all mechanical plants and equipment. It also includes integrated power metering to provide comprehensive data on the electrical usage and peak demand, resulting in comprehensive and real time reporting on energy consumption throughout the facilities including electrical, gas and water usage.

The web-based Energy Monitoring and Controlling program was also installed. 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. In just over four years, Penrith had saved more than \$640,000 in electricity and water charges and reduced CO₂ emissions by 4,000 tons, equivalent to taking 1,000 cars off the road or supplying enough power for an additional 850 new energy efficient houses.

The information in this document contains general descriptions of technical options available, which do not always have to be present in individual cases. The required features should therefore be specified in each individual case at the time of closing the contract.

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Highlights

- Customized modernization of building technology equipment and automation technology without the need to invest capital
- Exceeded guaranteed energy savings by 67 percent, for a total of \$640,000 in savings in just over four years
- Energy services with monitoring and controlling to ensure the guaranteed energy savings
- Exceeded guaranteed CO₂ reduction by 71 percent, for a total of 4,000 tons
- Shorted amortization period by one year