CASE STUDY:

Sydney Olympic Park Aquatic Center (SOPAC)

Total Renewable and Energy Efficiency Solutions

PROJECT SUMMARY

Project Type – Cogeneration base Energy Center, under an Energy Performance Contract

Aquatic Facility – SOPAC was designed and built as the premier NSW venue for swimming, diving, water polo and synchronized swimming competitions for Sydney Olympic and Paralympic Games.

Today SOPAC continues to host international, national, state and local community aquatic and fitness competitions, and is also a popular venue for social recreation activities throughout the year.

The aquatic center is situated in the center of Sydney metropolitan area at Homebush Bay where it averages 50,000 visitors each day and is open all year round. The aquatic center/fitness center averages between 3,000 - 8,000 visitors per day during competition events.

The facilities included:

- Competition Pool - 50m, 10 lane Olympic Pool
- Training Pool - 50m, 8 lanes
- Utility Pool - diving pool
- Water Slides
- Rapid River Ride

Project Cost - $1,724,894
Project Savings - $304,000 per year
Return on Investment – 5.6 years (SPB)
Energy Consumption savings – 2,767,284 kWh per year
Greenhouse Gas Emission Savings: 1,250 tonnes of CO2 per year which is equivalent to 6,280 cars off the road each year.
Site Savings - of total site electricity consumption, 95% of total gas consumption and 25% of total water consumption.

TECHNICAL SUMMARY

Cogeneration based Energy Center

2 x 260kWe packaged cogeneration plants to supply the electricity and heating requirements of SOPAC under an Energy Performance Contract (EPC) commercial framework.

As part of the environmental plan at this facility and with the goal of significant reduction of the facility carbon footprint and energy costs, Sydney Olympic Park Authority decide to install the carbon Energy Center which uses natural gas to produce an estimated 45% of the electricity required for SOPAC site, and heating approximately 1 million liters of water every day, across all of the multiple pools.

The installation provided with a number a challenges, such as lifting the Cogeneration Plants into SOPAC's plant room on level 5 of the facility.

A WH&S issue was also solved during the construction of the plant radiator platform on the roof of the facility. A system was designed and constructed involving s roof access ladder, man-hatch, roof walkway and work platform with guard rails, toe boards and safety mesh to meet Australian Standards such as that the need for harnesses, static lines and other high work restrictions were not needed for maintenance workers.

Ultimately. The Energy Center was installed and constructed to provide highly efficient, low carbon electricity and hot water for SOPAC, on time and to the satisfaction of the client.

CONTACT US

Total Renewable and Energy Efficiency Solutions Corporation

Unit A 6th Floor Glass Tower, 115 Don Carlos Palanca Street, Legazpi Village, Makati, 1229 Metro Manila

Tel. No.: +632 8856 2010; +632 8856 1196
trees@trees-kaltimex.com.ph