stellarenergy

QUICK FACTS

Market:	Commercial
Design:	Hybrid (Modular and Stick-built)
Scope:	Design and Fabrication
Owner:	Dubai Roads and Transport Authority
Location:	Dubai, United Arab Emirates
Project Completed:	2009
Plant Specs:	7,500 TR of chilling capacity

DUBAI METRO GREEN LINE

District Cooling

The Dubai Roads and Transport Authority sought an efficient cooling solution for two new stations on the Dubai Metro Green Line. Located in the heart of the city, the stations posed a construction challenge with a tight timeframe and infrastructure considerations such as lack of space, unmarked utilities and traffic impact.

Stellar Energy was hired by UAE-based utility Tabreed to design and construct a district cooling solution for the Abu Hail and Palm Deira stations. The solution consisted of two modular chiller plants within site-constructed buildings that were required to blend in with the city's architectural surroundings. The hybrid approach allowed parallel site and shop construction to meet the required deadline.

Each plant delivers a total of 3,750 tons of refrigeration. By centralizing the cooling system and reducing mechanical equipment, Stellar Energy's solution met the strict requirements for a small footprint. The selection of water-cooled chillers provided 40% greater efficiency than air-cooled chillers by reducing the power consumption.

Dubai Metro is the first mass transit system in the world to use district cooling.

District Cooling is the distribution of cooling energy from a centralized plant to several buildings in a district. Centralizing the comfort cooling infrastructure offsets the need for mechanical rooms in each building within the district. The result is up to 40% improvement in efficiency and up to 20% life cycle cost savings.

Proven Benefits of District Cooling:

- Reduced construction costs
- Increased usable building space
- Reduced energy consumption
- Reduced operations and maintenance costs
- Increased efficiency
- Increased sustainability