

Al-Galala Resort District Cooling Plant

Owner

Egyptian Ministry of Defense

Client

Misr Engineering Development Company (MEDCOM)

Scope of Work

Shop drawings

Location

Al-Galala Resort, Al-Ain Al-Sokhna

Types of Activities

Architectural
Civil
Communications and security systems
Electrical
HVAC
Infrastructure
Landscaping
Mechanical
Structural

This project was undertaken by a consortium comprising ECG Engineering Consultants Group, Misr Engineering Development Company (MEDCOM), and ECM Energy Services.

The district cooling plant consists of a ground floor and a mezzanine, with a total built-up area of about 3,500 m². The plant, operated using chilled water, has a total cooling capacity of 16,866 kW (4,800 TR).

It includes the following components:

- double-height chiller yard complete with chillers, pumps, piping, and connections
- administration area that includes offices, meeting room, toilets, storage area, and other services
- electrical rooms with low-voltage and medium-voltage generators

The plant has four centrifugal, water-cooled, parallel counterflow chillers, as well as HFC-134a refrigerants. The chillers utilize the vapor-compression cycle, and each chiller has a capacity of 2 × 5,622 kW (2 × 1,600 TR) at a

constant speed, and a capacity of 2 × 2,811 kW (2 × 800 TR) at a variable speed.

District Cooling System

- Chilled water design temperature: 8.9 C°
- Chilled water supply/return: 4.4 C/13.3 C°
- Pumping
- Primary chilled water pumps: 4
- Secondary pumps: 4

Drive: variable speed

- Condensation pumps: 4
- Pump type: horizontal split case

Cooling Towers

- Position: atop the plant
- Cooling towers: 4
- Cells per cooling tower: two towers have two cells each, and two towers have one cell each
- Cooling tower temperature: 5.6 C°
- Cooling tower design temperature (in/out): 35.0 C°/29.4 C°

