

Industrial & Technology Related

DISTRICT COOLING CENTRE - KLCC

Simplistic Complexity

Client KLCC Holdings Berhad
Location Kuala Lumpur City Centre, Malaysia

The 100-acre Kuala Lumpur City Centre development is the first project in Malaysia to be serviced by a District Cooling Centre which utilizes natural gas as the primary energy source for its air-conditioning system. An interesting feature of the plant is that it utilizes the new R-134A ozone-friendly refrigerant, which replaces the ozone depleting chlorofluorocarbons (CFC), which is currently being phased out under the Montreal Protocol. The combined capacity of these chillers will make it the largest in the world to use the new environment-friendly refrigerant.



The district cooling plant utilizes the supply of chilled water from a centralized cooling system for its air-conditioning requirements. To ensure high-energy efficiency, the plant has adopted a co-generation system that produces two useful energy forms from the same source. The process entails the use of gas turbine generators to produce steam. Therefore, the gas district cooling /co-generation plant produces chilled water in two ways:

- Utilizing electricity generated to run electrical centrifugal chillers, and
- Utilizing steam produced to run steam turbine centrifugal chillers or steam absorption chillers.

The benefits of implementing the Gas District Cooling System are:

- Higher overall energy efficiency
- More competitive than the conventional system
- Savings in Capital investment
- Higher system reliability
- Environmental-friendly system