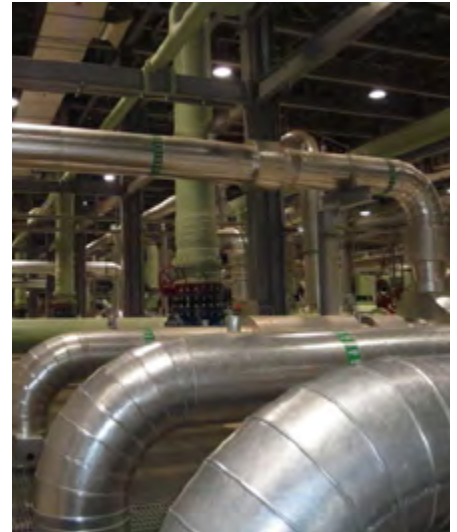
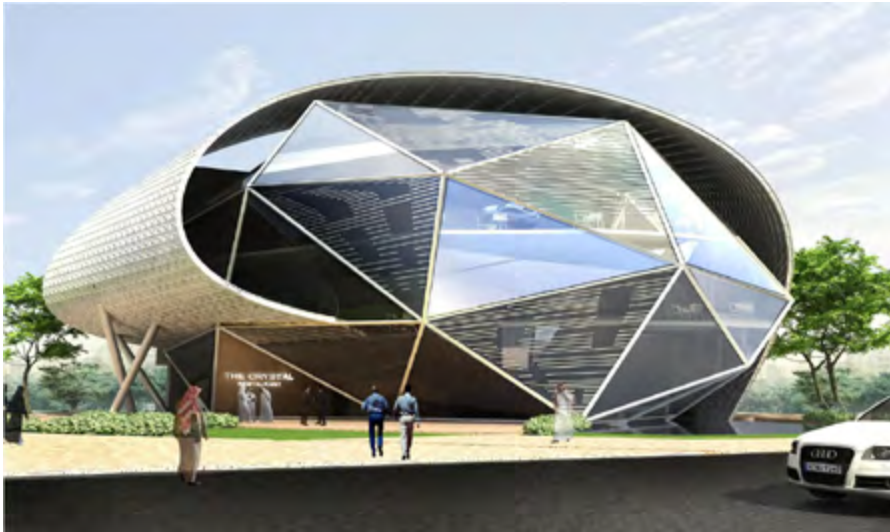




(ITCC) DISTRICT COOLING PLANT



Concept & Location

The Information Technology and Communication Complex (ITCC) is a massive office project that attracts and hosts Information and communication technology companies to setup bases in the important Riyadh market in KSA.

Developed on an area of more than 800,000 m², The ITCC project supports and promotes the development of the IT sector in the region. The Master Plan design philosophy of the complex targets the creation of a consistent set of public arenas, green oases and green walking trails.

The complex also offers many services such as high-class hotels, unique housing, social & recreational activities and commercial activities. All of which are linked together in a natural environment.

The ITCC complex has high power communications centres that accommodate thousands of employees and visitors at any given time. The huge machines that are used in a typical day generate a lot of heat which calls for an efficient and eco-friendly District Cooling system to be setup in the complex.

The ITCC will be located in the Nakheel district of Riyadh. It is the kingdom's first dedicated IT park and part of the country's effort to diversify its economy.

The ITCC aims to increase the strength of global competition for IT companies in Saudi Arabia, develop the Saudi labour force in IT training, offer research and development facilities and provide a centre for corporate IT company head quarters.

The ITCC masterplan envisioned four 20-storey landmark

towers which would seamlessly blend with the final masterplan for the ITCC Wahat Al-Aamal or Business Oasis. The premises also comprise two research and development buildings, two business technology incubator buildings, a library, a mosque, a sports club, a clinic and landscaping.

The four towers were conceived to frame a new public space at the centre. They are square in shape and their height is based on the golden mean proportion. The geometry of a parabolic dome intersects the towers' corners to create a scalloped surface in the corner of each facing the public space thus forming circular public spaces defined by a virtual dome.

The construction is based on a conventional concrete frame with central core and a steel diagrid supporting the scalloped corners. The towers' cladding is a double skin façade system designed to minimise glare and reduce operational cooling loads. A gold colour extruded aluminium-bronze outer skin provides a shimmering veil of varying opacity and translucence giving the buildings a distinctive character at the same time as protecting them from the harsh climate and environment.

Drake & Scull Water and Power were invited to undertake the Design and Build, Operate and Maintenance of the District Cooling system for the ITCC Project for a 10 year period. DSWP's strong cooling performance achieved the clients' objective of delivering a modern high powered IT facility that was on par with their counterparts in the developed world.



Scope of Work and Challenges

The District Cooling Plant installed by DSWP at the ITCC site has a capacity to deliver more than 35,000 Tonnes of cooling. The project was a major development from the Operations and Maintenance Perspective.

The clients chose District Cooling as an effective solution as it delivered much lower energy consumption for large developments compared to conventional methods. The District Cooling allowed the ITCC project to be more environment friendly and LEED effective through the use of grey water recycling, low energy lighting, low energy air conditioning and a reduction in solar gain.

DSWP undertook the complete Engineering, procurement, and construction for the district plant at ITCC.

The initial plans called for creation of a District cooling system with a capacity of 25,000 TR capacities, which as designed to be expandable to 30,000 TR to cope with increased demands for cooling with more residents moving into the premises.

DSWP also undertook the construction and installation of the two TES tanks works with 40,000 TRH capacity. The complete construction includes aspects of civil, process and MEP services.

DSWP's strong technical capabilities and sound technical foundation installation of the District Cooling Plants to the complete

satisfaction of the clients. The cooling system has proved to be capable of meeting the requirements of the thriving workplace and has also realised significant energy savings that have reduced the operational carbon footprint of the site.

The success of the DCP in the ITCC premises has helped to accelerate the adoption of District Cooling in KSA. Previously, Utility and District Cooling were not very popular in KSA but is now widely being adopted for major new developments.

DSWP's work in ITCC was also a fine example of Drake & Scull's vertical integration, as the DSI's MEP, Civil and Water and Power teams worked in parallel in a professional manner with efficient planning to take charge of all major aspects of construction.

The ITCC is located in the Nakheel district of Riyadh, KSA's first dedicated IT park and part of the kingdom's efforts towards economic diversification.