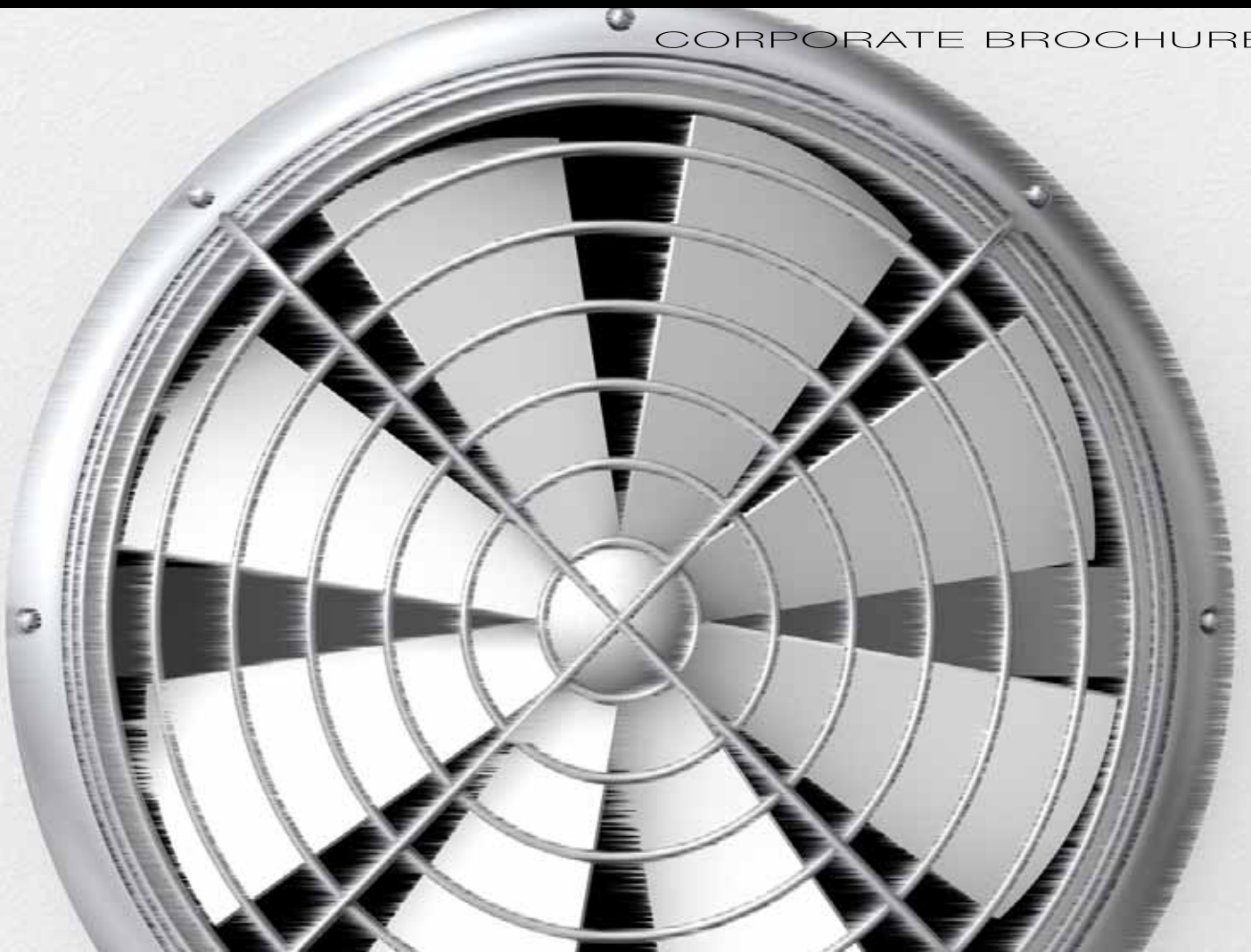


SAUDI TABREED COOLING

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CORPORATE BROCHURE



Coolidea

Jeff Daniels looks at a relatively new approach to providing air conditioning that is contributing greater energy efficiency to the Middle East



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orget about oil refining and horse breeding; air conditioning must be one of the more sensible business sectors to be involved with in Saudi Arabia. Nomadic Arabs might have managed for centuries without air conditioning, but modern living, with its higher density populations—and with everyone contributing to the environmental impact via computers and other electronic gadgets—means that Saudi Arabia today simply wouldn't function without a cooling breeze to make the 40 degrees-plus temperatures bearable.

But while the need hasn't changed in the past decade, the method of cooling homes, hotels and offices has. There's something of a quiet revolution in the technology brought about in part by the need to create greater energy efficiency and reduce the impact on the environment. Today, buildings are just as likely to be served by a district cooling system (DCS) as they are to have their own standalone air conditioning plants. These DCSs can be measured in tens or even hundreds of thousands of tonnes of refrigerant.

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Saudi Tabreed Cooling Company



District cooling is the process of distributing cooling water produced in a central source to lots of user buildings in the area. Chilled water is produced at one or more plants and then piped out for use in a specific building's air conditioning system. In Saudi Arabia, it is now widely used in downtown business districts and institutional settings such as college campuses. But it's a process not many people are yet familiar with, because the system quietly goes about its work and as the pipes that deliver the chilled water are usually buried beneath the streets, most people are simply unaware that they are there.

At a stroke, the need for individual buildings to have their own chillers is removed and with it, the associated capital and maintenance costs.

One of the biggest names in the business is Saudi Tabreed Cooling Company. Located in Al-Khobar, on the shores of the Arabian Sea and overlooking Bahrain and Qatar beyond, the company was formed in 2005 as a Saudi private sector joint venture company with Tabreed UAE, ACWA Holding and

RUSD International as the key members of the venture and major shareholders.

The cooling and distribution technology comes from Tabreed UAE, a Dubai-based operation said to be the largest district cooling provider in the world, owning and operating around 50 district cooling plants as joint ventures or subsidiaries throughout Bahrain, Qatar, Oman and Saudi Arabia—a position it has achieved in the 13 years since inception.

Water technology comes from ASWA (Arabian Company for Water and Power Development), a company engaged in the investment of seawater and brackish water desalination, power generation, potable water treatment and sewerage and industrial wastewater treatment.

RUSD International contributes marketing know-how as well as specialising in financial services through the Investment Bank and Asia Finance Bank of Malaysia, Salama



transmission limitations in cities is alleviated.

District cooling systems claim a variety of other benefits, both qualitative and economic. For example, the emotional advantages are perceived in terms of better comfort, better reliability and convenience. In cash terms, there are benefits for both building owners and tenants. The capital costs of control panels, internal power distribution, annual maintenance and power consumption inside the building are reduced and the cost of chillers is eliminated. Nor do roof lines need to be festooned with individual air conditioning units.

Tenants are happier and therefore less likely to want to move because they have greater control over the temperature and humidity of their environment, and less accommodation space needs to be allocated to cooling units. District cooling also puts paid to much of the noise often associated with air con.

In the Middle East, air conditioning is such an integral part of existence that the economic benefits of district cooling need to be given strong consideration. As such, Saudi Tabreed is finding ready listeners for

the economic arguments it can offer.

For example, air conditioning equipment consumes around 70 per cent of a building's total energy needs and constitutes 70 per cent of peak electric demand. By shifting that load from individual houses to a central plant, the housing electric load is reduced substantially and along with it, the number of electric substations and length and sizes of electric cables.

Within the system itself, district cooling requires far less electric power than multiple plant rooms or ducted splits. Furthermore, the plant room can house the electric substation, enormously reducing the electric works. Electric demand and peak shaving are easily controlled when district cooling is applied—especially important in the case of on-site continuous or standby power generation.

From Saudi Tabreed's point of view, a central plant is much less labour-intensive to maintain in comparison with the large number of teams required to maintain numerous smaller plants or hundreds of condensing units. Fan coil units and air handling units require minimal maintenance and cause only rare breakdowns.

Saudi Tabreed is keen to mirror the performance other Tabreed markets have achieved. It has recently signed an agreement to provide cooling services to the Saudi Aramco Dhahran complex. The contracted cooling capacity is 32,000 TR (tonnes refrigerant) and is based on a 25-year build-operate-own basis. A much larger deal has been struck with Raydah Investment Company for a 100,000 TR plant at the King Abdullah Financial District. Here, Saudi Tabreed will carry out the operation and maintenance activities for the first 10 years of the project's life. www.sauditabreed.com ■

Islamic Arab Insurance Company of the UAE and Ta'jeer Co. of Saudi Arabia.

Saudi Tabreed's approach to district cooling is founded on the principle of operating a stable and long-term utility business that provides clients with a sustainable approach to climate control. The contract it has with clients guarantees a chilled water supply throughout the period in question at a fixed cost—a solution that provides not only a cost effective service but peace of mind for the building owner as well.

For the community and economy as a whole, district cooling systems displace peak electric power demand with district cooling and storage using ice or chilled water. Local power grids aren't hit by high surges in demand; and power congestion due to power



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