

Case story

Keeping it cool in Downtown Dubai

Balancing 35 floors to perfection

Burj Khalifa, the world's tallest building, is located in Dubai, United Arab Emirates (UAE). With a staggering 160 floors, reaching 828 metres, the building takes your breath away. Burj Khalifa is not only a world famous skyscraper, but also a building complex in downtown Dubai with residential buildings, office buildings, hotels and shops.

Two of the residential buildings soaring to 35 floors and dwarfing many other high-rise buildings are balanced to perfection by an extensive Danfoss hydronic balancing solution. The solution provides more than 800 dwellers with a pleasant indoor climate even when temperatures rise to 40°C or above during the scorching hot summer months.

800

**AB-QM valves
800 actuators**

ensure a stable temperature,
pleasant indoor climate and
high energy efficiency in the
Claren buildings.

The solution comprises:

- 800 AB-QM valves, sizes: DN 15-20-25-32-80-100
- 800 actuators AME 110 NL and 15 QM

Advantages of the cooling solution:

- Simple design
- High balancing efficiency
- Safe operation
- Low operating costs due to hydronic efficiency
- Low maintenance costs
- High energy efficiency



"In the design phase, we convinced the contractors to use AB-QM valves due to fast installation and short commissioning. But energy savings were also an important argument. Even though the energy prices are much lower in the Gulf States compared to e.g. Europe, the awareness of energy savings is increasing in the UAE and supported by the UAE government," says Serhan Ismail Ozten, Area Sales Manager at Danfoss.

High indoor comfort and stable temperature

The most convincing argument in favour of the Danfoss solution was the high and stable level of comfort provided by the AB-QM installation.

"When you set the thermostat the temperature will be stable due to the advanced balancing system. Even with varying out-

side temperatures and varying cooling demands when people are away, the delicate hydronic balancing installation will ensure the proper flow providing the desired level of cooling in every apartment," explains Serhan Ismail Ozten who worked closely together with Mr. Abdul Latheef from engineering company WOTEK Co.

The perfectly balanced flow also explains the energy savings achieved by the Danfoss solution. When the flow rate is highly controlled and stable, the pumping required will be greatly reduced, resulting in significant energy savings.

The AB-QM valves are even maintenance-free as they contain no movable parts. Furthermore, the design of the valves prevents clogging during everyday use.



It was a pleasure working with Danfoss and WOTEK engineers throughout the project. The installation and commissioning support helped us in getting the valves operational in a quick and proper manner. The product itself showed high value and quality control during installation and functioning, hence the satisfaction from both contractors and building operation team.

Rida Biri, Project Manager,
Penguin Engineering

**About Claren 1 & 2, Downtown Burj Dubai:**

- 21,000 square meter residential buildings accommodating almost 800 dwellers
- 35 floors each
- Construction period: 2004-2011
- Investor/owner: Emaar Properties
- Architect: Chicago office of Skidmore, Owings & Merrill LLP with Adrian Smith FAIA, RIBA

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