

A photograph of several swimmers in a pool, captured in motion. The swimmers are wearing swim caps and goggles, and are splashing water. The pool is divided into lanes by white lane lines. The background shows the pool deck and some people standing.

# Munters provides comfortable climate for athletes

Sharjah swimming-pool, United Arab Emirates



The American University of Sharjah.

*The American University of Sharjah is located in the United Arab Emirates and offers an extensive range of educational programs, including 28 majors, 45 minors, 16 master's degrees and three PhD programs.*

The University aspires to be amongst the leading universities in the Arab World and is renowned and recognized in its region and around the globe for offering comprehensive academic and professional programs of the highest quality.

Between 400-500 students graduate from the university every year and 1,800 students live on campus. The students are offered excellent facilities, including a variety of sport arenas.

When the Sharjah University sports complex was being renovated, installations were updated to become more modern and energy efficient, which included a new district cooling supply update. Dealing with swimming pool humidity issues, a desiccant drying system from Munters was chosen to create the perfect pool environment.

#### **Case study**

American University of Sharjah swimming pool.

#### **Advantages:**

- Comfortable and healthy indoor climate without the need of traditional cooling
- Consistent climate all year round and minimum maintenance
- Prevents condensation and reduces energy and operating costs
- Provides efficient protection against building structure humidity-related damage



# Indoor climate problems

Due to its location in the UAE, American University of Sharjah suffered each year from long periods with serious indoor climate problems. The combination of high relative humidity and high outdoor temperatures lead to an indoor climate that caused breathing problems for both swimmers and audience. Condensation was also a major issue as it created costly damage to building structure.

In 2013 the sport complex building was one of many buildings on the compound that being refurbished. The University did not want to control the climate by installing a conventional cooling system in the swimming area, due to expensive operational costs and increased CO<sub>2</sub> emissions. The existing cooling systems were removed and updated to district cooling to save energy and improve cooling efficiency.

The swimming area climate had never been controlled, but a solution to the serious problem was found when the building was being renovated. A large amount of water evaporated from the pool surface every day, in fact, more than a ton a day. If not removed, it would damage building fabric and create an uncomfortable climate for swimmers.

Upul Sumanasekara, MEP Engineer at the Project Management Office of American University of Sharjah:

“We decided to find a solution that could control the climate around the swimming pool at 55% Relative Humidity with a year-round temperature of 28°C, and without additional cooling systems. We wanted a system that could be integrated with the AHU on site but we had very limited space on the roof.”

A Munters MCD100 desiccant dehumidifier was selected to deal with the moisture load from the pool.



# Energy efficient and environmentally friendly solution

The swimming arena volume was 24,000 m<sup>3</sup> and the pool area was 50 x 21 meters. Pool hall air was drawn through a desiccant drying wheel which absorbed moisture and delivered dry air back to the pool hall. At the same time, another airstream was drawn through a sector of the drying wheel so that the absorbed air was discharged externally to the pool hall. The dehumidifier worked with a nominal air flow of 10,000m<sup>3</sup>/h, and was recirculating the pool air with 50% fresh air intake .

Mr. Sumanasekara concluded: "After the installation of the dehumidification system, the climate in the swimming arena has improved a great deal, and today we enjoy a comfortable climate for both athletes and audience. We expect to reduce building maintenance costs since the condensation problem has been eliminated".

Munters MCD dehumidifiers work on the desiccant principle and the solution is much more environmentally- friendly when compared to refrigerant dehumidifiers. To further increase MCD dehumidifier energy efficiency, an energy recovery purge sector is available that reduces the heat required for desiccant wheel regeneration.

## Munters Energy Recover Purge

Munters ERP can be supplied as both a pre-installed feature and as a retrofit. It works by recirculating air into the regeneration cycle after the heater. The American University of Sharjah has selected the best possible solution, both for the swimmers, the audience and our environment.

Would you like to find out if Munters has a solution for your company too? If so, please visit our website, [www.munters.com](http://www.munters.com)

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