SAUDI ARABIA USES GRUNDFOS BOOSTERS IN MAJOR SECURITY CAMPUS BUILDINGS UPGRADE

MAJOR UPGRADE OF SAUDI ARABIAN SECURITY CAMPUSES ACROSS THE COUNTRY BROUGHT A NEED FOR MORE ENERGY EFFICIENT AND RELIABLE BOOSTER PUMPS IN NEW BUILDINGS. THE PUMPS NEEDED TO HANDLE SHIFTING DEMANDS ACROSS SEVERAL ZONES IN THE MOST EFFICIENT WAY POSSIBLE. THE PROJECT'S MAIN CONSULTANT CHOSE GRUNDFOS MPC-E BOOSTER SETS FOR THE TASK.

THE SITUATION

In 2013, the Kingdom of Saudi Arabia began upgrading 44 military and security facilities across five zones in the country. The country's Ministry of Interior launched the King Abdullah Bin Abdelaziz's Project (KAP2) in order to upgrade the military standards of the Kingdom.

KAP2 consists of constructing new buildings on all sites, including medical centres, training facilities, shooting ranges, clinical and forensic laboratories, villas, recreational facilities, auditoriums and congregational facilities, mosques, shops, sports buildings and more.

The total construction area totals more than 3.5 million square metres. Global design and project management company NKY was the ministry's main consultant. Their main challenge was to find a water boosting solution for the buildings that could optimise power based on demand, says Irfan Ahmed Ashrafi, Senior Business Development Manager, Grundfos Saudi Arabia.

"In the initial phase of the project, they had installed constant speed boosters from a competitor," he says. "The ministry wanted to find a more energy efficient solution. The project entails multiple buildings with multiple zones in each. And all these buildings were under construction and would be completed in phases. So they needed something that could adapt to the shifting load and demand requirements."

In addition, the buildings are all in high-security, "sensitive" areas. "It is a challenge to get access, so they did not want much maintenance work," Irfan Ahmed Ashrafi adds. "They wanted booster sets they could rely on."

Topic: Water boosting for security campuses
Location: Kingdom of Saudi Arabia
Customer: Ministry of Interior

THE SOLUTION

Grundfos presented its MPC-E variable-speed booster systems to NKY. Irfan Ahmed Ashrafi's team also explained the concept of proportional functionality in the Grundfos CU352 controller. The CU352 compensates for frictional losses, reducing water pressure and thereby water leakages.

"We also spoke about soft pressure building up, enabling smooth operation during start-up, reducing water hammer," he says. "That was not a standard feature on the competitor's pumps they had installed in the phase one."

Grundfos conducted an Energy Check after it supplied the variable speed booster sets in one of the new buildings that had been built in the first phase of KAP. The building's water boosting had previously used 14 fixed speed pumps. Grundfos wanted to show what difference it would make on the energy usage with variable speed over fixed speed pumps.

The Energy Check revealed that the Ministry could save more than 123,000 kWh of energy a year – and more than 87 tonnes of CO_2 emissions a year – by installing more energy efficient pumps and small improvements. It would also save around EUR 9,000/year in energy costs for this one building.

NKY approved a total of 121 MPC-E booster sets for the KAP2 project.

THE OUTCOME

Grundfos expects to have all the boosters installed and commissioned by the end of 2021.

NKY's Senior Mechanical Engineer, Tariq Mousa, says:

"The Grundfos Hydro MPC-E sets were the right fit for our project with their unique feature of proportional pressure and friction loss compensation," Tariq Mousa says. "This is an iconic project that required a reliable solution in terms of quality. The high technology of these boosters has accounted for energy savings."

GRUNDFOS SUPPLIED:

Grundfos supplied 121 fully assembled MPC-E booster pumps for the KAP2 project in Saudi Arabia. Read more about this solution here.

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