SAMSUNG

Case Study

Not too cool for school.

Together with IDA Engineers and McMillan James Equipment Company, Samsung HVAC did their homework to ensure a south Dallas high school would be kept comfortable before classes resumed.

Project: **DISD Wilmer Hutchins High School** | Product: **DVM Chiller** | Location: **Dallas, Texas**

CHALLENGE

Wilmer Hutchins High School is a secondary school in the Dallas Independent School District. The school underwent major renovations back in 2011, and part of the upgrade involved converting the school's primary cooling and heating system to a geothermal heat pump cooling system using the earth as a heatsink.

In the last few years, the heat pump systems have lost some capacity due to heat saturation around the wells for the water loops. The final blow came when much of the wells for the school were cut into during a project in June of 2023. This made it impossible to provide cooling going into the summer and heating for the winter. A decision was made to try something different rather than re-drilling all the wells and repairing the ground loops. On top of that, there wasn't much time until school started back up in August.

SOLUTION

IDA Engineers and McMillian James Equipment Company (MJEC) proposed a radical solution to the geothermal system utilizing Samsung's DVM Heat Pump Chiller. The school district was excited about the solution because the Samsung Heat Pump Chiller could easily replace the damaged ground loop. This is because of the chillers' ability to provide both hot and chilled water and can also provide a wide leaving water temperature range.

Samsung, whose HVAC headquarters and distribution center is less than an hour away in Roanoke, TX, provided engineering support for the Building Management System (BMS) integration. The system would need to be conceptualized, engineered, procured, delivered and installed in six weeks and be operational by the time teachers returned from summer break.

Within days of the new concrete pads being poured, Samsung coordinated the delivery of (42) chiller modules in staggered shipments to the job site where they were crane lifted onto the chiller stands one at a time. It took a week for the mechanical, electrical and integration work and then the chillers were ready for commissioning.

The Samsung DVM Chiller successfully provided cooling water to the secondary loop—and to the water source heat pumps in the school.

During cooling occupied hours, the BMS provides a cooling command and issues a target, leaving a water setpoint of 77°F (25°C). The water source heat pumps on campus control the setpoint provided for each zone, and the heat rejected is pushed back to the chiller system. The return water temperature is 10-12 degrees warmer and the cycle repeats. During the winter, the cycle is reversed. This is due to the heat pump capability of the Samsung chiller and its ability to heat the return water back up to 77°F (25°C).

The school is happy with the operation, low noise levels, energy efficiency and that the equipment was in-stock and available on such short notice. The total size of the two chiller yards combined is 630 nominal tons and is treating over 240,000 square feet. This is a perfect example of how Samsung's DVM Chiller can be applied in larger capacities and can be a solution for a multitude of applications.

To learn more about the Samsung DVM Chiller, visit SamsungHVAC.com