

SMART SYSTEM DELIVERS SAVINGS

A JUDICIAL
FACILITY INSTALLATION

The monthly average energy usage decreased by 23% compared to 2019. Total energy usage fell by 55%. Monthly energy savings are over \$2000.

“This is an excellent example of the type of high-performing, adaptive system we always work to deliver.”

Peter Wolff

Global Manager,
Energy Upgrades
and Ecosystems

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Towson Courthouse

Parallel Sensorless Pump Control (PSPC) is a technology that uses best-efficiency staging to minimize the energy costs of a multi-pump installation. Controlled by PSPC, Design Envelope Tango pumps supply only as much flow as is required to meet the immediate demands of the system.

Background

In late 2020, the Maryland Department of General Services (DGS) approached Jae Chon of Chesapeake Systems to help with a retrofit for the HVAC system in the Towson Courthouse. The existing system could not maintain comfortable temperature or humidity and was no longer operating efficiently.

Chesapeake partnered with Armstrong and Danfoss to deliver a comprehensive HVAC system retrofit, using a new design in which all the components work in synergy to enhance the efficiency of the entire loop. The new system uses high-efficiency scroll compressors, pressure-independent control valves, variable frequency drives, and 4 number 80-ton modular heat recovery chillers.

The new chiller modules operate at a lower condensing temperature to improve cooling efficiencies. The variable speed technology automatically adjusts to meet cooling demand, while continuously optimizing overall performance.

Supported by Armstrong's Smart Commissioning process, installation and commissioning were completed in time for the Maryland heating season, which typically starts in October.

Benefits

In October and November of 2021, the building used 59% less natural gas than in the same months of 2019. Total energy use fell by 55% in November, and the monthly average energy use over the first six months decreased by 23%. That reduction in energy use equates to more than \$2,000 in monthly utility savings.

Reflecting on the project's success, Peter Wolff, Global Manager, Energy Upgrades and Ecosystems stated “Retrofits often present challenges and the innovation shown by Jae Chon in creating a high-performing system is impressive. We're very proud to have been involved and to support this important project”.

Tech-info

- 4 Armstrong Tango Design Envelope Pumps
- 1 Armstrong 4380 Design Envelope Pump
- 1 Armstrong 4302 dualArm Design Envelope Pump
- 3 Armstrong 4380 Pumps
- Suction Guides and Flo-Trex valves
- Armstrong L-type Expansion tank

