

Case Study: Bank of Hawaii Domestic Booster Pumping System



Old Control Panel

The Bank of Hawaii corporate headquarters located in downtown Honolulu consists of 4 separate buildings.

Their domestic booster system which feeds all 4 buildings encompassed (5) pumps, (4) of which were at end-of-life.

The bank were looking to save energy and approached Energy Management Consulting and Construction (EMCC) to prepare an energy analysis and recommendation for upgrading their old system.

EMCC partnered with VSI Solutions and presented an analysis and proposal, which was eventually selected.

The original system used constant speed pumps with pressure reducing valves (PRV's) which consume a great deal of excess energy.

The new system incorporated variable speed driven pumps to maximize energy savings.



The construction work was performed by Continental Mechanical of the Pacific - it began at the end of the day on a Friday and continued throughout the weekend to ensure there was no water outage during normal working hours. The new system was commissioned on the Sunday.

The Yaskawa iQPump1000 VFD's have all control logic built-in so they do not require any additional controls. The two VFD's are connected via Cat5 cable.

The new pumps and VFDs take up less than half the space of the original system. The new system is integrated with the customers building automation system.

Original Equipment:

(4) constant speed pumps (7.5, 10, 15 and 30 Hp)

Retrofitted Equipment:

(2) Armstrong multistage stainless steel pumps

(2) Yaskawa iQPump1000 VFD's

(1) Drawdown tank

Annual energy consumption is estimated to be 33% of the original system.

That's a reduction of over **67%!!!**



Old System



New System

Other Benefits:

Pump Alternation: Pumps will be exercised evenly to ensure that they receive equal run times, thereby increasing the life cycle of the pumps and motors.

Pump and Drive Redundancy: If a drive or pump fails during operation or is taken out of service for maintenance, the remaining pumps continue to operate. The other drives on the network will automatically recognize when the drive and pump are restored to active healthy status and put them back into the pump rotation.

Low Suction pressure monitoring: The system will monitor inlet pressure with programmable PSI settings for faults, alarms and station controlled shutdown.

Soft Start and Sleep mode: Upon starting after power outage or shutdown, system ramps slowly to avoid water hammer. If there is no demand, system will be pre-charged and pumps will be shut down, saving money and increasing pump life.

Drawdown Tank: Allows for the system to remain off for longer periods of time where very little water is required.

See how much energy we can save in your building!

Utilizing the latest technologies, we can reduce your chiller plant efficiency by as much as 40% or more with typical returns in the 3-4 year timeframe.

We specialize in:

- Commercial Air Conditioning
- Domestic Booster Pumping Systems
- Hot water heat pump systems
- Variable Speed Drives
- Lighting
- Air Handlers



To schedule your free energy analysis*, please contact Kimberly De Souza at (808) 542-8279 or kim@vsih.com