

[How a Custom Pump System Slayed an Energy Vampire]

85% Reduced Energy Usage in First Year



Background

- 24-story office building
- Located in Honolulu, Hawaii
- Project occurred between 2014-2015
- An **energy vampire** is a device that continually consumes power to serve a load which requires far less than it uses, rendering the user unaware of the losses

The Problem

A client came to QuantumFlo needing a cost and energy-efficient pump pressure boosting system for a 24-story office building in Honolulu.

The nearly 30-year-old building was still equipped with three of the original constant-speed pumps. The current legacy system, labelled by QuantumFlo as an “energy vampire,” caused consistent issues, including:

- High energy bills
- Frequent maintenance visits
- Expensive repair costs

Challenges

The client needed to address the following:

- Deliver measurable energy optimization characteristics per Hawaii Energy requirements
- Establish existing baseline energy consumption and new system’s projected consumption
- Find an economical and efficient way to reduce energy costs
- Devise a solution with fast return on investment and low total cost for the client

QuantumFlo’s Custom Pump System Solution Improved Energy Efficiency, Resulting in:

85% Reduced Energy Usage in the First Year

9 Months = Full Return on Investment

Nearly \$22K Projected Annual Savings

The Solution

QuantumFlo assessed the client's situation and needs to deliver a custom pump system solution comprised of software and hardware designed to increase energy efficiency and deliver maximum savings.



CalQFlo, QuantumFlo's intelligent sizing tool, was used to generate accurate load profiles, crucial in determining ROI and energy savings. This report fulfilled the Hawaii Energy requirements for energy optimization characteristics.

The Brain

Intelligent control and optimization software:



iQFlo monitors and predicts water demand to reduce energy usage through intelligent pump staging and low flow detection



GreenFlo reduces energy consumption by automatically decreasing pressure in low flow conditions

The Brawn

Genius V pump system featuring:

- Three 7.5 HP, 3-phase pumps and motors with individual frequency drives and all stainless-steel frames and headers
- Using three pumps enables load separation and optimization, allowing one pump to maintain building water pressure 80% of the time



The Result

The before and after energy audit showed the legacy constant speed booster pump system consuming 86,160 kWh per year. The QuantumFlo retrofit solution measured 13,560 kWh per year.

- Benefits from GENIUS V with variable frequency drive VFD technology produced 20% of the total energy savings
- Precise load profiles and system configurations generated by CalQFlo delivered 60% of the total energy savings
- Benefits from the proprietary booster pump operating system iQFlo and GreenFlo generated 20% of the total energy savings

The 85% reduction in electricity consumption in combination will save the building owner \$329,651 (15-year product lifecycle) on the energy bill.

	Annual	15 Years
Electricity Use Savings	\$20,553	\$308,301
Electricity Demand Savings	\$1,424	\$21,350
Total Monthly Savings	\$21,977	\$329,651

The payback period on the investment was 9 months for the building owner.

About Us

QuantumFlo was established to design, manufacture and deliver the best packaged technologies to the pump systems market.

Industries

- Engineering
- Construction
- Turf & Irrigation
- Hospitality
- Commercial & Retail
- Aerospace
- Residential & Light Commercial
- Government & Military
- Power Generation & Utilities

Is There an Energy Vampire You Need to Slay?

Contact us today to discuss how our intelligent pump solutions can meet your project needs.

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