

# How a Custom Pump System Slayed an Energy Vampire

85% Reduced Energy Usage in First Year

## Background

- 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

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
- Devise a solution with fast return on investment and low total cost for the client

## QuantumFlo’s Custom Pump System Solution Improved

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



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

## The Brawn

Genius 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 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
<b>Electricity Use Savings</b>	\$20,553	\$308,301
<b>Electricity Demand Savings</b>	\$1,424	\$21,350
<b>Total Monthly Savings</b>	\$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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