



## OVERVIEW

Although the ANZ Centre was already deemed to be energy efficient, they piloted BTune to determine if additional energy savings could be achieved without creating additional expense or workload for the building team.

## SOLUTION

BTune's technology uses Automated System Optimization (ASO) to quickly compare HVAC performance against best practice standards to identify any of optimization. After the BTune edge device was connected to the BAS, it quickly began analyzing historical and real-time building data and identified 12 Energy Conservation Measures (ECMs) that would reduce HVAC energy consumption across 200+ individual pieces of equipment.

Once the action report was approved by the facilities team, BTune took over supervisory control to automatically deploy the ECMs, and continued to monitor and further optimize energy performance over the next 12 months.

**See what BTune did on the next page.**

## ABOUT ANZ CENTRE

### Building Info

- Constructed in 2015
- 3 stories plus car park
- ~120,000 square feet
- Mixed Office & Retail

### HVAC System

- 124x Fan-Coil-Unit (FCU)
- 3x Outdoor Air-Handling Unit (AHU) connected to 6x on-floor VAV
- 2x Water Loops
- 3x Heat Pump Chillers

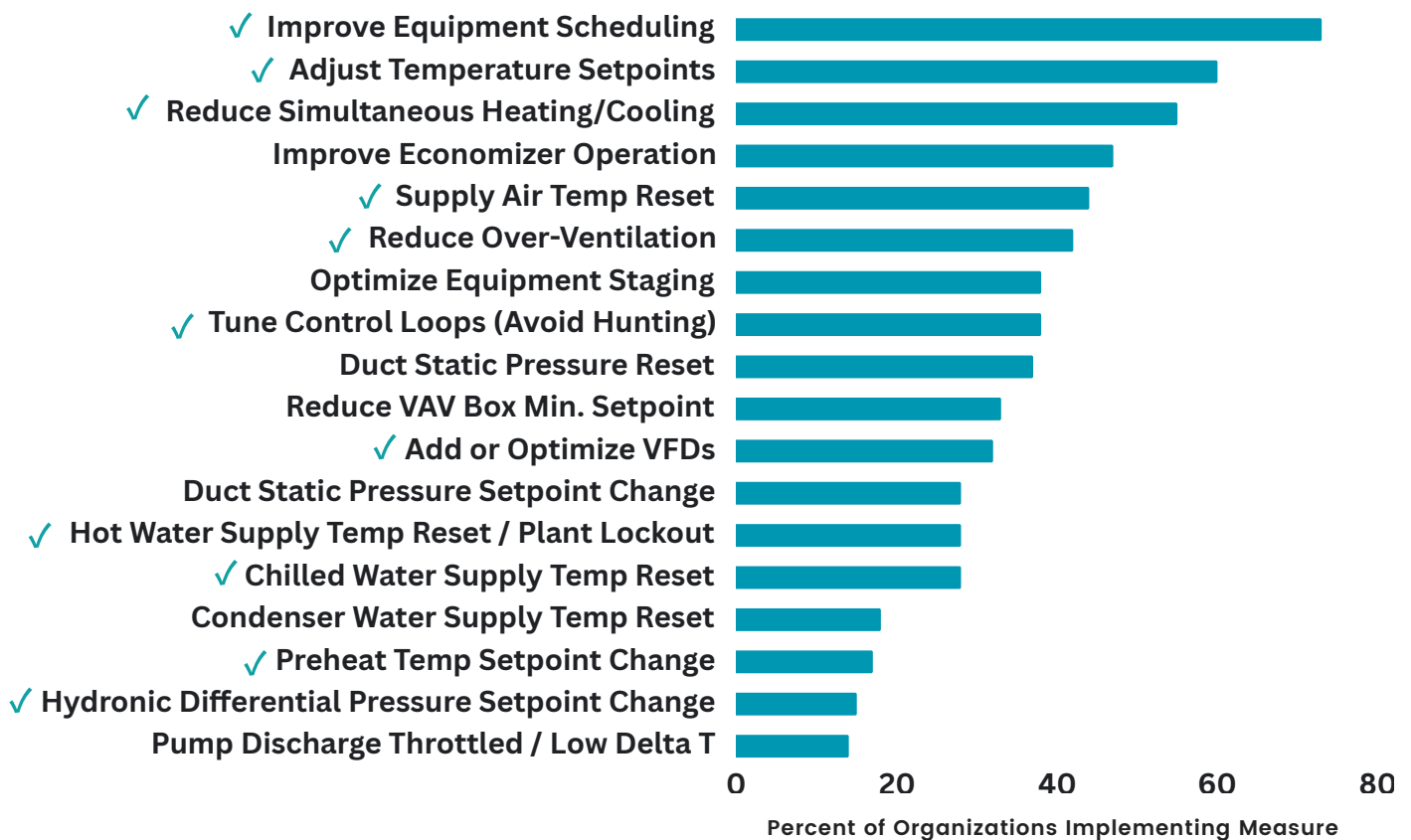
## WHAT IS ASO?

**Automated System Optimization is a supervisory control technology that dynamically changes HVAC BAS settings to optimize system performance in real-time.**

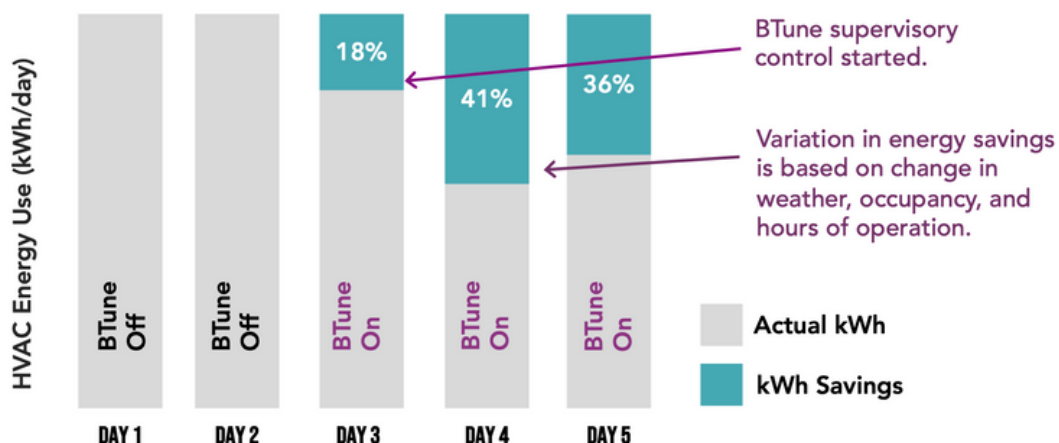
**Distinguished by its ability to write back to the BAS, it not only detects, but automatically corrects control issues, running a continuous loop of monitoring, diagnostics, and correction to sustain performance.**

# HVAC OPTIMIZATION IN ACTION

Below are the 18 most common Energy Saving Opportunities (ESO) for the HVAC system. BTune analyzes every piece of HVAC equipment for these ESOs and autonomously identifies and deploys a corrective strategy from our library of 50+ optimization measures. The specific ESOs addressed in the ANZ Centre are noted with a “✓” below.



By prioritizing common optimization opportunities, BTune can immediately reduce HVAC energy use, as noted in the chart below. To confirm BTune was driving this reduction, our technology was shut off (energy use spiked) and turned back on (energy use dropped).



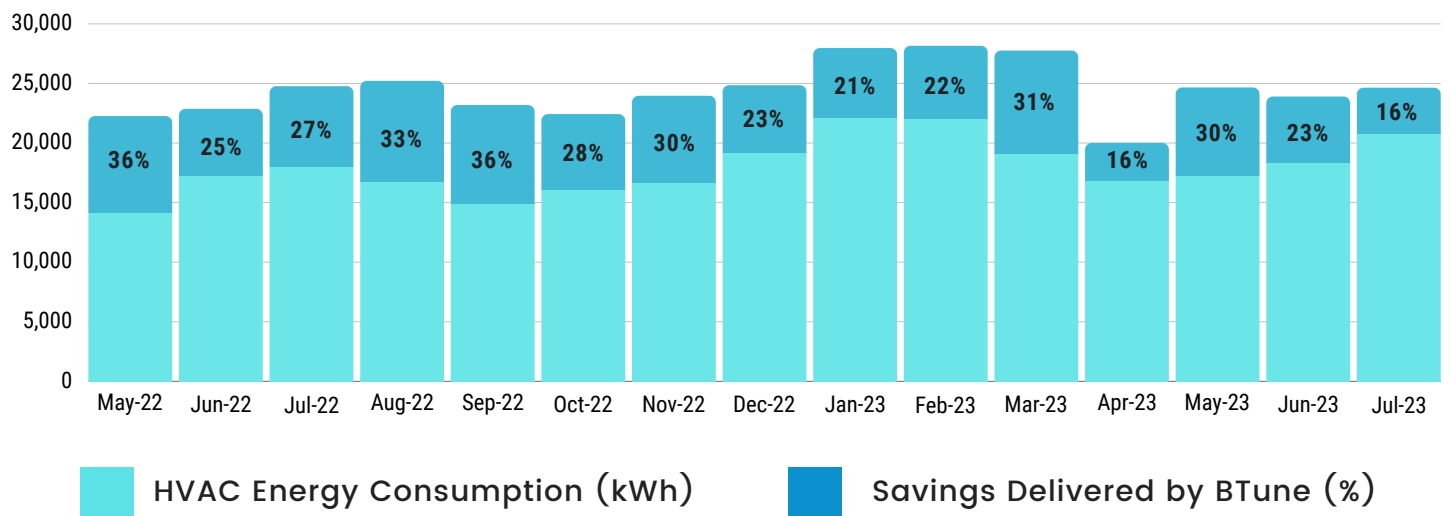
# MEASURED & VERIFIED OUTCOMES

## M&V PROCESS

BTune validates every efficiency project using the International Performance Measurement & Verification Protocol (IPMVP®) methodology. From May 2022 to April 2023, an extensive Measurement and Verification (M&V) process was carried out to validate the BTune energy savings achieved at the ANZ Centre. (See Statistic validation of baseline in table right.)

Statistical Test	Description	Criteria	Value
Mean Bias Error (overall period)	% sum of difference in energy baseline over energy measured one year	< 0.005%	0.0000%
R2	Explained variation/ total variation	>0.75	0.80
CV RMSE	SEy(standard error in the energy axis) /average of the energy measured	<0.2	0.189

## 12-MONTH RESULTS



**27%** Average monthly reduction in HVAC energy use, energy costs, and associated carbon emissions.

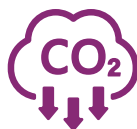
Estimated Annual Savings for Typical US Office Building



**97K**



**\$41K**



**121T**

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We brought in BTune to help us optimize our energy use and they have made saving energy, costs, and carbon easy.

Their team has been efficient to work with and provided support to field concerns from stakeholders and maintain relationships with contractors, reducing our effort and overhead.

**Kerrie Bloomfield**

Property Manager, CHC Properties