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building analytics simplified

Case Study: Making an Impact on Energy Costs and Improving Occupant Comfort

Holborn Bars

With a history dating back to the early 1870s, when it was commissioned by the Prudential Insurance Company, this Grade II* listed red brick building has long been involved in trading and business in the city. The team at Holborn Bars is committed to reducing energy consumption and staying on the cutting edge of modern technology to deliver a superior working environment for building occupants.

Challenge

Before leveraging BuildPulse technology, Holborn Bars had a high energy cost per square meter. The on-site energy team identified the need to improve the quality of operational data, both live and historic, more detailed energy and trending data so that informed decisions could be made to lower those costs while maintaining occupant comfort. The energy data was also needed to improve tenant-landlord relationships by increasing the level of transparency and introducing possible solutions.

Findings at a glance

Storing and analyzing over 654,000 data points every day from Holborn Bars, BuildPulse plug and play technology was able to uncover over 20 issues which would make an immediate impact on energy consumption that otherwise "would not have been identified." Most notably, during the first few weeks of operation the analytics solution revealed that condenser pumps and cooling towers were running without the chillers, chiller sequencing had failed allowing two chillers to start together with little load on the system, simultaneous heating and cooling was occurring on the Air Handlers, alongside many other issues.

"Overall, the existing BMS at Holborn had basic, limited functions and only having time switch control with temp adjustment. The BuildPulse solution has provided us with detailed operational data we can now use to improve operations." - Facility Energy Manager

Results

With a new transparency into their building's HVAC operational health, the team at Holborn Bars was able to take rapid action to solve issues, decrease energy costs, and generate ROI with every repair and adjustment. Using BuildPulse's weighted cost analysis tool, the team was able to prioritize issues based on cost savings, enabling them to select the most impactful 2 or 3 issues to work on at a time, all while ensuring the that working environmental conditions are met. Having access to the BuildPulse system, Holborn Bars saw results in reduced energy usage, reduced occupant complaints, a simplified workflow for the facility team, and the potential for higher rates of occupancy in the building.

"The BuildPulse software has provided us with detailed operating and energy data, which has been invaluable in making informed corrective decisions. This information has identified a number of energy consumption cost savings which could not have been identified previously." - Facility Energy Manager

ISSUE	EQUIPMENT	STATUS	TYPE	BUILDING	OCCURANCE FIRST / LAST	TOTAL COST	~SAVINGS	FAILURE COST	REPORT	
		open	Equipment	All Buildings						
Leaking, Stuck, or Overridden Cooling Valve	A-R9-LG-16 VAV AHU	open	Air Handling Unit Equipment	Holborn Bars	Jul 6th 2017 Aug 15th 2017	~$755	~$1328	0.00	Report	
Device in Hand or Overridden - Chilled Water Pump	CHW P4	open	Chilled Water Pump Equipment	Holborn Bars	Jun 12th 2017 Aug 21st 2017	~$639	~$715	0.00	Report	
Unresponsive Economizer Damper	A-R8-LG-10 VAV AHU	open	Air Handling Unit Equipment	Holborn Bars	Jul 6th 2017 Aug 21st 2017	~$575	~$988	0.00	Report	
Unresponsive Economizer Damper	A-R9-LG-16 VAV AHU	open	Air Handling Unit Equipment	Holborn Bars	Jul 6th 2017 Aug 21st 2017	~$354	~$571	0.00	Report	
Device in Hand or Overridden - Chilled Water Pump	CHW P3	open	Chilled Water Pump Equipment	Holborn Bars	Aug 3rd 2017 Aug 12th 2017	~$83	~$284	0.00	Report	

Holborn Bars at a Glance

Square Footage
400,000

Issues

- Dry cycling of the boiler resulting in unnecessary operation of the boiler
- Chilled water loop pressure sensor failures resulting in pumps running at full speed and not adjusting to field requirements
- Chiller sequencing failure causing wo chillers to start together with minimal load causing peak demands
- Cooling towers and condenser pumps running without the chillers, 30 minutes a day saved
- Simultaneous heating and cooling on some Air Handlers
- Fresh air purge implemented due to high nighttime temperatures being logged reducing chiller loading
- Heat recovery dampers on AHU not working as intended
- Failed Chilled water valve - always open
- Failed or misaligned economizer dampers

Results

- Decreased energy costs
- Decreased occupant complaints
- Improved tenant-landlord relationship
- Overall improved data and information in graphical form (i.e. profiles of space temps)
- Operation information of main plant vs OAT vs CW supply vs building demand for improved analysis
- Actionable data leading to more informed decision making

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