

# CONTROLLED EFFICIENCY

A COMMERCIAL  
FACILITY  
CASE STUDY



Armstrong reviewed the customers' HVAC system and recommended an OPTI-VISOR™ control solution to help them reach their efficiency goal.

“After an expensive retrofit installation we weren't seeing the magnitude of energy savings we'd been promised. With OPTI-VISOR controlling pump operations we saved an additional 51%.”  
Estates Manager

OPTI-VISOR™ is an add-on control solution that advises a BMS system on optimal speed settings for the operation of HVAC components.

## Background

Armstrong recently completed an installation in central London that uses an OPTI-VISOR controller to boost HVAC efficiency and reduce operating costs. Although the building cannot be identified for security reasons, other aspects of the story have been approved for publication.

After an initial project to replace outdated legacy HVAC equipment, the Estates Manager felt that the newly installed system was not meeting its full energy efficiency potential. A second project to install VSDs improved theoretical efficiency levels, but the actual energy efficiency of the site was still lower than anticipated.

Reflecting on the situation the Estates manager commented “I wasn't achieving the magnitude of savings I had been promised. We were just scratching the surface of the energy savings we had the potential to achieve. At that stage I called on Armstrong for their advice on a path forward.”

A review of the building confirmed that the mechanical equipment was in good condition. A decision was taken to retain all the installed equipment and add only an Armstrong OPTI-VISOR unit plus a new BMS connection with a cellular network communication card on the rooftop.

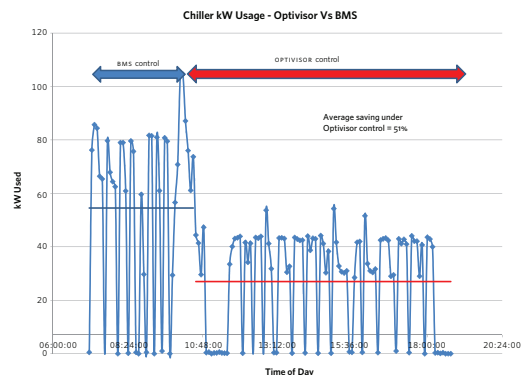
## Benefits

The OPTI-VISOR provides guidance regarding sequencing the chillers, and controls the primary pump, the condensor pumps and the fan speeds for the cooling tower. The efficiency improvements and energy savings were dramatic. The graph below shows the operating levels for April 15<sup>TH</sup> and two days later in similar weather conditions, when the OPTI-VISOR was turned on at 4:48 PM. Almost immediately, the HVAC system began operating at a better efficiency level. Prior to the retrofit project the HVAC system efficiency was averaging 2.5 kW per ton. Since the installation of the OPTI-VISOR, efficiency has averaged 1.2 kW per ton. Energy savings for the project are estimated to be \$20-\$25,000 annually.

## Tech-facts

### Equipment list

- OPTI-VISOR controller
- 1 additional BMS point
- 1 cellular network communications card



TORONTO  
+1 416 755 2291

BUFFALO  
+1 716 693 8813

BIRMINGHAM  
+44 (0) 8444 145 145

MANCHESTER  
+44 (0) 8444 145 145

BANGALORE  
+91 (0) 80 4906 3555

SHANGHAI  
+86 21 3756 6696

SÃO PAULO  
+55 11 4781 5500