



## About Hewlett-Packard and Barghest Building Performance

Hewlett-Packard (HP) Inc. creates technologies - computing, printing and imaging - through constant reinvention. At the heart of HP Inc.'s reinvention is the need to create a business that can have a lasting sustainable impact on the world. Not only is this the right thing to do, HP Inc. also believes that it fuels their innovation and growth, and creates a stronger and healthier company in the long term.

Barghest Building Performance (BBP) offers an advanced solution that optimises the operation of existing central chilled water systems. BBP's bespoke solution has no operational risk and allows for remote monitoring and continuous improvement through advanced analytics. Completed and ongoing installations of BBP's solution would result in over 80 MWh of annual energy savings, translating to 40,000 tonnes of CO<sub>2</sub> reduction every year.

## Chiller Plant Optimization and Data Driven Continuous Performance Improvement

HP Inc. targets to achieve 25% reduction in carbon emissions by 2025 based on 2015 baseline. In 2016, HP Inc. launched a program to establish best practices and national guidelines for facility energy management. The objective of the program is to enhance energy-related operations, technology, and processes. To achieve the intended impact, HP Inc. worked with BBP to create customised solutions for its chilled water systems which had been in operation for more than 20 years.

Using advanced data analytics, BBP's control algorithm optimised equipment set points (e.g. temperature and flow) to improve the efficiency of the existing chilled water systems. The remote monitoring and analytics capability created a platform for data driven discussions on how to further improve system efficiency. The automated reports generated also helped changed HP Inc.'s maintenance perspective from "equipment availability-based maintenance" to "performance-based maintenance".



## Achievements

HP Inc. achieved annual energy savings of over 2 GWh. The low temperature chilled water system efficiency improved from 0.89 KW/RT to 0.64 KW/RT while the high temperature chilled water system efficiency improved from 0.789 KW/RT to 0.72 KW/RT.

