



# Case Study

**Client:** Whitbread

**Services provided:** Monitoring & verification of energy saving measures implemented in beer cellars using IPMVP (International Performance Measurement & Verification Protocol)

**Industry:** Hospitality

**Benefits achieved:** Informed investment decisions and identified areas for improvement

## Summary

Whitbread, the UK's largest hotel, restaurant and coffee shop operator, are committed to continuous improvement of energy efficiency across its estate and appointed JRP Solutions to establish the efficiency of some cellar management systems and the effectiveness of energy saving measures implemented.

JRP considered a range of technologies through pilot studies at sample sites to reduce energy in refrigeration of beer cellars which accounts for a significant proportion of electricity used in Whitbread's restaurants. The pilot studies included potential improvements to refrigeration compressor efficiency, sophisticated building control system and measure to restrict air movement.

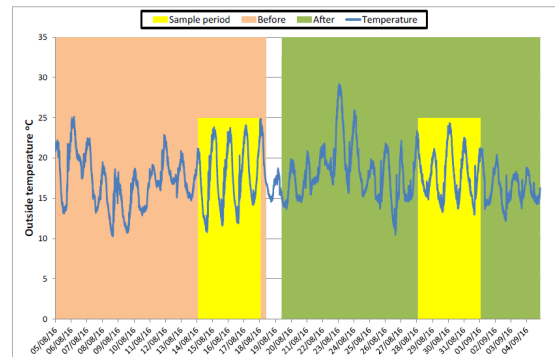
Before committing to a major investment programme across a large number of sites it was essential that Whitbread gained an accurate understanding of the potential energy and cost saving for each technology.

A simple before and after comparison of energy use at a trial site would not have been sufficient due to the large number of variables across the trial periods, particularly weather conditions and business activity.

JRP Solutions adopted a systematic monitoring and verification approach to determine the savings in each case. Monitoring equipment and data loggers were installed to measure a wide range of parameter including internal and external temperatures and humidity, power consumption by compressors and evaporators, and door openings etc at ten minute

intervals over a number of weeks before and after the trial installations.

Figure 3: Outside temperature trend during monitoring period



The vast amount of data collected was analysed to produce 10-minute energy balances over the complete trial period and the baseline energy consumption was adjusted using the identified routine energy-governing factors to provide a direct comparison with the reporting period conditions, allowing direct comparison between the baseline and reporting period energy consumptions. This exercise was repeated for premises with different characteristics to identify which locations would be most suitable for different technologies.

The analysis found that some technologies did not offer any benefits, whilst others provided normalised savings of between 9% and 15%.

## Conclusion

**JRP Solutions report was invaluable in directing Whitbread's energy efficiency investment programme.**