

## Whitbread PLC – CRC Participant Case Study

Whitbread is the UK's largest hotel and restaurant group, operating market-leading businesses in the budget hotel and restaurant sectors. Our brands are Premier Inn, Beefeater, Table Table, Brewers Fayre, Taybarns and Costa Coffee.

Whitbread employs over 40,000 people and serves nine million customers every month in over 2000 outlets across the UK.

Whitbread's vision is to be the most customer-focused hospitality company in the world guided by the genuine, committed and confident values held by its employees.

Since the beginning of the CRC we have worked hard to ensure that as a growing company we performed well in the CRC Public League Table, both to ensure a good reputation but also to limit our exposure to unnecessary costs.

Having secured a high proportion of the Early Action Metric in the first couple of years our next plan was to ensure that as we grew the portfolio we decoupled the growth in business from a growth in CO2 emissions.



### **High class performance new buildings**

Our strategy is to make sure that we refurbish our existing hotels to enhance their energy efficiency and to build new hotels to the highest sustainable standards that we realistically can. This year our hotel and restaurant development in Barry, South Wales, became the latest Whitbread hotel and restaurant to be awarded BREEAM excellent, making it one of the greenest and energy efficient in South Wales, and has been adopted enthusiastically by Barry residents.

Premier Inn Barry is an 80-bedroom hotel and Brewers Fayre restaurant at the Innovation Quarter regeneration scheme on Barry Waterfront, South Wales. The £7.5m hotel and restaurant opened in October 2012, creating 65 new jobs – the majority of which have been taken up by those living in the local area.

Since the very outset, Premier Inn Barry has been an exemplary sustainable development. Indeed, achieving a leading sustainable hotel and restaurant was a condition of the planning permission granted by the local planning authority, the Vale of Glamorgan Council, and one of the reasons why Whitbread was selected to develop the site following a competitive tender. Whitbread, The Vale of Glamorgan Council and the Welsh Assembly Government all worked co-operatively on the complex legal, planning and design considerations for the scheme.

The hotel has been designed in a contemporary architectural style and features an array of the latest sustainable technologies. Special attention was taken to ensure that the hotel suited its prominent waterside location overlooking Barry's No. 1 Dock. The local community were consulted on the outline plans (in June 2011) and locally-sourced materials and labour were used wherever possible. The final designs received the support of the Design Commission for Wales.

Premier Inn Barry is an excellent example of hotel-led regeneration. With one of the strongest covenants in the property industry and a proven record of delivering and operating successful hotels and restaurants, Premier Inn is acting as a catalyst to future development on the waterfront, helping to promote Barry as a place to visit. Engaging with Welsh Assembly Government politicians following the planning approval for the scheme, and throughout the construction process, helped promote this point across Government and in the local media.

Ensuring the benefits of the development were taken up locally was also a key feature of the project. Approximately 65 new full-time and part-time jobs have been created at the hotel and restaurant and the contractor to the scheme, Carter Lauren, and its subcontractors estimated that they supported 175 jobs during the construction phase by employing local labour and purchasing building supplies. Whitbread worked closely with the Council's Employment Training Services team to maximise local employment opportunities from the new hotel and restaurant.

### **Technical features of the hotel and restaurant and performance**

Below are a few bullet points outlining the technologies implemented at Barry;

- The Heating and cooling for both buildings is to be provided via an air source heat pump, which by virtue of its high co-efficient of performance results in lower overall carbon emissions than, say, a gas-fired boiler and conventional chiller
- Bedrooms are ventilated using high efficiency heat recovery ventilation units in conjunction with non-openable windows to ensure energy is retained within the building
- Restaurant ventilation incorporates heat recovery technology
- Solar shading to south facing windows to reduce cooling requirement
- Low energy light fittings and lamps including the use of LEDs where suitable, including the installation of dimmer controls and PIRs, to optimise energy efficiency and minimise wastage
- Lighting and some power in bedrooms to be controlled by the guest key card

- Installation of 'A' rated refrigerated catering goods
- All pumps and booster sets are fitted with variable speed drives to limit energy usage
- Grey water recycling is a standard requirement within model Whitbread developments. This collects drainage water from wash hand basins and showers and reuses it for the purposes of flushing toilets. This reduces the consumption of fresh potable water.
- All sanitary ware within the development is specified as having low volume flow to prevent the use of water unnecessarily.
- The actual weighted EPC CO2 Index for the development at Barry is 30.



### **Improving performance of existing buildings**

The Barry development is not a new idea for us but one that builds on previous learnings we have made from older developments at Tamworth and Burgess Hill, both previous BREEAM Excellent sites.

Restaurants are intensive energy consumers often with long operational hours. The design at Burgess Hill was given a target of achieving a 70% reduction in energy. A number of measures were incorporated within the kitchen design to help achieve this target, these included the use of induction hobs; close control and monitoring of the whole cook line; high efficiency fryers; energy efficient dishwashers (with heat recovery); energy efficient refrigeration and chill plant in a separate highly insulated room; a compact beer cellar.

Within the Premier Inn, unregulated energy uses include the lift and small power to the guest rooms. Appliances within the guest rooms are energystar rated and the lift was selected for its claimed energy efficiency measures that include LED car lighting; variable speed drive and a regenerative drive system.

A serious investment in sub-metering during construction at Burgess Hill has meant that for the first time we have been able to really drill down into the usage of the energy on-site and analyse how the building is performing in minute detail post construction.

There is currently only limited energy use information available for leisure buildings, and specifically buildings that have established design targets to make significant reductions in their CO2 emissions. In April we won a competition with the Technology strategy Board to fund a project to investigate the disconnect between Design, Construction and Operation.

The findings from this study will help to inform our strategy for new builds and demonstrate how building performance evaluation can narrow the gap between design expectation and delivered performance.

The study will establish the following:

1. The actual energy use by the buildings over a 24 month period, broken down by end use (space heating; hot water; ventilation etc.). An initial TM22 analysis has been carried out based on the design data, then after 12 months and then 24 months data collection. The measured energy use will also be compared to the data we hold on the performance of a standard hotel and restaurant combination.
2. Short term monitoring will be carried out to confirm that the environmental conditions within guest rooms and selected other areas of the development are acceptable. Monitoring will be carried out in both winter and summer periods. In addition, one-off tests such as a thermographic inspection will be carried out to verify the performance of the building fabric.
3. Building users perceptions of the buildings will be collected using the standard BUS questionnaire via Arups, these will be targeted specifically at the regular staff. This will be supplemented using the guest satisfaction questionnaires that we regularly use to canvas hotel and restaurant guests.
4. A review of the design and construction phase will be carried out by means of a review of the completed building, design documentation and a workshop session with the design and construction teams. This will highlight any areas of the design that were considered particularly successful or not.

Already this project is providing us with valuable insights into how we manage our existing estate of over 600 hotels and 400 restaurants.

For example, fryers are no longer used for our breakfast offering. Studies at Burgess Hill showed that some chefs turned on the 1kw fryers at 06:00 and some were able to leave them off until the lunch service at 11:00 by using ovens and/or grills which are already on for other products, thereby saving upto 10kwh/day. Making this practice standard kitchen procedure across over 550 of our kitchens could save us over 5500kwh/day along with significant financial savings on cooking oil.

The study has also highlighted that while we have managed to significantly lower the carbon performance of the guest bedrooms whilst not impacting the guests perception, our reception areas now consume up to 30% of the hotels total energy. We are now in the process of re-designing our reception areas, reducing feature lighting and IT equipment whilst maintaining the very high standard required as the first touchpoint for our guests.

This year we have also invested heavily in rolling out technology proven last year into the existing estate to reduce energy. To date we have installed over 200 voltage optimisers, rolled out a new kitchen extract system to all kitchens without heat recovery, and installed solar PV arrays in sites in the South West. In all over £3 million has been spent on energy and water efficiencies in the existing estate.

We have also conducted our first carbon footprinting project. The “hero of the room” in all Premier Inns is our bed. We are so proud of the comfort that our beds provide that we are able to offer a good night guarantee whereby, if you don’t sleep well you can have your money back. Now though, we can also say that you can sleep with a clear conscience as well as we have calculated the CO2 footprint of the bed at just 103kgs of CO2 from cradle to grave. This is the same amount of carbon as it takes to make 80 litres of fresh orange juice! Because we have more than 46,000 beds they form a significant part of our overall corporate carbon footprint.



### **New Brands, Lower Emissions**

This year we announced a new brand that we will introduce to our portfolio in 2014, the Hub by Premier Inn.

### **Hub by Premier Inn**

**Be Lean, use less energy** - 30% better than current building regulations.

**Be Clean, supply energy efficiently** - energy efficient equipment / CHP/ ASHP.

**Be Green, use renewable energy** – 100% green energy supply.

**Be Responsible** - source from ethical local supply chain, recycled materials.

- BREEAM – Very Good
- 100% renewable certified energy supplied from grid.
- Energy signature 30% less than a similar sized hotel & building regulations.
- Water usage 40% less than model – no baths
- Promote local biodiversity & community – green travel plans & cycle racks.
- EPC A rating – energy performance certificate high rating of **A24**

#### **Overview of the green measures for Hub by Premier Inn hotels;**

- High efficiency LED lighting within guestrooms, public areas & circulation spaces & low energy catering equipment. External photocell controls.
- Occupancy & presence detection within guestrooms to control lighting & A/C
- Presence detection to control lighting within corridors, staircases & back of house areas to save energy. Local controls on A/C.
- Heating & cooling via Mitsubishi high efficiency air source heat pumps incorporating heat recovery technology.
- Mechanical supply & extract ventilation incorporating heat recovery.
- Micro combined heat & power (CHP) unit with thermal storage to generate electricity & provide a significant amount of the domestic hot water required
- High efficiency Andrew's water heaters to provide hot water top up.
- Improved building fabric, double skin prefabricated sections to floors & walls
- Energy efficient lifts & energy efficiency small power appliances
- Energy uses monitored & sub metered, daily energy consumption display
- The building fabric U-values will be above Building Regulations Part L requirements to minimise heat loss
- Low flow showers & basin taps & dual flush toilets to minimise water usage
- Grey water recycling to provide 100% of flushing requirements.
- Local sourced restaurant products, recycled materials used.
- Brown roof insulation to attract local birds & local plant species.