Primark

Piloting the low-carbon shopping experience

CARBON TRUST
Making business sense of climate change

Carbon Management

After its energy spend reached £12 million in 2008, rapidly expanding fashion retailer, Primark, decided to explore the potential to cut its energy costs and appeal to environmentally conscious shoppers. After joining our Carbon Management scheme and receiving building design advice, the company has developed a pilot store which is set to deliver carbon savings of almost 50% over its current new build design.

The business focus

Founded in Dublin in 1969, today Primark has 198 stores in operation, of which 139 are in the UK.

Primark's baseline energy spend in 2008 was £12 million; a figure that was set to rise as its estate continued to expand rapidly. As a result, the company wanted to reduce its energy consumption and cut its bills. At the same time it was keen to improve its green credentials and demonstrate to customers that it was delivering carbon emissions savings.

As Primark is owned by the international food and retail group Associated British Foods (ABF), it is also bound by ABF's group level commitment to reducing carbon emissions. "The board is passionate about doing the right thing," says Peter Franks, Primark's Director of Store Development and Facilities Management.

ABF's CEO, George Weston, confirms this. "We take very seriously the environmental impact that our activities may have upon the communities and physical environments in which we operate, and continue to minimise them," he says.

"This year particular attention has been placed upon energy efficiency and associated carbon dioxide reductions. The regulation of carbon, issues of energy security and spikes in energy costs impact on all our operations like never before. Energy efficiency programmes are a vital part of our response."

With this in mind, Primark approached the Carbon Trust in 2008 for advice on developing a new approach to energy consumption.

Piloting change

In addition to our Carbon Management service, we provided Primark with building design advice in order to explore how close to carbon neutrality it could bring its new flagship store in East Ham.

The initial ambition was to deliver a carbon neutral store, and Primark grasped the opportunity to treat its East Ham development as a pilot project, implementing as many carbon saving strategies as possible as a trial site for future premises. However, the renewable energy technologies needed to make the store carbon neutral did not deliver a payback within Primark's investment policies. But the final store is still expected to deliver a 48% carbon saving compared to previous stores.

> "It didn't even cross my mind to work with anybody other than the Carbon Trust. We wanted to work with someone who would show us what was possible, rather than focusing on the cost."

Peter Franks
Director of Store Development and Facilities Management

The technical approach

We conducted an energy audit of each of Primark's UK-based stores, assessing their current consumption patterns and making recommendations to reduce waste further. Primark had already taken significant steps to become energy efficient, and many stores were making effective use of building management systems (BMS), efficient cooling, passive infra-red (PIR) sensors and variable speed drives (VSDs), but the company was keen to explore how it could reduce CO_2 emissions to a minimum.

"We wanted to see what was achievable when building from the ground up, as we felt that this opened up more possibilities than refurbishing an existing building would have done," says Peter.

Primark decided to focus specifically on reducing CO_2 levels and use this as the measurement tool to demonstrate their savings, rather than energy consumption or cost. This gave them a measurable concept to work with and justified the introduction of ideas which might not have been suggested otherwise.

Maintaining the balance

The company considered the full range of technologies available, but in the case of each had to maintain a balance between achieving the maximum CO_2 reduction and ensuring it didn't compromise the high standards set for its customer experience. As a result, wind catchers providing natural ventilation and sun pipes for light have replaced artificial cooling and lighting in the back of house staff areas, but not on the shop floor. In fact, the company uses little heating as its stores get warm enough from the lighting being used and footfall through the stores.

In addition, the company had already developed a format for high efficiency lighting for its stores. Peter acknowledges that this has the potential to be developed, but because lighting is such an important part of store presentation, at this point in time he is cautious of reducing the wattage any further.

Still in review

Other recommendations which were implemented at the East Ham site are being reviewed before a decision is made to replicate them across the Primark portfolio. For example, a glass draught lobby installed to prevent heat loss when the door onto the street is opened, has not, in Peter's opinion, worked from an operational perspective, blocking a customer's immediate view of the clothes as they enter the store. The double glazing for the store's general and display windows, the other key area of heat loss, has been more successful.

Primark also considered installing a biomass or gas-powered combined cooling, heat and power (CCHP) plant, but in the end it decided that this did not make commercial sense. A good local source of biofuel to power a biomass plant was not available, and the large size of existing CCHP plants meant that there would be significant surplus capacity. To make it viable and improve the payback of the initial capital cost, Primark would need to share its heating and cooling capacity with neighbouring buildings. A survey was undertaken of potential energy neighbours for the East Ham store but these sites were too far away for connection to be feasible. However, the store retains the space allocated for the plant should smaller or micro CCHP units become available in the future. In addition, the option of energy sharing will be considered in future new Primark stores, especially if there are other new buildings being developed nearby.

Taking it forward

Further ideas have been embraced. Recycled aluminium has been successfully used as wall protection, doors and wood panels are made of sustainable timber, and linoleum has replaced plastic laminate on the work surfaces. Rainwater harvesting, percussion taps and cycle-to-work schemes have also been successfully introduced.

"Once the store is open we will see the true results, but the expected nearly 50% savings on our current new build design are very exciting. We aim to implement the successful measures elsewhere once we can see them in action," says Peter. "The store manager is very enthusiastic, and looking forward to publicising the store's sustainability to customers."

Planning

These type of initiatives will become increasingly necessary – and not just for Primark – as more stringent planning requirements are introduced. For example, when opening new sites Primark is finding that most councils require a minimum level of energy efficiency and renewable technologies to be installed.

When the company opened its new Cambridge store in 2009, planning permission depended on a percentage of the site's energy being produced through renewable sources. As a result, the site has been fitted with three sets of rooftop photovoltaic (PV) panels, which generate a significant proportion of the site's energy. A prominently displayed green travel plan was also a requirement.

A PV array was considered for the roof of the East Ham store. However, during planning, details of Feed-in Tariffs (introduced in April 2010 to reward renewable electricity generation) were limited. Now that they have been launched and with the future introduction of Renewable Heat Incentives (RHIs) in April 2011 to reward the use of technologies such as biomass, solar water heating and ground source heat pumps, Peter feels that Primark's future use of renewables could be greater. For example if a Feed-in Tariff of 26 p/kWh had been available on the proposed PV array for East Ham, while the renewables would have a higher capital cost than the CCHP technologies considered, the revenue from Feed-in Tariffs would have provided a more rapid payback period. It would have also saved more carbon emissions than CCHP.

In addition, the planning application for a new store in Edinburgh included an obligatory sustainability statement.

The bigger picture

More generally, our Carbon Management service has encouraged Primark to work more closely with its staff to influence their behaviour in the area of energy efficiency.

"Before the energy for all our stores was managed centrally," explains Peter. "Now each store is accountable for its own consumption; and each has the target to reduce its CO_2 emissions by 3%. Each store manager receives a detailed monthly analysis of their energy use, and they're also offered guidelines and training on keeping usage down."

To help with this half-hourly metering is already in place throughout the estate, and Primark is now looking at installing smart metering to make it even easier for staff to see exactly where energy is being wasted, and how changes in behaviour can make a difference. League tables of store consumption are likely to be introduced to add an element of competition.

Primark has also increased its recycling of hangers and packaging materials, which has a greater impact than simply reducing landfill.

"The truck which delivers clothes to our distribution centre now takes the packaging away on the same journey," says Peter. "This saves a huge amount of travel emissions, as there are often three trips to be made each day and previously they were completely separate from the clothing delivery."

Cardboard is collected separately and taken to a pulping centre to be made into paper shopping bags.

Primark has now embarked on a Carbon Strategy project with us, which will help the company gain a deeper understanding of the risks and opportunities of climate change and the low carbon economy, and develop a long-term vision, targets and road map to manage its business towards a sustainable, low carbon future.

> "Working with the Carbon Trust means that we have been able to access a level of trusted expertise which you just don't get elsewhere. You know that by working with the Carbon Trust you're going to get best-in-class advice. Inevitably in this market there are hundreds of consultancies trying to tell you what to do. As a leader in the industry we are very particular about who we want our name to be associated with."

Peter Franks
Director of Store Development and Facilities Management