



BREEAM Excellent and high EPC B rating



47% below our construction CO<sub>2</sub> target.

## CASE STUDY: CHISWICK GREEN

Chiswick Green is a six-storey office containing 8,733m<sup>2</sup> of modern, open-plan, high quality working space with a high specification finish. An excellent example of a collaborative BAM project.

### SUSTAINABLE DESIGN

The aim of the project was to provide a high quality commercial space with an excellent internal environment and minimal running costs compared with older, less efficient buildings. This was achieved by focusing on the energy efficiency measures from the design stage, including excellent air tightness and other passive measures, with efficient equipment and controls. We added renewable energy technologies to reduce the running costs even further. In addition prefabrication was incorporated to reduce waste, along with the specification of sustainable materials. All of these measures resulted in the building achieving the targeted BREEAM Excellent standard and a high B rated EPC.

### TACKLING CLIMATE CHANGE

The carbon emissions of the building are 25% better than the building regulations 2010 target. Compared to a typical existing building (1990s stock) it will save an estimated £193,000 and 900 tonnes of CO<sub>2</sub> per annum.

The envelope of the building has been designed so that both solar gain and heat leakage are minimised – one of the best ways to make a building energy-efficient.

Air tightness is an important part of energy efficiency as air leaking through gaps leads to

heat loss. We made air tightness a top priority with the aim of achieving less than 5 m<sup>3</sup>/h/m<sup>2</sup>. Through interactive workshops with our designers and sub contractors, we managed to achieve an air tightness of 2.03 m<sup>3</sup>/h/m<sup>2</sup>, significantly surpassing our target.

We used high performance glazing which will reduce solar glare and minimise internal temperature fluctuations. The lighting system incorporates passive infrared (PIR) sensor detection and daylight sensing, which automatically dims to take account of the level of natural light coming into the office and also turns off when the office is unoccupied.

A solar photovoltaic array on the roof provides 40,000 kWh of electricity each year, 15% of the energy needed to run the offices (enough to power around 11 average homes).

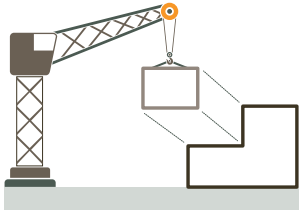
During construction we made efforts to ensure our carbon emissions were reduced. The temporary electrics on the site were installed using BAM Central Energy Management. Chiswick Green was the first project to use a dual energy circuit / four core system. This energy reduction measure allows the power to shut down at night, with only a trickle power feed to provide power for emergency lighting.

'CHISWICK GREEN IS A TRUE TESTAMENT OF THE BAM BRAND GIVING THE COMPLETE PROPERTY SOLUTION SERVICE.'

Gerry Mather, Operations Director, BAM Properties



Completed: April 2012  
 Customer: BAM Properties  
 Architects: BAM Design  
 Mechanical & Electrical consultants: BAM Design  
 Structural Engineer: BAM Design  
 Project Manager: Gardiner Theobald LLP  
 Quantity Surveyor: Randall Symonds LLP  
 Facilities Management: BAM FM



Prefabrication reduced waste on site



£6,000 contribution to local community projects



Silver CCS award in 2012

## RESOURCE EFFICIENCY

We used a variety of prefabricated components during the project including the electrical and mechanical package plant rooms, and pipe and ductwork, which helped to reduce waste on site and the number of lorry movements.

## COMMUNITY ENGAGEMENT

Working in partnership with Hounslow Council and Notting Hill Construction Training we provided construction training and 7 apprentice placements on site. We also worked closely with Connexions to set up a scheme offering CSCS training, testing and provision of subsequent cards to Hounslow residents.

A representative of Notting Hill Construction Training said, 'Within my role I meet with a number of our partnering Local Authorities and I have been delighted to have been able to use the Chiswick Green scheme as a case study of how CTI (Construction Training Initiative) can operate outside of the housing sector. I always cite BAM as being an exemplary example of a leading contractor being proactive in providing excellent training opportunities'.

By collaborating with the Hounslow Education Business Partnership we provided careers sessions, curriculum support and an art exhibition to brighten the hoardings. Based on the theme of sustainability, the exhibition was a great success, with students thrilled to see their work in the public domain. In recognition of the commitment to positively engaging local students, the site teams were awarded the Hounslow Education Business Partnership Jubilee Cup in 2011.

## HEALTH AND WELLBEING

In recognition of our whole teams commitment to safety on site, the project won three internal health and safety awards. The site team also impressed the monitors of the Considerate Constructors Scheme and the site won a 'Silver' award in 2009, a 'Performance Beyond Compliance' award in 2012 and another Silver award in 2012.

