



Simon Cox, vice president of project management at **ProLogis** explains how green distribution buildings can reduce your carbon footprint, benefit future generations and boost your bottom line – all at the same time.

# Lean and green



'excellent' standard and a high Energy Performance Certificate (EPC) rating. Following the Climate Change Act 2008, the energy performance of all commercial buildings must be independently assessed and rated before the buildings can be bought, sold or rented. This process is proving to be a reassuring indicator of ProLogis' expertise, since each of its new UK buildings earns an EPC score that demonstrates potential reductions in energy use and carbon emissions of up to 40% in comparison with similar newly built facilities.

## A logical process

To achieve these high levels of performance, ProLogis follows a logical development process, the first step of which is to design buildings that function passively, a measure that ensures operational energy requirements are as low as possible. Starting with the masterplan, the building is positioned – as far as possible within the site constraints – to take advantage of the path of the sun and to protect it from prevailing winds. Good insulation and air tight construction methods further reduce the need for heating, while the need for artificial light is limited by optimising daylight. Working closely with its supply chain, ProLogis ensures that the cladding specification and detailing on all its buildings achieves insulation levels well in excess of Building Regulations. The results of pressure tests demonstrate that ProLogis can achieve air tightness levels that are a 90% improvement on statutory requirements.

Taking a similarly pragmatic approach to lighting, ProLogis routinely fits rooflights to 15% of the warehouse roof area for its UK facilities. In contrast, 5% rooflights are typically installed in UK warehouse

Although it is difficult to predict the true effect of the recession on consumer attitudes towards green issues, it is extremely unlikely that UK retailers will step away from their environmental responsibilities. By doing so they would not only risk eroding consumer trust; they would also forgo the considerable cost-savings that can accrue from pursuing a green agenda. For reasons that include these two financial imperatives, many retailers have embedded principles of sustainability firmly into their business strategies – an approach that affects both their products and their supply chains.

Tesco, for example, has pledged to become the first chain to assign a 'carbon rating' to everything it sells, while Sainsbury's has undertaken to reduce its carbon emissions by 25% per square metre by 2012. Marks & Spencer has also set a target date of 2012, by which time it aims to be a carbon neutral company. Towards a Greener Retail Sector, a wide ranging study commissioned by the European Commission (DG ENV) and published in February 2009, shows that other retailers in the UK and across Europe are also

working to improve their environmental performance. Not surprisingly the study points out that the most widely implemented environmental improvements are those that save costs and relate to energy consumption.

Distribution warehouses can consume a substantial amount of energy and emit hundreds of tonnes of carbon every year. However, the same warehouses can also provide the retailer with an opportunity to cut its carbon footprint significantly and this is where specialist property companies like ProLogis can help. As a leading provider of distribution buildings in the UK and worldwide, ProLogis has worked with its customers and its own supply chain to determine the most effective ways to design and build facilities that not only meet the occupier's precise business needs, but that also save operational costs and significantly reduce the carbon emissions – or CO<sub>2</sub> - for which Lean and green warehouses are traditionally responsible.

To measure and verify carbon reduction, ProLogis has put in place rigorous protocols. In the UK, it designs each new building to achieve both a BREEAM



Recent examples include the Northampton Mail Centre, the Sainsbury's building at Pineham, and the new distribution facility that ProLogis is developing with Marks & Spencer at Bradford.

**Carbon offsetting: controversy abounds?**

Carbon trading and offsetting can be controversial, and some media commentators have dismissed it as a guilt-free license to carry on as normal. However, these criticisms are more often about lack of regulation than about the principle of offsetting itself. There are many ways to reduce operational carbon emissions, but the options for embodied carbon are more limited. The construction of a new building – even one that will lead to lower energy use – will inevitably generate carbon emissions. Recognising this, ProLogis believes that offsetting can provide an effective mechanism to address unavoidable emissions.

Sustainability is a term that is often both overused and misused. It can certainly mean different things to different people, but ProLogis believes that the central principle of sustainability rests on three interdependent dimensions – business excellence, environmental stewardship and social responsibility – and it is committed to achieving results in all three at once, a goal often referred to as the 'triple bottom line'.

The process of building a carbon neutral shell is just one example of how this principle can work in practice. A building such as Sainsbury's distribution facility at Pineham or the Northampton Mail Centre has reduced its impact on the environment considerably and by cutting energy usage, it can also make significant financial savings for the customer.

At the same time, the buildings provide excellent opportunities for educating the existing and future workforce about sustainable construction and design. At the Marks & Spencer facility at Bradford, for example, ProLogis is working with its supply chain and with the National Skills Academy for Construction to provide learning and skills opportunities for local people. These benefits combine to make a genuine and positive difference for people, for the planet and for profit. In ProLogis' view building for the triple bottom line is the only way to build a sustainable future. •

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buildings, whereas Building Regulations do not require any rooflights at all. The office element of the building is also designed to make maximum use of daylight with dual aspect glazing and narrow floorplates. This allows for both natural light and ventilation with brisessoleil and light shelves to regulate solar heat and glare.

Inevitably, there are some warehouse activities where energy must be used, so the next stage in the ProLogis process is to specify systems that operate as efficiently as possible. Passive infrared (PIR) lighting schemes that react to both daylight and movement, for example, can be installed in both the warehouse and the offices, while high efficiency low NOX boilers and thermostatically controlled radiators provide heating. After the energy use of the building has been minimised, ProLogis can take further steps to reduce the carbon footprint of a development. Working with its customers to understand their specific operational needs, ProLogis can design and install Low or Zero Carbon (LZC) technologies – including appropriate renewable energy solutions – that are precisely tailored to meet the customer's requirements.

At Sainsbury's food distribution centre in Pineham, for example, ProLogis has installed a combined heat and power plant (CHP) that provides electricity and heat for the facility. The heat is produced during the electricity generation process and is used to drive an absorption refrigeration system as well as to heat harvested rainwater for use in an industrial tray wash in the onsite resource recycling unit. ProLogis is also developing a new 200,000ft<sup>2</sup> mail centre in Northampton for Royal Mail, where the maintenance of a constant, comfortable temperature for staff in the sorting hall is an

important priority. Therefore, to limit the use of fossil fuel, the sorting hall will be heated by a biomass boiler and by a passive solar wall system, which will use the cladding of the building to capture heat from the sun.

Taking carbon reduction one step further, ProLogis has cut the carbon emissions embodied in the structure and fabric of its buildings by as much as 25% through measures such as offsite construction and by promoting more energy efficient practices within the supply chain. However, the embodied carbon footprint can still be substantial, so if its customers are keen to reduce this further, ProLogis can purchase and retire high quality, verified carbon credits. This measure cuts the embodied carbon associated with each development to zero so that the building has a carbon neutral shell.





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## Make Substantial Cost Energy Savings

ProLogis' sustainable buildings can save you energy costs of 69% compared to a fifteen year old building, and 41% compared to a typical new build. We build to high EPC standards, striving to achieve a BREEAM 'Excellent' rating across our portfolio.

Now there's something to make you glow.

Further information on ProLogis' sustained ability

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