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Take the Green Route out of the Red

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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.

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Take the green route out of the red

MAURICE DALTON, senior vice president at ProLogis Developments, looks at how the green agenda is impacting on warehouse design.

Lee Scott is no tree-hugger. But Wal-Mart's chief executive says he wants to turn the world's largest retailer into the greenest. The company is so big, so powerful it could force an army of suppliers to clean up their acts too.

There can no longer be any doubt that the colour of 21st century capitalism will be green. In the United States, president Obama is aiming to set a new course by turning the economic crisis into a new age of sustainability and it is clear that with Obama's commitment and America's technological expertise, the new administration's aspirations will rapidly develop from abstract concepts into genuine progress. Where the US leads, the rest of the world will inevitably follow. But what does this mean for logistics operators in the UK and how can property companies like ProLogis help its customers to meet the emerging sustainability agenda?

The issues surrounding sustainability can be complex, and one of the main concerns for many occupiers is cost. Although sustainability is admirable in theory, is it too expensive to put into practice in a recessionary market? The answer to this question lies in the definition of sustainability, where green concerns are balanced against economic and social considerations. In other words, if environmental measures are not cost-effective and do not meet the needs of communities at a local, regional and national level, they are simply not sustainable.

This philosophy underpins ProLogis' Sustainable Development Framework; a threefold approach that drives the design and construction of its buildings, the management of its sites and its broader approach to providing logistics facilities for the future. From the occupier's point of view, this methodology has two far-reaching benefits; it can save running and maintenance costs as well as making a significant contribution to the customer's own corporate social responsibility (CSR) agenda.

Even in challenging economic times, the importance of CSR – or sustainability – should not be underestimated. In a recent article, "Fortune" magazine said: "Lee Scott is no tree-hugger. But Wal-Mart's chief executive says he wants to turn the world's largest retailer into the greenest. The company is so big, so powerful it could force an army of suppliers to clean up their acts too." Similarly, Tesco has pledged to become the first supermarket chain to assign a "carbon rating" to everything it sells, while Sainsbury's has undertaken to reduce its carbon

emissions by 25 per cent per square metre by 2012. At Marks & Spencer the priority is "Plan A", which encompasses climate change, waste, sustainable raw materials, fair partner and health, "Because there is no Plan B".

The task of meeting objectives such as these demands a thorough analysis of each aspect of the potential building, including its construction and the supply chain. Similarly, the building's surroundings and its eventual operation must be carefully considered to determine the means by which a wide range of issues including carbon management, energy efficiency, waste management and ecology can be addressed most effectively. These painstaking analyses produce the information that enables ProLogis to deliver a building that will use 69 per cent less energy and carbon than a typical 15 year old distribution centre; can deliver a net 80 per cent reduction in total CO2 emissions during its lifespan and could include renewable energy sources.

Waste – both during the construction process and as part of the eventual site management regime – will also be carefully considered. ProLogis plans to recycle at least 50 per cent of construction waste, while including customer on-site waste sorting and recycling facilities within the overall design.

Recycling

Typically, ProLogis developments include low water use appliances with rainwater recycling for the offices, while on-site water retention can be used as an amenity and ecological resource. At The Bridge in Dartford, for example, the 264-acre development includes two large lakes that act as balancing ponds for the site-wide sustainable urban drainage system. At the same time, they provide a leisure facility for everyone working on site as well as for the wider local community.

Similarly, ProLogis has developed an integrated approach to landscape and ecology that can again be illustrated by The Bridge, where the lakes and their associated ditches and dry reedbeds were home to a flourishing population of water voles. Because the on-site infrastructure work included some infill of the lakes, it was impossible to protect the water voles (an endangered species) while the work was underway. So about 200 water voles were captured during autumn 2004 and 2005 and moved to a specialist sanctuary in Devon. To avoid inter-breeding with water voles from other areas of the country, the Dartford water voles are being kept separate and their descendants (water voles have a life span of approximately two years) will be returned to specially created habitats at The Bridge. These new habitats stretch from the lakes, along a linked series of ditches across the site. These



Sainsbury's distribution centre at ProLogis Park Pineham near Northampton.

connect with the marshes on the banks of the Thames, home to a wider water vole population.

As Chuck Sullivan, the head of global operations at ProLogis, said recently: "From the company's earliest days, ProLogis has come to represent quality," and it is clear that from its management of on-site ecology to its innovative building design, ProLogis aims for standards of best practice in every area of its operation. Adopting rigorous protocols to measure and verify carbon reduction, the company has undertaken that all its buildings will achieve a minimum BREEAM "very good" rating with the aspiration of achieving "excellent". Similarly, ProLogis intends that its new buildings will achieve the highest Energy Performance Certificate (EPC) rating possible within each building's size category.

The highest standards of energy performance are essential in the current economic climate not only because this significantly reduces a building's – and therefore the customer's – carbon footprint, but also because low energy operations reduce maintenance and running costs. Indeed, a standard 350,000 sq ft ProLogis distribution centre with an EPC A (CO₂ index 25) rating can achieve cost savings of up to 50 per cent in comparison with an equivalent EPC B (CO₂ index 50) reference building.

So, how can this level of cost saving be achieved? The answer is really quite straightforward – by taking a commonsense, pragmatic approach. When ProLogis develops a carbon and low energy management plan for a new building, it thinks in terms of embodied carbon (the emissions associated with material manufacture, delivery and construction of the building) and operational carbon (the emissions relating to the ongoing operation of the building). The aim is to create an intrinsically ultra low carbon, which involves reducing the demand for heating through good insulation and airtight construction methods and reducing the need for artificial light by increasing the use of daylight supplemented by energy efficient lighting systems.

Building Regulations, for example, demand that a distribution centre should have an airtightness standard of 10cu m/sq m/hr. However, ProLogis can improve this by 75 per cent to achieve 2.5cu m/sq m/hr. Similarly, although Building Regulations do not require any rooflights in a warehouse, it is standard practice to install five per cent rooflights. ProLogis goes much further than this by aiming for

15 per cent rooflights, which, combined with a passive infrared (PIR) lighting scheme, can reduce electricity consumption by 35 per cent. It is also worth mentioning that Building Regulations specify a U Value of 2.0W/m²K for rooflights, while ProLogis' standards demand a 1.8W/m²K, delivering a 20 per cent improvement over the regulations.

The office element of a distribution centre typically occupies 7.5 per cent of the total floor area, but it can account for up to 20 per cent of overall energy consumption, so ProLogis has focused on developing innovative ways to reduce this. Measures include zoning energy efficient office lighting to make maximum use of natural daylight and PIR controls; use of glazing to enhance daylight; brise soleil and light shelves to regulate daylight and solar glare; natural ventilation and the installation of condensing boilers with a minimum efficiency of 90 per cent.

Reduction

Taken together, these measures can achieve a 69 per cent reduction in operational carbon and energy compared with a typical UK warehouse and a 41 per cent reduction against a comparative Part L 2006 (frost protected) building – an approach that delivers immediate cost savings to the occupier.

Finally, while looking forward to a low carbon, energy efficient future, the role of rail transport must be mentioned. Even though most final distribution destinations are not rail-linked, there is nevertheless a strong case for logistics operators to consider moving freight by rail from the ports to distribution hubs. EWS has calculated that rail produces between five and ten times fewer emissions than road transport. At ProLogis' proposed rail freight interchange at Howbury, for example, the sustainable buildings could save an operator 5,535 tonnes of CO₂ a year, while the use of rail could save 35,300 tonnes of CO₂ over the same period. This level of carbon emission reduction can make a significant contribution to the country's climate change targets and for a company that has made a carbon reduction pledge to its stakeholders, it could also make good financial sense.

So in summary, although we used to be told by the eponymous mobile phone company that the future was orange, it is clear that the lights have changed. From the viewpoint of 2009, the only colour the future can possibly be is green.

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National Availability

North

Barnsley - Crossflow 530

530,168 ft²

Crewe - 360

359,800 ft²

Wakefield - Europort

255,936 ft²

Midlands

Huntingdon - Cardinal 3

80,122 ft²

Corby - Eurohub

150,000 ft²

Peterborough - Kingston Park

545,000 ft²

Coventry

105,000 ft²

Kettering

402,153 ft²

123,000 ft²

Minworth - Midpoint

237,134 ft²

313,771 ft²

Northampton - Pineham

138,133 ft²

371,337 ft²

Stafford

127,845 ft²

230,347 ft²

Stoke-on-Trent

381,600 ft²

South

Heathrow

68,778 ft²

75,310 ft²

96,357 ft²

Bristol - Crossflow 550

549,626 ft²