

We are committed to building increasingly energy efficient and sustainable homes and communities.

During 2009, we continued to focus on understanding and addressing the full implications of upcoming sustainability driven regulation. We have developed extensive strategies for meeting legislative requirements such as the improvements required by revisions to UK building regulations parts L and F in 2010. In addition, we have identified the most cost effective and efficient ways of achieving the UK Government's Code for Sustainable Homes levels three and four and have integrated these findings into our new house type range.

For more information
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We engage regularly and actively with the UK Government and the Opposition as well as the Home Builders Federation (HBF) on a range of issues including the feasibility of achieving higher levels of the Code. In 2008 we undertook a detailed study of the requirements of the Code including a thorough analysis of low and zero-carbon technologies. Our conclusions raised a number of serious financial, technical, consumer and other issues. The most notable for our industry is that we could not currently afford to build homes to Code levels five and above without either additional Government funding or incurring negative land values.

We have shared our research data and findings with the UK Government and the housebuilding industry and will continue to work to achieve solutions that are viable for industry, landowners, local authorities and our customers.

Building environmentally preferable homes

New build homes are significantly more energy efficient than older housing stock. In the United States, for example, we have been steadily improving the energy and water efficiency of the homes that we build. We have focused on improving the efficiency of the building fabric and the technology components in the home such as heating, air conditioning and appliances. A new Taylor Morrison home is around 20% more energy efficient than a similar home built 10 years ago.

In the UK, our research suggests that a current Taylor Wimpey home would require around one fifth of the energy needed to heat the same type of home built to 1930s building standards, a quarter of the energy needed to heat a 1970s home and a third of the energy necessary for heating a 1980s home. We reached these conclusions by assessing the energy consumption of

two standard Taylor Wimpey house types – a detached four bedroom house and a three bedroom terraced house – built to the current 2006 Building Regulations. We then calculated the energy consumption of the same house types if built to different historic building standards. We used standard industry measures of energy consumption for our analysis.

In 2009, we completed 663 homes to level three and 22 homes to level four of the Code for Sustainable Homes. An example of a Code level four

- The homes that we build are highly energy and water efficient and we integrate a wide range of sustainability features into our homes and communities.
- During 2009, we built 685 homes under the Code for Sustainable Homes and 2,104 homes to EcoHomes standards.
- We engage regularly and actively with government and the housebuilding industry.
- We continue to undertake extensive research into sustainability issues.

RECOGNITION FOR ECO FEATURES

Our Campbell Park development in Milton Keynes is being built to EcoHomes Excellent standard and was a finalist in the Low Energy Social Housing Project of the Year category of the Sustainable Housing Awards 2009. Stamford Brook in Altrincham was also highly commended in the Best Eco-Friendly Development category of the Daily Telegraph Your New Home Awards in 2009.



Our homes and communities

ENVIRONMENTAL SUSTAINABILITY CONTINUED



LOW CARBON COMMUNITY

Raploch has been recognised by the Scottish Government's Scottish Sustainable Communities Initiative (SSCI) as one of 11 low-carbon exemplar communities. Among the initiatives highlighted by SSCI were the creation of EcoHomes for local residents and the recycling of 98% of materials from the demolition of two primary schools on the site. Raploch is also the site of an ongoing composting trial with WRAP (the Waste Resources Action Programme).

development is Regis Park in Reading where we are building 50% of homes to level three and 50% to level four.

In addition, we built 2,104 homes to EcoHomes standards during 2009. Examples of EcoHomes Excellent standard homes under construction include our Greenwich Millennium Village in London and BRE Environmental Assessment Method (BREEAM) award winning Glasdir in Ruthin, North Wales.

In North America, we increasingly build homes under the US and Canadian Government backed Energy Star programme.

All homes built by our Denver and Houston Divisions are Energy Star qualified, making them significantly more energy efficient than standard US homes. Our Austin Division is working towards Energy Star accreditation for all homes during 2010.

In 2009, both our Denver and Houston Divisions won an Energy Star for Homes Leadership in Housing Award for building more than 250 Energy Star qualified homes during 2008. Our Northern California Division is building three communities to SMUD (Sacramento Municipal Utility District) Advantage Homes standards, which are designed to exceed California home energy cooling requirements by at least 30%.

Planning for sustainability

Our bespoke planning application template ensures that UK planning applications are consistent and comprehensive. This template covers all aspects of planning including a full range of social and environmental factors from community consultation to flood risk assessments. We use this alongside a comprehensive internal guide to delivering sustainable development.

Renewable energy use

An increasing number of our developments integrate renewable technologies. Examples include solar hot water and solar thermal, mechanical ventilation with heat recovery (MVHR), whole house heat recovery (WHHR) and air source heat pumps. We have biomass boilers with combined heat and power (CHP) at a number of developments including Greenwich Millennium Village, London. Apartment blocks at our Campbell Park development in Milton Keynes have solar photovoltaic panels that export surplus energy to the National Grid. A number of our sites integrate innovative renewable energy sources, such as solar lanterns at Oxley Gate and ecohats at Oxley Park, both in Milton Keynes.

In addition, all of our UK customers are signed up to a green energy supplier when they move into their new home.

We have in-depth experience and expertise in terms of using renewables and have learned a great deal from the performance of renewable energy sources on past and current projects. However, one of our key conclusions from our research in 2008 was that on site renewables are not the most cost effective or environmentally preferable solution on many developments.

We support the UK Government's proposed concept of 'allowable solutions' for achieving zero carbon housing. This would permit developers to achieve a set minimum level of carbon reduction on site and then tackle remaining carbon emissions reduction requirements via other solutions. We believe that this could provide the same level of emissions reduction in a significantly more practical and cost-effective manner.

For example, we calculate that upgrading existing housing stock would achieve equivalent energy savings at around one tenth of the price of improving the energy efficiency of new homes. During 2009 we worked on this as a possible 'offsetting' solution. We calculated the additional cost of making the required energy savings to a 30 home site built to 2010, 2013 and 2016 building regulations.

5x

A new Taylor Wimpey home is around 5 times more energy efficient than a similar home built in the 1930s.

100%

of Taylor Wimpey UK customers are signed up to a green energy tariff when they move into their new home.



GREEN BUILDER OF THE YEAR



In 2009, Monarch was named low-rise Green Builder of the Year in the BILD (Building Industry and Land Development) Awards for the Greater Toronto Area. According to BILD, the Green Builder awards are the most coveted of their annual awards. Monarch is currently building Evergreen in Toronto, which is Canada's largest ever low-rise community built to the LEED (Leadership in Energy and Environmental Design) for Homes green building standard.

Our homes and communities

ENVIRONMENTAL SUSTAINABILITY CONTINUED

We then analysed how to create the same reduction in energy use by upgrading existing housing stock, which is substantially less energy efficient than new build homes. The four most cost-effective ways to achieve the necessary reductions were by replacing older boilers, insulating lofts, insulating walls and replacing single windows with double glazing.

For example, we calculated that upgrading seven boilers in pre 1981 housing stock would save the same amount of energy each year as improving standards at the 30 home site from current building regulations to those anticipated in 2010 (equivalent to Code for Sustainable Homes level three). It could also be done at approximately one tenth of the cost of meeting 2010 regulations.

Water use

We are committed to reducing water use on our sites and developments. Alongside use of water-efficient fittings and appliances, our developments increasingly integrate other water saving features.

A number of our UK developments include rainwater harvesting systems for external landscaping, such as Campbell Park and Greenwich Millennium Village. Our Oxley Gate development uses a greywater

recycling system in 20% of the homes on site. Using greywater for flushing toilets reduces water consumption in the properties by an average of 10 cubic metres per bedspace per year. We also provide water butts on a range of developments.

In North America, some of our Divisions use drought tolerant native plants in order to reduce irrigation requirements. For example, our Phoenix Division uses desert landscaping as a standard feature on all communities that it builds. This uses extremely low water consumption landscape techniques and plant species.

We also use greywater systems for irrigation of gardens or open spaces in some communities. Examples include Lakeview Trails and Adora Trails in Arizona, Muroya-Carlsbad in California as well as Palma Sola Trace and Mediterra in Florida.

A number of our developments incorporate green or brown roofs that are covered with vegetation or soil. These provide a variety of benefits from insulation and cooling of buildings to managing stormwater run-off and providing wildlife habitats. Examples include Academy Central in East London and Campbell Park.

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We monitor and work to reduce water use on a number of our developments. For example, we achieved a target of reducing water use by over 30% at Greenwich Millennium Village over the course of the development.

Encouraging a greener lifestyle

There are a range of other ways in which we encourage our customers to reduce their own 'carbon footprint'.

We produce green transport plans for many of our UK developments and we regularly build cycle or footpaths and provide contributions towards local public transport infrastructure. At Campbell Park we have provided cycle storage for all homes, cycle washing points and a free folding bicycle to residents in one and two bedroom apartments. Our Grand Union Village in West London has a car club and Academy Central will introduce a car sharing scheme. Some of our developments also integrate Home Zone design principles to create pedestrian and cyclist friendly streets.

Finally, our larger developments often provide retail, health, education and leisure facilities that encourage residents to travel less.

Some of our developments also provide compost bins to encourage our customers to re-use their garden waste.



AWARD WINNING SUSTAINABLE DRAINAGE

Many of our sites integrate sustainable urban drainage systems, often in ways that enhance wildlife habitats or provide water features for local residents to enjoy. In 2009 our Northern California Division's Hampton Park community in San Jose received an honourable mention in the Santa Clara Valley Urban Runoff Pollution Prevention Program Site Design Awards. This follows the Division's Modern Ice development winning the large residential category of the awards in 2008.