

BedZED - the UK's largest mixed use zero carbon community

Beddington Zero Energy Development is the UK's largest mixed use sustainable community. It was designed to create a thriving community in which ordinary people could enjoy a high quality of life, while living within their fair share of the Earth's resources.



Key achievements:

1. Higher reported quality of life, with a strong sense of community
2. Keen resident reduces ecological footprint by 43% (average reduction is 11%)
3. Significant behaviour change amongst average UK citizens

From BedZED we developed the 10 One Planet Living Principles:

- 1 Zero Carbon
- 2 Zero Waste
- 3 Sustainable Transport
- 4 Local and Sustainable Materials
- 5 Local and Sustainable Food
- 6 Sustainable Water
- 7 Natural Habitats and Wildlife
- 8 Culture and Heritage
- 9 Equity and Fairtrade
- 10 Health and Happiness

BedZED was initiated by BioRegional and ZEDfactory, and developed by the Peabody Trust. It was completed and occupied in 2002. The community comprises 50% housing for sale, 25% key worker shared ownership and 25% social housing for rent.

People move to BedZED with typical lifestyles, and over the years change their behaviour significantly. The holistic design works on three levels:

1. the design solves problems such as heating and water usage;
2. the design and services offered help people make sustainable choices such as walking rather than driving; and
3. the community have created their own facilities and groups to improve quality of life and reduce their environmental impact.

Reducing energy demand

- 81% reduction in energy use for heating **5.2kWh/person/day**
- 45% reduction in electricity use **3.4 kWh/person/day**

BedZED homes are kept at comfortable temperatures with fresh air using simple passive architectural techniques rather than high tech solutions. Energy efficient appliances, good daylighting and visible meters have led to behaviour changes.

Zero carbon energy provision

- Local waste wood CHP (efficient and zero carbon) and solar PV

Solar PV panels provide 20% of the electrical demand. The combined heat and power plant (CHP) delivers the remaining electricity and all the hot water through a district heating system, using local waste wood from our Croydon TreeStation. The company operating the CHP ceased trading in 2005, so the CHP isn't currently in use.

Sustainable transport

- 64% reduction in car mileage **2,318km/year**

A comprehensive transport plan reduced car parking spaces; introduced London's first car club; provides free electric car charging points; uses a living streets / home zone layout to de-prioritise cars; located BedZED with good public transport links; and made ample provision for cyclists.



"We wake up every morning and think we're on holiday. The heat pours through the windows into the light, airy rooms. We have the sitting room upstairs to make access to the garden across the bridge easy. It's very flexible"

- Steve Tabard, a BedZED resident

Water

- *58% reduction in water use 72 litres/person/day*

Sustainable drainage systems (SUDS) reduced flooding whilst boosting biodiversity. Waste water recycling and efficient fixtures and fittings reduced mains water consumption.

Waste

- *60% waste recycled*

Recycling and composting is made easy, but the biggest increase has come from community initiatives, peer pressure and education.

Food

- *86% of residents buy organic food*

Allotments and a vegetable box scheme were provided; the community has initiated a local, seasonal organic vegetable market and regular cafes.

The community

- *Residents know 20 neighbours by name on average*

Good place making and community-managed facilities made the strong community the most popular aspect of BedZED for residents and workers.

Lessons for local authorities

Ensure that Local Development Frameworks go beyond PPS guidelines and the Code for Sustainable Homes, to adequately cover energy demand and provision, waste, construction materials, transport, food, water, natural habitats and the social aspects of a thriving community.

Lessons for developers

Engage partners and stakeholders to develop a shared vision of how One Planet Living can be achieved on your projects, and create a sustainability action plan together based on the ten One Planet Living principles to back this up.

Further reading

Toolkits: Part 1 – reducing the impact of construction materials; Part 2 – designing cost-effective zero carbon, sustainable communities with monitoring data.

Monitoring: 2003 data in Toolkit Part 2; updated 2007 data in special monitoring report. All reports available at www.bioregional.com



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