

# North West Bicester

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Zero Carbon Community

In the heart of Oxfordshire, leading housing provider **A2Dominion**, architect **Farrells** and **Cherwell District Council** are designing and developing a large-scale eco-town.

The new scheme at **North West Bicester (NW Bicester)** will deliver **6,000 zero carbon homes** over the next **20 to 30 years**. It will set a benchmark for the future development of sustainable communities and for the growth of Bicester in the future.

### Designing exceptional quality of life

*"We're taking a very long term involved attitude rather than "design, build, forget and disappear."*

Project Director, A2Dominion

North West Bicester was borne from the Ecotown programme of the 2000's. The council chose to retain the Ecotown status and related targets for social, environmental and economic sustainability through its own planning policy. Its purpose is to provide much needed housing at affordable prices and to enable residents to live within managed environmental limits and in communities resilient to climate change.

NW Bicester is being designed with the holistic intention to *"create an outstanding living environment providing exceptional quality of life for residents without compromising the needs of future generations"* (Project Director, A2Dominion). Architect Farrells' design approach involved analysis of the site, history and context of the area; an understanding of A2Dominion's development objectives; and research to understand the needs and aspirations of all those who would live and work in NW Bicester.

### 'True' zero carbon

NW Bicester shows how a major housing development of this kind can contribute to the UK delivering on its 2050 carbon reduction target<sup>1</sup>. Specifically, the scheme is being delivered to the standards of the former Planning Policy Statement 1 (PPS1) for eco towns. Its definition of 'true' zero carbon means account has to be taken of regulated, as well as unregulated, energy use<sup>2</sup>.

### Adapting to climate change

*"Instead of designing to today's temperatures, we're designing for the future. This means testing for the risk of over-heating on different types of houses and those with different orientations."*

Project Director, A2 Dominion

Designing an eco-town for the future means doing whatever is possible to tackle climate change on a local scale. Using dynamic thermal simulation technology, work has been undertaken to assess the risk of future warming in the local area. This has enabled the design team to consider the impact on temperature rises and determine the most appropriate solutions to mitigate overheating.

### Becoming a net energy provider

*"Building self-sustaining communities of the future involves identifying ways of harnessing renewable energy."*

Lead Architect, Farrells

At NW Bicester, networked energy centres with Combined Heat and Power (CHP) will provide all the development's heating requirements. Combined with solar Photovoltaic (PV) renewable energy, this will provide electricity to meet the needs of the development, exporting excess to the grid when supply exceeds demand.

<sup>1</sup>The UK is committed to reducing its greenhouse gas emissions by at least 80% by 2050, relative to 1990 levels.

<sup>2</sup>Regulated energy is used by the house for heating and cooling, hot water and fixed lighting, as outlined in Part L1A of the Building Regulations. Unregulated energy is used by people living in the house, for example televisions and mobile phone charging.

**Improving connectivity**

"The new eco-town needs to integrate with our wider Eco Bicester Programme for the whole town, so it's not just on the edge. We're looking at options for energy efficiency retrofit schemes, car clubs and electric vehicles across the whole town of Bicester".

Team Leader, Cherwell District Council

Eco-towns depend on connectivity – not only within and between communities – but to ensure residents know how to operate the latest technologies within their home. A computer tablet named *The Shimmy* has been designed for every home in the new scheme at NW Bicester. It will provide residents with real time energy use information, videos explaining how to use the technologies within their home, as well as community-related information such as live bus status, car club availability, events and news.

Homes of the future will increasingly need to be designed with digital connectivity in mind and this provides an example of such future trends.

**Learning opportunities for the future**

The Eco-Bicester Living Lab is a collaborative initiative by Oxford Institute for Sustainable Development and Bioregional Development Group. It will capture the range of learning and innovation taking place across Cherwell District Council's Eco Bicester programme and NW Bicester. By providing a source of best practice and lessons learned it will form a vital learning resource to underpin the development of future sustainable communities in the UK.

