

## NW Bicester Exemplar

**One Planet Action Plan Review - January 2015**

North West Bicester (NW Bicester) is a pioneering new development led by A2Dominion to create the **UK's first Eco Town**. Its first phase is a One Planet Community, one of only nine in the world, with a One Planet Action Plan created with sustainability charity Bioregional and endorsed in 2012. With construction of the Eco Town's first phase commencing in April 2014, progress against the ambitious targets set out in the action plan has been reviewed. This summary sets out the key achievements as of January 2015, and the main activities planned for the coming year.



The action plan is based on the ten One Planet Living principles and covers North West Bicester's first 'Exemplar' phase consisting of **393 highly energy efficient homes** and a village hub, including primary school, community centre and eco business centre. It is the UK's largest zero carbon housing development, causing no net CO<sub>2</sub> emissions from its use of heat and power.



A2Dominion and its project team have been through an intensive period of detailed design, construction costing and contractor procurement, leading to a start on site and the establishment of sustainable construction practices. In parallel with building the homes and infrastructure, A2Dominion has also been working on the living community, creating partnerships with local stakeholders, training providers, social enterprises and Bicester residents.



the UK's **largest zero carbon housing development**, causing no net CO<sub>2</sub> emissions from its use of heat and power.



**393**

highly energy  
efficient homes



**Zero waste**

to landfill from  
construction



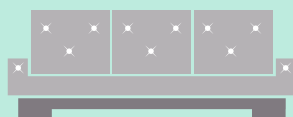
**280**  
kilowatts

peak output from  
solar photovoltaic  
power panels on  
the first 91 homes



**350**  
participants

in annual  
Bicester bike day



**21%**

of construction  
staff live locally



**Zero carbon**

development





## Getting to site

Between planning permission being granted in summer 2012 and the start of construction, the Exemplar has passed through several stages, each one developing and securing the detailed features that will ultimately deliver the One Planet Action Plan (OPAP) targets and aspirations. Every aspect of the OPAP required full quoted costings and to be worked through in terms of lease agreements, product guarantees and the balancing of conflicting drivers.

The ten **One Planet Living** principles on which the OPAP is based were embedded, secured and agreed, through:

- Finalising the Section 106 planning agreements
- Delivery of early Section 106 items, which include:
  - Off site highway junction improvements and walking/ cycling paths connecting with the town centre
  - Agreement on detailed monitoring measures during construction and then post occupancy
- Detailed design of buildings and infrastructure
- Contractors' tender quotes
- Value engineering and commercial viability process
- Detailed contractor negotiations
- Contracts awarded
- Discharging of planning conditions, these include:
  - Detailed measures and timings to meet true zero carbon
  - Computer modelling and design improvements to demonstrate no homes will suffer from overheating, even with future climate change
  - Securing high daylighting standards
  - Agreeing a scheme of bat, bird, owl and invertebrate boxes

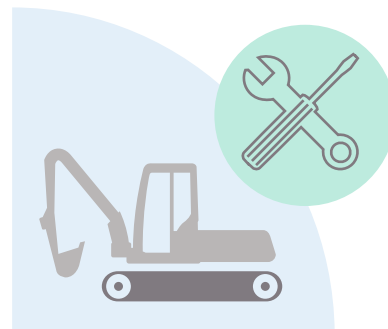
The Exemplar has gone through the full design and tough value engineering processes without compromising the original aspirations set out in the OPAP.



A vision of a world in which people enjoy **happy, healthy lives** within their fair share of the earth's resources, leaving space for wildlife and wilderness.

### The ten One Planet Living principles:

	Health and happiness
	Equity and local economy
	Culture and community
	Land use and wildlife
	Sustainable water
	Local and sustainable food
	Sustainable materials
	Sustainable transport
	Zero waste
	Zero carbon



## Sustainable construction

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On track with  
zero  
carbon  
target

### April 2014 to January 2015

- Design stage: 29% reduction in embodied carbon compared to traditional build (see chart on **page 8**)
- On track with true zero carbon target and Code for Sustainable Homes Level 5 build out
- 72 foundations poured and 17 timber frames erected
- First interim airtightness test achieved  $2.35\text{m}^3/\text{hr}/\text{m}^2$  (Better than the target 3.0)
- First highly efficient timber framed triple glazed windows installed
- Photovoltaic (PV) panels installed on first homes
- First construction stage monitoring report shows zero waste to landfill target is being met
- Installation of first district heating pipes underway
- Electrical infrastructure upgraded to cope with high outputs from PV
- Submission of planning application for zero carbon primary school
- School provider secured



## Sustainable transport

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The Exemplar includes **two pedestrian** and **cycle bridges** with street lighting. The design team had to balance the need to maintain a **dark corridor for bats** and other wildlife with the desire to make walking and cycling feel safe and enjoyable, creating an affordable solution that both lit the bridge and retained enough darkness.

- Partnership with Electric Vehicle leasing partner secured to showcase and promote low emission vehicles
- Funding for cycle repair workshops in Bicester town has been agreed with local social enterprise, Bicester Green





## Enhancing the local economy

# 79%

of work packages  
have been let to  
local companies

- In April 2012 a Business Portal was launched on the **NW Bicester Website**, giving businesses within a 50 mile radius the opportunity to register an interest to become involved in first phase delivery. Companies are prioritised on their ability to demonstrate a local connection to Bicester and their ability to supply a 'green' product or service at a competitive price
- 212 businesses have registered to date, 32 have gone on to tender for work packages and 79% of these work packages have been let to local companies, including: groundworks, manufacture and installation of timber frames of the properties and the supply and installation of windows and doors
- In early 2015 there were an average of 272 operatives / management on site on the Exemplar of which 21% are classified as local labour living within a 20 mile radius of the development
- A commitment to deliver a minimum of 10 apprenticeships during the five year build of the first phase. So far an apprentice bricklayer and an apprentice carpenter both living within five miles of the site have joined the team
- In addition, eight x up to two week unpaid work experience blocks per year are being offered on site in a range of disciplines from construction to administration, and A2Dominion are working with local schools and colleges to roll these out. 40 students from Bicester and Banbury college are undertaking 1 week placements on site between Feb – June 2015
- And three x six-month paid work placements on site per year that can form part of an NVQ level 3 qualification
- A2Dominion is working with Job Centre Plus and Bicester Job Club to enable local unemployed people to access these job opportunities and will spend £5K per year offering added value training (taster sessions, assistance with CSCS card training, work ready skills) to enable them to compete effectively for work on the site



## Sustainable lifestyles

### Development of the 'Shimmy'

a digital tablet computer in every home giving easy-to-understand details on energy use, real time travel information and updates on community life and events

- Formation of the Interim Management Board (IMB) responsible for initial management of the completed Exemplar
- Ten workshops have been delivered over the past two years to shape its terms of reference, early programme and activities, including an induction for its members in One Planet Living
- Development of the 'Shimmy', a digital tablet computer in every home giving easy-to-understand details on energy use, real time travel information and updates on community life and events
- Third annual Bicester Bike day had 350 participants and achieved the support of 14 different local stakeholders and organisations
- Creation of the NW Bicester Resident Green Charter, tested with the IMB
- Creation of the Community Development Strategy underway



## Connecting to existing communities

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Very early on A2Dominion invested in the engagement of the existing Bicester community to communicate with local residents about the project and get them involved:

- Launching a public competition to name the streets of the Exemplar for which there were more than 900 entries
- Holding competitions with local primary schools to design community streets and short films about the UK's first Eco Town
- Establishing an annual Bicester Bike and Family Fun Day for the whole town, delivered in partnership with a range of local organisations and cycling clubs to encourage people to cycle more in the town - a safe, sustainable and fun way to travel
- Funding wider voluntary and community group projects in the town, such as Grassroots Bicester's Incredible Edible to encourage sustainable food growth and community skills transfer

These initiatives have helped local people to forge a connection with the new community before residents even move in.

A2Dominion has committed to consulting with the community and residents throughout the lifecycle of the project and into the future. It has achieved high levels of participation throughout the masterplan consultation through a series of independently chaired key issues workshops, pop-up exhibitions in empty retail units in Bicester town centre and on-line surveys, all followed up with newsletter updates with consultation feedback, analysis and responses to the proposals. This approach is designed to:

- Build confidence with the local planning authority that A2Dominion is a responsible, trustworthy and proactive developer to partner with by demonstrating its commitment to the project and long-term investment in Bicester
- Build public knowledge, engagement and confidence by affirming its promise to working in partnership, conducting full and transparent consultation exercises and delivering tangible benefits to the wider town



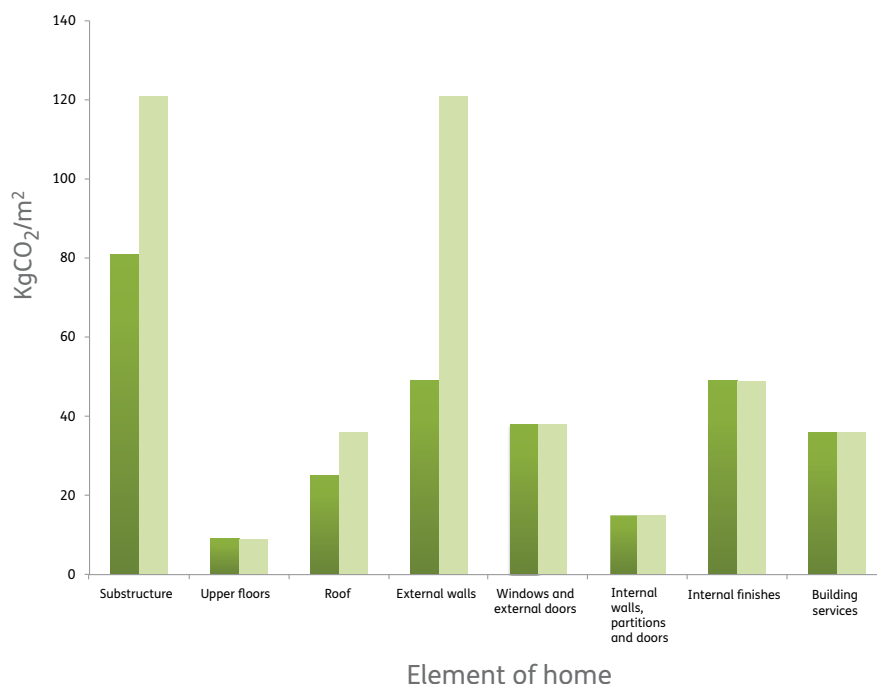
# One Planet Living principles

Principle	Key activities planned for 2015/16
Zero carbon	<ul style="list-style-type: none"> <li>Building of combined heat and power energy centre</li> <li>District heating network commissioned</li> <li>Findings from Cherwell District Council feasibility study into using heat from the nearby Ardley Energy Recovery Facility for a district heat network serving NW Bicester and the wider area</li> <li>Estimated 280 kWp of PV to be installed by end of phase 1</li> </ul>
Zero waste	<ul style="list-style-type: none"> <li>Continue to achieve zero waste to landfill target for construction</li> <li>Waste reduction plan for new residents moving to NW Bicester</li> </ul>
Sustainable transport	<ul style="list-style-type: none"> <li>Finalise Electric Vehicle (EV)/Ultra Low Emission Vehicle partner to provide leasing service and car club</li> <li>Finalise the community bus service offering</li> <li>Installation of EV charging points within homes and public realm</li> <li>Development of cycling incentives</li> <li>Development of strong cycling culture e.g. Annual Bicester Bike days</li> </ul>
Sustainable materials	<ul style="list-style-type: none"> <li>Continue towards 40% reduction in embodied energy and carbon emissions from traditional build</li> </ul>
Local and sustainable food	<ul style="list-style-type: none"> <li>Development of community orchard and fruit tree planting in residents' gardens</li> <li>'Just Ask' estate management staff to encourage local food growing in gardens</li> </ul>
Sustainable Water	<ul style="list-style-type: none"> <li>Installation of rain water harvesting systems on all homes, providing water for toilet flushing and garden watering</li> <li>Installation of green roofs on garages</li> <li>Phase 1 sustainable urban drainage systems delivery</li> </ul>
Land use and wildlife	<ul style="list-style-type: none"> <li>Continued retention and protection of hedgerow buffers</li> <li>Sign off the Ecological Landscape Management Plan</li> <li>Interim community meeting space – demonstration garden created</li> </ul>
Culture and community	<ul style="list-style-type: none"> <li>Creation of a comprehensive community development strategy including:               <ul style="list-style-type: none"> <li>Tenure-blind 'welcome to your home events' for new residents of NW Bicester, informing them about their new eco homes, the wider community and promoting local organisations and volunteering opportunities</li> <li>The delivery of education initiatives spanning One Planet Living principles</li> </ul> </li> <li>Development and installation of the Shimmy, a bespoke interactive tablet in every home</li> <li>Construct primary school – planning permission already received</li> <li>Resident induction programme</li> <li>Resident participation in the governance through Intermin Management Board</li> </ul>
Equity and local economy	<ul style="list-style-type: none"> <li>Planning application to be submitted for Eco Business Centre providing space for local businesses</li> <li>Delivery of three apprenticeships on site</li> <li>Annual Eco Bicester <b>Living Lab</b> event</li> <li>Continuation of local labour on site and encouragement of local business to tender</li> </ul>
Health and happiness	<ul style="list-style-type: none"> <li>Good quality internal environment achieved (no overheating, daylighting targets achieved and good ventilation)</li> <li>Monitoring to ascertain that residents are happy in their new homes!</li> <li>Aspiration to build community identity to create strong community spirit and sense of pride</li> </ul>

## Comparison of embodied carbon content of Exemplar Phase homes with a UK baseline

■ NW Bicester embodied carbon content (kgCO<sub>2</sub>/m<sup>2</sup>)  
 ■ UK embodied carbon baseline (kgCO<sub>2</sub>/m<sup>2</sup>)

Sources: UK embodied carbon baseline from *Cutting Carbon in Construction Projects*, WRAP, 2011 and NW Bicester embodied carbon from *An embodied carbon assessment of NW Bicester – scoping an embodied carbon reduction*, Sustain, 2013.



Being recognised as a One Planet Community differentiates the Exemplar phase from other schemes claiming green credentials, and positions the project amongst some of the greenest neighbourhoods in the world. We're really pleased with the progress we are making against the action plan and enjoy working with Bioregional on this ambitious and truly unique development that will make sustainable living a reality.

*Steve Hornblow, A2Dominion Project Director for NW Bicester*



A2Dominion and their team have done an amazing job getting to site without losing any of the One Planet Living aspirations. There is still a long way to go but work on site is going well and we are looking forward to welcoming our first residents to a truly one planet community later this year.

*Nicole Lazarus, Bicester Eco Town Programme Manager, Bioregional*

north  
west  
bicester

a2dominion



Bioregional

**Written and published by Bioregional - June 2015**

Bioregional champions a better, more sustainable way to live. We work with partners to create places which enable people to live, work and do business within the natural limits of the planet. We call this One Planet Living.

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