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west
bicester



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a2dominion

BioRegional

solutions for sustainability

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foreword



The 393 homes that make up the first phase of NW Bicester are the Exemplar which will lead the way towards the wider eco-town development of 5,000 zero-carbon properties – but we intend for this first phase to also stand out as a model for the rest of the country, if not the world, for how to grow a community that lives sustainably and well.

From the very start, our guiding principles at A2Dominion have shared the One Planet Communities' philosophy of making it easier, attractive and affordable for people to live a healthy, happy lifestyle using only their fair share of our planet's resources.

Through a raft of measures going above and beyond the UK government's definition of a 'zero carbon' settlement, we are committed to setting a true precedent at NW Bicester for green living that moves this unique project firmly into the mainstream for others to emulate.

Our plans have been designed to cope with climate change of up to 10 degrees Celsius, and the design speaks for itself: solar panels on every building to create the UK's biggest residential solar array, mass water harvesting, 40 per cent green space, high spec insulation and triple glazing, and a highly efficient district combined heat and power centre.

We understand transport is a major generator of carbon so we aim to reduce to 50 per cent the number of trips made by car (currently in Bicester this figure stands at 67.5 per cent). To achieve this we're making it simpler for residents to use a regular bus service instead, eventually with a bus arriving every 15 minutes and with a stop no more than 400 metres from any property, plus in-home travel updates on a real-time information system known as a 'Shimmy'.

What makes the Exemplar phase even more special, however, is our determination that the eco-town spirit isn't constrained to housing and transport, but flourishes to encompass jobs, business and a culture of naturally making sustainable choices. And Bicester itself is joining in this effort with a string of actions within the existing town adding to the programme.

Its residents too will also enjoy the benefits through our aim to nurture NW Bicester into an economic hub for green enterprise and development, with companies operating in a business centre dedicated to eco-friendly industry.

We're confident NW Bicester's formidable first phase credentials have earned it the recognition of BioRegional's One Planet Communities mark – not just as our flagship scheme at A2Dominion or even for sustainable development as a whole, but as an inspiration for future communities that will themselves one day be honoured with the same coveted accolade.

John Kneveff,

Group Commercial Chief Officer and Deputy CEO of A2Dominion Group

scope of this report

NW Bicester Exemplar is the first phase in the masterplan for a new, flagship 5,000 home eco-development on the north west edge of Bicester Town located in Cherwell, north Oxfordshire. The development was first conceived under the previous national Labour government which pioneered the concept of 'Eco Towns'. At this time central government proposed 4 flagship Eco Towns across England; Bicester is the only development to have received detailed planning permission on a sizeable number of homes, thanks to concerted efforts from a cross-partnership collaboration between A2Dominion, local councils and BioRegional.

In light of this context, the NW Bicester Exemplar has been designed and developed using the specific standards set in Eco Town PPS1. In response to the extensive work carried out by the developers A2Dominion, Cherwell District Council, BioRegional and other stakeholders to ensure the Exemplar achieves the highest standards in sustainability, it has been agreed the NW Bicester Exemplar will seek endorsement from BioRegional as a One Planet Community.

The purpose of this document is to make the case for the NW Bicester Exemplar as a One Planet Community. It assimilates the extensive work completed to date in environmental, social and economic sustainability. The report reframes this information in the context of ecological footprinting and the 10 principles of One Planet Living. Additional information was also gathered through a multi-stakeholder workshop, held at A2Dominion's offices in June 2012, which brought together representatives from A2Dominion, Cherwell District Council and BioRegional and formed a lively brainstorming session exploring areas where the Exemplar can be yet more ambitious in its targets.

This report demonstrates how the targets set and processes undertaken to realise the NW Bicester Exemplar not only fulfil the Common International Targets for One Planet Communities but are also innovative and world leading.



introduction to NW Bicester exemplar

The Exemplar phase of NW Bicester Eco Town - Components:



- 393 residential units
- an energy centre (up to 400 m²)
- a nursery (up to 350 m²) with amenity space
- a community centre (up to 350 m²)
- three retail units of up to 770 m² including a convenience store, a post office and a pharmacy
- an Eco-Business Centre (up to 1,800 m²)
- office accommodation (up to 1,100 m²)
- an Eco-Pub (up to 190 m²)
- primary school site (up to 1.34 hectares)

Locational context and challenges

NW Bicester forms an extension to the market town of Bicester which is subject to considerable housing growth and development on sites around its perimeter. Other eco town proposals were for stand alone settlements but the NW Bicester eco town proposal was favoured because it made strong connections with an existing town and benefits from established services, facilities and transport connections within its proximity.

NW Bicester is however on a greenfield site of productive farmland. The scheme works hard to address this. Ecological surveys and a long term plan for net biodiversity gain have been developed. Food growing at all scales from window boxes, 'edible landscaping' and allotments right up to a proposed community farm as part of the wider NW Bicester masterplan, will mitigate the loss of farmland. The change of land use will also improve the quality of water runoff with reduced nitrate inputs from intensive agriculture - an important benefit with the nationally significant and sensitive River Ray catchment downstream.

The semi-rural location makes sustainable transport more challenging than urban schemes, despite the proximity of a well-connected train station (1.3 miles) and the town centre (1.5 miles). The first phase Exemplar is particularly challenging as it is slightly disconnected from the town and, as a first phase, lacks the critical mass for extensive local services on site. The Exemplar site is split into two distinct sections separated by an existing brook and narrow 'pinch point' (see drawing above). A2Dominion will fund new public transport infrastructure; connecting the two by bus, cycle lanes and footpaths, whilst restricting car use between them. A new community bus and off-road cycle route link the Exemplar to Bicester town centre. Employment opportunities, amenities and essential services will be brought forward within the site, further reducing the need for residents to travel and helping to create a lively sense of local community.

The location favours family homes, gardens and a lower density than urban schemes; this exacerbates the transport challenges. But these features do provide a very significant roof resource, enabling unprecedented solar PV and rainwater harvesting, as well as green roofs and room for food growing on the ground. These challenges and opportunities all inform NW Bicester's unique, semi-rural interpretation of sustainability.

The Exemplar phase will be known as Thurlington - a name chosen to represent 'strong communities'. Thurle, of Irish origin, means 'strong fort' while 'ing' and 'ton' have connotations of kinship, belonging to and community in Anglo Saxon English.

About A2Dominion Group

The A2Dominion Group is one of the country's leading registered providers of high quality housing in the UK and the developer for the NW Bicester Exemplar.

The Group was formed in October 2008, as a result of A2 and Dominion coming together to create an organisation with the financial strength and resources to deliver more homes and better services for customers.

The A2Dominion Group now provides over 34,000 homes across London and southern England with thousands in development, of which the Exemplar will be a flagship scheme. They offer a wide range of housing options including, affordable rented, temporary, student, care & support accommodation, key worker accommodation; as well as shared ownership options through its 'A2Dominion New Homes' brand.

A2Dominion is developing a track record in environmental initiatives and invests significant sums in raising environmental standards. In 2010/11, recognising the growing importance of the green agenda they introduced environmental objectives into the Group's Business Plan and in 2012 published a *Green Strategy*, which includes:

1. **Green governance and culture** – the adoption and promotion of environmentally conscious practices throughout the Group's operation and with residents
2. **Reduce CO2 emissions** – commissioning a footprint analysis to define a baseline against which reduction targets can be set across the business
3. **Affordable warmth** – reducing residents' exposure to extreme fluctuations in fuel prices.
4. **Sustainable approach to waste, water and purchasing** – minimising water use in homes and offices; reducing consumption, reusing where possible, considering lifecycle costs
5. **Sustainable land use enhancing biodiversity and adapting to climate change**

Team leaders



"This is an ambitious project which will create a truly unique development. NW Bicester approaches sustainable living realistically, providing people with the tools to benefit from a real community environment, reduced home running costs and the latest green technologies."

Steve Hornblow,
Project Director



"Achieving One Planet status would give deserved recognition to the exemplar phase as one of the greenest neighbourhoods in the world."

The exemplar phase will demonstrate methods to attain zero carbon and zero waste, sustainable water use and sustainable transport, as well as promote culture and heritage, equity and local economy, and health and happiness within the community."

Gerry Walker, Director of
Development



"From the beginning work is underway to involve local communities. A primary goal is to develop community and employment plans that benefit Bicester as a whole. A major part of this will include creating opportunities for the local community to own and govern neighbourhood assets enabling both the existing and new community to participate effectively in the future running of the eco town."

Heather David, Head of
Community Involvement

2020 sustainability action plan - summary



ZERO CARBON: NW Bicester is to achieve true zero carbon status by building exemplary energy efficient homes and commercial buildings, large scale use of rooftop photovoltaic panels and a district heating network of underground pipes. Hot water for this network will be supplied by a combined heat and power plant or heat from a nearby energy from waste plant. Residents will be encouraged to be aware of their energy consumption and to make savings.



ZERO WASTE: During construction, zero waste to landfill, the use of off-site manufacture and smart design and procurement to design out waste. In use, 80% recycling/reuse/composting rate to be achieved including 92% of food waste to be composted. Residual waste per household to be no more than 200kg per year, a 72% reduction on current levels. Segregated recycling bins fitted in all kitchens, fortnightly household recycling collections.



SUSTAINABLE TRANSPORT: Increase non-car travel to 50% of journeys by 2026, implement new community bus service, high speed cycle lane connecting NW Bicester to town centre. <10min walk to all amenities, <5min walk to bus stops. Secure bike storage for every home, cycle incentives, a car club and electric car charge points throughout the site



SUSTAINABLE MATERIALS: During construction, reduce embodied CO₂ from construction by >40%, prioritise local sourcing alongside quality and affordability. Create an on-site reuse area. Once homes are occupied, shops on-site to have a pro-local and sustainable sourcing policy. Aspiration for an on-site swap and repair events linked to a materials reuse centre in Bicester town. Swapping, sharing, reusing and repairing to be encouraged.



SUSTAINABLE FOOD: Two community orchards, 0.5 ha of allotments with communal composting and every garden to have a fruit tree. Consumption of local, fresh, sustainable food encouraged by cookery classes, fairs, and via the site's shops, eco pub and cafe. Investigate having a target for minimum % of all food sold on-site to come from local/organic/Fairtrade sources - for example 40%.



SUSTAINABLE WATER: Set a water efficiency standard of 80 litres/household/day, implement an exemplary sustainable urban drainage system, site-wide rainwater harvesting for use in all toilets and garden watering. Achieve water neutrality across wider masterplan area.



LAND USE AND WILDLIFE: 40% of site to be open space. Achieve net biodiversity gain through new meadows and ponds, retaining and enhancing existing habitats, tree and shrub planting, use of bird boxes and bug hotels. Ten year sustainable land management plan.



CULTURE AND COMMUNITY: Preserve all listed buildings and historic features on-site. All residents to sign Green Charter. Identity projects with local artists, green champions and A2Dominion personnel to foster a convivial One Planet Community with strong cultural identity. Eco pub, community centre and cafe to act as social hubs.



EQUITY AND LOCAL ECONOMY: 30% of housing to be affordable. Creation of 430 jobs on-site over five years and a further 100 jobs in easy walking/cycling distance, 13 apprenticeships including ten in construction. Create vibrant local economy. Eco Business Centre to act as hub for start-up businesses. Training and volunteering opportunities linking with local colleges and groups. Local Management Organisation to be created with a democratic constitution.



HEALTH AND HAPPINESS: All homes to be 'secure by design', where possible all homes to meet 'Lifetime Homes' standards. Exemplary homes that are warm in winter, cool in summer and adapt to a changing climate. Excellent air quality and daylighting. Sustained support for encouraging active citizenship and a strong sense of community. Cycle culture, access to fresh, healthy food and amenity green space to promote happy and healthy living.

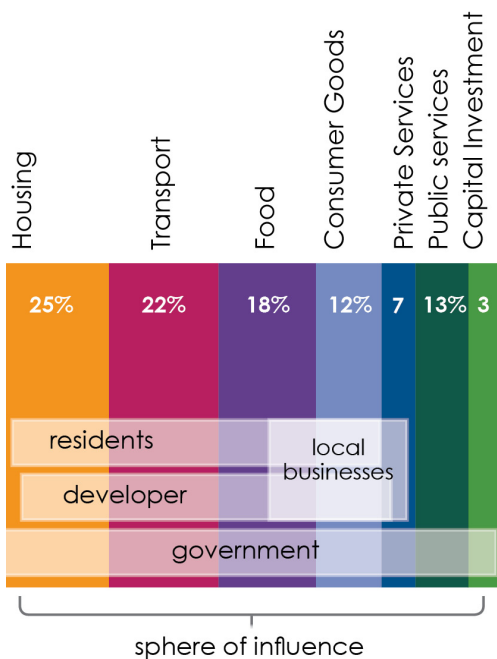
the one planet challenge

“A world in which it is easy, attractive and affordable for people everywhere to lead happy, healthy lives within their fair share of the earth’s resources”



“If everyone in the world lived as we do in the UK, it would take 3 planets to sustain us”

Typical UK eco-footprint



Living within ecological limits

The aim of the One Planet initiative is to create a future where it is easy, attractive and affordable for people to lead happy and healthy lives within a fair share of the earth’s resources – in other words, One Planet Living. The initiative uses 10 guiding principles as a framework to help our partners examine the sustainability challenges they face and develop appropriate solutions (see p.11). These principles were developed as a result of lessons learned from BioRegional’s work at the pioneering BedZED eco-village in south London.

As part of the One Planet Communities programme, BioRegional applies the 10 One Planet Living principles to support the development of **flagship sustainable communities** on every inhabited continent. These One Planet Communities are intended to be places where residents can live a One Planet lifestyle by 2020, should they choose to.

A sustainable future will need to consider environmental, social and economic factors. The **10 One Planet principles** and their associated **Common International Targets** have been developed in recognition of this.

Tying these together, there are three overarching environmental drivers behind the One Planet initiative:

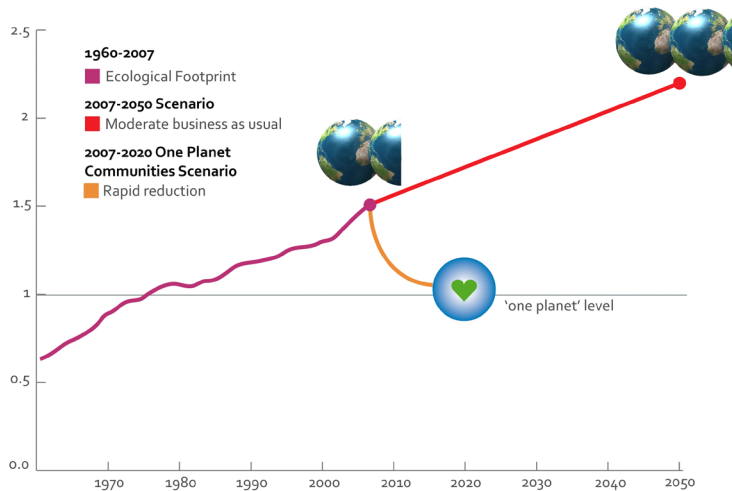
- 1. sustainable ecological footprint
- 2. sustainable carbon footprint
- 3. clean (non-polluting) activities

Spheres of influence

It is not possible for any property developer to deliver one planet living alone. Government regulation, wider business practices and resident behaviours will all affect the degree to which a One Planet Community achieves its aspirations. At NW Bicester, A2Dominion are working with all three layers of local government to overcome some of these limitations. They will work with local businesses, their supply chain and with future residents. It will take all of these parties to make one planet living possible at NW Bicester.

By way of example, the diagram opposite illustrates the source of greenhouse gas emissions for an average UK resident and the influence that different parties have on these emissions. A developer will need to influence and work with all these parties to produce a truly holistic implementation of the Common International Targets.

ecological footprinting: an introduction



Ecological footprinting measures our consumption of natural resources to supply our demands for goods and services and absorb our wastes and pollution, in global hectares (gha) of land and sea. Our global footprint now exceeds the world's capacity to regenerate by about 50%¹. If our demands on the planet continue at today's rate, by 2030 we will need the equivalent of two planets to maintain our lifestyles. One Planet Communities make it easy, attractive and affordable for their residents to live within a fair share of the earth's resources which, according to current calculations, will be no more than 1.2gha by 2020².

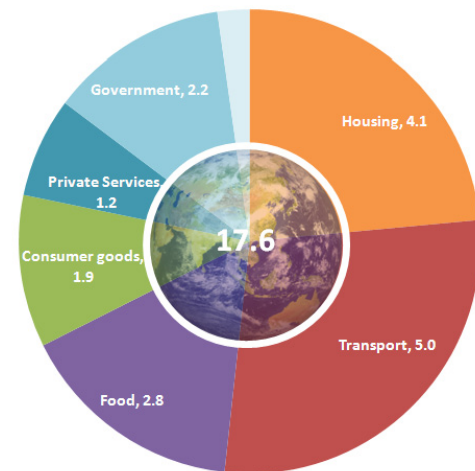
The graph above shows the trajectory for the global ecological footprint if we continue to consume at current levels in comparison to a rapid reduction in footprint to the one planet level in 2020.

The One Planet initiative uses this 'consumption-based' carbon footprinting to inform a holistic picture of what causes our greenhouse gas emissions and the most appropriate strategies for reducing them. Consumption based emissions are those that arise all the way through the supply chain. These include not just 'direct emissions' caused by fuel consumption in buildings, transport and power generation, but also embodied emissions in goods and services purchased including food, manufactured items and construction materials.

Climate science tells us that in order to avoid runaway climate change, global greenhouse gas emissions need to be reduced by 50% from 1990 levels (and by 80% in the UK) by 2050. In order for this to happen CO₂ emissions will have to be no more than one tonne per person per annum.



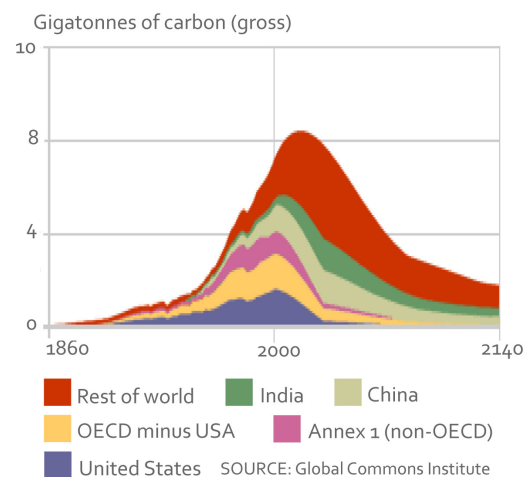
Ecological footprint for a typical Bicester resident in 2010:



17.6 tCO₂e - 5.1 gha/person
 (2.8 planet living)

Stockholm Environment Institute (2009)

Contraction and Convergence: a means to mitigate climate change



1] Global Footprint Network, WWF & Zoological Society of London (2010). Living Planet Report

2] Based on a population of 7.67 billion, a biocapacity of 1.6gha per person and allowing 20% space for wildlife

the one planet network



BioRegional is now working with 17 projects using the One Planet principles, spread across all the earth's inhabited continents, striving to create developments and build communities that live within the earth's limits. Of these, five are fully endorsed One Planet Communities. Two of the endorsed communities most relevant to NW Bicester are:



One Brighton

One Brighton is a completed development by Crest Nicholson BioRegional Quintain LLP comprising 172 apartments – from eco-studios to 3-bedroom units – plus office and community space.

The development incorporates solar PV, biomass boiler, rooftop allotments, communal sky gardens, a 'green' concrete frame, clay blocks and natural insulation; in addition to a car club, cycle storage and a green caretaker to ensure the smooth running of the facilities, composting and biomass boiler.

Sonoma Mountain Village, USA (under construction)

Sonoma Mountain Village (SOMO) is a \$1billion redevelopment of an 81 hectare, ex-industrial site 40 miles north of San Francisco.

The development aims to generate 100% of its energy from on-site renewables from a 1.14 megawatt solar PV array. Further sustainability targets include an 82% reduction in transport emissions, 65% local food consumption goal, and 65% reduction in municipal water usage.



the approach at NW Bicester

To achieve One Planet Endorsement the developers A2Dominion are following a stringent process for NW Bicester which includes:

Planning using the ten principles

BioRegional's ten principles of One Planet Living form a touchstone for every One Planet Community. The principles address every aspect of environmental, social and economic sustainability, reaching beyond energy systems and green buildings to ensure sustainability becomes about a happier, healthier and more enjoyable way of life.

Strategies and target setting

The One Planet Living concept requires a 100% reduction in greenhouse gas emissions from buildings and a pathway towards zero waste, reductions in water use, radical rethinking of transport infrastructure and more. The expectation for One Planet developments is that they challenge themselves by setting ambitious targets, developing comprehensive plans and strategies for achieving them.

Planning for true sustainability using ecological footprinting

One Planet Communities use the ecological footprinting tool throughout the design and planning stages, guiding reductions in the total ecological footprint of residents to a truly sustainable "one planet" level.

Devising means to promote and facilitate the transition to a convivial, healthy, sustainable lifestyle

Soft infrastructures as well as built infrastructures are equally critical to facilitating One Planet Living. Research shows 42% of emission reductions in the flagship BedZED development are a result of behavioural changes made by residents.

Designing, monitoring and management processes for the development to 2020 and beyond

To ensure the ambitious targets laid out in this One Planet Action Plan (OPAP) and those imposed by planning conditions are achieved, A2Dominion and BioRegional have devised a rigorous monitoring plan and schedule summarised within each of the 10 one planet principles (right).



Ten Principles of One Planet Living

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

Building strong partnerships with local community and local government

In order to broaden impact and coordinate with wider strategic objectives A2Dominion is working closely with Oxfordshire, Cherwell and Bicester councils, local community groups and future residents to address areas beyond the development, such as infrastructure and local amenities.

This process is explained in greater detail overleaf.

building strong partnerships

Nicole Lazarus, BioRegional
Sustainability Integrator for NW
Bicester & Eco Bicester

"This is the most exciting project I've ever worked on. The buy-in from three layers of government, the town-wide approach and the involvement of local innovative businesses and community organisations all add depth...that's how new approaches to sustainability start to be possible"

Councillor Barry Wood, Cherwell District Council
Leader of the council

"We're committed to ensuring new developments meet residents' needs for new homes and employment, but also enhance our existing towns and respect the surrounding countryside. NW Bicester will set new standards in the quality of homes, community and employment opportunities"

Steve Hornblow, A2Dominion
Project Manager for NW Bicester
Exemplar

"The A2Dominion Group is very proud to be working with Cherwell District Council to deliver the UK's first eco town at NW Bicester."

"The progress and ambition of the exemplar phase to date is largely due to our close working partnership with Cherwell District Council and BioRegional. We share a common goal to improve the quality of life for local people"

As part of the Eco Town Challenge Panel, BioRegional was able to bring the philosophy of One Planet Living to the Eco Town PPS1 policy framework around which the NW Bicester Exemplar has evolved.

BioRegional has been embedded in the NW Bicester project since 2010, through a unique joint appointment between the developer A2Dominion and Cherwell District Council (CDC). In addition BioRegional has worked closely with facilitators for the wider 5,000 home Eco Town. Nicole Lazarus acts as Sustainability Integrator for NW Bicester and Programme Lead for BioRegional.

Eco Bicester and NW Bicester: Shared Challenges

NW Bicester sits within a wider Eco Bicester programme led by Cherwell District Council. The Eco Bicester programme aims to bring the benefits of eco town status and the pioneering work at NW Bicester to the rest of the town and to catalyse the greening of Bicester. When Cherwell won Eco Town status for Bicester, they initiated a suite of demonstration projects in the existing town, piloting key sustainability principles ahead of the NW Bicester delivery:

- Travel behaviour programme
- New community centre – UK's largest civic building built to Passivhaus standards
- Demonstration house – built to Passivhaus standards
- 23 new affordable code 4 and 5 homes in the town centre
- Zero carbon extension to the 6th form area of Cooper School
- Mass insulation offer and promotion has led to >1400 homes being fitted with loft and cavity wall insulation

Cherwell developed a planning policy document, 'Eco Bicester: One Shared Vision', which enshrines much of the eco town aspirations in local policy and applies it to the whole town of Bicester.

In various partnerships with Grassroots Bicester (a community action group), Oxford Brookes University, local businesses and housing associations, BioRegional and Cherwell are building on the momentum of the Eco Town and applying very successfully to a range of funders for community engagement work on sustainability, energy efficiency campaigns, renewable installations in the town and post occupancy monitoring and evaluation of demonstration buildings

Future partnerships: building a network of green champions

Through engagement, the offer of incentives and training it is hoped A2Dominion and BioRegional will be able to develop a network of 'Green Champions' from new residents at the Exemplar who are active members of the community and work with a range of groups and organisations on site to foster sustainable living. Ideally 10 champions will be elected, one for each of the principles, who will work closely with the Local Management Organisation (see 'innovative governance' p.28), A2Dominion and BioRegional to ensure sufficient support and guidance is on offer to residents.

how will NW bicester foster happier, healthier and more affordable lifestyles?



Zero carbon – A superinsulated home with excellent levels of daylighting and good ventilation and air-quality provides the healthiest possible environment for inhabitants. Less traffic, reduced car use and reduced direct emissions from homes ensures superior air quality across the site. Lower energy bills will be possible from on-site generation and reduced demand.



Zero waste – Less waste and therefore cleaner streets. On-site Freecycle events and swap shops make it easier than ever to exchange goods, saving time, money and effort. An overall reduced impact on landfill sites and therefore reduced toxicity and pollution of water courses in the surrounding landscape.



Sustainable transport – Promoting itself as the best place in the UK for cycling and walking; residents will not only save time travelling to work, but also avoid the hassle and stress of congested roads and long commuting distances. By cycling and walking more they will be fitter and healthier. Car share schemes will remove the expense and hassle of owning a car and make it easier to share journeys with friends and neighbours.



Sustainable materials – Through the use of local materials and local manufacture the Exemplar will create more local jobs and reduce emissions from material transport. Occupants will enjoy well designed homes with superior air quality. Emissions from energy intensive construction materials, consumer goods and smog from transportation are reduced.



Local and sustainable food – By encouraging people to grow their own food and providing access to fresh, free food on site in the form of herbs and fruit trees, residents will feel more connected to where their food is sourced and how its grown. Allotment holders and gardeners will gain health benefits, a sense of satisfaction and cost savings inherent in planting and harvesting ones own food. A range of fresh, sustainable, locally grown food on site from the Coop, eco pub and green fast food outlets - as well as weekly farmers markets - will ensure residents can access tasty, seasonal, healthy food at a comparable or lower cost.



Sustainable water – Lower water bills will be made possible. Rainwater harvesting ensures a reliable supply of water during drought and reduced pollution from run-off.



Land use & wildlife – With 40% of the Exemplar designated green space residents will enjoy feeling more connected with nature and biodiversity. Bird boxes, ponds, orchards, wild meadow plants, bee hives, bug hotels and regular educational events will make access to wildlife and understanding its benefits easier and more enjoyable. A stronger local ecosystem will benefit all residents.



Culture & community – Street sculpture and artwork by local artists, along with regular events and programs with the schools and local groups will help forge a strong sense of culture and identity for residents of the Exemplar. Celebrations of nature, art and diversity in culture will be common place through the primary school, community centre and eco pub.



Equity & local economy – The local economy will be strengthened by encouraging and facilitating working from home and new start-up enterprises. The Eco-Business Centre will form a hub for local, social enterprise and thereby promoting knowledge sharing and collaboration. The shops on site will be locally owned and managed, adding to a sense of community and identity and help to keep wealth on site.



Health & happiness – The Exemplar makes commitments to foster happier, stronger communities where residents can have more time for friends and family, exercising and being outdoors, getting to know their neighbours, feeling safer and more connected to where they live and the surrounding environment.

daily life at NW Bicester in 2015

THE AIM

"To create a thriving community in Bicester that offers a sustainable way of life for all."

Community Governance Structure

Eco-living: the new 'normal'

Sustainable living is often synonymous with expense, inconvenience and giving up the things we enjoy, but the Exemplar will make it easy and enjoyable for people to live and work more sustainably. The result is more time for the things that matter, greater affordability and stronger, more resilient communities.

So what will it be like living there?

The following offers a series of illustrations of how life might be for a number of different groups of residents at the NW Bicester Exemplar in 2015, just a few years into the life of the community.

The intention is not simply to demonstrate how the key features put in place at the Exemplar will facilitate reduced ecological impact, but rather how it will promote a better quality of life for all.

Scenarios are given for a child, retired couple, single professional, family with young children and a first-time buyer:

Single professional

I started my own business a few years back but still work in Oxford developing green technologies.

Buying a place here was an obvious choice for me; modern, low energy homes and an eco-business centre right on the doorstep. It has meant I've slashed the amount of time I spend travelling.

I can run my business directly from home or from the business centre thanks to the fibre optic broadband and meeting spaces available. When I do have to commute into Oxford its quick and easy thanks to the integrated community bus and improved train connections.

I work hard but also enjoy time out: I've joined the Millennium Cycle club in town and have been able to start racing again, thanks to the time saved working on site at the Business Centre during the week. I race all over the country and so borrow the car club car to take my teammates to races. It's so much easier and cheaper than owning my own car.

Life is pretty busy at the moment, but with all the events going on and places to bump into people - at the shops, community centre or eco-pub - it means I have still managed to get to know my neighbours and feel part of a vibrant community.



Retired couple

We moved here from Banbury, we wanted a smaller place with more green space and a stronger sense of community.

It's been a breath of fresh air; everything is within easy walking distance and the links to the town centre and Oxford by train and bus make it easy to get about. We know more of our neighbours here and spend more time socialising than we have in years - there are just more opportunities to meet new people.

We love to travel, but now we see the benefits of flying less to reduce our footprints. The Travel Plan Coordinator on site has been great at helping us plan trips away; we didn't realise how many of these places we could reach without flying by simply planning further ahead and trying new things.

Our house is the perfect size for us, thoughtfully designed so we get sunlight throughout the day, and easily adaptable so that when we do start to slow down it will be easy to stay here. It's great to be somewhere the grandkids can visit at weekends and play outdoors safely.



Family with young children

We were lucky enough to get one of the affordable homes here. The homes are beautiful and very quiet - well designed for noisy children!

We were a little reluctant about moving to NW Bicester at first as we were not really into the 'green' thing, but we wanted to bring Joe and Pat up in a place where they could play outdoors, be safe and where I could walk them to school. My husband loves technology and the idea of living somewhere 'different', where we could generate our own energy was very appealing.



Initially it was more about saving money for us and that has been great; our bills are much lower and by helping with the upkeep around the village the management costs are lower too.

But now some of the other benefits of NW Bicester are really starting to show. I've got to know just about everyone on our street through the welcome events and made some good friends through working at the nursery part-time. I wasn't really into cooking before we moved here, but the free cookery lessons at the pub helped me discover a new passion.

My husband Phil switched to a new electric car when we moved in because of the great discounts on offer and he loves all the gadgets that come with it and the fact he can plug it in at night and charge it at a fraction of the cost of putting diesel in the tank!



Artist's impression of the NW Bicester Exemplar

one planet action plan to 2020

The following is a summary of the targets A2Dominion have set in order to ensure residents at the Exemplar transition towards One Planet Living over the coming years.

Many of the targets are a legally binding planning condition; others are more aspirational. All are based on a balance of realism and ambition.

The pages which follow set out in detail how each of the targets below and the Common International Targets for One Planet Communities will be addressed using the ten principles.

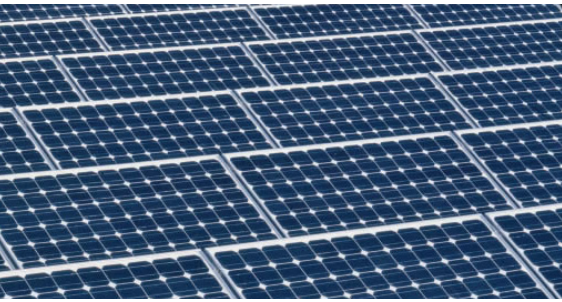
BioRegional and A2Dominion have designed a monitoring programme to ensure targets are addressed and reached. More detail on the monitoring strategy can be found in document 'Draft Monitoring Plan NL151211.doc' and on p.34 of this report.



100%	reduction in direct CO2 emissions from buildings compliance with Code for Sustainable Homes 5/6	40%	reduction in embodied energy from construction
4kWp	peak output of solar PV for each home across the exemplar	30%	of food available on site sourced <30 miles distance
zero	waste to landfill during construction	100%	water neutrality across wider masterplan area
80%	of waste recycled/ reused and composted	47%	reduction of water use (150 litres/person/day > 80l/p/d)
25%	reduction in emissions from private vehicles	40%	land designated public open or green space
25%	aspirational target reduction in air travel of residents	100%	existing building and historic features on site preserved
15min	max. time to wait for the community bus	>1:1	ratio of jobs created at the Exemplar to number of homes
400m	max. distance of any home to a community bus stop	30%	designated affordable housing
		30%	aspiration to increase the Happy Planet Index for residents



1. zero carbon



All roofs have been optimised for solar access and avoiding shading. Average solar PV provision is >4kWp per home

Emissions Targets

*net zero carbon
emissions from the site in
accordance with the
Eco Town PPS1*

Measuring Performance to 2020

Combine and cross check data from:

- Site-wide data on home energy consumption supplied by multiple utility service company (MUSCo)
- Annual hot water demand across the site
- Biennial survey questionnaires on consumption of food, goods and services
- Results from personal carbon footprint calculators
- National and local average data for carbon footprints

The NW Bicester Exemplar will achieve Code for Sustainable Homes Level 5 (CSH5, effectively level 6 relative to energy efficiency measures) for all homes and BREEAM Excellent for all non-residential buildings.

The development will achieve **'zero carbon'** status, as defined by the Eco Town PPS1 ET 7 which states **"over a year the net carbon dioxide emissions from all energy use within the buildings on the eco-town as a whole are zero or below"**

To be achieved through the following measures;

- Space heating demand reduced by 65% compared with current Building Regulations through super insulation, air tight detailing and Mechanical Ventilation with Heat Recovery (MVHR)
- Electricity demand reduced by 35% by installing high energy efficiency white goods, low energy lighting, good daylighting
- Hot water demand will be reduced through water efficient fittings for showers, baths and bathroom taps
- Welcome packs and inductions for new residents will explain how to live energy efficiently, including explanatory videos
- Energy efficient behaviour will be encouraged through the in-house Shimmy screen (see p.31) showing energy consumption in imaginative ways that make data meaningful and enable easy lifestyle changes
- Community engagement on energy efficiency will be supported by A2Dominion and the Local Management Organisation (LMO), including the provision of 'Carbon Conversation' courses, free energy efficiency training and advice for all occupants
- >100% of all electrical demand on the site met through 13,450m² of photovoltaic (PV) panels with peak output of 1,682kW. Roof designs optimised for solar orientation and freedom from shading
- District heating system will circulate heated water to all homes and buildings for space heating and hot water
- The long-term solution for hot water is to take heat from an energy from waste plant currently under construction 2km from the Exemplar. This heat would otherwise be wasted. At the time of writing this action plan, early studies show this to be the best solution from commercial and carbon reduction viewpoints
- Until this waste heat connection is confirmed, the Exemplar will meet demand using heat from an onsite gas-fired Combined Heat and Power (CHP) plant. Some electricity from the CHP will be exported and using SAP coefficients (standard figures for building carbon emissions), the heat supply is attributed very low carbon intensity (the same as biomass heating). These residual emissions are offset by excess PV generation. For detailed carbon balance figures see the Energy Strategy
- In the earliest stages of construction, a gas boiler will supply hot water to the district heating system until the waste heat connection arrives / there is sufficient demand for the gas CHP
- Two 40,000ltrs thermal stores will buffer peak hot water demands and allow steady operation of plant
- Smart grid solutions are being explored
- A funded research study is currently developing a whole house smart grid solution to maximise local use of the very significant PV output through domestic scale storage, DC wiring for LED lighting circuits and resident interface to enable shifting of peak demand. This will be trialled on the Exemplar show home



2. zero waste

In construction

- Achieve zero construction waste to landfill through optimising designing out waste, effective site waste management planning; specify reusable / recyclable materials and those with high recycled content
- Actively promote waste minimisation through the design process, materials selection, construction techniques, and operational methods
- Work with sub-contractors and supply chains to ensure packaging is minimised
- Separation and weather-proof storage is to be made available for all reusable and recyclable waste arising on site
- During the construction process implement a waste reuse and recycling hub on the site to maximise the levels of waste reused (i) on site and (ii) in the local area
- Investigate and actively support the creation of a construction materials reuse centre in the town/ region

In use

- 80% recycled/composted/reused by 2020 (an increase of 29% on current levels)
- 92% recycling of garden and food waste; with integrated food waste bins in kitchens, compost bins for gardens and allotments and the municipal organic collection scheme
- Residual waste to be no more than 200 kg/household/year by 2020 (a reduction of 520Kg (72%) on current levels)
- Segregated recycling bins to be fitted in every kitchen, at the village centre and fortnightly recycling collection available for every household
- A performance based charging system for households and commercial premises is to be investigated to incentivise participation in meeting the targets
- All businesses and non-residential users to prepare their own personalised waste management plans which are to include ambitious targets for waste reduction
- Workshops and training relating to waste reduction to be offered to all businesses on site
- A waste strategy for all non-residential buildings is to be developed

Further detail is available in the Site Waste Management and Resource Plan



Waste Reduction Targets

- Zero waste to landfill in construction
- 80% waste to be recycled / reused / composted
- Max. 200 kg residual waste per household per year

Measuring Performance to 2020

During construction:

- Contractors to monitor and document all construction waste arising and its destination in accordance with the site waste management plan
- Unscheduled inspections to take place to monitor on-going performance

In occupation:

- On-board weighing technology on collection vehicles
- Results reported monthly by council
- Each non-residential organisation to set waste targets and design a monitoring strategy as part of their individual waste plans
- Household estimates will be extrapolated from surveys



3. sustainable transport



Travel Targets

- Av. vehicle emissions for cars less than 110gCO₂/km
- Av. annual vehicle kilometres by private cars will be at least 10% lower than the 2008 UK average of 14,723Km
- 50% of journeys non-car by 2026
- Aspiration to reduce air travel by >25%

Measuring Performance to 2020

During construction;

- Commuting distance for construction workers calculated from post codes
- Average sourcing distance of construction materials, weighted for different materials by tonnes - km

In occupation:

- Transport carbon data – output from biennial travel surveys
- Average personal transport related carbon emissions to be estimated from travel surveys and travel diaries
- Commuting distances for incoming workers gathered from business travel surveys (collect postcodes for all employees and modes of transport)
- Feedback from all site users on transport related facilities - identifying most effective measures and what would help residents to further reduce their car use and carbon emissions
- counters to be installed for vehicles and pedestrian cycle paths

Reduce the need to travel by design

- Key facilities and services including schools, shops and business centre are located within the development
- A change of tenancy agreement and new facilities to promote home working, including high-speed broadband and an eco business incubator at the centre of the village

Make walking and cycling the preferred option

- Ensuring no dwelling is more than 800m distance from primary school or the neighbourhood centres (max. 10 min walk)
- Providing convenient walking / cycling routes through the development, separated from traffic and linked to the town centre

Increase % of journeys that are not by car to 45% by 2016, 50% by 2026, a rise of 17.5%

- Maximum five minute walk to a bus stop
- Average of 1.5 parking spaces per home, 0.5 spaces less than the maximum allowed. This will be reviewed for later phases.
- Providing integrated transport links throughout the site and into the existing town centre and rail stations, including a new off-road, direct cycling route
- Providing a regular bus service from the site to the town centre and railway stations
- Key routes only accessible to bus, pedestrian and cycle
- Limit vehicle speed to 20mph across the site
- England's first semi rural car club offering four low emission vehicles for hire by the hour

Make NW Bicester the place to live for cyclists

- Encourage creation of cycle repair events and workshops
- Provide dedicated cycle storage for each home
- Create an abundance of cycle stands and street furniture to enable cycles to be safely locked when visiting the village centre
- Create shared surfaces where bus, pedestrians and cyclists can travel safely together and off-road cycle routes for those who prefer to be separated from traffic
- Offer a menu of incentives with every home to promote cycling

Create a post for a Travel Plan Coordinator (TPC)

- Promoting the use of public transport, walking and cycling
- Facilitating business and personalised travel planning
- Promoting and supporting use of car club and car share services
- Offer incentives for electric vehicles and promote low emission vehicles
- Provide a 'green travel agent service' for holiday planning
- Promote alternatives to flying to reduce air travel by 25%

Up-to-the minute travel information in the home

- Easy booking of the car club cars, planning lift sharing and accessing bus and train times via Shimmy and community intranet

The Draft Travel Plan sets out the full range of measures in detail.



4. sustainable materials

In construction

Minimise embodied energy in construction

- Targeting a 40% reduction in energy and carbon emissions from a traditional brick and block construction baseline of 400kg CO₂/m²

Minimising the impact of construction

- The majority of homes to be lightweight timber frame, produced off-site by a local manufacturer
- Favour local, natural, renewable, low embodied energy, non-toxic materials and materials with high recycled content throughout procurement process
- In achieving CSH5, BRE's Green Guide to Specification will be used to secure Code Materials credits
- Follow best practice in sustainable construction methods including off-site manufacture and prefabrication to minimise waste
- Work with suppliers to encourage ethical and environmental sourcing throughout the supply chain
- Develop strong local supply chains
- Through an online business portal local businesses will be encouraged to tender to supply products and services to the Exemplar

In use

Improving access to sustainable products and services

- Co-op and other shops to operate under local and sustainable sourcing policy
- Promote farmers and crafts markets to run at the community centre, putting in place ethical and environmental sourcing covenants
- Aspiration for on-site swap and repair events linked to a reuse centre in Bicester town
- Aspiration to facilitate sharing among residents (of books, toys, tools etc) and potentially having a central location for this (such as a workshop or library)

Creating an awareness of sustainable purchasing

- Promote culture of ethical and ecological purchasing, outlined in the sustainability charter - signed by all residents
- Provide a list of local producers via Shimmy
- Build a culture of buying less, reusing more and promoting the associated benefits of this transition
- Promote culture of exchanging, sharing and hiring products via Freecycle events, community shop and Shimmy
- A2Dominion and Green Champions to promote and support the hosting of regular events / workshops to provide skills training in repair and maintenance
- Investigate value of using voluntary targets to achieve measurable reductions in materials footprints



Regular local markets become the 'norm'



Environmental purchasing made easy

Sustainable Materials Targets

- 40% reduction in embodied carbon from construction
- Range of local, organic, fair trade and ecological products available on site
- Regular on-site reuse events
- Regular markets supplying local products

Measuring Performance to 2020

In construction:

- All materials to meet the sustainable materials sourcing policy to be set out at procurement stage

In occupation:

- Biennial questionnaires on consumption of food, goods and services
- Monitor the % of local, organic and Fairtrade products available by weight/ value of the total goods available on site



5. local & sustainable food



Food Targets

- Local, seasonal, organic and Fairtrade products to be sold in every food outlet on the Exemplar
- 0.5ha area of allotments created
- Two community orchards created

Measuring Performance to 2020

The following will be recorded during occupation:

- Biennial survey questionnaires on consumption of food, goods and services
- Monitor the % of local, organic and Fairtrade products available, measured by weight, value or % shelf space/% menu space

Promoting on-site food growing

- 0.5ha area of allotments provided for residents
- Edible fruit tree provided in every garden and free vegetable seeds with each welcome pack
- Establish two community orchards
- Edible planting integrated into the landscaping plan; to include fruit trees and bushes, herbs and edible plants. Tours offered to residents highlighting edible plants and their uses
- Communal composting site established for allotments

Building a culture of valuing fresh, local produce

- Healthy, seasonal food to be offered during construction through site canteen
- Aspire to provide cookery classes in café or eco pub
- Promote sustainable food sources via Shimmy
- A2Dominion to work with local groups to take steps towards achieving 100% composting of food waste, encourage scrumping and establish an 'Abundance Project'
- Establish a central collection point for veg box deliveries and community buying deliveries

Promote home cooking and communal feasting

- Kitchens designed to encourage home cooking. Free 'cook seasonal' recipe book on Shimmy
- Built in BBQs in communal areas to promote parties / feasts
- Encourage festivals and seasonal food fairs

Local, sustainably produced food accessible to all

- Sustainable/local sourcing of food covenants to be written into tenancy agreements for all food outlets
- Establish a regular local farmers market
- Promote and offer incentives to buy local, organic veg boxes prior to the Co-op store opening on the Exemplar
- Eco pub/ cafe to offer fresh and locally sourced high quality food, with aspiration to provide training opportunities for chefs
- Investigate the value of using fixed targets, (E.g. 40% of food sold on site to be locally sourced within 50miles / organic and/or Fairtrade)

Education and raising awareness about the ecological impact of food

- A2Dominion / LMO to work with primary school to establish 'kids allotments' and education programmes around food
- Co-op and community centre to disseminate information on the impact of food and the benefits of sourcing local, seasonal, sustainably sourced produce
- The LMO and Green Champions to promote healthier, lower impact diets, through events such as 'veggie days' and general awareness raising



6. sustainable water

Bicester falls within the water stressed region of south east England. Water stress has been identified as a significant risk due to climate change over the coming decades.

Mitigating the risk of flooding

- Achieving (or improving upon) green field run off rates
- Implementing an exemplary sustainable urban drainage system (SUDS)
- This will include newly-created ponds used to retain water and prevent flooding during periods of heavy rainfall
- Responding to the flood risk assessment; design ensures no buildings are located in areas of potential flood risk

Achieve water neutrality across the masterplan area through water efficiency, reuse and recycling

- Achieve CSH 6 water efficiency standards of 80 litres per person per day
- Achieve BREEAM excellent standards of water efficiency in the non-residential buildings
- Via low flush toilets, aerated taps and showers, low use appliances and other water efficiency devices
- The LMO and Green Champions to promote water efficiency throughout the site via the Shimmy, signage and periodical campaigns
- Harvest rainwater from roofs for toilet flushing and washing machines, and for garden, landscape and allotment watering
- Monitoring of water use by house, street and area. Information given on their water use in relation to neighbourhood averages
- Waste water treatment is not viable or sensible for the first Exemplar phase but wider Masterplan will design for on site waste water treatment and water neutrality

Achieve zero contamination, preservation of water courses and groundwater relative to the water framework directive and River Quality Standards to promote biodiversity

- Design for integrated drainage systems; SUDS and biodiversity features that effectively manage surface water drainage, improve quality and mitigate flood risk
- Utilise SUDS that recharge the underlying ground water system, creating soakaways close to source, infiltration conveyance swales and permeable ponds
- Ensure SUDS achieve a run-off at no greater than agricultural green field rates
- Install green and brown roofs where practical and appropriate to reduce run-off during heavy rain
- Maintain and seek to improve the water quality and ecological status of the River Bure and its tributaries



Water Targets

- Residential water use to be <80l/person/day to meet CSH Code 6
- Meet BREEAM Excellent in all non-residential buildings
- Site-wide rainwater harvesting for use in toilets, washing machine and for community allotments
- Achieve water neutrality across masterplan

Measuring Performance to 2020

The following will be recorded:

- Construction related water consumption
- Water quality in run-off streams
- Metered household usage
- Metered non-residential water usage
- Site wide recycled water
- Annual hot water demand for the whole site



7. land use and wildlife



Land use and wildlife targets

- 40% green space allocation across site
- Provision of 0.5ha area of allotments
- Provision of two community orchards
- Net increase in biodiversity
- 1000s new trees planted
- 10 Year landscape plan devised and enacted with targets for key species and habitats

Measuring Performance to 2020

The following will be recorded:

- Number of key indicator species and habitats
- Numbers of residents actively enjoying, taking part in, observing wildlife or conservation work will be monitored through biennial surveys
- Monitor fulfilment of Landscape Management Plan
- LMO, wildlife working group and Wildlife Trust to assess impacts of the development and its management on levels of biodiversity against baseline surveys

Green infrastructure: 40% of the eco-town area to be allocated to open, green space, 50% of this to be public. 3.8 hectares of public space will be designed specifically and primarily for high ecological value

Create net gain in biodiversity from pre-development levels

- Habitat and protected species surveys have been undertaken across site to map existing biodiversity
- Implement the Landscape Management and Ecology Plan (currently under development) that ensures all biodiversity assets are maintained or enhanced
- 1,000s of new native trees, plants and shrubs to be planted

Manage environmental quality; maintain or enhance existing quality of air, noise, water and soil

- The biodiversity strategy centres around retention and improvement of the existing network of hedgerows and the river corridor
- Sensitive management allowing trees and shrubs to flower, set seed and produce fruit
- Create buffers and movement corridors for wildlife across the site to avoid fragmentation
- Instate a tall grass margin next to hedgerows to be mown infrequently dependent on its individual setting
- Create new habitats to benefit biodiversity which are multiple-purpose, (E.g. above ground SUDS (reed beds, ponds, swales) designed to benefit wildlife
- Bat corridors to be created with sensitive lighting and bridge design across river corridor. Native wildflower seed used to create areas of species rich grassland; either damp grassland as part of SUDS or dry calcareous
- Two community orchards to be planted
- Every new home to possess native fruit tree in the garden

Retain habitats that support protected species

- Protect existing badger setts and bat roosts. Establish bird boxes, bug hotels and ladybird boxes across the site

Climate change adaptation

- Landscape, planting and streetscape design to provide spaces that create shelter, shading and reduce 'heat island' effects as adaption to climate change

Promote green space as amenity/ educational / recreational resource

- Promote use of green spaces to facilitate active lifestyles and mental well-being
- Natural play space and educational ponds to be created
- Training and volunteer opportunities to be created, working with local schools, colleges and volunteer groups
- Wildlife-friendly gardening will be promoted in the show homes and through community engagement



8. culture and community

Preserving heritage

- All listed buildings and historic features to be retained. Farmhouse retained
- The design responds to historical and cultural settings, archaeological assessments and landscape character

Celebrating the arts

- Work to be undertaken with local artists to create sculptures, artworks and installations across the site
- Work with primary school on site, local schools and colleges to create exhibitions, murals and sculptures on topics relating to the environment and sustainability; to be showcased in the community centre
- A2Dominion and the Green Champions to encourage and promote regular cultural, music and arts based events at the community centre

Building a strong and unique identity

- Eco pub and community centre to act as social hubs, promoting community identity and inclusion, high quality, healthy food and green living
- The Green Charter (see p.29) will create a shared ethos amongst residents to help build a strong, shared identity
- A2Dominion, the LMO and Green Champions to be key in promoting One Planet message
- Promote a strong cycling identity via the Travel Plan Coordinator and champions, supported by A2Dominion
- Devise an 'Identity Project' where existing residents and local schools will be encouraged to develop their identity for NW Bicester based on local culture and environment
- Establish a visitor centre with interactive exhibits to demonstrate how the Exemplar is working towards becoming a One Planet Community
- Create a cartoon character for the Shimmy through engagement with local schools

Building a culture of active citizenship and community

- A unique, locally managed governance structure will ensure NW Bicester is run by the residents for the residents; with the power to raise revenue and invest in maintenance and improvement programmes – see 'innovative governance' on p.28
- A culture of volunteering will be fostered through the Green Champions and other voluntary positions
- Celebrating diversity and global outlook
- Cultural diversity amongst new buyers will be encouraged
- Celebrating cultural diversity through international food and cultural events at the community centre
- Via exhibitions, events and film evenings at the village centre an awareness of international issues, including impacts of climate change overseas will be developed



Celebrating local artists and musicians through events and installations

Cultural Targets

- *Preserve and enhance all listed buildings and historical landscape features on site*
- *Foster a strong sense of identity amongst resident through the OPL framework and brand*
- *Foster a culture of active citizenship and community*

Measuring Performance to 2020

The following will be recorded:

- *Qualitative report describing services available on site*
- *Numbers attending, variety and frequency of cultural events/ activities*
- *Calculate biennially the 'walkability' based on services available on site*
- *Fulfil planning requirement to preserve and enhance all existing structures on site*
- *Record residents 'sense of identity and community' in biennial surveys and endeavour to improve this year on year*



9. Equity and local economy



Local Economy Targets

- Creation of 625 new jobs in walking or cycling distance
- 30% affordable housing
- Creation of 2,900sq.m business, retail and office space
- 20% local workforce during construction
- Incubate and support new start-up enterprises

Measuring Performance to 2020

The following will be recorded:

- Number of construction related jobs, apprenticeships and training placements
- Number of local businesses benefitting from construction process
- Other local jobs due to construction process eg. suppliers, catering services, etc.
- Implementation of the construction skills strategy
- Data from facility organisers and also from residents or intranet surveys will monitor take up rates of green services and facilities on site
- Biennial surveys will monitor occupancy satisfaction for local services and the governance of their neighbourhood
- Attempts will be made to monitor the increase of jobs in key sectors in Bicester
- Application of LM3 local multiplier tool, along with setting targets for the local multiplier of the whole Exemplar project, will be investigated further

On Site job creation

- 430 new jobs to be created on-site over five years
- 50 new construction jobs, 20% will be local labour
- 100 additional new jobs off-site, in walking or cycling distance

Key jobs to be created on and around the development

- On-site retail, construction and a variety of retrofit jobs created town-wide as a result of the Exemplar
- Community services including; nursery, teaching and related jobs in new primary school to be created and promoted to local residents via the Job Club and Job Centre Plus
- Home working encouraged with fibre-optic broadband. The Eco Business Centre to offer hot-desking, meeting rooms, business support and conference facilities
- Aspiration to create a new role for a 'Community and Environment Officer' and 10 'Green Champions'
- An estimated 60 new jobs in Bicester as a result of business growth and inward investment, all within walking / cycling distance

Emphasising the provision of high quality jobs and training opportunities

- Deliver an employment and training management plan to support apprenticeships and work placement opportunities to local residents in partnership with existing providers
- Ten construction apprenticeships, at least three others in landscape management, security and catering
- Work with local institutions to develop courses relating to eco-construction

Working with local plans and key stakeholders

- A2Dominion are working closely with Cherwell District Council and Bicester Town Council to respond to the *One Shared Vision*
- A 'local business portal' to encourage supply of products and services from local businesses has been established, working with the Chamber of Commerce and Bicester Vision
- Partnerships to be built with voluntary sector, training providers, local schools to deliver education and training
- Partnership with the Midcounties Co-op is under development

Developing the green economy

- Environmental goods and services to be available on site
- Support offered to incubate start-up green businesses
- Provision of up to 1,110 square metres of high quality, small office space in the Village Centre
- Promoting purchase of fair trade goods in local shops

Financial inclusion

- 30% of all dwellings to be Affordable Homes
- A2Dominion to support delivery of workshops on budgeting and myth-busting; demonstrating health and well-being benefits of low impact lifestyle choices
- Shared ownership schemes to be made available
- 11 self-finish units will offer the opportunity for home buyers to train in a trade and complete their home



10. Health and happiness

Building a healthy community which supports convenient eco-lifestyles

- Building exercise into people's lives by making 'active transport' the norm
- Providing information on and access to healthy eating.
- All homes to meet Lifetime homes standards and 'Building for Life' Silver, determined principles of 'Secure by Design' and 'Community Streets'
- All homes to have excellent levels of daylighting; with an ADF factor between 2 and 5 in all habitable areas
- Excellent air quality and ventilation via natural ventilation in summer, MVHR in winter
- Use of non-toxic finishes and minimal VOC eco-paints
- Super-insulated buildings that stay warm in the winter and cool in the summer

Creating a 'Community Development Strategy'

- A2Dominion to work with all partners to build a strong sense of community at NW Bicester
- Achieved through welcome events and activity days
- Encouraging street parties and 'get to know your neighbour' evenings
- Facilitating the formation of new Community Action Groups through Shimmy
- Establish annual community events such as green Olympics
- Work with the skills, knowledge and interests of residents to build a unique identity for the site

Feeling connected; promoting accessibility and inclusion

- Via the in-home Shimmy device residents will feel connected to all the activities, events, services and support available
- A2Dominion will deliver an ex-servicemen social enterprise project
- Diversity amongst community groups in the area to be promoted
- Links with existing organisations in Bicester town to be built

Building for the future: ensuring climate change adaptation

- Site planning to mitigate against flood risks
- Innovative research and modelling as part of a TSB project undertaken in collaboration with Oxford Brookes University investigated a range of adaptation measures to be applied to buildings, for a range of scenarios up to 2080
- Energy strategy makes possible 100% generation on site ensuring future energy security



Wellbeing Targets

- 90% of residents to feel 'happy, safe and part of a community'
- Exemplary levels of daylight and air quality in homes and throughout the site
- 25% improvement on the Happy Planet Index compared with UK

Measuring Performance to 2020

Biennial survey will cover the following:

- Perceived health
- Exercise frequency
- Health indices and obesity levels
- Comfort levels in homes relating to temperature and humidity throughout the year
- Site wide noise levels
- Air quality
- Calculation of Happy Planet Index for the development and comparison with national averages
- Number of voluntary groups / % of residents involved in a voluntary groups or communities of interest
- Survey with elderly population addressing levels of inclusions
- Average number of neighbours known by name
- Satisfaction with community support facilities



innovative governance: community management

It is A2Dominion's express intention to ensure all residents and occupiers of the commercial units are integral to formulating an innovative governance ethos; creating a self-managed high quality development for all. This is set out in a community governance strategy.

By advocating local influence over local issues, residents and other key stakeholders will be encouraged to take a proactive approach to building a thriving community, which continually pursues the One Planet Living ethos.

A2Dominion will, in the first instance manage the majority of matters overseen by a management body of existing Bicester stakeholders with a scrutiny role. However as occupancy rates increase and the 'community-led management group' is established, A2Dominion will be able to take a supporting, rather than leading role.

A2Dominion will be a key partner in the management of the development along with other headline groups; Bicester Town Council, Cherwell District Council and Oxfordshire County Council. However, structures of support are to be put in place to ensure the local community assumes a leading role in managing the site. These stakeholders will be supported by BioRegional in order to ensure exemplary sustainability standards are maintained in all service and infrastructure areas.

The governance body will be instrumental in refining and enacting the residents' Green Charter, see draft opposite. Key responsibilities will be undertaken by Green Champions; one for each of the 10 One Planet principles. A strong partnership between A2Dominion, the Green Champions and the **Local Management Organisation** (LMO) will be fundamental to achieving a strong and inclusive One Planet community.

"The LMO for NW Bicester will offer local residents and businesses a forum for active participation, where non-elected citizens could come together in decision-making, on issues that affect their immediate area."

(Appendix 3 Community Governance Strategy)

"The [Eco Town] PPS seeks to ensure that democratic arrangements are in place to ensure community involvement in the management and running of the development."

(2.7 Community Governance Strategy)

"All key stakeholders, future residents and non-residential unit providers will be involved in forming a constitution of the body through a bottom up rather than top down approach."

(6.4 Community Governance Strategy)

Proposed Residents' Green Charter

We the residents of NW Bicester agree to:

1. Look for ways to be as environmentally friendly as possible
2. Take part in the spirit of this eco town and be creative about reducing our community's eco footprint
3. Take part in surveys and activities that measure our carbon footprint and other environmental measurements
4. Learn how best to use our state of the art eco home and be mindful of energy and water use
5. Report any problems with the home that stop us from being as energy and water efficient as possible
6. Think about waste, look for ways to waste less, do our recycling, report any problems with the recycling collections
7. Take up the offer of, and make use of, our personal travel plans prepared by the Travel Plan Coordinator
8. Learn about local buses, trains, cycle paths and walking routes. Take part in cycle training; get free cycle training for the kids. Try to only use the car when other options are not convenient.
9. Consider volunteering or taking a place on the Board for the local management organisation
10. Consider getting involved with community activities
11. Support the local shops and businesses on site whenever we can
12. If we have an idea for how this community could be better and more environmentally friendly, we will talk to our neighbours about it and send the idea to the LMO
13. Learn about wildlife-friendly gardening and growing our own food
14. Consider volunteering for nature conservation work around the estate
15. Get to know our neighbours and work together to make sure this is a beautiful, fun and safe place to live

Community Governance Strategy

As part of the above titled report the following aspects were identified as key to the future success of a community governance structure:

- Representation from all key stakeholders from residents, commercial tenants, A2Dominion and possibly, the local council
- A democratic and accountable organisational structure
- A business plan with revenue streams identified to ensure long term financial sustainability
- Appointed posts for Green Champions and a Community Officer to support the LMO and ensure coordination, motivation and action on all areas of sustainability, community engagement and asset management

Ensuring long term viability

A range of possible organisational structures are under consideration, which are democratic and accountable, these include: Development Trust; Community Interest Company (CiC); Community Land Trust (CLT); Commonhold Association. Revenue streams are essential to fund the LMO's activities in the long term. The following have been identified as possible sources:

- Service charges on properties enforced through covenants;
- Creation of income streams from assets;
- Reduction in Council Tax for local people who undertake local maintenance jobs;
- Section 106 contributions;
- Sponsorship;
- Partnerships with other groups;
- Endowments;
- Independent bodies; and other entrepreneurial activities.

Building on experience
UNDERSTANDING
COMMUNITY ENGAGEMENT

A2Dominion has extensive experience working with communities as a Registered Provider of over 34,000 homes across London and the South East of England.

It runs youth projects, a volunteer service, training, enterprise support projects and employment opportunities for its residents. It also takes a proactive approach to engaging and building communities through its new developments, such as Green Man Lane in Ealing, London.

A2Dominion, in partnership with BioRegional, will build on this experience to create training and support for Green Champions and community officers, which help to foster active and engaged communities



A community consultation with future residents at Green Man Lane

“Much of my time is spent listening to and working with local stakeholders to understand their aspirations, needs and concerns of the development.”

Louise Caves, Strategic Partnerships Co-ordinator, NW Bicester

community engagement

A2Dominion is committed to fostering a community prior to the development being occupied. The **Strategic Partnership Co-ordinator**, Louise Caves, is currently a major resource in facilitating this process. This role was created in February 2012 and forms part of the Community Involvement Team and is exclusive to NW Bicester.

Below Louise demonstrates how her role contributes to building the foundations of a One Planet Community at NW Bicester:

*Louise Caves
Strategic Partnership Co-ordinator*



My role crosscuts a number of different elements of the project:

- **Managing PR and communications** leading up to and during the NW Bicester Development with trade, national and local audiences. This is fundamental to getting the key messages and facts out there about the development. This includes delivering community events that promote the identity of A2Dominion and NW Bicester.
- **Engaging and consulting** with key stakeholders to have their involvement and influence in the community aspects of NW Bicester. Much of my time is spent listening to and working with local stakeholders to understand their aspirations, needs and concerns relating to the development.
- **Building strong partnership relationships** with the local public, private, voluntary and community sectors, to work collaboratively to add value to and strengthen existing organisations and networks in the Town. We are very keen to make NW Bicester an organic extension of the town, rather than a bolt-on. Integrating it within existing networks will be fundamental to achieving this.
- **Working with existing stakeholders and new residents** of NW Bicester to develop a programme for the delivery of a suitable community-led management structure for NW Bicester, including the development of an appropriate delivery vehicle. This will facilitate local people's participation in local democracy and have a say over the issues that affect them and their immediate neighbourhood environment. The model will be inclusive and aims to create a strong, sustainable and resilient community.

monitoring for positive change

- **Developing a Community Development Strategy** for the new community which includes education in green lifestyle opportunities, volunteering opportunities and hosting 'welcome to your new home' events. Much of this work will help to reinforce the principles of the residents' green charter.
- **Developing a training and employment delivery plan** for the first phase which creates business opportunities for local suppliers, enables local job seekers to access construction opportunities arising on site, and delivering a minimum of 10 apprenticeships. All of which are aimed at benefitting the existing Bicester Community and expanding their knowledge and skills in sustainable construction.
- **Engaging local schools** with the development by devising and delivering exciting projects that give children the opportunity to learn about NW Bicester through their curriculum and become part of the journey through its expansion.
- **Developing an identity project** that looks to address wider concerns, identified through local consultation, about the fragmented nature of the town as a whole and using local history to bring communities together and inform the naming of NW Bicester.
- **Developing and trialling the Shimmy device**, a real-time information system, considering its use and impact on behaviour prior to it going into the homes in NW Bicester with existing Bicester residents and A2Dominion tenants, to make it as effective, inclusive and accessible as possible from day one.

The Shimmy

Shimmy is a customised interactive tablet, to be fitted in each house. It will provide real time information on energy consumption, travel information and community activities as well as containing a platform for residents to communicate directly with each other.

Securing resources to support ONE PLANET LIFESTYLES

One Planet Lifestyles & behaviour change

A discussion paper on One Planet Lifestyles draws on learning across a range of One Planet Communities. It finds true sustainability can only be reached through a combination of planning, technology and **significant behaviour change**.

Research at the BedZED eco-village suggests **42%** of residents' saving in CO2 emissions are attributable to behaviour change. Furthermore the paper reinforces the value of having a human resource to support and facilitate behaviour change and the development of a strong community.



NW Bicester will therefore need to provide sufficient resources to create an eco-concierge/ green caretaker/ community and environment officer, or equivalent to facilitate the shift to One Planet Living.

Acknowledging the importance of providing long term support to new tenants in facilitating a new One Planet Community, it is A2Dominion's aspiration to create a **Community and Environment Officer (C&E)** responsible for sustaining the Strategic Partnerships Co-ordinator's role throughout the occupation of the development. The C&E officer could assist in implementing the Community Development Strategy and help initiate new projects and events promoting One Planet Living.

Exemplary Monitoring

In order to ensure the ambitious targets laid out in this OPAP and those imposed by planning conditions are achieved A2Dominion and Bioregional have devised a monitoring plan and schedule which has been summarised within each of the 10 One Planet principles (see p.11).

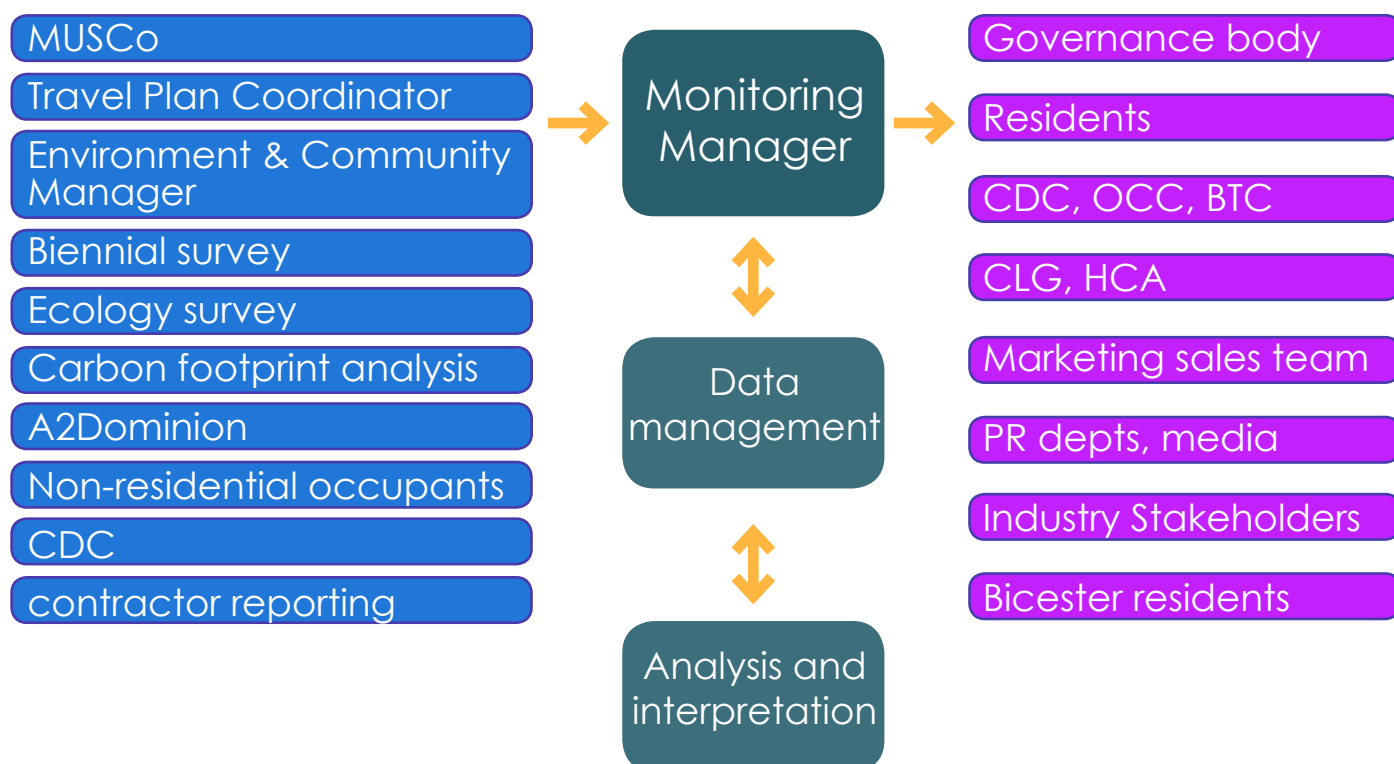
The monitoring schedule set out in the Draft Monitoring Plan is exemplary and exceeds best practice in both its scope and rigor in order to achieve the following objectives:

Monitoring Objectives

- To measure progress against the Eco Towns PPS, the One Planet Action Plan and the Eco Bicester's One Shared Vision
- To enable good management and governance - by collecting enough qualitative and quantitative information to understand what is happening both technically and behaviourally, in order to manage the eco town responsively and to keep on improving it
- To inform residents and occupants of performance (both individual and collective) to enable informed behaviour change and to empower community governance
- To communicate successes and shortfalls to industry, government and Bicester residents. This enables wider progress and informs policy
- To comply with planning requirements

Reporting Structure

Monitoring results from a range of sources will be fed to a Monitoring Manager in a pre-agreed format and at pre-agreed times. The Monitoring Manager will be responsible for data management, analysis and interpretation. The Monitoring Manager reports the results first to the LMO, Governance Body and Community Engagement + Environment Officer as appropriate and then to wider stakeholders annually.



Key to abbreviations

MUSCo	Multiple Utility Service Company
CDC	Cherwell District Council
OCC	Oxfordshire County Council
BTC	Bicester Town Council
CLG	Communities and Local Government
HCA	Homes and Communities Agency

references and supporting documents

1	Zero carbon • Document 18 - Sustainability Statement.pdf • Document 19 - Exemplar Sustainable Energy Strategy - Inc Doc 31.pdf • CHP sizing 06431021.pdf • Carbon balance 06431016.pdf
2	Zero waste • Document 18 - Sustainability Statement.pdf
3	Sustainable transport • Draft Travel Plan – Exemplar Site v2 • Briefing report: possible cycling incentives for NW Bicester, Nov 2011: 'Cycle incentive report_REVISEDsm.pdf' • Document 18 - Sustainability Statement.pdf
4	Sustainable materials • Davis Langdon embodied CO2 study(2).pdf • Document 18 - Sustainability Statement.pdf • Construction Environmental Management Plan
5	Local and sustainable food • Document 18 - Sustainability Statement.pdf
6	Sustainable water • Document 18 - Sustainability Statement.pdf
7	Land use & wildlife • 110616 Exemplar LECMP for S106v5.docx • Green Infrastructure Plan.pdf • Document 18 - Sustainability Statement.pdf • Exemplar - Biodiversity Strategy-1.docx • UA001881-701-118-03 Exemplar strategic open space provision.pdf • 8045 NET GAIN CALCULATION DRAFT.PDF
8	Culture & community • Document 18 - Sustainability Statement.pdf • 101126 FINAL Community Governance Paper.pdf • Appendix 1.doc • Appendix 2a.doc • Appendix 2b.pdf • Appendix 3.doc • Residents Green Charter 2.docx
9	Equity & local economy • Document 11 - Revised Economic Strategy.pdf
10	Health & happiness • 12036 Bicester climate adaptation 08-07-12.pdf • Community and Environment Co-ordinator JD.doc • Document 18 - Sustainability Statement.pdf • Document 22 - Overshadowing and Daylighting Report(1).pdf
11	Other References • Draft Monitoring Plan NL151211.doc • Common-International-Targets-FINAL-low-res-2011.pdf • Climate change adaptation report - NW Bicester V2.pdf • Baseline energy demand table 06431008.pdf • 12036 Bicester climate adaptation 08-07-12.pdf

Appendix: Carbon footprinting analysis

Bicester footprints – Present day

All footprints are given in tonnes of carbon dioxide equivalent (CO_{2e}) per person per year, accounting for CO₂ and the other main greenhouse gases. An 80% CO₂ reduction is achieved when the pie chart is the same size as the planet.

Footprint data based on Cherwell Region: Stockholm Environment Institute, Biology Department, University of York, Footprint Results from BRIO model, October 2009.

Available at [http://www.resource-accounting.org.uk/downloads/Bicester population from 2001 Census Footprint projections for NW Bicester Exemplar](http://www.resource-accounting.org.uk/downloads/Bicester%20population%20from%202001%20Census/Footprint%20projections%20for%20NW%20Bicester%20Exemplar)

Footprint projections for NW Bicester Exemplar

Package of measures 01: 35% reduction

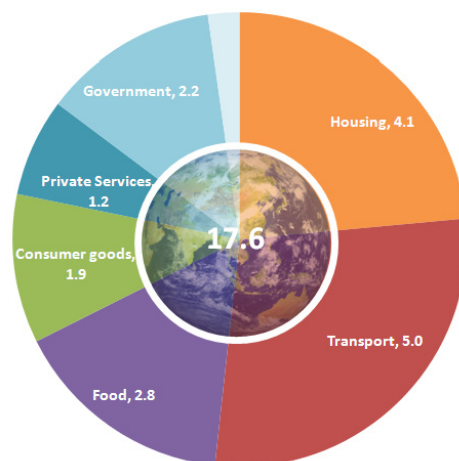
- Zero carbon homes (reduction – 18%)
- 40% reduction in impact from construction (further reduction - 2%)
- Create zero carbon non-residential buildings (further reduction - 2%)
- Modal shift: 50% of journeys by non-car means (further reduction - 5%)
- Water efficiency savings (further reduction - 0.5%)
- Meet recycling targets (further reduction - 1%)
- Local government meets target savings of 30% (further reduction - 1.5%)
- Modest food savings through education (further reduction - 2%)
- 10% reduction in mileage and meet low emission vehicles target (further reduction - 3%)

Package of measures 02: 45% reduction

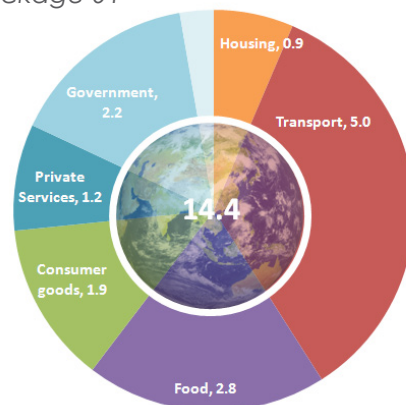
Assumes Package 01 plus additional measures;

- Reduce car ownership by 15% (cumulative reduction - 0.5%)
- 20% reduction in flying through eco-holidays (further reduction - 1%)
- Increased reuse and reduced goods consumption (further reduction - 2%)
- Cutting food waste by 20% (further reduction - 2%)
- Self-sufficiency in fruit and vegetables, reduce meat consumption by 20% (further reduction - 2%)
- Sustainable food purchasing (further reduction - 2%)

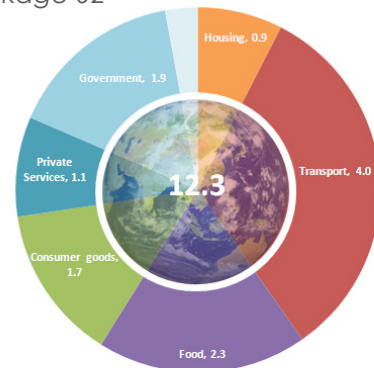
Present day



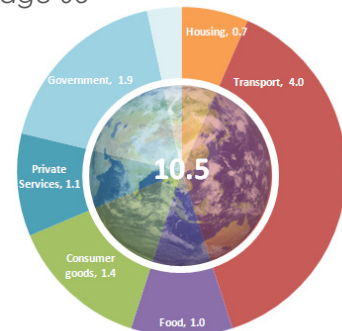
Package 01



Package 02



Package 03



Package of measures 03: 75% reduction

Assumes Package 01 and 02 plus additional measures;

- Reduce car ownership by 15% (cumulative reduction - 1%)
- 20% reduction in flying through eco-holidays (further reduction - 1%)
- Increased reuse and reduced goods consumption (further reduction - 2%)
- Reduction in food waste by 20% (further reduction - 2%)
- Self-sufficient in fruit and veg and reduce meat consumption by 20% (further reduction - 2%)
- Sustainable food purchasing (further reduction - 3%)

Even with the advances in sustainability planned for the NW Bicester Exemplar, true One Planet Living would remain a real challenge for residents. This would require further changes in behaviour/lifestyle and major changes in the way goods and services are provided.

For example, a NW Bicester resident could make a 75% reduction in personal carbon emissions through the measures set out in Packages 01 and 02 set out above:

- Not owning a car, using the low-emission car club vehicle and no flying (80% reduction in transport emissions)
- Major reductions in meat and dairy consumption. Alternatively the food industry running on renewable energy and reducing waste could give equivalent savings (70% reduction in the impact of food)
- Significant improvements in the provision of services, for example
- National government makes carbon savings of 70% through zero carbon buildings and changes in purchasing procedures
- A 60% reduction in the impact of consumer goods – half the savings achieved through changes in purchasing (sharing and rental as opposed to ownership) and half through increased production efficiencies and use of renewable energy
- 50% reduction in the impact of private sector services through all commercial buildings being zero carbon and waste reductions.

For more detail on the transitions described above please see BioRegional's *Capital Consumption* report, available at www.bioregional.org/news-views/publications/capital-consumption/

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NW Bicester is
committed to
following the ten
principles of One
Planet Living designed

to ensure people everywhere can enjoy
a high quality of life within the resource
capacity of our one planet. These guiding
principles ensure our commitment to a
sustainable approach to everything we do.
The amount of printed literature material that
we produce is always kept to a minimum and
printed on 100% recycled paper.

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