Buckinghamshire & Milton Keynes Natural Environment Partnership (The "NEP")

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Buckinghamshire & Milton Keynes Natural Environment Partnership

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1. The Natural Environment *Partnership* - what and why?

Aim for **multiple benefits** from environmental improvement

- Environmental
- Economic
- Social
- Health and wellbeing

Set vision for the environment in Bucks

Influencing: Collective Voice

Share and promote **best practice**

Raise **awareness**

Monitor progress

Improve the environment

Champion the value of the environment in **local decision-making**

Strategic, **joined-up working**

Landscape-scale e.g. green spaces network

Encourage involvement and action

Better integrate environmental objectives with social health, wellbeing and economic goals

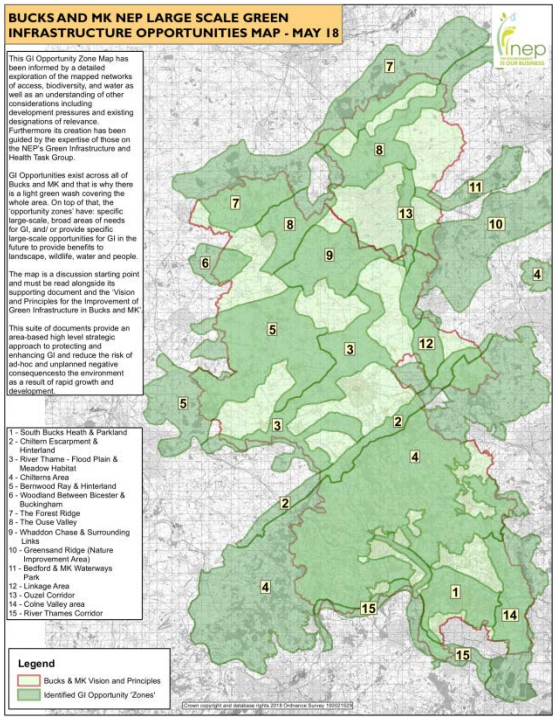
2. Environment and Development:

The NEP's work on

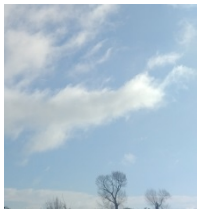
Green Infrastructure
Biodiversity Accounting

Green Infrastructure

Vision and Principles for the improvement of green infrastructure in Buckinghamshire



Air

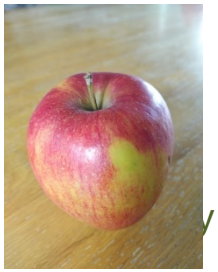


Water

Health living

Green infrastructure

Community



Food

Habitat

"We collectively endorse a vision for Green Infrastructure in Buckinghamshire and Milton Keynes by 2030 that provides, connects, improves and protects our Green Infrastructure assets for their many benefits and into the long term".

Biodiversity Accounting

What is it?

i. "Count" the number of "units" of biodiversity affected by development – using a common "metric"

ii. Apply the **mitigation hierarchy** to prevent and counter the negative impacts.

Development can lead to **net gains in biodiversity**

On-site first, then **off-site** if needed

Avoid and Minimise
Find ways to avoid or reduce biodiversity impacts of development

e.g. **site selection** (consider impacts on surrounding landscape, habitats, hydrology, traffic, noise etc; select land with least intrinsic environmental value); and **site design**

Compensation for negative impacts – can lead to **NET GAINS IN BIODIVERSITY**

Improve ecosystems after exposure to negative impacts

3. Incorporating the environment into development

Why? **Multiple benefits**

What? **Features of good practice**

Multiple benefits of green infrastructure networks and biodiversity features in development

Environmental

Wildlife and biodiversity
Multiple habitats,
Wildlife corridors
Attract target species
Improve resilience

Natural flood mitigation and water management
There are 9,286 properties at risk of a 1 in 100 year flood *across Bucks Districts and MK* (2014 data).

Urban cooling:
Urban landscapes can amplify summer night time temperatures, which affects people's health.
In the heatwave of August 2003 there were 2,139 excess deaths in England and Wales.


Photo credit: Nicola Thomas

Economic *a more attractive setting for residents, businesses and visitors*

Commercial lettings and house prices – environmental setting and lifestyle quality increasingly a feature of marketing materials.

Workers feel happier employed in an area with more green space. (London Metropolitan University's study: impact of GI in Victoria - nearly 70% of workers felt 'happier' being employed in an area with more green spaces).

Attractive environment is attractive to visitors
There are 10.1m day visits to Bucks each year. £261m is spent.

Development is more environmentally-resilient: risk and cost reductions. Natural surfaces, more vegetation and water bodies keep development cool, dry and the air clean and reduce impacts of extreme weather events – e.g. drought, heavy rain and flooding.

Social *improved health and wellbeing*

Good access to green space could offer ***cost savings to the NHS of treating obesity of more than £2billion per year across England***

- Further savings - increased physical activity, reduced stress, social cohesion

Air quality: vegetation removes air pollutants.

- Adverse impact on public health. ***Air pollution kills 40,000 a year and costs the UK economy more than £20bn per year*** (just under 16% of the current annual NHS budget of around £116bn) .

- ***London's trees remove a tenth of the pollution*** *emitted by road transport in London and are* ***worth around £6.1 billion*** *to the capital*

Good practice: common features

There are many national and local strategies available on what good practice looks like: e.g. TCPA, Landscape Institute, District Council design guides, Biodiversity and Planning in Buckinghamshire guidelines. These put **emphasis on natural solutions rather than engineered; and features at all scales, including**:

At all scales: ***Natural solutions*** *rather than engineered* ***Net Gain*** ***Enhance green space and connections*** *- green and blue corridors*

Building / garden

Design features for biodiversity

Green roofs and walls – *biodiversity, cooling and water savings benefits*

Gardens / surroundings – *planting / habitats for wildlife*

Wildlife-friendly design *(e.g. bird, bat boxes)*

Designs for resource efficiency *water use reduction (e.g. rainwater harvesting).*

Energy *efficiency, renewables,*

Street

Street trees

Road verges

Sustainable Drainage systems

Walking and cycling *routes – connected within and beyond development*

Development

Natural landscape features *to guide layout* e.g. ***hedgerows and water courses*** *as wildlife corridors and design features;*

Incorporate green spaces *for recreation, communities, employees; and natural flood risk management;*
Long-term *management and monitoring*

Community food-production *e.g. community allotments, orchards; promote social cohesion*

Meet energy demand on-site *– efficiency, carbon-reduction reasons and to overcome grid reinforcement costs;*

Surrounding landscape

Networks of accessible green space

Extend and connect *green corridors and walking and cycling routes to existing facilities, networks and green space*

Buffer strips *to minimise development impacts on landscape and wildlife*

4. Environment and Development

Case Studies

Incorporating green infrastructure networks and biodiversity in built development,
to achieve
social, economic and environmental gains.

Pinewood Studios

- Lies in the Colne Valley Regional Park, and in one of the Bucks "Biodiversity Opportunity Areas"; also surrounded by species-rich habitats (aim to replicate on-site).
- Planning permission for the **Pinewood Studios Development Framework Development** included **planning conditions**
  - an **ecological management plan for 25 years;** and
  - an **ecological monitoring plan** for the site.


Photo credit © Pinewood Studios Limited.

Good practice – includes:

- **Net Gain in biodiversity demonstrated with metric**
- **Landscaping** – **connecting and enhancing**:
  - Species-diverse planting; structurally diverse landscape - Sustainable and bio-diverse landscape zones
  - Strong structural landscape framework – provides visual screening through buffer planting and bunding - Accessible site with recreation potential
  - Ecological corridors: on-site; and connected to surrounding fields and parkland
  - Existing mature landscape features, species and habitats conserved
- **Construction-phase management of activities –** to minimise ecological, wildlife and habitat disturbance, run-off and pollution. And **ongoing monitoring and maintenance** – beyond construction
- **Habitats – protect, enhance, and create new habitats:**
  e.g. hedgerows and tree planting, water bodies, green roofs and green walls…
- **Green roofs and walls:** mosaic of habitat types to increase biodiversity and attract target species (e.g.skylarks, bats); features for invertebrates; on-site water attenuation; visual screening
- **Features to encourage wildlife incorporated into new habitats**
  - e.g. reptile and invertebrate features (e.g. logpiles), reptile underpass; bat boxes, bird nest boxes, invertebrate houses on green roofs, mature trees and buildings.

Commercial impacts: *"The green space at Pinewood creates a positive and welcoming environment for our clients. The green roof has a number health benefits including improving air quality for our clients. The green roof also reduces noise which helps both our local residents and our clients. Environmental concerns are becoming increasingly important to our customers".*

Pinewood Studios Roof Gardens












Greening the BIDs (London)

- Public and private sectors working together.
- The ***Greening the BIDs partnership*** is led by Cross River Partnership (the public-private regeneration partnership) and supported by the GLA and Natural England.

"London has 14 of the top 15 areas nationally at risk of surface water flooding with around 1.4 million properties vulnerable to an extreme rainstorm. ***Maintaining and enhancing London's green cover is essential to ensuring environmental resilience****, as well as protecting wildlife biodiversity and providing attractive, liveable public spaces…".*

Good practice

- Local businesses wanted more places to relax and enjoy their working environment.
- Victoria Business Improvement District (BID) – the public-private partnership devised and commissioned a ground-breaking **Green Infrastructure (GI) audit** to understand and improve the existing natural environment resource in the area.
- The audit mapped green and grey spaces in Victoria and identified new opportunities for urban greening.
- The GI Audit approach **has inspired other BIDs to follow suit.**

Impact: benefits

- The Greening the BIDs partnership has since **delivered 19 Green Infrastructure Audits and 16 GI installations**, including rain gardens, green walls and green roofs, across central London. The Living Wall on the side of the ***Rubens Hotel in Victoria*** is one high profile example.
- **Environmental**: Delivery to date includes sustainable urban drainage systems, green roofs, pollinator projects and one of the largest green walls in Europe - designed with biodiversity in mind.
- **Social / Community**: Mitigate environmental risks e.g. surface water flooding; extreme temperatures
- **Business case:** value of green infrastructure for attracting customers (link GI benefits with their products, services or CSR); maximising spending (increased dwell time), staff motivation; building partnership with local authorities and community groups.

Kingsbrook (residential)

(RSPB working with Barratt Developments and AVDC)

2,450 dwellings (2-5 bedroom homes; 3 schools and various community facilities; surrounded by open green meadows, orchards and parks. Building wildlife provision into major development.

Good practice


Photo credit: Barratt David Wilson Homes

- **Over 60% of the site is set aside as open space for conservation and leisure** – the green infrastructure network includes green spaces, orchards, allotments, meadows, ponds, woodlands.
- Nature reserve (in addition) – 100 Ha wetland park with visitor centre
- Features to encourage wildlife throughout development
  - Approximately 1 in 3 homes will have a swift nest brick incorporated. These were designed specifically for the development, cheaper than alternatives so more can be installed.
  - Bat roost boxes throughout the development
  - Hedges, wildflower grassland, green spaces: ponds, parks, meadow, orchards, nature reserve; also sand banks, loggery, dragon fly perches, wildlife tunnels.
  - Approximately 50% of the homes will have a fruit tree planted in the garden
  - Hedgehog-friendly fencing throughout (gaps under fences and walls).
  - Sustainable Urban Drainage – permeable surfaces, ponds, etc. to slow the flow and use nature to clean the water.
  - RSPB welcome pack to each new resident to encourage nature-friendly gardening and other features on the site
  - Show home gardens showcase nature-friendly planting in association with RSPB design input.
- Marketing info highlights focus on conservation. Monitoring benefits: biodiversity, social.

Impact

- **Units are selling well with customers reporting biodiversity and the environment as decision making factors. Wildlife focus to the development and RSPB involvement has been acknowledged as a contributing factor to the sales experience**.

North West Bicester Eco-Town proposal

- Proposed eco-town for 6,000 zero-carbon homes (c. 30% affordable), infrastructure, schools and leisure
- The vision for North West Bicester has been guided to a large extent by the Eco-towns Planning Policy Statement (PPS). The PPS Supplement sets out objectives for providing **large-scale residential development while responding to the impact of climate change**; and **sets standards for delivery** of zero carbon development, homes, transport, jobs, local services and other components of an eco-town.
- **Aim: attractive place to live; with flexibility for residents to work from home; provision of local services and facilities to reduce travel and support homeworkers**


Photo credit A2Dominion

Good practice

- **Biodiversity net gain** through development –**metric to demonstrate this**
- **40% green space** – half public open space (the 40% excludes green roofs).
- **Existing landscape and wildlife features and corridors retained and give layout of proposed development structure** – e.g. hedgerows define the site layout – natural corridors for wildlife and residents (for walking and cycling network); buffers; stream corridors, woodland copses. Green "fingers" integrating infrastructure into the development.
- **Development requirements and principles include:**
  - **Zero carbon -** aim is net zero CO2 emissions from energy use in all buildings on site: houses, commercial, public sector.
  - **Climate change adaptation –** urban cooling effect and avoid worst case overheating: e.g. green spaces, green streets, east-west layouts; sustainable construction to maximise passive energy gain (and reduce need for electric cooling); **energy efficient buildings; renewables encouraged** - PV, wind and grey water use; district heating network (gas and biomass CHP). **Sustainable Urban Drainage Systems** (SUDS) designed to respond to future extreme weather events.
  - **Homeworking** – to provide employment opportunities on-site; reduce the need to travel; provide superfast broadband and design homes with homeworkers in mind.
  - **Sustainable travel:** attractive design and routes to reduce car dependency; cycling and walking to become first choice
  - **Healthy lifestyles** – Proposals to provide facilities to contribute to the wellbeing, enjoyment and physical and mental health and wellbeing of people – e.g. promote active travel, green spaces for sport, recreation and local food production. Community allotments and play areas can: encourage healthy lifestyles; reduce obesity and stress; encourage interaction with the environment to build confidence and skills; provide a means for social inclusion; and lead to food cost savings.
  - **Green space and green infrastructure** – **existing green infrastructure influences design of development.** Range of types of green space provides **attractive** place to live; **opportunities** for sports, play and recreation; green **wildlife** corridors, range of types of green space – including land for food production.

Impact

- Marketing material – Phase I brochure highlights green space for quality of life; and zero-carbon houses (see Elmsbrook brochure). Exemplar site is under way. Some of the site is going through planning.

Other examples include…

- **Oxford Science Park** – incorporated brook in development; space for nature, cycle paths, screened car parks
- **Cambourne** near Cambridge – home to 7,000 residents; two-thirds of the site proposed to be open space.
  - **Green Infrastructure planned, designed and managed from the very start** – landscaping consultants and ecologists in the design team and the development and protection of the natural environment built in. Includes a Country Park.
  - **Existing landscape and wildlife features on the site preserved and enhanced.** Open spaces designed to provide a range of different functions in order to make best use of land, including ecological enhancement, engineering requirements, waste disposal, education, screening, shelter, and recreation.
  - **Masterplan ethos sought to integrate the settlement into surrounding countryside**, provide an attractive rural landscape, conserve existing landscape features and reflect social inclusion.

Resulted in:

  - **A network of green spaces** within Cambourne with a **vast range of habitats**
  - **Greenways, footpaths, cycleways and bridleways designed to encourage walking and cycling**
  - Linkages and networks on-site and off-site encourage healthy lifestyles, and allow development to enhance biodiversity and wildlife corridors.
  - **Environmentally-sustainable approach to flood management and water conservation.**

    Existing ponds, watercourses and ditches on the site were retained. New open ditches, swales, ponds and lakes have been created to link the water system together. This involved significant engineering operations that were carried out with the management of water and the Green Infrastructure as the main aim. But, in addition, this has **avoided the need to move 1.5 million cubic metres of soil and demolition waste off the site, accommodating it within the new landforms.** The result has been that the system is able to take all of Cambourne's (4000 hectares) surface water and flood discharge, holding it back in open lakes after periods of heavy rainfall and letting it leave in a controlled way to the surrounding area. **This flood control system creates over 6ha of new lakes and wetlands**. They have created a variety of ecological and community recreational opportunities.
  - Allotments - provide green space, community facility and reduce food costs
  - **A significant number of people living in Cambourne work there too**. (e.g. adjacent Business Park) – reduces travel impacts
  - 45ha of new woodlands and 12 miles of new hedgerows that contain over 250,000 trees and shrubs: these provide wildlife habitats, screening, shelter and recreation opportunities.

Proposals *with potential* to follow good practice include:

- Aylesbury Garden Town and surrounding developments
- Aylesbury Woodlands
- High Wycombe Town Centre – proposal to open up the River Wye (de-culverting)

Developers are actively responding…

For example…

Berkeley Homes

Corporate Commitments for 2016-2018 includes:

"*Develop and apply an approach to ensure that*
all new developments
create a biodiversity net gain"

Plus

Committed to using a ***biodiversity accounting metric*** *to demonstrate this*

6. Useful links

- **National-level strategies and design guides include:**
  - TCPA and Wildlife Trust - Green Infrastructure Guide
  - Landscape Institute Position Statement: Green Infrastructure: an integrated approach to land use

- **Local-scale strategies and design guides include:**
  - Bucks and MK NEP 2016: Vision and Principles for the Improvement of Green Infrastructure in Buckinghamshire and Milton Keynes
  - Biodiversity and Planning in Buckinghamshire (2014)
  - Design guides – e.g. Islington Council has guides on:
    - Green roofs and walls
    - Biodiversity in the built environment
    - Climate change adaptation
    - Low energy cooling

- **Making the business case, good practice and advice guide**
  - **Greening the BIDS - Video, case studies and benefits: Cross River Partnership**
    To showcase the installations delivered by our partners, celebrate successful public/private collaboration, articulate the multi-functional benefits of GI, inspire a wider audience and attract future funders, CRP has worked with its partners to produce a short inspirational video:
    Green Capital – green infrastructure for a future city. This is accompanied by a **User-friendly brochure** of successful green infrastructure installation case studies, along with information and advice about the benefits and a delivering GI 'how to' guide.