

# Outline Application

## NW Bicester Planning Application 1

Land to the North of the Railway Line and A4095 Lords Lane and West of B4100 Banbury Road, surrounding Lords Farm and Hawkwell Farm, Bicester, Oxfordshire

### Green Infrastructure and Landscape Strategy

August 2014





## Contents

- |                               |                              |
|-------------------------------|------------------------------|
| 1. Introduction               | Retained Hedgerows           |
| 2. Landscape Strategy         | River corridor               |
| 3. Biodiversity               | Woodland                     |
| 4. Key Green Spaces           | 6. Sport and Play            |
| Green Loops Linear Park       | 7. Food Production           |
| Country Park                  | 8. Climate Change Resilience |
| Village Green                 |                              |
| The Triangle                  |                              |
| 5. Key Interfaces and Buffers |                              |
| Agricultural edge             |                              |

# 1. Introduction

*'The rich, agrarian landscape of Bicester has remained one of its key assets for hundreds of years, as it evolved through man's interactions from its ancient origins. Through history it has significantly changed. NW Bicester presents an opportunity for the next stage in Bicester's landscape evolution. Aptly, this development is being planned at a time where the value of landscape is gaining national recognition through what is now called Green Infrastructure (GI).'*

*NW Bicester Masterplan Green Infrastructure and Landscape Strategy*

This document sets out the strategy for provision of Green Infrastructure within Application 1. Application 1 sits within the context of the wider NW Bicester Masterplan.

This document is supplementary to the Application 1 Design and Access Statement and should be read in conjunction with the NW Bicester Masterplan - 'Green Infrastructure and Landscape Strategy' and the 'NW Bicester Biodiversity Strategy'.

## Green Infrastructure

Application 1 includes provision of 68.01 hectares of green infrastructure (excluding schools)(circa 46% of the total site area).

Within Application 1, this pioneering community will not only provide up to 2,600 future proof homes, it will also create outstanding green spaces, sports and leisure facilities. The green infrastructure includes a Country Park, Wetland Waste Water Treatment Facility, Village Green, Green Loops Linear Park (including riparian corridor), area for a Burial Ground, Sustainable Drainage features including swales and attenuation ponds, allotments, a community farm, street trees, informal recreational sports fields and play areas.

The green infrastructure will perform many functions both within NW Bicester and in integrating NW Bicester with the existing landscape and settlement. We believe there is no other scheme that incorporates such green infrastructure and energy-efficient design whilst protecting and enhancing the existing landscape.

The green infrastructure will be vital in underpinning NW Bicester's distinctive identity and providing a sense of place. It will play a key role in making NW Bicester an attractive, enjoyable and healthy place to live.

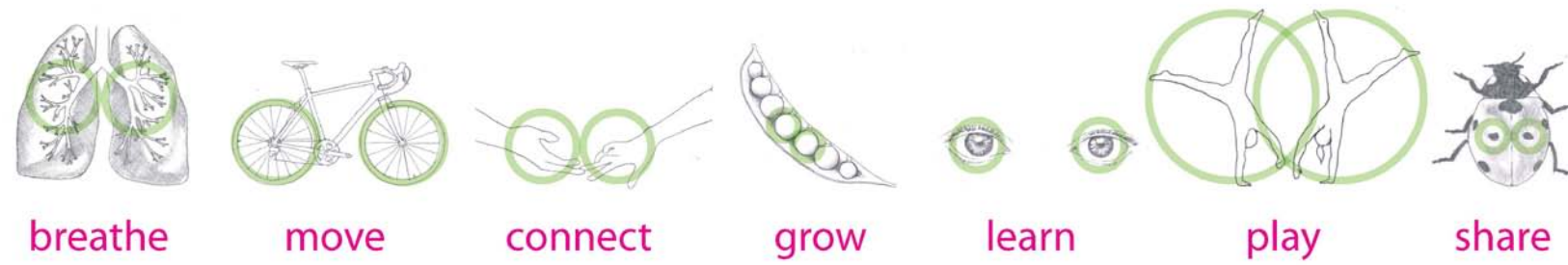
The exceptional green infrastructure will encourage healthier lifestyles with all the facilities needed to create and sustain a vibrant community life.

## Green Infrastructure Concept & Landscape Vision

Key to the green infrastructure within Application 1 and the wider masterplan vision are the green loops; structured by the site's existing landscape and ecological features, focused on the need for a cohesive, unifying landscape element and access to green space for all, they provide a unique identity and feature for the development.

The loops and connecting GI will provide residents with Space to Live their life – a varied landscape resource on their doorstep that offers wellbeing for people and wildlife alike, a place to: 'Breathe, Move, Connect, Grow, Learn, Play, Share'.

Space to ...



breathe move connect grow learn play share

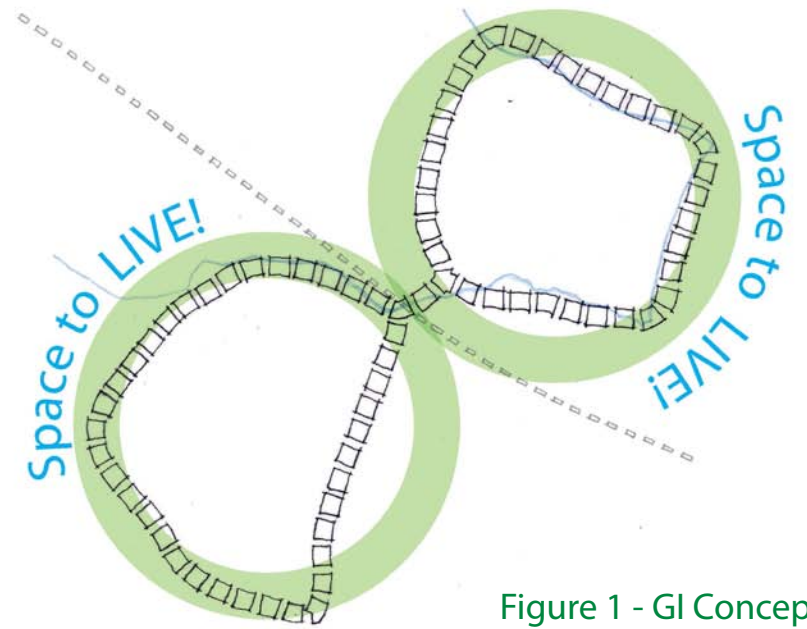


Figure 1 - GI Concept

- Breathe** fresh air, open space, take a breather, exercise
- Move** walk or cycle, run, hop or skip
- Connect** meeting places, community contact, socialising, spending time together
- Grow** allotments, take part or observe
- Learn** learn about nature, food growing, natural processes
- Play** natural playground, use your imagination
- Share** share your space with wildlife

*'The exceptional green infrastructure will encourage healthier lifestyles with all the facilities needed to create and sustain a vibrant community life'.*

*Key destinations for new and existing Bicester residents to enjoy will be the tranquil Bure Stream and the picturesque Rural Edge, each adhering to the masterplan's aim to fully integrate urban and rural needs*

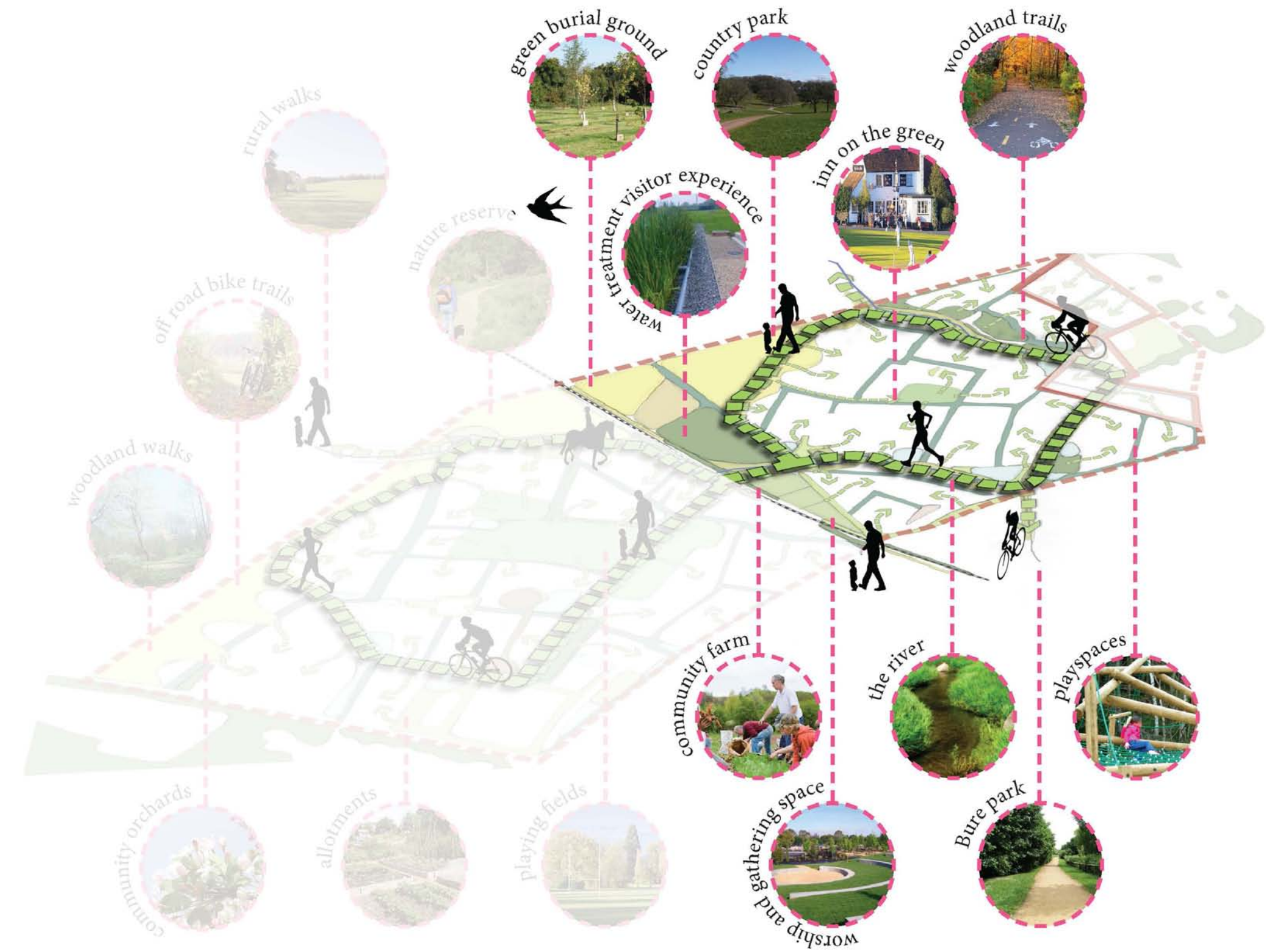


Figure 2 - Where shall we go today?

*We've included all sorts of ways to make residents feel part of something great. There are so many safe places for everyone to enjoy the outdoors- nature trails, sport,leisure and play facilities, attractive walks to the shops and schools, and characterful places to meet*

**PPS1:**

Planning Policy Statement: Eco-Towns A Supplement to Planning Policy Statement 1 (July 2009) ET14 Green Infrastructure, requirements in relation to GI are as follows:

*'ET 14.1 Forty per cent of the eco-town's total area should be allocated to green space, of which at least half should be public and consist of a network of well managed, high quality green/open spaces which are linked to the wider countryside. Planning applications should demonstrate a range of types of green space, for example community forests, wetland areas and public parks. The space should be multifunctional, e.g. accessible for play and recreation, walking or cycling safely, and support wildlife, urban cooling and flood management. ET 14.2 Particular attention should be given to land to allow the local production of food from community, allotment and/or commercial gardens.'*

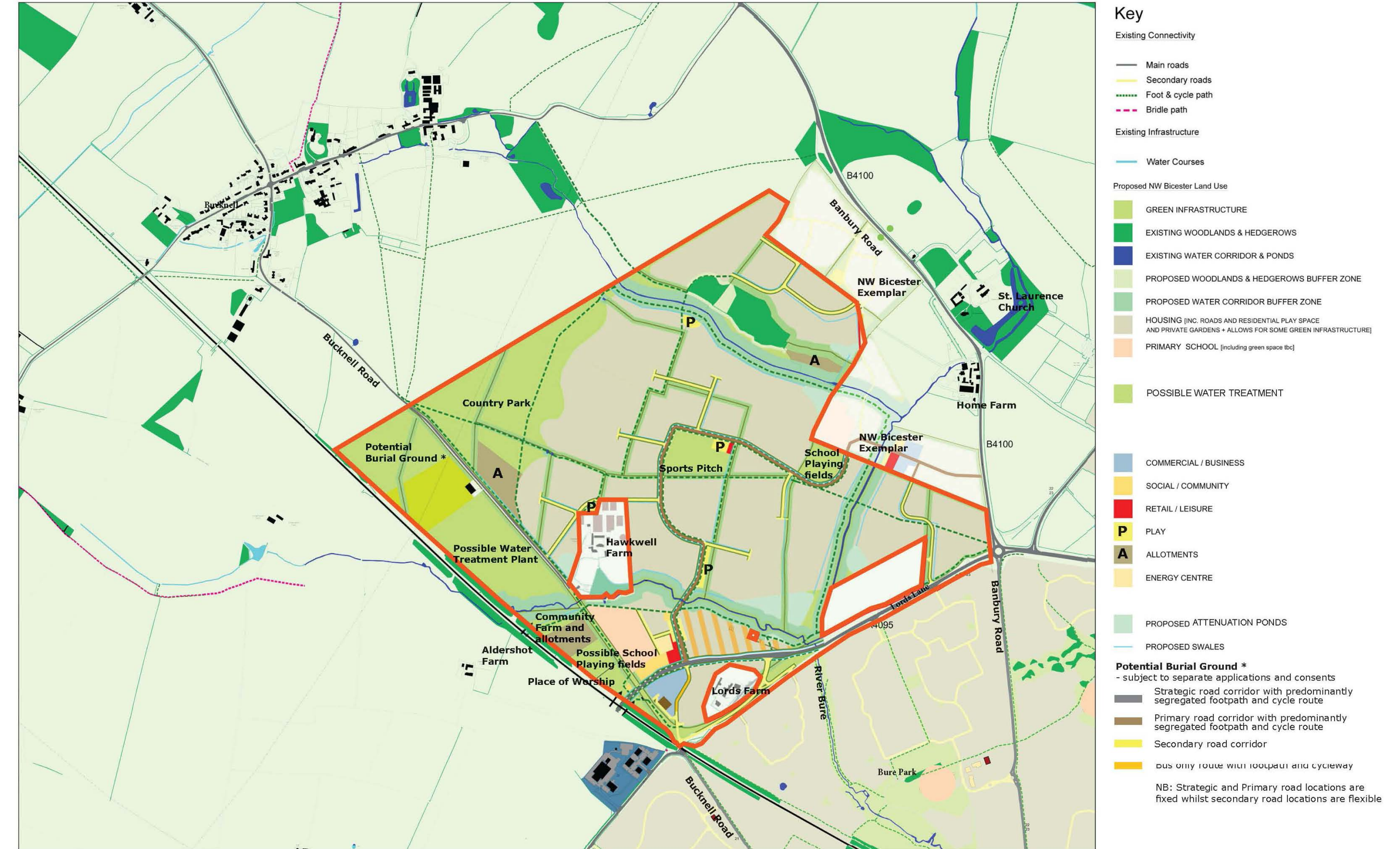
Application 1 exceeds requirements of ET14.1 with provision of 68.01 hectares of green infrastructure (excluding schools) (circa 46% of the total site area).

The green infrastructure incorporates a range of provision including a Country Park, Wetland Waste Water Treatment Facility, Village Green, Green Loops Linear Park (including riparian corridor), area for a Burial Ground, Sustainable Drainage features including swales and attenuation ponds, allotments, a community farm, street trees, informal recreational sports fields, play areas and retained woodland and hedgerows.

The green infrastructure is connected via an extensive network of walking and cycling routes, developed in coordination with the Access and Movement Strategy. A range of climate change adaptation measures are supported in line with *Design for Future Climate - Adapting Buildings Programme* by the Technology Strategy Board (TSB) 2013 (see section 8). These include the use of SuDS and flood management through measures including the creation of a 60m buffer to the riparian corridor, street trees, shading with vegetation and the provision of space for food production. SuDS's and flood water management measures are integrated with the green infrastructure providing amenity value and valuable assets to enhancing on site Biodiversity. Wildlife is supported with the protection and enhancement of existing habitat and through the introduction of new semi-natural habitat. Buffer zones are applied to retained features (hedgerows, riparian corridor, woodland & ponds) to protect and enhance habitat and contribute to a net gain in biodiversity. New habitat is created within the green infrastructure including within the Burial Ground, Community Farm, Country Park, and play areas. More information can be found on biodiversity in Chapter 3 of this report and in the Biodiversity Strategy.

The requirements of ET14.2 are met through the provision of allotments, orchards and a community Farm. More information can be found on these items under section 7 'Food Production' and section 4 'Key Green Spaces'.

*Our guiding principle is to make it easy, attractive and affordable for people of all ages to live healthy, sustainable lifestyles without compromising the needs of future generations.*



**APPLICATION 1 NORTH OF LORDS LANE - APPLICATION FRAMEWORK PLAN**  
 BIMP6 116D NW BICESTER APPLICATION - PARAMETER PLAN

Figure 3 - Framework plan

## 2. Landscape Strategy

The landscape setting to NW Bicester has the potential to be its equity. The underpinning principles of the landscape and green infrastructure strategy are focused around releasing this equity to the benefit of Eco Bicester's existing and future residents, its visitors and the wider community.

The green infrastructure is founded on the retention and enhancement of the most prominent existing site assets – the topography, hedgerows and river Bure and tributary. The landscape strategy for the masterplan develops the concept and formative design principles to direct the spatial masterplan layout. These include the key principle of Green Loops Linear Park which are set out below. The presence of the Green Loops Linear Park within Application 1 is of key importance both to the wider masterplan and as a stand alone element, that functions as a single loop within the Application 1 site and adjoining Exemplar scheme.

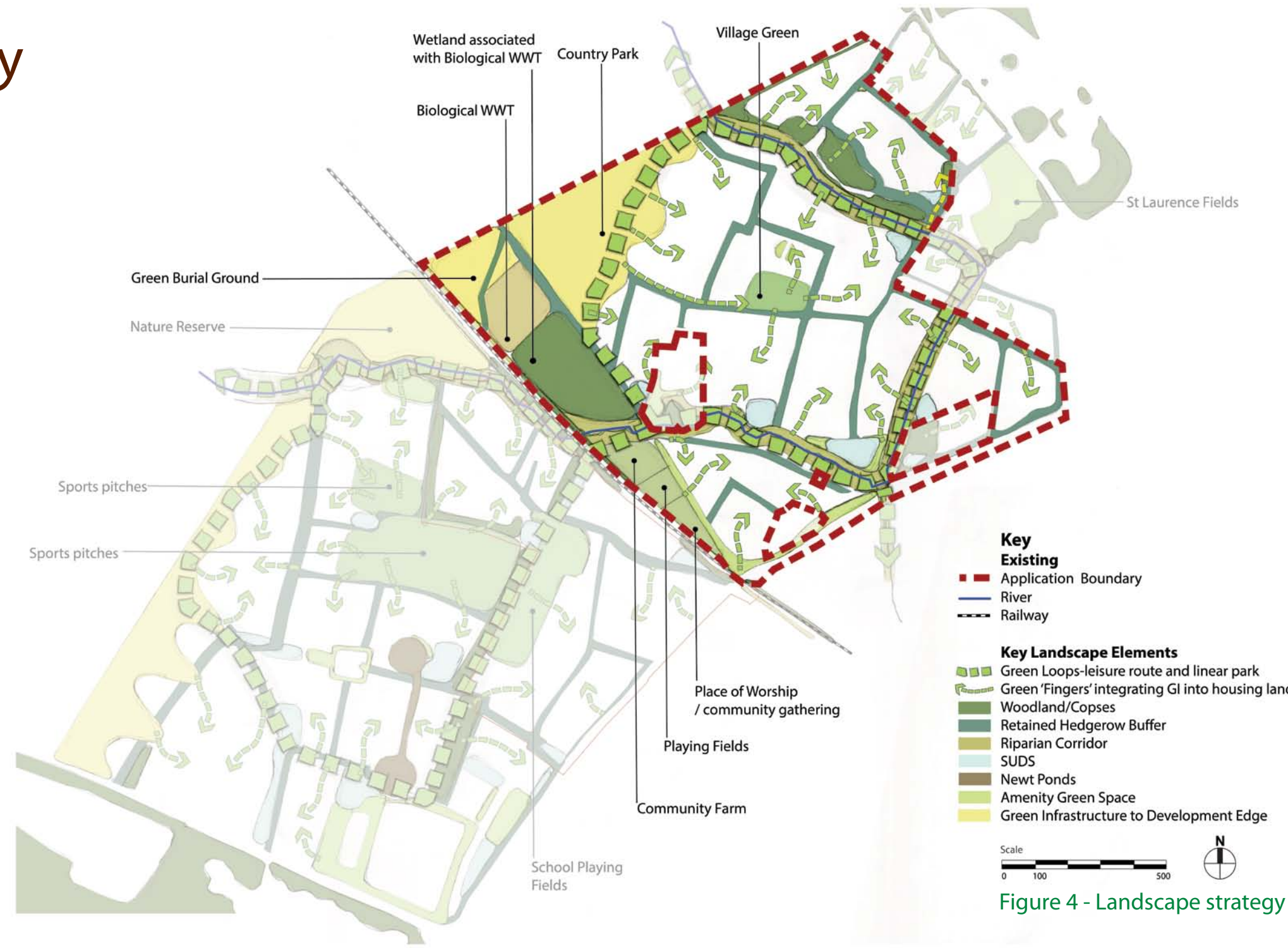


Figure 4 - Landscape strategy

### Green Loops:

Integrate north and south sites of masterplan site (divided by railway line)

Integrate the various areas within the masterplan (housing to open space, housing to Public Rights of Way, housing to schools/retail/employment...)

- Integrate NW Bicester with existing settlement
- Protect existing site assets (river, dark corridor, etc) and provide access to them/amenity value
- Create a distinctive landscape feature

- Are accessible from all areas of the site
  - Have a 'presence', key factor to providing distinctive 'place'
  - Contribute to health & wellbeing
  - Incorporate a linear park which will connect and open into wider open spaces
- Supporting principles to the landscape strategy include those endorsed by Bio-regional's landscape-led place making principles:
1. Work with and extend existing landscape features and elements
  2. Provide a diversity of pedestrian and cycle routes appropriate to function and use within the hierarchy or movement network
  3. Create durable and interactive landscape features
  4. Co-locate non-residential uses with appropriate open spaces
  5. Use landscape and open space to form the setting for residential uses
  6. Use the different landscape settings to enhance activity and play
  7. Ensure continuity and quality of pedestrian and cycle routes across and beyond the eco-town
  8. Create a clear durable green infrastructure and landscape structure within which there is value to people and wildlife

9. Wider open spaces to have specific functions – e.g. formal sport, recreation, formal and natural play, food production, water treatment, edge zones and buffers etc

10. Maximise landscape productivity and edible / foraging environments for people and wildlife

These inform and are incorporated into the Green Infrastructure typologies, assets and functions to provide a richly complex and diverse landscape environment as an accessible resource.

The green infrastructure will also meet the requirements for Cherwell District Council's open space provision (see also Farrell's Masterplan 'Vision' document and Application 1 'Design and Access Statement').

## 3. Biodiversity

The proposals seek to retain the most valuable habitats and features with appropriate buffer zones, and create ecologically valuable areas of green space. The green spaces across the site would be linked to create a network of green infrastructure. The habitats of value to nature conservation that would be retained with a buffer zone of semi-natural habitat comprise:

Hedgerows.

The watercourse (River Bure and its tributaries).

Semi-natural broad-leaved woodland (also known as lowland mixed deciduous woodland).

The bat commuting route would be retained as a dark corridor, i.e. a corridor that would not be illuminated by artificial light. This route predominantly follows the stream corridors and links west across the railway (see Figure 5). The watercourses would be retained within a 60 metre-wide corridor (30m either side), the hedgerows within a minimum of a 40 metre-wide corridor (20m either side), the woodlands with 10 metre buffers, the ponds within a 10 metre-wide buffer. The buffers and corridors would be planted, as appropriate, to support habitats that would be complementary to the retained habitats and enhance the value of these habitats for nature conservation. More information on buffers can be seen in section 5.

It is proposed to create significant areas of habitat of value to biodiversity across the site, in particular:

A Country Park.

Sustainable drainage features.

A wetland waste water treatment facility.

Other large areas of green space that would provide habitats for biodiversity on the site include:

Parkland for green burial.

Green (Sedum) roofs for water treatment.

The 'Green Loops' Linear Park

Habitats of Principal Importance under the Natural Environment and Rural Communities Act (2006) that would be created in these areas include: mixed broadleaved woodland, lowland meadows, ponds, reed beds and wet woodland. Other

habitats that would be created include species-rich scrub, wildflower-rich grassland, short grassland, damp/marshy grassland and ditches.

It is anticipated that habitats and features of value to biodiversity would also be created within other areas of open space. This would include the allotments, play areas, community farm and the school grounds.

Although the outline application does not provide the detailed design for the areas of development, it is anticipated that green areas of value to biodiversity would also be created within these areas. These would include:

the use of artificial nest and roost boxes, and/or the incorporation of suitable equivalent features into the fabric of the buildings;

the use of brown/blue roofs;

street trees;

fruit trees within gardens;

green walls;

planting that has a structure that provides shelter for fauna (comprising a mixture of native and ornamental species);

linked gardens which would provide significant areas of green space; and

the incorporation of native planting within areas of open space.

The development would lead to the loss of land of value to farmland birds; monies would be provided to a conservation grant giving organisation (such as the Trust for Oxfordshire's Environment) to provide grants to enhance the value of farmland off site for farmland birds, to mitigate for this impact. There are tried and tested techniques, such as those provided for by the Government's Stewardship schemes, which would enhance the value of existing intensively managed farmland for birds. A Section 106 agreement or similar legal agreement would be provided to ensure that the monies are provided. The grant giving body would ensure that the enhancement works are carried out. This off site enhancement would ensure that the proposal has no residual impact on farmland birds.

The Defra metric developed for measuring Biodiversity Offsetting has been used to demonstrate that the Green Infrastructure provided in the Masterplan within which Application 1 sits, would deliver a net gain in biodiversity. The retained and newly created habitats would be managed by a funded Land Management Organisation in accordance with a Landscape and Habitats Management Plan.

For more information on Biodiversity see:

Biodiversity Strategy - Appendix 6J

Supporting Document - NW Bicester Masterplan, Green Infrastructure and Landscape Strategy

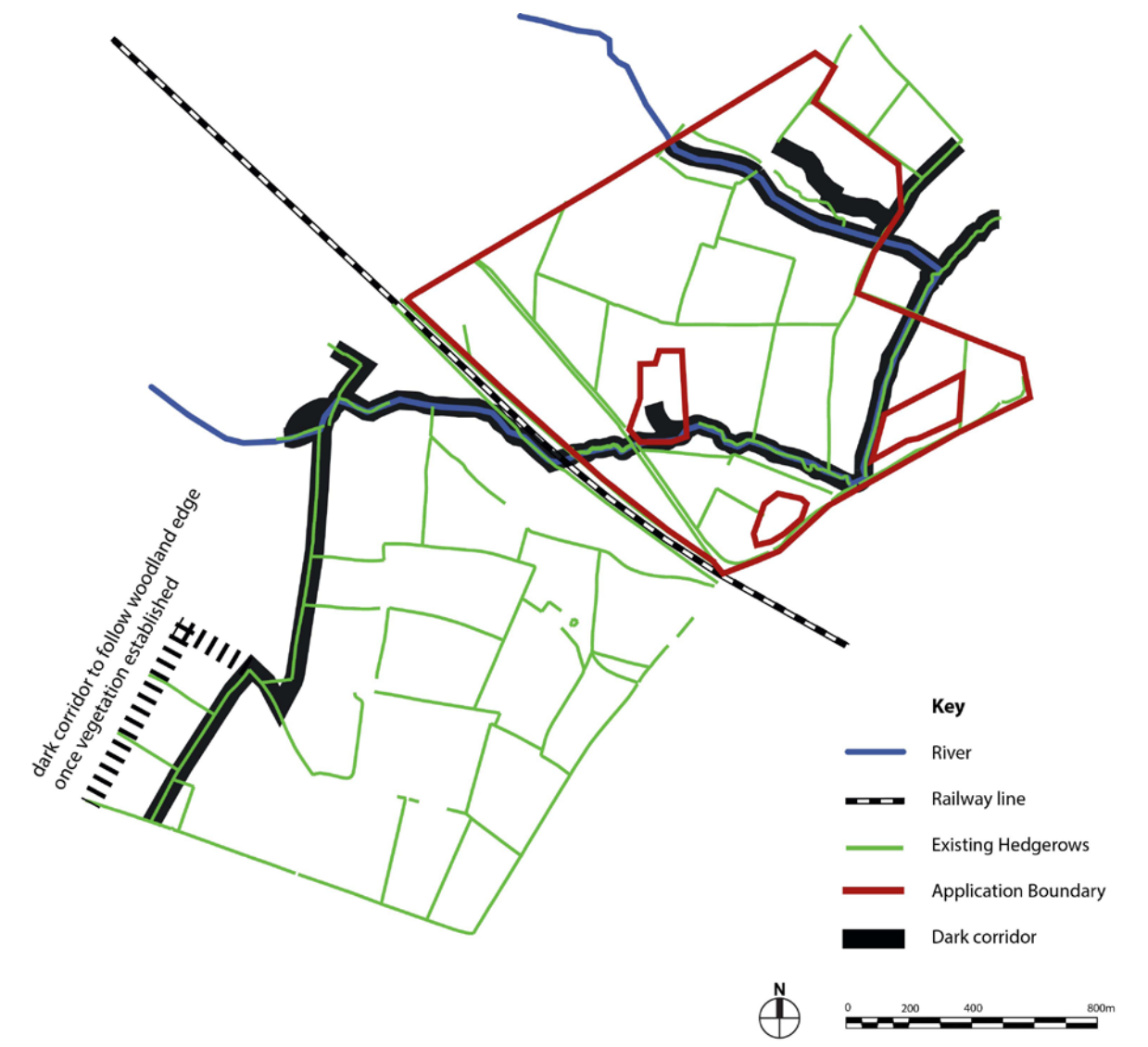
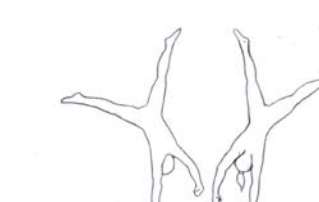


Figure 5 - Dark corridors

# 4. Key Green Spaces

Key green/open spaces are described in this section.



## Green Loops Linear Park

### Key design principles

A linear route that feels safe, relaxing and green, the linear park to form a cohesive element to the scheme, easily accessed by all residents. It can be experienced uniquely or used to access a variety of other destinations.

The route to open out into wider breathing spaces - resting places, picnic spots and natural play space. It connects to public open spaces such as the country park and sports pitches, to allotments and to the rural landscape and existing settlement. In part it follows the river corridors.

As a leisure route design speeds to be low and the route largely unlit.

Landscape character, public art and wayfinding to be used to provide legibility and interest.

### Landscape Character

The Green Loops Linear Park to traverse the site encompassing all of the identified existing landscape character areas and many of those proposed. The linear park has its own strong character the underpinning principles of which to be constant. However it will also adapt and change to correspond to the existing and proposed character areas of the site, providing legibility and interest.

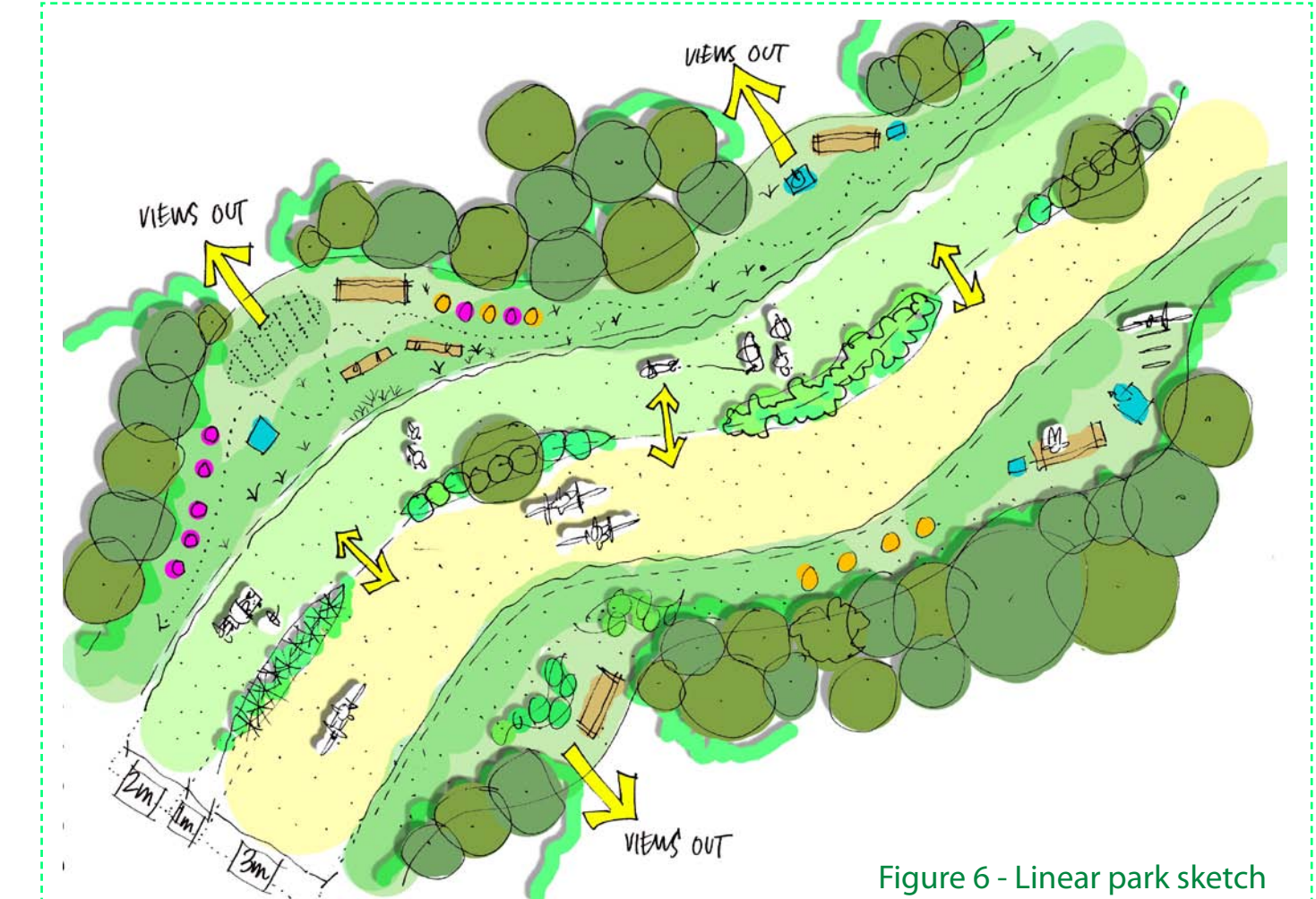


Figure 6 - Linear park sketch



### Habitat/biodiversity benefits

Create areas of long-grass habitat that provide shelter and habitats for invertebrates. Areas of dense scrub habitat comprising native species that produce flowers, fruit and nuts to support nesting and foraging birds; also providing shelter for wildlife such as invertebrates. Semi-natural habitats using surface water run off: to include swales, water features, rain gardens.

### GI functions/benefits

Movement, health & wellbeing, active and passive recreation, biodiversity, community cohesion



# Country Park

## Key design principles

A varied landscape to provide a country estate feel with sweeping views, large specimen tree planting, woodland and open grassland. To contain trails for walking, running and cycling. Strategically placed planting to facilitate views out over the agricultural landscape whilst limiting views in. Strong connections to be made into the housing area and active 'edge zone' with the use of green 'fingers'.

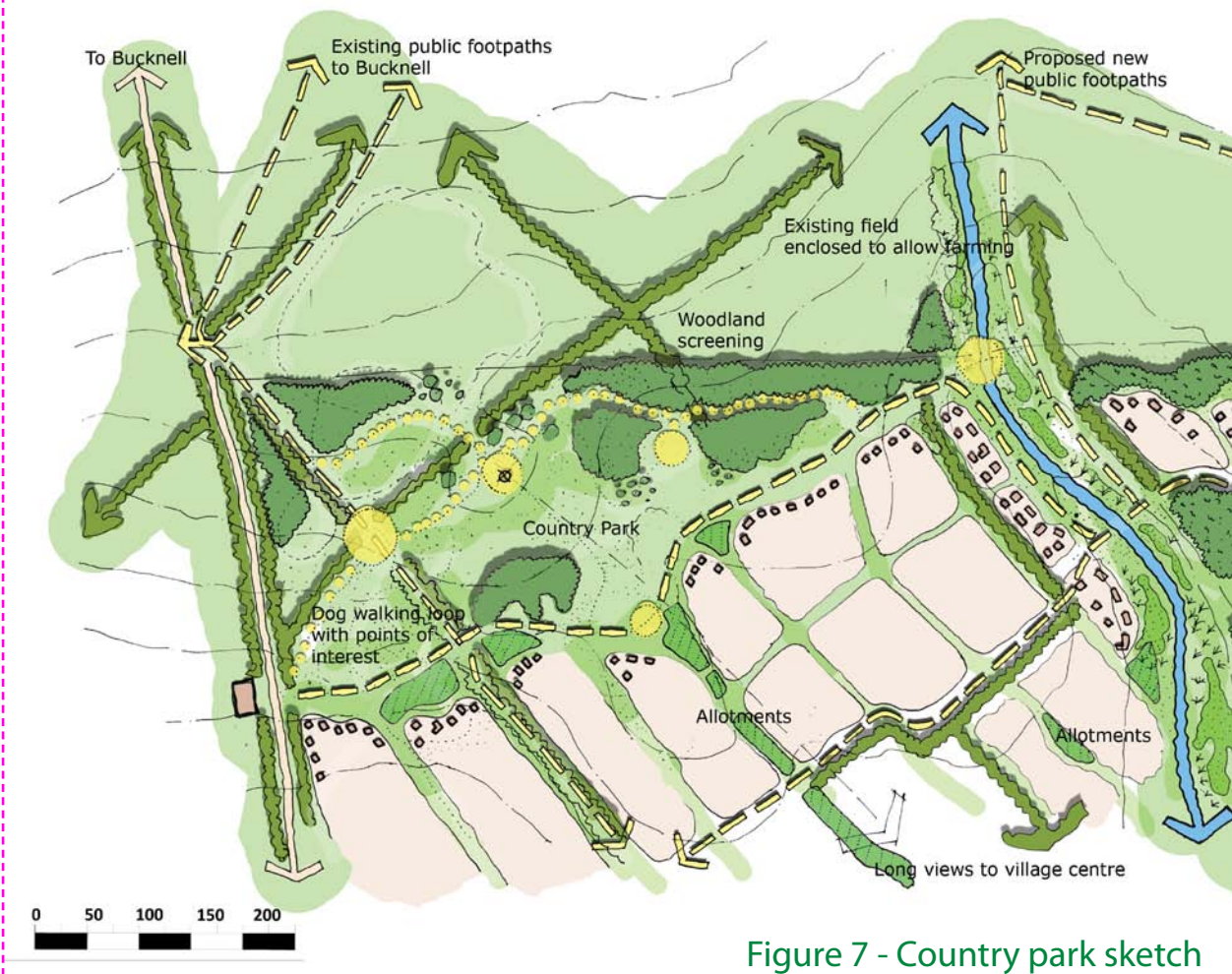
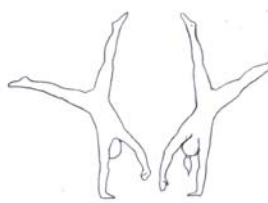


Figure 7 - Country park sketch

## Landscape Character

Existing levels and hedgerows to be retained. Hedgerows and trees to frame open views to the rural and urban landscape. A gradual transition to be created from the agricultural edge to an urban edge with its greater intensity of activity.



## Habitat/biodiversity benefits

Potential to create lowland mixed deciduous woodland, lowland meadow, ponds, short grassland, native species-rich scrub and wildflower-rich grassland. Beneficial to a diverse range of fauna.

## GI functions/benefits

Environmental awareness, enjoyment of nature, education, health and wellbeing, water management, biodiversity, active and passive recreation, amenity, microclimate resilience, landscape character, climate change resilience



# Village Green

## Key design principles

Create an open, permeable space that feels inviting, with containment provided by surrounding trees, built form, hedgerows and transport infrastructure. Use trees to frame the space and provide shade and shelter whilst allowing pedestrian permeability. Swales to open out into ponds and be crossed by hard and soft bridges. The space to be adaptable to a variety of uses - impromptu and organised sport, community events, picnics, relaxation and play. Public art provides identity and interest. The public house to enjoy views over the green and a garden terrace for sunny days.

## Landscape Character

The Village Green to utilise existing hedgerows and trees to create enclosure. These features and associated habitat planting creates a soft backdrop to the space with surrounding housing, mown grass and more formal landscape elements to the north and west creating an urban, ordered look and feel as is appropriate in this central location.

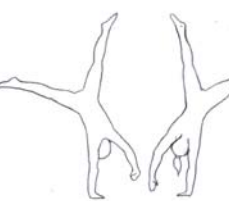


Figure 8 - Village green sketch

## Habitat/biodiversity benefits

Create areas of long-grass habitat that provide shelter and habitats for invertebrates. Create semi-natural habitats using surface water run off

## GI functions/benefits

Amenity, urban heat island (UHI) mitigation, street trees, water management, local distinctiveness, community cohesion, cultural identity, passive and active recreation



## The Triangle (see figure 9 for illustrative layout)

### Key design principles

A green wedge linking existing settlement to the wider countryside, The Triangle, hosts a variety of uses providing functional, amenity, educational, orientational and spiritual value: Green Burial, Wastewater Treatment Works (WwTW) and wetland habitat, community farm, sports, open air worship and land art. Strong connections to be made into the housing area, adjacent school, community centre and adjacent foot and cycleway. The Triangle also provides a window into the NW Bicester development site from the elevated railway line, showcasing its productive landscape.

**Green Burial Ground** - Quiet, contemplative space. Planting within the grounds and at the agricultural edge assists in screening the development.

**WwTW** - Functional space with treatment infrastructure in the north progressively moving to formal reed beds, informal reed beds and naturalistic wetland habitat in the south. To include pedestrian access for organised educational visits. (The inclusion of wastewater treatment works on site is an option pending ongoing technical and viability work. Should the WwTW in this location not come forward, the area would still be utilised for habitat creation. Alternative methods of creating wetland habitat would be considered such as the use of groundwater (solar PV pump)).

**Community Farm** - Welcoming, functional space provides community congregation, education and amenity value. Structures, open fields and polytunnels provide accessible, multi use space predominantly in agricultural use.

**School playing field** - school sports pitch with protection to railway. Mown grass with strategically placed habitat planting to screen whilst maintaining natural surveillance.

**Open air worship** - Quiet, open space with planting to define edge and reduce noise and formal planting within the grounds to add delight. Religiously neutral space.

**Land Art** - Striking public/land art visible from the railway and surrounding landscape. To provide identity legibility and delight.

### Landscape Character

Existing levels retained through the majority of the triangle with exceptions where necessary to implement structures and water retention (STW/wetland). Existing hedgerows to be retained. The triangle comprises a predominantly soft, vegetated landscape which unifies the various characters of the individual uses.



Burial Ground precedent images



WwTW precedent images



Community Farm precedent images



School playing field precedent images



Open air worship precedent images



Land/public art precedent images

### Habitat/biodiversity benefits

#### Burial ground

Create an area of parkland of benefit to invertebrates, reptiles, birds and bats.

#### WwTW

Create a diverse range of wetland habitats, to include: reed beds; standing water; running water; ditches; ponds; deep water; shallow water; wet woodland; damp woodland; islands; stands of emergent vegetation; marshy grassland; damp grassland; areas of tall herbs.

Such a diversity of habitats would support a range of invertebrates, be beneficial to birds, bats, badgers, reptiles and amphibians. Location for the swift tower and another structure (folly or building that has another use) suitable for use by roosting bats potentially to include features that would be used by hibernating bats. Create hibernaculum for amphibians and reptiles.

#### Community farm

Potential location for an area to grow soft fruit, an orchard; bee habitats, a pond or larger wetland habitat. Potential to create an area that supports productive areas of benefit to wildlife. For example open compost heaps that support reptiles, bee gardens that produce honey, wetland habitats that provide a cooling environment that also support wetland species (plants, invertebrates, birds and amphibians) and fallow areas that contain seeds suitable for farmland birds.

Create areas of long-grass habitat that provide shelter and habitats for invertebrates. Create areas of dense scrub habitat comprising native species that produces flowers, fruit and nuts suitable to support nesting and foraging birds; that also provide shelter for other wildlife such as invertebrates. Where possible create semi-natural habitats using surface water run off: to include swales, water features; rain gardens.

#### School playing field

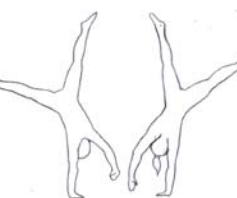
Create areas of short grass suitable for foraging birds (such as starling). Create habitats of value to other wildlife where appropriate on the edge of these areas (long grass, dense scrub, tree planting). Maintain buffers of semi-natural vegetation alongside green corridors

Open air worship - see 'Community Farm' paragraph 2, above

Land art - see 'Community Farm' paragraph 2, above

### GI functions/benefits

Environmental awareness, enjoyment of nature, education, health and wellbeing, water management, biodiversity, active and passive recreation, amenity, microclimate resilience, landscape character, climate change resilience, delight





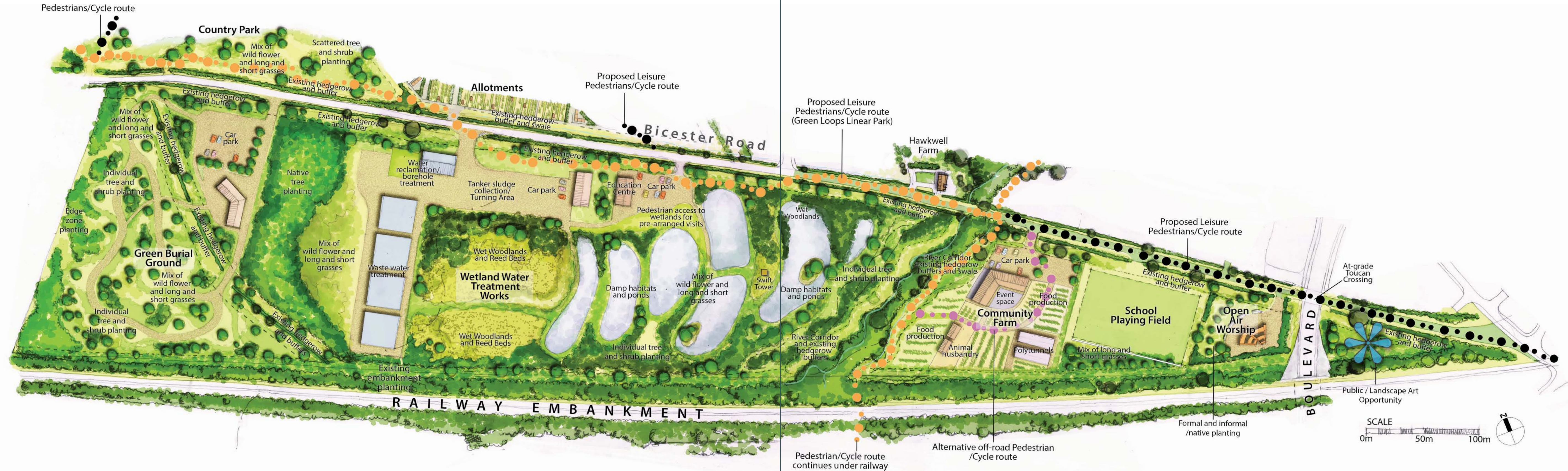


Figure 9- The Triangle sketch plan