

# GREEN INFRASTRUCTURE STRATEGY

**KETTERING ENERGY PARK**  
**BURTON WOLD, NORTHAMPTONSHIRE**

**FIRST RENEWABLE**

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# 1.0 INTRODUCTION

Barry Chinn Associates were commissioned by First Renewable to prepare a Green Infrastructure Strategy for a proposed Energy Park in Burton Wold, Kettering, Northamptonshire.

The document has been designed as an easily accessible toolkit, describing the key drivers, core principles and design strategies underpinning the future landscape proposals. It is intended to provide a simple design guide to feed into the masterplanning process and help inform future applications for the development site in accordance with Policy 26 of the North Northamptonshire Joint Core Strategy.

# 2.0 DEVELOPMENT SITE CONTEXT

The site is located on agricultural land to the southeast of Kettering, situated to the east of Burton Latimer and to the north of Finedon. The land within which the development site is located forms part of the Burton Wold Wind Farm. The general area of land occupied by the wind farm is bound by the A14 in the north, the A510 in the east / southeast and the A6 in the west / southwest.

Principle urban areas generally lie to the west and northwest sides of the site. Burton Latimer is the nearest large settlement, to the west, on the other side of the A6. Burton Latimer primarily consists of residential areas, with some industrial and a distribution hub development located in its north adjacent the A14. The greater substantial urban areas of Burton Seagrave and Kettering can be found further to the northwest, beyond the A14.

Other smaller settlements surround the site, including Finedon in the south, where the A6 and A510 intersect and Cranford in the North, lying on the northern side of the A14. To the east of the site lies a number of villages (Woodford, Great Addington and Little Addington) set on the valley sides of the River Nene, these are located beyond the expanses of agricultural land to the east of the A510.

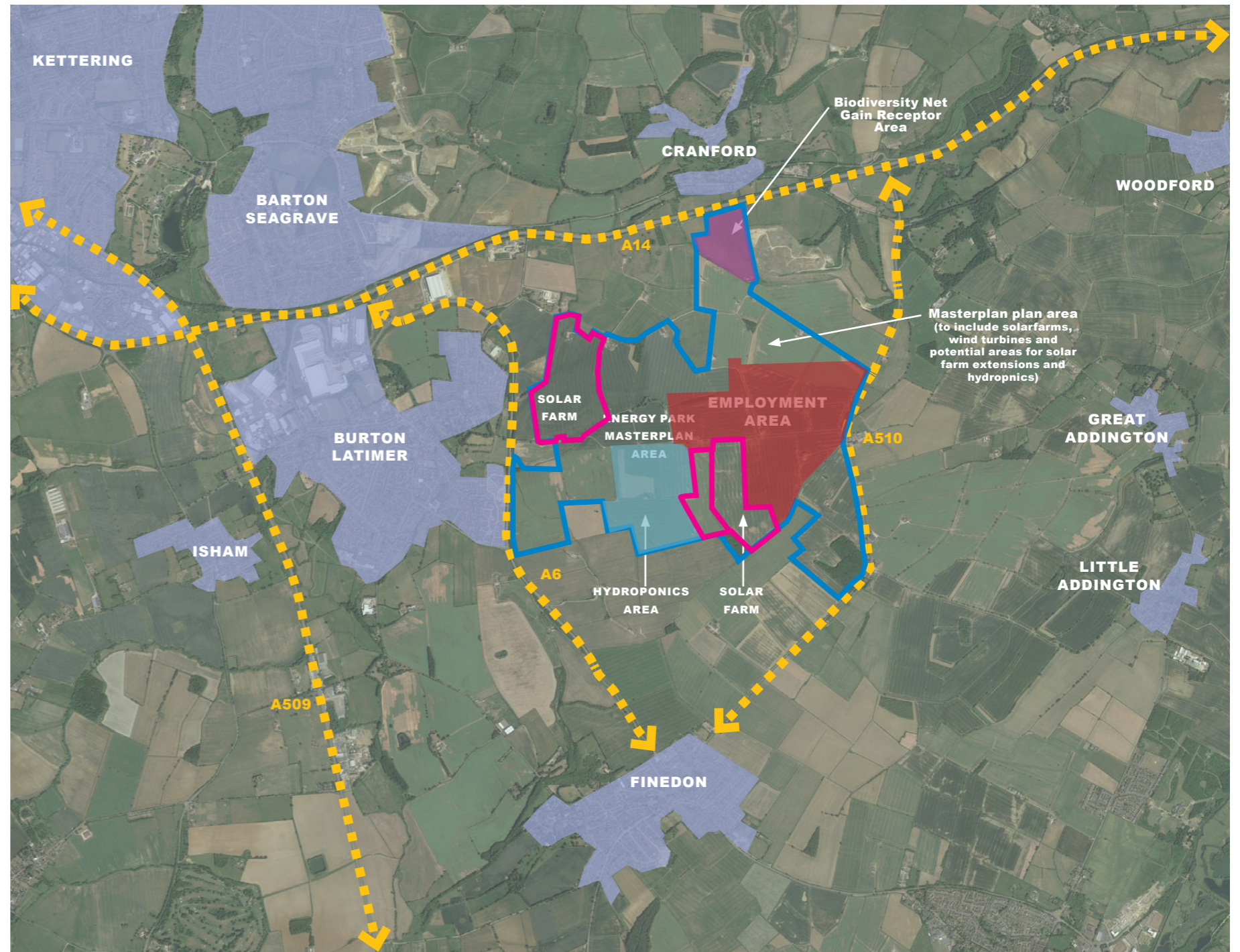


Fig 01 : Site Context



### 3.0 EXISTING GREEN INFRASTRUCTURE NETWORK

The diagram opposite illustrates areas of existing green infrastructure within close proximity of the development site and how these relate to the sub-regional and local Green Corridors identified within North Northamptonshire's Joint Core Strategy, Green Infrastructure Delivery Plan and the emerging Site Specific Part 2 Local Plan.

The planning policy has identified the green infrastructure networks at both strategic (Sub-regional) and local scales across Northamptonshire. The sub-regional network consists of a series of interlinked corridors which broadly follow the main river valleys and tributaries extending beyond the boundaries of North Northamptonshire. The closest of these to the site is the Nene Valley in the east and the Ise Valley in the west.

The sub-regional network is complemented by local green infrastructure corridors which cover a range of land uses. The closest and most relevant of this to the Site is located in the north broadly following the route of the A14, from Wicksteed Park to Thrapston. The corridor incorporates various green spaces including Southfield Marsh SSSI and nature reserve to the northwest of the site. Cranford St John SSSI to the north of the site borders the proposed BNG receptor site. Twywell Hills and Dales Nature Reserve are located to the northeast of the site.

Adjacent the site there are various small blocks of woodland, spinneys and tree belts, that although have no designation, may be important habitat for wildlife, as well as providing green linkages to the local green infrastructure corridor at the A14, to the north. These include Finedon Poplars woodland to the southeast, a number of smaller woodlands within the site, tree belt planting along the Thrapston Road adjacent to the Round House, Victory Plantation, Lake Wood and other woodland adjacent Five Willows Farm and Cranford landfill site, all to the northeast of the site.

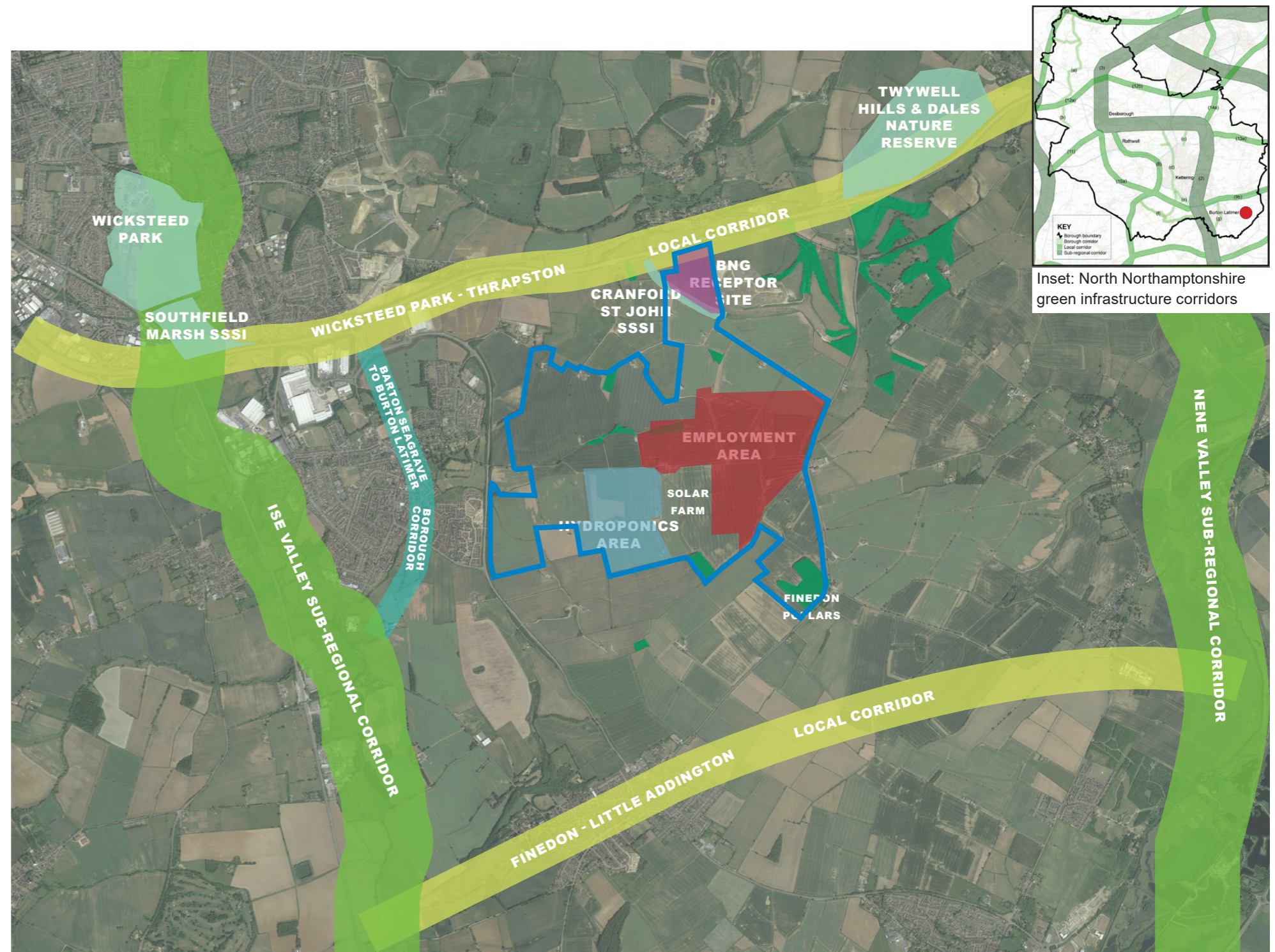


Fig 02 : Existing Green Infrastructure Network



## 4.0 EXISTING PEDESTRIAN ROUTES

The diagram opposite illustrates the existing transport network in the development site's immediate vicinity. A number of 'A' Roads run through the landscape to the north, east and west of the site. The busiest is the A14, approx. 1.5 km to the north of the site. Beyond these principal routes, roads are limited in the area, the few that do exist are quiet country lanes. Large areas of the landscape are inaccessible to road traffic, allowing wide areas to retain a quiet, rural character. The 'A' roads along with these county roads are devoid of any pedestrian footpaths which discourages navigation of the area by foot.

The Site, is crossed by three Public Rights of Way (PRoW). The main PRoW is footpath UA6, which crosses the site from the A510 Thrapston Road in the east and runs across the site to the west, crossing the A6 into Burton Latimer. This footpath follows the route of Wold Road until Wold Farm, where it diverts northwest through the agricultural fields, towards the A6. The two other PRoW's are Bridleways GF17 and GF18, both run from the A510, adjacent the northeast boundary of the site, running north towards Cranford, via Cranford St John SSSI and Cranford landfill site, before crossing the A14 via an underpass.

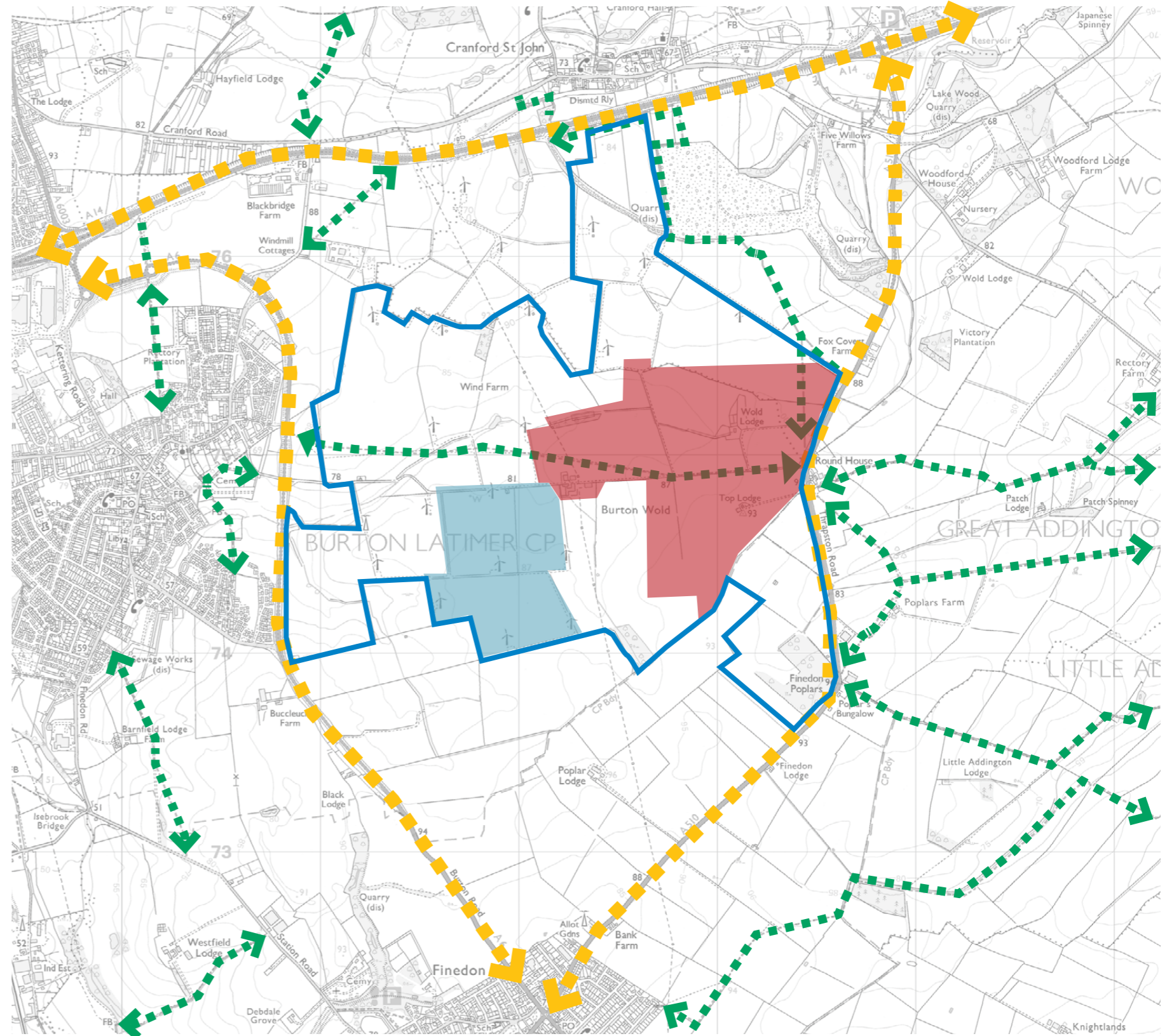


Fig 03 : Existing Pedestrian Routes



# 5.0 LOCAL GREEN INFRASTRUCTURE NETWORK INTEGRATION

This section explains the landscape strategy's over-arching design principles and is intended to illustrate how any proposals should be developed to integrate with the existing green infrastructure network. This includes details on the integration of existing site features and proposed planting strategy.

Due to the site's strategic location adjacent the Wicksteed to Thrapston local green corridor, it is key that the proposed Green Infrastructure Strategy not only functions in isolation, but also dovetails into and contributes to the wider GI network. The diagram opposite highlights specific areas of opportunity to link with the surrounding Green Infrastructure network.

As indicated on the diagram opposite, an area of land, adjacent the Cranford St John SSSI, has been identified as a Biodiversity Net Gain Receptor Area. The purpose of this area is to provide further biodiversity net gain habitat creation, beyond those being incorporated into the green infrastructure on the Employment Area part of the site. Its envisioned that this additional area of green infrastructure creation will not only further boost biodiversity of the proposed site, but can also help in creating green further green links between the existing local corridors.

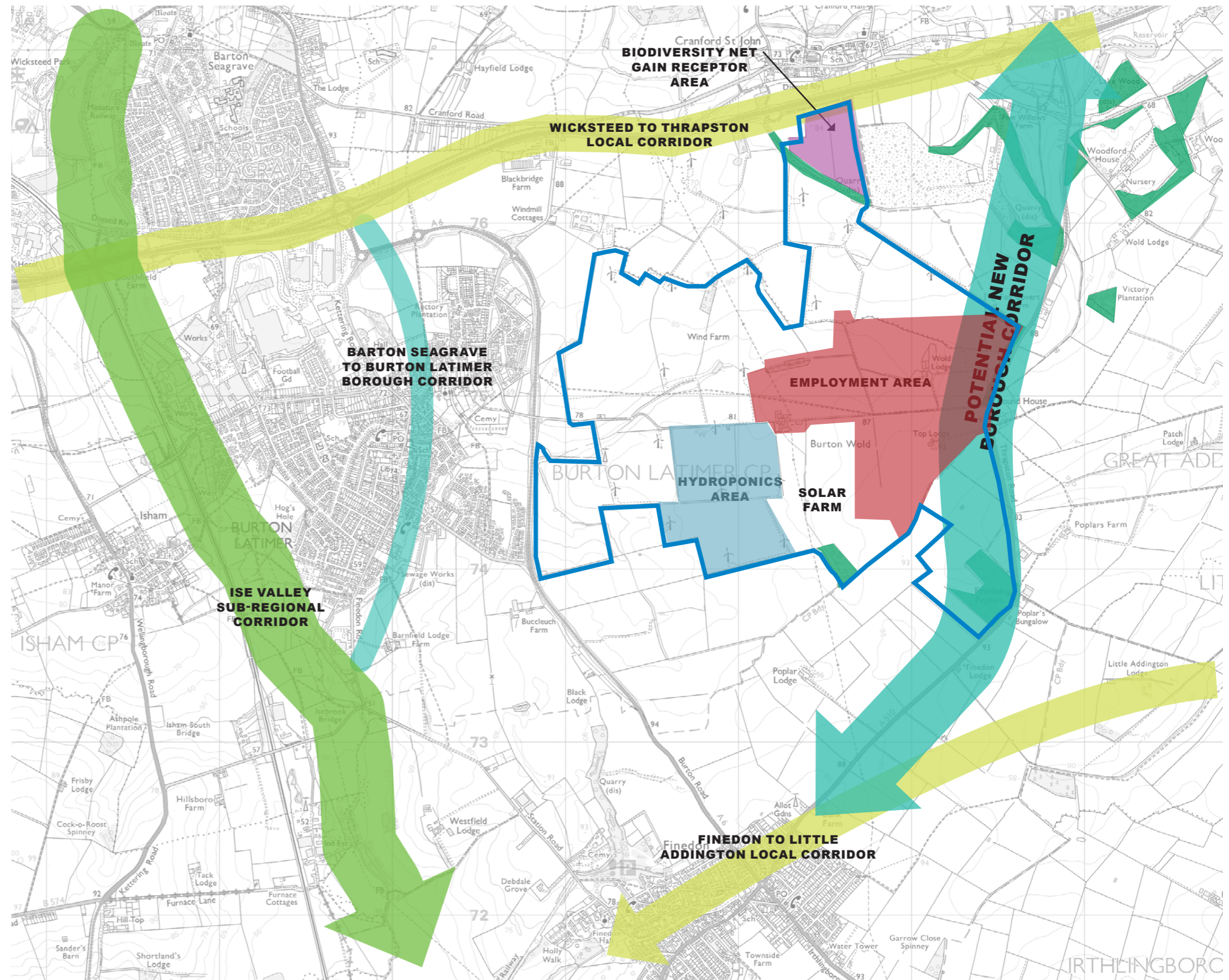


Fig 04 : Wider Green Infrastructure Network



## 6.0 INTEGRATION OF EXISTING SITE FEATURES

The adjacent plan identifies landscape features which should be retained as part of any proposed development. Where possible, existing landscape features of value will be retained and/or enhanced as part of the development.

Existing hedgerows will be retained where they do not restrict the development footprint, such as along site boundaries. These are of particular amenity value, where they help to provide a partial existing screen to the employment park along the east boundary and help preserve some of the rural landscape character of the A510 Thrapston Road.

A Spinney or small woodland to the south of the site should be retained as part of any development, along with Finedon Poplars woodland, it would help provide an established screen to help filter views from the south along the A510 and the urban edge of Finedon.

The majority of vegetation which may be removed is located within the main development area of the site. This area primarily comprises agricultural fields, fragmented hedgerows, scattered scrub and individual trees.

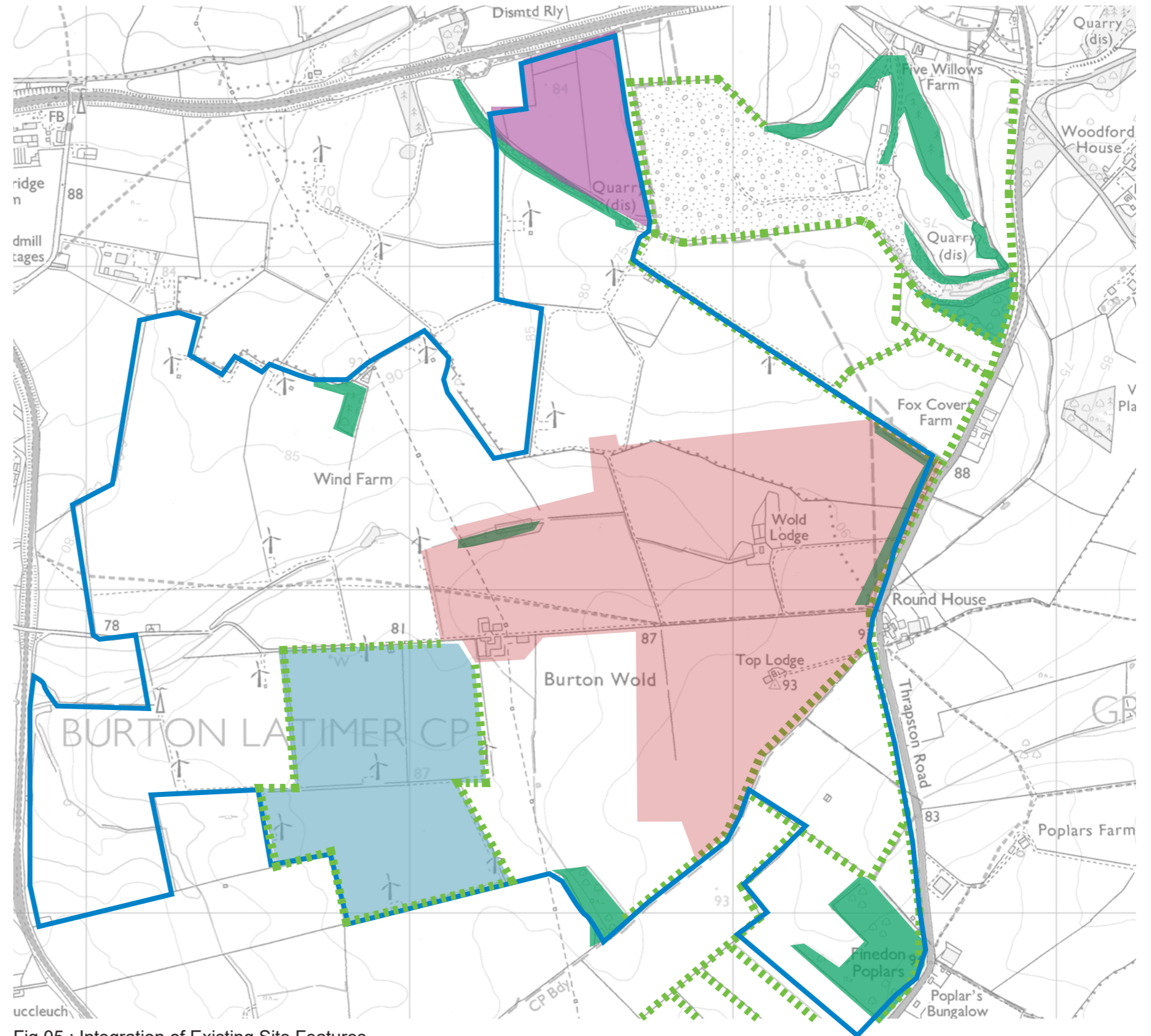


Fig 05 : Integration of Existing Site Features



## 7.0 KEY DESIGN PRINCIPLES

The Land at Burton Wold benefits from a number of landscape features, both on-site and on adjacent land, which contribute to the ecological value and visual character of the landscape.

Proposals should capitalise upon the site's existing landscape features and ensure that future users can benefit from these assets, whilst not adversely affecting valuable habitat. Where impacts upon existing features are necessary, due consideration will be given to adequate mitigation measures to compensate for any disturbance and/or loss of habitat.

The ultimate driver behind the landscape proposals is to deliver a well-connected network of green spaces, which benefits users and local wildlife, resulting in an attractive landscape setting and a net gain in biodiversity.

The following core principles summarise the fundamental approach taken through developing the landscape strategy:

- Maximise retention of existing hedgerows and tree planting to the site boundaries to capitalise upon established green corridors. Enhance these existing connections by providing a new, continuous landscape buffer to the site boundary. This combination of retained and new green corridors provides an opportunity to join up with other existing landscape features, heading north along the A510, potentially creating a new borough green corridor that connects to the existing local green corridor at the A14, between Wicksteed Park and Thrapston. This accords with North Northamptonshire Joint Core Strategy Policy 19 – The delivery of green infrastructure, North Northamptonshire Joint Planning Unit's Green Infrastructure Delivery Plan and North Northamptonshire's emerging Policy NEH2 from the Site Specific Part 2 Local Plan.
- Improve connectivity across the development area and provide an easily accessible network of Green Infrastructure for staff and public use.
- Create a new landscaped green link through the centre of the development to provide a wildlife corridor, improve the quality of public realm and contribute to a more accessible green infrastructure network.
- Integrate existing ecological resources into the green infrastructure strategy and provide a net gain across the development.
- Integrate Sustainable Drainage (SuDS) into green infrastructure and capitalise on its biodiversity and amenity benefits.



View looking southwest from the A510.



## 8.0 GREEN INFRASTRUCTURE STRATEGY

The overall GI strategy is based upon utilising existing site features, including hedgerows, woodland and spinneys, as a basis for developing a strong landscape setting for the development, enhancing biodiversity and ecological connectivity across the site and, opening up a network of amenity routes and green corridors.

New areas of woodland and scrub planting will create a strong wooded edge to the perimeter of the site, forming a continuous loop of vegetation. This will help to screen and soften views of the site, minimise its effects on the character of the surrounding landscape, whilst providing an attractive walking route and opening up valuable habitats for a wide variety of species.

The proposed wooded edge along the boundary with the A510 Thrapston Road, should be set back from the road edge to help preserve some of the open rural character of the Road corridor. The existing hedgerow will be retained, along with the wide grassy verge to the carriageway edge.

Behind this existing boundary hedge a wide swathe of species rich wildflower grassland will be utilised, creating a graduated landscape treatment to the boundary, increasing in height from the low grassland through to scrub then woodland.

Where possible, all opportunities will be taken to extend areas of planting into the site, creating new wildlife corridors between large areas of hard standing whilst also performing screening and security functions

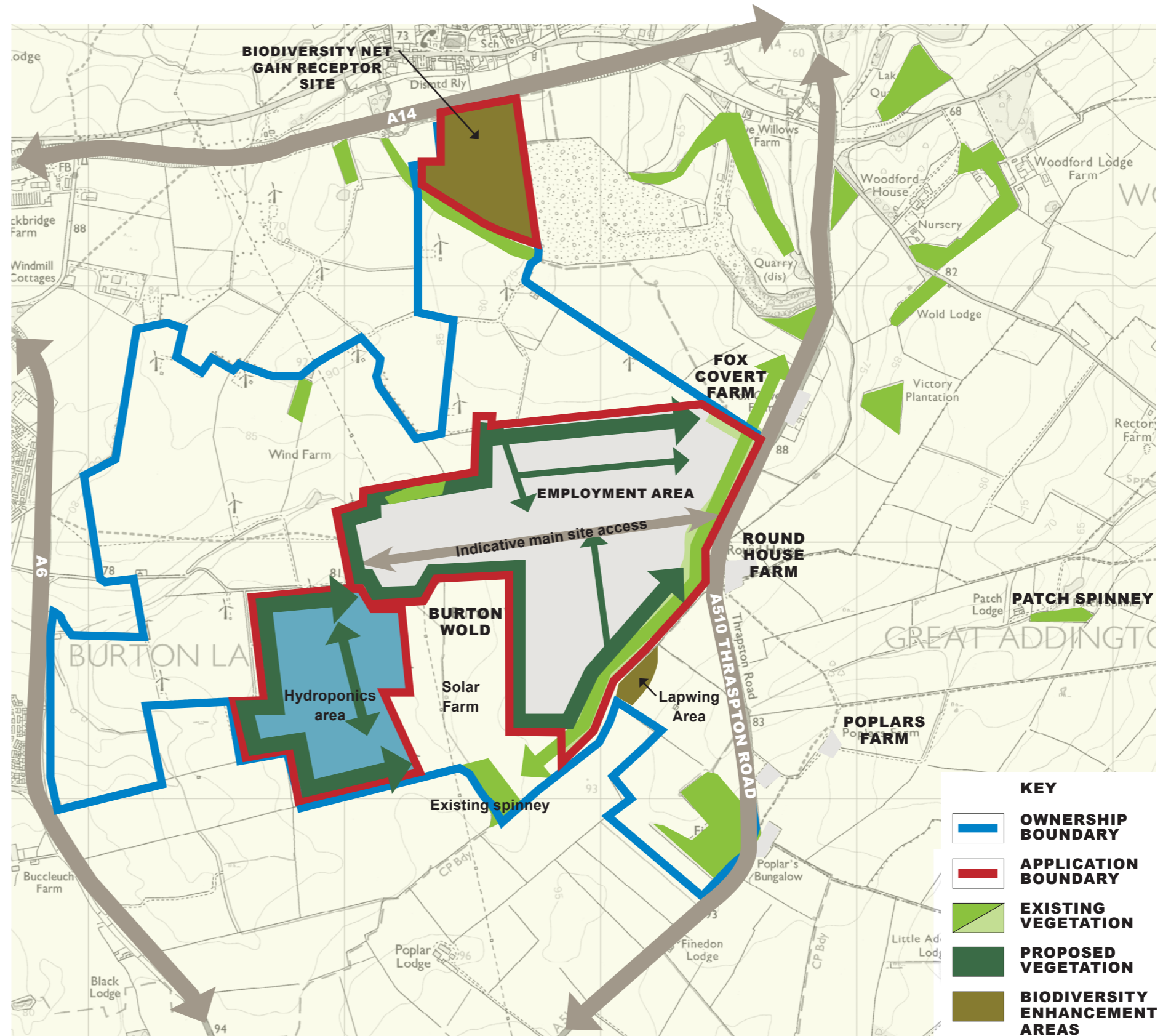


Fig 06 : Green Infrastructure Strategy



## 9.0 CONNECTIVITY

The existing pedestrian and bridle routes are illustrated on the adjacent plan and previously on page 3. The adjacent includes permissive and proposed routes either as part the application or S106 obligations.

There are two permissive routes within the wider ownership boundary, the first will be through the BNG receptor site in the northern section. The second is along the eastern boundary following the field boundary alongside the A510 Thrapston road, connecting to the existing routes near Finedon Poplars, spinney woodland.

The employment area proposes improved connectivity for pedestrians and cyclists heading to and from the site. Additional permissive paths create convenient routes maintaining separation from vehicle routes and utilising rural character along the proposed foot, cycle and bridle ways.

The existing public rights of way crossing the site will likely need diverting, diversions will be incorporated into the layout following the route of the central vehicular access road, with connections off it to the site wide amenity path routes. The following page provides illustrations relating to this.

Some uses on site will need secure premises and the provision of access to and through the site will need to consider the needs of the existing farm, including seasonal peaks and any future businesses that come to the site.

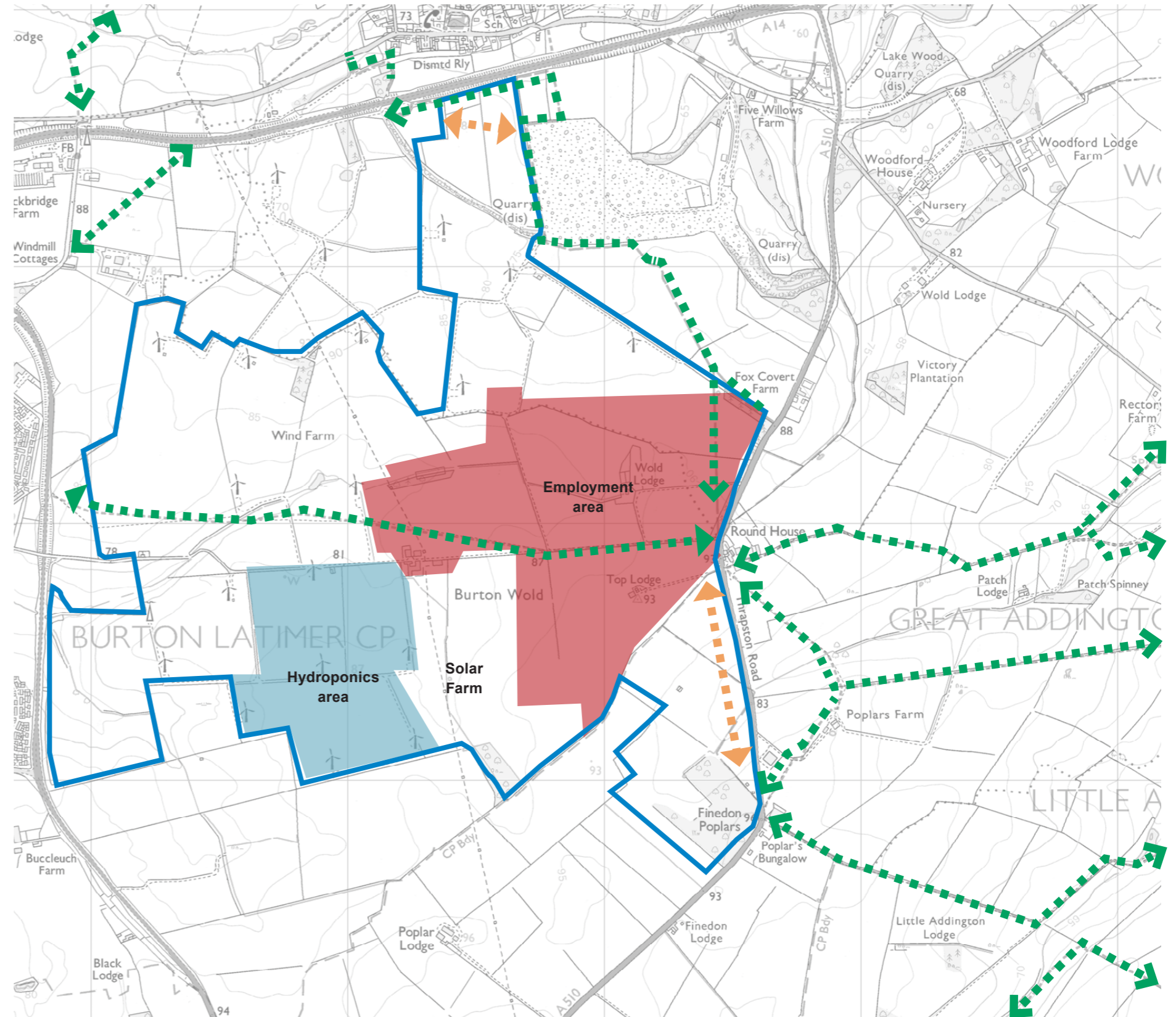


Fig 07 : Connectivity



# 10.0 AMENITY LANDSCAPE, OPEN SPACES & MOVEMENT

The Green Infrastructure Strategy in this document sets out a clear aspiration to create a new network of landscape spaces, which can accommodate a series of footpaths and open areas for amenity benefit. There are three main elements to this strategy which should be carefully integrated with areas of proposed green infrastructure:

## Amenity Path Routes

To the perimeter of the development area where possible, an easily accessible amenity route should be created for the benefit of site users, linking to each of the proposed development parcels via a centrally located green space.

The route will be characterised as an informal woodland walk along the areas of newly proposed woodland and scrub planting to the site perimeter as well as fringing the various pond and basin features, where required by the drainage strategy. This will create an attractive pedestrian route which can be used for relaxation or fitness.

Where site topography allows, views will be created through the proposed wooded boundaries, looking out towards the surrounding open countryside.

## Formal Amenity Space

Where the amenity route passes through the centre of the site between development parcels, the landscape could open up into a series of formal amenity spaces, presenting a more civic style landscape including formal tree planting and ornamental shrub planting. These amenity cores will align with the main vehicular access road and form entrances to each development parcel. These should be perceived as the development's more formal amenity areas and will be designed as areas of public realm, incorporating a network of footpaths, adequate seating and a range of more ornamental planting styles.

## Movement

The proposals will incorporate a comprehensive network of footpaths and cycle ways connecting all areas of the site to promote pedestrian movement and encourage use of the proposed open spaces and amenity path routes.

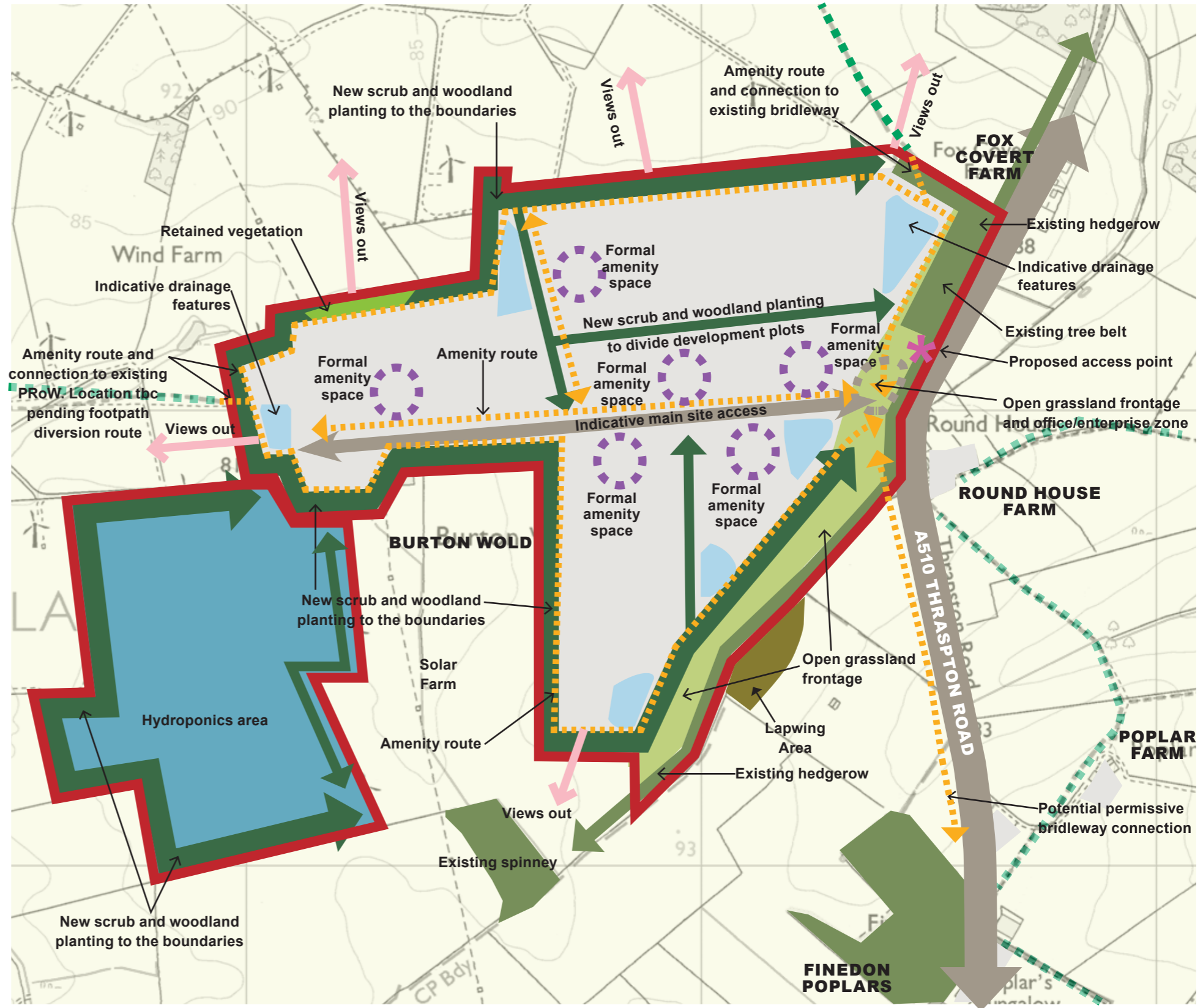


Fig 08 : Amenity Landscape, Open spaces & Movement



# 11.0 PLANTING STRATEGY

## Street Tree Planting

An avenue of street trees should be used along the main spine road to emphasize the proposed central green corridor and provide vertical green structure to the street scene. Street trees have been selected for their fastigate, compact, and vertical form to accommodate the long-term growth and viability for such a street location.

Depending on the proposals put forward at the application stage, a suitable species for the main avenue should be selected from those adjacent. If secondary streets are to be created, alternative species should be selected from those adjacent to provide distinction to each street and help with bio-security.

Tree stock should be 20-25cm girth size with 2m clear stems. Species to include the following:

- *Acer campestre* 'Elsrijk'
- *Acer platanoides* 'Columnare'
- *Carpinus betulus* 'Frans Fontaine'
- *Liquidambar styraciflua* 'Lane Roberts'
- *Pyrus calleryana* 'Chaticleer'
- *Tilia cordata* 'Greenspire'

## Scattered Trees

Within open green spaces and to woodland edges, scattered trees will be specified to create ornamental interest, seasonal variation and biodiversity value. This will enhance the areas of public realm and amenity routes throughout the site, as well as providing improvements to ecological habitats.

Tree stock should be 14-20cm girth size with 2m clear stems. Species to include the following:

- *Acer campestre*
- *Betula pendula*
- *Carpinus betulus*
- *Fagus sylvatica*
- *Pinus sylvestris*
- *Prunus avium*
- *Quercus robur*
- *Salix alba*
- *Sorbus aria*
- *Tilia cordata*

## Woodland Planting

Woodland planting is proposed to the site perimeter to act as a visual screen to the development from surrounding areas, to create green corridors that encircle the site and where possible provide some linkage to existing adjacent green corridors. Woodland planting will extend into the site where space and site levels allow, to encourage the movement of wildlife.

Species will be selected to complement locally prevalent species and to maximise biodiversity gains and wildlife value. The woodland will be structured using a suitable range of climax, nurse, woodland edge and native shrub species to ensure the sustainable establishment and successful long-term management of these areas of woodland. Plants to be planted in a 1.5 m grid.

Woodland planting will comprise of a species mixture. Stock sizes should be 60-80cm, bareroot, transplants of the following species:

- *Acer campestre*
- *Betula pendula*
- *Corylus avellana*
- *Crataegus monogyna*
- *Malus sylvestris*
- *Populus nigra*
- *Prunus avium*
- *Prunus spinosa*
- *Quercus robur*
- *Salix caprea*
- *Sambucus nigra*

## Scrub Planting

Native scrub planting will be used to the site periphery, around woodland edges and in areas of amenity space which require a more robust treatment. Plant selection will be based on enhancing wildlife value, while also creating seasonal variation through the specification of species which possess horticulturally interesting characteristics such as flowers, fruit or autumnal colour. Plants to be planted in a 1 m grid.

Stock sizes should be 60-80cm, bareroot, transplants of the following species:

- *Cornus sanguinea*
- *Corylus avellana*
- *Crataegus monogyna*
- *Ilex avellana*
- *Ligustrum vulgare*
- *Prunus spinosa*
- *Salix caprea*
- *Viburnum opulus*



# 11.0 PLANTING STRATEGY

## Species Rich Hedgerows

Some existing hedgerows could be retained to the perimeter of the site and possibly alongside internal access roads where feasible. Where opportunities exist to extend these wildlife corridors into the development, new lengths of hedgerow are proposed. This will improve the movement network for wildlife and also provide an efficient mechanism for delineating space and providing visual screening. Where appropriate, standard trees will be scattered along the line of species-rich hedgerows to increase structure or screening and habitat value. Tree species will reflect those used in woodlands around the site.

Hedge stock sizes should be 60-80cm, bareroot, transplants of the following species:

- *Carpinus betulus*
- *Crataegus monogyna*
- *Fagus sylvatica*
- *Ligustrum vulgare*
- *Prunus spinosa*
- *Rosa canina*

## Amenity Planting

Planting with more ornamental characteristics will be specified along the central spine route and within designated amenity areas. This will provide a finer grain of texture to the more intensely used public spaces and create year-round seasonal interest and colour through plant selection. Plant material will be selected for its robustness, tolerance of site specific conditions and to provide continuous structure throughout the year, using a mix of deciduous and evergreen species.

Stock sizes should be 3 litre pots and include the following species:

- *Aucuba japonica* 'Crotonifolia'
- *Choisya ternata*
- *Cornus alba* 'Elegantissima'
- *Cotoneaster* 'Coral Beauty'
- *Elaeagnus x ebbingei*
- *Escallonia* 'Apple Blossom'
- *Hypericum* 'Hidcote'
- *Lonicera nitida* 'Maigrun'
- *Prunus laurocerasus* 'Otto Luyken'
- *Pyracantha coccinea* 'Red Cushion'
- *Rosa* 'Max Graf'
- *Sarcococca confuse*
- *Skimmia x confuse* 'Kew Green'
- *Spiraea nipponica* 'Snowmound'
- *Stephandra incisa* 'Crispa'
- *Symphoricarpos x chanaultii* 'Hancock'
- *Viburnum davidii*

## Species Rich Grasslands

Areas of species-rich grassland with perennial wildflowers will provide an attractive contrast to closely mown lawns and create valuable habitat for a range of species. They will be used in general amenity areas, shaded areas of the site and in the vicinity of ponds, specified to respond to specific site conditions. Two example mixes have been included to indicate suitable species for open sunny locations and more shaded areas such as woodland edges.

The first mix is a general species rich mix for spaces such as key amenity areas and is suitable for creating a grassland on a wide range of soil types. The absence of annuals lends this mixture to being mown more regularly than those containing annuals. The mix provides habitat for invertebrates which in turn provide food for birds and mammals.

The second species rich mix is suitable for sowing within hedgerows and semi-shaded woodland, providing floral interest from April - September. Due to light levels being lower than in the open locations, growth of companion grasses will be slow, in turn making this mixture low in maintenance. Brambles may require control from time to time. If possible, when cutting in late summer, an area of up to one third should be left uncut until the following Spring for overwintering invertebrates. This area should be alternated each year.

Suggested seed mix for general open locations is:

- DLF Pro Flora 8 Legacy seed mix (20% Wildflowers / 80% Grasses) or similar species composition.

Suggested seed mix for shady locations is:

- DLF Pro Flora 11 woodland and heavy shade seed mix (20% Wildflowers / 80% Grasses) or similar species composition.

## Wetland Species Rich Grasslands

Species rich wet grassland seed mixes will be specified to natural basins and wet landscaped areas. This meadow mixture for wetlands is suited to seasonally wet soils and is based on the vegetation of traditional water meadows. Soils in wet meadow may flood for short periods in winter but are usually dry in summer.

Suggested seed mix:

- DLF Pro Flora 5 wet loamy soils seed mix (20% Wildflowers / 80% Grasses) or similar species composition.

## Amenity Grasslands

Amenity grassland, the short mown areas of lawn that are associated with formal amenity landscape areas, road edges and path edges. To encourage bio-diversity its suggested that flowering lawn seed mix is used, these have a greater range of grasses and flowering plant species.

Suggested seed mix for shady locations is:

- Emorsgate's EL1 flowering lawn seed mix (20% Wildflowers / 80% Grasses) or similar species composition.



# 11.0 PLANTING STRATEGY

## Marginal and Aquatic Planting

A variety of water bodies are proposed within the development site which will perform SuDS functions, provide attractive amenity assets and create valuable habitat as part of the scheme's ecological mitigation.

Marginal and aquatic planting will be used to enhance these areas aesthetically and ecologically, whilst creating a low-level barrier where appropriate to prevent site users falling or walking into areas of open water.

Species selection will be dependent upon the pond's ultimate function and anticipated water levels. A variety of mixes will be required to address these variables at each given location, each tailored to their specific location. Species should be selected to cater for a range of planting depths, create interesting structure, and provide opportunities for submerged habitats. A number of example mixes have been included with indicative species for drainage features. In future applications, full details of planting should be provided to clearly demonstrate that species selection is appropriate for the anticipated moisture regime of any detailed drainage proposals.

### Reedbed planting

*Phragmites australis*

### Submerged /Oxygenating Plants

*Callitriche stagnalis*  
*Potamogeton crispus*  
*Potamogeton natans*

### Floating Plants

*Glyceria fluitans*  
*Hydrocharis morsus-ranae*  
*Nuphar lutea*  
*Nymphaea alba*

### Emergent Plants

*Acorus calamus*  
*Alisma plantago-aquatica*  
*Apium nodiflorum*  
*Butomus umbellatus*  
*Glyceria maxima*  
*Persicaria amphibia*  
*Sagittaria sagittifolia*  
*Schoenoplectus lacustris*  
*Sparganium erectum*

### Marginal Plants

*Angelica sylvestris*  
*Caltha palustis*  
*Carex acutiformis*  
*Carex pendula*  
*Carex pseudocyperus*  
*Carex riparia*  
*Eleocharis palustris*  
*Filipendula ulmaria*  
*Iris pseudacorus*  
*Lysimachia vulgaris*  
*Lysimachia salicaria*  
*Mentha aquatica*  
*Myosotis scorpioides*  
*Phalaris arundinacea*  
*Ranunculus flammula*  
*Rumex hydrolapathum*  
*Scrophularia auriculata*  
*Veronica beccabunga*

