

KETTERING

ENERGY PARK

A unique opportunity to create one of the
UK's most sustainable developments

Site Analysis, Opportunities & Constraints



January 2023



FIRST RENEWABLE
DEVELOPMENTS

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Introduction

This document has been prepared to outline the work that has been undertaken to date to support the preparation of a masterplan that will guide future development of the Kettering Energy Park. The masterplan is being prepared to meet the objectives of Policy 26 of the North Northamptonshire Joint Core Strategy that was adopted in 2016 and which identified the land at the Burton Wold Wind Farm as a location for an Energy Park. The development of an Energy Park at this location has been the ambition of First Renewable and the land owners, Stuart Beaty and his family, for a number of years.

Once finalised, it is proposed that the masterplan document will be considered by North Northamptonshire Council and approved as a document that supports Policy 26 of the Joint Core Strategy. Once approved, the masterplan will then inform future planning applications at the site and provide a framework that subsequent proposals will need to respond to.

The Energy Park has the potential to improve energy security and resilience and to become an exemplar development that could support the transformation of North Northamptonshire to a low carbon economy. The proposals for the Energy Park are being led by First Renewable who assisted with the extension to the Burton Wold wind farm as well as the consented solar farms and 132kv grid connection.

The primary concept behind the Energy Park project is to realise the potential of the existing and consented energy infrastructure at the site and bring forward development that will incorporate a mix of uses including additional energy infrastructure, hydroponics and new employment premises. The objective of the project is to make best use of the renewable energy provided at the site to enable businesses that locate to the Energy Park to meet up to 100% of their energy needs from the on-site renewable sources.

Vision

The vision for the project is to create a sustainable and attractive development that supports the local environment as much as the local economy. The Energy Park intends to match energy production with consumption, to supply renewable energy to energy-intensive businesses and make best use of resources by supplying energy to other complementary uses at the site. This will provide a catalyst for new investment within North Northamptonshire. The Energy Park will be based on principles of sustainability to minimise the impact of development and support low carbon development that will contribute to the local economy.

The vision is underpinned by the following principles:

- A holistic approach – co-location of complementary uses, including employment and renewable energy sources, not at the expense of biodiversity.
- Implementing a Green Infrastructure Strategy that will integrate with existing ecological and landscape settings.
- Implementing a Sustainable Transport Strategy that will offer alternative and sustainable forms of access and modes of transport to the site
- Creating a criteria for future employment development & uses to ensure the Masterplan can attract businesses that have high energy demands or which focus on innovation towards a low carbon economy and society.
- Promoting the principles of sustainability to establish a form of development that is at the forefront of responding to the Climate and Environment Emergency declared by North Northamptonshire Council.
- Providing Energy Efficient buildings that make best use of the available renewable energy.
- Supplementing the existing and consented renewables with new energy infrastructure to increase resilience and energy security.

KETTERING ENERGY PARK



The Masterplan's vision and principles will be brought forward in conjunction with a Green Infrastructure Strategy. This Strategy will allow the development to come forward in a way that will:

- Respect existing landscape features and planting where possible.
- Provide a pleasant landscape setting for the new development with amenity areas for new employees and improving public access where appropriate.
- Minimise the visual impact of development.
- Incorporate above ground sustainable drainage features.
- Create new or enhance existing areas of native planting as a coordinated part of drainage and biodiversity enhancement measures to secure a minimum 10% net gain.

Planning Policy Context

The proposals for the Energy Park will directly respond to the Climate and Environment Emergency that has been declared by North Northamptonshire Council as well as many of the key requirements of the NPPF. For example, the Energy Park seeks to achieve a sustainable form of development that makes effective use of land, improves biodiversity, uses natural resources prudently, helps mitigate and adapt to climate change and supports the move to a low carbon economy (NPPF Paragraphs 8, 152 & 154).

At a more local level, the North Northamptonshire Joint Core Strategy (Core Strategy) was adopted in 2016 and this identifies that there is an opportunity to provide an Energy Park at Burton Wold. In strategic terms, the site has therefore already been considered as a suitable location to accommodate an Energy Park as this was reviewed in the course of preparing the Core Strategy. The Core Strategy does not define what form the Energy Park will take, stating the following (para 8.35)

Its precise extent and mix of uses is to be determined through a Masterplan prepared in consultation with the local community and stakeholders for agreement with the local planning authority. The impacts of development at this location will be evaluated in greater detail through the consideration of any planning applications.

Policy 26 of the Core Strategy (Renewable and Low Carbon Energy) identifies that development of the Energy Park will provide a decentralised energy network using renewable technologies and outlines the following about the Energy Park:

Land at Burton Wold is identified for an Energy Park to add to the range of renewable energy technologies already present. The development will serve as a decentralised energy network which will link the energy production to existing and new developments.

Proposals within the Energy Park should meet criteria a) to i) above and should also be in accordance with a comprehensive masterplan which will be prepared in consultation with the local community and stakeholders and agreed by the local planning authority;

This will:

1. Define development boundaries and also the renewable / low carbon technologies and land uses to be developed on the site;
2. Make provision for a mix of complimentary employment uses to facilitate development of local knowledge, expertise and research and development;
3. Demonstrate how the proposal will contribute towards meeting the energy needs of existing and planned development, including East Kettering SUE, strategic development at Junction 10 of the A14 and employment uses associated with the site;
4. Create a model for zero carbon energy through the installation of exemplary energy efficiency standards in buildings which use energy produced on-site in their operation.

The policy therefore provides a flexible planning framework under which development can come forward at the Burton Wold site. For completeness, the full text of the policy is included at appendix A.

The Masterplan document aims to address the above points of this policy requirement by defining the boundaries of the proposed development and also identifying which energy technologies and other uses could be developed at the Burton Wold site.

The Masterplan will be subject to public consultation and once in a final form it is intended that the Masterplan Document will be used as a material consideration in determining future applications at the Energy Park. It is anticipated that the site will be developed out in phases with planning applications coming forward in due course.

NORTH NORTHAMPTONSHIRE KEY DIAGRAM

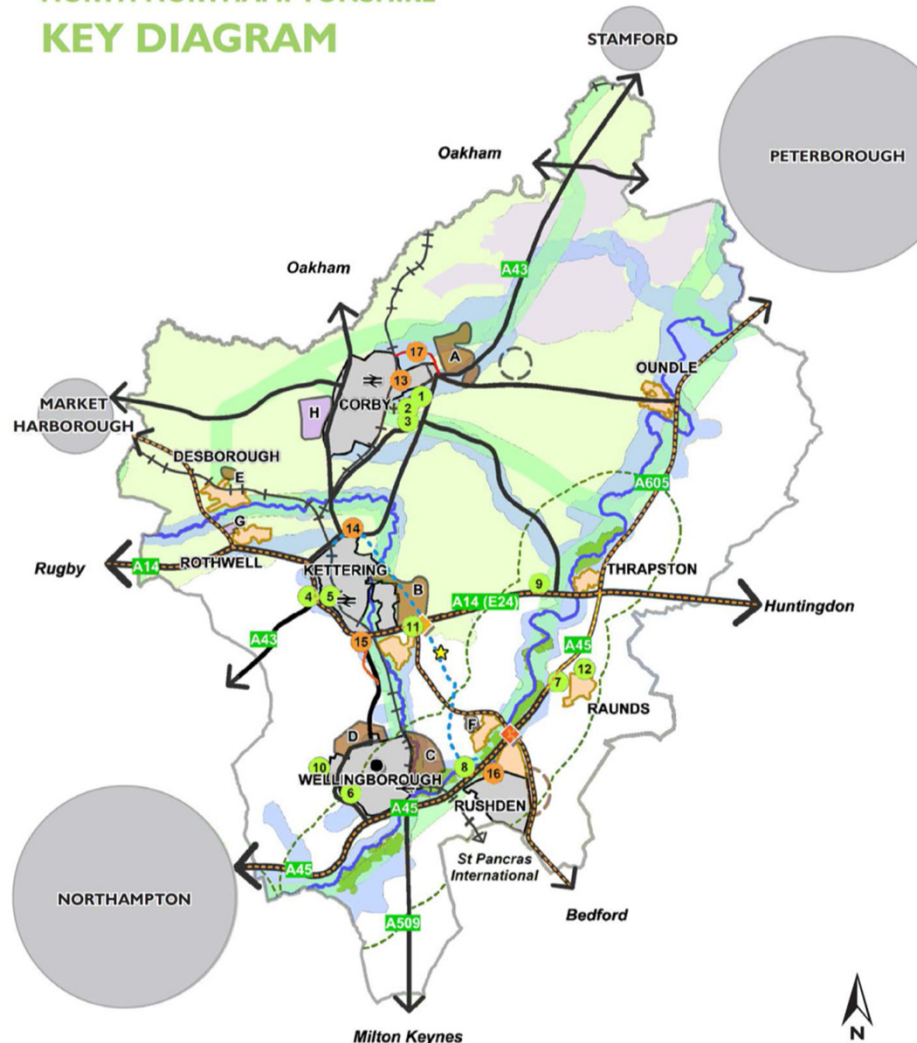


Figure 1: Key Diagram from North Northamptonshire Joint Core Strategy (Energy Park is shown by the star)

Strategic Overview

The site is located to the south west of Kettering and has excellent access to the A14, and the wider strategic road network, which puts other towns and cities in the UK within easy reach. The site is also within the sphere of influence of the Oxford Cambridge Arc and the associated knowledge and technology centres that these cities support.

Whilst the Energy Park is not just an employment development, as it will support a number of new businesses at the site that can benefit from access to the existing and proposed energy infrastructure and create an ecosystem of like-minded uses that will support the transition to a low carbon economy. The Government's Net Zero Strategy aims for the UK to be Net Zero by 2050, requiring a 68% reduction in Greenhouse Gas emissions by 2030, whilst North Northamptonshire Council has the objective of becoming carbon neutral by 2030.

- Kettering Energy Park is well-connected at both regional and national level with good access to key transport hubs such as the Port of Felixstowe, the motorway network (M1, A1(M), M6 & M11), nearby urban areas so new businesses will be able to benefit from the site's excellent location near Junction 11 of the A14
- The site is within the notional Oxford-Cambridge Arc that comprises the County areas of Oxfordshire, Buckinghamshire, Northamptonshire, Bedfordshire and Cambridgeshire, which collectively is one of the fastest growing economies in the UK. Infrastructure in this area is expected to improve, including continued investment into East West Rail. The Energy Park site has the potential to attract high-quality businesses and investors and offer businesses more cost-effective lab space or premises for R&D and other high-tech operations, with more traditional areas having limited availability of such space which higher-costs.
- Local population growth has the potential to enhance the workforce available to Kettering Energy Park and equally, the employment component of the site will provide jobs to the growing population
- The Energy Park is intended to provide a resilient and robust supply of electricity for the uses at the site and also have the ability to export excess energy to the National Grid by acting as a buffer at times of peak demand elsewhere in the UK. The site is crossed by 132kv overhead power lines, and approval has been granted for a grid connection to import and export up to 50 MW of supply. This provides a robust energy supply to businesses, which is identified as a local constraint of employment land in the Kettering area, and also provides flexibility for the national grid and makes best use of the energy generated at the site.
- The Park intends to match energy production with consumption, to supply renewable resources for energy intensive businesses, provide a catalyst for new investment within the area and meet the UK Government and North Northamptonshire's ambitions of carbon neutrality by 2050.

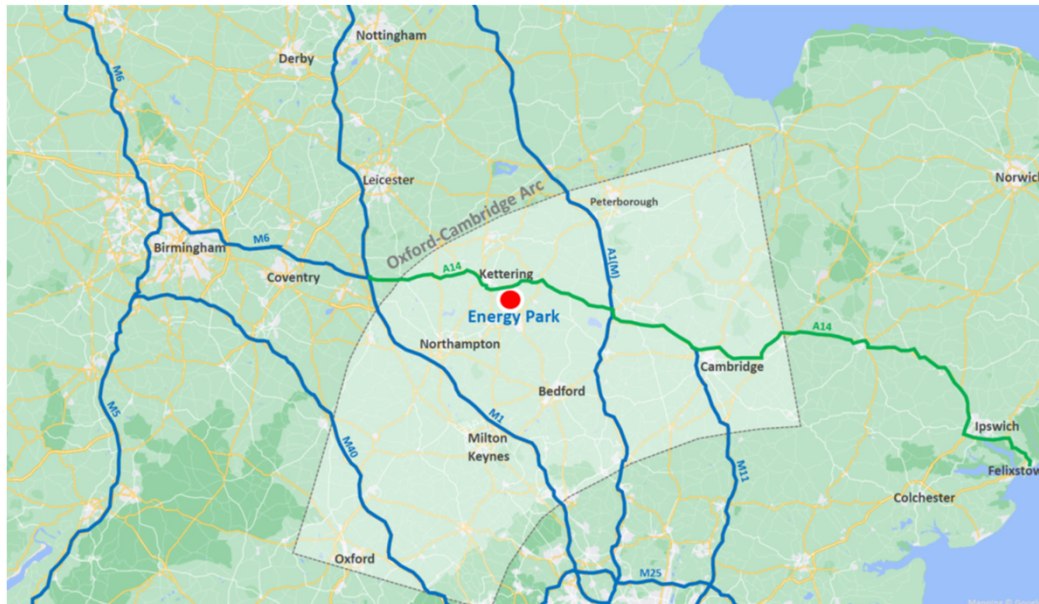
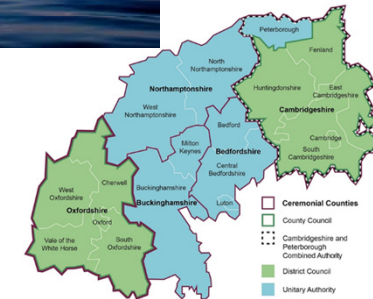
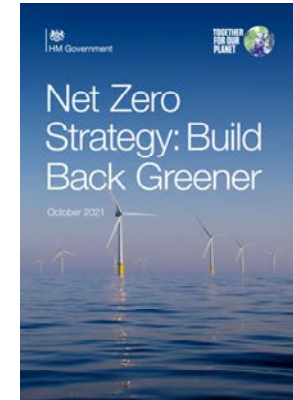


Figure 2: Strategic Context Plan

Employment Overview

A review has been undertaken of the need for employment floorspace in the Kettering and wider North Northamptonshire area. Whilst the area around Kettering offers good connectivity that will be attractive to employers, the research has also revealed that there is a continuing need for high-quality business premises across a range of sectors. A summary of the key points from this research is provided below.

- The target for job creation across North Northamptonshire is to secure 31,100 net new jobs by 2031, with the most recent Annual Monitoring Report noting that a further 9,000 jobs still need to be created by 2031 in order to meet this target.
- Investment is currently being lost due to the undersupply and suitability of employment space in the local and regional areas according to the most recent market analysis undertaken by North Northamptonshire Council and the South East Midlands Local Economic Partnership (SEMLEP). This is set out in the Kettering Employment Land Review (Aspinall Verdi) and the SEMLEP Local Industrial Strategy Evidence Base (both November 2018).
- There is high demand for suitable employment space across the industrial and warehouse/logistics sectors, with varying requirements for different sizes of new premises. There are currently low vacancy rates (of circa 1.5%) and increasing rents across the wider Midlands area in the employment sector, which indicates a lack of supply (LOGIC: Midlands Q1 2022, Knight Frank, March 2022).
- There is high demand and a lack of supply of laboratory space and premises for R&D in the established Oxford and Cambridge areas. Rents for such space is high and occupiers are considering alternative and more cost effective locations.
- The provision of high-quality employment floorspace in the Kettering area that has a sufficient power supply, can therefore help to address the undersupply of employment premises to:
 - Enable local businesses to expand or relocate to better premises in the area;
 - Attract new employers and investors to the area; and
 - Support businesses in their efforts to reduce carbon emissions.
- The supply of new homes in the Kettering area is increasing and new employment development at the site would help to provide jobs in the local area and support more sustainable patterns of development.
- The proposed development makes an ideal location to establish employment uses that have high energy requirements, such as cold stores, data centres as well as operations that use robotic retrieval systems.
- Kettering benefits from good links to the wider UK and there is also access to a potential workforce in the urban areas near the site. Kettering has pockets of deprivation and skills and wages are below the England average (SEMLEP Local Industrial Strategy Evidence Base), which new development could help to address.

A number of businesses have already expressed strong interest in securing premises at the Energy Park, with the main attraction being access to a resilient power supply that will help businesses to meet their objectives, and those of the wider UK, to reduce carbon emissions. The site also has flexibility to accommodate a range of different sized units and has good access to the A14 and urban areas, all of which are looked upon favourably by employers.

To address some of the issues identified in the Evidence Base relating to employment matters, it will be important for the Energy Park to address the following:

- Provide for a range of uses and allow for flexibility to accommodate a variety of building size
- Encourage employers at the site to invest in skills and training initiatives to improve the skill of the workforce
- Provide floorspace that will help meet North Northamptonshire Council's objective of creating a total of 31,100 new jobs by 2031



Consultation & Technical Studies

To inform the preparation of the Masterplan initial consultations have been held with stakeholders. The concept of the Energy Park and the production of the emerging Masterplan has also been introduced to a number of the local Parish and Town Councils in the vicinity of the site. Feedback from this initial consultation is being used to help inform the Masterplan and to refine some of the principles of development.

Policy 26 of the Joint Core Strategy notes that consultation will be an important part of preparing the masterplan and the final form of the document will have been informed by both informal consultation and a period of formal consultation. The informal consultation will comprise of meetings and presentations to stakeholders and local community groups (such as local Town and Parish Council's) as well as the use of a website to publicise the proposals and reach out to a wider audience. The informal consultation feedback received will be collated with a view to making any necessary changes to the Masterplan as per the provisions of JCS Policy 26.

Once the Draft Masterplan document has been agreed with the Council, this will then be subject to a period of formal public consultation and the comments received will again be collated and reviewed to determine any changes that may be required to the Masterplan. This approach will ensure that the views of the wider community have been canvassed, which will result in the preparation of a more rounded masterplan that responds to issues identified during the consultation.

A number of surveys have been undertaken to support the preparation of the masterplan, these include the following:

- Ecology Surveys, which started in 2020 and have continued across 2021 and 2022 to provide a comprehensive record and understanding of habitats and species supported at the site
- Highways Modelling has been undertaken and is continuing in conjunction with National Highways and the Highway Authority
- Landscape Appraisals to establish the site context, key features and visibility of the site from surrounding areas
- Assessments of flood risk and drainage issues that may affect the site and will need to be considered by any future development
- Assessment of Archaeology and Heritage context, including geophysical surveys of the site
- Technical studies and assessments to consider issues such as noise, air quality and opportunities for sustainable transport to and from the site

These surveys and assessments have all been used to inform the preparation of the masterplan and will in turn be used to support baseline studies for any future outline application. This document seeks to provide a summary of the work undertaken to date and identifies the key issues that are shaping the emerging Masterplan for the Energy Park.

Site Analysis & Characteristics

The area of search for the Kettering Energy Park masterplan shown on Figure 3 below, is within the countryside, to the southeast of Kettering and comprises mainly arable farmland, extending in area to approximately 445 hectares. The land is considered to be agricultural grade 3b. The town of Burton Latimer is to the west of the site and the village of Cranford St John is to the north, whilst Finedon is located to the south.

The site lies to the south of the A14 is bounded by the A510 Thrapston Road to the east, and the A6 Burton Road to the west. The A510 connects to Junction 11 of the A14.

The site is therefore close to a number of population centres and is readily accessible by the existing road network. The Energy Park, would therefore benefit from an existing labour supply, which will increase as new dwellings continue to be built at the Hanwood Park development located to the east of Kettering (c.5,500 dwellings total).

Initial assessments have been undertaken to identify constraints, opportunities and key areas of the site where development of new energy infrastructure, business premises and other complementary uses could be located. Potential development zones for the Energy Park have then identified based on this analysis. This assessment work for the masterplan has also considered proposals to mitigate any potential impacts that may arise from development at the site. In addition, opportunities are identified that could be incorporated into the masterplan where these would benefit the local area and surrounding communities.

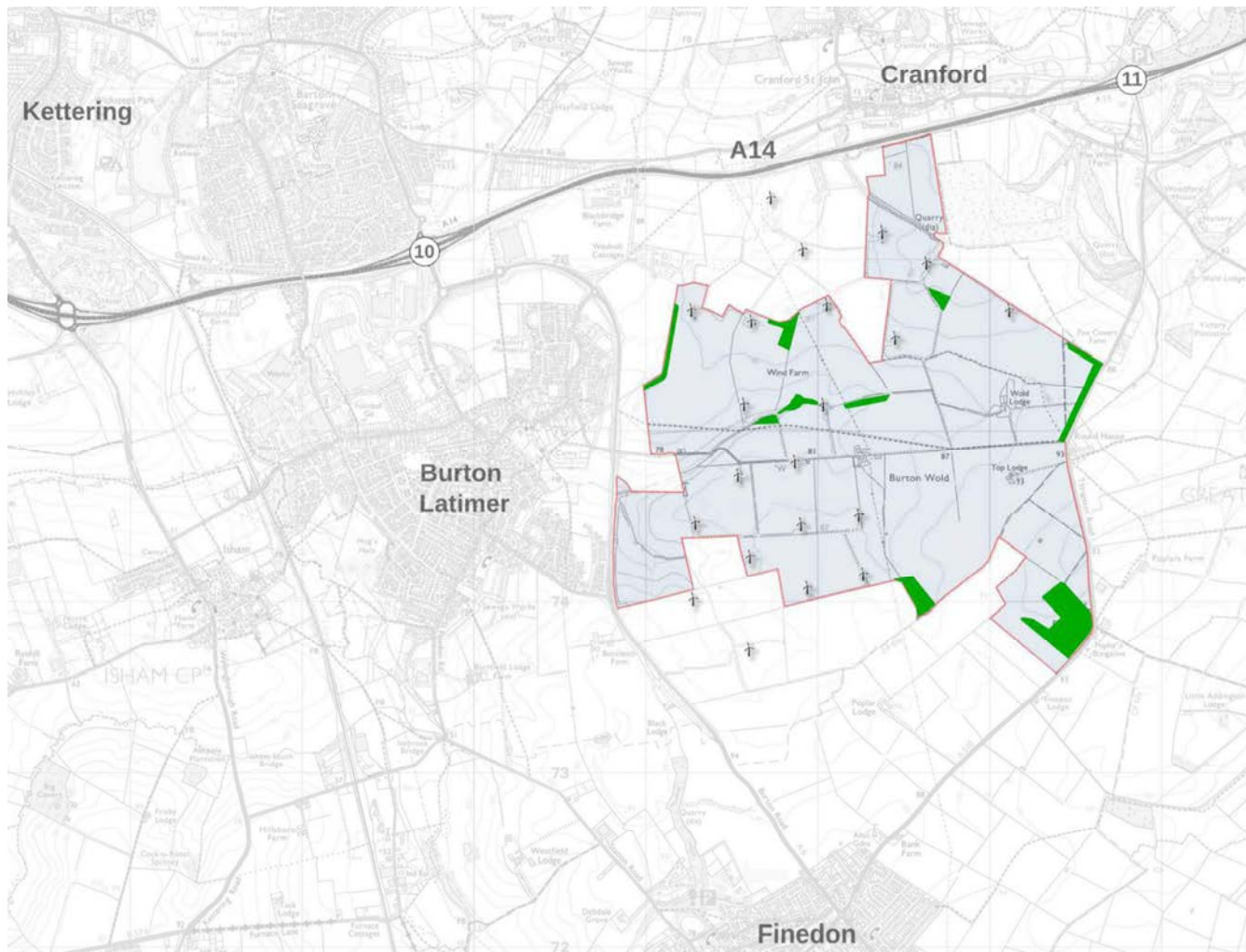


Figure 3: Area of Search for the Masterplan

Energy Infrastructure

The masterplan for the Energy Park is based around the wind turbines that comprise the Burton Wold Wind Farm, the consented solar farms and an available connection to the overhead 132kv power lines that run north south across the site. These key features are why this site was identified as a location for an Energy Park.

The most visible features at the site are the existing wind turbines, which extend between c. 100 m and 110 m in height, to the maximum extent of the turbine blades from ground level. The turbines also act as a form of constraint at the site as the land that they occupy can't be developed and any new buildings or other structures will need to be sited so that they do not adversely affect their operation.

The overhead power lines are also visible features on the skyline and extend to around 36m high from ground level. These also represent an opportunity and constraint. The opportunity exists to import and export energy, via the approved connection point that links to the power lines adjacent to the existing farm buildings at Wold Farm.

The area below and immediately adjacent to the power lines is constrained as the pylons take up land and the potential for the wires to sag in higher temperatures and sway in windy conditions means that development potential under the lines is restricted to smaller scale opportunities.

There are two areas of the site that are to be developed for solar farms. These installations will also need to be considered in respect of the location of new structures and buildings. The solar farms benefit from existing planning permission that has been implemented and will be installed in phases to coincide with development at the Energy Park. The location of the existing and consented infrastructure at the site is illustrated on Figure 4.

There is also an existing planning permission in place for a connection to the Grid via the overhead power lines. The connection point will allow energy to be imported to the site if required, and surplus energy to be exported to the National Grid. This will ensure that there is a robust energy supply for new businesses at the Energy Park and increase resilience in the National energy supply. As the energy generated at the site is renewable incorporating storage capacity, such as in the form of battery storage, will further improve resilience for new development at the site and the Grid to make best use of surplus energy that is not consumed, helping to manage peaks in demand at the site or across the National Grid.

The wind turbines and solar farms have the potential to generate circa 76 Mva, and when based on a notional demand from new business premises, this could be sufficient power for up to 1.5 million sq m of development*.

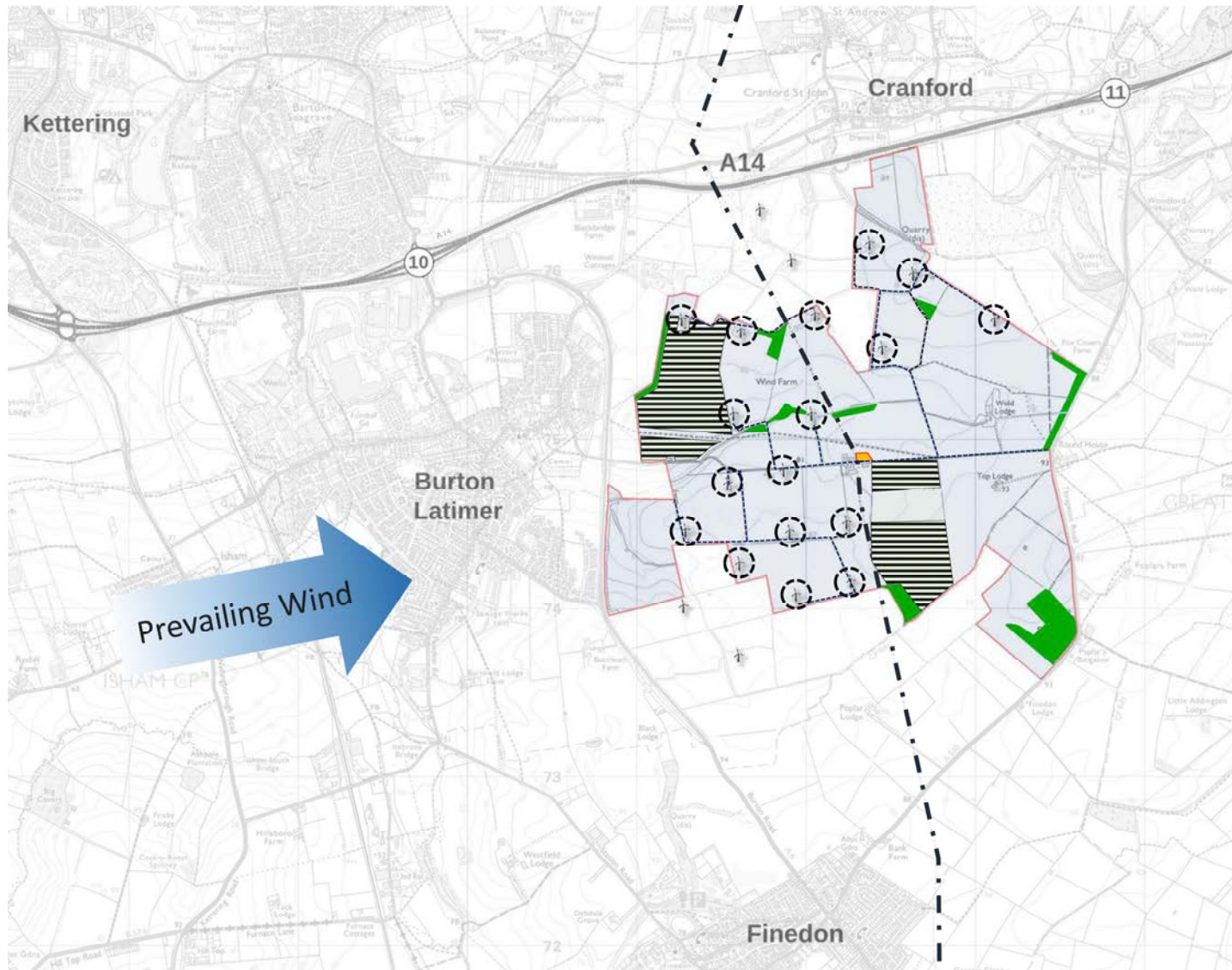


Recommendations

- The development of the Energy Park should take account of the existing energy infrastructure to ensure that this can be accommodated within the Energy Park and operations are not affected.
- Development of new business premises should therefore be located to the eastern part of the site so that potential impact on the turbines is minimised as prevailing winds are generally from the south and west.
- Space should be provided to accommodate additional energy infrastructure to supplement the existing sources and provide greater resilience and energy security by making use of the approved Grid Connection to the 132kv overhead power lines that traverse the site.
- As the energy generated at the site is renewable, then storage capacity should be provided to help balance peaks in demand by storing surplus energy.
- The scale of the development should aim to make best use of the available power generated at the site to allow businesses to benefit from this direct source of renewable energy.

(* Based on a notional power requirement of 50 kva per sq m, which is typical of modern employment development)

Energy Infrastructure



KEY

- Masterplan area of search
- Existing overhead power line
- Consented solar farm
- Consented 132kv grid connection area
- Existing on-site wind turbine
- Access route/cable run to on-site wind turbine
- Existing vegetation (excluding field margin hedgerows)



Figure 4: Existing/Consented Energy Infrastructure Plan

Landscape

The site is not affected by any landscape designations and lies within the Regional Landscape Character Type 8a: Clay Wolds, which is a distinctive elevated plateau farmland landscape, separated by rolling valleys. This area is typified by a largely empty character, with views available of the surrounding area.

The site's topography comprises an elevated area with a slightly rounded profile, with ground heights varying from 80m – 90m AOD. The highest part of the site is at the south western extent which gradually falls away to the south towards Finedon and the north towards the A14. The gently undulating plateau is defined by rolling valley landscapes created from rivers and their tributaries. The most notable is the River Nene to the east and southeast; the River Ise to the southwest and west and Alledge Brook to the north and east.

The most notable views of the site are generally localised views within 2 km from the east from Bridleway MB4, Footpath MA14 and the A510 Thrapston Road. Views across the site give a sense of the undulations across the surrounding valleys, which interrupt some views and obscure some of the more prominent features such as the existing wind turbines. In general terms the site is reasonably flat with Wold Road running east west across the site with the operational farm buildings at the centre of Wold Farm. Wold Road is generally flat until it approaches Burton Latimer where the topography changes markedly.

Views from the north along the A510 are obscured by existing boundary planting. Views are also available of the northern extent of the site and existing wind turbines from parts of Cranford on higher ground where there is limited tree planting or landscape cover. Extensive views towards the western extents of the site and the existing wind turbines are afforded from the southern part of the A6, where there is limited boundary planting. Views towards the site from the northern parts of the A6 are more limited due to level differences and more extensive planting along the boundary. Longer range views to the site are generally from the west and north as the land to the south and east is at a lower level. Views from these settlements are naturally or partially screened by the landform. Any views that are possible, tend to be filtered by either built form or by more heavily vegetated areas, often associated with the edges of urban areas.

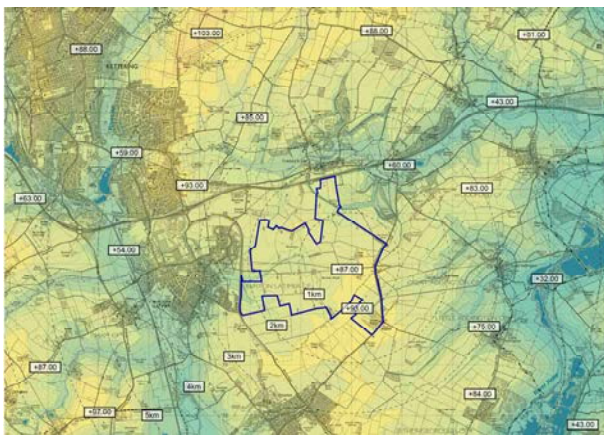


Figure 5: Existing Topography Plan

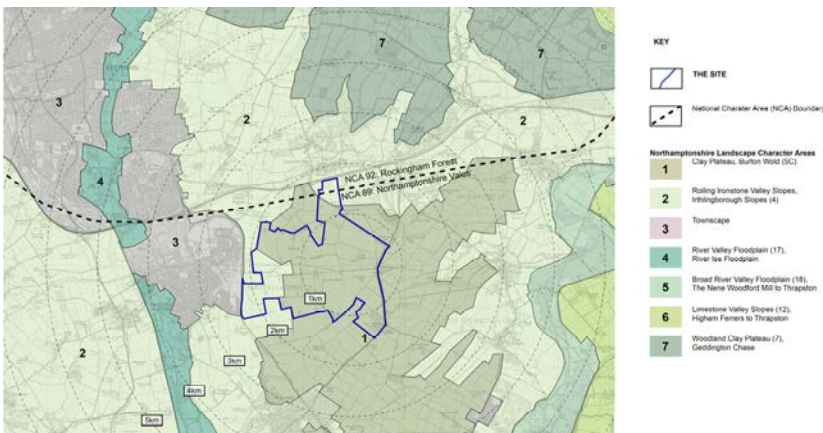


Figure 6: Landscape Character Plan

The North Northamptonshire Joint Core Strategy, Green Infrastructure Delivery Plan, the Plan for the Borough of Wellingborough and the Site Specific Part 2 Local Plan for Kettering identify the green infrastructure networks at both strategic (sub-regional) and local scales across North Northamptonshire.

The sub-regional network consists of interlinked corridors which broadly follow the main river valleys and tributaries, which is complemented by local green infrastructure corridors. The closest to the site is to 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, Cranford St John SSSI to the north and Twywell Hills and Dales Nature Reserve to the northeast.

There are various small blocks of woodland, spinneys hedgerows and tree belts within and surrounding the site that have no designations, but which provide other habitat areas. These areas provide green linkages to the local green infrastructure corridor at the A14 and provide important habitat for wildlife.

Recommendations:

- The Energy Park proposals should consider the topography and landscape to ensure that as far as possible, the development integrates into the surroundings.
- Development located towards the southern and eastern part of the site should be of a smaller scale where the site levels are at their highest.
- Landscape buffers should be provided to supplement existing perimeter planting to screen the development and where possible account for views towards the development from nearby receptors, e.g. from Bridleway MB4 and the Roundhouse building.
- A Green Infrastructure Strategy should be prepared to guide future development of the site and ensure that a holistic approach is taken to delivery of development that includes sustainable drainage, biodiversity net gain, access requirements such as realignment of existing rights of way and potential for new amenity routes and/or additional public access.
- A detailed Landscape and Visual Impact Assessment should be prepared to support any application at the site to identify appropriate mitigation and inform the landscape strategy, building form and the choice of materials and colours for any new development.
- The Joint Core Strategy notes that Green Roofs can be useful tools for larger employment buildings, especially those with large roof spans. The feasibility of providing green will be explored at application stage.

Landscape

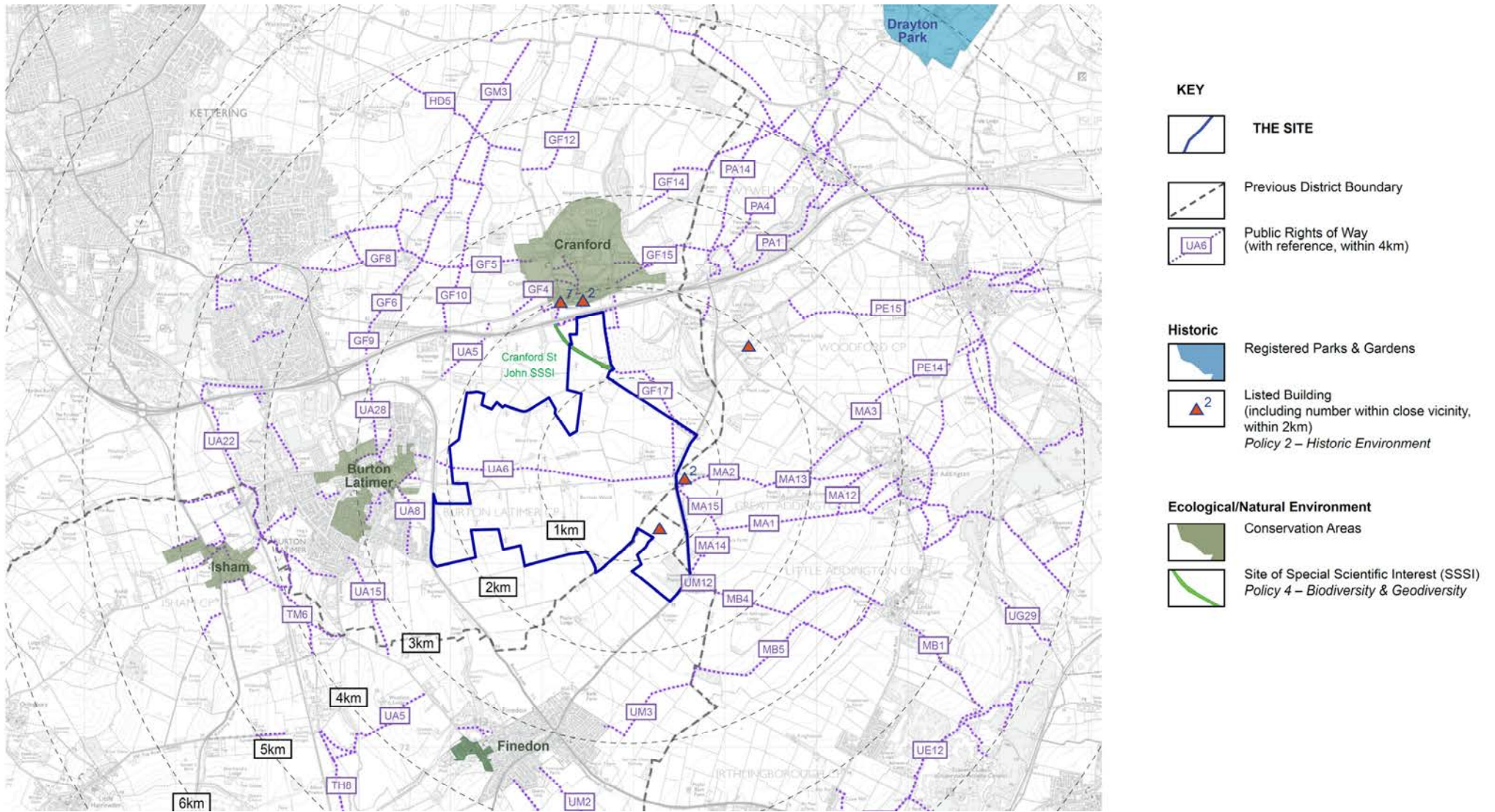


Figure 7: Landscape Policy Plan

Ecology

There are no national, regional or local landscape or ecology designations that affect the site apart from Cranford St John Site of Special Scientific Interest (SSSI), which is designated solely on account of its geological interest and is not therefore identified to be of any significant ecological value. The site is not within or affected by an area of natural beauty or an area of special landscape quality. The site predominantly consists of large arable fields bounded by a mix of hedgerows, scrub/ruderal vegetation, areas of plantation and deciduous woodland with post and wire fences as well as some existing buildings areas of improved grassland. There are several drains and streams that run adjacent to, and through, the site, which provide drainage to the farmland and two ponds within the area of search, one located adjacent to the existing property of Wold Lodge and the other in the western part of the wider site.

The nearest protected sites (SSSI's, Special Areas of Conservation (SAC), Special Protection Areas (SPA) and RAMSAR sites) are:

- The Twywell Gullet SSSI, circa 2km to the north east of the site adjacent to Junction 11 of the A14;
- The Southfield Farm SSSI located circa 2km to the north west of the site and just south of Kettering;
- The Upper Nene Valley Gravel Pits SSSI and SPA/Ramsar site which is circa 3km to the east of the site and extends from Great Addington down to Irthlingborough; and
- The Aldwinckle Marsh SSSI which forms part of the Upper Nene Valley SPA/Ramsar site is circa 7 km to the north east and just north of Thrapston.

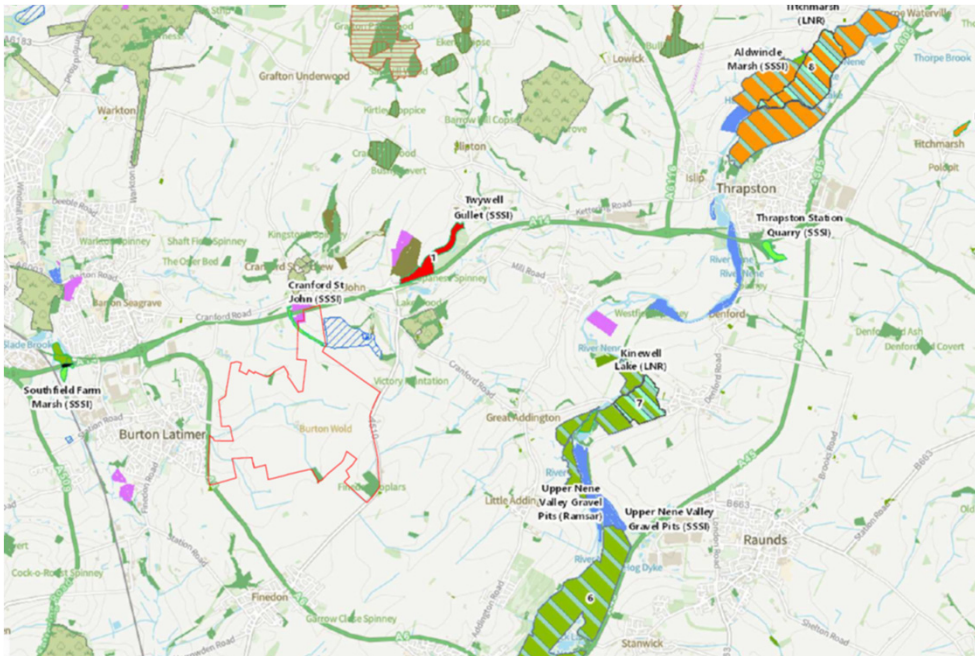


Figure 8: Extract from Magic Map (© Magic Map/DEFRA & others)

The site is characterised by arable farmland that is in agricultural use, but it does include other habitat types as illustrated on Figure 9.

The ecology surveys undertaken to date comprised initial walkover surveys followed by detailed surveys for individual species that were considered to be appropriate, as well as wintering bird surveys.

The surveys found no evidence of badgers or reptiles and due to the extensive agricultural nature of the site it is considered to be of limited ecological significance. A wintering bird survey was carried out in the winter of 2020/21 that recorded few instances of wetland species visiting the site. The wider site does, however, support nesting birds, foraging and commuting bats including Barbastelle as well as Great Crested Newts.

The meadow adjacent to the Cranford St John SSSI is relatively remote and has a steep change in levels caused by the extraction of the iron ore during the mining operations. The soil is not good quality agricultural land as it contains numerous rocks and material that prevents it being sowed to produce crops. It is considered that this part of the site would not be suitable for development but has good potential to be improved to become a biodiversity net gain receptor site as it is currently just a meadow area used for grazing with limited biodiversity value in its current state..

Recommendations

- Existing areas of broadleaved and plantation woodland should be retained wherever possible, particularly the areas to the eastern boundary and to the west.
- Areas of hedgerow within the site should be retained where possible.
- Transit areas for foraging and commuting bats including Barbastelle should be provided within the site to ensure movement of these species across and through the site
- An external lighting strategy will be needed to identify how dark zones will be maintained for wildlife
- Biodiversity Net Gain (minimum 10%) should be secured to be exceeded wherever possible, to include use of the receptor area to the north.
- New water features should be provided as part of the sustainable drainage strategy and designed to support biodiversity and provide habitats
- Defined amenity areas should also be provided for employees to reduce pressure on naturalised areas that provide habitat.
- Native species should be used for new planting as part of any landscape proposals.

Ecology

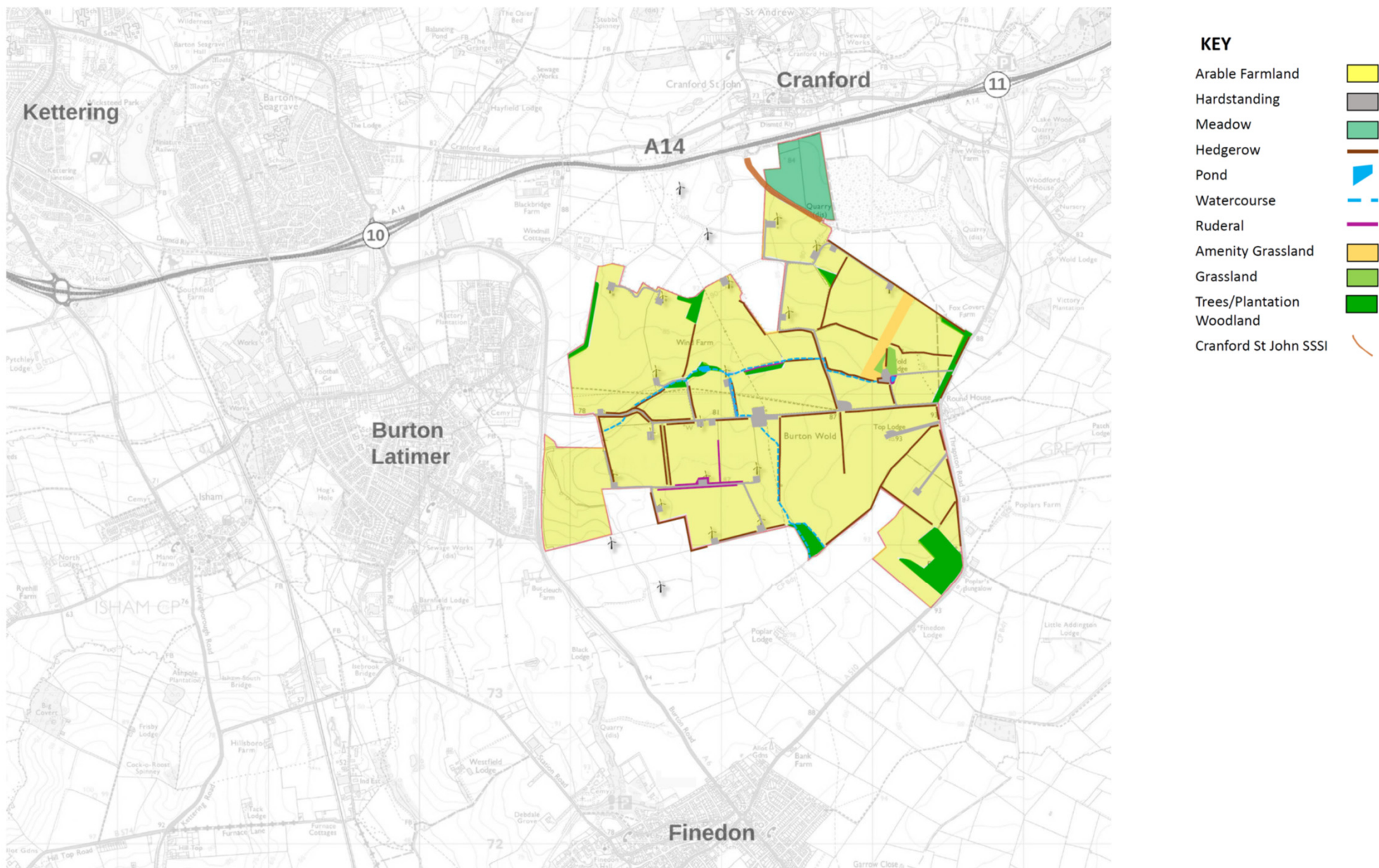


Figure 9: Existing Habitat Plan

Heritage & Archaeology

An initial assessment has been made of heritage assets and potential archaeological features that could potentially be affected by the Energy Park proposals. There are two Grade II listed buildings within or adjacent to the site as follows:

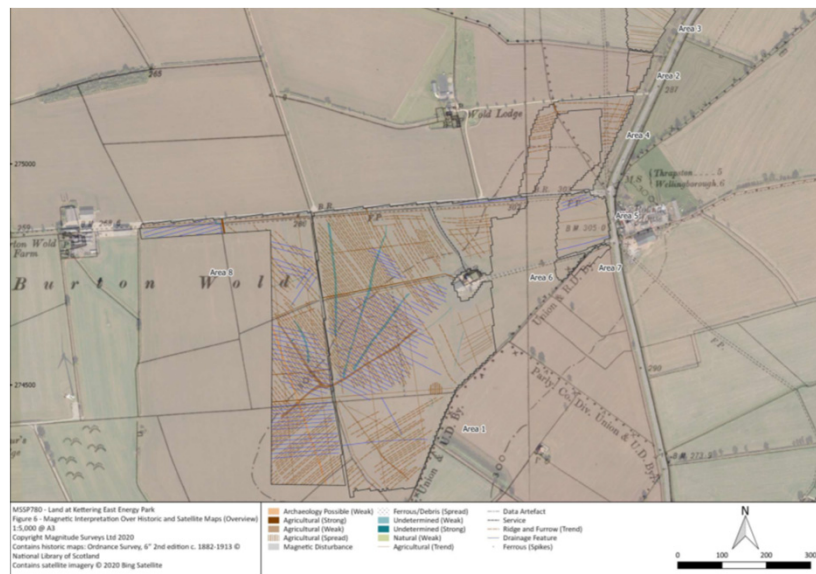
1. Within the site – A mid-18th century barn - 640m to the southeast (although it is understood that this was rebuilt and little of the original building now exists)
2. Adjacent to the site – The Round House - to the east on the A510 opposite the site

Apart from these assets, there are no designated heritage assets (Conservation Areas, Scheduled Monuments, Registered Parks & Gardens or Registered Battlefields) within the Masterplan Area of Search. As these Listed Buildings are inter-visible with the site, the potential impact of the development on their respective significance has been considered. The other buildings within the site comprise residential buildings and operational buildings such as modern barns associated with the current agricultural use. These are generally the equivalent of 2-3 storeys high with ancillary single storey buildings and are of no heritage value.

There is distant visibility of the spire of the Church of St Mary, Burton Latimer from the site, and the Energy Park proposals have the potential to form part of wider views from the church and Conservation Area. However, these views are experienced only distantly from the site and it is not possible to discern their individual heritage significance. In return views east towards the site from the Conservation Area, the open space of the site is not visible by virtue of the intervening modern built form to the southern part of the Conservation Area, vegetation and changing topography. Where the proposed development within the site may potentially be visible, it will be experienced distantly on the horizon beyond the agricultural fields closest to the Conservation Area. There are also existing Conservation Areas at Cranford and Finedon, although the inter-visibility of the site to and from these areas is limited by the existing urban context that makes up the Conservation Area and the intervening landscape.



The Round House (Grade II Listed)



Geophysics Survey with Historic Mapping

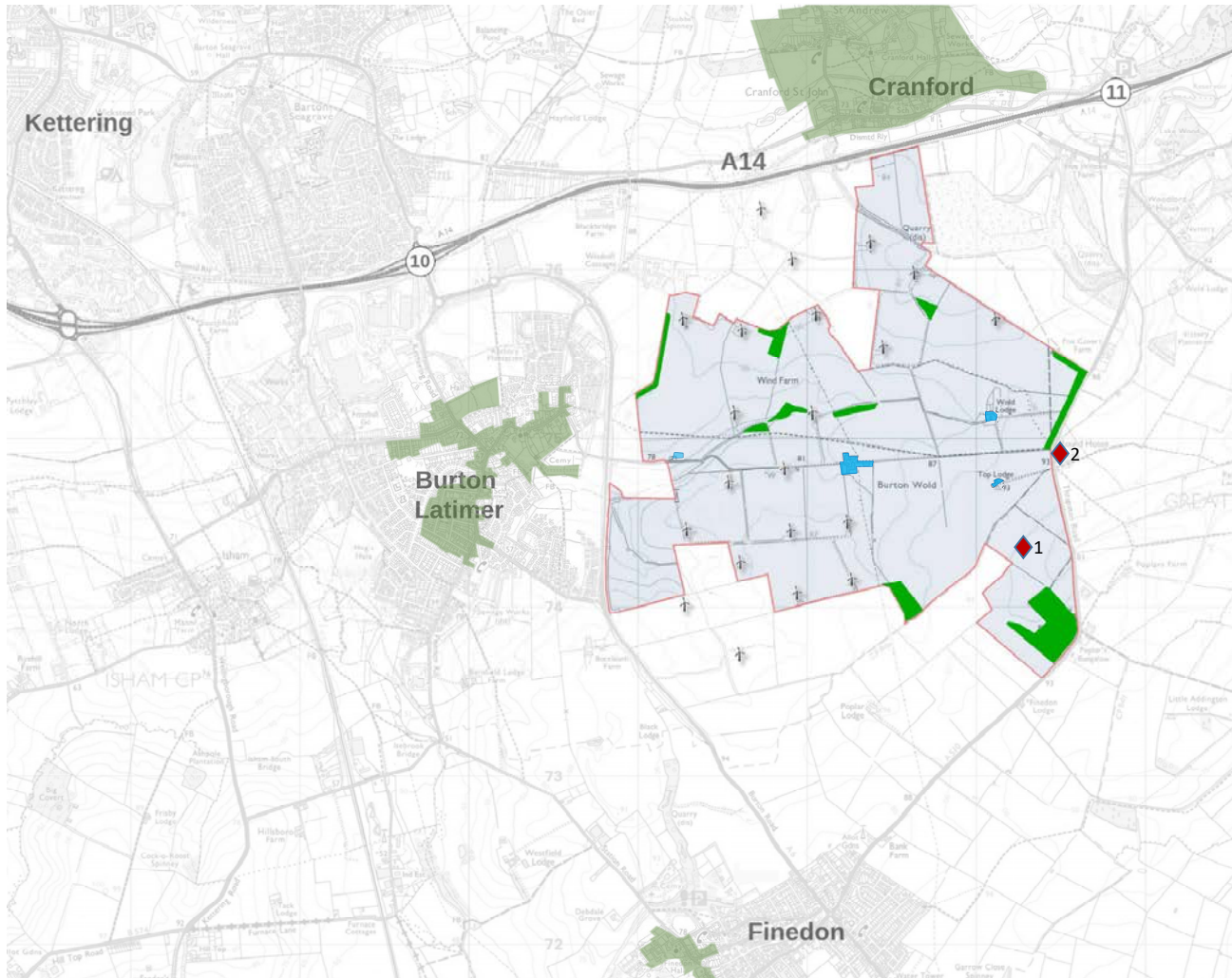
There is the potential for some below ground archaeological features to be present but those at limited depth are likely to have been affected by the farming activity at the site if present. Geophysics surveys have indicated that there is perhaps greater potential for below ground remains of value to be present adjacent to the consented solar farm plot to the western part of the site near Burton Latimer.

The surveys for the solar farm to the eastern part of the site did not identify similar strong areas of potential, but archaeological features could of course still be present. Detailed site investigations comprising trenching have not been undertaken on the majority of the site, but these will need to be undertaken following further detailed assessment prior to any development taking place.

Recommendations:

- The masterplan area should be set back from the southern and eastern boundaries of the site with smaller scale development located to the east, particularly as site levels are higher at this location to take account of longer range views.
- Landscape buffers should also be provided to screen the development and help the development integrate into the landscape with tree planting set back from the boundaries to retain a more open frontage to Thrapston Road opposite the Round House building.
- Views towards and of the Round House should be considered in relation to its setting to inform the future layout and massing of proposed development at the Energy Park.
- A detailed heritage impact assessment will be needed to support any future planning application.
- Investigations will need to be undertaken to establish the presence of archaeological remains and development will need to be planned accordingly following such investigations.

Heritage & Archaeology



KEY

Listed Building on/adjacent to site



Conservation Area



Existing buildings on site



Trees/Plantation Woodland



Figure 10: Heritage Assets

Highways & Access

The site is well located to support employment development as it benefits from good access to the strategic highway network and is located within the Oxford Cambridge Arc. A large part of the UK is within easy reach of the site including the cities, towns, institutions and businesses that are within the Oxford Cambridge Arc.

The site is in close proximity to Junction 11 of the A14 via the A510. Initial modelling work undertaken in conjunction with National Highways and the local Highway Authority indicate that there is capacity at this junction and across the A14 to accommodate new development at the Energy Park. The modelling also anticipates that some traffic will come to the site from other parts of the road network, not just the A14. The most suitable route to access the site, particularly for any larger HGV traffic, will be from the north via Junction 11.

There are 5 existing points of connection into the site from the adopted highway. Access is available from the west from Burton Latimer along Wold Road, which is adopted highway as it crosses the A6. The remainder of Wold Road is privately owned and maintained and no public access is currently allowed along this longer section of the road. Wold Road connects to the A510 Thrapston Road just to the north of the Round House and a further junction exists to the north of this that provides access, again by a private road, to the residential property of Wold Lodge. A further access into the site, again from the A510 on a private road, is available to the south of the Round House which provides access to the residential property of Top Lodge, whilst further to the south along the A510 is another private access leading to Poplars Barn.

The main opportunities for access to the site to serve new development are where the site ownership boundary adjoins the adopted public highway at a main route. There are three such areas where the ownership adjoins with nearby main roads, the A6 to the west, the A14 to the north and the A510 to the east. The best location for access to the Energy Park is from the A510 to the north of the Round House, as an appropriate form of access can be accommodated, which will offer links to Junction 11 and this will not be visible from the Round House.

There are a number of private tracks and roads within the site to provide access around the farm and for maintenance of the wind turbines. Public access to the site is available via public footpath UA6 and Bridleway GF17/GF18. There are a number of bridleways and footpaths off site including a link to Cranford is also available via footpath GF21 that connects to Bridleway GF17 to the east near the landfill site.



Figure 11: Public Rights of Way within the site

There are no national cycle routes within the study area, but there are some existing shared cycle way and pedestrian routes to the west from Burton Latimer to Kettering that provide access across Junction 10 of the A14. The existing Bridleway network around the site can also be used by bicycles.

In respect of public transport, the nearest railway station to the site is Kettering Railway station which is some 6.6 miles to the north west. There are no bus stops or bus routes on the A510 that presently serve the site. The nearest bus routes are available in Burton Latimer on Church Road, Higham Road and the High Street served by routes 47, 48 and 50 providing connections to Kettering, Wellingborough and Bedford. Cranford is served by route 16, with bus stops on the High Street, connecting to Kettering, Thrapston and Raunds. The frequency of these bus services is variable.

Recommendations

- Main Point of Access to the site should be via the A510 with traffic directed to use Junction 11 of the A14.
- The main point of access to the Energy Park site should be from the east off the A510 to the north of the Roundhouse to reduce its intervisibility with this Listed Building (Option 4).
- Access to the site from Burton Latimer using Wold Road should be limited to walking, cycling and emergency access.
- The existing junction of Wold Road and the A510 could be retained as an emergency or secondary access to the site
- Access to the site from the south via Finedon and the A6 will be minimised where possible using management measures.
- Opportunities to improve pedestrian and cycle access should be explored, particularly strengthening connections to Burton Latimer and Cranford and potentially Finedon.
- Opportunities to enhance sustainable travel to and from the site should be explored, potentially by providing a shuttle bus from the nearest transport hubs such as Kettering and Wellingborough.

Highways & Access

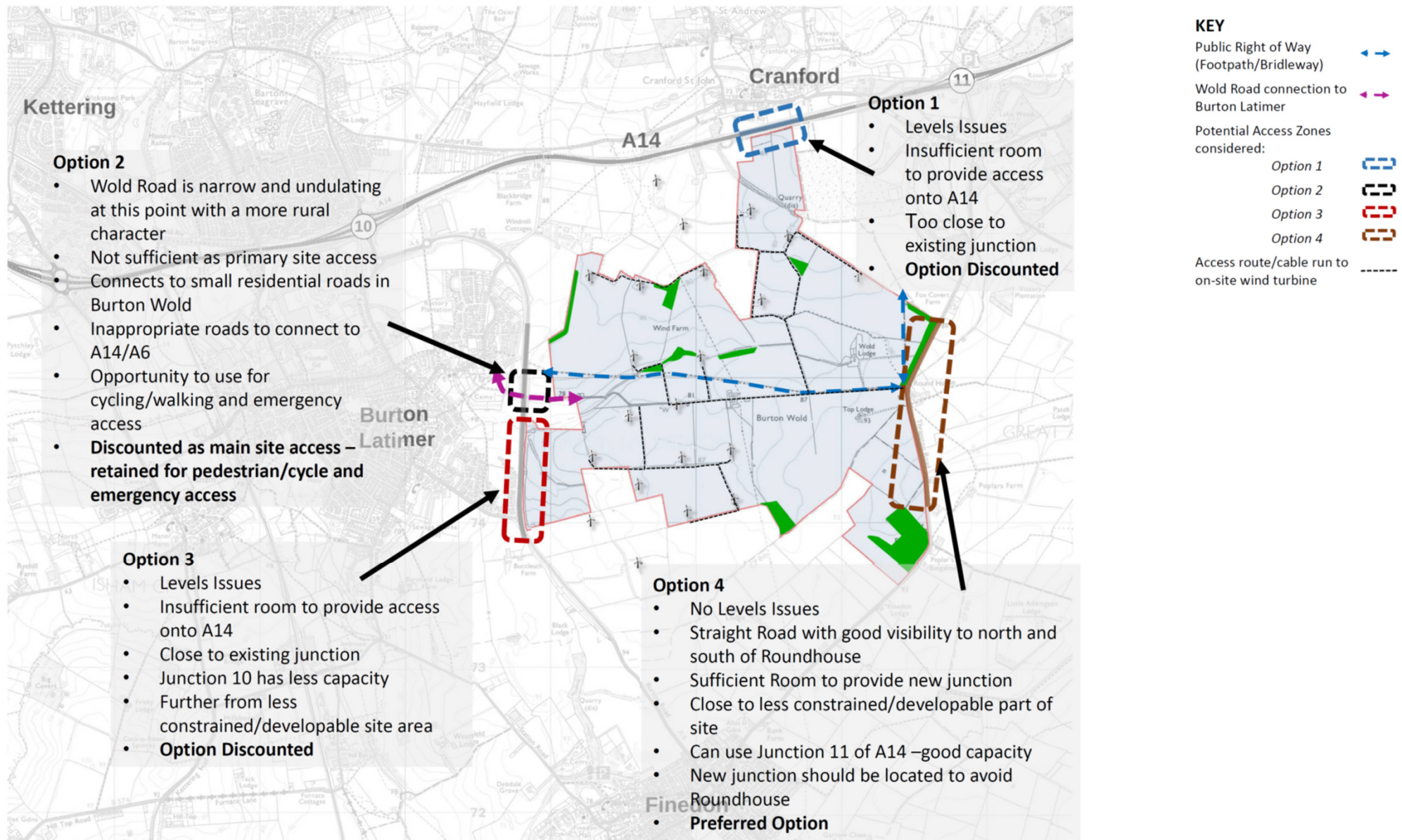


Figure 12: Site Access Opportunities Plan

Flood Risk & Drainage

The site is within Flood Zone 1 and is therefore at a low risk of flooding. The Strategic Flood Risk Assessment for the Kettering area has been reviewed and no flood events have been identified that have led to flooding at the site.

The nearest main watercourse to the site is the Alledge Brook which is approximately 1.2km to the north and so it is not considered that flooding from this or any other river will pose any significant risk. There are a number of unnamed ordinary watercourses that cross the site and which provide elements of drainage, which are understood to drain variously to the west, southwest, north and north east. These are not shown on the Environment Agency mapping systems due to their small size and limited catchment.

The Environment Agency mapping for surface water flood risk also indicates that the site is at a low risk of flooding from surface water, however limited areas of potential risk are shown on the mapping which generally correlates with the location of the ordinary watercourses on site. The main flood risk at the site is therefore associated with the existing ordinary watercourses although some of these are outside of the proposed Masterplan area and are understood to carry water away from this area. The watercourses within the site will therefore need to be considered as part of the Energy Park proposals to ensure that the risk from surface water flooding is handled appropriately.

The location of the ordinary watercourses will need to be reviewed to assess how they are affected by the Energy Park proposals and whether any diversions may be needed. Where the ordinary watercourses are retained, then a suitable riparian buffer will need to be maintained adjacent to these. Any works to these watercourses will need to be discussed with the Drainage Board.

In geological terms, the site is predominantly underlain by a Limestone bedrock, although a small part of the site to the eastern boundary is underlain by mudstone. The vast majority of the site is also shown to have a layer of superficial deposits overlaying the bedrock, made up of Oadby Member although there is a small area to the west with diamicton of Bozeat Till.

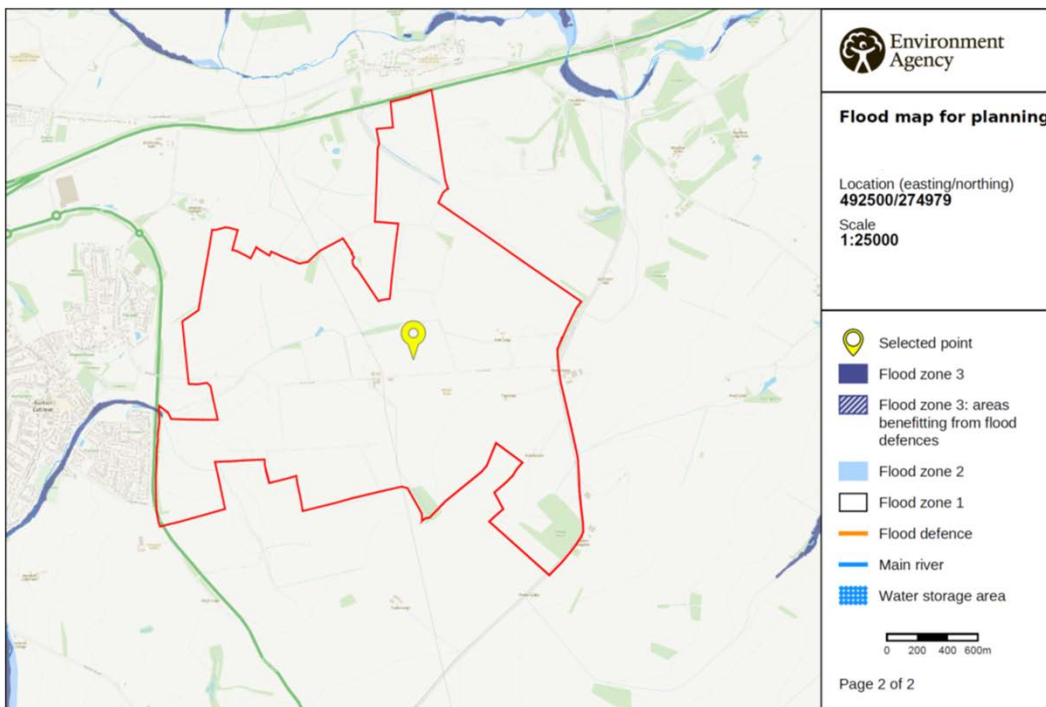


Figure 13: Extract from Flood Risk Map for Planning (© Environment Agency)

The Limestone formation is classified as a Principal Aquifer however the other geology is classified as either unproductive or in the case of the predominant Oadby Member to be Secondary (undifferentiated). The geology of the site indicates that infiltration should be possible as part of the drainage strategy.

The Energy Park proposals would lead to the addition of new impermeable surfaces at the site, which will increase surface water run off compared to the site's predominant existing use as agricultural land. To ensure that the incidence and severity of flooding does not increase as a result of surface water run-off, a drainage strategy will need to be prepared.

Recommendations

- Further detailed work is required at application stage to assess the details of the drainage strategy and review issues such as diversion of the existing watercourses and drainage channels at the site, which may be required to facilitate the development.
- A suitable drainage strategy should be prepared for the site, which will need to attenuate volumes of up to the 1:100 year event with an allowance for climate change, with run off controlled at the equivalent greenfield rate.
- Principles of Sustainable Urban Drainage should be used to form the drainage strategy, with the use of above ground drainage features such as basins. The drainage will generally use existing levels with drainage falling to the north and west. A sequence of drainage basins and channels could be provided at the site to allow the development to come forward in a phased manner so that required infrastructure can be provided to serve each phase.
- The drainage strategy should have input from the project ecologist to see what biodiversity gains/habitat areas can be created/enhanced as part of the drainage approach.
- The Joint Core Strategy notes that Green Roofs can be useful tools for larger employment buildings, especially those with large roof spans. The feasibility of providing green roofs on larger buildings that may come forward at the site will be explored at application stage.

Flood Risk & Drainage

The below graphics are from the Strategic Flood Risk Assessment for Kettering Borough, which extends to its former administrative boundary, with the area to the south east covered in the Wellingborough Strategic Flood Risk Assessment, however the information is visible as a partially occluded layer, which relates to surface water drainage. The information within the SFRA identifies that the site is not prone to flood, is in Flood Risk Zone 1 and the only constraint to address in relation to flood risk and drainage relates to surface water.

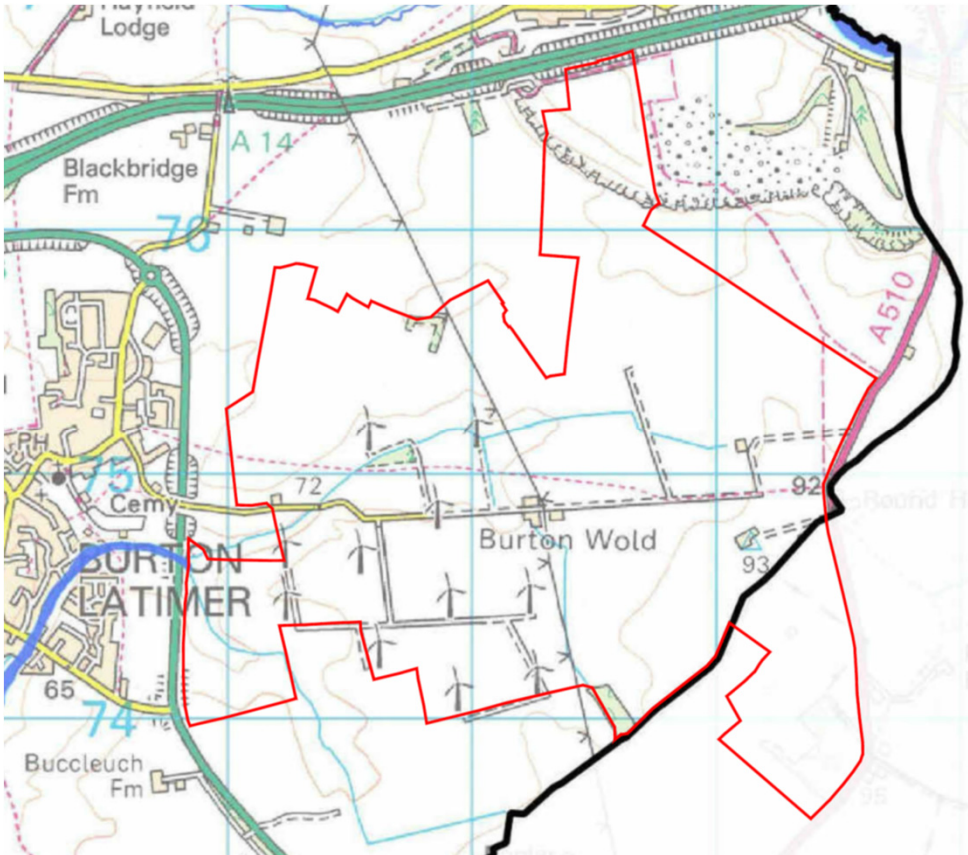


Figure 14: Extract from Kettering SFRA – Flood Risk from Rivers

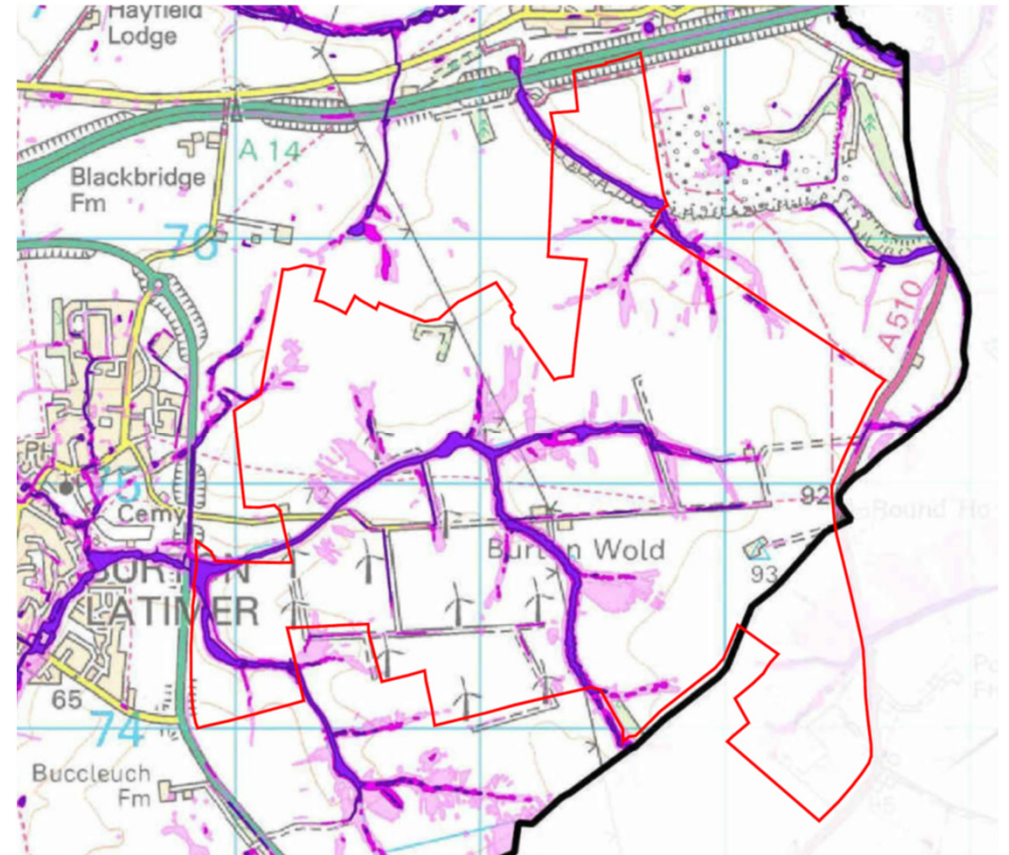


Figure 15: Extract from Kettering SFRA – Flood Risk from Surface Water

Constraints & Opportunities

The previous sections of this report outline the constraints and issues that will inform the preparation of the masterplan and in turn any future planning application. The assessment work undertaken to date demonstrates that the area of search for the Masterplan is not affected by any designations or significant constraints that would affect development of the Energy Park. The constraints that need to be taken into account relate to more localized matters, such as the location of the wind turbines and certain areas of the area of search are more suitable to accommodate development than others.

The issues that will need to be considered in the preparation of the masterplan are generally as follows:

- Location of existing and consented energy infrastructure and ongoing access requirements/cablings that serves this
- Requirement to maintain operational farm buildings to service retained agricultural land
- Requirement to accommodate surface water drainage to avoid future flood risk on the site and to adjoining areas
- Site Levels and visibility of future development from the local area and from longer range views
- Existing planting and habitat features, to be retained where possible
- Existing public rights of way within the site
- Relationship of the development with the immediate surroundings, particularly the Round House to the east which is a designated heritage asset

The analysis of the existing site has identified a series of recommendations to avoid impacts or to mitigate potential impacts that may arise from development at the site. The concept of the Energy Park is to provide a form of development that supports the transition to a low carbon society and contributes to economic growth in a way that allows the development to integrate into the surroundings as much as possible to create a sustainable form of development.

Whilst it is important to identify the constraints that need to be taken into account, it is also important to consider the opportunities that are presented by development. The key opportunity presented by the site and the proposed Energy Park is to create a development that will meet the main objectives of the Joint Core Strategy and National Policy in supporting economic growth and job creation in a way that reduces carbon emissions and presents a possible template for other similar developments in the UK.

The initial meetings with some of the nearby Town and Parish Councils have also helped to identify issues that the surrounding communities will be interested in and how the development can respond to these. The Opportunities presented by development include:

- Providing flexibility to provide new lab space and other uses that are priced out of areas such as Cambridge or Oxford, where land and new premises are in short supply
- Support the development of new, modern, energy efficient employment premises across a range of types to provide for future needs of Kettering and North Northamptonshire
- Provide a site where businesses with high energy use can benefit directly from a resilient, renewable energy supply to meet their operational needs
- Providing additional energy capacity through further generation or storage at the site to improve resilience in the Grid, including PV's on the roofspace of new buildings
- Making new buildings energy efficient to ensure energy is used efficiently, targeting BREEAM Excellent
- Securing a net gain for biodiversity on site, with the potential to exceed the 10% requirement set in the Environment Act
- Improve cycle and pedestrian access to Burton Latimer, Kettering and Cranford
- Use the least constrained land to provide new business premises and energy infrastructure
- Incorporate a sustainable transport hub at the site
- Accommodate new, native planting within the development area to provide landscape buffers, amenity areas and screening of new buildings
- Explore opportunities for improving public access at the site
- Incorporate above ground sustainable urban drainage features that can also support biodiversity
- Make best use of the available on site energy and supplement this with new infrastructure including solar photovoltaic panels on the roofspace of new buildings
- Support modern agricultural practices and provide space for hydroponic uses that could also make use of renewable energy/excess heat if generated by future businesses
- Establish a potential a Community Fund to spread the benefits of the development to the surrounding area.

Constraints & Opportunities

There is an opportunity to accommodate development at the site to form part of the Energy Park, which include additional energy infrastructure, employment uses and hydroponics uses. These different uses have been assessed to understand what requirements they have in respect of site characteristics or location. This has then informed the site analysis, which considers which parts of the Burton Wold site may be best suited to accommodate these uses.

The key requirements for these uses are summarised below:

Hydroponics

Ability to accommodate lightweight structures of up to 8 metres in height

Regular and relatively flat plots are required to accommodate the structures, ideally with minimal work to adjust ground levels

Proximity to on-site renewable infrastructure and other uses where excess heat generation can be used to supply the structures

Requires frequent but low intensity access for deliveries from HGV's and employees

Employment Uses

Flexible Plots with the ability to accommodate different layouts and building footprints to meet occupier requirements

Can be adapted to provide for flexible uses across Class E (office, research & development, light industrial), B2 (manufacturing/industrial) and B8

Ability to accommodate new buildings/units of varying heights – from circa 8 metres potentially up to circa 30 m

Good, convenient access to the highway network required for HGV's and employees

Proximity to on-site renewables and grid connection

Energy infrastructure

Located in close proximity to Grid Connection and proposed development it will serve

Requires minimal access, only for maintenance & management

Ground levels for solar pv and battery storage can vary as installed in modular arrangements

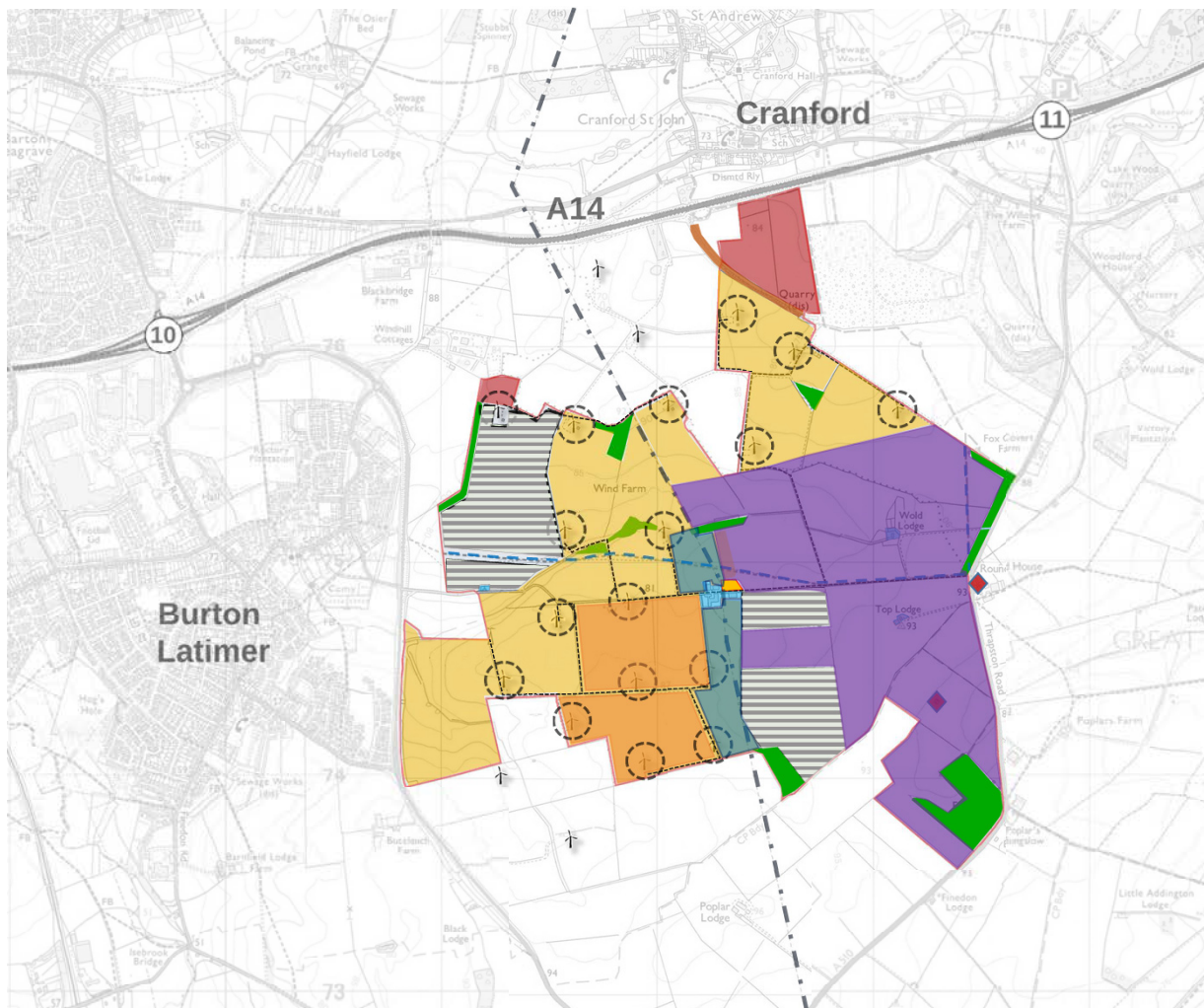
Solar PV needs to have good southerly aspect with limited shading to ensure efficiency of power output.

Site Analysis – Categorising the Site

To assist in identifying where development would be most suitable, based on the assessment work and identification of site constraints, the land within the area of search was categorised to indicate its development potential. In turn, this would then form the basis for the masterplan and future more detailed studies that would be undertaken as part of any future planning application. The site has been categorised as follows:

- Land that is generally unconstrained, although consideration of some features/issues will be needed (coloured purple on Figure 16)
- Land is constrained by proximity to the wind turbines, but lower height and less intense development could be supported (coloured amber/orange on Figure 16)
- Land is constrained by proximity to overhead power lines but this could be suitable for additional infrastructure and other energy uses (coloured blue on Figure 16)
- Land considered best for retention as agricultural use as has limited development potential (coloured yellow on Figure 16)
- Land is not accessible and/or has significant constraints (coloured red on Figure 16)

These categories are shown on Figure 16 below, which also includes existing and consented energy infrastructure and key features of the site. From this it can be seen that the least constrained parts of the site are to the east and south.



KEY






- Area with strongest development potential 
- Area with potential for additional Energy Infrastructure 
- Area's best retained for agriculture with more limited potential 
- Area with greatest potential for Hydroponics 
- Area with best opportunity for bio-diversity enhancement 
- Consented solar farm 
- Consented 132kv grid connection area 

Figure 16: Site Assessment Plan 1

Site Analysis – Categorising the Site

Following the categorisation of the site, further consideration was undertaken of key views of the potential development areas. This part of the refinement process included consideration of the setting of the Listed Buildings within and adjacent to the area of search as well as local prominent views towards the development.

Preliminary visual studies identified areas that the proposed development zone were visible from. The issues considered from a visual perspective are as follows:

- Views from access routes around the site, primarily the A510 and A6
- Views from pedestrian rights of way within and also outside the area of search
- The visual setting of the Listed Buildings adjacent to and within the area of search

Some visibility of the proposed development at the site will be inevitable given that the site is currently characterised by open arable farmland, but development zones and landscape buffers can be located to minimise the visual effects of development and help the Energy Park integrate with the surroundings. The views towards the site that were considered as part of this process are identified in Figure 17 below.

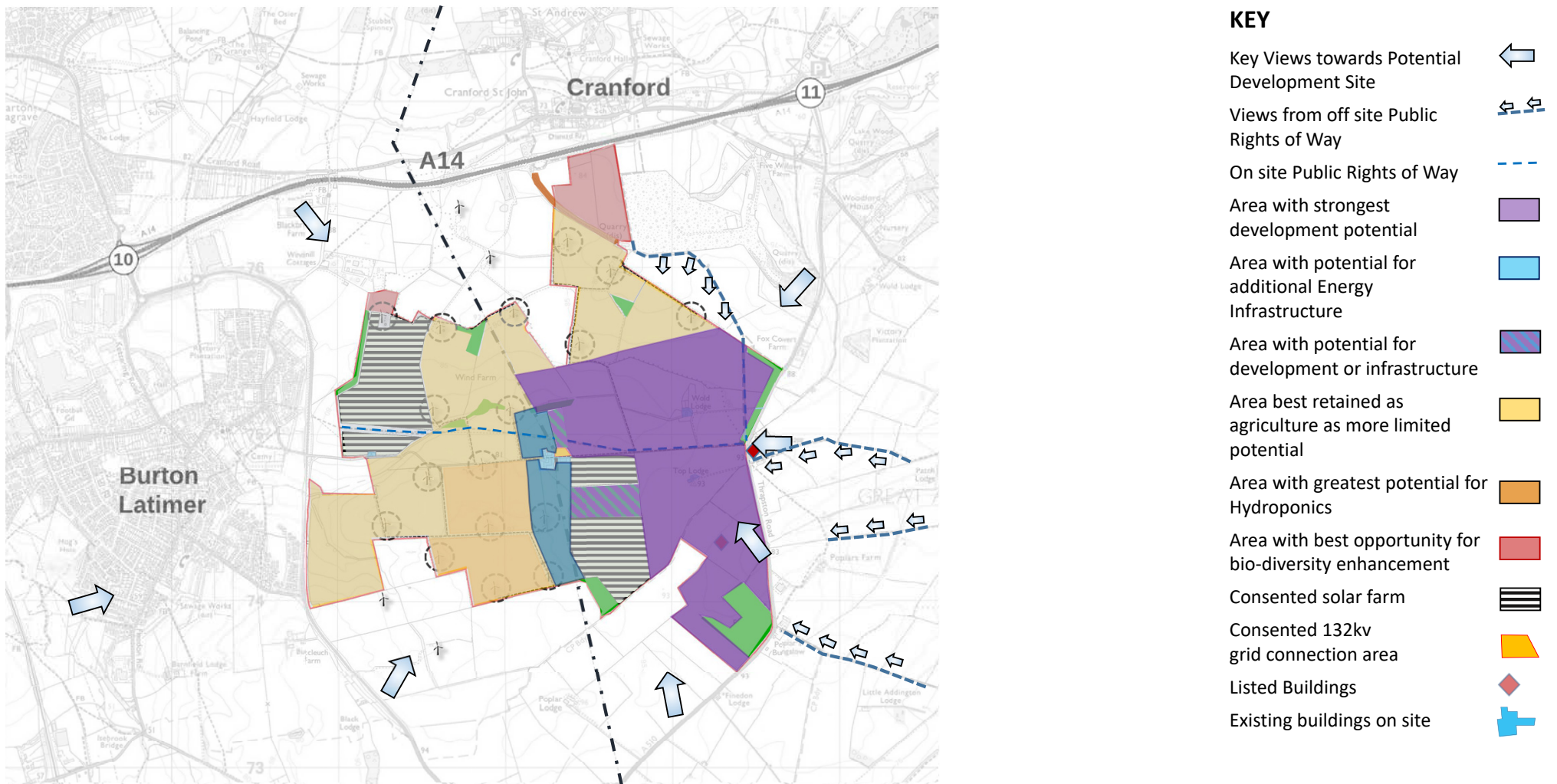


Figure 17: Site Assessment Plan 2

Site Analysis – Categorising the Site

The potential development zones and key principles were then refined to take account of the constraints to minimise views from outside the site and make best use of the least constrained land. As a result of the process, the potential development zone for the Energy Park has been amended as follows:

- Development Zone pulled back from southern and eastern boundary with a landscape buffer provided adjacent to the more visible aspects of the site and the adjacent Listed buildings.
- New access from A510 into site to the north of the Roundhouse, with the new estate road using the alignment of the existing private access
- Rationalise solar farm to make better use of land and provide a more regular development plot
- Provision of landscape buffers around the perimeter of the development zone, with wider buffers to south eastern and eastern boundary incorporating grassland and tree planting
- Hydroponics area provided on land adjacent to the wind turbines. These uses are anticipated to be under 8 metres in height, so they won't impact the operation of the wind turbines and can be accommodated within the constraints of this part of the site
- Identification of areas for future solar farms and battery storage adjacent to the point of connection and located under the overhead power lines.

The development zones shown in Figure 18 below will therefore form the basis of the Masterplan with issues such as uses, landscape principles and building heights considered within the Masterplan document.

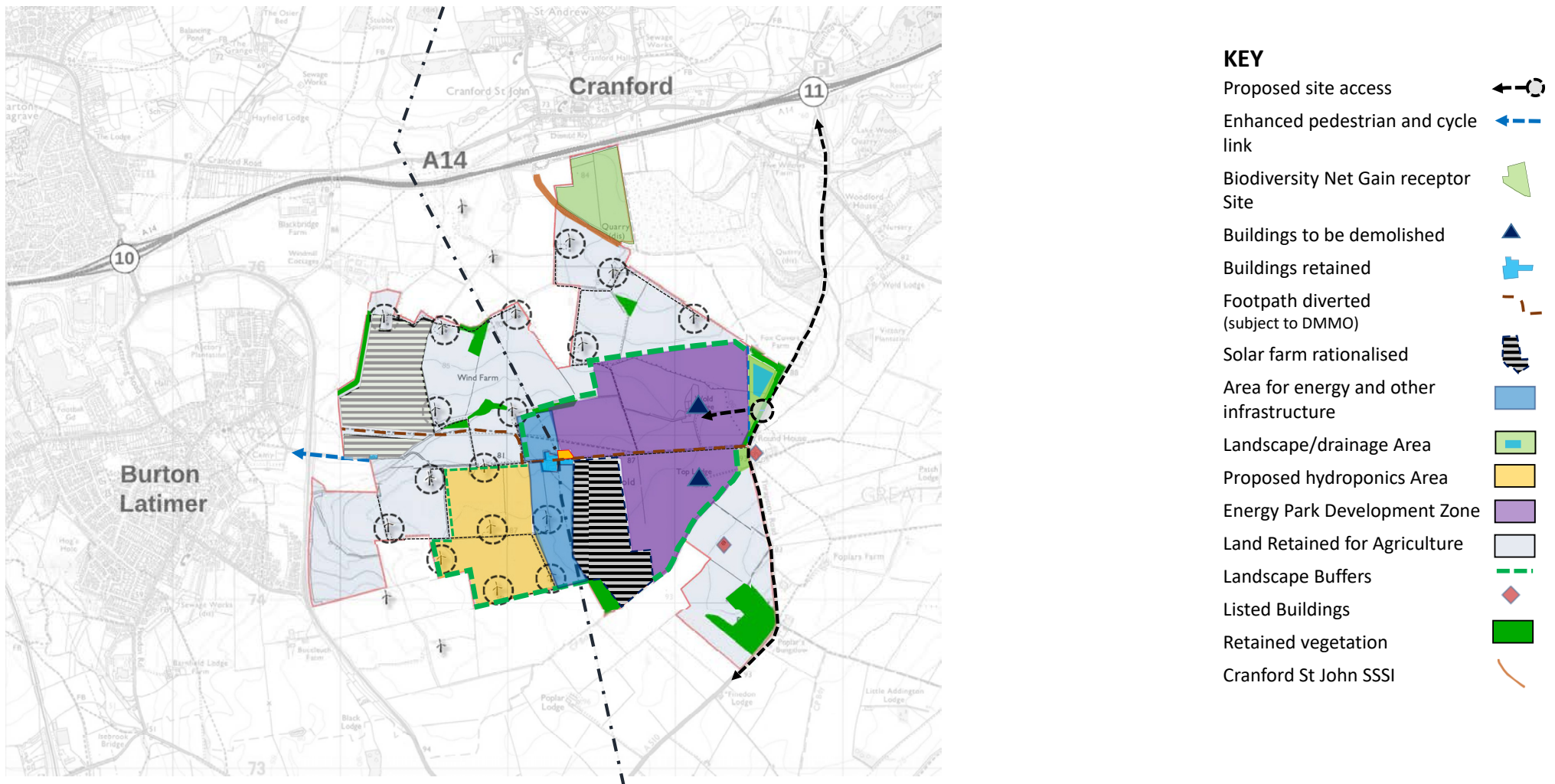


Figure 18: Site Assessment Plan 3

Next Steps

The work undertaken to date to analyse the site and identify the various constraints and opportunities will now inform the preparation of the Masterplan for the site. This assessment work has identified the areas of the site with the strongest potential to accommodate development of various types. The next stage of the assessment work is to provide more detail about the principles of development and set this out in a draft masterplan document to include a development framework that future planning applications will be guided by.

The principles of development that will be set out within the draft masterplan document will include the following:

1. A Green Infrastructure strategy to identify landscape principles, including strategic landscape buffers
2. A Biodiversity Plan to identify the principles for Biodiversity Net Gain that will be incorporated into the development
3. Sustainable Drainage Principles
4. Infrastructure Requirements to serve the development
5. Access and Sustainable Transport Strategy
6. Sustainability Principles for new development
7. The Energy Criteria for new development and businesses coming to the site
8. Development Principles for new buildings such as allowable uses, heights and materials/appearance.

Once the draft Masterplan document has been prepared, this will then be subject to public consultation.

Appendix A – Policy 26 of the Joint Core Strategy

POLICY 26 – RENEWABLE AND LOW CARBON ENERGY

Proposals for sensitively located renewable and low carbon energy generation will be supported where it can be demonstrated that the proposal meets all of the following criteria:

- a) The landscape impact of the development is minimised and mitigated against;
- b) The development links to a specific demand through a decentralised energy network or where this is not possible, the necessary infrastructure is provided to supply power to the National Grid;
- c) The siting of development avoids harm to the significance of a heritage asset and its setting in accordance with the provisions of the NPPF;
- d) The siting of development does not significantly adversely affect the amenity of existing, or proposed, residential dwellings and/or businesses, either in isolation or cumulatively, by reason of noise, odour intrusion, dust, traffic generation, visual impact or shadow flicker;
- e) The development does not result in an adverse impact on the capacity and safety of the highways network and of public rights of way;
- f) The development includes a managed programme of measures to mitigate against any adverse impacts on the built and natural environment resulting from the construction, operation and decommissioning of any equipment/infrastructure;
- g) The development does not create a significant adverse cumulative noise or visual impact when considered in conjunction with other developments planned within North Northamptonshire and adjoining local authority areas;
- h) The development retains and enhances on-site biodiversity and supports the enlargement of, and/or connection to, existing biodiversity assets such as wildlife corridors, where possible;
- i) Proposals for Solar Photovoltaic farms avoid the best and most versatile agricultural land.

Provision will be made for the removal of apparatus and reinstatement of the site to an acceptable condition, should the scheme become redundant and/or at the end of the permitted period for time limited planning permissions.

Land at Burton Wold is identified for an Energy Park to add to the range of renewable energy technologies already present. The development will serve as a decentralised energy network which will link the energy production to existing and new developments.

Proposals within the Energy Park should meet criteria a) to i) above and should also be in accordance with a comprehensive masterplan which will be prepared in consultation with the local community and stakeholders and agreed by the local planning authority;

This will:

1. Define development boundaries and also the renewable/low carbon technologies and land uses to be developed on the site;
2. Make provision for a mix of complimentary employment uses to facilitate development of local knowledge, expertise and research and development;
3. Demonstrate how the proposal will contribute towards meeting the energy needs of existing and planned development, including East Kettering SUE, strategic development at Junction 10 of the A14 and employment uses associated with the site;
4. Create a model for zero carbon energy through the installation of exemplary energy efficiency standards in buildings which use energy produced on-site in their operation.