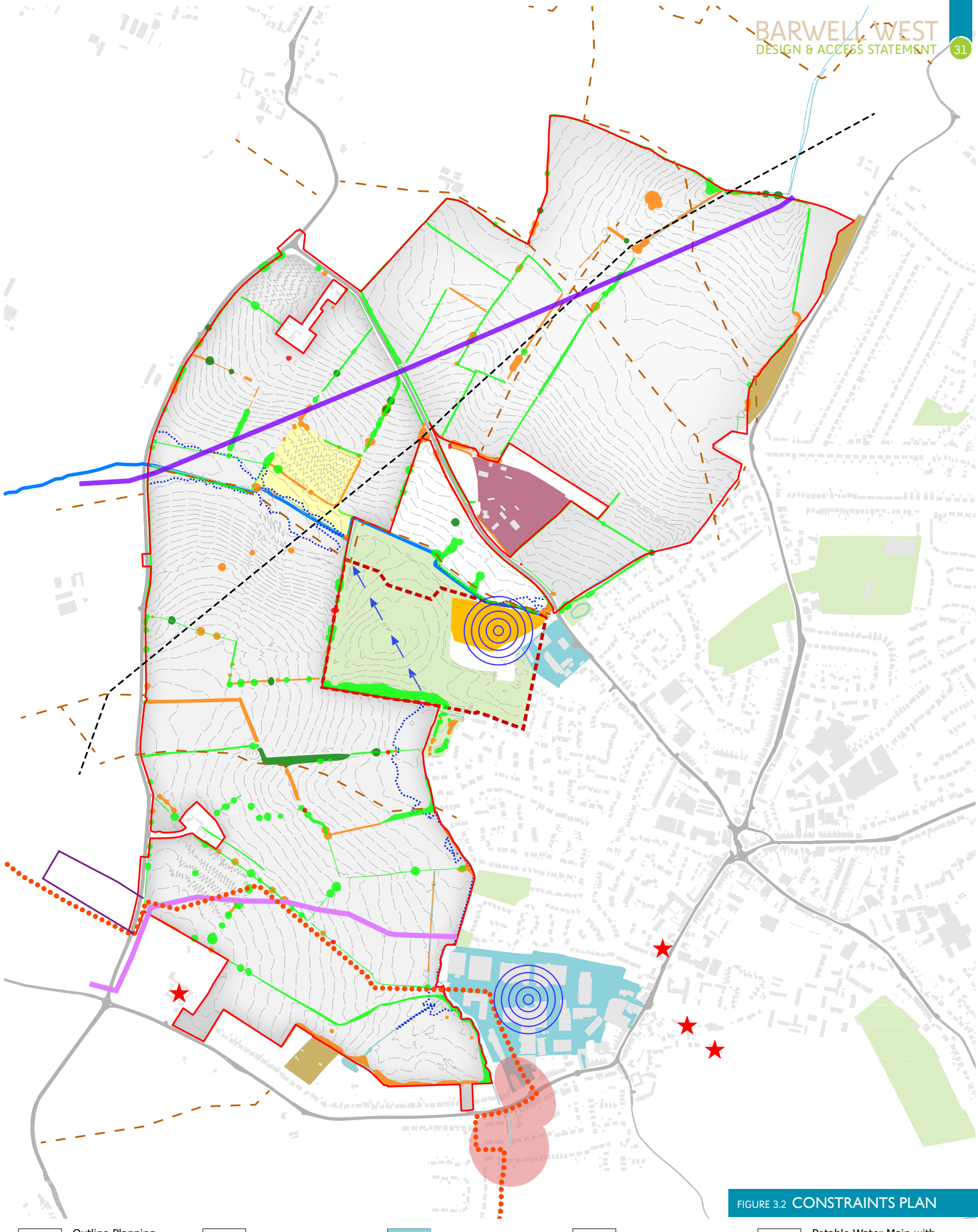


FIGURE 3.2 CONSTRAINTS PLAN

ECOLOGY

3.2.17 A full suite of ecological investigations of the site and its environs have been undertaken and include the following surveys:

- Extended Phase 1 Habitat;
- Great Crested Newts;
- Reptiles;
- Water Voles;
- Badgers;
- Bats;
- Breeding birds;
- Hobbies;

3.2.18 The ecological assessment work concluded that the most valuable features on site were its hedgerow network, trees and the Little Fields Farm Meadow Local Wildlife Site. No protected species roosts or resting places were recorded within the site, though bats and Hobbies were recorded foraging and commuting across it.

3.2.19 The site has potential to support nesting and foraging birds, hedgehogs, hares, amphibians and other wildlife not subject to statutory protection. As such, landscape and ecological proposals for the Public Open Space network will consider opportunities to create new bio-diverse environments to support a range of species.

3.2.20 In essence, as a result of its intensive agricultural use, the site's existing biodiversity value is limited and contained within relatively few features. Many of these features could and would be protected within development proposals and could be augmented, expanded and enhanced by an ecologically focussed landscape strategy for the site.

3.2.21 A full biodiversity report is provided as an appendix to the Ecology chapter of the Environmental Statement accompanying this application.

HERITAGE

Heritage and Archaeology

3.2.22 Archaeological and Heritage specialists have undertaken a 'Desk Based Assessment' and a range of fieldwork to establish the historic context of the site and it's potential to contain archaeological features.

3.2.23 The work has confirmed that the site does not contain any designated heritage assets, such as historic battlefields, listed buildings, registered parks and gardens or scheduled monuments. 18 listed buildings and a single scheduled monument lie in the wider area, outside the site but the intervening distance and land uses indicates that they would not be compromised by the development of the site.

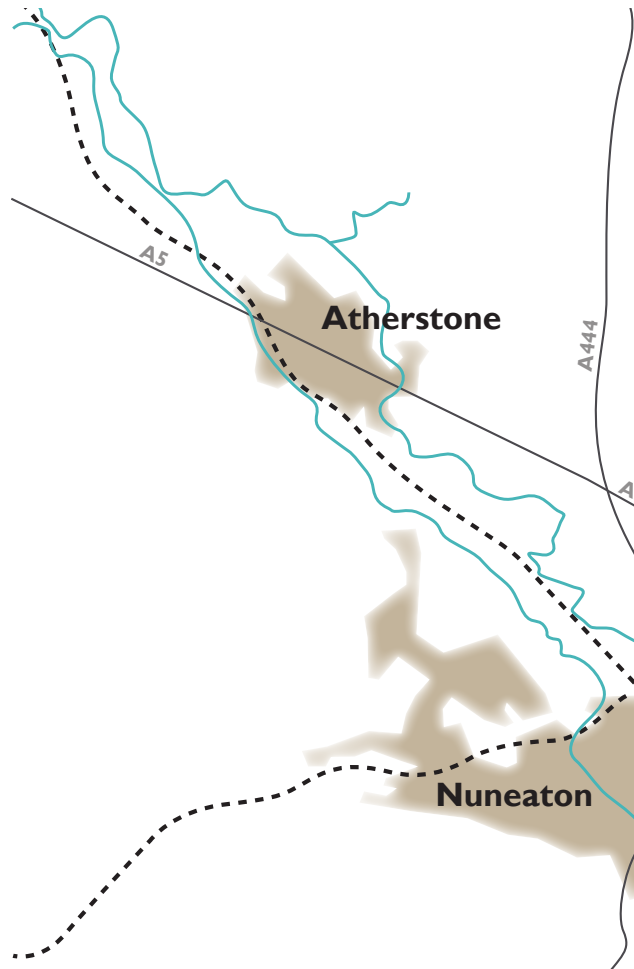
3.2.24 Barwell House Farm, to the South West of the site, is a Grade II listed building and as such, effects on its setting need to be considered and taken into account in the master planning process.

3.2.25 St. Mary's Church, unlike many churches in the locale, does not have a spire or tower, and therefore does not provide a landmark which the proposed development can use to connect with its setting..

3.2.26 Two conservation areas have been designated within Barwell. The first is located along the High Street incorporating a range of commercial, residential and community uses. The second is Arthur Street, a commercial area adjacent to the centre that comprises traditional employment buildings originally home to the boot and lace industries for which the region was famed.

3.2.27 Both Geophysical survey and 'trial trenching' investigations of the site have indicated that, while a number of features and artefacts of archaeological interest have been recorded, none of these represents an in-principle constraint to its development. Furthermore, a number of features, such as ridge and furrow earthworks, medieval fish pond and historic hedgerows, can be preserved within the context of a development to allow for inclusion of these historic features within Public Open Space. These will strengthen the character of the finished development and assist in creating a 'Sense of Place'.

3.2.28 A full Archaeological Assessment is provided as an appendix to the Archaeology and Heritage chapter of the Environmental Statement accompanying this application.



ACCESS AND CIRCULATION

3.2.29 Vehicular movement follows the original radial routes that extend from the centre of Barwell and connect to the wider network of the A447 (Ashby Road) and the A47 locally as well as the A5.

3.2.30 The site is located to the immediate west of the settlement of Barwell and is adjacent to the A447 Ashby Road. Access to and from wider destinations is provided by the A47, the A5 and M69, as shown below.

3.2.31 The following off-site junctions were identified as requiring further review to demonstrate that they could satisfactorily accommodate traffic arising from Barwell West.

- A5/ A47 Dodwells roundabout
- A5/ A47 Longshoot traffic signal junction
- A47/ A447 Ashby Road
- A447/ Hinckley Road
- A447/ Stapleton Road
- Barwell village centre
- M69 Junction 1
- M69 Junction 2

EXISTING PEDESTRIAN/CYCLIST PROVISION

3.2.32 A series of Public Rights of Way cross the site including footpaths and bridleways. Each of these routes provides east-west linkages that connect Barwell to the wider countryside. The Area Action Plan acknowledges that diversions of these routes will be part of any future proposals.

3.2.33 With the site being located immediately adjacent to Barwell, foot access to all its amenities, services and employment provision are well within the 2km recommended walk distance.

3.2.34 From the centre of Barwell, two cycle routes are available to Hinckley rail station; cyclists can travel either along the 'recommended routes' of Hinckley Road – Mill Street – High Street, Ashby Road and Station Road or along the off-road cycleway on Barnwell Lane and utilise the network of cycleways and bridleways around Hinckley. Both routes are marginally over the recommended 5km cycle distance and provide an opportunity for more experienced commuters wishing to travel by cycle and train.

3.2.35 The strategically important Leicestershire Round comprising a local footpath crosses within the southern area of the site north of the Hinckley Road properties. It provides a connection between the Moat Way employment area and the A447.

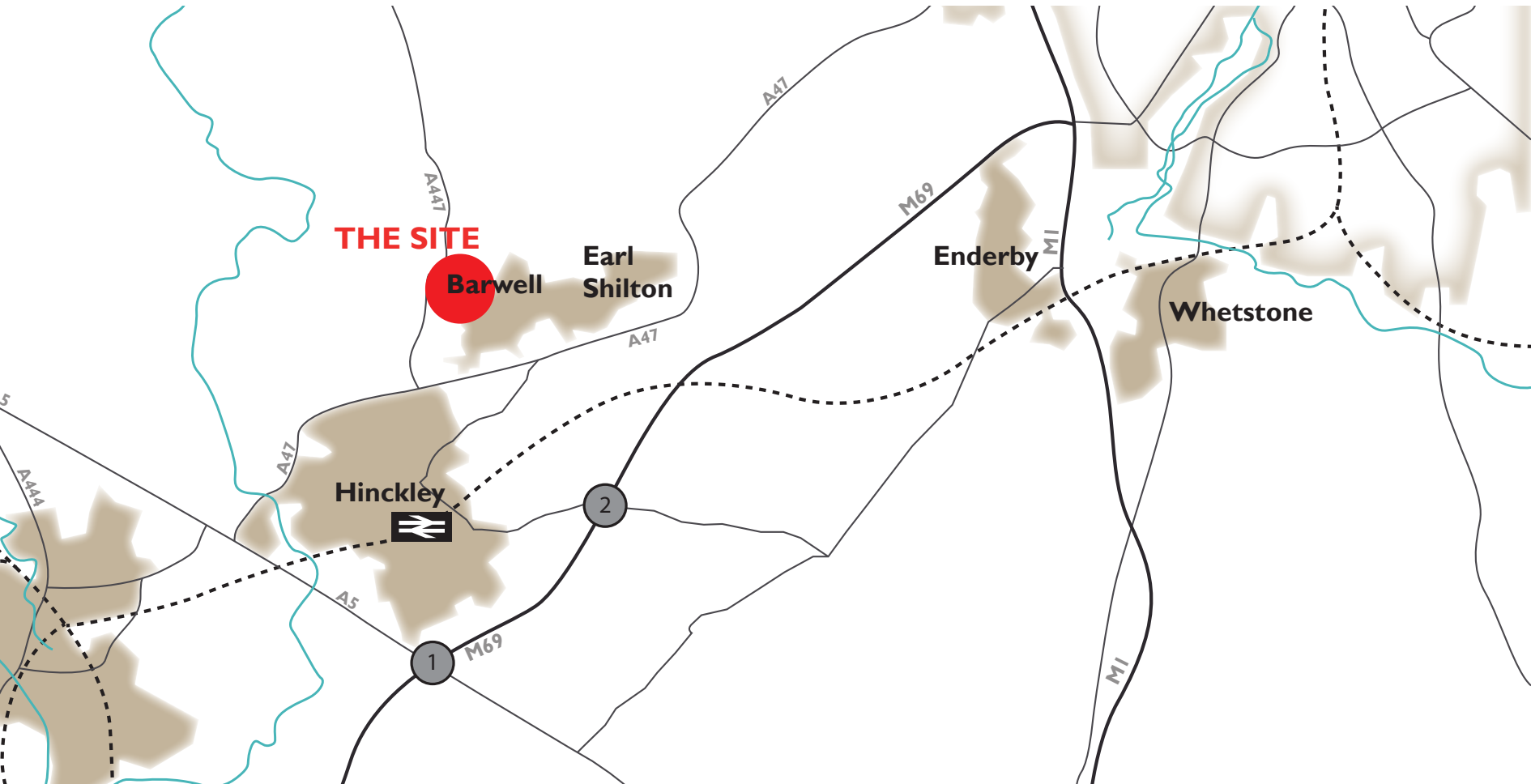
EXISTING BUS SERVICES

3.2.36 There are several bus services currently operating within Barwell and the surrounding road network. Existing bus stops along the local road network in the vicinity of the site along the A447, Hinckley Road and Stapleton Lane have been reviewed.

TRAIN

3.2.37 For travel by rail, Hinckley rail station is approximately 3.5km cycle distance from the A447/ Hinckley Road junction and approximately 5km from the A447/ Stapleton Lane junction. The station has sheltered cycle parking facilities at Platform 1 and is within 550m of Hinckley bus station. The station is on the Cross Country Birmingham to Stansted Airport line and is managed by East Midlands Trains.

3.2.38 Opportunities are therefore available for cycling from a large proportion of the site within the recommended maximum cycling distance of 5km 'to form part of a longer journey by public transport' (PPG13), and for those using the bus services travelling to Hinckley.



UTILITIES

3.2.39 A water main (1000mm diameter and easement width of 10m) runs diagonally beneath the site, beginning east of the A447 and heads in a north easterly direction up to and beyond the site boundary. This is a significant constraint to development and has an impact on the form and layout of the design.

3.2.40 A 400mm diameter combined sewer is located in the southern part of the site. It follows the western edge of Barwell House Farm and runs west-east across the site, north of the Moat Way employment area. It does not pose a significant constraint to development.

3.2.41 High voltage (HV), 33KV and 11kV overhead lines cross the site in several locations. The overhead lines will be diverted within the development within the new road layouts, or through areas of open space (subject to agreement of new easement and wayleaves with Western Power Distribution).

NOISE

3.2.42 A baseline noise survey was undertaken on 29th – 30th September 2011 to determine the current noise climate of the site and to validate the noise model. An additional noise survey was undertaken on 28th November 2011. The purpose of this survey was to measure noise caused by activities within Carousel Park, used predominantly as a residential base for travelling artists and also for repair/refurbishment of equipment.

3.2.43 The dominant noise source at all locations of the Carousel Park survey was road traffic from Stapleton Lane and also distant road traffic noise. Occasional faint activity noise (use of power tools) could be heard from Carousel Park but did not significantly affect the measured noise levels. Vehicles accessing Carousel Park as occupiers left and arrived on site also contributed to the noise level.

3.2.44 The majority of the site falls into NEC A. Corridors of NEC B and C are predicted in the immediate vicinity of the Ashby Road and Stapleton Lane. Land upto 12m from Ashby Road and 8m from Stapleton Lane falls with within NEC C.

3.2.45 No land falls within NEC D where residential development would not be permitted. Therefore the development site is suitable for the proposed development, provided that noise mitigation measures are used to minimise the internal noise levels as necessary.

3.2.46 Figure 16.4 and Figure 16.5 present the predicted noise levels for the future year 2026, with the proposed developments for the daytime and night-time respectively.

3.2.47 Figure 16.4 for the daytime shows that majority of the proposed dwellings would be exposed to noise levels below 55 dB(A). Dwellings proposed directly adjacent to A447 Ashby Road on the west of the site will be exposed to noise levels between 55 dB(A) and 69 dB(A). Noise levels of up to 66 dB(A) will be experienced by dwellings in the orange coloured contour area directly adjacent to Stapletone Lane.

HYDROLOGY

3.2.48 The current Environment Agency (EA) Groundwater Vulnerability map classifies the Triassic aged bedrock Gunthorpe Formation as a Secondary B aquifer. A Secondary B aquifer has predominantly lower permeability layers which may store and yield limited amounts of groundwater due to localised features such as fissures, thin permeable horizons and weathering. These are generally the water-bearing parts of what were formerly designated non-aquifers.

3.2.49 The EA map set shows the hydrogeology of the overlying superficial drift deposits to be complex with the following designations:

- Recent Alluvium – A Secondary A aquifer;
- Glacial Deposits (Oadby Till) – Unproductive Strata;
- Glacial Deposits (Wolston Clay and Wigston Member) – Secondary B aquifer; and
- Glacial Deposits (Wolston Sand and Gravel) – Secondary A aquifer.

3.2.50 A Secondary A aquifer has permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases form an important source of base flow to rivers. Unproductive Strata are rock layers or superficial drift deposits with low permeability that have negligible significance for water supply or river base flow. There are no recorded groundwater abstractions (from wells or boreholes) on or within 250m of the site.

3.2.51 The direction of the groundwater flow in the bedrock is not known. The direction of the local groundwater flow in the drift deposits is not known but likely to be towards the Tweed River.

3.2.52 The site does not currently lie within 500m of a current groundwater Source Protection Zone (SPZ). The site area is currently classified as a 'Nitrate Vulnerable Zone' (NVZ) by the Environment Agency.

3.2.53 Flooding arising from groundwater sources is not known to be an issue at this location.

WATERCOURSES AND LAND DRAINAGE

3.2.54 The principal watercourse in the area is the Tweed River, which drains a catchment of approximately 4km² to the western site boundary. The River drains a largely rural catchment, but also receives surface water inflows from Barwell and the north-eastern fringe of Hinckley.

3.2.55 A tributary of the Tweed River enters the site on the eastern boundary in the vicinity of Stapleton Lane and appears to be fed by an outfall from a surface water balancing pond and run-off from a small area of field. A further watercourse, a tributary of the Thurlaston Brook, rises on the northern boundary of the site and drains a small area of agricultural land.

3.2.56 Features of note within the watercourse corridors include Abraham's Bridge (culvert carrying the Tweed River beneath the A447 Ashby Road) and the culvert carrying the Tweed River beneath the former landfill located part way along the eastern boundary of the site;

3.2.57 The site comprises farmland, which is in part served by a network of drains and ditches that discharge to the Tweed River and its tributary. Public and private surface water sewers serving the urban area of Barwell to the east discharge to the Tweed River and its tributary.

SURFACE WATER SEWERS

3.2.58 Public and private surface water sewers from the urban area of Barwell to the east discharge to the Tweed River and the ditchcourse to the north of the Recycling Centre. The Hinckley and Bosworth Borough Council SFRA indicates that historic flooding in the Hinckley Road and Mill Street area was associated with surcharging of the existing surface water drainage system.

LAND USE AND TOPOGRAPHY

3.2.59 The study area predominantly comprises agricultural land in both arable and pasture land-use with individual field enclosures bounded by hedgerows and ditches.

3.2.60 The site contains the Glebe Farm, Bosworth House Farm and Little Fields Farm farmsteads. In addition, an area of active allotments is located adjacent to the eastern boundary in the north-eastern part of the site.

3.2.61 In general topographic terms, the site comprises gently undulating land which slopes towards the Tweed River and its tributary in the southern and central area, and the tributary of the Thurlaston Brook located on the northern fringe of the site. Ground levels vary from approximately 115m AOD to around 105m AOD.

FLOODPLAIN AND FLOOD RISK

3.2.62 The nature of flood risk associated with the Tweed River and its tributary and the Thurlaston Brook tributary has been assessed by developing a hydraulic model using topographical survey of the watercourse corridors collected in September 2011. The hydraulic model is used to estimate water levels associated with flood events of different magnitudes or frequency (i.e. rarity) which, in turn, enables the site to be categorised in accordance with the flood zones set out in PPS25.

3.2.63 The modelling analysis indicates that some small areas of the site lie within the 100 year and 1,000 year floodplains. However, the floodplain is generally limited to a relatively narrow corridor of land, such that over 95% of the site lies within an area classified as being at the lowest risk of flooding.

3.2.64 In accordance with national planning policy, the master plan "makes space" for the floodplain and incorporates a "green" corridor alongside the watercourses. Built infrastructure is therefore located outside the 100 year floodplain. This, in turn, facilitates the retention of a strategic route for recreation along the Tweed River, as required by Policy 20 of the Hinckley and Bosworth Core Strategy..

3.3 EXISTING CHARACTER ANALYSIS AND PRINCIPLES

3.3.1 Government policy requires developments to respond to their local context and create or reinforce local distinctiveness (PPS1). This places locally distinctive design at the heart of the planning process and builds upon one of the central tenets of PPS3. This requires good design to contribute positively to making better places for people. To achieve these objectives within proposals set out in this document, it is essential to understand the immediate and wider context.

3.3.2 A detailed character assessment was carried out to analyse the character of Barwell, Hinckley, Stoke Golding and Sutton Cheney. It also builds upon the Hinckley and Bosworth Borough Council Contextual Appraisal produced as part of the evidence base for the emerging Area Action Plan.

3.3.3 Barwell, Hinckley, Stoke Golding and Sutton Cheney have been chosen because of their respective proximity to the site and their relative scale and mix of development. Whilst we have looked at the areas as a whole we have focused mainly on the conservation areas for the best examples of character in this locale from which to draw principles for future proposals.

3.3.4 The document concludes by summarising those elements that contribute to local distinctiveness in Barwell and the surrounding areas and establishes principles that will inform the future proposals. The key points regarding local character are set out overleaf and have informed the key principles that have been incorporated with the design set out within this document.

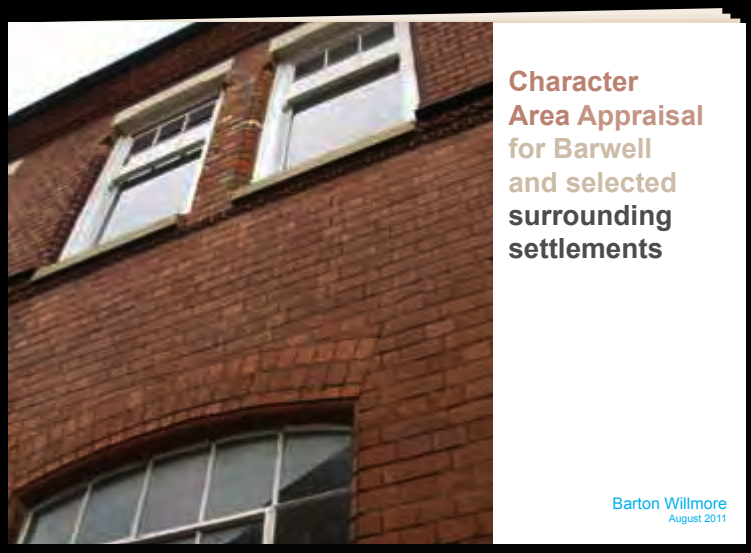


FIGURE 3.3 SITE LOCATION PLAN

3.4 CHARACTER ANALYSIS SUMMARY

3.4.1 The summary below draws out the key characteristics that give Barwell and the locality its sense of place. These characteristics have then been translated into principles that will inform the future design approach. The principles have been organised into thematic headings for ease of reference:

FIGURE 3.4 SUMMARY OF EXISTING CHARACTER

KEY POINTS REGARDING CHARACTER

KEY IMAGES TO SUPPORT GENERAL POINTS

DEVELOPMENT FORM AND FUNCTION

- Development within town and villages radiated from the core along major routes;
- The centre is often located on key junctions with a mix of commercial and residential uses;
- Gateways into settlements within rural areas are defined by single sided development along principal routes.
- Density and continuity of frontage gradually intensifies in proximity to the centre; and
- Church spires/towers provide local landmarks within towns and villages

BUILDING TYPES AND USES

- A mix of building types are present across the region:
- Residential - terraced through to detached;
- Commercial: variation in size and form. A mix of wide and narrow frontage, often organised in a linear forms along roads, or providing perimeter edges to courtyards;

ROOFLINE AND BUILDING HEIGHTS

- Adjoining dwellings/ properties have variation on height and pitch;
- Roofline often responds to the changes in topography;
- Individual dwellings, predominantly have a consistent roof line with little or no variation in height and pitch;
- Residential buildings range between 2 and 3 stories; and
- Commercial buildings typically range for 1 to 4 stories. Ground floors have raised floor to ceiling heights compared to upper floors.

MATERIALS

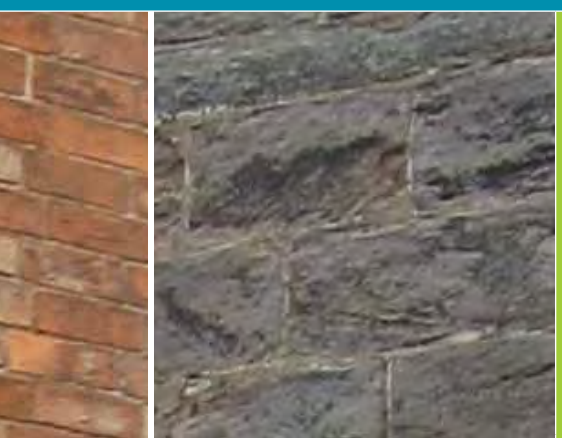
- Predominantly red brick building facades with occasional rendered examples;
- Predominantly dark blue plain tiles and slate;
- Natural materials are prevalent with polychromatic/ tonal variation creating visual interest and variety; and
- Blue/ black brick boundary walls;

KEY PRINCIPLES TO INFORM FUTURE DESIGN

- There should be an appropriate transition from the urban to rural edge to integrate development into the adjacent landscape;
- Tighter/finer grained development close to neighbourhood and local centres, and less dense development to the fringes and edges of the development to assist with the transition from the development and countryside;
- The centre(s) of the development should contain a mix of residential, retail, commercial and community uses to create a activity throughout the day;
- Gateway points into the settlement are to be defined my single sided development that intensifies as one gets closer to the settlement core; and
- Where possible the development should seek to integrate with the radial road network of Barwell.

- A mix of building types, and styles will help to create variety across the developed area and enable subtle variation in character that will enable and assist will legibility.
- Mixed commercial and employment uses should reflect local character in terms of building material, scale, style and detailing without being pastiche;
- An effort should be made to incorporate commercial buildings and typologies with residential dwellings to create a mix of uses and create activity in these locations throughout the day;

- Residential building heights should reflect local typologies and range from 2/ 3 storeys for residential dwellings, with a mix of roof heights and pitches to create variety within streetscenes;
- Commercial building heights should vary from 1 to 3 storeys. Higher landmark features may also be appropriate to define the area and assist with legibility;
- Ground floor levels should have higher floor to ceiling heights than upper stories;
- Commercial roof forms may wish to represent common patterns, but also include the 'Saw –toothed style, that is evident in Barwell; and
- Commercial uses while integrated should have a distinctive gateway/entrance and landmark feature to aid legibility.



- Building materials should seek to use natural materials where possible or other similar aesthetic materials should be used to assist with the creation of a rural character; and
- Tonal variation in materials, particularly brickwork, is an important element of character within the region.

KEY POINTS REGARDING CHARACTER

KEY IMAGES TO SUPPORT GENERAL POINTS

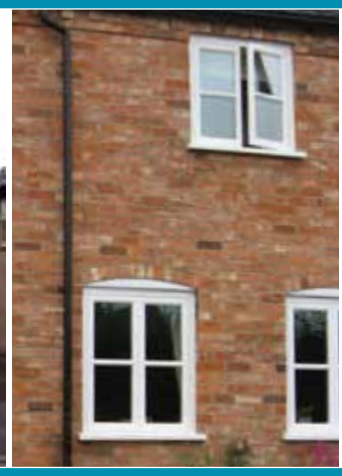
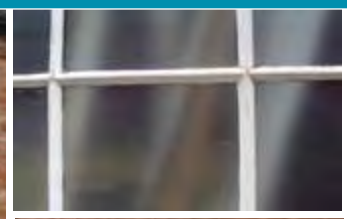
DETAILING

- Levels of detailing vary in terms of building use and style
- Residential: mixed with detailing confined to brickwork, chimney breasts, eaves and doorways
- Commercial: Simple detailing confined to brick work (on gable ends, or archways) and signage



FENESTRATION

- Many properties have original frames with single panes, although some have been replaced with double glazing;
- Villages: Casement windows are prevalent, particularly in village typologies and tend to have a horizontal emphasis;
- Towns: Sash windows are typically the main window type and have a vertical emphasis;
- Bay windows are common amongst larger residential properties.
- Commercial window types are simple rectangular forms, often with a vertical emphasis and under a brick arch;
- Commercial buildings have a strong/ regular horizontal and vertical window patterns, with deviation often demarcating stair wells and circulation space.

BOUNDARY TREATMENTS

- Within residential typologies brick walls and hedgerows are the common types of demarcation with hedgerows increasingly prevalent towards the village edge;
- Front gardens vary in hard and soft landscaping and depth from the back of pavement;
- Commercial buildings predominantly abut the back of pavement with little or no privacy strip;
- Railing occasionally feature; and
- Brick plinths with stone copings frequently provide a subtle buffer between the main building facade and the pavement.



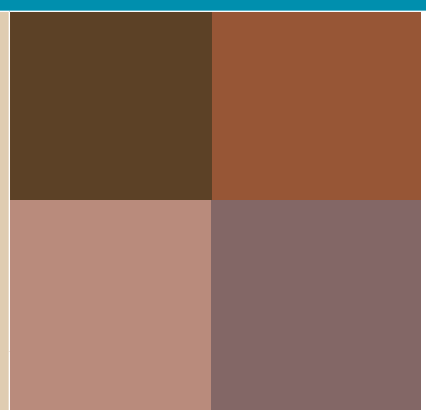
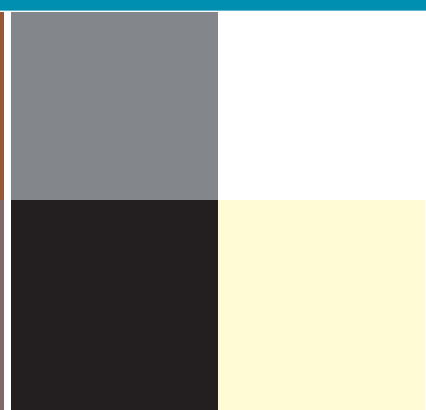
LANDSCAPE AND OPEN SPACE

- Mature vegetation is a prominent feature of the towns and villages in the region.
- Villages frequently have large residential plots with a strong soft landscape emphasis;
- Commercial areas have limited soft landscaping and typically have hard surfaced courtyards;
- Formal and informal open space provides a mix of recreational activities; and
- Open space in rural areas is less formal and creates a sense of space and focus for the village cores and that allow the ability to see beyond or through the village to the wider countryside.



TONES AND COLOURS

- A mixture of red/brown tones exist within the brick work;
- Predominantly blue plain tiles and slate;
- White painted window frames.
- Brighter colours are often used to accentuate the key features such as building entrances


KEY PRINCIPLES TO INFORM FUTURE DESIGN

- Commercial building details should remain simple, but emphasis should be given to point of entry and signage.
- Detailing in residential buildings should be focused on, fenestration, eaves and doorways; and
- Attention should also be given to the form, scale and shape of the chimney breasts, with less detailing required.

- Regular horizontal and vertical fenestration patterns in higher density residential areas, becoming more varied and informal in lower density and 'edge' situations;
- Commercial development shall have well defined regular horizontal and vertical fenestration patterns; and
- Fenestration within the commercial roofscape should be considered to allow natural light and acknowledge this local style of development. A possible modern interpretation could be used with the inclusion of photovoltaic roof panels;

- Boundary treatment should vary with buildings types. Residential uses should seek to have a mix of soft landscape treatment and traditional walled boundaries, with a higher proportion of walls and hard landscape treatments in higher density and more 'urban' situations with increasing proportion of soft boundary treatments in lower density and 'edge situations;
- Variation in plot depths and building frontages should be created to give a variety and interest in the streetscene;
- Larger residential plots could be used to maintain external views to the wider countryside and ensure a sense of rural character, particularly on the development edges;
- Commercial buildings should seek to have buildings fronting streets, with courtyards set back from the road; and
- Commercial buildings should typically be set to the back of pavement with no privacy strip to reflect local character of this type.

- Mature vegetation and landscape provides a sense of space that contributes greatly to the essence of 'ruralness'; Development proposals should seek to retain existing vegetation where possible.
- Open spaces should provide connections across the site to link the distinctive character areas ranging from urban-rural fringe to rural fringe and on into the wider landscape
- Hedgerows should be retained where possible and integrated into the street scene.
- Where possible, the use of natural materials are encouraged, such as gravel or shingles on driveways;
- A variety of open space should be provided that offers different functions and uses.
- Open space should also be provided across the site to ensure a sense of openness associated with rural character specific to this locale;
- Focal open spaces will be important to help define and formalise character to which development will need to respond to accordingly;

- Colour tones should reflect those found in the locality. Tonal variation an important element of character across the region;
- Brighter colours can be used to highlight key features and details, such as entrances to commercial buildings and fenestration.

3.5 LANDSCAPE CHARACTER ASSESSMENT

3.5.1 Landscape character is the physical makeup and condition of the landscape itself. It arises from a distinct, recognisable and consistent pattern of physical and social elements, aesthetic factors and perceptual aspects (big fields, steep slopes, coniferous woodlands etc). Such patterns have been subject to national, regional and often local assessment and definition and such studies are published and available to inform site specific considerations.

3.5.2 The site falls within National Character Area 94 - 'Leicestershire Vales'. At the East Midlands Regional level, it lies within the 'Village Farmlands' and at the County level, it is within the 'Upper Soar' character area of the "Leicester, Leicestershire and Rutland Landscape and Woodland Strategy". The landscape descriptions provided within these documents offer a useful overview of the general landscape character of the area but are not detailed enough to be applicable at a site specific level.

3.5.3 The borough's landscape character assessment ('LCA') the "Hinckley and Bosworth Borough Council Landscape Character Assessment", published in July 2006, includes ten character areas which are described, along with their sensitivities and capacity to accommodate landscape change. The site lies within the 'Stoke Golding Vales' character area, the key characteristics of this which are considered pertinent to the site are listed below:

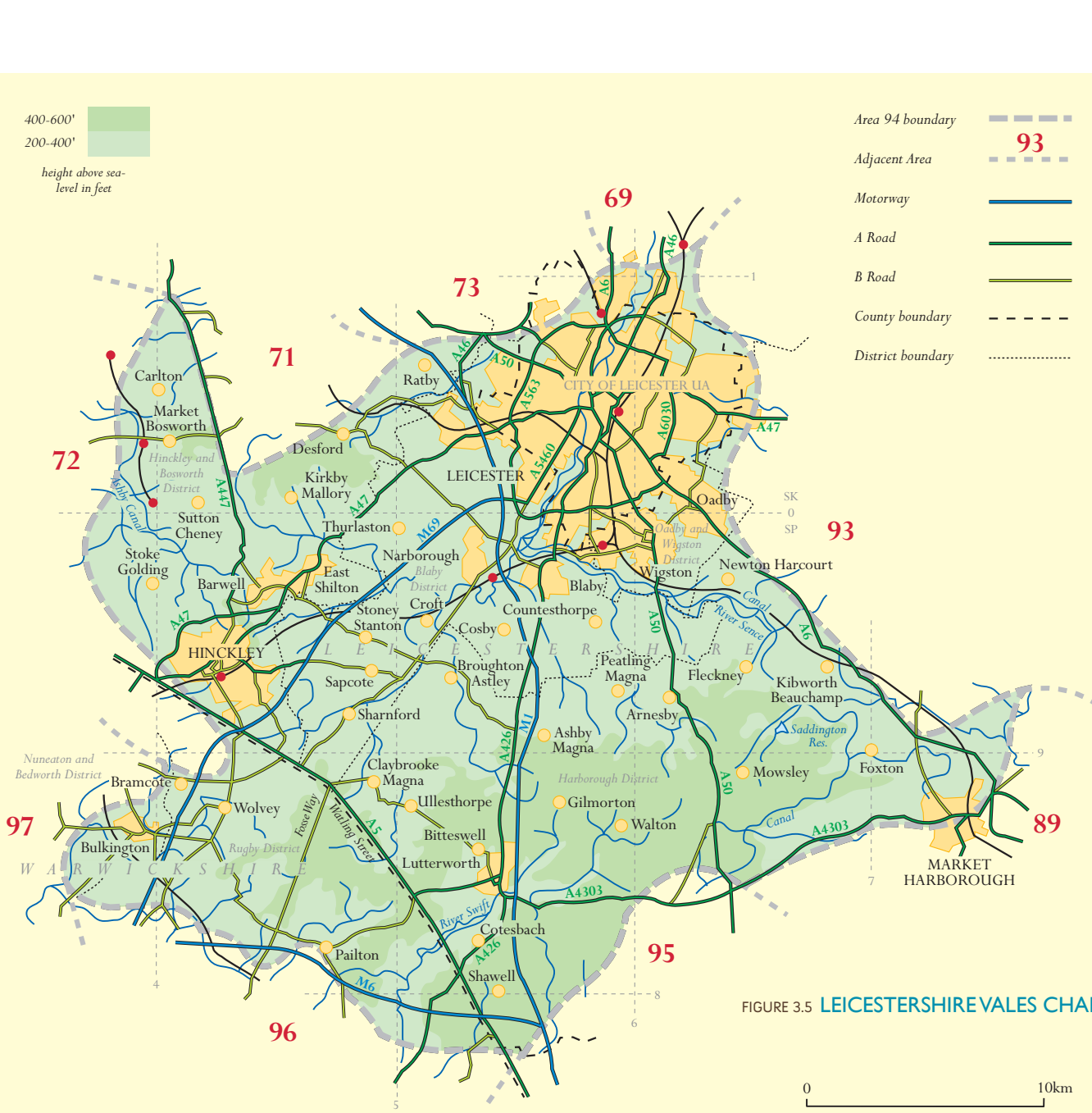


FIGURE 3.5 LEICESTERSHIRE VALES CHARACTER AREA

- Medium scale rectilinear field pattern bounded by mixed hedgerows with scattered hedgerow trees and small copses;
- Settlement usually associated with local high points;
- Area criss-crossed by network of small lanes and public footpaths. The Ashby Canal features numerous attractive canal bridges;
- Mix of arable and pasture with frequent individual trees;

3.5.4 Notably, the following characteristics of the Stoke Golding area are not considered consistent:

- Predominately flat with only gentle undulations;
- Area is open and expansive with views occasionally limited by vegetation;
- This is generally a tranquil, rural character area despite the proximity of Hinckley and the A5.

3.5.5 In addition to reviewing the published assessments, EDP Landscape Architects undertook a thorough appraisal of the site's own landscape character. This concluded:

- The site consists of land which is predominantly in agricultural use, with fields bounded by hedgerows and hedgerow trees;
- A locally designated wildlife site is located within the site alongside the Tweed River corridor;
- The Tweed River is a minor watercourse, no wider than a stream, which is obscured by vegetation;
- Contrary to published landscape assessments, there is no woodland on the site and historically none has been present. However in places hedgerows comprise a higher number of hedgerow trees and so appear more substantial;
- The landscape character is broadly consistent with the borough-wide 'Upper Soar' character area. However, whilst it lies within the local 'Stoke Golding' character area and shares some characteristics, it is also strongly influenced by the urban characteristics of the adjacent 'Hinckley, Barwell and Burbage Fringe' local character area;
- The site occupies a series of broadly rolling 'spurs' which extend westwards out from the higher ground upon which Barwell sits. However, the easterly sloping nature of the site creates a strong physical relationship with Barwell;
- The site occupies a local landscape defined by two of the largest towns in the area. These are interconnected by a transport and recreation infrastructure network providing connections through and adjacent to the site;
- A number of farms are found within and adjacent to the site and introduce further built form and traffic into the landscape to the west of Barwell;
- Structural landscape mitigation would complement retained mature trees and hedgerows within the site to reinforce the local landscape character. This mitigation would form an integral part of the development scheme, enhancing and reinforcing the existing framework and creating a robust Green Infrastructure network by linking up key landscape features such as the healthy mature trees and more substantial hedgerows.

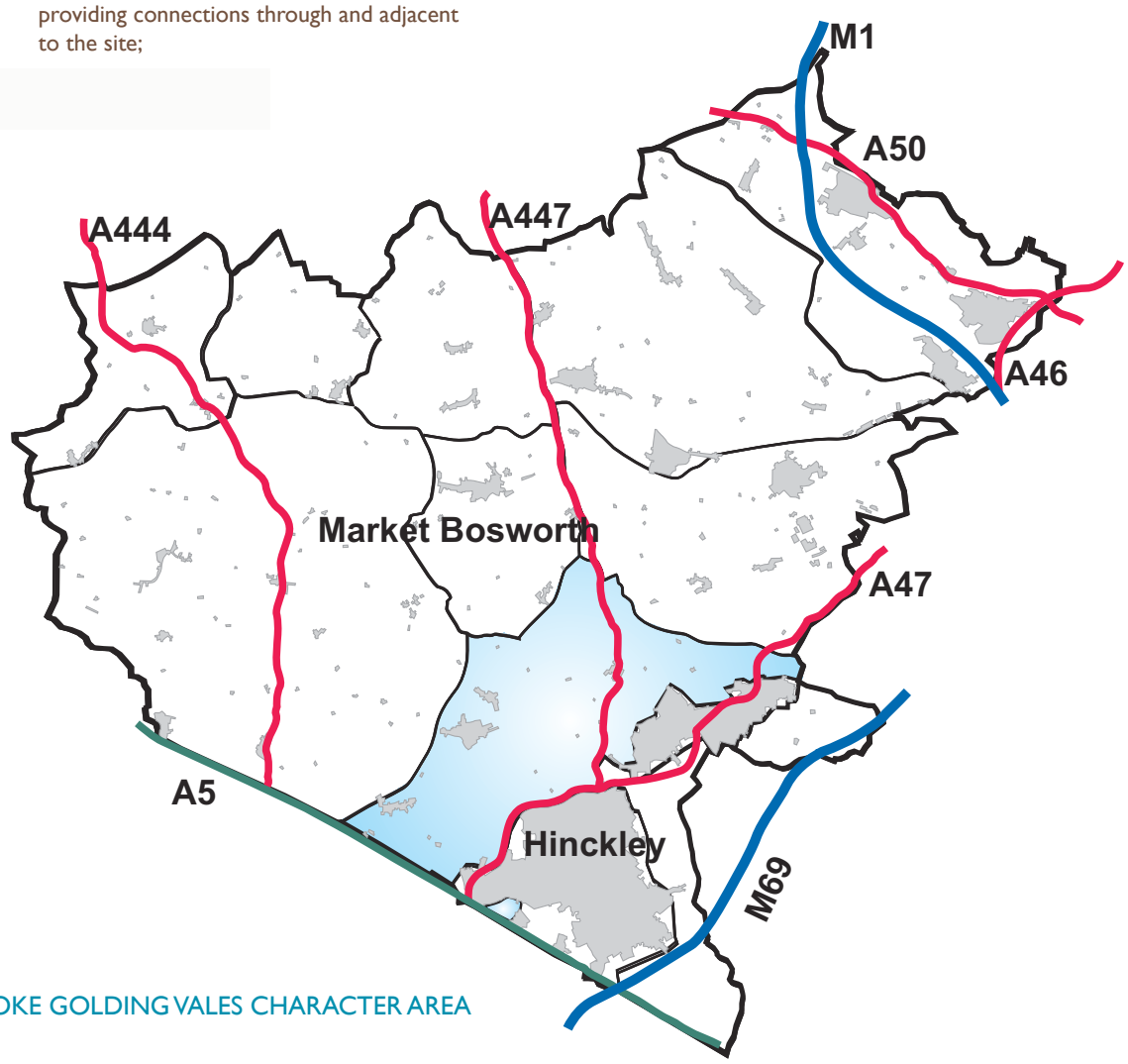


FIGURE 3.6 STOKE GOLDING VALES CHARACTER AREA

3.6 PLANNING POLICY

Input provided. Not sufficient time to incorporate