



# KNEBWORTH

## Neighbourhood Masterplanning and Design Guidelines

**FINAL REPORT**

February 2019

**AECOM**

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## Quality information

Project role	Name	Position	Action summary	Signature	Date
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Introduction

01

# 1. Introduction

This section provides context and general information to introduce the project and its location.

## 1.1 Background

Through the Ministry of Housing, Communities and Local Government (MHCLG) Neighbourhood Planning Programme, AECOM has been commissioned to provide Design support to Knebworth Parish Council. The support is intended to provide assistance to the group's work in producing a Neighbourhood Plan.

## 1.2 Objectives

The support has two main objectives, which are reflected in the structure of this report:

### Design Guidance

Chapter 3 provides general design guidance that will influence the form of development in the neighbourhood plan area by advising on how it can reflect local character. The guidance is based upon

observations of village character and feedback from engagement already undertaken by Knebworth Parish Council.

### Site Masterplanning

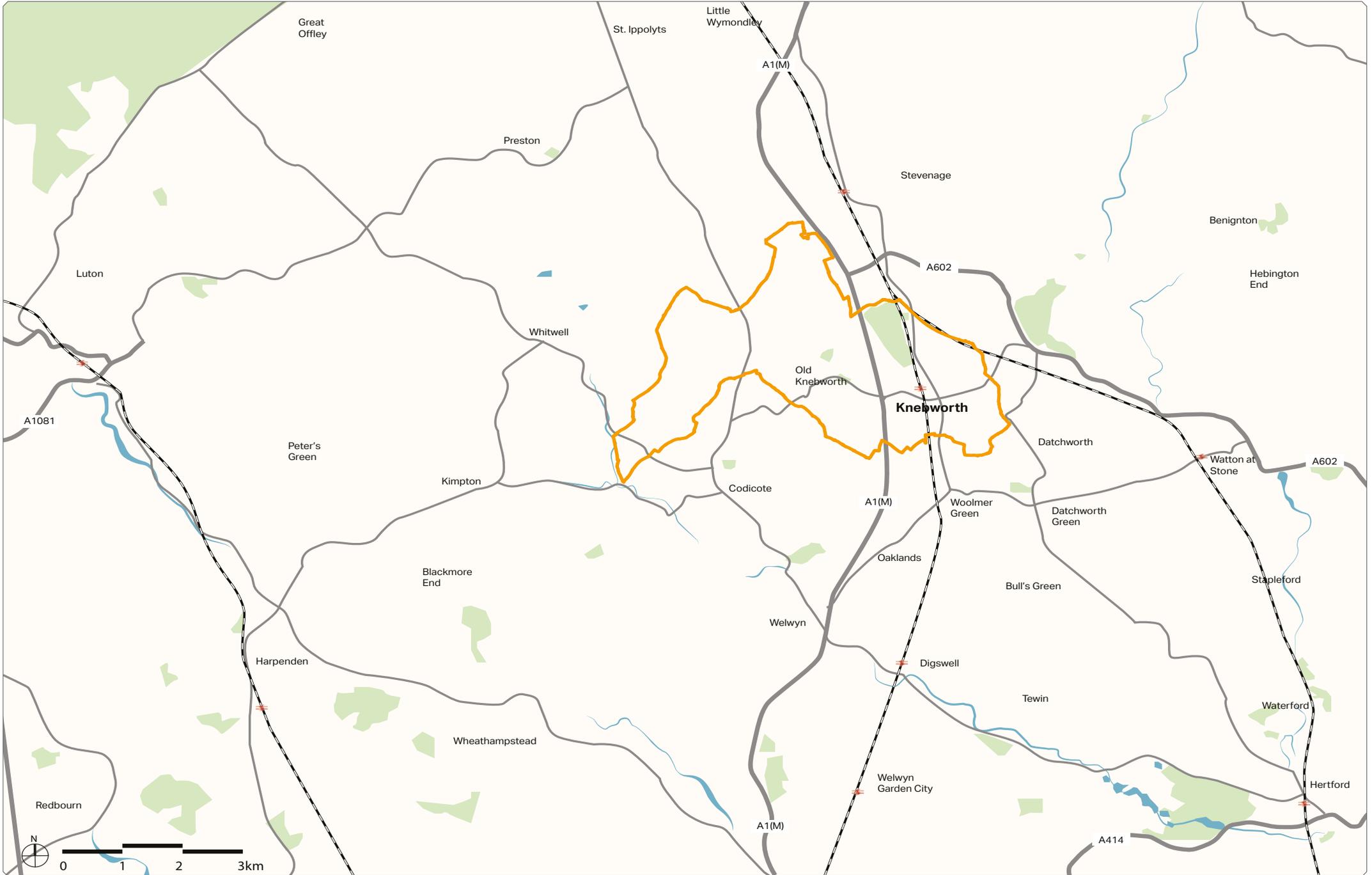
Chapter 4 provides masterplanning principles and high level concept plans for sites that are in the process of being allocated in the North Hertfordshire Local Plan. A significant amount of new housing is being proposed and it is crucial to both existing and future residents of Knebworth that any new development is planned and designed in a way that makes them proud of its high quality.

## 1.3 Process

The following steps were undertaken to produce this report:

- Initial meeting and site visit;
- Further site visits and urban design analysis;
- Access assessment based on further site visits from a transport planner;
- Desktop research and policy review;

- Preparation of draft design guidance and site concept plans;
- Preparation of a draft report, subsequently revised in response to feedback provided by the Knebworth Parish Council; and
- Submission of a final report.



Strategic plan showing Knebworth Parish within the local context

## 1.4 The Importance of Good Design

As the National Planning Policy Framework (paragraph 124) notes, “good design is a key aspect of sustainable development, creates better places in which to live and work and helps make development acceptable to communities”.

Research, such as for the Government’s Commission for Architecture and the Built Environment (now part of the Design Council; see, for example, *The Value of Good Design* at <https://www.designcouncil.org.uk/sites/default/files/asset/document/the-value-of-good-design.pdf>) has shown that good design of buildings and places can:

- Improve health and well-being;
- Increase civic pride and cultural activity;
- Reduce crime and anti-social behaviour; and
- Reduce pollution.



Stockens Green Conservation Area.



Grade II\* listed St Martin's Church

## 1.5 Design context in Knebworth

### Location

Knebworth is a village located in the south of North Hertfordshire, immediately south of Stevenage and north of Welwyn. The original settlement centred around the village currently known as Old Knebworth and Knebworth House. The current village of Knebworth developed around Knebworth Station in the 19th century, following the construction of the East Coast Main Line, which bisects the village.

In the 20th century the A1 motorway was constructed west of the village.

The Knebworth parish encompasses the village of Old Knebworth as well as the surrounding countryside. The village is surrounded by Green Belt land comprising open fields and the Knebworth Golf Club that separates it from Stevenage and other nearby settlements.

Knebworth Station is located in the centre of the village and provides regular services to London and Cambridge. The village has bus services to Stevenage, Welwyn Garden City, and Luton. Other facilities in the village include a village hall, library, primary school, surgery, post office, shops, and churches.

Listed buildings and structures in the parish include the Knebworth House Registered Historic Park and Garden, as well as the churches of St Martin and St Mary. The village has two conservation areas within its settlement boundaries; one at Deard's End Lane and another at Stockens Green.

### Population

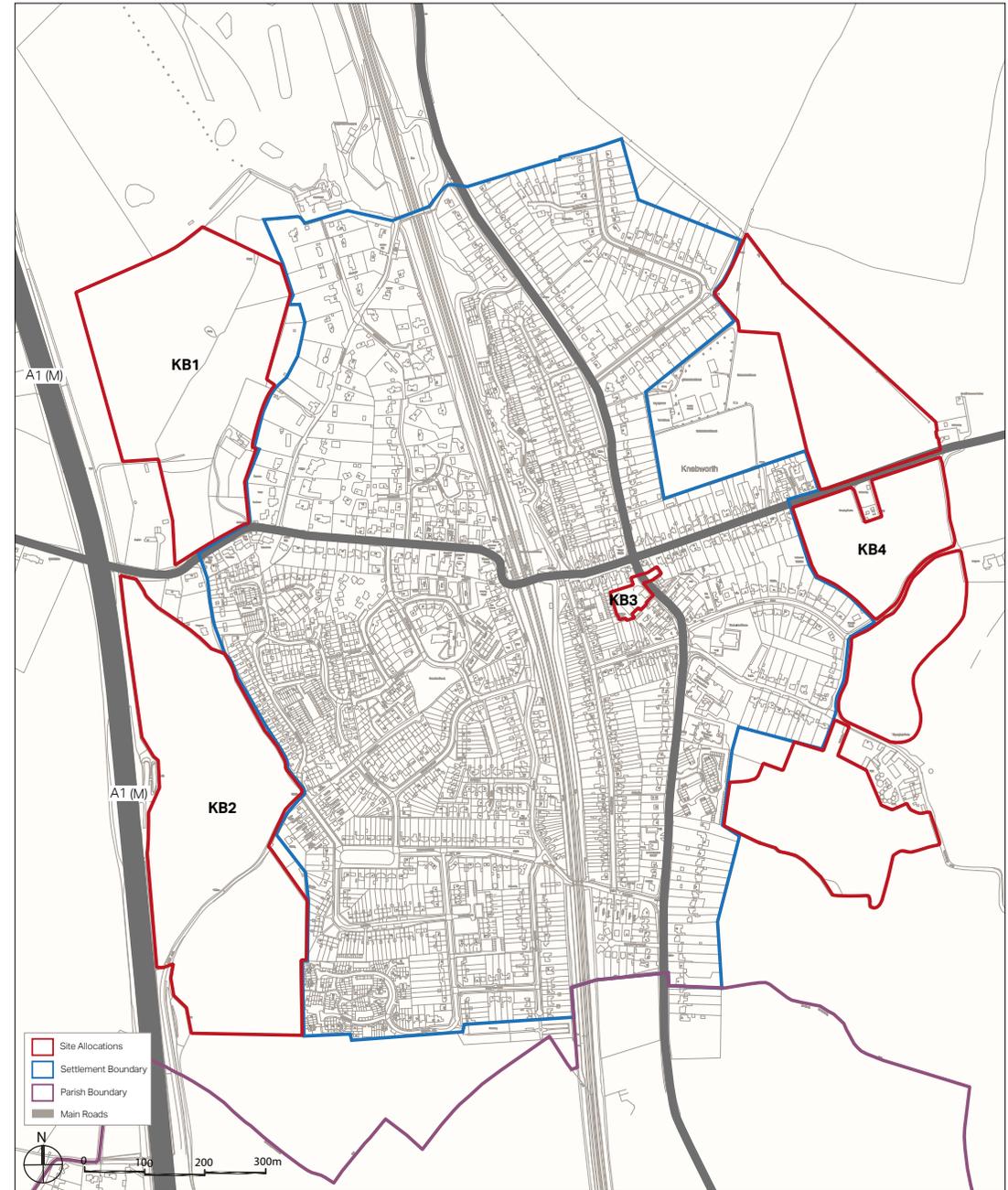
At the 2011 census the population was 4,155 for the built-up area that forms the settlement of Knebworth. The parish of Knebworth, which also includes the settlement of Old Knebworth, has a population of 4,496.

Knebworth is facing a period of growth, with the draft Local Plan allocating sites for almost 600 homes to the east and west of the village. As there are currently around 1800 homes in the village, this represents significant growth.

Section 4 of this report focuses on the urban extension sites - KB1, KB2, and KB4.

### Local housing allocation sites in the Draft North Hertfordshire Local Plan

Site ref	Site Description	Dwelling Estimate
<b>KB1</b>	<b>Land at Deard's End</b> Based on the Local Plan there is an estimated 200 new dwellings to be accommodated on this development plot.	<b>200 homes</b>
<b>KB2</b>	<b>Land off Gypsy Lane</b> Based on the Local Plan there is an estimated 184 new dwellings to be accommodated on this development plot together with a 2 ha area set aside for a 1 FE primary school.	<b>184 homes</b>
<b>KB3</b>	<b>Chas Lowe site, London Road</b> Based on the Local Plan there is an estimated minimum of 47 new dwellings to be accommodated on this development plot.	<b>47 homes</b>
<b>KB4</b>	<b>Land east of Knebworth</b> Based on the Local Plan there is an estimated 200 new dwellings to be accommodated on this development plot, with land reserved for long term secondary education use.	<b>200 homes</b>



North Hertfordshire District Council SHLAA sites in Knebworth.



Half-timbered brick building on Park Lane.



Garden City-type housing cluster on Stockens Green



Rural edge seen from Old Lane.



Corner building on the junction of London Road and St Martin's Road.



Semi-detached (foreground) and terraced housing (background) along Westland Road



Detached and semi-detached residential and commercial buildings on Station Road, showing a variety of architectural style and building materials.



Semi-detached houses along Station Road



Grade II listed Golf Club House



New two storey and bungalow residential development on Oak Tree Gardens

## 1.6 Engagement

Local residents of Knebworth were consulted through workshops and surveys for the Neighbourhood Plan. Ideas and suggestions from these workshops relevant to design are summarised in this section, and have directly influenced the design guidance and concept plans that are the focus of this report.

### Summary

Most households either work outside of Knebworth or are retired. A minority of residents work in Knebworth or own businesses locally.

In response to the survey, Knebworth residents found that the following infrastructure/facilities are inadequate:

- Flood defences and drainage;
- Off and on road parking;
- Restaurants;
- Primary and secondary schools; and
- Traffic control.

Residents also identified the following as the highest priorities for Knebworth:

- Housing;
- Disabled access and facilities, shops, and station; and
- Communications technology.

### Education

- Primary school is currently at capacity for the existing population. New development would put significant pressure on the school at present.
- There is a lack of satisfaction with the choice and quality of schools.

### Public transportation and related facilities

- The train to London is over capacity and the introduction of new residents will make the commute even more unpleasant. More frequent services through Knebworth would alleviate congestion during peak hours.
- The station's platforms do not have facilities that protect passengers from cold winters. Adequate shelters should be provided.
- The parking lot outside of the station fills quickly during peak hours and is regularly used by out-of-towners who commute to London. Resident's permits and more spaces should be provided to avoid further issues.
- There is no disabled access to the platforms.
- There are no public toilets in the vicinity of the station.

### **Traffic related issues**

- Residents overwhelmingly reported that traffic congestion locks the High Street (London Road) during peak hours. New development will lead to an increase in the number of users and eventually more congestion – this is a serious problem according to locals.
- Various potential options have been suggested to manage parking whilst maintaining pedestrian and cyclist safety, including reducing parking to one side of the high street.
- Speeding and aggressive driving pose serious safety concerns, especially in areas frequented by small children.
- Residents expressed a need for increased off-street parking .

### **Business and economy**

- Residents are extremely concerned by the closure of the pub as there are no others nearby. There is potential for the re-opening of the local pub to form a gateway to the village due to it's convenient location opposite Knebworth station.
- There is a demand for additional restaurants and bars to inject new life into the village centre. These should be promoted along the high street – a village of Knebworth's size should have a variety of choice.
- Facilities and offices to stimulate local business should be developed around the high street. Furthermore, high-speed broadband should be installed to help independent business and allow people to easily work from home.

### **Leisure and sports facilities**

- There is a shortage of family-friendly public facilities and spaces. The only adequate open spaces are those next to St Martin's Church.
- Safe playgrounds should be provided for children.
- There is a lack of quality sports facilities in the area. Football pitches are particularly in demand.

### **Natural environment and resilience**

- Existing parks should be protected, maintained and improved and new parks/green spaces should be introduced where possible.
- Some residents are worried about development on Green Belt land. The open countryside is an important part of Knebworth's character and should be protected although many recognise that there is a significant need for new housing in the village.
- Flooding resulting from inadequate drainage systems is considered to be a major risk. More particularly, it is feared that the new flood alleviation system installed on Gypsy Lane will be unable to cope with new development on KB2. Flood defence strategies should be a priority in the Neighbourhood Plan.
- Managing water and rain is also important. SuDS are seen as a viable solution.
- Planting more trees alongside roads could increase the aesthetic appeal of Knebworth. Vegetation and plants increase the liveability of the area and act as anti-pollution measures. "Greening" Knebworth also mitigates the potential loss of Green Belt land.





**Policy Review**

**02**

## 2. Policy Review

This section notes the existing and emerging planning policy context and highlights the relevant policies to which the development should comply.

### 2.1 Emerging North Hertfordshire Local Plan, 2011-2031

The District Council's Local Plan was submitted in 2016. It is not yet adopted but, having been subject to examination by a Government-appointed Inspector, does carry some weight. Policies relevant to this document are summarised here. The Knebworth housing allocations are included above.

#### ***Vision for North Hertfordshire***

"Our spatial strategy is one of promoting sustainable development by supporting the use of suitably located previously developed land and buildings and by focusing the majority of development on our towns (including urban extensions) in order to make

maximum use of existing facilities, social networks and infrastructure, and maximise opportunities to deliver new infrastructure. It also allows for some growth of our villages in order to allow those communities to continue to thrive." [3.3]

#### ***Policy SP2: Settlement hierarchy***

Knebworth is designated as a Category A Village, meaning that general development will be allowed within the defined settlement of the village. Specific sites have been allocated in order to meet the District housing total. As Knebworth is Category A, it is excluded from the policy designation that concerns adjacent countryside (either Green Belt or Rural Area beyond the Green Belt; Policy SP5). Knebworth is not considered a strategic housing site but is deemed a "preferred site for development" in the local plan.

#### ***Policy SP8: Housing***

From 2011 – 2031, the District Council expects to release enough land to deliver 14 000 new homes:

- "13 800 will be provided within that part of the District falling within the Stevenage Housing Market Area" (including Knebworth);

- "33% of all homes over the plan period as Affordable Housing for local needs with targets to deliver up to 40% Affordable Housing where viable."

#### ***Policy SP9: Design and Sustainability***

The District Council believes that quality design is a key part of promoting sustainable development. It will:

- "Support new development where it is well designed and located and responds positively to its local context;
- Require masterplans for significant developments;
- Assess proposals against detailed policy requirements set out in this Plan and the Design SPD;
- Adopt the Government's technical standards for the size of new homes, water efficiency and, in specified circumstances, accessibility."

**Policy SP10: Healthy Communities**

The District Council will facilitate “the provision of new or expanded schools in appropriate and accessible locations”, such as Knebworth.

**Policy HS3: Housing Mix**

Planning permission for new homes will be granted where:

- An appropriate range of house types and sizes are provided taking into account:
  - The findings of the most up-to-date Strategic Housing Market Assessment;
  - The location and accessibility of the site; and
  - Recent completions, existing permissions and sites in the five year supply; and
- The scheme would provide a density, scale and character of development appropriate to its location and surroundings.

**Policy SP4: Town and Local Centres**

Make provision for 38,100m<sup>2</sup> of additional A-class floorspace over the plan period, consisting of:

- 22,500m<sup>2</sup> comparison goods (e.g. clothes, shoes, furniture, carpets);
- 8,500m<sup>2</sup> convenience (e.g. food, drink, toiletries); and
- 7,000m<sup>2</sup> other town centre uses.

**Policy SP8: Housing**

Support a range of housing tenures, types and sizes measured against targets to provide:

- 33% of all homes over the plan period as Affordable Housing for local needs with targets to deliver up to 40% Affordable Housing where viable;
- A broadly even split between smaller (1- and 2-bed) and larger (3+ bed) properties; and
- 100 plots for self-build development over the plan period; and

Provide up to 350 bed spaces in suitable, supported accommodation to meet the needs of those who cannot live in their own home.

**Policy HS2: Affordable housing**

- The Council's starting point for negotiation that 65% of affordable homes will be rented and 35% other forms of affordable housing
- Size of site (gross dwellings): target percentage of dwellings to be affordable:
  - 11-14 dwellings: 25%;
  - 15-24 dwellings: 35%;
  - 25 or more dwellings: 40%.

**Policy HS3: Housing Mix**

8.20 – On most suburban and edge-of-settlement sites, applicants should therefore make an initial assumption of 60% larger (3+ bed) and 40% smaller (1 or 2 bed) homes to ensure an overall mix is achieved. The most appropriate solution will be considered on a site-by-site basis having regard to this, the criteria set out above and the outcomes from applying Policy HS2.

SP8 – Affordable housing completions: For at least one-third of housing completions to be for affordable housing.

SP8 – Affordable housing supply by scheme type:  
For affordable housing to meet target levels of provision

SP8 – Housing completions by size: To supply a broadly even split between small (1- or 2-bed) and large (3+ bed) properties

## 2.2 Open Space Requirements

### North Hertfordshire Open Space Review & Standards (2016)

Types of Open Space	Standard (per 1,000 persons)
Multi-Functional Open Space	2 Ha
Provision for Children and Young People	0.57 Ha
Outdoor Sports Facilities	1.60 Ha
Allotments	0.25 Ha

## 2.3 Social Infrastructure Facilities Requirements

AECOM's infrastructure model was used to estimate the community infrastructure that would normally be expected to be provided along with the level of growth being allocated. The site layouts set out in Chapter 4 do not specify locations for all of these facilities, but it is expected that they would be provided within the development sites or in the village centre, which is more accessible to a larger number of people.

Facility	Requirement
Estimated total population growth	1,580
Early years facilities (50 place nurseries)	0.8
Primary school form entries	0.8
Secondary school form entries	0.8
General practitioners	1
Community space (sq.m)	103
Library space (sq.m)	47
Art & cultural space (sq.m)	71
Open space and recreation (ha)	10.9
Children's playspace (ha)	1.3

## 2.4 Parking Requirements

### North Hertfordshire District Council Local Development Framework - Vehicle Parking at New Development Supplementary Planning Document (2011)

Housing Type	Car Parking
1 Bedroom	1 space per dwelling minimum
2+ Bedrooms	2 spaces per dwelling minimum

The above standards will also require visitor/unallocated parking as set out below to be added. Garages will be counted towards meeting the standards only if they are at least 7m x 3m measured internally. Reductions will be considered only in exceptional circumstances e.g. very small scale conversion of buildings for small number of residential units in town centre.

Use Class D	Maximum Car Parking Standards (including visitor spaces)
Community/family centre	1 space per 9 m <sup>2</sup> ground floor area plus 1 space per full-time staff members or equivalent
Day centres	1 space per 2 staff members plus 1 space per 3 persons attending or 1 space per 9 m <sup>2</sup> ground floor area
Outdoor sports grounds with football pitches	20 spaces per pitch
Outdoor sports grounds without football pitches	50 spaces per hectare

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**Design Guidance**

**03**

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## 3. Design Guidance

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This section outlines key design elements and principles to consider when assessing a design proposal.

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The aim of this Design Guidance is to ensure that future developments consider local character and can enhance local distinctiveness by creating good quality developments, thriving communities and prosperous places to live.

This chapter provides a set of solid principles that can be applied to all new development, whereas the following chapters focus on urban extensions and regeneration sites respectively.



Knebworth Recreation Ground. Credits: Adam Pengelly

### 3.1 Place Making and Design Principles

This section introduces a set of placemaking principles that will influence the design of the area's streets, homes and open spaces, and the interfaces between them.

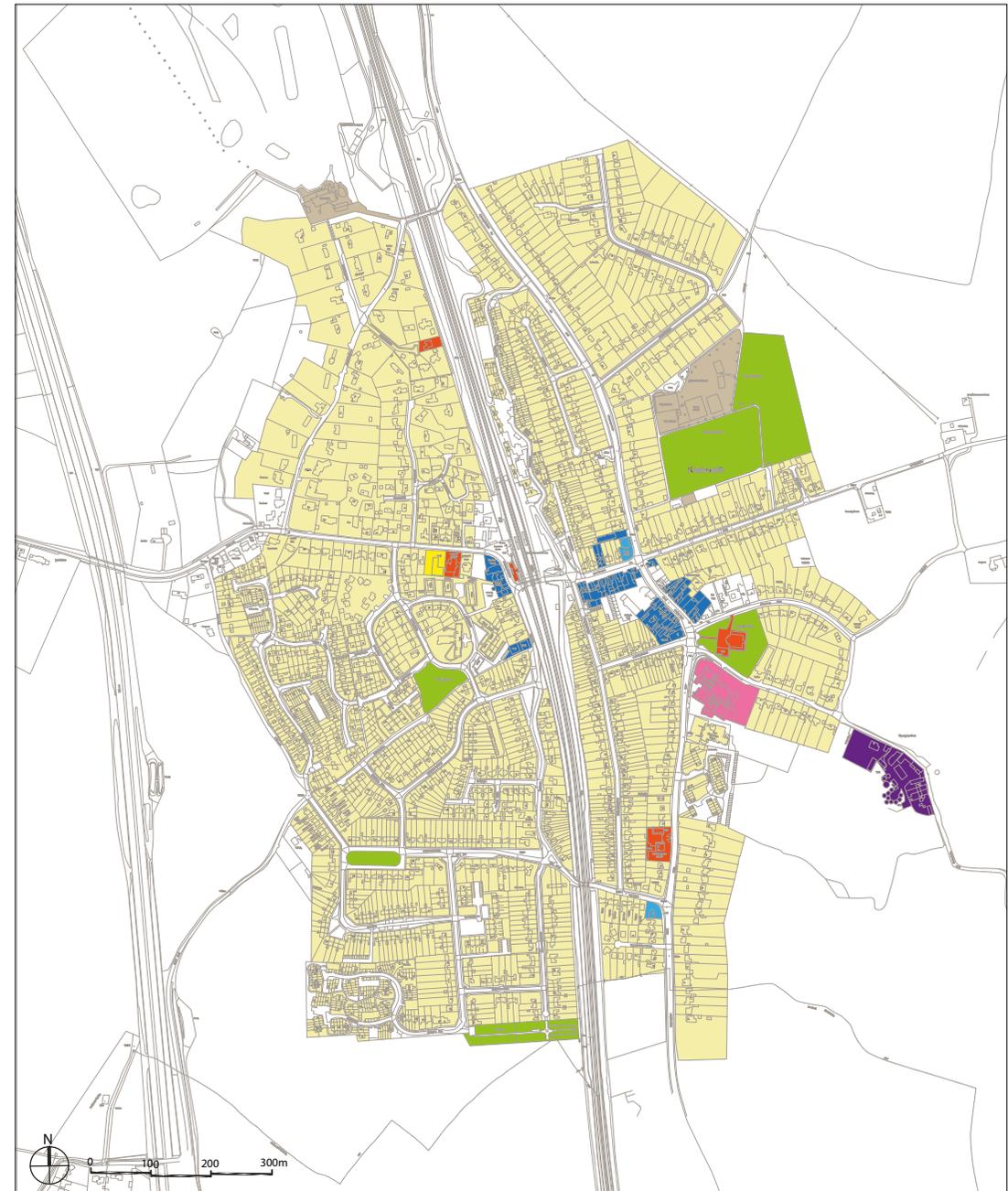
### 3.1.1 Land Use and Density

Knebworth has developed at a low rise scale, predominantly featuring two storey dwellings. The historic core is predominantly late nineteenth- and early twentieth-century in character, with a higher incidence of terraced and semi-detached buildings. The rest of the village is more recent and has a higher proportion of post-War semi-detached and detached houses. Most commercial spaces are located in the small retail core on Station Road and London Road east of the train station.

In the case of new developments, density should be appropriate to the location and simultaneously respond to the character of the existing settlement areas. Where appropriate, proposals should include a diverse range of densities, building types and forms. Higher density development should be located around key movement nodes or areas that are highly accessible by public transport, walking or cycling. A varied density and land use distribution profile in case of large development sites (which is in the case for sites KB1, 2, and 4) adds interest and supports local facilities, public transport, and supports the legibility of the various character areas.

#### Key

- Residential
- Primary School
- Retail
- Community Centre
- Health Facility
- Leisure
- Religious Building
- Agriculture Building
- Open Space



Village-wide land use map

### 3.1.2 Place Making

Placemaking is about creating the physical conditions that residents and users find attractive and safe, with good levels of social encounter and layouts that are easily understood. The placemaking principles set out in the following pages should be used to assess the design quality of future development or regeneration proposals.



#### Walkable Places

Creating new walking routes which are well connected to the existing walking and cycling routes should be present for any new development. Walking routes should be laid out in a way that they follow the shortest and straightest distance between two points.

The success of a place can be measured by its walkability. Therefore, walking distances should be between 5 to 10 minutes to achieve an accessible neighbourhood. It is good practice to plan new homes within a 400 metres walking distance to bus stops or local green spaces and about 800 metres distance from local shops, schools or parks. Pedestrian footpaths should be at least 2 metres wide and be well lit to encourage use at all times.



Footpath between Gypsy Lane and Orchard Way

#### Connectivity

It is important that all newly developed areas provide direct and attractive footpaths between neighbouring streets and local facilities. Establishing a robust pedestrian network a) across any new development and b) among new and existing development is key in achieving good levels of permeability among any part of Knebworth.

A connected street network provides people with a choice of different routes and allows traffic to be dispersed more evenly across an area rather than concentrated on to heavily trafficked roads.

Design features such as barriers to vehicle movement, gates to new developments or footpaths between high fences should be kept at minimum and the latter should be avoided.

## Enclosure

Enclosure is the relationship between public spaces and the buildings or other features that surround them. A more cohesive and attractive urban form is achieved where enclosure is in proportion. The following principles serve as general guidelines that should be considered to achieve a satisfactory sense of enclosure:

- Façades should have an appropriate ratio between the width of the street and the building height.
- Buildings should be designed to turn corners and terminate views.
- Narrow gaps between buildings should be avoided, they should be either detached or properly linked.
- Generally, building façades should front onto streets. Variation to the building line can be introduced to create an informal village character.
- In case of terraced buildings, it is recommended that a variety of plot widths, land use and facade depth should be considered during the design process to create attractive townscape.



## Landmarks and Vistas

Places should be planned to respond to existing view corridors or reinforce views of existing landmarks. Careful consideration should be given to the location of any new landmarks as they contribute to the wider legibility of that particular area.

In addition to adapting to local heritage, landmark buildings should also be innovative and interesting. They should promote good architecture and ensure that places are distinct, recognisable and memorable.



## Hierarchy of Movements

The network of streets should be designed to enable direct and convenient walking and cycling routes to public transport stops and to village and local centres. Streets should be considered as spaces for use by all, not just by vehicular movements.

The street network must provide a safe and pleasant to use environment at all times of the day. It is important that in the case of new developments, streets should consider the needs of users in

the following order: pedestrians, cyclists, public transport users, and other motor traffic.

A street network with a distinguishable movement hierarchy should be established. Streets should be differentiated based on their character, role and function. Streets can be identified based on their proportion to the scale of development as primary, secondary or tertiary (and cul-de-sacs).



Example of vehicle pinch point with planters on Watton Road.



Example of vertical traffic calming on Watton Road.

## Way Finding and Legibility

Developers should aim to create places that have identity and that are easy to navigate through. As noted above, local landmark buildings and clear, direct routes can aid legibility.

Signage could be placed at key nodes and arrival points to aid orientation. The signs should be readable with bare eyes and easy to understand.

## Cycle Paths

Cycling routes should be safe and direct and should form part of a well connected network within Knebworth.

Where dedicated cycle paths are required, these should remain separated from other traffic and pedestrians. However, these cycle paths should always be well over-looked and at the same street level as other routes where possible.



Good example of dedicated cycle path

### 3.1.3 Urban Structure

Urban structure comprises the pattern or arrangement of urban blocks, streets, buildings, public realm and landscape. The size and organisation of any block varies depending upon diverse parameters such as location, desired land use and density. At an urban scale it is important to achieve a good mix of block form and block size, to facilitate adaptability over the years and ensure a good variety of uses within the new parts of the development.

New development should respond to the existing pattern of development within Knebworth, influenced by existing block sizes and structures, patterns of plot subdivision and the relationship between the built and the non-built private space.

### Activity and Frontage

Successful spaces and streets are created where activity and movement occurs. These areas should be designed in a way that they are accessible not only to people living in the community but also to people passing by. In order to achieve this a good mix of land use and provision of well designed public realm is key.

Frontages should be 'active' wherever possible. In residential areas, this means front doors and windows of habitable rooms. In centres, this usually means shopfronts, although uses will not necessarily be retail - food and drink, community uses and services can also provide activity and strong frontages. Shopfront proportions should harmonise with the main building and its neighbouring buildings.

A coordinated, uncluttered approach which is visually cohesive should be a leading design principle in case of new shopfront design.

Ground floor units should be flexible and adaptable to respond to future changing needs of its customers which can reduce the likelihood of vacant units.



## Building Lines

The way buildings sit in relation to the street can have a significant consequence on the success of a development. The main façades and entrances of buildings should usually face the street, which additionally allows for natural surveillance and enhances interface activity.

The building line should have subtle variations in the form of recesses and protrusions but should generally form a unified whole.



## 3.1.4 Parking and Servicing

At the time of writing, the demand for private cars remains high, therefore they have to be carefully integrated into neighbourhoods. There is no single best approach to domestic car parking - a good mix of parking typologies should be deployed, depending on and influenced by location, topography and market demand.

Generally, arrangements for car parking should be safe and convenient and should not undermine the quality and amenity of our streets. Where possible, the predominant parking mode should be on plot, to the side or front. In some cases, when adjoining to existing development, on street parking could be considered as a last resort. However, in this case it should be designed to minimise the visual impact of the car and hard surfaced areas, and its placement should not impede bi-directional traffic flow.

## On Plot Parking

On plot parking can be either in garages and/ or on the driveway at the front or the side of the building. As a form of parking it can be visually attractive when it is combined with high quality and well designed soft landscaping. Boundary treatment is the key element in getting aesthetic results which can be achieved by using elements such as hedges, trees, flower beds, low walls, high quality paving materials between the private and public space. Hard standing and driveways should be constructed from porous materials to minimise surface water run-off. Front yards should be of sufficient depth to accommodate the full length of a modern family car if front yard parking is required.



## Garages

Garages should be designed either as free standing structures or as additive form to the main building. In both situations, it should be aimed to reflect the architectural style of the main building, looking an integral part of it rather than a mismatched unit.

Often, garages can be used as a design element to create a link between buildings, ensuring continuity of the building line. However, it should be considered that garages are not prominent elements so that, they should be designed accordingly. They should be sufficiently large for modern vehicle parking.

It should be noted that many garages are not used for storing vehicles, and so may not be the best use of space.



## On Street Parking

On street parking should be arranged and clearly identified to avoid any undesired situation of street parking.

Parking in such situation can be arranged either:

- Perpendicular; or
- Parallel to the carriageway;

On-street parking should be designed to avoid overly impeding traffic flow, and can serve a useful informal traffic calming function. Potential negative impacts on the street scene can be ameliorated by the use of recessed parking bays with planting between.



## Cycle Parking

Cycling can be encouraged by providing secured covered cycle parking within all new residential developments and publicly available cycle parking at destinations.

For residential units with no garage on plot, covered and secured cycle parking should be provided within the domestic curtilage.



## Servicing

With modern requirements for waste separation and recycling, the number of household bins quantum and size have increased. The issue poses a problem in regarding the aesthetics of the property if bins are left without a design solution. The images below illustrate design solutions for servicing units within the plot.



### 3.1.5 Building Forms and Materials

Building form, proportions, roofscape, and overall appearance should be considerate toward the local character of Knebworth, and any new addition should positively contribute to this character. Nevertheless, responding to character of the place should not result in pastiche replicas, instead the emphasis should be placed on contemporary interpretation of traditional building forms to suit current needs.

### Building Scale and Massing

Buildings should be sympathetic in scale to the context and should not pass 2-2.5 storey in residential areas.

Subtle variation in height is encouraged to add visual interest, such as altering eaves and ridge heights. Another way of doing it could be by variation of frontage widths and plan forms. This can be appropriate in both central and more suburban locations.

### Building Detailing

Building detailing refers to a set of architectural tools that can contribute to local distinctiveness.

In case of new development, buildings should be designed in harmony and proportional to each other and enhancing or complementing the overall street character.

All building elevations (all floors) should be designed with equal care and design details to create a well integrated overall composition.



## Buildings at Corners

Streets should have strong continuity of frontage not only for being visually attractive and enhancing streetscape, but also for providing high levels of natural surveillance.

Corner buildings should have both side façades animated with doors and/or windows. Exposed, blank gable end buildings with no windows fronting the public realm should be avoided.

Decorative architectural elements also should be considered in treating these building types. It is not necessary for strong corner buildings to be taller than neighbouring buildings.



## Privacy

In any new development appropriate privacy measures should be taken into account from early design stage. Issues such as overlooking from streets, private and communal gardens, courtyards and open spaces into private property, predominantly for residential units should be all considered. Setback from the street, front garden landscaping and added detailed architectural design should help in balancing privacy to front living spaces with the need for overlooking of the streets.



It is important to clearly distinguish between private and public space. Clear ownership boundaries should be established so that spaces feel safe and are appropriate for the right user group to use.

Setting private-public boundaries:

- Landscape barriers using hedging, boundary fences, small walls or setbacks,
- Minimum front gardens should be 1.5 metres deep unless designed to accommodate parking, in which case they should be minimum 5m deep to avoid highway overhangs.



## Roof Line

Creating a good variety in the roof line is a significant element of designing attractive places. There are certain elements that serve as guideline in achieving a good variety of roofs:

- Scale of the roof should always be in proportion with the dimensions of the building itself;
- Monotonous building elevations should be avoided, therefore subtle changes in roof line should be ensured during the design process;
- The design of roof lines should include PV panels or the opportunities to integrate PV panels at a later date;
- Local traditional roof detailing elements should be considered and implemented where possible in case of new development; and
- Dormers can be used as design element to add variety and interest to roofs, however taking the need for PV panels into account.

## Materials and Architectural Details

It is important that the materials used in new developments are of a high quality and reinforce the local distinctiveness of Knebworth.

Development proposals should demonstrate that the palette of materials has been selected based on an understanding of the surrounding built environment.

It should be noted that these materials are not prescriptive and there is opportunity for innovative and creative material suggestions in new buildings, restorations and extensions that may complement what already exists. However, when buildings are designed, local heritage of building materials should be taken into consideration.



Materials proposed for use in new development and building extensions shall match or be guided by those used in the existing building or area and subtle variations by street. (Images on page 35 show typical palettes of traditional bricks, rendering, windows, doors, paving and cornicing).

Architectural detailing should typically display elements that equate to those on existing traditional buildings which provide interest, scale and texture to form and elevations.





BLACK TIMBER CLADDING



CLAY TILE SHINGLES



DECORATED ROOF GABLE



FRONT HEDGES



VARIATIONS IN FACADE MATERIAL AND TEXTURE



RED BRICKS



'M' GABLES



RED BRICK WINDOW TRIM



CENTRAL GREEN SPACE



CLAY ROOF SHINGLES



HALF-TIMBERED UPPER FLOOR



MULTI-PANELED HORIZONTAL WINDOW



WOODEN PORCH



FRONT GARDEN



BAY WINDOWS

## 3.2 General questions to ask and issues to consider when presented with a development proposal

This section states a general design principle followed by a number of questions against which the design proposal should be judged. The aim is to assess all proposals by objectively answering the questions below.

Not all the questions will apply to every development. The relevant ones, however, should provide an assessment overview as to whether the design proposal has taken into account the context and provided an adequate design solution.

The Design Proposal should:

### A. Harmonise and enhance existing settlement in terms of physical form pattern or movement and land use.

- What are the particular characteristics of this area which have been taken into account in the design?
- Is the proposal within a conservation area?
- Does the proposal affect or change the setting of a listed building or listed landscape?

### B. Relate well to local topography and landscape features, including prominent ridge lines.

- Does the proposal harmonise with the adjacent properties?
- Has careful attention been paid to height, form, massing and scale?
- If a proposal is an extension, is it subsidiary to the existing property so as not to compromise its character?
- Does the proposal maintain or enhance the existing landscape features?
- How does the proposal affect the trees on or adjacent to the site?
- How does the proposal affect on the character of a rural location?

### **C. Reinforce or enhance the established urban character of streets, squares and other spaces.**

- What is the character of the adjacent streets and does this have implications for the new proposals?
- Does the new proposal respect or enhance the existing area or adversely change its character?
- Does the proposal positively contribute to the quality of the public realm/streetscape and existing pedestrian access?
- How does the proposal impact on existing views which are important to the area?
- Can any new views be created?

### **D. Reflect, respect and reinforce local architecture and historic distinctiveness.**

- What is the local architectural character and has this been demonstrated in the proposals?
- If the proposal is a contemporary design, are the details and materials of a sufficiently high enough quality and does it relate specifically to the architectural characteristics and scale of the site?

### **E. Retain and incorporate important existing features into the development.**

- What are the important features surrounding the site?
- What effect would the proposal have on the streetscape?
- How can the important existing features including trees be incorporated into the site?
- How does the development relate to any important links both physical and visual that currently exist on the site?

### **F. Respect surrounding buildings in terms of scale, height, form and massing.**

- Is the scale of adjacent buildings appropriate to the area?
- Should the adjacent scale be reflected?
- What would be the reason for making the development higher?
- Would a higher development improve the scale of the overall area?
- If the proposal is an extension, is it subsidiary to the existing house?
- Does the proposed development compromise the amenity of adjoining properties?
- Does the proposal overlook any adjacent properties or gardens?

### **G. Adopt appropriate materials and details.**

- What is the distinctive material in the area, if any?
- Does the proposed material harmonise with the local material?
- Does the proposal use high quality materials?
- Have the details of the windows, doors, eaves and roof details been addressed in the context of the overall design?

### **H. Integrate with existing paths, streets, circulation networks and patterns of activity.**

- What are the essential characteristics of the existing street pattern?
- How will the new design or extension integrate with the existing arrangement?
- Are the new points of access appropriate in terms of patterns of movement?
- Do the points of access conform to the statutory technical requirements?
- Do the new points of access have regard for all users of the development (including those with disabilities)?

### **I. Provide adequate open space for the development in terms of both quantity and quality.**

- Is there adequate amenity space for the development?
- Does the new development respect and enhance existing amenity space?
- Have opportunities for enhancing existing amenity spaces been explored?
- Are there existing trees to consider?
- Will any communal amenity space be created? If so, how will this be used by the new owners and how will it be managed?

**J. Incorporate necessary services and drainage infrastructure without causing unacceptable harm to retained features.**

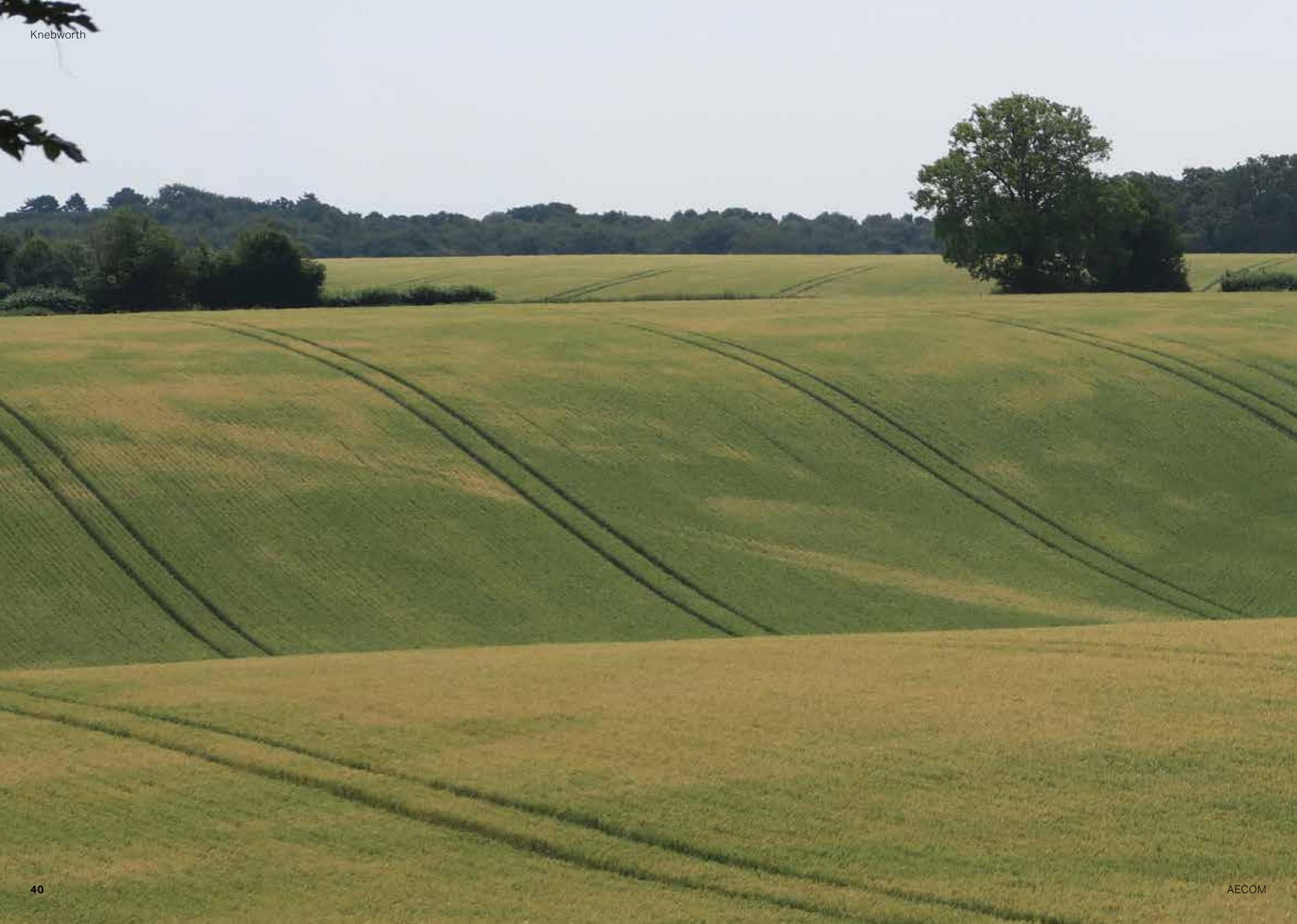
- What visual impact will services have on the scheme as a whole?
- Can the effect of services be integrated at the planning design stage, or mitigated if harmful?
- Has the lighting scheme been designed to avoid light pollution?

**K. Ensure all components e.g. buildings, landscapes, access routes, parking and open space are well related to each other, to provide a safe and attractive environment.**

- Has the proposal been considered in its widest context?
- Is the landscaping to be hard or soft?
- What are the landscape qualities of the area?
- Have all aspects of security been fully considered and integrated into the design of the building and open spaces?
- Has the impact on the landscape quality of the area been taken into account?
- Have the appropriateness of the boundary treatments been considered in the context of the site?
- In rural locations has the impact of the development on the tranquillity of the area been fully considered?

**L. Make sufficient provision for sustainable waste management (including facilities for kerbside collection, waste separation and minimisation where appropriate) without adverse impact on the street scene, the local landscape or the amenities of neighbours.**

- Has adequate provision been made for bin storage?
- Has adequate provision been made for waste separation and relevant recycling facilities?
- Has the location of the bin storage facilities been considered relative to the travel distance from the collection vehicle?
- Has the impact of the design and location of the bin storage facilities been considered in the context of the whole development?
- Could additional measures, such as landscaping be used to help integrate the bin storage facilities into the development?
- Has any provision been made for the need to enlarge the bin storage in the future without adversely affecting the development in other ways?



# Site Masterplanning

# 04

## 4. Site Masterplanning

This section proposes masterplanning approaches for the sites, illustrating how the guidance above might be implemented providing indicative land use budgets and key points for each option.

### 4.1 Site Access Appraisal

A technical note was prepared to review the potential for vehicular access at the sites that are being allocated, as outlined in Chapter 1.

To establish the access potential of each of these sites, a site appreciation visit was undertaken on Thursday 2 August 2018 and an initial appraisal of each site is set out below. It mainly focused on the ability to access each site from the existing highway network and reference is made to the visibility requirements set out in Manual for Streets (MfS). At each site, visibility has been estimated on site and by using the measuring facility in Google Maps. More accurate visibility measurements based on a topographical survey will be required should any of these sites be taken forward to a planning application.



Access to Site KB1 from Park Lane



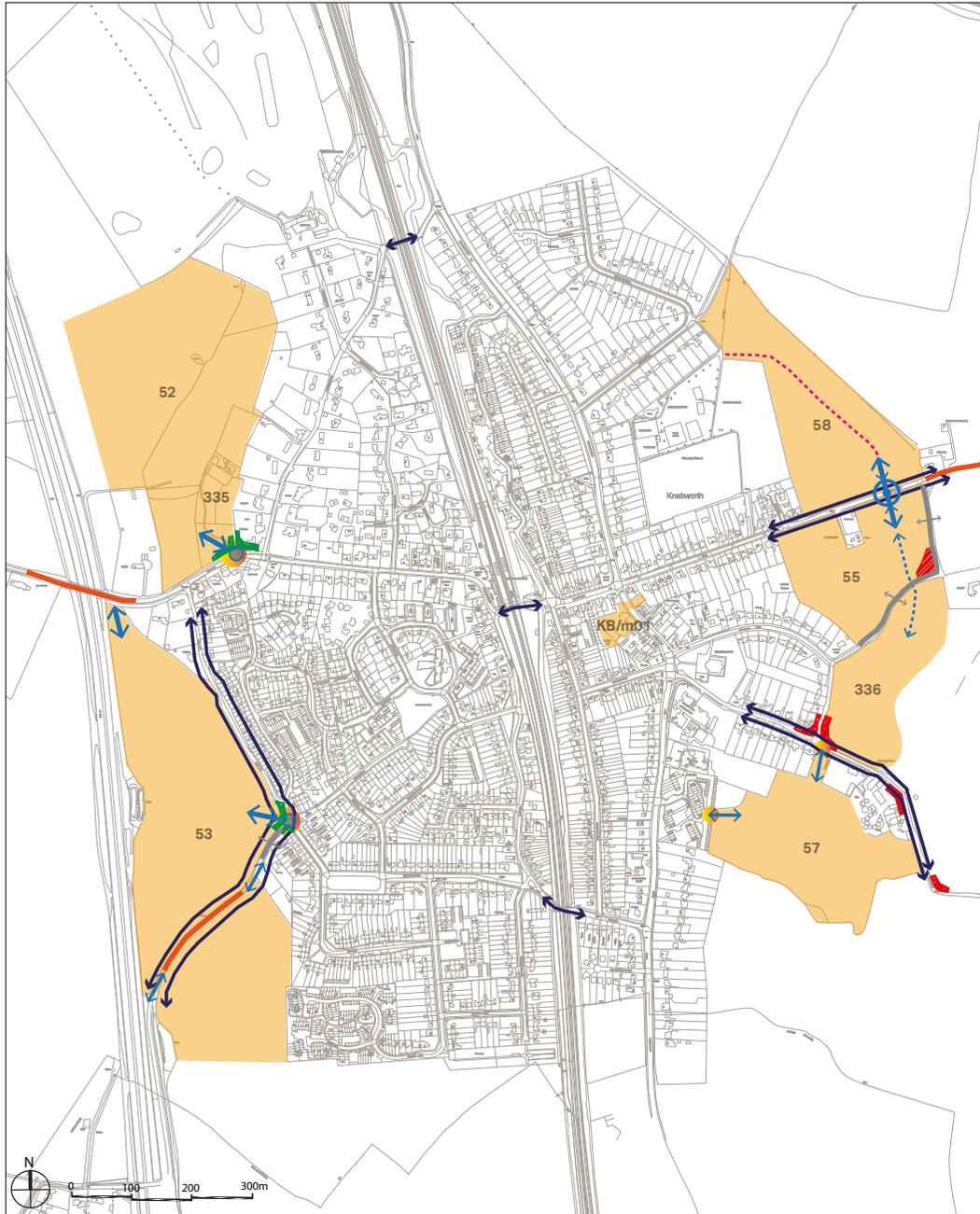
Access to Site KB2 from Park Lane



Potential access to Site KB4 from Watton Road



Delineation between plots within Site KB4 at Old Lane



- Key**
- Site allocation
  - Potential main access point
  - Potential secondary access point
  - Vegetation to be trimmed to provide required visibility
  - Potential access points requiring further investigation
  - Recommended speed restriction sections
  - Proposed cycle route
  - Road widening to be considered
  - Access route shared with adjacent site
  - Missing footways
  - Proposed junction or mini-roundabout
  - Roads or turns with restricted visibility
  - Proposed shared access roundabout

Existing site access and transport constraints in Knebworth.

This assessment is based on observations made on site and through reference to imagery provided by Google Maps. As such the advice set out in this note is preliminary in nature and will need to be confirmed by more accurate assessments based on a topographical survey.

Notwithstanding, each site has been assessed for its potential to provide a suitable means of access and the following is a summary of the main issues that have been identified at this preliminary stage.

The analysis is presented for the sub-sites within the allocations, using the site numbers used in the District Council's Preferred Options report. These are shown in the plan above. Page 57 lists a number of recommended additional studies to address congestion, safety, and parking issues that are either existing or anticipated as a result of new development on these sites.

### **Site 52**

- Has site frontage to Park Lane within the existing built up area of Knebworth.
- Access appears to be achievable from an existing gated field access in the south east corner of the site subject to a more detailed assessment.

- Either a simple priority junction or a mini roundabout would be an appropriate form of junction.
- Reasonable pedestrian connectivity to the village centre and located on an infrequent bus route.

### **Site 53**

- Has narrow site frontage to Park Lane and more extensive frontage to Gypsy Lane which passes through the southern third of the site.
- Access appears to be achievable from Park Lane and from a point on Gypsy Lane subject to minor modifications and a more detailed assessment.
- Provision of two points of access would distribute traffic reducing impact on routes that may not be capable of accommodating the full development.
- Poor pedestrian connectivity to the village centre although northern part of site has access to a bus route.

### **Site 55**

- Has site frontage to Watton Road where there are opportunities for access including the potential to share access with Site 58 either with staggered priority junctions or staggered mini roundabouts.
- Mini roundabouts have an added benefit of providing a traffic calming feature.
- Reasonable pedestrian connectivity to the village centre although no direct access to bus services.

### **Site 58**

- Has site frontage to Watton Road where there are opportunities for access including the potential to share access with Site 55 either with staggered priority junctions or staggered mini roundabouts.
- Mini roundabouts have an added benefit of providing a traffic calming feature.
- Also has narrow frontage to Oakfields Road where there is potential for a second or alternative access.
- To prevent rat running if both accesses are provided there should not be a vehicular connection between Watton Road and Oakfields Road.
- Reasonable pedestrian connectivity to the village centre although no direct access to an infrequent bus route.

**Site 57**

- Has site frontage to Swangley's Lane at two locations and to Haygarth.
- The frontage onto Swangley's Lane at the eastern edge of the site is considered unsuitable due to highway alignment issues.
- The narrow frontage onto Swangley's Lane just to the east of Old Lane has potential although proximity to Old Lane and visibility to the left could be constraints. Staggered priority junctions or staggered mini roundabouts incorporating Old Lane could be appropriate. A more detailed review based on a topographical survey is required.
- Access to Haygarth appears feasible although quality of route to London Road may reduce the attractiveness of the site.
- Need to confirm that Haygarth is adopted highway and to check the ownership of the strip of grassland between the garages to ensure there is no potential for ransom.
- Good pedestrian connectivity to the village centre via Haygarth and to bus stops in the village centre.
- Poor pedestrian connectivity from Swangley's Lane due to lack of footways.

**Site 336**

- Has frontage onto Swangley's Lane and Old Lane both of which are narrow and lack footway provision and are therefore unlikely to offer realistic opportunities for access.
- The 2016 SHLAA update states that this site not suitable in isolation but could be considered together with the other site to the east of Knebworth.
- Potential to share access on Watton Road with Site 55 although would need to ensure that there is no intensification of use on Old Lane which is a narrow sub-standard route.
- Reasonable pedestrian connectivity to village centre via St Martin's Road although there are no footways along the first section.

## 4.2 Site Analysis

The following general issues and constraints have been identified across the sites:

- **Narrow roads** - A number of key routes within and connecting to the sites are particularly narrow, with some lacking footways. New developments will bring an increase in users which the roads will not be able to support safely. This is particularly true for railway crossing points. Upgrading these roads with wider carriageways and new footways is therefore necessary.
- **Low visibility turns** - There are several bends on certain roads that either have low visibility due to overgrown vegetation or turn dangerously at sharp angles onto narrow roads. Again, this problem is particularly true at railway crossing points.
- **Views into the open countryside** - Each site has a boundary with the countryside, with views onto open fields. New developments should be sensitive to these views and consider the use of planted buffers where appropriate.
- **Views from neighbouring properties** - Each site is adjacent to overlooking residential properties. New building design must be sensitive to this relationship and landscaping should be used appropriately to mitigate impact.

- **Flood zones** - High and low risk flood zones trickle through the south eastern and south western sites. Particular consideration must be given to developments within high risk zones, and site drainage improved to alleviate flooding. Sustainable drainage systems (SuDS) should be considered.
- **Listed buildings and conservation areas** - Conservation areas are located next to the two western sites. The design of new developments must remain sympathetic with the architecture of listed buildings and protected areas.
- **Hedgerows** - Hedgerows run through and around the boundaries of many of the sites. Where possible, these should be retained and integrated into landscaping and urban design.
- **A1(M)** - Sites KB1 and KB2 are adjacent to the A1 motorway, complete with its noise and air pollution.

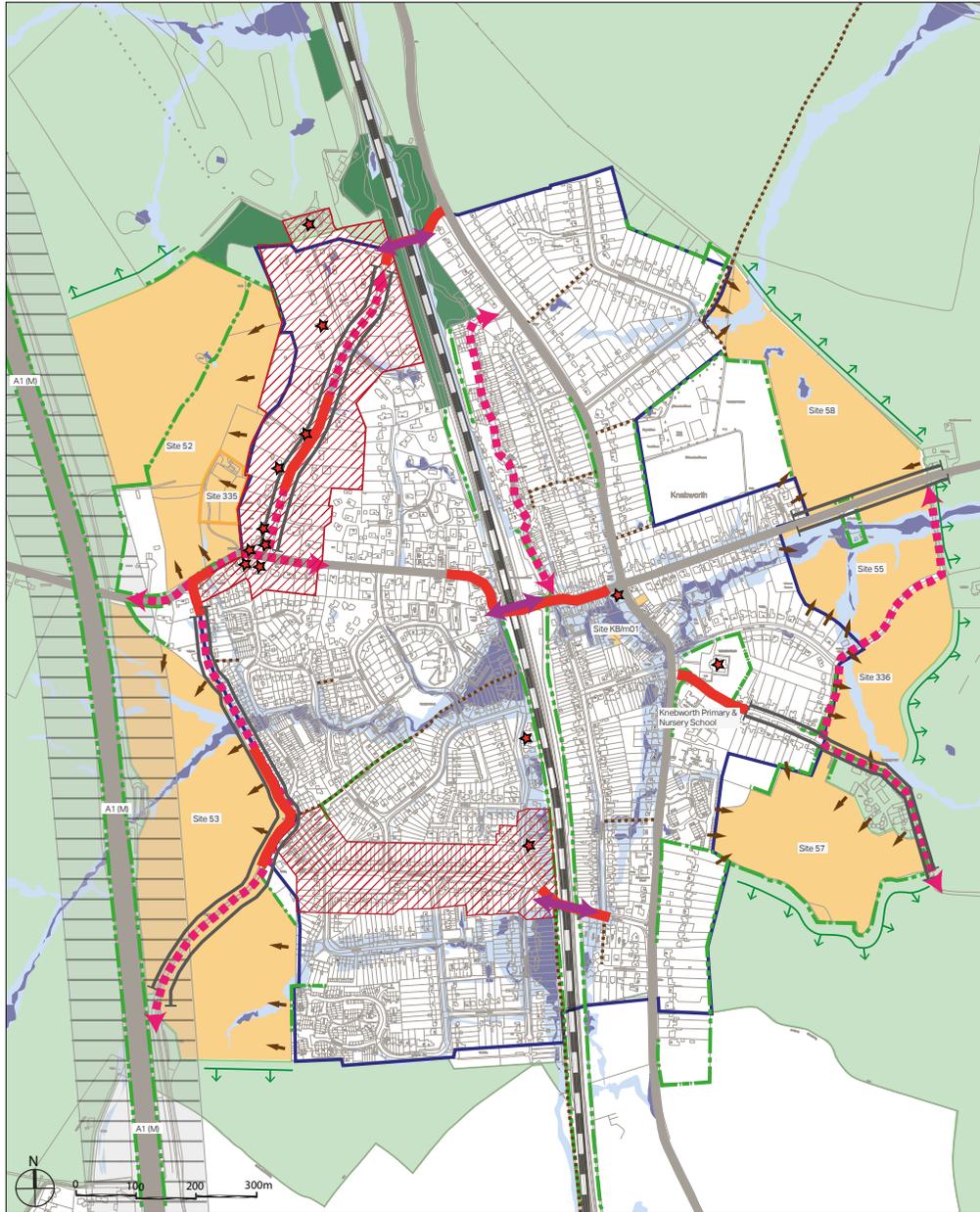
## 4.3 Site Masterplanning

Sites KB1, KB2, and KB4 could accommodate a total of to 584 new houses at an average of 30 dwelling units per hectare (dph). The concept plans in the following sections show how a total of 14.16 ha of new green space can be provided, to include multi-functional open space, children and young people play areas, as well as outdoor sports facilities and allotment gardens. Green

spaces will incorporate sustainable urban drainage (SUDs) for flood mitigation and potentially noise attenuation features along the A1. Green buffers will provide a sympathetic interface between the new development and the open countryside. Hedgerows will be retained or planted to shield unsympathetic views to and from the backs of neighbouring residential properties.

There are also provisions for a new primary and secondary school to the west and east of the village respectively, as well as new community facilities that include early years facilities. These proposals should come along upgrades to the existing road, cycling, and pedestrian network to improve traffic safety and accessibility for all road users while mitigating negative impact on congestion and parking.

The following pages will provide more detailed site analyses and masterplanning proposals for each of the sites studied. They also determine an expected housing yield at an average density of 28-30 dph, which can be adjusted within each site and parcel to respond to specific site constraints such as the proximity of Conservation Areas or listed buildings, or views to preserve.



Village-wide site analysis

AECOM

**Key**

-  Settlement boundary
-  Site allocations
-  Conservation area
-  Greenbelt
-  Deciduous woodland
-  Hedgerows
-  Low surface flooding risk
-  High surface flooding risk
-  Listed buildings
-  Main roads
-  Railway line
-  Railway crossings with inadequate pedestrian provisions
-  Roads with restricted width
-  Roads or turns with restricted visibility
-  Area most subject to noise pollution and particulates from A1(M)
-  Views from neighbouring properties
-  Site edge with open countryside
-  Missing footways
-  Existing footpaths and bridleways

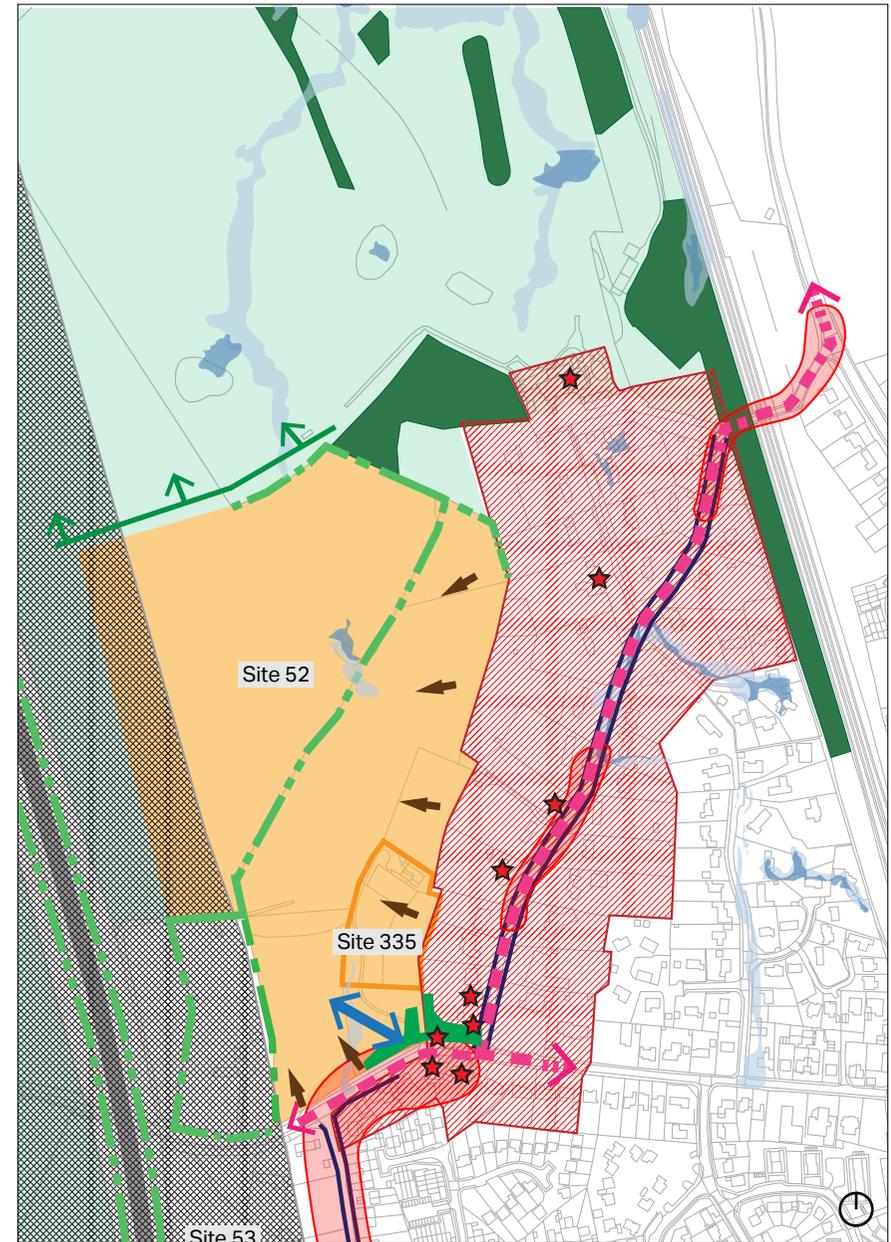
Proposed use	Area (Ha)
Residential	20.16
Overall open space, including:	14.27
Multi-functional open space, including SUDs, green buffers, and potential noise attenuation features	10.06
Children and young people play areas	1.00
Outdoor sports facilities, including ancillary facilities	2.46
Allotment gardens	0.75
Primary school	2.03
Secondary school	5.92
Main road	2.51
Community centre, including early years facilities	0.08

**Estimated housing yield: 584 dwelling units at 28-30 dph**

## 4.4 Land at Deard's End (KB1)

### 4.4.1 Site Analysis

The site has the A1 motorway to the west and the Deard's End Lane Conservation Area to the east. Furthermore, there is a cluster of listed buildings to the south east of the site, in close proximity to the site's proposed main access point. There are two ponds on the northern half of the site. The northern edge of the site gives onto sensitive open countryside and ancient woodland (Knebworth Woods SSSI).



Site KB1 analysis

### 4.4.2 Site Layout

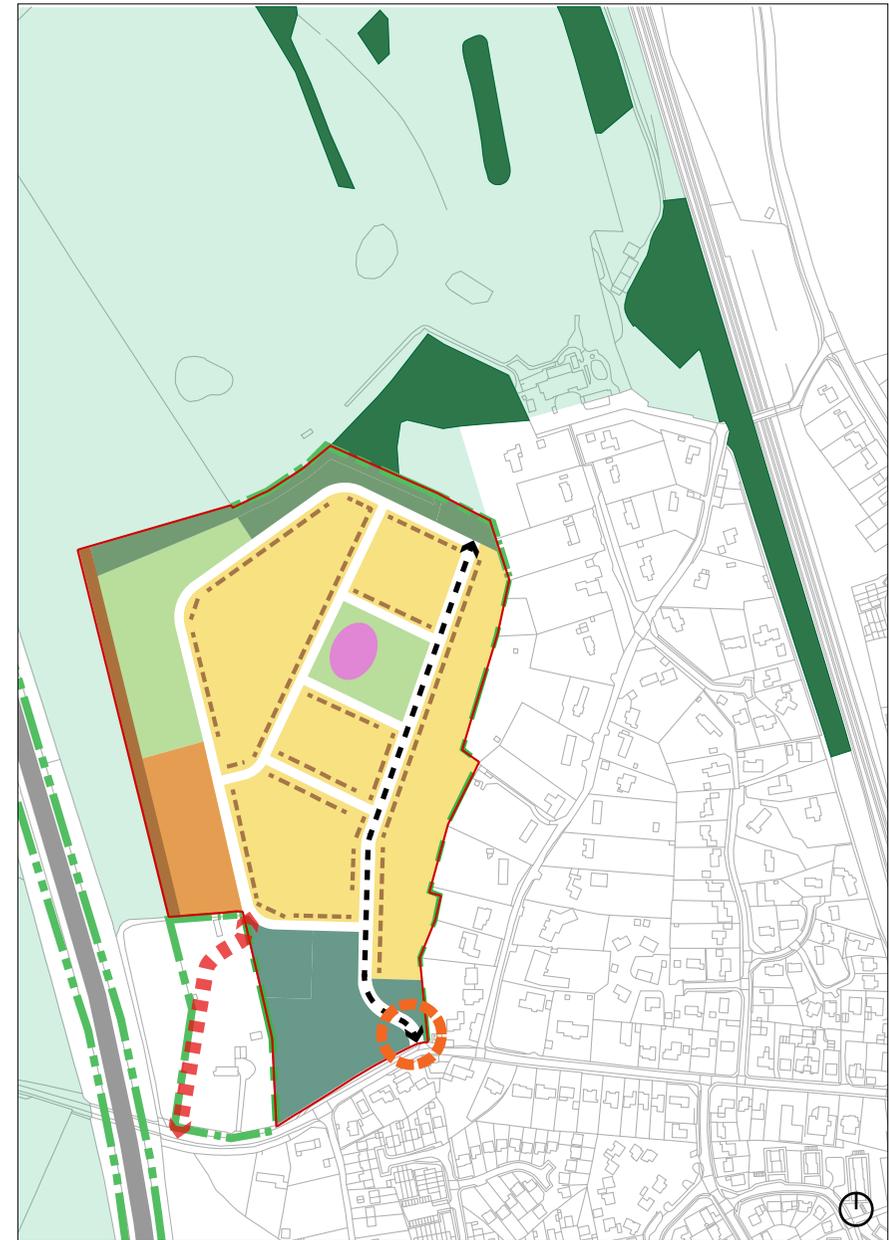
- 200 new houses at 30 dph average density;
- One site access on Park Lane, with one potential long term connection to Site KB2 subject to agreement with landowner of adjacent site;
- Residential development offset from motorway to reduce exposure to A1 noise and air pollution;
- Green spaces along A1 incorporating allotment gardens and potential noise mitigation features;
- New outdoor sports facilities, including ancillary facilities (toilets, changing rooms, and parking for 20 cars);
- Green buffer at interface with open fields and Priority Habitat Inventory woodland to the north;
- Hedgerows at interface with Deard’s End Lane Conservation Area to be retained and reinforced to minimise intrusive views; residential densities to be locally reduced.

Proposed use	Area (Ha)
Residential	6.78
Overall open space, including:	4.55
Multi-functional open space, including SUDs, green buffers, and potential noise attenuation features	2.10
Children and young people play areas	0.30
Outdoor sports facilities, including ancillary facilities (toilets, changing rooms, and car parking)	1.29
Allotment gardens	0.75
Main road	0.55

**Estimated housing yield: 200 dwelling units at 30 dph**

**Key**

-  Site boundaries
-  New residential development
-  New open spaces and SUDs
-  Green buffers
-  Proposed residential frontage
-  Potential noise attenuation feature
-  Existing main roads
-  New main roads
-  Potential connection to Site KB2 subject to agreement with third party landowner
-  Site accesses
-  Retained ancient woodland
-  Retained and proposed hedgerows
-  Greenbelt
-  Potential LEAP and NEAP location
-  New sport pitches including ancillary facilities
-  New allotment gardens

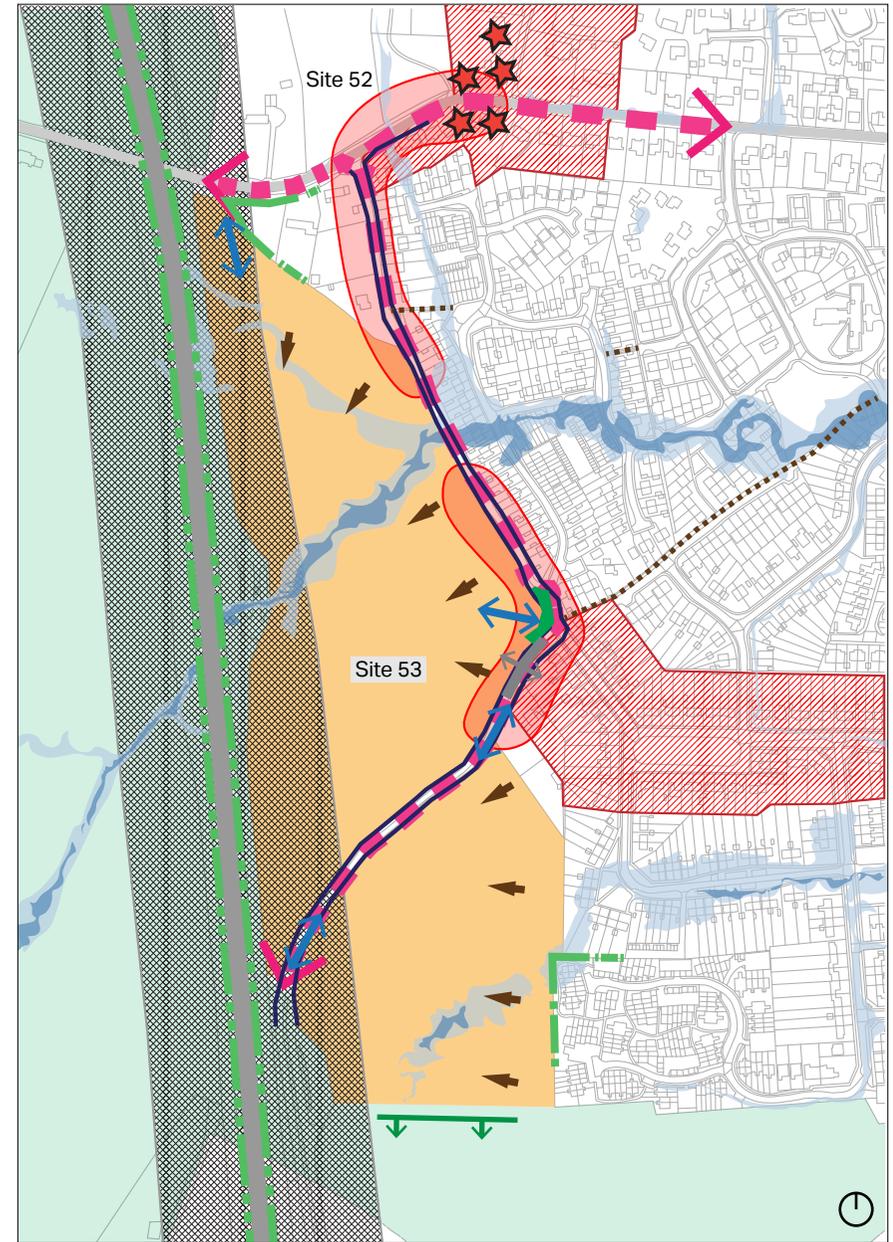


Site KB1 masterplan

## 4.5 Land Off Gypsy Lane (KB2)

### 4.5.1. Site Analysis

The site is divided into two areas by the southern end of Gypsy Lane - a single lane road with several dangerous turns that would require widening to accommodate traffic generated by the new development. A high risk flood zone also runs through the northern part of the site. Fronting the western boundary is the A1 motorway, which will create a significant amount of noise pollution and particulates – appropriate landscaping and acoustic buffering must be used to minimise impact.



Site KB2 analysis

### 4.5.2 Site Layout

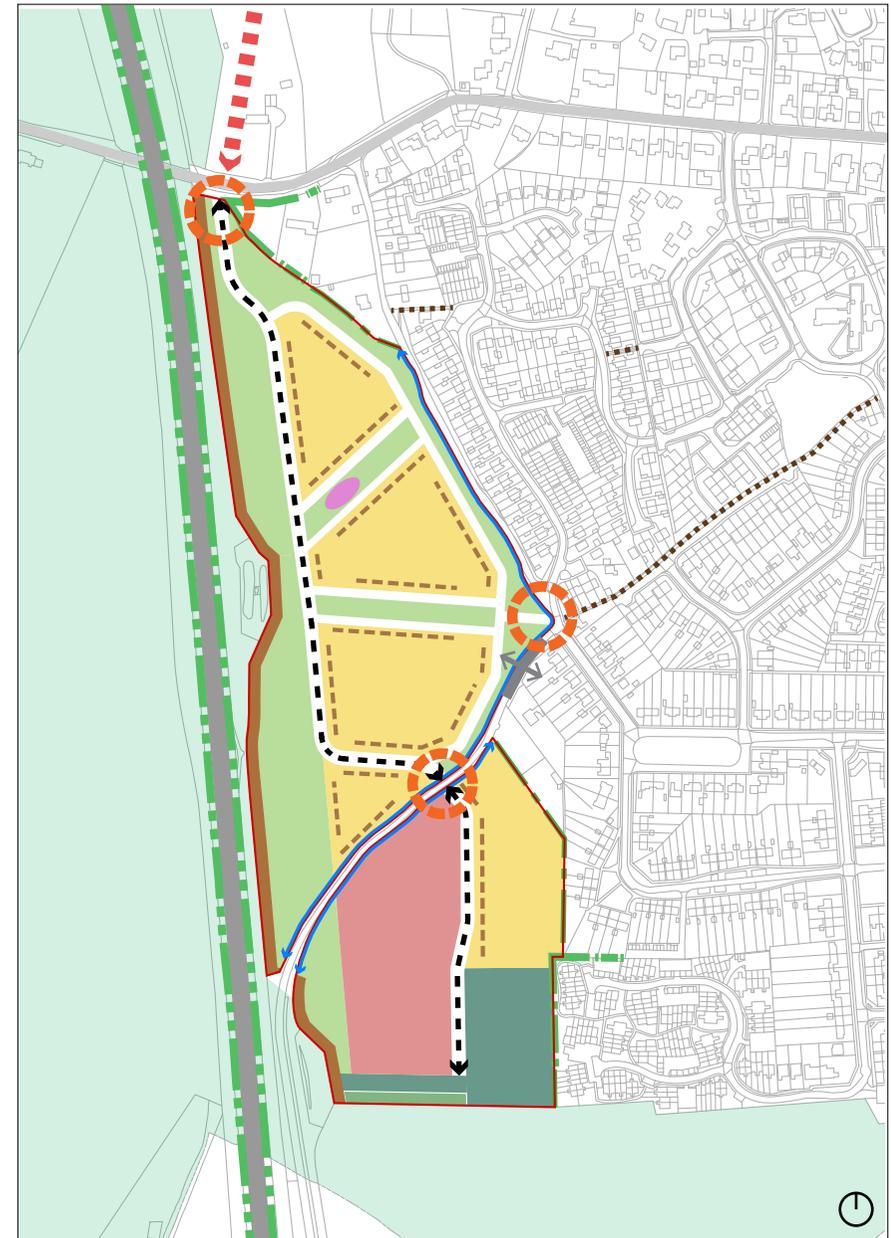
- 184 new houses at 30 dph average density;
- 3 site accesses on Park Lane and Gipsy Lane;
- Residential development offset from motorway to reduce exposure to A1 noise and air pollution;
- Green spaces along A1 incorporating potential noise mitigation features;
- 2 ha site reserved for new 1FE primary school;
- Green buffers along Gipsy Lane to screen Stockens Green Conservation Area and to retain low-traffic rural character of Gipsy Lane;
- New footways along Gipsy Lane for pedestrian connectivity and safety; and
- New outdoor sports facilities, including ancillary facilities (toilets, changing rooms, and parking).

Proposed use	Area (Ha)
Residential	6.12
Overall open space, including:	6.04
Multi-functional open space, including SUDs and potential noise attenuation features	4.68
Children and young people play areas	0.30
Outdoor sports facilities, including ancillary facilities (toilets, changing rooms, and car parking)	1.06
Main road	1.01
Primary school	2.03

**Estimated housing yield: 184 dwelling units at 30 dph**

**Key**

- Site boundaries
- New residential development
- New open spaces and SUDs
- Green buffers
- New primary school
- Proposed residential frontage
- Potential noise attenuation feature
- Existing main roads
- New main roads
- Potential connection to Site KB1 subject to agreement with third party landowner
- New footways
- Site accesses
- Retained and proposed hedgerows
- Greenbelt
- Existing footpaths and bridleways
- Potential LEAP or NEAP location
- New sport pitches including ancillary facilities



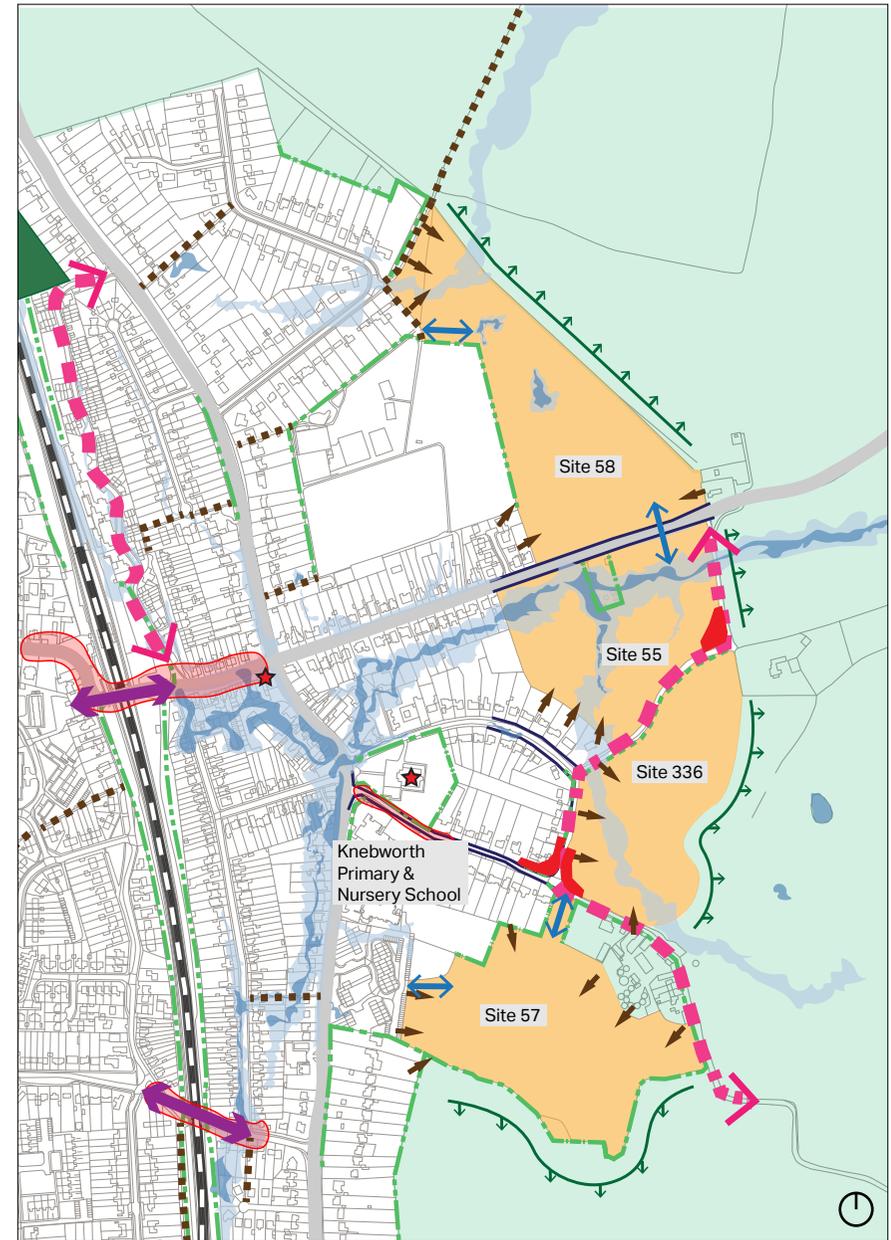
Site KB2 masterplan

## 4.6 Land East of Knebworth (KB4)

### 4.6.1. Site Analysis

The eastern boundaries of sites 58, 55, 336, and 57 border the open countryside. The scale and design of new developments must take these vistas into account as they are an important feature of the village's character. Many neighbouring properties currently have direct views onto the sites, though some are mitigated by hedgerows. The south of the site benefits from its proximity with Knebworth Primary & Nursery School.

Site 55, 336, and 57 are linked by Old Lane and Swangley's Lane though both are narrow single-lane roads that would require significant widening. Several high and low risk flood zones run through Sites 55 and 336 – sustainable drainage systems are a potential solution for managing these issues. Pedestrian links must also be installed along Watton Road as the eastern sites are poorly connect to the village centre. The section of Swangley's Lane east of Knebworth Primary & Nursery School has no footways.



Site KB4 analysis

### 4.6.2 Site Layout

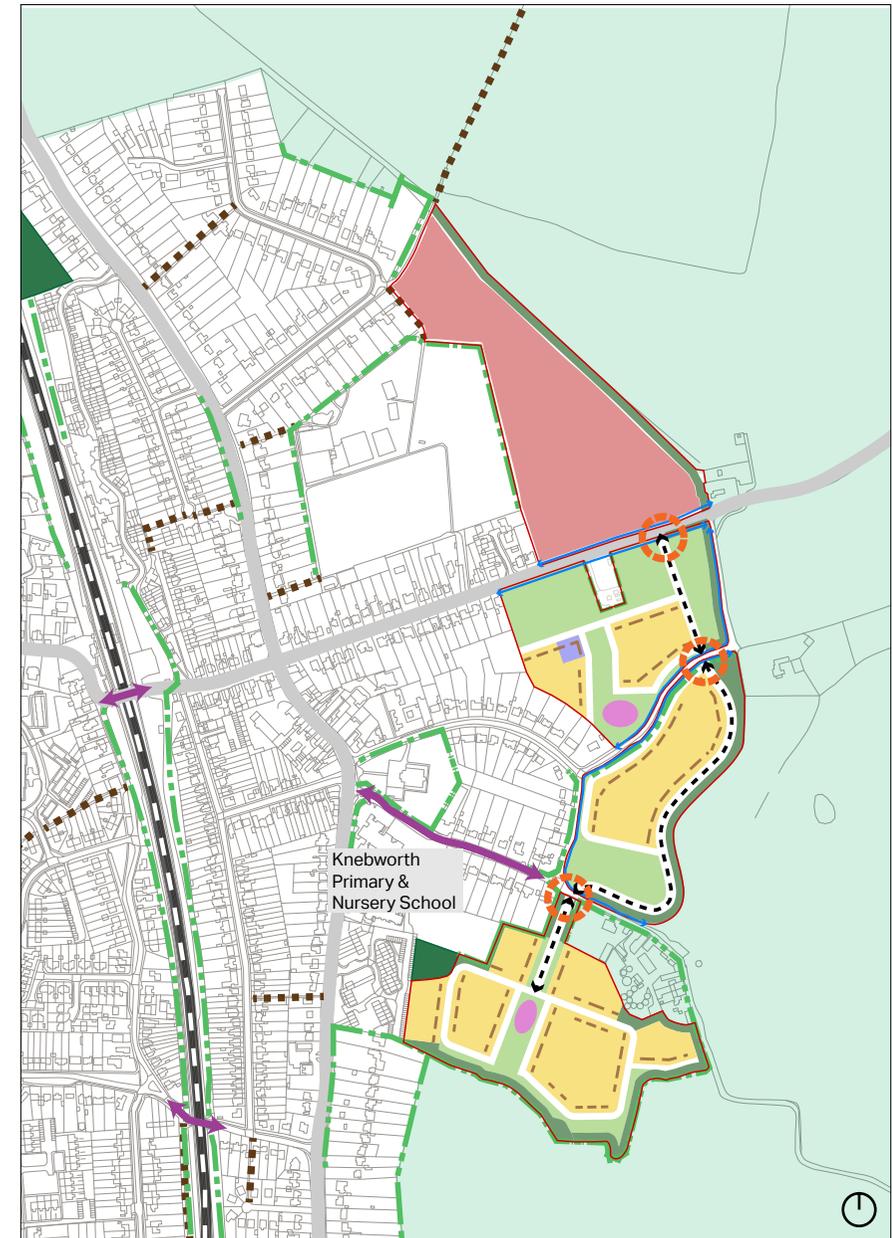
- 200 new houses at 28 dph average density;
- 3 site accesses on Watton Road, Old Lane, and Swangley's Lane;
- 5.9 ha site reserved for new secondary school with option to link site with Recreation Ground;
- New community centre, including early years facilities;
- Green buffer at interface with open fields;
- New footways along Watton Road, Old Lane, and Swangley's Lane for pedestrian connectivity and safety; and
- Traffic studies recommended to improve pedestrian safety on Swangley's Lane between London Road and Old Lane.

Proposed use	Area (Ha)
Residential	7.26
Overall open space, including:	3.68
Multi-functional open space, including SUDs, green buffers, and potential noise attenuation features	3.28
Children and young people play areas	0.40
Main road	0.95
Secondary school	5.92
Community centre, including early years facilities (50 place nurseries)	0.08

**Estimated housing yield: 200 dwelling units at 28 dph**

**Key**

-  Site boundaries
-  New residential development
-  New open spaces and SUDs
-  Green buffers
-  New secondary school
-  Proposed residential frontage
-  Existing main roads
-  New main roads
-  New footways
-  Site accesses
-  Retained ancient woodland
-  Retained and proposed hedgerows
-  Greenbelt
-  Existing footpaths and bridleways
-  Critical links with missing footways - traffic studies required
-  Potential LEAP and NEAP locations
-  New community centre, including early years facilities



Site KB4 masterplan





**Next Steps and  
Recommendations**

**05**

## 5. Next Steps and Recommendations

This section concludes the report with recommendations on how to embed findings in the Neighbourhood Plan.

The recommended next steps for how to use the outcomes of this design options study are to:

1. Embed the masterplan and guidelines in the Draft Neighbourhood Plan;
2. Engage with the Council to develop policies supporting the proposals;

The report concludes with further recommendations on traffic issues that have been beyond the scope of this report.

### 5.1. Embed the masterplan and guidelines in the Draft Neighbourhood Plan

The objective of this report is to develop a series of design guidelines for development possibilities in Sites KB1, KB2, and KB4, as well as general design guidelines.

The report's content could usefully be converted into neighbourhood plan policies, or could be presented as an appendix to the neighbourhood plan, referred to in design policies.

### 5.2. Engage with the Council to develop policies supporting the proposals

The inputs from the Council's policy and development management specialists would be invaluable in advance of formal consultation and submission. The Parish Council should consider how our recommendations can be transposed into policy through discussions with the Council and use the best practice guidance from Locality to prepare draft policies for consultation. Locality's 'Writing Planning Policies'<sup>1</sup> guidance sets out how different planning policies are designed to achieve different things.

The guide describes the three most common as:

- **Generic** – a simple policy which applies universally to development across the entire neighbourhood plan area;
- **Criteria based** – a policy with a series of requirements that should be met by development proposals. These can be set out as separate bullet points; and

<sup>1</sup> Planning Practice Guidance (Paragraph: 065 Reference ID: 41-065-20140306 Revision date: 06 03 2014). Accessed at: <https://www.gov.uk/guidance/neighbourhood-planning--2#basic-conditions-for-neighbourhood-plan-to-referendum>

- **Site specific** – this is where a policy applies to particular areas of land. One of the most powerful tools for a neighbourhood plan is to allocate land for a particular type of development. As well as allocating land you can use your plan to set out the principles which need to be followed in developing a particular site. This might include specifying what needs to be covered in a design brief to accompany any planning application. If you have site specific policies then you need to include a clear map showing the location and boundaries.

In addition, the steering group should check with the Local Planning Authority that emerging preferred options are planning matters (i.e. suitable for inclusion as land use planning policy). Those that are not, such as proposals to address traffic problems, can be considered as community projects or neighbourhood infrastructure to be included within a delivery and implementation section of the neighbourhood plan.

### 5.3. Additional recommendations

Acoustic studies are recommended to measure the impact of the A1 on Sites KB1 and KB2. This would help determine the types of noise attenuation features most appropriate on these sites.

The addition of new housing is also likely to increase pressure on the existing road network. This could be particularly pronounced at locations already subject to concerns over congestion, traffic safety, and availability of parking:

- **Railway crossings at Deard's End Lane, Station Road, and Gun Road:** low forward visibility, low vertical clearance, narrow carriageways, and missing or narrow footways;
- **B197 (Stevenage Road and London Road):** road congestion and rat-running on adjacent streets, traffic safety, and parking;
- **Deard's End Lane and Swangley's Lane near Knebworth Primary & Nursery School:** pedestrian safety due to missing footway sections and rat running exacerbated by development on Sites KB1 and KB4; and

- **Parking provision,** both on- and off-street, for residents and commuters, as well as potential impact of changes to parking regulations on local businesses.

It is recommended that issues of connectivity, traffic safety, and impact on congestion and parking at the aforementioned locations form part of a Transport Assessment/Transport Statement that will be required to support a planning application at each of the sites. It should also consider the cumulative impacts of sites KB1, KB2, and KB4 on these issues, and propose the necessary mitigation or improvement measures.

Issues relating to the routing and timing of construction traffic would be set out in a Construction Environmental Management Plan (CEMP), which would also be a requirement of each site at the planning stage. Proposals to introduce measures to deter or prevent rat running would need to be evidence based and discussed with the Highway Authority.



# KNEBORTH

## Appendix - Site Access Appraisal



This appendix presents the findings of a high level transport assessment that has been undertaken in order to explore potential access points and related issues.

A technical note was prepared to review the potential for vehicular access at the six that are identified for residential development as outlined in Chapter 1.

To establish the access potential of each of these sites, a site appreciation visit was undertaken on Thursday 2 August 2018 and an initial appraisal of each site is set out below. It mainly focused on the ability to access each site from the existing highway network and reference is made to the visibility requirements set out in Manual for Streets (MfS). At each site visibility has been estimated on site and by using the measuring facility in Google Maps. More accurate visibility measurements based on a topographical survey will be required should any of these sites be taken forward to a planning application.



**Access to Site 52 (SHLAA ref KB1) from Park Lane**



**Access to Site 53 (SHLAA ref KB2) from Park Lane**



**Potential access to Site 55 (SHLAA ref KB4) from Watton Road**



**Delineation between Sites 55 and 336 (SHLAA ref KB4) at Old Lane**

## Site 52 (SHLAA ref KB1)

This site is located to the north west of Knebworth and is bordered to the south by Park Lane, to the east by the rear gardens of properties on Deard's End Lane, to the north by Knebworth Golf Course and to the west by a narrow strip of agricultural land that borders the eastern edge of the A1(M). There is a large residential property to the south west that does not form part of Site 52.

In 2016 NHDC updated the SHLAA and identified that Site 52 could accommodate 227 dwellings. The site has frontage to Park Lane which has a 5.2 metre carriageway and is subject to a 30mph speed restriction. There is a narrow footway on the north side of the road and along most of the site frontage there is a significant level difference between the road and the elevated footway. Over this section the road is separated from the footway by a steep verge and vegetation. At the eastern end of the site frontage the road and the footway are almost at the same level and in this location there is a gated field access that could be used to provide access to the site.

The access is on the outside of a bend and from a 2.4 metre setback the visibility was estimated on site to be 100 metres and 120 metres to the left and right respectively. Vegetation may need to be trimmed to maintain the visibility splay but this appears to be on highway land or on the development land. For roads with a 30mph speed restriction, MfS indicates that a visibility splay of 43 metres should be provided. It would appear that based on the requirements of MfS access to Site 52 could be achieved from the existing gated access in the south east corner of the site although this would need to be confirmed by a topographical survey.

In terms of junction form, this could either be a simple priority junction or a mini roundabout. The benefit of a mini roundabout is that would act as a traffic calming feature on Park Lane.

It also appears that travelling from the east on Park Lane towards the site, there is adequate forward visibility to the point at which the junction would be formed so that a vehicle approaching from the east would be able to see a vehicle waiting to turn right into the site. As above this would need to be confirmed by a topographical survey.

The village centre is approximately 600 metres from the proposed site access and there are continuous footways on the north side of Park Lane linking the site to the centre. This site therefore has reasonable pedestrian connectivity to Knebworth's main facilities. Pedestrian safety concerns were however raised about the inadequate width of the single footway under the railway bridge connecting Park Lane to the village centre via Station Road and Station Approach.

Bus routes 44/45 pass the site on Park Lane and the nearest bus stops are approximately 80 metres to the east of the site. Routes 44/45 operate between Luton and Stevenage and there are five services per day.

The general characteristics of Park Lane including the proposed site access are shown in the photographs opposite.



View to the right from proposed site access



View to the left from proposed site access



Low vertical clearance and inadequate footway width on Station Road



View towards proposed site access from the east



View towards proposed site access from the west



Inadequate carriageway width on Deard's End Lane Bridge

## Site 53 (SHLAA ref KB2)

This site is located to the south west of Knebworth and is bordered to the east by Gipsy Lane and the rear gardens of properties on Orchard Way, to the north by residential properties accessed from Gipsy Lane and a short section of Park Lane, to the west by the A1(M) and to the south by agricultural land.

The 2016 SHLAA Update identified that Site 53 could accommodate 229 dwellings. The site has narrow frontage onto Park Lane as well as further more extensive frontage onto the northern section of Gipsy Lane. The southern section of Gipsy Lane passes through the southern third of the site providing opportunities for access at either end where it crosses the site boundaries.

It is considered that this site could potentially provide two main points of access although they would both be subject to a more detailed review based on a topographical survey.

Although the frontage with Park Lane is narrow, there is an existing field access some 40 metres east of the bridge over the A1(M). In this location the width of Park Lane ranges from 6.6 to 6.9 metres and the extent of the site frontage is within the 30mph speed restriction. There is a footway on the southern side of Park Lane to the east of the site frontage which switches to the northern side to the east of Gipsy Lane.

The speed limit on Park Lane becomes de-restricted just to the east of the motorway bridge. From a 2.4 metre setback the visibility was estimated on site to be 60 metres and 100 metres to the left and right respectively. This complies with MfS although the start of the 30mph speed restriction may need to be relocated to the west of the motorway bridge to ensure that vehicles approaching the access from the west are travelling at an appropriate speed.

The photographs opposite and on the following page show the general characteristics of this section of Park Lane.



View to the right from proposed site access



View to the left from proposed site access



Inadequate width and forward visibility at the Gun Lane railway underpass



View towards motorway overbridge showing start of speed derestriction



View of existing gated field access



View of recent drainage improvements on Gypsy Lane

The northern section of Gipsy Lane is narrow and the presence of several passing places confirms that the road is not wide enough for two vehicles to pass. It is subject to a 30mph speed restriction and has no footways. At its southern end this section of Gipsy Lane forms a simple junction with Orchard Way where visibility is good in both directions. Due to the width constraints on this section of Gipsy Lane, it is not proposed to provide an access onto this section of the road. The characteristics of this section of Gipsy Lane are shown in the photograph below.

Approximately 30 metres to the south Gipsy Lane continues in a south westerly direction where it passes through the southern third of the site. This section is currently de-restricted although as part of the development it would be appropriate to extend the 30mph limit to include the developed area. The carriageway width increases to some 4.8 metres over this section and there is room for two cars to pass with care. There are no footways along this section of Gipsy Lane.

South of the junction with Orchard Way, Gipsy Lane forms a fork with one prong leading towards Stockens Green while another forms a south-western bend. The visibility in both directions appears reasonable although to the right vegetation may need to be trimmed to maintain the required visibility splay. It is considered that with some minor modifications to the existing junction, which may include relocating it slightly to the north to improve visibility, the existing Gipsy Lane bend could provide an acceptable second point of access to Site 53.

At its southern end there is currently no junction and Gipsy Lane continues in a southerly direction running parallel to the A1(M) before reaching a motorway overbridge at Wych Elm Lane. To the south of the bridge the quality of the route is variable and at its eastern end becomes a single track road with passing bays. It would therefore not be appropriate to encourage a significant amount of development traffic to access the site from the south and the masterplan will need to take these constraints into account.

It is considered that with some modest widening of Gipsy Lane where it forms a fork leading towards Stockens Green, a suitable point of access could be provided where Gipsy Lane crosses the site boundary. A network of footways would also be required within the development to provide pedestrian connectivity to the village centre via the existing residential area to the east of the site. The characteristics of the southern section of Gipsy Lane are shown in the photographs below.



**Characteristics of Gipsy Lane where it passes through Site 53**

The provision of two points of access would have the benefit of distributing the traffic evenly on the surrounding highway network therefore reducing the impact on routes where it would not be appropriate to accommodate the full development – for example the northern section of Gipsy Lane and the predominately residential route via Stockens Green and Gun Lane to the B197 London Road. On Gun Lane there is also a narrow bridge under the railway which restricts capacity.

The village centre is approximately 800 metres from the proposed site access on Park Lane and 900 metres from the proposed access on Gipsy Lane. There are continuous footways from both points linking the site to the centre although at a distance of between 800 and 900 metres it is considered that the pedestrian connectivity to Knebworth’s main facilities is poor. Bus routes 44/45 pass the site on Park Lane and the nearest bus stops are approximately 320 metres to the east of the site. Routes 44/45 operate between Luton and Stevenage and there are five services per day.



**Point at which Gipsy Lane crosses the site boundary in the south west**



**Three-pronged Gipsy Lane junction south of the junction with Orchard Way**

## Sites 55 and (SHLAA ref KB4)

These sites are considered together as they share site frontage on Watton Road to the east of Knebworth. Site 58 lies to the north of Watton Road and to the east is bordered by agricultural land and to the north and west by a mixture of residential properties and Knebworth Recreation Ground.

The 2016 SHLAA Update identified that Site 58 could accommodate up to 100 dwellings. The site has around 220 metres of frontage on Watton Road as well as narrow frontage onto Oakfields Road potentially providing two opportunities for access.

Site 55 lies to the south of Watton Road and to the south and east is bordered by Old Lane, a narrow single track road that serves a single dwelling and to the west by the rear gardens of properties on St Martin's Road and Watton Road.

The 2016 SHLAA Update identified that Site 55 could accommodate up to 63 dwellings. It has two sections of frontage with Watton Road both around 100 metres in length and separated by a pumping station that is outside the site boundary and will be retained. It also has extensive frontage onto Old Lane although this would need to be significantly improved to accommodate any development.

Watton Road is the main route into Knebworth from the east and provides a direct link to Bragbury End just to the south of Stevenage. Watton Road is approximately 5.4 metres wide and until it reaches the built up area of Knebworth is de-restricted. This includes most of the site frontage to Site 58 and the section to the east of the pumping station to Site 55.

The section of site frontage to the west of the pumping station to Site 55 is mostly within the 30mph limit which begins approximately 50 metres to the east of its junction with Bell Close. To the west of Bell Close Watton Road is traffic calmed with a series of speed humps and priority narrowings.

Footways are provided on both sides of Watton Road to the west of Bell Close and a continuous pedestrian link could be provided from the western edge of Site 55 and the village centre which at a distance of around 330 metres is reasonably accessible on foot. The western edge of site 58 is around 380 metres from the village centre although still within reasonable walking distance. There are no bus services operating on Watton Road. The nearest bus stops are in the village centre on Stevenage Road.

The characteristics of Watton Road and Old Lane are shown on the following page.



View towards Knebworth and the 30mph from the east on Watton Road



Watton Road/Bell Close junction



View of site frontages onto Watton Road to the east of the pumping station



View of Old Lane running down the eastern side of Site 55

There would appear to be several options for access to both sites from Watton Road. A joint access strategy could be considered on the section to the east of the pumping station although this would probably need to take the form of standard mini roundabouts or a staggered priority junction on the basis that four-arm mini roundabouts and crossroads are not normally promoted on safety grounds. Traffic signals would also be out of character in this location. The benefit of staggered mini roundabouts is that they would act as a traffic calming feature for traffic on Watton Road. The formation of new junctions on this section of Watton Road would rely on the relocation of the 30mph speed restriction to the east of Old Lane.

There may also be an opportunity to provide staggered mini roundabouts on the section of Watton Road to the west of the pumping station which would be within the existing 30mph speed restriction and better related to the existing built up area.

If a joint access strategy is not considered appropriate separate junctions could be provided with the one for Site 58 on the section to the east of the pumping station and the one for Site 55 to the west of the pumping station within the existing 30mph limit. Either simple priority junctions or standalone three-arm mini roundabouts would be appropriate noting the benefits of mini roundabouts as traffic calming features.

There is the potential for a second or alternative point of access to Site 58 from Oakfields Road. The photographs below show that there is an existing access on the outside of a bend where Oakfields Road becomes Oakfields Avenue. An access in this location would however need to ensure that safe access could be maintained to the adjacent properties and would also need to maintain access to the bridleway and footpath that follow the northern and western perimeters of the site respectively. The provision of an access in this location would also be subject to confirmation of land ownership.

It is considered that the creation of a through traffic route between Watton Road and Oakfields Road would be undesirable as there is the potential that it could be used as a rat run between the southern parts of Stevenage and north eastern parts of Knebworth. One potential solution would be to serve a small part of the site from Oakfields Road with the majority served from Watton Road with a pedestrian/cycle connection only between the two parts of the site.

The characteristics of the potential access on Oakfields Road are shown in the photographs on the following page.



**View towards potential access from Oakfields Road**



**View towards Oakfields Road from access**



**View of footpath along western perimeter of Site 58**



**View of bridleway along northern perimeter of Site 58**

## Site 57 (SHLAA ref KB4)

This site is located to the south east of Knebworth and is bordered to the north by the rear gardens of properties on Swangley's Lane and Swangley's Farm, to the east by Swangley's Lane, to the south by agricultural land and to the west by playing fields and Haygarth.

The 2016 SHLAA Update identified that Site 57 could accommodate 100 dwellings. There are potentially three points where this site could gain access to the surrounding highway network, two on Swangley's Lane and one on Haygarth.

The first point is at the easternmost part of the site where there is around 50 metres of site frontage onto Swangley's Lane. However this location is considered unsuitable for access as this section of Swangley's Lane is narrow, has a twisting alignment and has a steep gradient. High hedges on both sides of the road also restrict visibility and there is a bend just to the north of the site frontage where Swangley's Farm buildings restrict the forward visibility. It is also well outside the built up area where the speed limit is de-restricted and there are no footways. The general character of this section of Swangley's Lane is shown in the photographs opposite.



Characteristics of Swangley's Lane at site frontage



Restricted visibility due to farm buildings on Swangley's Lane

There is a second point where the site has frontage onto Swangley's Lane and this is a narrow strip of land just to the south east of its junction with Old Lane. In this location Swangley's Lane is between 4 and 5 metres wide and most of the site frontage is within the 30mph limit. There are no footways on this section of Swangley's Lane or the first 140 metres on the section to the west of Old Lane. Pedestrian connectivity to the village centre via Swangley's Lane is therefore considered to be poor. There are no bus services operating on Swangley's Lane.

A new junction at this location would be in close proximity to Old Lane and it may not be possible to provide sufficient distance between the two side roads to provide an acceptable stagger between the two junctions. Visibility to the left is also restricted by a bend in the road and to the right, although the required visibility should be achievable, there is a significant down gradient where it would be difficult to control the speed of traffic approaching the junction. Staggered mini roundabouts incorporating the Swangley's Lane/Old Lane junction may also be appropriate to overcome any existing visibility issues.

Although access from this location is possible, due to the constraints identified above, there would be a need for a more detailed review based on a topographical survey. It is also considered that early consultation with the Highway Authority would be beneficial to establish the principle of an access from this location.

The general character of this section of Swangley's Lane is shown in the photographs opposite.



**View towards Old Lane from narrow frontage onto Swangley's Lane**

The third point where this site has some frontage with the external highway is Haygarth where there is a narrow gap between two rows of garages along the western fringe of the site. Haygarth is a residential road serving flats that appear to be in public ownership. Haygarth leads to London Road from where the distance to the village centre is around 275 metres. There is a continuous footway from where Site 57 would be accessed to the village centre providing good pedestrian connectivity with Knebworth's main facilities. All bus routes that serve Knebworth stop in the village centre and are reasonably accessible from Haygarth.



**View towards site frontage from Haygarth**



**View to right from narrow frontage onto Swangley's Lane**

The downside of providing access from Haygarth is that the route to London Road is indirect and there is some on-street parking both of which may reduce the attractiveness of the site. There is also a narrow strip of grassland between the highway edge and what appears to be the site boundary marked by a hedge between the rear of the two sets of garages. The ownership of this land is unclear and it would need to be established during the early stages of the development to ensure that it does not represent a potential ransom strip.

Given the character of the road it would also be prudent to confirm that Haygarth is an adopted road.

## Site 336 (SHLAA ref KB4)

This site is located to the east of Knebworth and is bordered to the south by Swangley's Lane, to the west by Old Lane and to the north and east by a single dwelling accessed from Old Lane and by agricultural land respectively.

Site 336 sits between sites 55 and 57 and the 2016 SHLAA Update identified that it could accommodate 44 dwellings. It has frontage to Old Lane and Swangley's Lane but for the reasons set out in relation to sites 55 and 57 neither of these roads offer realistic opportunities for access. The main constraints relate to the rural character of the roads, carriageway width and the prevalence of private means of access particularly on the section of Old Lane between Swangley's Lane and St Martin's Road. There is also a general lack of footway provision reducing pedestrian connectivity to the village centre although via St Martin's Road the distance to the village centre is only around 350 metres. There is however a lack of footway provision over the first section of St Martin's Road which is a private road.

The 2016 SHLAA Update states that this site would not be suitable in isolation but could allow for a coherent approach across multiple sites to the east of Knebworth. It relates best to Site 55 to the north and there may be an opportunity for Site 336 to share its access onto Watton Road. There would however be a requirement for traffic to/from Site 336 to cross Old Lane which may result in an increase in traffic on this narrow sub-standard route. The way the crossing of Old Lane is treated will need to be considered carefully to ensure that it does not lead to an intensification of use.

The general character of the roads surrounding Site 336 is shown in the photographs on the following page.



**View towards St Martin's Road from narrow section of Old Lane**



**Swangley's Lane/Old Lane junction**



**Section of Old Lane running down western fringe of Site 336**



**Section of Swangley's Lane running down southern fringe of Site 336**

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