Opportunities and Constraints

Hartley Gardens

Informal Submission
March 2023

Tibbalds CampbellReith

Multidisciplinary Joint Venture

Tibbalds CampbellReith JV is a contractual joint venture formed between two like-minded companies to deliver a range of built environment projects through the Homes England Multidisciplinary Panel 2019-2023. The JV is supported by a comprehensive consultant team.

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Contents

This report has been produced in collaboration by the project team and is for internal use only:

Homes England
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Greenwich Hospital
Joint Client

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SYSTRA UK
Highways and Movement

The Environment Partnership
Landscape, Ecology, Biodiversity, Archaeology and Heritage

FLOH Consulting
Utilities, Energy and Sustainability

This Hartley Gardens Opportunities and Constraints Informal Submission was presented by the Homes England Team to Tendring District Council at a meeting on 22 March 2023.

It has been provided as part of the evidence base to the Hartley Gardens Supplementary Planning Document (HGSPD) in July 2025. It has not been updated other then removing personal names. The following should be noted:

- This document was produced by Tibbalds CampbellReith in 2023 to inform the Framework Masterplan and HGSPD
- The combined constraints plan has evolved as envisaged.
- The HGSPD boundary has since been expanded as set out in the HGSPD.
- Discussions with various consultees have been held, please refer to the HGSPD Consultation Statement.
- Various further ecology surveys have since been undertaken.

1 Introduction
Purpose of report

The purpose of this report is to outline the constraints and opportunities identified as part of our baseline assessments and review of all documentation / due diligence undertaken to date, it is an internal report for client and consultant team only.

Section 3 of this report comprises a summary of the combined constraints assessment that has been undertaken as part the following work streams:

- Planning
- Design and placemaking
- Civil engineering
- Transport and movement
- Landscape
- Ecology
- Archaeology and heritage
- Energy and utilities

The constraints plan will be reviewed regularly and updated as new information comes to light prior to the submission of the planning application.

Section 4 of this report contains the opportunities identified as part of our baseline assessments.

The summary of this report comprises the proposed next steps and Gap analysis, which includes recommendations for further surveys to support and de-risk the planning strategy.

It is envisaged that the opportunities and constraints identified in this report will be presented to members, key stakeholders, landowners and the local community, in the early part of 2023 and subsequently inform the design and development of the Framework masterplan and SPD.

Figure 1.1 Wider context plan

Context and surroundings

The Site, known as Hartley Gardens, forms one of the Strategic Allocation Mixed Use Sites, Site allocation SAMU2, in Tendring District, as outlined in the 'Tendring District Local Plan 2013-2033 and Beyond', adopted in January 2022.

This report covers the total allocation area of SAMU2 and for the purpose of the report we are calling the allocation area - 'the Site'.

The Site has various landowners; the largest being Greenwich Hospital and Homes England. The approximate areas are as follows:

- SPD Allocation: 161.2 ha
- Greenwich Hospital
  - Inside allocation boundary: 70.5 ha
  - Outside allocation boundary: 8.5 ha
- Homes England: 29.1 ha
- Other land ownership
  - Inside allocation boundary: 61.6 ha
  - Outside allocation boundary: 8.8 ha

Greenwich Hospital ownership

The Greenwich Hospital land ownership is bounded on the west by Little Clacton Road and the north-eastern corner by the A133. The south-eastern corner abuts the western boundary of the Brook Park West development. Picker's Ditch runs through the centre of the Greenwich Hospital land west-to-east.

Homes England ownership

The Homes England land ownership sits in the south-western corner of the allocation Site. Predominantly bounded by fields, with the eastern edge abutting Little Clacton Road and the residential neighbourhood Bocking's Elm.

Located close to the Essex coastline, the Site is situated on the north-western edge of seaside town, Clacton-on-Sea, roughly 19km from Colchester.

Other ownerships

Additional parcels of land surrounding the Homes England and Greenwich Hospital land is owned by third party landowners.

The Site benefits from close proximity to a range of facilities, employment opportunities and existing infrastructure in the town.

The Site is physically defined as follows:

- the eastern boundary is clearly defined by the A133, a single carriageway southbound to Clacton and northbound to Colchester and Little Clacton;
- in the south-eastern corner the Site is immediately adjacent to Brook Retail Park. Part of the south-eastern boundary is currently undefined but adjoins the proposed Brook Park West development (16/01250/OUT) which will comprise 200 dwellings forming part of a wider development;
- the western boundary cuts partway through adjacent fields and follows the easternmost edge of Hartley Wood. Earls Hall Wind Farm lies beyond the western boundary to the southwest of Hartley Wood;
- to the north the Site is bounded by the St Osyth Road and the associated residential dwellings and Meadow View Park; and
- to the south the Site, and south-east of the Homes England land, it is bounded by the residential neighbourhoods of Bocking's Elm.

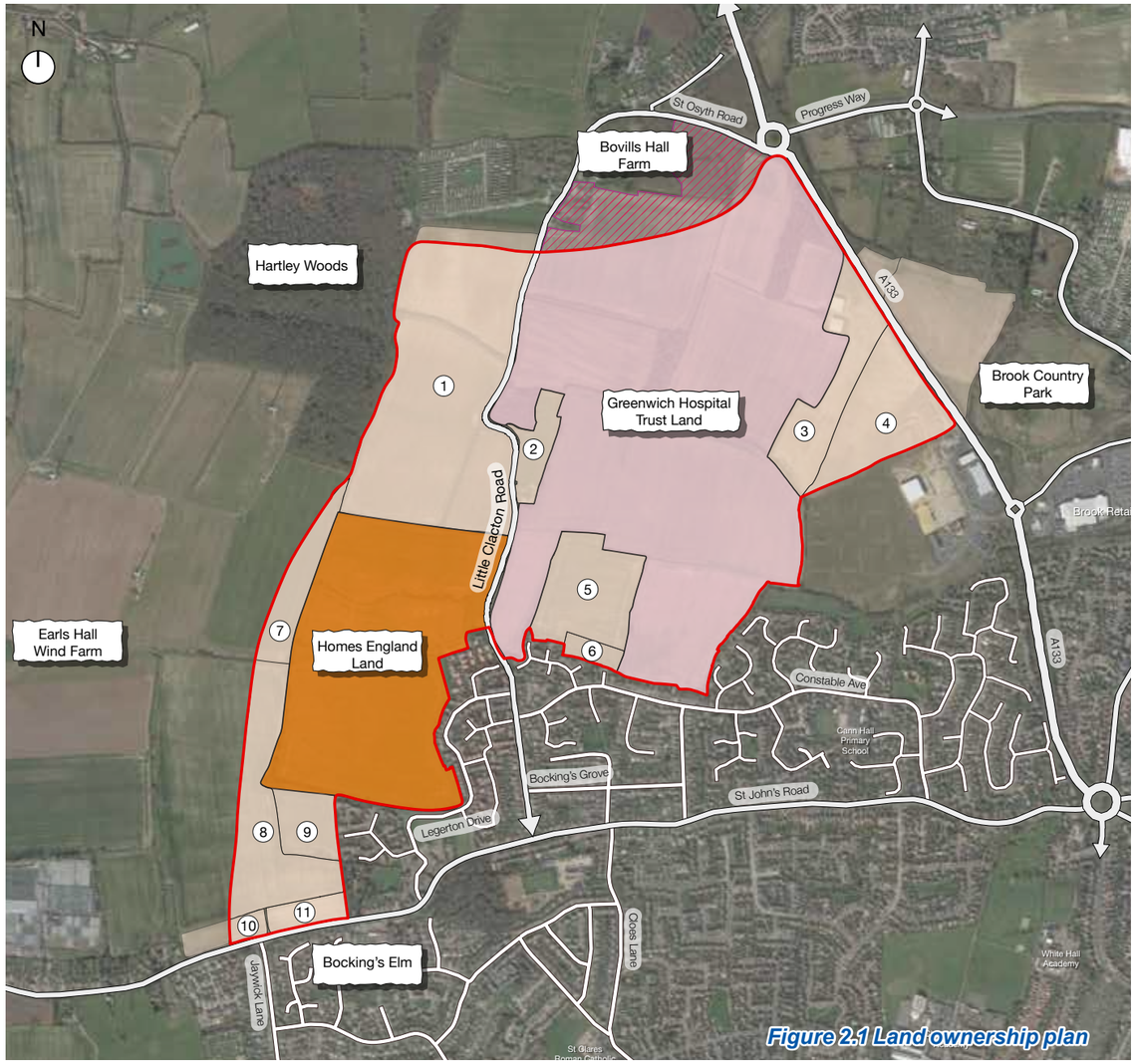


Figure 2.1 Land ownership plan

Key

- SPD boundary (to be confirmed)
- Homes England ownership
- Greenwich Hospital ownership inside SPD boundary
- Greenwich Hospital ownership outside SPD boundary
- Third Party Land ownership

1. Smiths Farms (Clacton) Ltd
2. Stewart Christopher Locke & Hon NG Locke
3. Britton Developments Ltd
4. Britton Developments Ltd
5. Smiths Farms (Clacton) Ltd
6. Tendring District Council
7. Roger Ernest Lord & Timothy Graham Hunt
8. Patricia Ane Smith
9. Smiths Farms (Clacton) Ltd
10. Mr Martin King
11. Britton Developments Ltd

Combined constraints

This section of the report comprises a summary of the combined constraints and influences assessment that has been undertaken as part of the baseline analysis.

The adjacent plan illustrates the combined constraints and influences.

Key

- SPD Boundary (to be confirmed)
- Homes England Boundary
- Greenwich Hospital Boundary
- Ponds where Great Crested Newts are present
- Tree Protection Order
- Withdrawn Tree Protection Order
- New Zealand Pigmyweed (Schedule 9 invasive Plant Species)
- Bat potential trees
- Listed Buildings
- Earls Hall Wind Farm: 125m blade tip height

Extent of potential turbine topple distances

- 124.5m + 25% contingency
- 124.5m + 50% contingency

Extent of potential shadows from Wind turbines

- 250m shadow (umbra)
- 900m shadow (penumbra)
- S41 Priority Habitat (Deciduous Woodland)
- Ancient & Semi-Natural Woodland
- Conservation area
- Historic Landfill Sites
- Environment Agency Main River
- Flood Zone 2
- Flood Zone 3

Risk of Flooding from Surface Water

- High
- Medium
- Low

BGS Boreholes

- BGS Bor Unknown
- 0 - 10m
- 10 - 30m
- 30m+

Public Rights of Way

- Footpath
- Restricted byway

Road Noise 16h (07:00 - 23:00)

Annual Mean (Decibels)

- 55.0 - 59.9
- 60.0 - 64.9
- 65.0 - 69.9
- 70.0 - 74.9
- >=75.0

Utilities

- Potable Water Main
- Surface Water Sewer
- Foul Water Sewer
- Foul Water Rising Main
- Combined Sewer
- Gas Main
- Underground Electricity
- 33kV Overhead Electricity
- Telecoms
- Overhead Telecoms
- HSE Consultation Zone Outer Zone
- HSE Consultation Zone Middle Zone
- HSE Consultation Zone Inner Zone
- Surface Water Pumping Station
- Foul Water Pumping Station

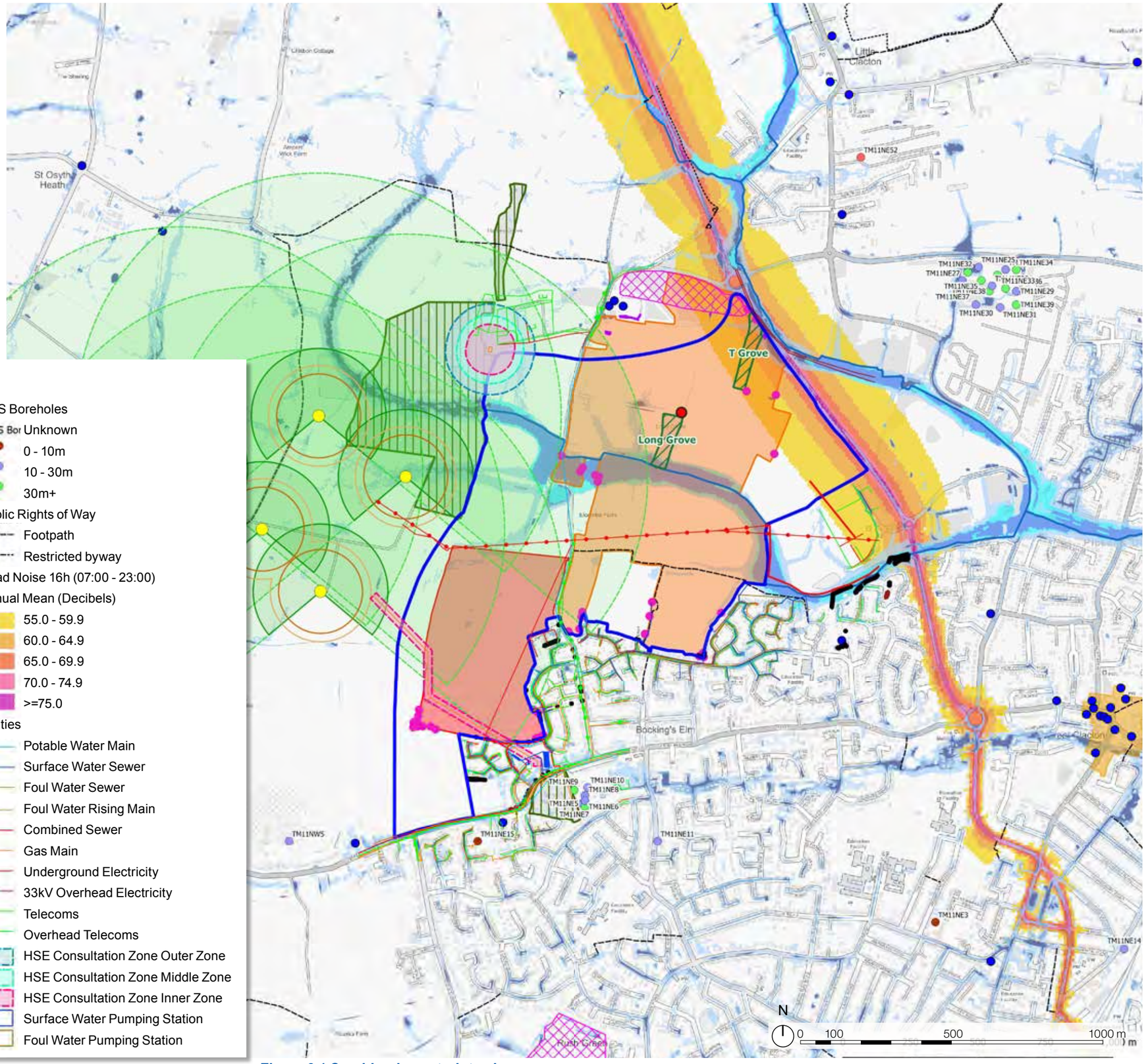


Figure 3.1 Combined constraints plan

Planning

The Site forms one of the Strategic Allocation Mixed Use Sites, Site allocation SAMU2, in Tendring District, as outlined in the 'Tendring District Local Plan 2013-2033 and Beyond', adopted in January 2022.

The allocation confirms that the Site has an approximate capacity of 1700 dwellings. Strategic Allocation Mixed Use Sites are expected to accommodate homes, jobs and community assets.

A summary of the main planning constraints and considerations are:

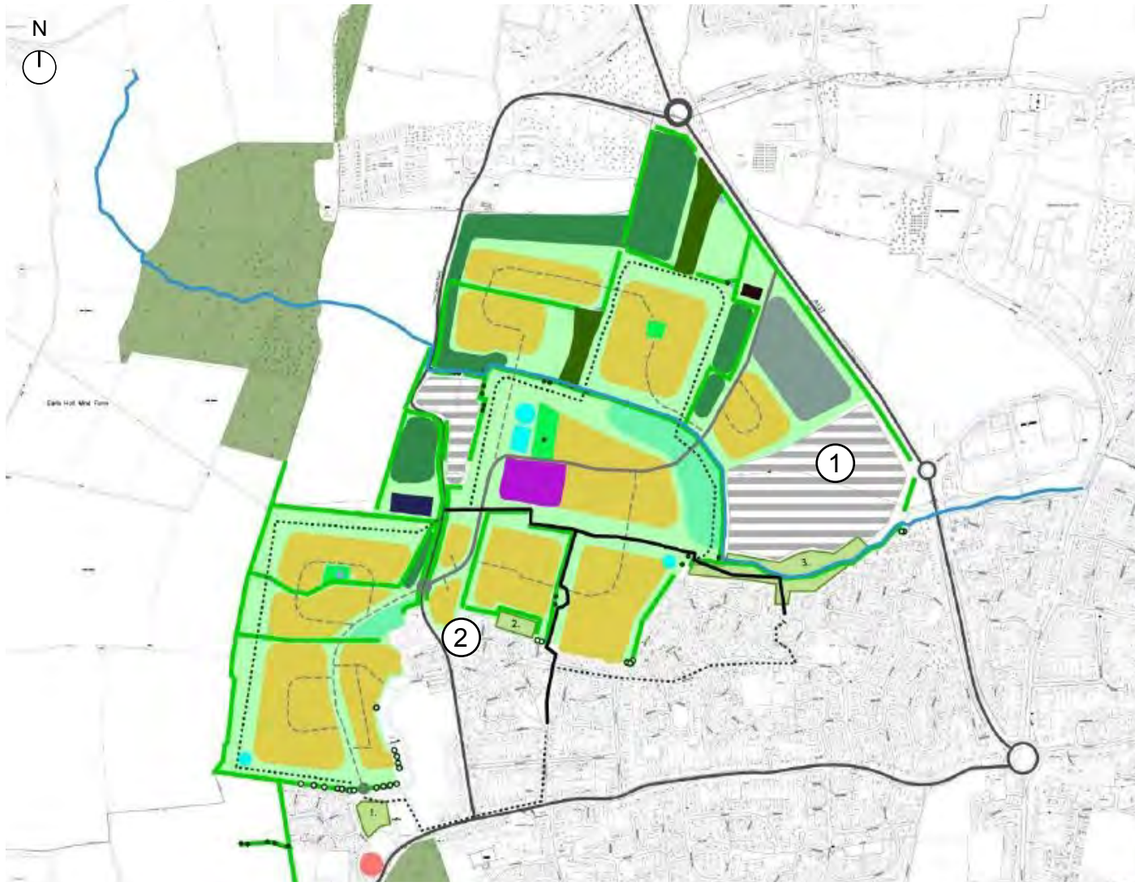
- Multiple land owners requires a collaborative approach to development and ability for individual applications to come forward without prejudice to comprehensive development.
- Key policy requirements including:
  - the provision of 1700 new homes, with 30% affordable housing;
  - up to 7 hectares of employment land;
  - 2.1 hectares of land for a new two-form entry primary school with co-located 56 place early years and childcare facility;
  - 1.3 hectares of land for a second 56 place stand-alone early years and childcare nursery and/or financial contributions towards primary school and secondary school provision as required by the Local Education Authority based on evidenced need; and
  - 10% biodiversity net gain; and establish a sustainable drainage system across the Site that integrates the green infrastructure network and utilises where practicable the existing watercourses.

Planning history

There are no relevant planning applications on the Site in question, however there are two recent planning applications bordering the Site on the southern side:

1. Brook Park West (16/01250/OUT – 08/06/2017): This is a retail led mixed use development that's an extension off the urban area to the west of the A133. Approved were 200 homes along with business units, a food store, hotel, family public house and retail warehousing and drive-thru restaurants. The development came through as a hybrid planning application, with the retail units on the east of the Site submitted in detail and the and employment units submitted in outline. Several the retail units have been delivered; however, the first phase has not been completed.
2. Bungalows south of Elm Farm (18/00662/FUL – 17/10/2018): This is a completed development for 14 bungalows to the east off Little Clacton Road, just south of Elm Farm.

Figure 3.2 Concept framework plan from Topic Paper 6: Hartley Gardens, Independent Examination of Section 2 of the Tendring District Local Plan '2013-2033 and Beyond' (December 2020)



Key

Retained GI features
- Hedgerows
- Deciduous Woodland
- Feature Trees
- Tree Preservation Orders (Quercus spp.)
- Pond
- Ditch
- Ancient Woodland
- PRoW
- Existing Agriculture Building
- Existing Public Open Space
  1. Leggerton Drive Open Space
  2. Cranleigh Close Open Space
  3. Pickers Ditch Green Corridor
- Local Centre

Proposed GI features
- Semi-Natural Green Space
- Residential Development
- Employment Development
- Existing Development
- Woodland
- SuDS Provision (as part of multi-functional Open Space)
- Allotments
- School site
- Formal Amenity Space
- Play Provision
- Walking and Cycling Routes
- New Primary Access Road
- Secondary Streets

Design and place making

Consideration needs to be made for the adjacent neighbourhoods and local amenities including the following:

- Little Clacton
- Bocking's Elm
- Great Clacton
- Brook Park West
- Brook Retail Park
- Jaywick

The design and layout of the development must have regard to the surrounding landscape, and consider views towards and onto the Site from local footpaths and residential dwellings, seeking to minimise visual impacts through the inclusion of mitigation measures.

A character assessment will be undertaken as part of the masterplan development, which will explore the local facilities and amenities in the proximity of the Site. The character assessment and Stage 1 public consultation will also identify key characteristics and features of the local area that can inform the masterplan.

Further consideration needs to be given to the Site's strategic location in relation to Clacton-on-Sea and opportunities to establish a key gateway into the town, and support the regeneration of the town centre.

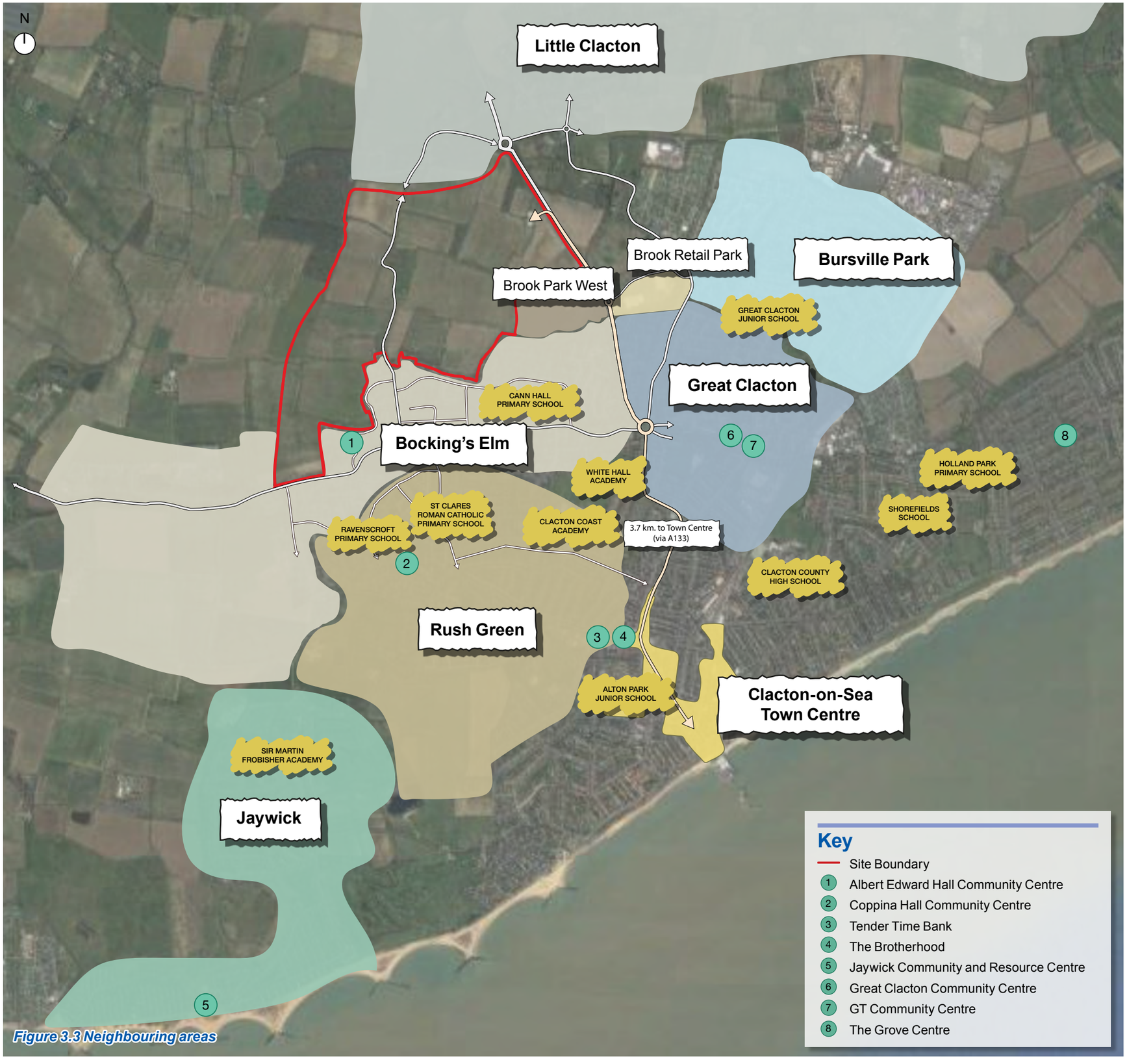


Figure 3.3 Neighbouring areas

Civil engineering

Flooding and Drainage

Picker's Ditch - an Environment Agency main river - bisects the Site in a broadly west-east direction. Whilst designated as a main river it is a vegetated/overgrown ditch approximately 1m deep and does not appear to be regularly maintained. It forms part of the Holland Brook catchment which eventually discharges to the North Sea. There is localised flood plain (zones 2/3) and surface water flooding associated with the ditch. There are also several field ditches within the Site which convey surface water to Picker's Ditch and a number of small culverts in variable condition.

Masterplanning should consider opening up the ditch and removing culverts where appropriate as part of a well-connected blue-green infrastructure strategy. Early consultation with the EA should be undertaken as part of this to gain their buy-in to the development aspirations. The majority of the Site is underlain by impermeable clay and therefore infiltration drainage will not be viable as the main means of water conveyance, instead inter-connected ponds and swales will largely comprise the SuDS strategy discharging water at restricted greenfield rate into Picker's Ditch. Localised infiltration may be feasible in the very south-west of the Site associated with the sands and gravels but would require infiltration testing to be undertaken which confirms a favourable rate. If unfavourable then basins could be formed which then discharge at a restricted rate to the local Anglian Water surface water sewer

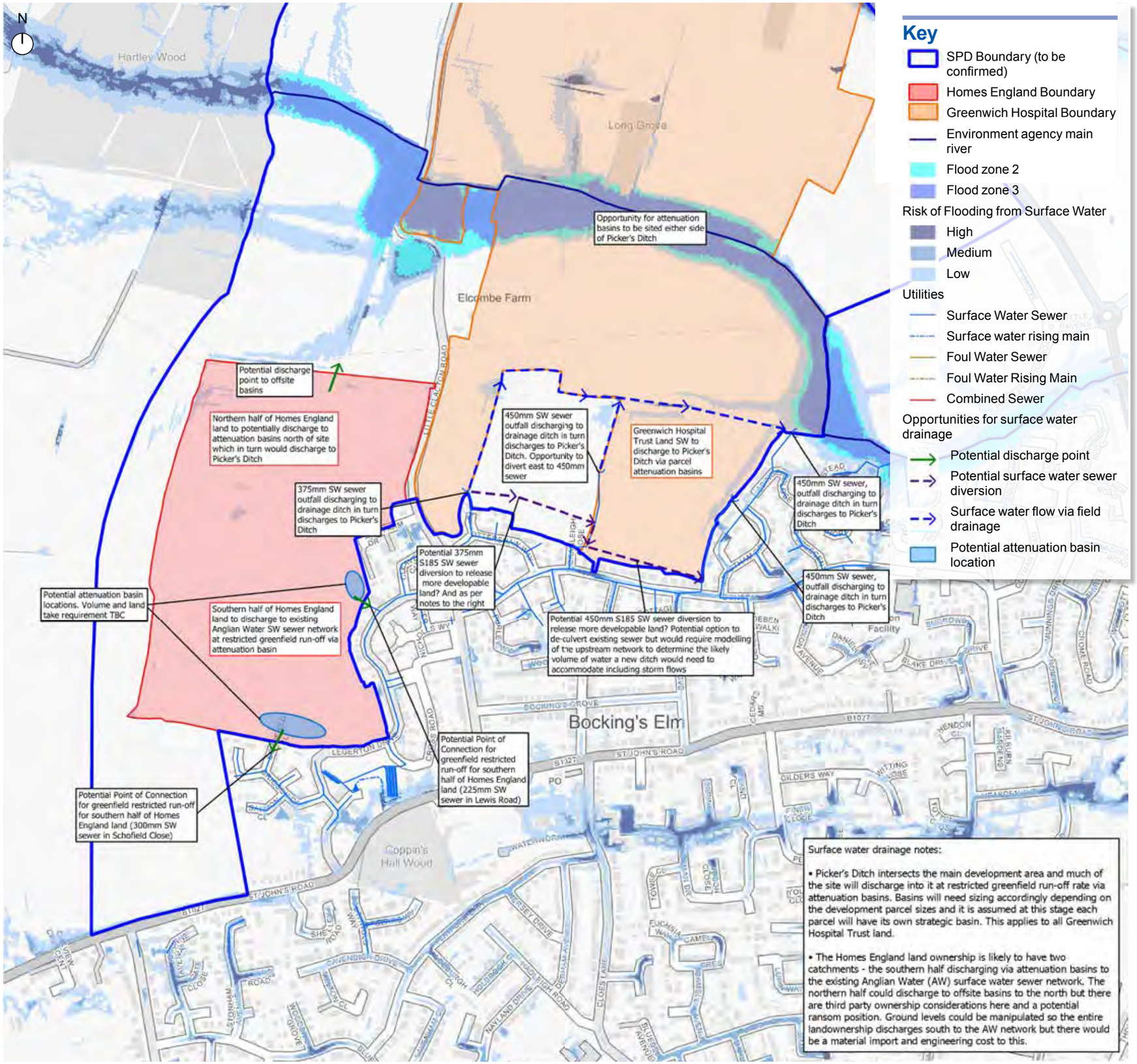


Figure 3.4 Initial surface water drainage observations

network. A careful review of landownership will be undertaken in development of the drainage strategy to avoid any potential ransom position with third party landowners and to also form part of the development phasing.

It is understood that there are capacity issues with the Anglian Water wastewater treatment works (Clacton (Holland Haven)) and therefore early consultation with Anglian Water will be key to establish what (if any) upgrades are required and their associated implementation programme. In terms of the local foul network the existing development forming the southern boundary provides opportunity for several connection points to the network. From an initial review, potentially two local foul pumping stations will be required to serve the masterplan.

Masterplanning should consider the recent development of the bungalows on Elm Farm Drive including the drainage strategy and requirements for attenuation within the Homes England land ownership.

Ground Conditions

The general greenfield nature of the Site means that the development is not constrained from a contaminated land perspective, although a localised area of the Environment Agency (EA) recorded historical landfill is present in the very north-east of the Site boundary, adjacent to the A133/Progress Way roundabout and therefore will be a localised consideration if a new access is formed here. There may also be other localised areas of made ground associated with historical farming practices which should be assessed during the groundworks phase.

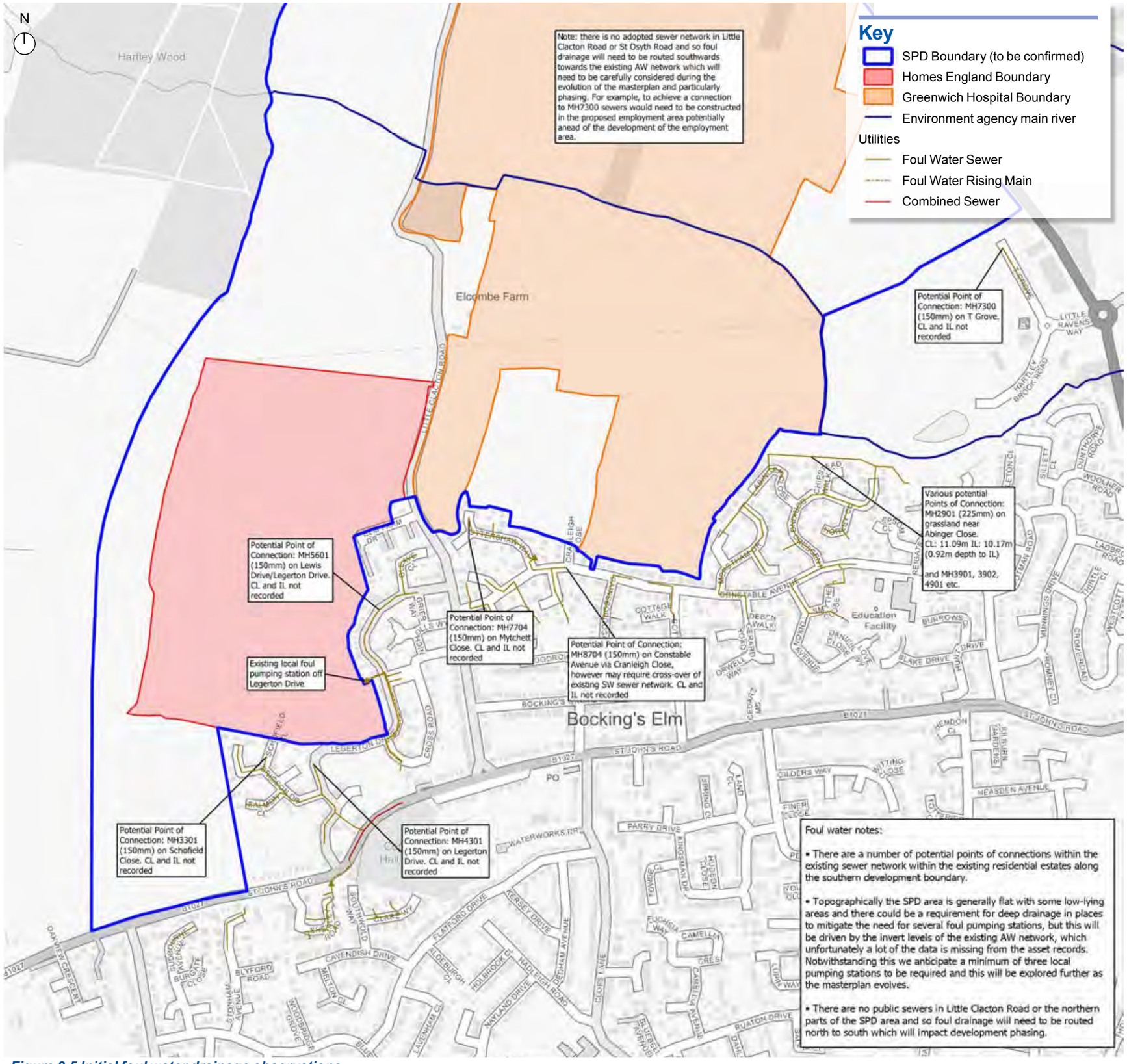


Figure 3.5 Initial foul water drainage observations

The majority of the Site is underlain directly by bedrock geology of the Thames Group (London Clay Formation) apart from in the very south-west of the Site where superficial deposits of the Kesgrave Catchment Subgroup (sands and gravels) overlay the London Clay Formation. These geologies lend themselves to permitting traditional shallow foundations for low-rise buildings, although these may need to be locally deepened where development is in close proximity to trees and shrinkable soils. London Clay can contain elevated concentrations of sulphates which are aggressive to buried concrete and steel and so ground investigation is required (in due course) to ascertain the necessary grade of concrete.

Unexploded Ordnance (UXO) risk has been identified as moderate and further detailed assessment is required to establish any mitigation works.

Earls Hall Farm Wind Farm

Earls Hall Farm Wind Farm is located to the west of the Site, with the nearest wind turbine in a close proximity of approximately 300m of the western boundary.

From a review of the information available on the Wind Farm and a Site visit, it is considered that there are key potential constraints to the western area of the Site which may have potential impact on the layout and design of the proposed development associated with the Site, which include:

- Visual Amenity;
- Topple Distance;
- Shadow Flicker; and
- Noise.

In terms of visual amenity, there are three principal elements of the wind farm that give rise to visual effects:

- the turbines plus anemometry mast;
- the Site access / access tracks; and
- substation / compound.

Of these only the turbines were easily visible from the Site with views of them placed against the sky.

There is a risk that the turbines could fall over (topple) and residential properties should be located beyond the distance where the turbine could land which in this case is 124.5m plus contingency. The contingency is usually considered to be about 25-50% of the total height.

Rotating turbine blades cast moving shadows, which could under certain conditions cause flickering. The turbine rotors (blades) for the turbines at Earl Hall Farm Wind Farm are 92m. Therefore, flicker effects will only occur within 920m of the wind turbines within 130 degrees (either side of north southwest through north to southeast of the turbines). The Site is within 600m of the wind turbines to the east, northeast and southeast of the wind turbines.

It is recommended that the noise survey is carried out as soon as practicable with survey locations along the western boundary to determine the noise levels of the wind turbines and define the scope for any necessary mitigation measures.

Air Quality

Planning Policy

Air Quality is mentioned twice within the Tendring District Local Plan 2013-2033 and Beyond:

1.14 Transport

The Local Plans seek to improve transport infrastructure and ensure that new development is accessible by sustainable forms of transport. Measures designed to encourage people to make other sustainable travel choices such as better public transport provision, car clubs, electric vehicle charging points and provision of cycle links and walk ways will also be required to achieve such a change. It will also help to enhance air quality and improve health and well-being.

8.1 Sustainable Transport and Accessibility

The Essex Transport Strategy (2011) is the Local Transport Plan (LTP) and includes Tendring District within the 'Haven Gateway'. It sets out the transport priorities for the area, which include 5 key outcomes to be achieved:

1. Provide connectivity for Essex communities and international gateways to support sustainable economic growth and regeneration;

2. Reduce carbon dioxide emissions and improve air quality through lifestyle changes, innovation and technology;

3. Improve safety on the transport network and enhance and promote a safe travelling environment;

4. Secure and maintain all transport assets to an appropriate standard and ensure that the network is available for use; and

5. Provide sustainable access and travel choice for Essex residents to help create sustainable communities.

Existing Pollutant Concentration Monitoring

Table 3.1 identifies the diffusion tube monitoring locations closest to the proposed development site. These were obtained from the LAQM Annual Status Report 2022 for Tendring District Council (TDistrict Council).

Table 3.1: Details of Non-Automatic Monitoring Sites

Site ID	Grid Reference		2017 Annual Mean NO2 (µg/m3)	2018 Annual Mean NO2 (µg/m3)	2019 Annual Mean NO2 (µg/m3)	2020 Annual Mean NO2 (µg/m3)	2021 Annual Mean NO2 (µg/m3)
	X	Y					
DT11	617272	215021	17.0	13.7	14.0	11.0	12.2
DT14	616163	218287	-	-	-	17.4	23.4
DT22	617451	215385	22.6	20.1	19.0	25.6	28.2
DT29	617397	214882	-	-	-	16.4	19.3
DR30	617232	214219	-	-	-	16.8	17.6
DT31	617888	216298	-	-	-	24.0	26.6
DT32	617143	216143	-	-	-	16.0	23.4
DT41	617505	215662	-	-	-	-	32.2
DT42	617336	215793	-	-	-	-	27.1
DT44	618007	216281	-	-	-	-	24.3
DT45	617618	216487	-	-	-	-	31.5

Background Concentration of Air Pollutants Maps

Background concentrations of air pollutants were obtained from the DEFRA pollutant concentration maps. Table 3.2 identifies the background pollutant concentrations the proposed development site at the associated 1km x 1km grid. All of the estimated background concentrations for the annual mean NO2 and PM10 used in the assessment are significantly below the annual mean objective limit of 40µg/m3 in 2019 and the earliest potential first occupation year of 2025. As the proposed first occupation year is likely to be later than 2025, the background pollutant concentration will decrease further.

Table 3.2: Background Concentration of Air Pollutants

Location and Year	NOx µg/ m3	NO2 µg/ m3	PM10 µg/ m3	PM2.5 µg/ m3
Site 2019 614500, 216500	9.80	7.61	14.41	9.06
Site 2025 614500, 216500	7.92	6.23	13.26	8.14
Site 2019 616500, 217500	11.83	9.08	15.36	9.52
Site 2025 616500, 217500	9.26	7.23	14.19	8.59
Site 2019 615500, 217500	9.96	7.73	14.89	9.18
Site 2025 615500, 217500	9.26	6.31	13.75	8.26
Site 2019 615500, 216500	11.40	8.77	15.36	9.55
Site 2025 615500, 216500	9.02	7.04	14.19	8.59
Site 2019 616500, 216500	13.38	10.18	14.99	10.05
Site 2025 616500, 216500	10.51	8.13	13.77	9.10

Table 3.3 identifies the traffic data for 2019 which will be utilised for the verification of any subsequent air quality modelling. Traffic flow and vehicle split data were obtained from the DfT (2019).

This is the most recent year of traffic data available before the Covid-19 outbreak in the UK, and therefore is deemed to be the most accurate baseline.

It is assumed that development traffic generated onto the local highway network will be provided by the traffic consultant for the project.

Table 3.3: Road Traffic for 2019

Road Name	AADT	%HDV
A133	21,796	3.5
St John's Road	15,203	1.4

Based on the background data, the traffic flows and measurement data it is ACCON's opinion that, the likelihood of any air quality constraints on the site is minimal and should not impact on the proposed design. Additionally, air quality impacts at existing sensitive receptor locations should not result in unacceptable pollutant concentration levels.

Noise

Road Traffic Noise

The main source of noise across the site will be from road traffic on the A133. The Proposed Development boundary has been overlayed on Noise mapping obtained from Noise Consultants Site Suitability indicator in order to identify the magnitude of road traffic noise affecting the site. Figure 3.4 identifies the daytime noise contour in order to show the propagation of road traffic noise across the site. The night-time noise contour is visually similar.

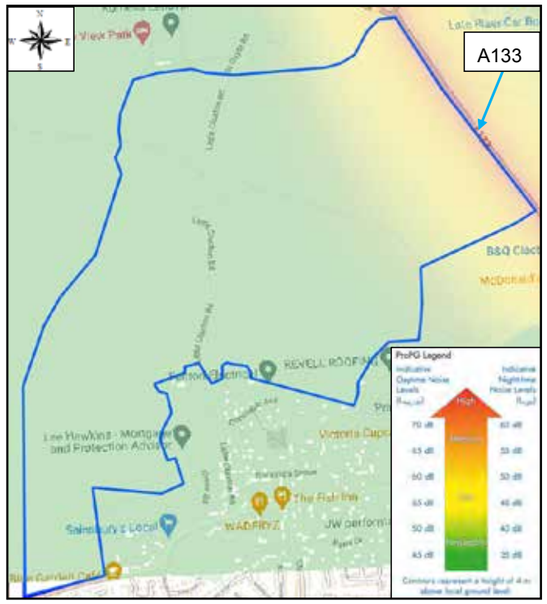


Figure 3.6: Daytime Noise Map: Initial Site Noise Risk Assessment

Noise Constraints and Mitigation Requirements

Road traffic noise levels vary from approximately 70 dB(A) at the eastern boundary in close proximity to the A133 to 50 dB(A) toward the western boundary of the Site. The noise map in Figure 3.4 indicates that the site varies from negligible to high risk of adverse effect during both the daytime and night-time. The highest risk areas are located along the eastern boundary of the site and within approximately 100m of the A133.

Internal Noise Levels

Due to the high levels of road traffic noise near to the eastern boundary of the site, any residential properties that face the A133 will require suitable acoustic double glazing and acoustic ventilation in order to meet the typical internal noise level criteria. It is suggested that any proposed dwellings are set back from the A133 by a minimum distance of 50m. Alternatively, it would be possible to construct single aspect dwellings without habitable rooms (living rooms and bedrooms) directly facing the A133. In this case, the dwellings could be located closer to each boundary.

External Noise Levels

Proposed amenity areas that are within 100m of the A133 are likely to require boundary mitigation in the form of purpose-built acoustic barriers (minimum surface mass of 10 kg/m2) in order to meet the external noise level criterion.

Window Glazing Specifications

It is expected that any dwellings adjacent to the A133 will require high performance acoustic double glazing, such as a minimum of 8/16/6 configuration and with an Rw value of 35 dB. These specifications are subject to change pending results of the noise measurement survey. Any façades within 50m of the A133 are expected to require acoustically treated vents or mechanical ventilation and heat recovery.

Earls Hall Wind Farm

The Site is close to the existing Earls Hall Wind Farm. The five turbine wind farm has been operational since 2013. The closest wind turbine is approximately 300m away from the SPD's western boundary. Background noise measurements were undertaken at Elm Farm as part of the Earls Hall Wind Farm Environmental Statement (ES) by Npower Renewables.

ACCON have reviewed the ES and identified that the wind turbine noise level predictions for Elm Farm varied between 30-38 L90 dB(A) and at wind speeds 3-7m/s. It has also been observed that the results of the noise measurement survey undertaken at Elm Farm identify that the typical wind speeds are in the lower wind speed range below 7 m/s. Therefore the wind turbines would typically be operating well below their maximum sound power level. Although the noise from the wind turbines will be slightly higher at the western boundary of the Site than predicted for Elm Farm, the noise levels are not expected to exceed the prevailing background noise. If required, suitable mitigation could be advised at a later stage in order to protect future residents from potential adverse effects from wind turbine noise, especially at night. However, consultation with the Tendring District Council EHO will be necessary to agree how noise from the wind farm should be taken into account.

Conclusion

ACCON have undertaken a high-level initial site noise risk assessment to address the site suitability for a residential development.

The noise map in Figure 3.4 indicates that part of the Proposed Development near its eastern boundary in close proximity to the A133 is exposed to high levels of road traffic noise. Therefore, it is expected that any dwellings proposed in this location will require high performance acoustic double glazing and mechanical ventilation systems in order to achieve internal noise level criteria.

The currently operational Earls Hall Wind Farm has been identified as a potential constraint and noise mitigation measures to address noise from the wind turbines may need to be considered as the design of the Site progresses.

It should be noted that the conclusions presented here are based upon a high level desk study. Any recommendations contained within this report should be treated as advisory until further detailed assessments are undertaken.

Transport and movement

The 'Tendring District Local Plan 2013-2033 and Beyond', adopted in January 2022 outlines that Site allocation SAMU2, will provide further guidance to meet the following principles and all development proposals should accord with these:

- create a series of permeable and legible well defined streets which prioritise cycle and pedestrian routes which link into the existing built up area and local facilities (e.g. retail and schools);
- identify off site highway works required to support new development, their phasing and funding;
- identify public transport measures to ensure sufficient access to the site by bus, rail, walking and cycling routes within the site with strong and positive linkages to the existing network.

Policy SAMU2 also outlines that where necessary, appropriate highway capacity and/or safety enhancements; improvements to public transport services and infrastructure; cycle; pedestrian and bridleway infrastructure enhancements will be provided. The development will necessitate a new road to be constructed from the B1442/A133 roundabout to the B1027 (St Johns Road).

Site Access: Walking and Cycling

The accesses potentially available to the Site for pedestrian and cyclist movement are constrained by the layout of the Homes England and Greenwich Hospital lands within the wider allocation Site. Figure 2.1 shows the Homes England and Greenwich Hospital land ownership areas for context.

Existing pedestrian infrastructure in the southern vicinity of the Site is of mixed quality. Footpaths along St John's Road are wide and generally smooth, with dropped kerbs provided at a majority of crossing points. It is notable that there are relatively few formal pedestrian crossings, however given this is a largely residential road, the requirement for this is reduced. Footpaths on Legerton Drive and Constable Avenue are wide and smooth. There is no pedestrian infrastructure along Little Clacton Road and the A133.

It is noted that there is no cycle infrastructure or facilities in the immediate vicinity of the Site, however given the range of residential avenues with wide roads, these are likely to be accessible for cyclists.

For the purposes of extending cycle and pedestrian footways into the Site, the most notable opportunity on the southern side of the Site appears to be via a direct route from Legerton Drive, subject to landownership and further design development. This part of the Homes England Site directly abuts the residential street and is not impeded by existing residential properties; it is noted that this was previously identified as a potential all-modes access by Tendring District Council.

A possible additional access route specifically for pedestrians and cyclists may exist through Cranleigh Close to connect via the wider allocation Site to the Greenwich Hospital land. As a road which ends directly adjacent to the allocation area, and additionally is highly constrained as a potential vehicular access due to protected trees, this would be a beneficial point at which to make new pedestrian and cycle connections into the Site. It is noted that there is an existing field access via Dorking Crescent which links to land not itself within the allocation area, but which lies adjacent to the Greenwich Hospital land and could form a future additional link if this land were to be considered as a possible expansion to the allocated area.

The remaining network of small close and cul-de-sac roads does not offer any other major opportunities for connection to the HE or Greenwich Hospital land without removal of existing garages or parking areas.

The eastern edges of the Site abut the A133 and are obstructed by dense vegetation, and constrained by a lack of footpaths on the eastern side of the carriageway.

Site Access: Vehicles

The Legerton Drive access to the Homes England land appears to be the most deliverable vehicular access opportunity in the short term, subject to landownership and further design development. Physical space exists in principle for a technically compliant access point to be designed; however, the volume of traffic which could be accommodated on the connecting residential highway network will be limited, with traffic required to either route to the Legerton Drive / St John's Road junction, or via Little Clacton Road -the latter is acknowledged to be politically (and potentially ecologically) sensitive. It is noted that the Local Plan testing has previously identified a series of upgrades required along St John's Road which would be required to support the Local Plan growth, a large part of which is accounted for by Hartley Gardens, but it is not immediately clear what degree of traffic is assumed to be accessing the network from Legerton Drive, and how much is using another main access point on the A133. This will require further investigation.

Additional discussion around the Little Clacton Road access and the previous technical work carried out by Stantec has indicated that the section of this road which currently fronts existing development would potentially

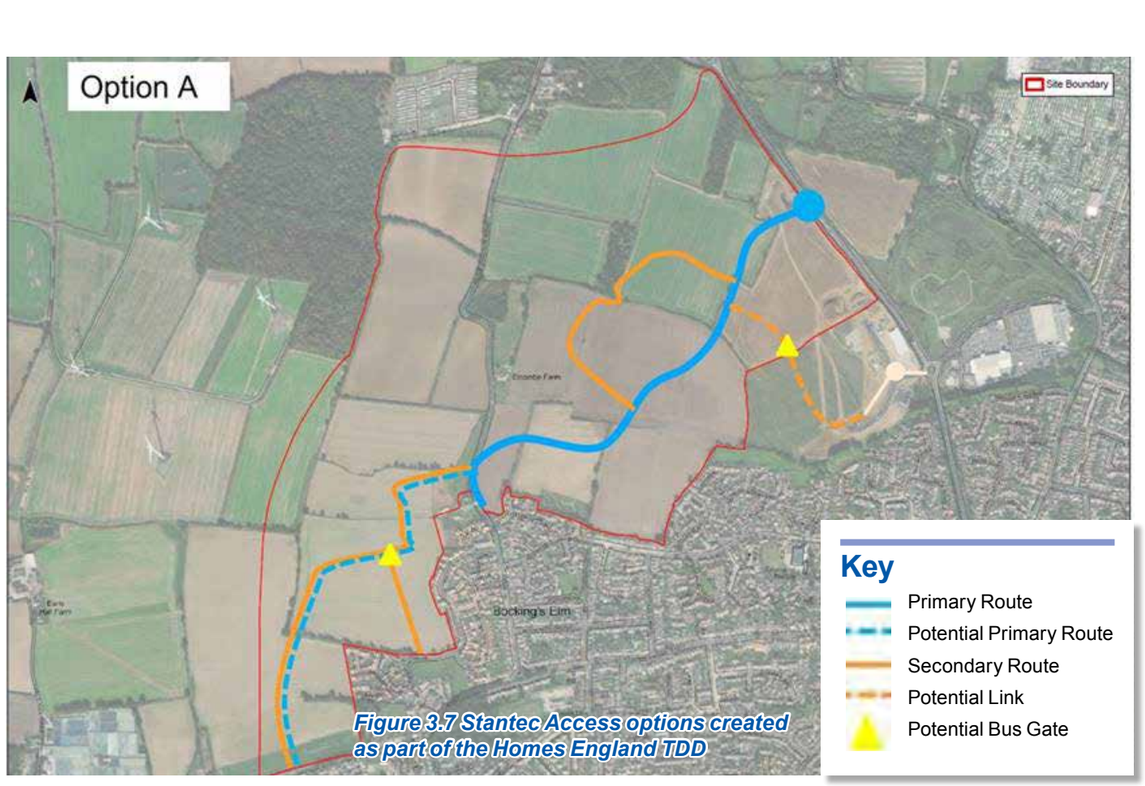


Figure 3.7 Stantec Access options created as part of the Homes England TDD

be suitable to carry a substantial volume of additional vehicles, however the main constraint is the existing access junction with St Johns Road. This takes the form of a “triangle” arrangement of give-way junctions with a large tree positioned on the “island” created by these; the tree is the subject of a TPO. Stantec’s earlier work indicates that (using their vehicle trip rates, which were agreed with Essex County Council but appear slightly low based on current trends) up to 300 homes could be accommodated from the existing junction; signalisation of the junction and its conversion into a more traditional layout would raise this to around 520 homes, but would necessitate the loss of the existing tree. Even with the Local Plan upgrades elsewhere on St John’s Road, this specific junction would struggle to accommodate more dwellings based on the Stantec work to date, therefore this will need to be accounted for in the masterplanning exercises.

Previously between TDC and Homes England identified two main options for access to the Site, which correspond to the earlier Local Plan testing. Option A would be achieved via land controlled by a third party within the wider allocation Site, whereas Option B provides a longer connection from the existing Bovills Roundabout and could be delivered purely by the Greenwich Hospital and Homes England land.

Some further discussion has been held around whether there would be an option for a new roundabout to be created from the Greenwich Hospital land adjacent to the A133 (thus avoiding reliance on third party land).

It is considered that this would be extremely challenging from an engineering perspective, primarily due to the lack of separation to the existing roundabout, and to a lesser extent as a result of the existing land form along this edge of the Site where there is some build-up of earth and a considerable amount of established vegetation, meaning that there would be significant earthworking requirements to create a suitable access point. If (as is currently expected) a roundabout junction would be needed, the entire footprint would need to be accommodated within the Greenwich Hospital land, which would mean re-aligning the A133 on a curve to achieve this, and sterilising a large part of the Site in the process. As such, this option will not be taken further within the next stage of masterplanning work.

In summary, it is currently considered that early development would be most suitably served for all modes access either via Legerton Drive or from Little Clacton Road, but that the full development is still likely to require some form of connection to the A133. As has been discussed in project team meetings, the nature of any such connection would need to be designed around serving the needs of the development and sustainable modes first, and would not be designed or promoted as an alternative to the main A133 route into town for existing traffic. Achieving this is likely to require careful balancing with the impacts to Little Clacton Road.

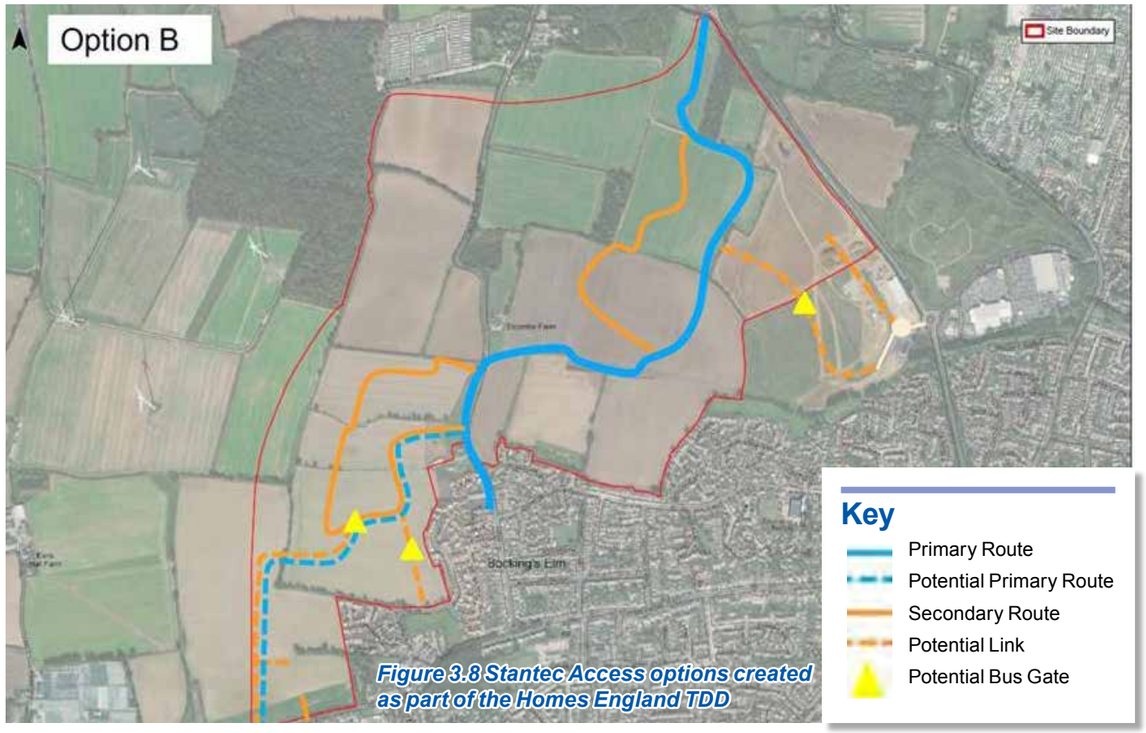


Figure 3.8 Stantec Access options created as part of the Homes England TDD

External Road Network

The key identified constraints with regard to the external road network are the capacity and nature of:

- St John's Road;
- the A133 / St Johns Road / London Road roundabout;
- the A133 Progress Way roundabout and A133 links connecting to this; and
- the street network around Legerton Drive.

This list is not considered definitive and is likely to expand following further discussions with Tendring District Council and Essex County Council; for the purposes of this exercise, the characteristics and constraints of these areas are described below.

A133

The A133 is a north-south arterial road which runs down the eastern boundary of the Site. It connects to the A120 in the north, and in the south it reaches Clacton-on-Sea town centre.

Along the Site's boundary it is a two-direction carriageway, with one lane going in each direction, with each at an approximate width of five metres.

The highway offers three roundabouts in proximity to the Site, with the A133/Progress Way roundabout on the north-eastern boundary, A133/Little Ravens Way on the south-eastern boundary of the Site, and a further roundabout to the south, A133/St John's Road.

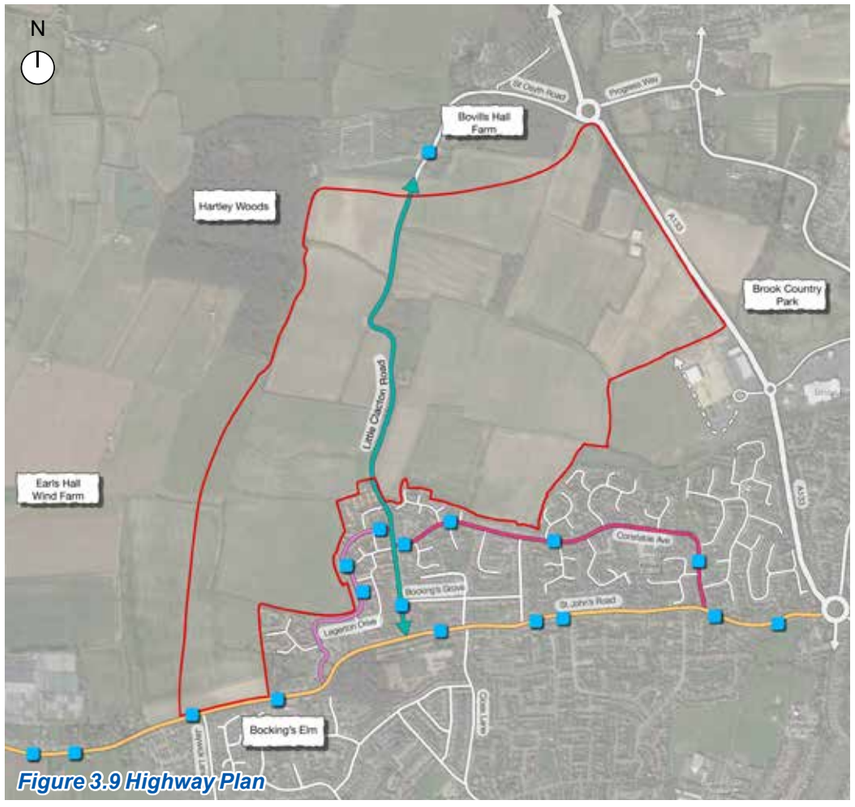


Figure 3.9 Highway Plan

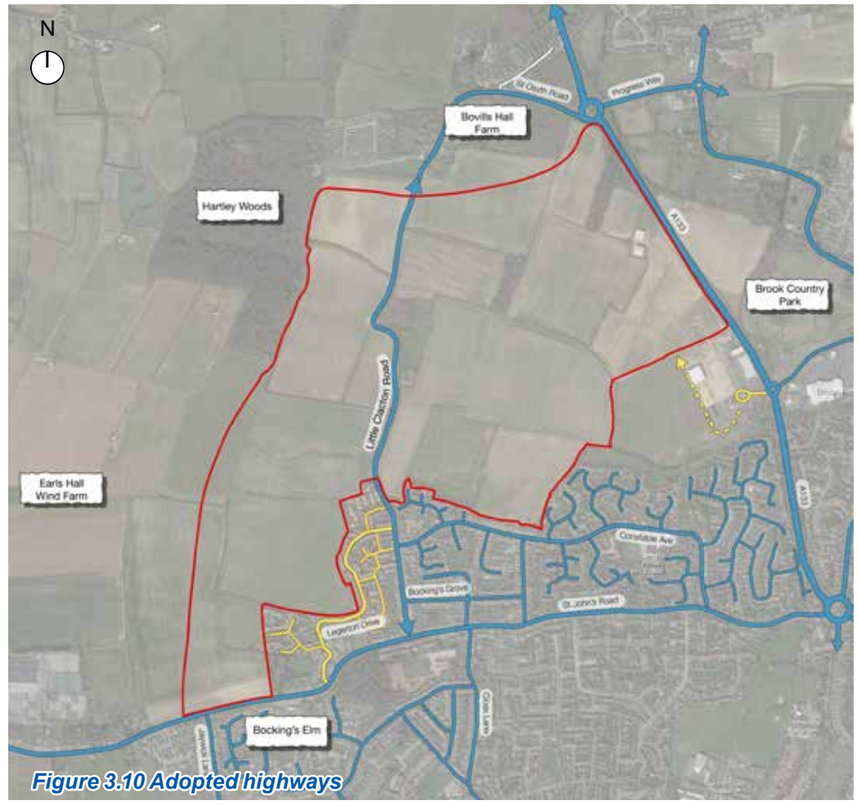


Figure 3.10 Adopted highways

Key

- SPD Boundary (TBC)
- Roads
- Future Potential Connection to Brook Park West Development
- Little Clacton Road
- St John's Road
- Legerton Drive
- Constable Ave
- Bus Stops

Key

- SPD Boundary (TBC)
- Adopted Highway
- Private Road

St John's Road

St John's Road is an east-west road which stretches across much of northern Clacton. It connects Bockings Elm in the west to just beyond the roundabout with the A133 in the east.

It is a largely residential road, with narrow lanes running in each direction at approximately 2.5 metres in width. Towards the west of the road, it directly borders the Hartley Garden Site on its south-western boundary.

No on-street parking is provided on St John's Road. There are lay-bys lined along the sides of the road, however the only formalised parking provisions are the private driveways of the residential properties on the street.

There are 11 bus stops along the course of the road, which are served by the 3, 6, 6A, 6B, 7, 74, 74B, 137 and 702.

Legerton Drive

Legerton Drive is a newly-built road to the north of St John's Road, connecting with Little Clacton Road to the northeast. It also features numerous inlets between the properties in a western direction.

It is mainly comprised of residential properties, and bordering the greenspace which forms part of the Site. There is one lane running in each direction, at approximate widths of 2.71 metres.

Due to both the fact that it is a newly built road, and additionally has the branches coming off into the Site's perimeter, this is seen as a likely point of access for the Hartley Gardens Masterplan.

Whilst there is no structured parking area along Legerton Drive, the width of the road provides space, along its borders which is used by vehicles for parking. Additionally, there is residential parking spaces to the sides of dwellings.

There are three bus stops on Legerton Drive, served by the routes 7 and 135.

Little Clacton Road

Little Clacton Road is a north-south road which runs through the Site. It is a rural road, which is consistently lined with hedgerows and vegetation. It meets St Osyth Road at the northern end, and St John's Road at the south with a Y-junction.

Through research, it is noted that the scope for altering the road within the constraints of the Site, whether that be increasing its width or altering its course, is very limited given the Council's thoughts that any alteration would detract from the local rural character.

It is noted that there may be some potential at the northern end of Little Clacton Road (including the existing St Osyth's Road) to create a new connection into the Site so that existing through-traffic from the A133 Bovills Roundabout can be diverted away. This would need to be done in a manner which preserves access as far as possible for existing properties in this area, however this would not only potentially reduce traffic on Little Clacton Road but would offer some opportunities to re-assess lighting provision and the general environment in the vicinity of existing listed buildings to the north of the Site.

The road features a bus stop in each direction towards its junction with St John's Road, which is served by the bus routes 3 (Clacton - Harwich)and 6A (Clacton – Point Clear).

Comment is made in Stantec's Traffic Appraisal (2022) that there are forecasted increases in delays on Little Clacton Road/St John's Road Y-Junction in future year scenarios, however it is determined that if Little Clacton Road is downgraded to a greenway then this will ensure that levels of usage are reduced (4.2.16).

Constable Avenue

Constable Avenue is a west-east-south road comprising dwellings and Cann Hall Primary School. It connects Little Clacton Road to the west, with St John's Road at the southern bend.

The road comprises two lanes in each direction, both three metres in width. Along the road there are 15 different Avenues and Drives which branch off either side.

The road runs along the southern boundary of the Site, and in past consultations, Cranleigh Close has been considered a possible access point for the Site.

No formalised on-street parking is provided on Constable Avenue, with most properties featuring driveways, and the width of the road used by some vehicles for curb-side parking.

There are four bus stops along the course of the road, being served by the 6A, 7 and 135.

Public Transport

Bus Services

The Site is currently served by 7 bus services. An accessible bus service is defined as one which can be reached within a maximum walk distance of 640m (an eight minute walk at 4.8kph). The closest bus stops to the Site are on Legerton Drive, (see Figure 3.9) approximately 140 metres from the proposed access point with the Site.

Local bus services that pass within an accessible distance of the Site are detailed in Table 3.4.

Data on current loadings for these services is not immediately available; it is recognised that due to the size and extent of the Site, bus services will need to enter the Site in order to provide a high quality service that acts as a genuine alternative to car use. The cost implications of this requirement should be considered as a Site constraint until further work can be undertaken via the masterplan development process.

Table 3.4: Local Bus Services and Frequencies (accurate as of November 2022)

Route	Description	Max frequency
3	Clacton – Thorpe-le-Stoken – Little Oakley – Harwich	58 mins
6	Clacton – Bockings Elm (Brace of Pistols) – St Osyth – Point Clear	30 mins
6A	Clacton – Great Clacton – Bockings Elm (Merstham Drive) – St Osyth – Point Clear	1 service per day (20:50)
6B	Clacton – Gilders Way – Bockings Elm (Brace of Pistols) – St Osyth – Point Clear	2 services per day (19:50 and 21:50)
7	Clacton – Great Clacton – Gilders Way – Legerton Drive – St Osyth	1 service per day (16:50)
74	Clacton – St Osyth – Thorrington – Essex University – Colchester	48 mins
135	Clacton – Bockings Elm (Brace of Pistols) – Legerton Drive – Gilders Way – Great Clacton – Clacton	40 mins

National Rail Services

The Site's potential Legerton Drive access is located 3.3km to the north of Clacton-on-Sea Station, and Thorpe-le-Soken Station is 4.6km to the northeast of the potential A133/Progress Way roundabout access.

Clacton-on-Sea Station is approximately 90 metres to the north of Railway Station (Stop 3) Bus Stop, which is served by the 6/A/B, 7, and 135 bus routes.

Clacton-on-Sea Station is served by Greater Anglia services to London Liverpool Street, which depart on an approximately hourly basis. The Station has a car park with 49 spaces, and cycle storage is also provided; with 128 spaces provided, across Compound, Stands, and Wheel Racks. The Station is seen as accessible, with step-free access to all platforms, and the ticket office being a point of accessibility assistance.

Thorpe-le-Soken Station is served by Greater Anglia services to London Liverpool Street, Colchester, Walton-on-the-Naze and Clacton-on-Sea. All of these services depart on an approximately hourly basis. The station has a car park with 65 spaces, and cycle parking allocation for 40 cycles, in two-tier storage racks. It is noted that Thorpe-le-Soken has no step-free access, with passengers arriving at the station required to cross the platforms via footbridges.

Landscape

Landscape Character Area

At the District level the Site is in Landscape Character Area (LCA) 8B Clacton and the Sokens Clay Plateau (Tendring District Landscape Character Assessment Vol 1 Nov 2001). The landscape of the LCA is identified as being visually sensitive due to its open and rural character and long views, woodlands and the gently undulating topography provides some opportunities to integrate development.

The overall landscape strategy of the LCA is 'to strengthen and enhance the character of the individual villages and the rural wooded character of the landscape'. Landscape enhancements within the LCA would include increasing the extent of native deciduous woodland, conserving hedgerows and considering opportunities for meadow creation.

The historic settlement pattern includes small villages set around greens – this could provide a new template for residential areas.

The landscape character assessment notes that there are important views across the agricultural hinterland and towards landmarks e.g churches.

Landscape Sensitivity

- The landscape sensitivity of the Site is higher (medium-high) towards the north (Greenwich Hospital land) due to the presence of priority woodlands which provide enclosure.
- The central parcel and north-western parcels have a medium sensitivity due to the lack of vegetative enclosure, its proximity to the woodland and Picker's Ditch.
- The land parcel to the western edge of the Site (Homes England land) has a medium sensitivity due to its lack of connection with the settlement edge and its proximity to the woodland.
- To the east and south-east (part Homes England land), the landscape sensitivity is medium-low due to their proximity to emerging development and a lack of landscape features. To the south and south-west, the landscape sensitivity is medium-low due to its urban context.

Visual sensitivity

- Visual sensitivity is higher in the central parcels of the Site (Greenwich Hospital land) and near to the settlement edge due to the available public and private views into the parcels from the existing settlement edge, Little Clacton Road and PRoWs.
- Parcels to the north have lower visual sensitivity due to less public and private views into the area.
- Those to the centre of the northern section of the Site have increased sensitivity due to their proximity to Little Clacton, in terms of preventing merging and coalescence.

Key landscape features

- Key landscape features include the Picker's Ditch, Priority Woodlands, the internal hedgerow field structure with some feature trees and vegetative screening along the A133.
- The boundary to Little Clacton Road and St John's Road is identified as sensitive, with opportunities to add landscape buffers.
- The northern part of the Site provides separation between Clacton and Little Clacton and it is suggested that this area comprises public open space.
- Key views into the Site are identified from St John's Road and the existing residential edge.
- A buffer should be provided to Hartley Wood.
- Existing Public Rights of Way should be retained.

Ecology

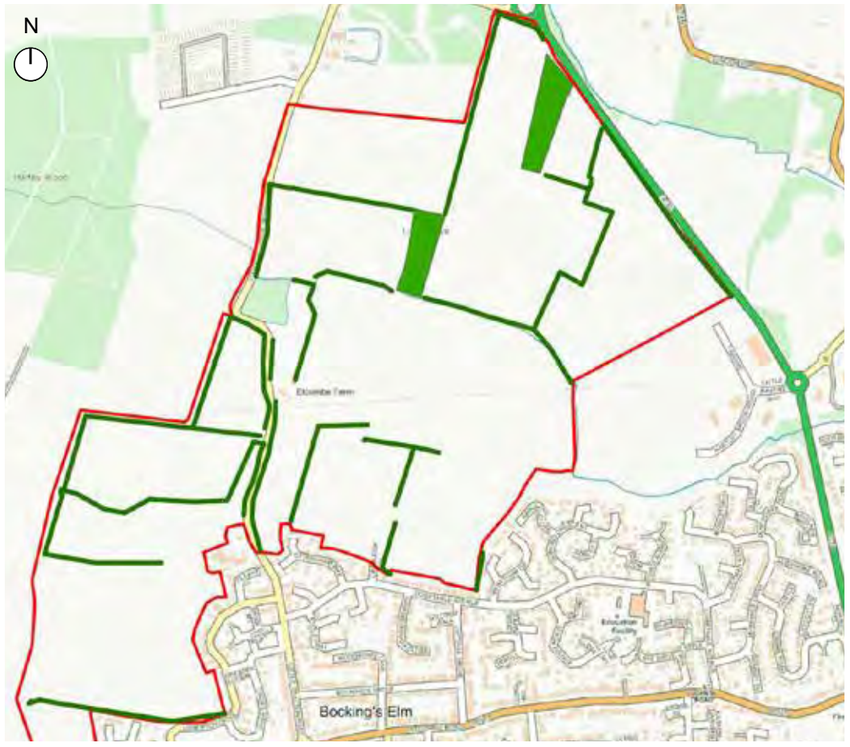
Moderate Level Constraints

The T Grove and Long Grove woodlands within the Site qualify as a Section 41 priority habitat. These woodland parcels should be retained where possible with a minimum 15m buffer and any losses must be compensated.

Hedgerows should be retained/enhanced where possible. Loss of priority hedgerows will require compensation. If surveys confirm that any hedgerows are important, then these should be retained where practicable or permission must be sought for removal. (Important hedgerows: moderate-high constraint. Priority hedgerows: moderate constraint).

Mature trees should be retained where possible and losses will require compensation (arboriculture survey required to confirm details).

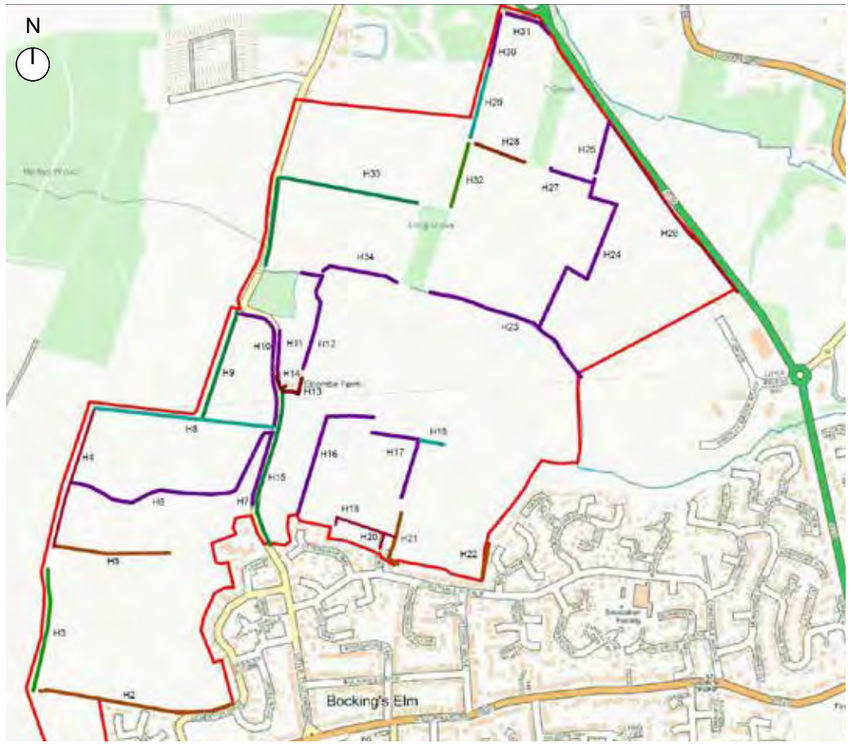
Figure 3.11 'Priority habitats under S.41 of NERC Act' extracted for reference from Place Services November 2020 report: Hartley Gardens Preliminary Ecological Appraisal Report



Key

- Place Services 2020 Site boundary
- Hedgerow - Priority habitat
- Woodland - Priority habitat

Figure 3.12 'Hedgerows' extracted for reference from Place Services November 2020 report: Hartley Gardens Preliminary Ecological Appraisal Report



Key

- Place Services 2020 Site boundary
- Hedge ornamental non native
- Line of trees - associated with bank or ditch
- Native hedgerow
- Native hedgerow associated with bank or ditch
- Native hedgerow with trees
- Native hedgerow with trees associated with bank or ditch
- Native species rich hedgerow
- Native species rich hedgerow - associated with bank or ditch
- Native species rich hedgerow with trees
- Native species rich hedgerow with trees -associated with bank or ditch

Ponds 2, 4, 5, and 15 are priority habitat (due to the presence of Great Crested Newts). Any losses will require compensation. Condition assessments of other ponds using guidance from Metric 3.1 will need to be undertaken to determine if any other ponds will be considered a priority habitat.

An updated condition assessment of the Site is required before providing detailed recommendations regarding Biodiversity Net Gain. It can however be deduced that focussing the development on low distinctiveness habitats that will likely include the arable fields, currently built-up areas / gardens, and unvegetated areas, and retaining and enhancing (where possible) medium/high distinctiveness habitats that would likely include grassland, woodland, trees, scrub, ponds, ditches, and hedgerows, would be advantageous. As a general guide, to achieve 10% net gain where predominantly arable habitat is lost, there will need to be the provision of 35% of the total area given to public open space, including habitat enhancements.

Due to the results of the winter bird surveys a Habitats Regulation Assessment (HRA) will be required for the Site and it is considered likely that this will reach at least Stage 2 of the HRA process (Appropriate Assessment). Mitigation for wintering birds may require a set back of residential development of up to 400m from the key area for wintering golden plover and lapwing located off-Site but directly adjacent to the southwest corner.

Due to the presence of barbastelle bats commuting along hedgerows in the southwest of the Site and commuting from Hartley Wood to the west to the Site there will be a requirement to maintain a dark corridor to maintain this linkage. Depending on the results of the remaining activity surveys and the Site evaluation for commuting and foraging bats there may be a requirement for more extensive dark corridors and / or compensation for any loss of commuting and foraging habitat for bats.

Great Crested Newts (GCN) have been confirmed as present on Site. It is anticipated that the ponds supporting GCN can be retained however setting development back by 500m will be unlikely to be feasible, particularly from P2, located on the northern edge of Long Grove woodland towards the centre of the Site. Most ponds that have been confirmed to support GCN are in the far north of the Site where it would be advantageous to create a wildlife area which will reduce impacts. The approach to licensing and the final Site layout may reduce the constraint level. The approach for this licence needs to be discussed and agreed but may include registration under a District Level Licensing scheme which would entail conservation payments and precautionary working methods, or a traditional licence which would require a mitigation strategy including a trapping and translocation scheme and compensation for lost habitat within the Site. (Low-Moderate / Financial constraint).

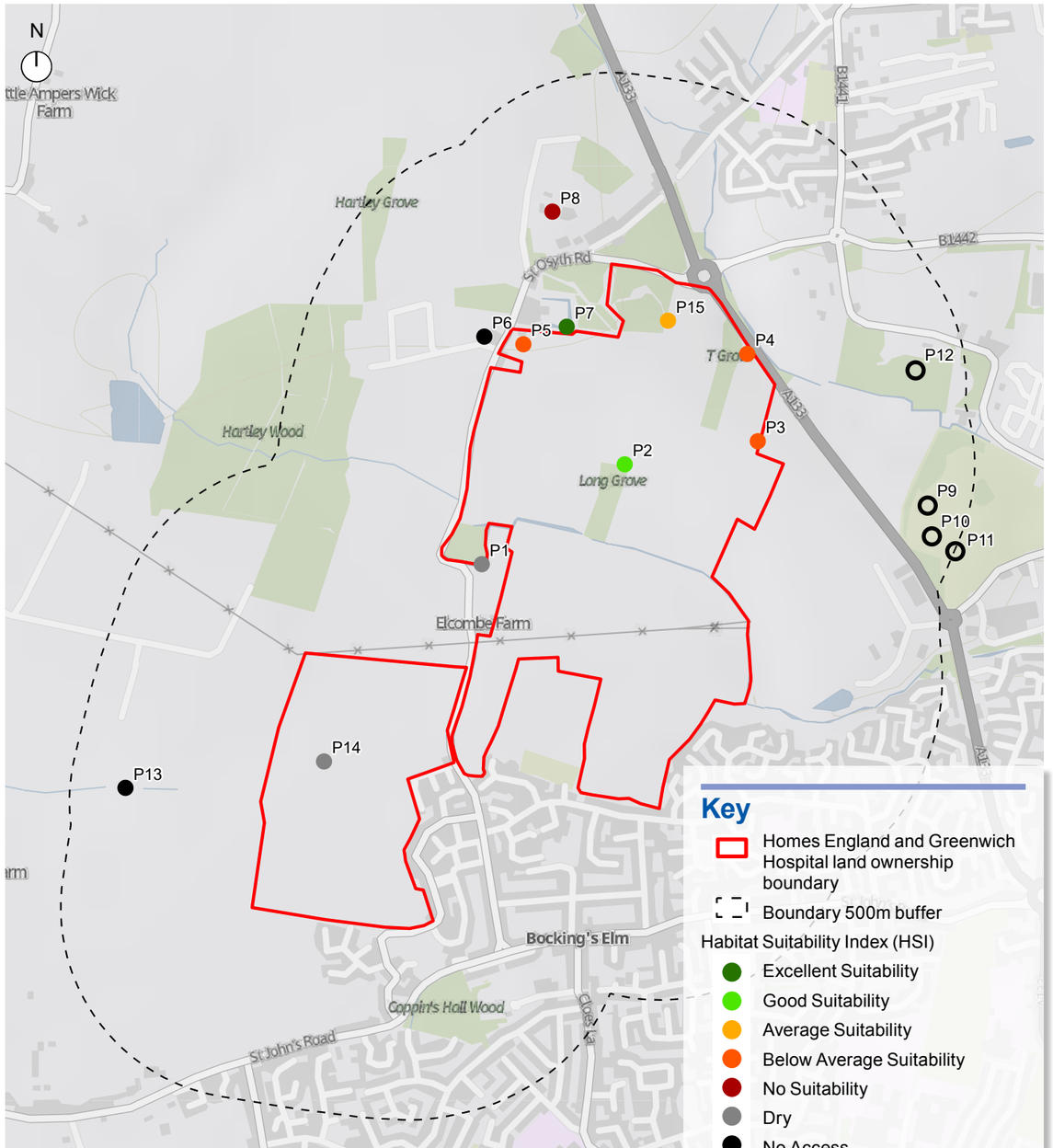


Figure 3.13 Stantec HSI Assessment Results

Potential Moderate Level Constraints (Depending on Survey Results)

If roosting bats are confirmed to be present within any building or tree that cannot be retained and buffered, then a mitigation licence will be required. The constraint level would be determined by the number of roosts and the conservation status of the roosts as this would inform the mitigation requirements, although is highly unlikely to represent any more than a moderate level constraint.

Further surveys for badgers will be required as detailed in Table 5.2. If active setts are present and a buffer of 30m around the active setts cannot be maintained, then it is likely that a licence/mitigation will be required. If no active setts are present then badger represents only a negligible constraint level. If active outlier setts only are present and a buffer cannot be maintained, then they would represent a low constraint level. However, if a main sett is present that requires closure under licence then this would entail the construction of an artificial sett under licence and would represent a moderate constraint level.

Breeding birds may represent a moderate constraint depending on the results of surveys. The final survey results will determine the compensation required for the loss of suitable breeding habitat, although primarily breeding birds only represent a seasonal constraint to the clearance of vegetation.

If further surveys confirm the presence of hazel dormice within the Site then a mitigation licence will be required and appropriate mitigation agreed as part of the licence application. If dormice are confirmed as absent, then they will represent a negligible constraint. If present the constraint will be low-moderate level depending on the extent of suitable habitat impacted.

Invertebrate surveys have not yet been completed. If surveys identify and important assemblage, then they may represent a moderate level constraint as habitat compensation and mitigation may be required.

The first otter and water vole survey did not find any evidence of these species. If the second survey confirms the presence of a breeding or resting place for otter and a 30m buffer cannot be maintained, then a mitigation licence would be required with mitigation agreed as part of the licensing process which would represent a moderate level constraint. If water vole is confirmed as present and a minimum buffer of 5m from the bank top cannot be maintained then licensing and mitigation may be required in which case the level of constraint would be determined by the required approach to licensing.

Low Level Constraints

The loss of non-priority habitats (including grassland, non-priority hedgerows, ditches, scrub, and young-semi-mature trees) represents a low level constraint as compensation will be required to achieve the required 10% BNG.

Reptiles have been confirmed as present within the Site. A trapping and translocation scheme will be required which will involve trapping reptiles located in habitats that will be impacted and moving them to a suitable receptor Site. The receptor Site may be located off-Site if necessary, or within an area of public open space. The trapping and translocation scheme would also safeguard common amphibians.

Conclusions

- No ecological constraints to development have been identified that could be considered of a high level.
- The moderate and potentially moderate level constraints identified will not prevent the development from proceeding but some will have impacts on the timing of selected works and the Site layout, will require mitigation licences to be applied for, and may require compensation measures.
- The results of ongoing ecological surveys once completed and ecological surveys still to be completed (see Tables 5.1 and 5.2 in Section 5) will allow for thus far unconfirmed constraint levels to be deduced.

Archaeology and heritage

The aim of this section is to provide a summary of the baseline archaeological and historic environment. A preliminary historic environment baseline review was undertaken by a full member of the Chartered Institute for Archaeologists (CIfA) and in accordance with the CIfA Standard and Guidance for archaeological desk-based assessment (CIfA, 2020).

For the purposes of this constraint summary on known and potential heritage assets information from the SPD area, the technical summary will include any relevant designated heritage asset/ non-designated assets up to 500m from the Site.

Baseline conditions

Baseline conditions have been established using data derived from several sources including:

- The heritage list for England maintained by Historic England, consulted for designated heritage asset data;
- Online sources; National Library for Scotland (historic mapping), Historic England for HLC, Heritage Gateway and MAGIC Map;
- Essex County Council webSites for data on conservation areas and local listings; and
- Aerial images on Google Earth.

There are no world heritage sites, scheduled monuments, conservation areas, registered parks and gardens, or registered battlefields within study area. There are seven designated heritage assets within 500m of the Site including six listed buildings (one Grade II*; five Grade II). There are no locally listed buildings within the Site.

The following assets will be affected by a direct change to their setting:

Table 3.5: Heritage assets (refer to Figure 3.8 on the adjacent page for locations of designated heritage assets)

NHLE Reference	Name	Description	Grade	Significance
1111549	Cann Hall	Timber-framed house circa 1512, built for St Osyth's Priory, with some 18th century alterations; refenestrated in 20th century.	II*	Medium
1111510	Bovill's Hall	A timber framed and rough rendered house from the 15th or 16th century of possibly earlier origin with later alterations and additions.	II	Medium
1309179	Barn approximately 30m north-west of Bovill Hall's	Timber framed and weatherboarded Barn from the 16th century with later re-roof.	II	Medium
1111511	Pig sties 50m north-west of Bovill Hall	Red brick pair of pig sties from the 19th century.	II	Medium
1337149	Bluehouse Farmhouse adjacent to East of Clacton Garden Centre	Timber framed with red brick faced house of 17th century origin with later alterations and additions.	II	Medium
1111522	Duchess Farmhouse	Timber framed painted brick faced 17th century farmhouse with 18th century alterations.	II	Medium
1165889	Stone Hall	Timber framed 17th century house with later alterations and rear additions.	II	Medium

There are a number of designated assets further afield that might be affected by the Scheme. A zone of theoretical visibility (ZTV) will be produced in order to assess impacts to settings on designated assets outside the 500m study area. These will be further scoped out or in after a Site and archive visit to establish if there will be a change to their settings.

Archaeological Potential

There are a large number of non-designated heritage assets with archaeological interest within the 500m study area providing evidence of human activity within the Site for the majority of periods from prehistoric to modern. Therefore, there is a generally moderate to high potential for archaeological remains to survive on Site for all periods. Analysis of the aerial photography suggests that there is a likelihood of post-medieval field boundaries and other activity to survive on Site. Cropmarks of linear features are clearly visible in the fields within the southern extent of the Site. The HER also records previously excavated cropmarks which have revealed evidence of prehistoric enclosures.

Excavations in advance of the construction of the Clacton - Weeley bypass recovered a series of prehistoric ditches and a pit at the western end of the Site. The earliest feature on Site was a linear pit which produced pottery of Late Bronze Age or Early Iron Age date. To the west of this feature were parts of four ditches; one of which produced prehistoric pottery. A rectilinear enclosure was also recorded, a fieldwalking survey found evidence of Bronze Age pottery which was used to date the feature. A field within the Site extent produced 84 sherds of medieval pottery of 13th to early 14th century date. A moat associated with Bovill's Hill is also recorded within the Site and is visible on the first edition OS map, aerial photography does not show any evidence of this surviving although it may be buried or obscured.

A full Site walkover survey will need to be undertaken. Field notes will be taken to record the land use, condition of known heritage assets of archaeological interest, surface evidence for any previously unrecorded heritage assets, the topography and landscape character as an indicator of potential for buried archaeology.

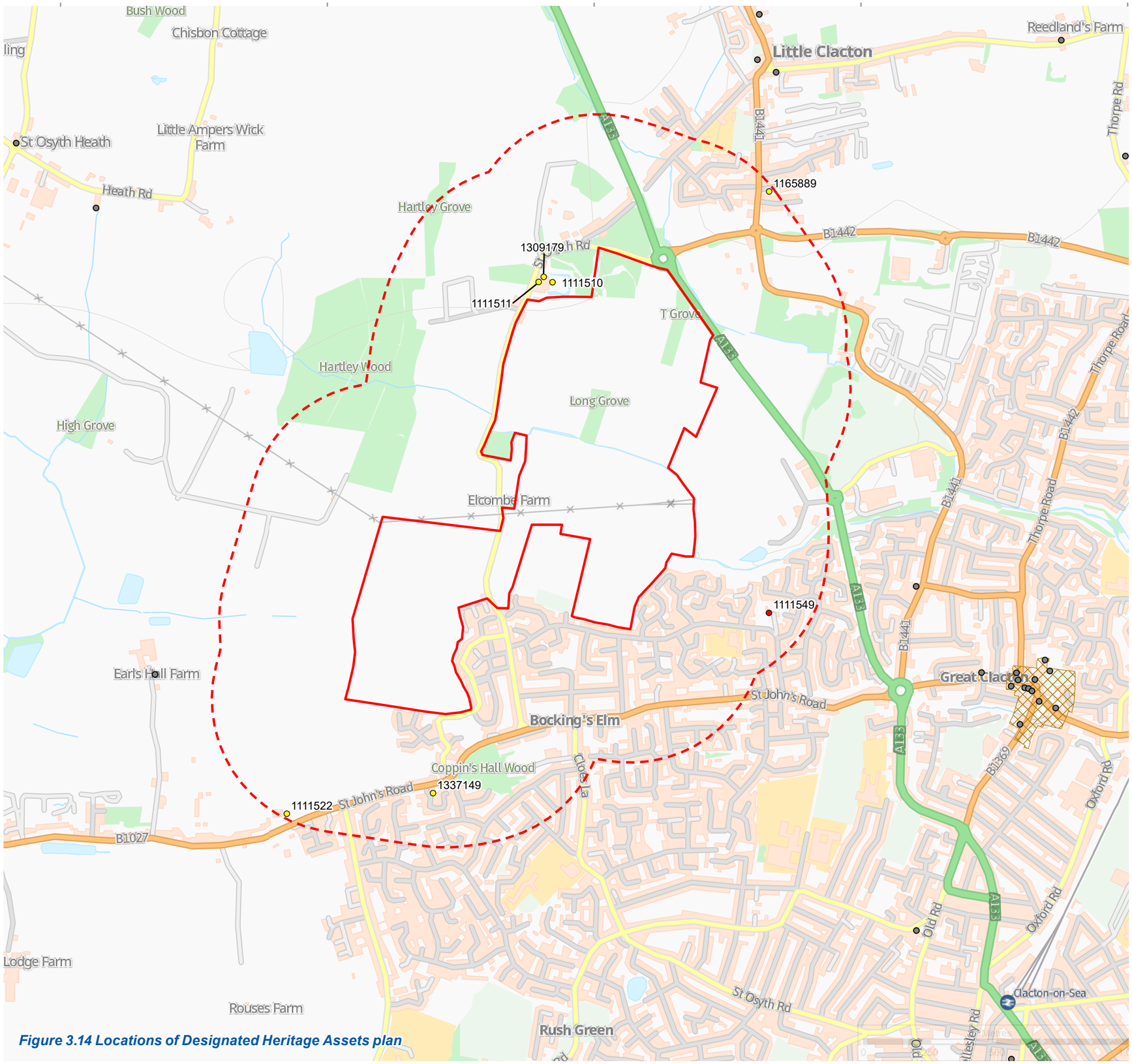
Historic Landscape

Analysis of the historic mapping available on National Library of Scotland (NLS), shows that there may be historic hedgerows that survive on Site. Hedgerows Regulations 1997 states that the hedgerow can be deemed important based on archaeological and historic considerations. This would need to be further established by an archive visit to analyse historic maps for evidence of historic hedgerows.

Most of the Site is made of the "Pre 18th century 'Irregular' Enclosure HLC type forms. This HLC type is common within the country comprising irregular enclosures varying in size and shape, forming both arable and pasture. They are probably the result of piecemeal enclosure and may originate from the medieval period or earlier. This HLC type has been affected by boundary loss resulting in hybrid and palimpsest, with edges that may have several periods of origin. The surviving edges of these fields are of historic importance.

The Site also has surviving Ancient Woodland, in Essex the HLC project states that these also include "traditional wood-pasture, such as seen at Hatfield Forest, where single or small groups of pollarded trees occur in pasture alongside small coppice-with-standards managed woodlands." This rare HLC type can preserve features such as an uneven land surface that pre-date the woodland such as prehistoric earthworks or medieval cultivation ridges where woodland has regenerated.

The Site also includes pockets of modern built-up areas, which is fairly common in the county. This type has been applied to modern and historic built up or urban areas, and ranges from cities, towns, villages, and hamlets to large farms.



Key

- Homes England and Greenwich Hospital land ownership boundary
- Boundary 500m buffer

Listed Buildings

- Grade I Listed Building
- Grade II* Listed Building
- Grade II Listed Building
- Listed Buildings Outside the Study Area
- Conservation Area

N

0 100 500 1000 m

Figure 3.14 Locations of Designated Heritage Assets plan

Energy and utilities

Existing utilities record information and background strategic utilities information from various sources has been reviewed and cross referenced. Some discrepancies have been identified and are being investigated further but the likely case is captured here.

At TDD stage 33kV and 11kV overhead electricity lines were identified for diversion or undergrounding and this strategy will be taken forward in consultation with UKPN.

An existing high pressure gas pipeline crosses the southwest corner of the site and sterilises part of that corner for development. Some works will be possible within proximity of the pipeline but such activities will need to be agreed with and then overseen by Cadent. For the avoidance of any doubt this asset will remain in-situ.

A 10" water main running along Little Clacton Road will be retained in situ. For the most part this main will not affect potential development though there is one section where the main diverges from the road alignment and this will be monitored as the masterplan emerges.

New water and electricity connections to local infrastructure will not be possible without offsite reinforcement of both. Details are not known at present but both will have cost and programme implications. More significantly it is likely that a primary substation will be required somewhere on site, most likely along the corridor of the existing 33kV service.

Main utilities related constraints are:

1. Likely requirement for a primary substation on site given capacity limitations at local primary sub-stations;
2. 33kV overhead dissecting site centre of site laterally;
3. Surface water sewer entering central southern boundary;
4. Existing buried LV cable crossing southernmost south west corner of site;
5. High pressure gas pipeline and buffer zone crossing southernmost south west corner of site;
6. Overhead open reach cables on Little Clacton Road;
7. Existing water main on Little Clacton Road;
8. HSE Notifiable storage facility to the north west of site, presumed LPG. NB unlikely to affect development but retained for information only; and

Offsite reinforcement of mains water network.

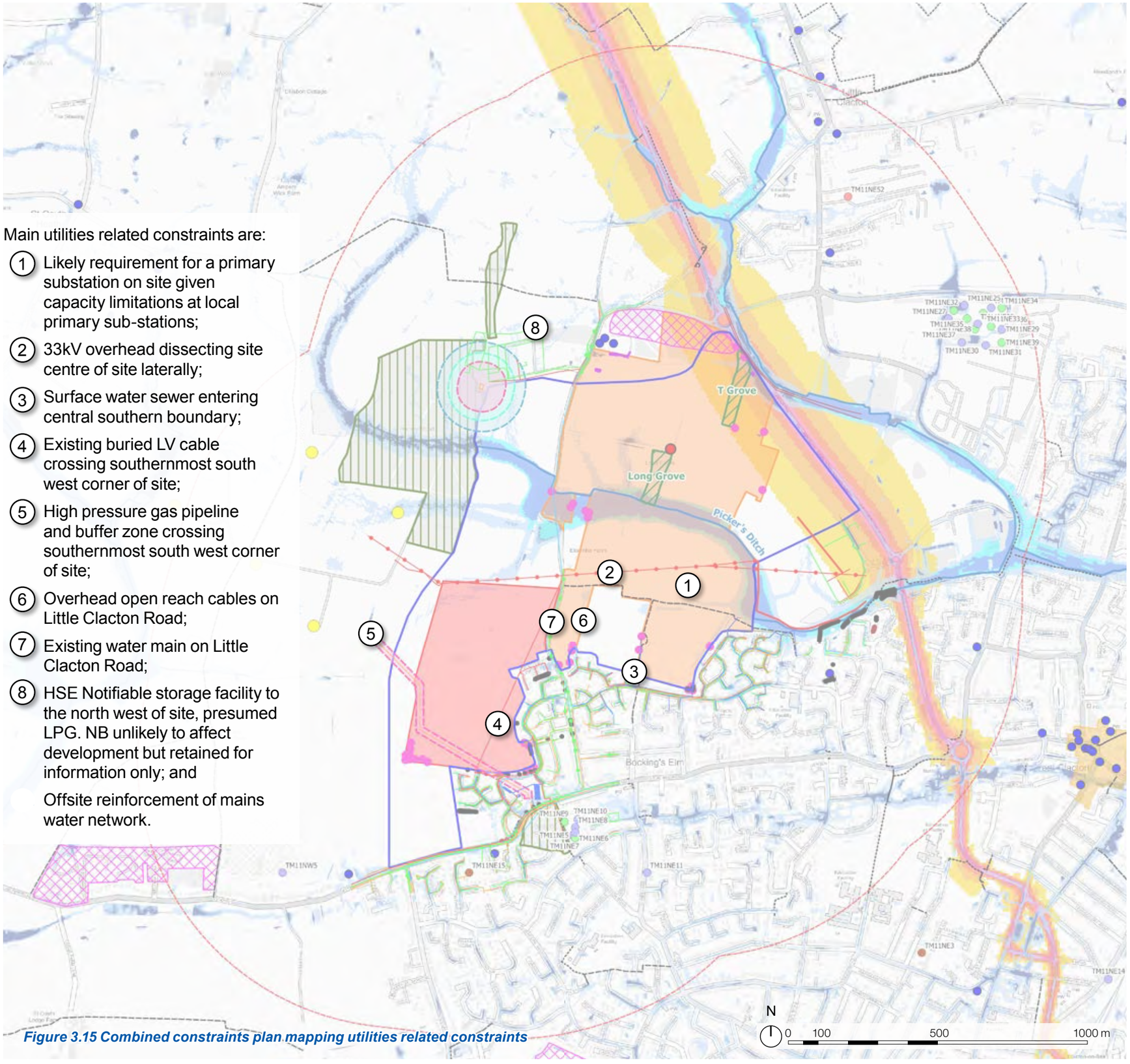


Figure 3.15 Combined constraints plan mapping utilities related constraints

Site opportunities

The adjacent plan illustrates the following opportunities:

1. provide an integrated natural edge of sensitive buffers embedded in the surrounding natural environment;
2. create a diverse landscape network offering extensive walking and cycling routes, biodiversity corridors and rich open spaces;
3. ensure a rich, diverse environment through the retention & enhancement of existing features, opening up the ditch and removing culverts where appropriate as part of a well-connected blue-green infrastructure strategy;
4. retain and enhance existing hedgerows and woodlands;
5. create connections between new and existing residents of adjacent neighbourhoods and future development;
6. enhance and protect Public Rights of Way and create well-connected, safe and continuous walking routes;
7. respond sensitively to Listed buildings / Buildings to be retained and protect the setting of the heritage assets;
8. respond sensitively and retain a landscape gap to Little Clacton;
9. create an integrated movement network responding to existing routes, such as A133 with the potential to downgrade Little Clacton Road; and
10. create a gateway into Clacton-on-Sea responding to the plan-making process that has recognised the Site as a strategic position upon entering the town.

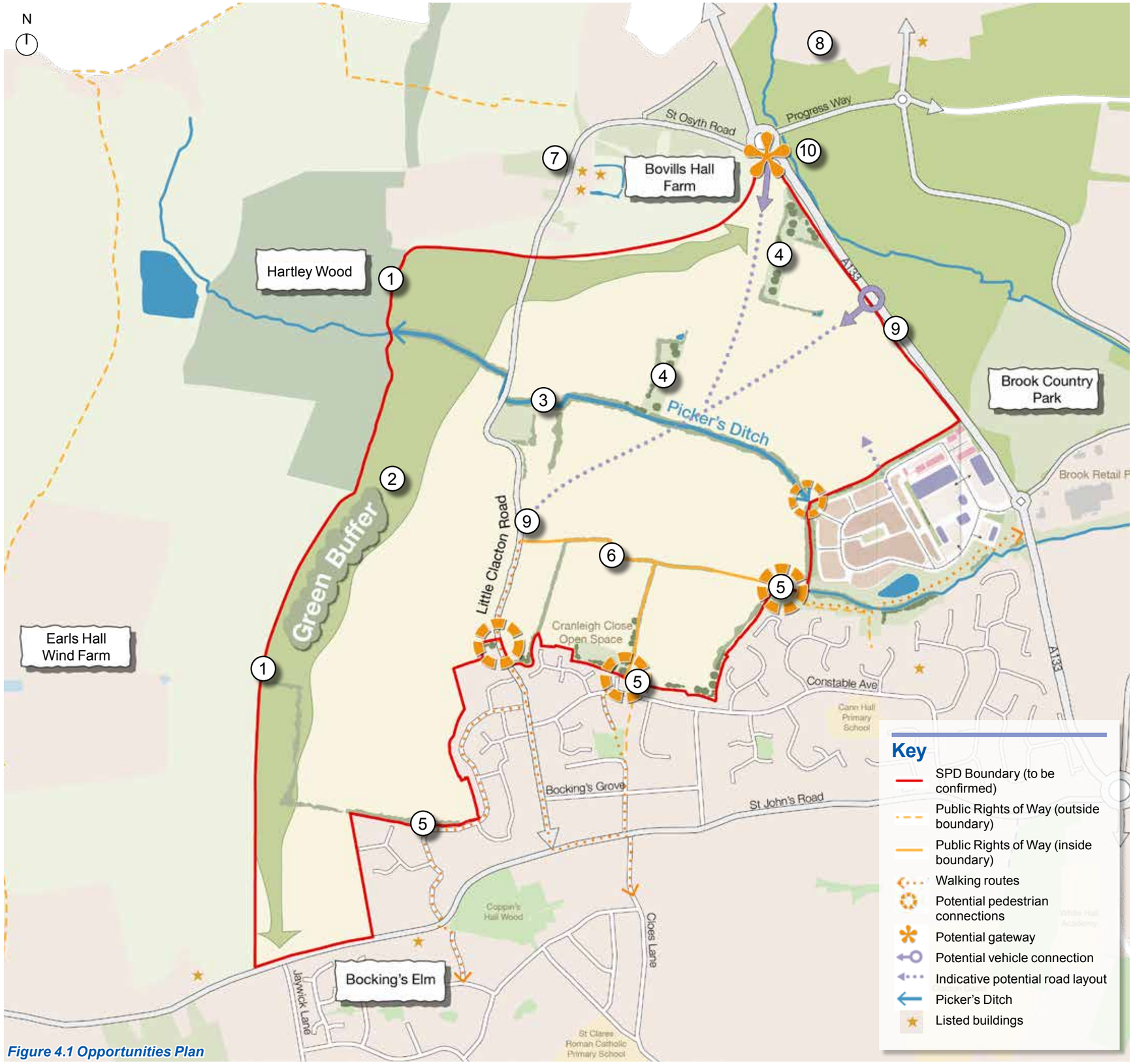


Figure 4.1 Opportunities Plan

Completed Ecological Surveys and Results

A Preliminary Ecological Appraisal (PEA) of the Site known as Hartley Gardens was undertaken by Place Services in November 2020. The PEA found that the Site comprises predominantly arable land, with smaller parcels of other grassland, a network of hedges, scattered trees, parcels of woodland, ponds, wet ditches, and a small number of buildings.

The PEA recommended a suite of ecological surveys the majority of which Stantec have been completing during 2022. It is understood that the geographical scope of the ecological surveys completed by Stantec have encompassed both the Homes England owned land and the Greenwich Hospital owned land but may not have been extended to cover the third party land.

To date the following reports have been provided by Stantec:

- Wintering Bird Report (Interim),
- GCN Technical Note, and
- Woodland NVC Survey.

The reports an interim results summary has confirmed several ecological surveys have been completed or are ongoing, and the results to date. These are outlined in Table 5.1:

Table 5.1: Completed ecological surveys and results

Ecological Survey	Status	Results
NVC survey of T Grove and Long Grove	Completed	The NVC surveys found no evidence to suggest that T Grove or Long Grove could be classified as ancient woodland although did confirm that these woodlands are Habitats of Principal Importance.
Wintering bird surveys	Ongoing	The wintering bird surveys completed to date concluded that there was no evidence of a functional link between the Site and the nearby SPAs and Ramsar Sites. Consultation with Natural England was undertaken, and Natural England advised that surveys should continue during this winter (2022-2023) and that they would advise that a conclusion should be drawn that there is a partial functional link between the Site and the nearby SPAs and Ramsar Sites.
Breeding bird surveys	Ongoing	The breeding bird surveys completed to date identified likely breeding territories for the Schedule 1 bird species hobby and red list species skylark, starling, house sparrow, linnet, and yellowhammer within the Site.
Great crested newt (GCN) HSI and eDNA surveys	Completed	The GCN surveys confirmed the presence of GCN within 4 ponds located within the Site (P2, P4, P5, and P15), and one pond located directly adjacent to the Site boundary (P7).
Reptile surveys	Completed	Reptile surveys have confirmed the presence of a “low population of common lizard and a good population of slow worm”.
Preliminary roost assessment and ground-based tree assessment for bats	Completed	The preliminary roost assessment and ground-based tree assessment for bats identified two buildings with moderate suitability, six buildings with low suitability, 34 trees/tree groups with high suitability, 80 trees/tree groups with moderate suitability, and 51 trees/tree groups with low suitability to support roosting bats.
Bat activity surveys	Ongoing	Bat activity surveys completed to date confirmed an assemblage of at least seven species including common pipistrelle, soprano pipistrelle, brown long-eared bat, noctule, serotine, Myotis species, and barbastelle. Barbastelle, a particularly light sensitive species, activity was concentrated in the south-west of the Site with bats commuting along hedgerows from the mature woodland parcel (Hartley Wood) off-Site to the west.
Hazel dormouse surveys	Ongoing	Hazel dormouse surveys completed to date have not found any evidence of hazel dormice using the Site.
Otter and water vole surveys	Ongoing	The otter and water vole surveys completed to date have not found any evidence of either species utilising the Site.

Information gaps

Ecology

- Ongoing surveys for wintering birds, hazel dormouse, and otter and water vole, are not considered further within this section as it is understood that these will be continued and completed by Stantec.
- TEP has identified an issue with breeding bird surveys being split over two seasons and, following consultation with the TEP ornithology team, would advise that a full suite of six surveys (including one nocturnal survey visit) is completed during 2023.

It is assumed that the surveys detailed in Table 5.2 below have not been completed by Stantec and will therefore be required to be commissioned to support the planning application. The geographical extent of most surveys completed by Stantec will not present an issue if the application is extended to include the additional land parcels except for those detailed in Table 5.2.

Table 5.2: Ecological Surveys Requiring Completion (excluding ongoing surveys detailed in Table 5.1)

Ecological Survey	Timing	Extent / Rationale
Updated Habitat Condition Assessment (using Metric 3.1 guidance)	Spring / Summer	Whole Site. The updated Biodiversity Net Gain Assessment for the Site will need to use Defra Metric 3.1 and therefore the updated condition assessment must apply the associated guidance.
Hedgerow Assessment	Spring / Summer	All hedgerows within the Site. To determine if any hedgerows, aside from those within 500m of a pond containing GCN, are 'Important'.
Ground-level Tree Assessment (if additional land parcels are incorporated)	Winter is optimal	All trees within the additional land parcels.
Aerial Tree Inspections for Bats (optional)	No seasonal restrictions	Any trees identified as having suitability to support roosting bats that will be impacted by the development. Aerial inspections are optional but may be used to rationalise the requirements / scope for nocturnal roost surveys.
Nocturnal Bat Roost Surveys	May-August	All trees and buildings identified as having suitability to support roosting bats (except for low suitability trees) that will be impacted by the development. If it cannot be determined which buildings / trees will be impacted, then it is likely that surveys will be required of all features with suitability (except low suitability trees).
Bat Activity Surveys (if additional land parcels are incorporated)	May-October	Suitable habitat within the additional land parcels. It is unlikely that additional transect surveys will be required but static remote monitoring would likely be required.
Detailed Badger Survey and Sett Monitoring	No seasonal restrictions	Whole Site and 30m buffer. A detailed badger survey should be undertaken. Two outlier setts were identified by Place Ecology. These setts and any additional setts found should be monitored to confirm activity levels.
Dormouse Surveys (if additional land parcels are incorporated)	April- November	Suitable habitat within the additional land parcels. If dormice are confirmed as present within the Homes England / Greenwich Hospital owned land parcels, then surveys will not be required although there will be an assumption that dormice are present within the additional land parcels.

Heritage

A full Historic Environment desk-based assessment for the proposed development will be carried out in order in assess the impact of the development on the historic environment. The datasets consulted will include but not limited to:

- Essex Historic Environment Record (HER)
- Historic mapping from local archives and online sources
- LiDAR
- ZTV to assess setting effects on long distance heritage assets
- Aerial photography
- Historic England-The National Heritage List for England (NHLE)

The proposed development may require further evaluation, including a programme of archaeological works, the scope to be agreed following the results of the desk-based assessment and in consultation with the archaeological advisor to the LPA.

Table 5.3: Landscape, Engineering, Transport and Heritage Surveys Requiring Completion

Discipline	Survey	Timing	Extent / Rationale
Landscape	Initial Landscape and Visual Survey	TBC	
	Landscape and Visual Survey	TBC	
Engineering	Topographical Survey	No time constrains	The topographical survey will cover the full survey extent (to be confirmed)
Transport	Noise Survey	TBC	
	Traffic Surveys - Turning Counts	April / May	Expected to comprise a number of locations, including but not limited to: St John's Road, A133 corridor and other key junctions within the Clacton area. The precise extent will be identified through the development of a survey specification with Essex CC Highways and Tendring DC. It is anticipated that the surveys will need to be commissioned to take place in either April or May 2023.
	Traffic Surveys - Automated Traffic Counters	April / May	Expected to comprise a number of locations, including but not limited to: St John's Road, A133 corridor and other locations within and around the Clacton area, as determined by the results of the first principles Trip Distribution exercise and comments on this from ECC. The scope will also be agreed with those responsible for the Air Quality and Noise Assessments to ensure adequete coverage of expected impacts. The precise extent will be identified through the development of a survey specification with Essex CC
Heritage	Heritage walkover survey	Feb / March	