Green Infrastructure Study Site Allocation H7b



Client Basildon Borough Council Date September 2021 Version Final Report



Basildon H7B Green Infrastructure Strategy September 2021

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1. Introduction

1.1 Purpose of this document

- 1.1.1 Basildon Borough Council (BBC) commissioned Place Services in April 2021 to undertake ecology and landscape work relating to Site Allocation H7b, which is allocated for residential development within the Council's submitted Local Plan.
- 1.1.2 The Council requires an ecological review to be undertaken on the site to enable recommendations as to the extent of the landscape buffer to the north.
- 1.1.3 In addition, the Council is requiring a landscape and design appraisal of the site which considers the constraints of the site, gives guidance on how the recommended landscape buffers can be incorporated into the layout of the site and identifies the quantum of housing which can be achieved having regard to the policy requirements.

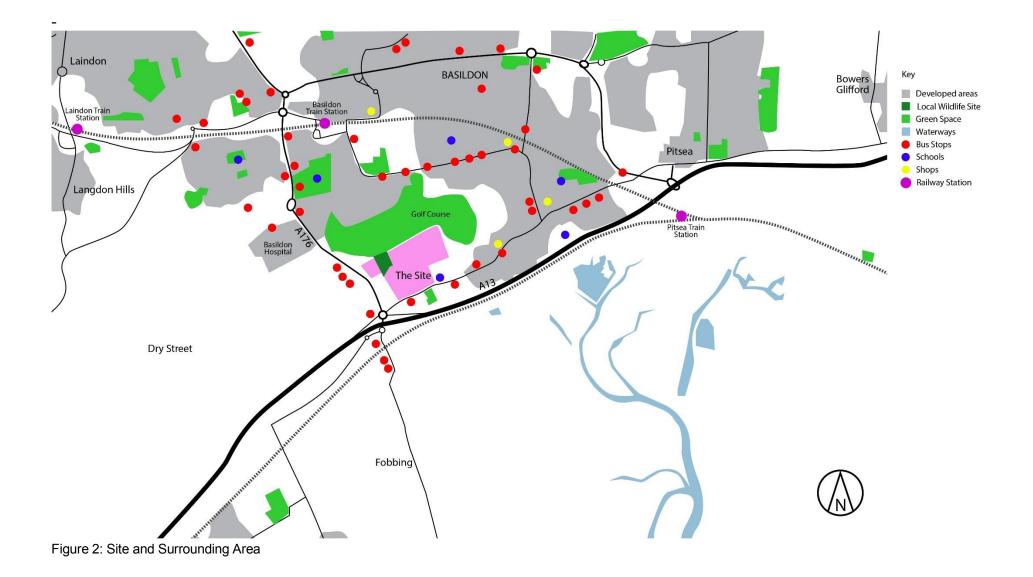
1.2 Site Description

- 1.2.1 Site H7b is adjacent to Tompkins Farm Meadow Local Wildlife Site which is to the north west boundary of the allocation and the Vange Hill and Golf Course which abuts the northern boundary (see Figure 1).
- 1.2.2 The site lies north of London Road and comprises land formerly Basildon Zoo and neighbouring land at Tompkins Farm. It is also adjacent to Vange Primary school in the south east corner, which serves the existing urban area to the east.
- 1.2.3 Given the sites proximity to the A13 and Five Bells interchange, screening from noise and transport pollution interchange will be required. The aspiration is that these landscape buffers should be multi-functional; providing recreational space, ecological enhancements, and SuDS.
- 1.2.4 Other constraints on the site include the proximity of Local Wildlife Sites (LoWS), proximity of the Langdon Ridge SSSI, existing ecological features, topography (landform) and a fuel pipeline which crosses the site.

1.2.5 Church of All Saints is a Grade II* listed building to the south of the site, off the B1464 London Road in Vange.



Figure 1: Proposed H7b Site Allocation (Source: Regulation 19 Local Plan Policies Map 2018, Basildon Borough Council)



2. Planning Policy

Basildon Borough Revised Publication Local Plan 2014 – 2034 (October 2018)

2.1 This site is designated under Policy H7 for housing development in the emerging Basildon Borough Local Plan (submitted for examination March 2019). Its boundary is defined on the Local Plan Policy map as site H7b, as shown on Figure 1.

A number of requirements are detailed under Policy H7 that impact layout, green infrastructure, and developable area. Those that relate to this study include:

"land to the north of London Road, Vange, as identified on the Policies Map with the notation H7b, will be developed for high quality housing at a density of **35duph to provide around 615 homes**" ...

"Development area H7b will be required to include **open space provision** within its area" ...

...."In order to ensure that development on these sites is well screened from noise and air pollution arising from the A13, and in order to limit harm to the open landscape and wildlife designations to the north, landscape buffers should be provided to the southern boundary of H7a **and to the south-western and northern boundaries of H7b**. Where appropriate, these landscape buffers should be multi-functional and also seek to deliver open space, ecological and surface water management benefits."

2.2 Green Infrastructure also plays an important role within the emerging Basildon Borough Council Local Plan (2018). Policies that relate to green infrastructure and the role it plays within development management are shown below:

2.2.1 Policy NE1: Green Infrastructure

"In delivering green infrastructure projects, and when considering applications for development, the Council will work with partners and developers to:

- a. Protect areas of ecological sensitivity from development and recreational pressures, by locating development away from such locations having regard to the hierarchy of designations, securing the on-site provision of green infrastructure for recreational activity, and seeking contributions towards the delivery of the Essex Coast RAMS. All new housing and employment allocations should also secure strategic landscaping that incorporates space for biodiversity, including new habitat creation;
- b. Recognise the importance of country parks, Local Wildlife Sites, and PRoW as key features of the Borough's green infrastructure, and ensuring they are protected and enhanced where possible;
- c. Secure a net increase in biodiversity across the Borough's area with a focus on priority habitats and priority species;

- d. Encourage the preservation and enhancement of landscape and landscape features;
- e. Provide green infrastructure which ensures buffering and enhancement of watercourses in order to bring their ecological and chemical status in line with the objectives of the Water Framework Directive;
- f. Secure the provision of green infrastructure alongside development across all sites to achieve a reduction in pollution to air, water and soil;
- g. Develop and improve the urban environment through provision of local scale green infrastructure including footpaths, cycleways, green links, parks, gardens, allotments, trees and green roofs; and
- h. Seek the provision of blue and green infrastructure which is multi-functional and incorporates measures that will help to reduce the extent of climate change and/or enable the Borough's communities to adapt better to a changing climate."

2.2.2 Policy NE3 Local Wildlife Sites

"The Council seeks the conservation and enhancement of Local Wildlife Sites and will support proposals which ensure the active management and improvement of biodiversity interest at these sites.

Development proposals, including proposals for recreational uses, which would result in harm to a Local Wildlife Site will be considered against the requirements of policy NE4."

2.2.3 Policy NE4: Development Impacts on Ecology and Biodiversity

- 1. "Proposals which can demonstrate a resultant net gain in biodiversity will in principle be supported, subject to compliance with other relevant policies in this plan.
- 2. Proposals resulting in any direct adverse impacts to biodiversity within Ramsar sites, Special Protection Areas, potential Special Protection Areas, Special Areas of Conservation, Sites of Special Scientific Interest and Ancient Woodland will be refused unless it can be shown that there is an overriding public interest which necessitates that development occurring in that location.
- 3. Proposals resulting in indirect adverse impacts on sites with these designations, such as recreational disturbance, must be fully mitigated through a combination of on-site measures such as the provision of suitable alternative natural green space within the development site, and a financial contribution towards the measures set out in the Essex Coast Recreation Avoidance and Mitigation Strategy (RAMS).
- 4. A management scheme must be put in place to ensure the on-going maintenance of any on-site mitigation measures. Proposals which may result in adverse harm to other sites with local biodiversity interest, including those sites with protected species, priority species and/or priority habitats, will only be supported if they can meet the following requirements:
 - a. It must be demonstrated that there is a need for the development proposed and harm to biodiversity cannot be avoided through locating the development on an alternative site with less harmful impacts;

- b. Where an alternative site is not available, the development proposal should seek to avoid adverse harm to biodiversity by virtue of the design and layout of the development. The Council must be satisfied that all reasonable opportunities to avoid harm to biodiversity have been taken;
- c. Where it has not been possible to avoid all harm to biodiversity, as required by a) and b), the development proposal should seek to apply management and mitigation techniques which retain and enhance biodiversity on site. The Council must be satisfied that all reasonable opportunities to secure on-site management and mitigation have been taken;
- d. Where it is likely that harm to protected species, or priority species is not fully addressed through a), b) and c), species translocation within the site, or to a suitable site nearby, in accordance with Natural England licences will be required to address the remaining harm to that species. The Council must be satisfied that the relocation site will provide a longterm suitable habitat for the species in question. A management plan must be put in place to manage the relocation site as a suitable habitat for a period of at least 20 years; then
- e. As a last resort, if the harm to biodiversity in terms of both quantity and quality have not been fully addressed through a), b), c) and d) off-site compensation which would result in a net gain in biodiversity will be required. A compensation site must be identified which has the potential to be broadly equivalent to that habitat being lost, and a management plan prepared. Arrangements must be put in place to deliver that plan over a period of at least 20 years. 217 Proposals affecting ecologically sensitive sites and designated sites should be accompanied by an ecological assessment which should conform with guidance set out by the Chartered Institute of Ecology and Environmental Management (CIEEM) or an equivalent standard. Where insufficient information is provided, the Council will take a precautionary approach to the protection of ecological assets."

2.2.4 Policy NE5: Development Impacts on Landscape and Landscape Features

"The landscape character and local distinctiveness of the Borough shall be protected, conserved and, where possible, enhanced. Proposals for development shall take into account the local distinctiveness and the sensitivity to change of the distinctive landscape character area as set out in the Borough's Landscape Character and Greenbelt Landscape Capacity Study (2014), or any subsequent review. Development will be permitted provided that it protects, conserves and, where possible, enhances:

- a. The landscape character and local distinctiveness of the area including its historical, biodiversity and cultural character, its landscape features, its scenic quality, its condition and its tranquillity;
- b. The distinctive setting of, and relationship between, settlement and buildings and the landscape including important views, landmarks and the degree of openness;

- c. The nature conservation value of the area including the composition, pattern and extent of woodland, forests, trees, field boundaries, vegetation and other features;
- d. The recreational value of the landscape;
- e. The special qualities of rivers, waterways, wetlands and their surroundings and
- f. The topography of the area including sensitive skylines, hillsides and geological features."

Heritage Impact Assessment

2.3 In December 2020, a Heritage Impact Assessment was undertaken for site H7 to establish the impact that development may have on the heritage assets in the surrounding area. With the exception of the former Rectory site which later sited Basildon Zoo, the historic assessment finds that the site is historically comprised of agricultural land and remained undeveloped. There are no designated heritage assets within the site boundary, however, views of the Grade 11* listed Church of All Saints are present, due to its location on the immediate boundary along the B1464 London Road. With regard to the development of H7b Site, the extent of the impact will largely depend upon the extent of development and how existing views from the church will change the verdant landscape to a suburban context. The level of harm will be less than substantial with regard to the NPPF and will at least be low; this could rise to moderate/large depending on the extent to views are impacted by development. Harm that arises from the development of H7b can be reduced through appropriate masterplan design.

3 Landscape Analysis

3.1 Landscape Structure

- 3.1.1 The landscape in and around the H7b Site study area contains designated areas and features, which are protected by legislation and / or National and Local planning policy. Figure 3 identifies landscape features, designations and other characteristics that affect the landscape value and sense of place.
- 3.1.2 Parts of the study area are rich in ecological interest. The key designation is the Tompkins Farm Meadow Local Wildlife Site which is to the north west boundary of the allocation and the Vange Hill and Golf Course Local Wildlife Site which abuts the northern and eastern boundaries.
- 3.1.3 This land is predominantly horse-grazed grassland, broken up by mature substantial hedgerows. Areas of deciduous woodland are located within the site towards the north-eastern corner, which extends beyond the site boundary to form the southern edge of the golf course. There are a substantial number of hedgerows which are mature and of high ecological quality, located within the site and on the site boundaries.
- 3.1.4 Definitive footpaths are located along the northern edge of the site, linking Basildon Hospital to the village of Vange. This footpath sits between the study area boundary and the southern boundary of Basildon Golf Course appears to be the most well-used footpath. This footpath crosses into the site in the north eastern corner, running northsouth adjacent to a mature hedgerow and is accessed to the west of Vange Primary School from London Road. There are a number of other footpaths that meet at the north-eastern corner of the site.
- 3.1.5 Topography is a key consideration on this site. As shown in Figure 4, the site slopes south, with cross valley views possible from the northern edge of the site closest to the Golf course. Visually, this makes the northern boundary the most sensitive to development.
- 3.1.6 The site is absent of any watercourses and is located in Flood Zone 1.

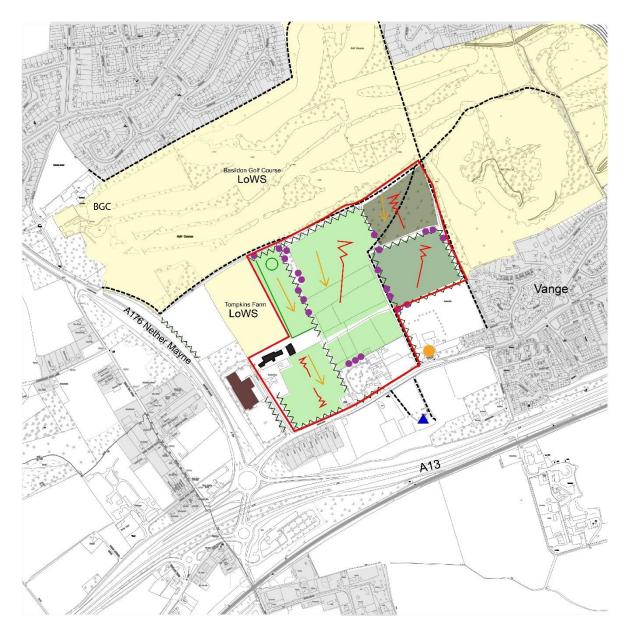




Figure 3: Basildon H7b Allocation Landscape Structure

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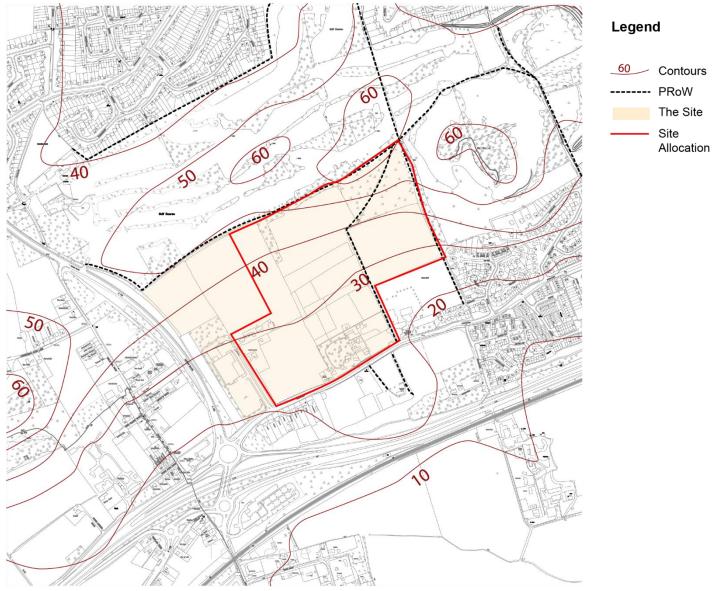


Figure 4: Contours of H7b Site Allocation and Wider Site

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3.2 Landscape Character Context

- 3.2.1 There are national, county and district scale landscape character assessments that cover the landscape within and around the Basildon H7b site. The national scale assessment has not been analysed for this assessment, as more detailed data is available.
- 3.2.2 The two relevant character assessment for this study are:
 - 1. South Essex Coastal Towns (G3)
 - 2. Langdon Hills (LCA14)
- 3.2.3 Although both these studies could be classed as outdated, both assessments identify characteristics that applicable to the study area.
- 3.2.4 The Agricultural Land Classification (ALC) also identifies that the site is predominantly comprising of Grade 3 classification (good to moderate).
- 3.2.5 The Essex LCA identifies the study area to be located within the G3 South Essex Coastal Towns.

Landscape	Landscape	Key characteristics
Туре	Character Area	
Urban Landscapes (G)	South Essex Coastal Towns (G3)	 Large areas of dense urban development. Strongly rolling hills with steep south and west facing escarpments covered by open grassland or a mix of small woods, pastures and commons. Extensive flat coastal grazing marshes in the south adjacent to the Thames Estuary. Large blocks of woodland in the centre of the area. Narrow bands and broader areas of gently undulating arable farmland, with a remnant hedgerow pattern, separating some of the towns. Particularly complex network of major transportation routes. Pylon routes visually dominate farmland in the A130 corridor.

Table 1: Essex Landscape Character Areas

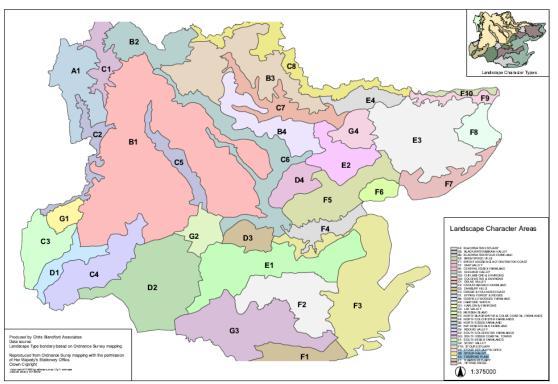


Figure 5: Essex Landscape Character Areas (Chris Blandford Associates, 2003)

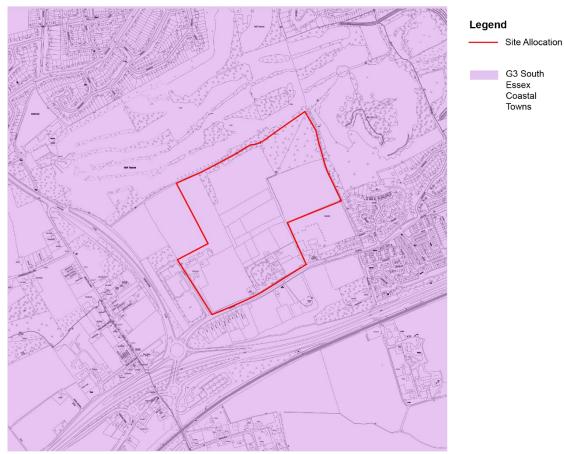


Figure 6: Essex Landscape Character Areas Site overlay (Place Services, 2021)

3.2.6 Similarly, the Basildon Landscape Study undertaken by The Landscape Partnership (2014) identifies the study area falling within one LCA (as shown in Figure 7). This is LCA14 – Langdon Hills. Details of this LCA include:

LCA	Key characteristics
LCA14 Langdon Hills	 The landform is strongly undulating encompassing the elevated Langdon Hills with sloping sides and secondary valleys Medium sized rectilinear arable fields and small scattered pastures with mixed tall and clipped hedgerows to the south east Extensive woodland cover, predominantly Oak with a mix of Sycamore, Ash, Field Maple, Hawthorn and Elm Some secondary woodland on former plotlands and mature Oaks and Poplars throughout the golf course. Higher ground allows some extensive views overlooking the Thames Estuary Ecological designations cover large parts of the character area All Saints Church in Vange is an important viewpoint and landmark Extensive network of Public Rights of Way run through and connect areas of informal recreation

 Table 2: Basildon Landscape Character Areas

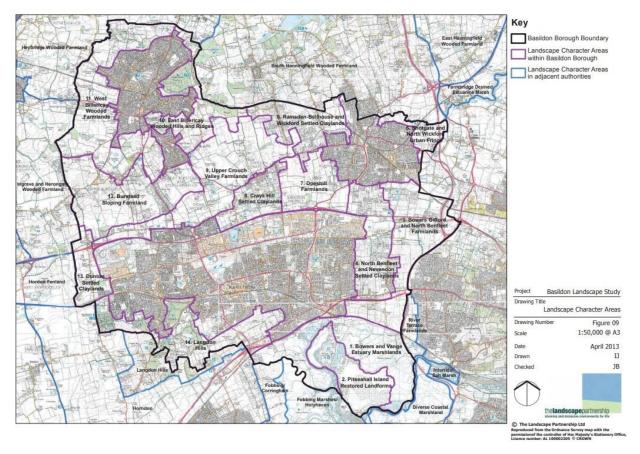


Figure 7: Basildon Landscape Types and Character Areas (The Landscape Partnership, 2014)

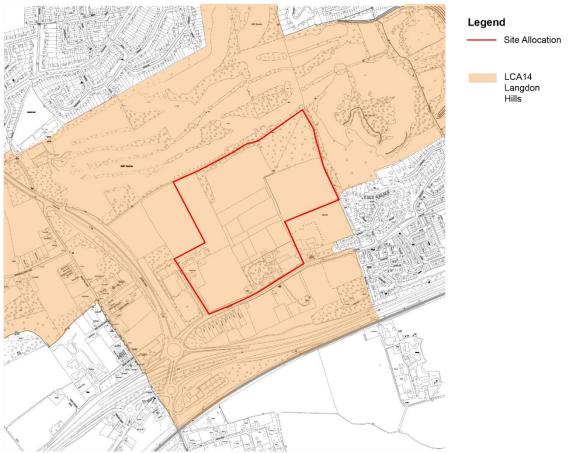


Figure 8: Basildon Landscape Character Areas Site Overlay (Place Services, 2021)

3.3 Site-wide Characteristics

- 3.3.1 A site-wide assessment of the character of the landscape has been undertaken to inform the Green Infrastructure framework for future development.
- 3.3.2 Field survey work was undertaken in May 2021 to confirm and refine the baseline desk study, recording characteristics that cannot be recorded via the desk study alone, and informing the analysis and assessment. Findings were recorded onto survey sheets and OS mapping.
- 3.3.3 Drawing on the baseline work and a field assessment, a site wide characteristic study has been undertaken.
- 3.3.4 The study divides the site allocation into site-scale landscape parcels. Site H7b has been divided into 7 parcels (Figure 9).
- 3.3.5 For each parcel, there will be a description of the key characteristics and site photographs.



Figure 9: Site-scale Landscape Characterisation of the site allocation (Place Services, 2021)

Parcel 1	Key Characteristics
	Parcel 1 is located towards the north of the site is one of the smallest. It forms a long rectangle with a NW/SE axis.
	The current land use is equine grazing, with dense hedgerows/woodland to the north and east. The western boundary is formed by low quality hedge, which is approximately 1-1.5m high and mainly hawthorn. The southern boundary is denser and a little taller but also low quality.
	The gradient in the field is a gentle-moderate slope, rising up to the mature trees to the north. There is a circular stand of trees approximately 30m x 50m in the northern quarter.
	Due to the landform and vegetation, there are long distance views out to the south, and south west. Despite the vegetation to the north and north east, this parcel feels open and exposed but defensible.



Figure 10: View to the north with stand



Figure 11: View to the south / south-west towards the Thames

Parcel 2	Key Characteristics
	Parcel 2 is the largest parcel of land and is a slightly inverted L shape.
2	The current land use is equine grazing. There are well established and dense hedgerows and woodland to the west, north and east of the site. The southern boundary is not well defined with little vegetation, forming evident views into Parcel 5.
	The landform of this parcel is generally a gentle - moderate slope with the north east corner rising sharply in the final 100m. There is a level ridge approximate 80m from the southern boundary, along which a vehicle track has been formed.
	The southern portion of the parcel has limited views out with some glimpsed views of All Saints church. While the northern portion has extensive and far-reaching views to the south west, south and south east.



Figure 12: View towards the north-east corner across horse paddocks



Figure 13: View south towards Parcel 5

Parcel 3	Key Characteristics
	Parcel 3 forms the north east corner of the H7b allocation. It is currently covered with well-established scrub to the south and some perennial vegetation to the north.
3	The scrub is typical of the area, mainly consisting of native trees which are predominately hawthorn and bramble. These create dense areas which are impenetrable for humans.
-	The topography of this parcel is steep, rising up to the northern edge.
	There are spectacular views from the PRoW to the north of the parcel and no views within the southern scrub areas.



Figure 14: View of hawthorn and bramble scrub to the south



Figure 15: View from the PRoW overlooking Parcel 3 towards the south

Parcel 4	Key Characteristics
4	Parcel 4 is roughly square in shape and is enclosed on three sides by well-established hedge and woodlands. The southern boundary with the school has a well-established treeline with metal palisade fencing at the base. The field itself was uncut grass/meadow at the time of visit.
-	The topography is moderately sloped up towards the northern boundary.
	The southern portion of the parcel is well screened, with limited views on to the school grounds. The northern portion of the site allows long range panoramic views towards the south.
	The dense woodland to the east screens views of the existing residential area. Only glimpses of one or two properties on The Vale, Angel Close and Cashmere Way can be observed.



Figure 16: View south/south-east



Figure 17: Southern boundary fence with Vange Primary School

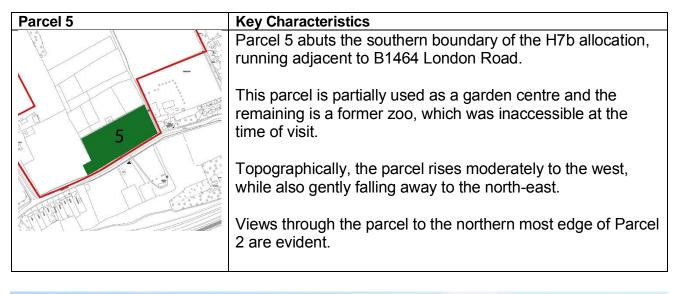




Figure 18: View looking north from London Road, through Parcel 5 onto Parcel 2.



Figure 19: View south from Parcel 3 into Parcel 5

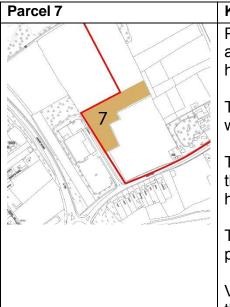
Parcel 6	Key Characteristics
	Parcel 6 abuts the southern boundary of the H7b allocation., running adjacent to B1464 London Road.
6	The current land use is equine grazing, with dense well- established hedgerows to the west, south and eastern boundaries. The northern boundary is formed by landform change and equine. Part of the eastern boundary is formed by the domestic boundary of Tompkins Farm.
	The gradient in the field is a gentle-moderate slope, rising up to the north. Due to the landform and vegetation, there are long distance views out to the south and south west from the northern edge of the parcel.
	A marker for major infrastructure was found on the southern boundary approximately 10m west of the housing on London Road.



Figure 20: View south across Parcel 6



Figure 21: Oil pipeline marker



Key Characteristics

Parcel 7 is already developed and currently in use as an automotive garage and residential dwelling, with associated hardstanding.

The landform rises gently towards the north of the parcel, with areas levelled for buildings and hard standing.

There are several unwanted vehicles stored on and around the hardstanding, and potential for land contamination is high.

There is a fenced sports area to the eastern side of the parcel.

Views within the parcel are limited due to the buildings, but there are several long-distance views out of the site.



Figure 22: Long view to the south east



Figure 23: Long view to the south west



Figure 24: Long view to the west/south-west

4. Ecological Assessment

4.1 Methodology

- 4.1.1 Each grassland dominated field, and subdivisions of those fields, were walked as far as possible and the plant species present in each were recorded along with a measure of their frequency using the DAFOR scale (Dominant-Abundant-Frequent-Occasional-Rare). Additional notes were recorded about the structure of the grassland in each unit and any other significant features, with an assessment of habitat type according to the UK Habitat Classification.
- 4.1.2 For comparability, field numbering F1 to F5 is as identified in Plan ECO2: Ecological Features within the Ecology Solutions report of May 2021 prepared for the site promoters. Fields F4 and F5 are outside of the allocation and are considered in section 7.4 below; F5 is the LoWS meadow. Additional habitat units were numbered according to the same sequence, with F6 and F7 in the north east corner of the site.
- 4.1.3 Other habitats present, including woodland blocks, mixed scrub and hedgerows were also recorded and assessed.

4.2 Limitations

Grassland surveys were considered incomplete and therefore only indicative, as many species were not yet visible or readily identifiable, some fields could not be thoroughly covered due to the presence of grazing horses, and some fields had been grazed too intensively for the full range of species to be visible.

4.3 Results

4.3.1 The predominantly grassed site slopes up from the road to the south to an east-west public footpath that separates it from Basildon Golf Course further north. The fields are divided by broad, tall hedgerows and strips of linear woodland. In the centre of the site is a complex of industrial/commercial buildings including a garage, stables, a sports pitch and numerous decaying vehicles. In the southeast of the site, is the former Basildon Zoo site, which comprises a small-scale mosaic of hard standing and modified vegetation of low ecological value.

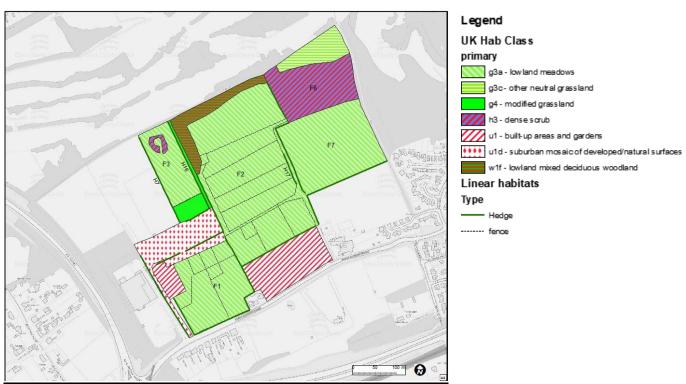


Figure 25: UK Habitat Classification Map

Grassland

- 4.3.2 The grasslands across the site were largely considered to be consistent in community type, although their condition varied according to their recent history of grazing. The prominence of woody scrub and bare ground (through poaching) also varied between and within habitat units. All of the fields were being grazed at the time of the survey, or showed signs of recent grazing, apart from F7.
- 4.3.3 F1 This is the southernmost field, subdivided by temporary fencing to give five smaller paddocks and two larger ones. The smaller paddocks were all heavily grazed with no survey possible, and access was not possible to the larger paddocks. Visually, this field looked comparable in composition to the other fields.
- 4.3.4 F2 The largest of the fields, F2 was divided into five strips to the north of an east-west grass track (F2a-d), with a strip to the south of the track (F2e) further subdivided into smaller paddocks. Different sections had been grazed at different intensities or frequencies, with varied sward heights as a result. Young scrub was more prominent towards the top of the slope and in more restricted patches elsewhere.
- 4.3.5 Overall, F2 was the most diverse of the fields with 46 species recorded (excluding woody species), only five of which, all recorded as 'Rare', are considered undesirable. A few specimens of the Essex Red List species Pale Flax were present. Meadow Buttercup, Common Bird's-foot-trefoil and Creeping Cinquefoil were all prominent throughout, with Wild Carrot, Common Knapweed and Common Cat's-ear 'Frequent' or 'Abundant' in places.



Figure 26 – Looking west across F2

4.3.6 F3 - This field forms a relatively narrow north-south strip with a large ring of scrub towards the top of the slope. The southernmost section was fenced off (F3a) and had been heavily grazed and poached, with several patches of obvious nutrient enrichment visible. Just to the north of the fenced-off section, was a similarly sized area that had been very heavily poached (F3c), such that the sward was fragmented and the ground surface was very uneven. The remainder of the field (F3b) showed some signs of poaching but had not been grazed in the immediate past. Young scrub was abundant, especially lower down the slope.



Figure 27 – Looking north across F3, showing heavily poached section

- 4.3.7 A total of 35 species was recorded, including Small Fruited Prickly Sedge and Glaucous Sedge. Bulbous and Meadow Buttercup, Common Bird's-foot-trefoil, Wild Carrot and Creeping Cinquefoil were all 'Frequent' with Meadow Vetchling locally so.
- 4.3.8 F6 This habitat block in the northeast corner of the site supports naturally regenerating mixed scrub, developing into young woodland, with more open grassland remaining along the northern and eastern edge.
- 4.3.9 The remaining open grassland is dominated by coarse species such as False Oatgrass, Cock's-foot and Barren Brome with abundant Cow Parsley and patches of Common Nettle. Other species include Wild Carrot, Meadow Foxtail, Hairy Willowherb, Creeping Buttercup and Common Cleavers. The margins are marked by Bramble thickets grading into woody scrub.
- 4.3.10 F7 The prominence of coarse grass species in parts of this site, including Tall Fescue and Common Couch, and the emergence of a thatch of dead material reflect low management effort in recent years. However, a total of 35 species was recorded including locally 'Abundant' Common Knapweed, and 'Frequent' or locally 'Frequent' Common Bird's-foot Trefoil, Meadow Buttercup, Sweet Vernal Grass and Hedge Bedstraw.

Woodland and scrub

- 4.3.11 The northernmost section of F2 is bordered to the west and north by bands of mature broad-leaved woodland, comprising Pedunculate Oak and Ash, with an understorey including Hawthorn, elm, Field Maple and Blackthorn and a ground flora typical of secondary (relatively recent) woodland.
- 4.3.12 In the scrub area of F6, Pedunculate Oak is forming the establishing canopy, with Wild Cherry, Ash, Hawthorn, Field Maple and Pear. Developing woodland ground flora includes Bramble, Wood Avens, Ivy, Red Campion and False-brome, with some Sweet Vernal Grass, Common Vetch and Meadow Foxtail in the remaining open areas.

Hedgerows

- 4.3.13 The majority of the hedgerows bordering and dividing the fields within the site are tall, broad and entire, with the expected diversity for the area, although none would be considered species rich. The exceptions are H7, H16 and H17: H7 is sparse and low, although it is not obvious whether this is from decline or the poor establishment of a new hedge; H16 is a tall, narrower hedge that has been maintained in recent years; H17 is probably a younger feature, composed entirely of Blackthorn, and has been closely managed to provide a lower, narrow hedge.
- 4.3.14 Some hedges contain mature Pedunculate Oak and Ash trees, and other typical species include elm, Hawthorn, Blackthorn, Field Maple and Wild Cherry.

4.4 Discussion

<u>Grassland</u>

- 4.4.1 There were no indicator species to suggest strongly acid or calcareous soil conditions in the grasslands, although species favouring both were recorded. The grassland habitat is therefore considered to be circum-neutral, with an apparent minor, localised variation in pH.
- 4.4.2 Grass cover varied across the site and was apparently higher where there was active grazing, but the percentage cover of forbs was sufficient to classify the grassland as g3 Neutral Grassland rather than g4 Modified Grassland, according to the UK Habitat Classification, in all but a few restricted areas.
- 4.4.3 Perennial Rye-grass, the most consistent indicator of agricultural improvement, was recorded as present in all fields apart from F7, although it should be noted that is also a natural component of lowland grassland. Its occurrence in each field was patchy, with a particular association with the latrine sites of the grazing horses and with areas subject to disturbance, such as field entrances. Across the fields as a whole it was consistently present, but in no way dominant and not in a way that suggested any systematic improvement of the grassland.
- 4.4.4 The other species most commonly associated with agricultural improvement, White Clover, was present locally in F2 and F3, but again was mostly restricted to areas of damaged sward.

- 4.4.5 Despite the timing of the survey, similar species diversity was visible across the site, with the exception of areas subject to the most intensive grazing where the sward has become broken. Species richness and the types of species present suggest that the habitat conforms to the Lowland Meadow Priority Habitat, g3a in the UK Habitat Classification. However, the grassland on this site is not a perfect match for the best examples of this habitat, such as within the Langdon Ridge SSSI to the west of the site, which has similar environmental characteristics.
- 4.4.6 The condition of the grassland habitat, considering the criteria that underpin the Defra Metric, varied within fields as well as between fields. These criteria include indicators of poor condition: cover of undesirable species above 5%, more than 5% physical damage, cover of scrub and bramble more than 5%. The presence of undesirable species was generally very low, with only scattered individual specimens of Curled Dock, Broad-leaved Dock, Common Ragwort and Spear Thistle, and localised incidence of Creeping Thistle. As discussed above, White Clover was locally present in some places. Physical damage was extensive in restricted areas, presumably where horses have been kept over-winter in wet conditions. Elsewhere some damage from poaching could be seen, but not in excess of 5%. Scrub and Bramble growth is apparent in most parts of the site, often in excess of 5% in individual habitat units, but not consistently distributed across each one.
- 4.4.7 Overall, the condition of the grassland habitat would be assessed as 'Moderate', forming lower quality Priority Habitat as a result of a history of inappropriate management, with an excess of scrub the only condition criteria that is consistently negative. In patches that have been more severely damaged, condition would be assessed as 'Poor'. Areas identified as g4 Modified grassland are inherently considered to be in 'Poor' condition.

Other Ecological Value

- 4.4.8 It is noted that the invertebrate survey carried out by Ecology Solutions identified "a large and diverse invertebrate assemblage" of "high quality". The analysis carried out using the Pantheon toolkit identified high Species Quality Index values for a range of habitat features: short sward and bare ground, tall sward and scrub, arboreal, decaying wood. These represent the mosaic of habitats found across the whole site, with open grassland of varying structure, tall broad hedgerows including mature trees, and broad-leaved woodland. Although the report highlights the importance of the hedgerows, species-rich grassland and dung, the overall species diversity recorded is a function of the different habitat features present and their extent.
- 4.4.9 During targeted surveys, low populations of three reptile species have been recorded on the site: Common Lizard, Slow Worm and Adder. These do not appear to be significant populations, although the survey methodology and timing may not have favoured the recording of Adders in particular. The refuges used were 0.5m x 0.5m squares of roofing felt, which are not favoured by Adders, and there were no surveys in the spring period, which is generally more effective for all reptiles. There is known to be an established population of Adders in this area (R.Cole *pers. comm.*).

4.5 Assessment

- 4.5.1 The site appears to represent a remnant of a traditional landscape, with substantially unimproved grasslands in small fields divided by mature hedgerows, and so its apparent ecological value should not be unexpected. Although not subject to nature conservation management, a recent history of horse grazing has largely maintained the character and composition of the grassland communities.
- 4.5.2 The extent and quality of the grassland and hedgerow habitats mean that the site has a relatively high Baseline Habitat Value, as measured by the Defra Metric and so delivering 10% net gain in biodiversity value with the loss of any significant proportion of the grassland is not likely to be possible with entirely on-site measures.
- 4.5.3 The current condition of the site's grassland means that net gain for biodiversity can be achieved in retained areas through an improvement in habitat condition. This could be achieved by application of a management strategy based upon nature conservation outcomes, aiming to reduce the frequency of scrub, and to graze or cut the grassland in a more favourable way.
- 4.5.4 The already developed and more damaged areas of the site have no or little ecological value and could form the core developable area, with further opportunities on the areas where grassland condition is poor, generally on the lower slopes.
- 4.5.5 The site's hedgerows are important ecological features, including for the recorded invertebrate assemblage, and so these should be largely retained as a core part of the site's green infrastructure, also providing north-south connectivity through the site.

5. Green Infrastructure Framework

5.1 A Green Infrastructure Framework Plan as shown in Figure 30 has been prepared to indicate how the policy requirement to provide a suitable landscape buffer can be met on site, whilst also providing developable areas for residential growth.

Key Recommendations

- 5.2 The recommendations below relate to general green infrastructure principles and should be used to inform a site-wide masterplan. The aim is to achieve sensitively sited, high quality design appropriate to the sensitivity and character of this area.
- 5.3 The Green Infrastructure Framework Plan includes a typical development scenario and is structured around a series of linear green corridors that incorporate the existing extensive mature hedgerow network and a large Public Open Space (POS) to the northern edge, which works with the site's topography to provide a buffer with the adjacent ecologically sensitive areas and to lessen the visual impact of the development.
- 5.5 The areas to the north of the site have a high visual sensitivity, due to the topography creating elevated views from the south. The upper slopes also tend to support the most diverse grassland habitat, with less damage to swards from intensive horse grazing. It is recommended that this buffer is a minimum of 50 metres wide to ensure appropriate levels of protection remain once developed.
- 5.6 The POS/ecological buffer to the north would be the main focus of ecological enhancements, with opportunities to provide high quality recreation spread throughout the site. Opportunities for natural play and amenity provision could be accommodated within the linear green spaces, the ecological buffer to the north and around the SuDS space(s) to the south. However, restoring high quality grassland habitat may not be compatible with amenity uses and so some zonation may be necessary to ensure that ecological objectives can be achieved. Areas of more diverse grassland habitat should not be included within amenity provision.
- 5.7 The site topography has also informed the location of potential SuDS opportunities to the south west corner and east of Vange Primary School.
- 5.8 On plan there is little direct interface with the existing settlement of Vange to the east, due to the location of Vange Primary school. However, when viewed along London Road this development would be seen as an extension to the settlement boundary.
- 5.9 Links to the existing PROW to the north and east have been included, though due to the natural surfacing these are unlikely to serve as commuting routes. Improvement of the surface/connection to Cashmere Way would provide a serviceable pedestrian route from/through Parcel 4 to the east.

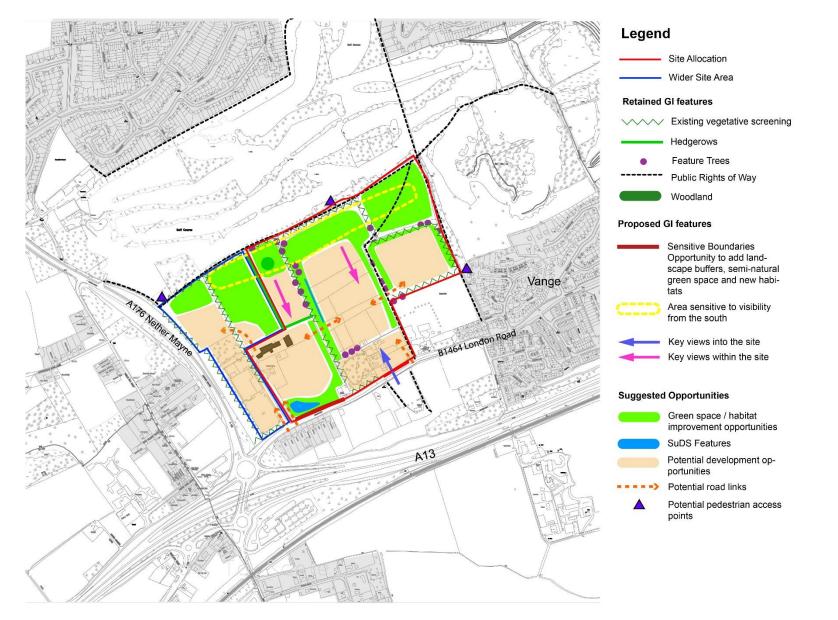


Figure 28: Green Infrastructure Framework Plan

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6.0 Indicative Developable Area Calculations

- 6.1 Calculations have been undertaken to understand if the policy requirement of 615 homes under Policy H7 can be physically accommodated on site using the indicative development scenario included in the Green Infrastructure Framework Plan.
- 6.2 Using the 7 parcels identified in Figure 29, the table below (Table 3: Land Use Budget) illustrate the number of units that could be achieved based on the Gross Developable area of each parcel.
- 6.3 Based on these findings, it is estimated that 391 units could be achieved using the densities set out in Figure 29. This is 224 units short of the requirements under Policy H7.



Figure 29: Potential housing density plan

Table 3: Land Use Budget

Parcel	Gross Developable Area (ha)*	Units (25 dph)**	Units (35 dph)**	Units (45 dph)**
1	1.3	33	-	-
2	3.5	38	70	-
3	0	-	-	-
4	1.8	-	63	-
5	1.5	-	-	68
6	1.7	-	-	77
7	1.2	-	42	-
Total	11	71	175	145
Total Dwellings		391		

*Gross Area includes:

- Access roads
- Private gardens Car Parking
- •
- Incidental Open Space

**figures rounded up/down to the nearest whole number

7.0 Potential site expansion

7.1 Introduction

- 7.1.1 As demonstrated in Section 6 of this report, to achieve the appropriate green infrastructure framework, including a sufficient buffer to the northern site boundary, the requirement for 615 dwellings cannot be achieved.
- 7.1.2 However, through Regulation 19 consultation of the Local Plan it was discussed that there is potential for the site allocation boundary to be amended in order to deliver the amount of housing stated within the policy and to include additional land parcels adjacent to the existing allocation was discussed. The proposed area is shown within Figure 29 below.
- 7.1.3 The site expansion area includes, horse grazing pastures, the Tompkins Farm Meadow LoWS, existing areas of scrub and the Homebase site to the south west.

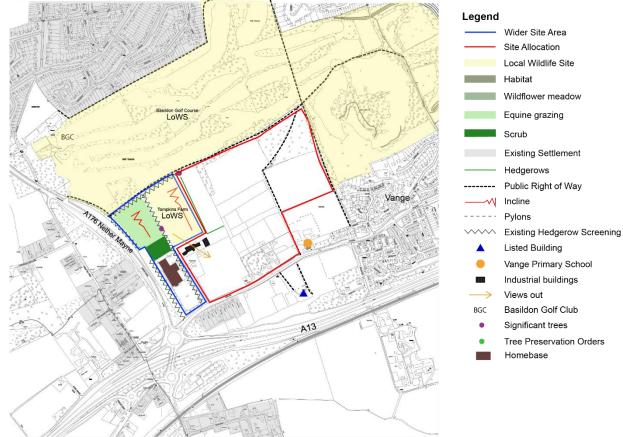


Figure 30: Potential site expansion area

7.2 Landscape Characterisation

7.2.1 Drawing on the landscape structure analysis, the study divides the wider site into 3 sitescale landscape parcels (Figure 30) in the same process as the site allocation.



Figure 31: Wider site Landscape Characterisation (Place Services, 2021)

Character Area 8	Key Characteristics		
	Parcel 8 is a brownfield site that is defined by the existing Homebase site and the associated parking. The parcel abuts both London Road and Nether Mayne Road on the southern and western boundaries respectively.		
8	All boundaries are formed by well-established hedgerows, with the exception of the road entrance to Homebase in the SE corner.		
	The parcel is generally flat, with a small gradient downhill along the Homebase access road that lies to the east of the site.		
	The north of the parcel encompasses an area of dense trees and undergrowth.		



Figure 32: View west along London Road, with the southern hedgerow of Parcel 8 on the left

Key Characteristics		
 P abuts the western edge of the H7b allocation, alongside A176 Nether Mayne Road. The road noise s road is very apparent within this parcel. rcel is currently used for equine grazing, with dense tablished hedgerows lining all four boundaries. The can be accessed from the south-east corner, through gap in the mature hedgerows. dform gently rises towards the north, although the hedgerows restrict views into and out of this parcel. 		



Figure 33: View west into the horse paddock



Figure 34: View north across the paddock

Character Area 10	Key Characteristics		
The second of th	Parcel 10 is an identified Local Wildlife Site, namely Tompkins Farm Meadow.		
10	The current land use is equine grazing. There are well established dense hedgerows along the north and western boundaries, with a low quality hedgerow separating the parcel from Parcel 1. The southern boundary is defined by the buildings and hard standing at Tompkins Farm		
	The landform of this parcel is generally a gentle - moderate slope towards the northern boundary.		
	The southern portion of the parcel has limited views out, whilst the northern portion has extensive and far reaching panoramic views of the south.		



Figure 35: View north into Parcel 10, with view of the hedgerow boundary to the left to Parcel 9

7.3 Ecological Assessment

7.3.1 The assessment below relates to the area proposed as an expansion of site allocation H7b.

Grassland

- 7.3.2 F4 This is the westernmost of the fields and had been grazed moderately hard, with extensive areas of broken, poached ground but also widespread scrub, some of it several years in age. This was the least diverse field of those recorded with a total of 24 species, and none of particular note. Bulbous Buttercup and Creeping Cinquefoil were both 'Frequent', with Agrimony locally 'Frequent', but overall floristic abundance was low.
- 7.3.3 F5 This is the designated Local Wildlife Site, with temporary fencing separating a section in the southeast, which is then further subdivided.
- 7.3.4 The southern most part of the southeast section (F5a) had been very heavily grazed, with no survey possible. The remainder of the southeast section (F5b) had evidently been split into two sections by a fence that had subsequently been removed. The eastern half had been moderately heavily grazed, with low sward height and reduced diversity, but the western half was ungrazed with a coarse grass sward and scrub prominent at the southern end.
- 7.3.5 The main part of the field also varied, with a possibly re-seeded section at the southern end in which Perennial Rye-grass and White Clover were co-dominant. This part of the field was lightly grazed, with frequent young scrub in places, including a denser patch of Bramble. A total of 29 species was recorded, but these included locally 'Frequent' Spiny Restharrow and some Yellow Rattle, both indicators of unimproved grassland. Common Bird's-foot-trefoil, Wild Carrot and Creeping Cinquefoil were all 'Frequent' throughout, with Meadow Buttercup and Common Knapweed 'Frequent' in parts.

<u>Scrub</u>

7.3.6 F8 - This small habitat block lies to the north of the Homebase store and consists of tall mixed scrub, with Pedunculate Oak, Hawthorn, Blackthorn, Ash and Field Maple, with a sparse ground flora of False-brome, Lords-and-ladies, Common Cleavers, Ivy, Cow Parsley and Bramble.



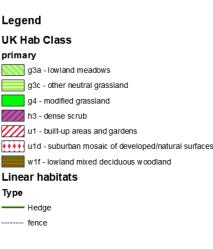


Figure 36: Potential Site Expansion, UK Habitat Classification

<u>Assessment</u>

- 7.3.7 Apart from the already developed Homebase site, the area of potential expansion is consistent ecologically with the original allocation site, and the general points made in section 4.4 apply to it.
- 7.3.8 Although not the most diverse of the fields, Tomkins Farm Meadow LoWS (F5) is the only one that supports populations of the unimproved grassland indicators Yellow Rattle and Spiny Restharrow. Its condition would only be considered to be 'moderate' due to locally high cover of scrub, but apart from the improved section in the southwest corner, it still meets the LoWS selection criteria.
- 7.3.9 In contrast, the grassland in F4 is damaged and impoverished, with low diversity and a high abundance of scrub. Its condition is poor and so it could be considered for development without significant ecological implications.
- 7.3.10 The hedgerow between F4 and F5 has high ecological value in the context of the wider site and should be retained.
- 7.3.11 The scrub habitat in F8 has not matured sufficiently to have gained significant ecological value and represents a resource that is widespread in the surrounding area, and so could be considered for development.

7.4 Green Infrastructure Framework

- 7.4.1 The site expansion area has been incorporated into the Green Infrastructure Framework Plan as shown in Figure 36.
- 7.4.2 The Green Infrastructure Framework Plan includes the same development scenario for the site allocation area, with the potential to expand and develop land to the west that can connect into the site via potential road links.
- 7.4.3 As Tomkins Farm Meadow LoWS is the only parcel that supports populations of the unimproved grassland indicators Yellow Rattle and Spiny Restharrow, therefore the majority of the parcel has been retained as green space within the northern landscape buffer. Managed public access through the LoWS would be acceptable, but widespread amenity use could harm the condition of the habitat. Similarly, the LoWS would not be suitable to use for SUDS provision.
- 7.4.4 The southwest corner of the LoWS is classified as modified grassland and therefore has development potential. This area would also provide capacity for a road link to ensure the movement network is appropriate.
- 7.4.5 The small woodland/scrub habitat block that lies to the north of the Homebase store is relatively new and in poor condition. There is therefore scope for this to be removed and developed with habitat enhancements provided across other areas of the proposed green infrastructure network.
- 7.4.5 Further links to the existing PROW to the east have been included, though due to the natural surfacing these are unlikely to serve as commuting routes unless improved.

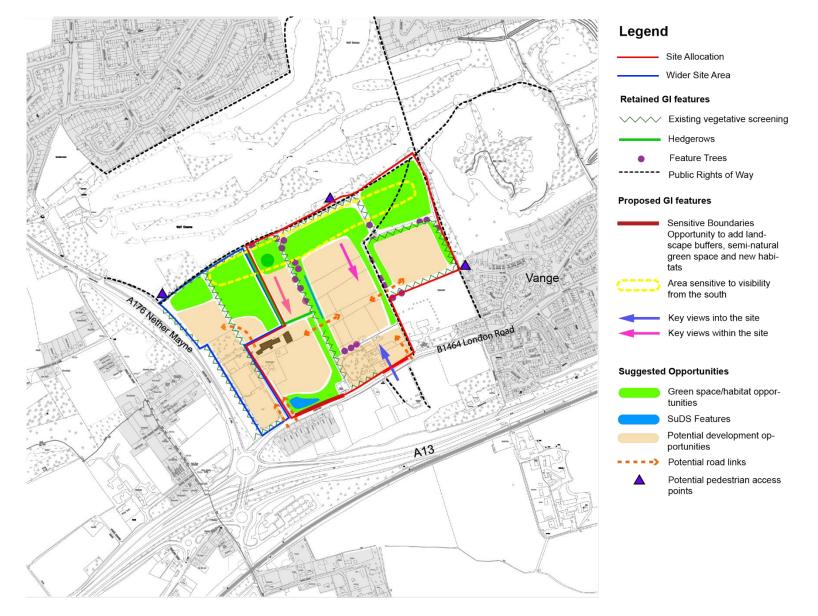


Figure 37: Green Infrastructure Plan for site allocation and wider expansion are

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7.5 Indicative Developable Area Calculations

- 7.5.1 As undertaken for the site allocation alone, the same calculations have been undertaken to understand if the policy requirement of 615 homes under Policy H7 can be physically accommodated on site using the indicative development scenario included in the Green Infrastructure Framework Plan for the site allocation and the wider site expansion area.
- 7.5.2 Using the 10 parcels identified in Figure 38, Table 4 illustrate the number of units that could be achieved based on the Gross Developable area of each parcel.
- 7.5.3 Based on these findings, it is estimated that 511 units could be achieved using the density mix proposed in Figure 38. This is still 104 units short of the requirements under Policy H7.



Figure 38: Potential housing density plan

Table 4: Land Use Budget

Parcel	Gross Developable Area (ha)*	Units (25 dph)**	Units (35 dph)**	Units (45 dph)**
1	1.3	33	-	-
2	3.5	38	70	-
3	0	-	-	-
4	1.8	-	63	-
5	1.5	-	-	68
6	1.7	-	-	77
7	1.2	-	42	-
8	1.8	-	-	81
9	0.8	-	28	-
10	0.3	-	11	-
Total	13.9	71	214	226
Total Dwellings		511		

*Gross Area includes:

- Access roads
- Private gardens •
- •
- Car Parking Incidental Open Space •

**figures rounded up/down to the nearest whole number

8.0 Conclusion

- 8.1 The site allocation H7b is predominantly made up of horse-grazed grassland, broken up by mature substantial hedgerows. Areas of deciduous woodland are located within the site towards the north-eastern corner, which extends beyond the site boundary to form the southern edge of the golf course. There are a substantial number of hedgerows which are mature and of high quality, located within the site and on the site boundaries.
- 8.2 The extent and quality of the grassland and hedgerow habitats mean that the site has a relatively high Baseline Habitat Value, as measured by the Defra Metric and so delivering 10% net gain in biodiversity value with the loss of any significant proportion of the grassland is not likely to be possible with entirely on-site measures.
- 8.3 Topography is also a key consideration on this site. The report has highlighted that the areas to the north of the site have a high visual sensitivity, due to the topography creating elevated views from the south. It's recommended that this landscape buffer is a minimum of 50metres wide with some areas wider to account for Tompkins Farm LoWS and to ensure appropriate levels of protection remain once developed.
- 8.4 Whilst allowing capacity for the recommended 50metre landscape buffer on the northern corridor and suitable landscape corridors along existing hedgerows and road boundaries, it is estimated that 391 units could be achieved, which is 224 units short of the requirements under Policy H7.
- 8.5 If the wider site expansion areas were included with the Green Infrastructure framework proposal, it is estimated that 511 units could be achieved using a density of 35 dph. This is still 104 units short of the requirements under Policy H7 and therefore the policy requirement of 615 is unlikely to be met based on the requirements set within the proposed green infrastructure framework.