Preliminary Ecological Appraisal Report

Hart Road, Thundersley

Legal and General Modular Homes

Report Reference: ER-4743-01

25/11/2020

REPORT CONTAINS SENSITIVE INFORMATION ON BADGERS – DO NOT PLACE IN THE PUBLIC DOMAIN

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Report Reference:	ER-4743-01
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Summary

This report is produced to inform Legal and General Modular Homes of potential ecological constraints associated with a proposed development site.

Methodology

The report is based on a desk study of designated wildlife sites and records of protected or notable species, and an extended Phase 1 Habitat Survey carried out in November 2020.

Findings - Key Points

- The site is policy constrained by encompassing part of a Local Wildlife Site though the biodiversity interest of the part of the LWS in the Site appears very low. Measures to compensate for loss of part of the LWS may need to be agreed with the local planning authority.
- No further detailed surveys are considered necessary to evaluate the site baseline.
- The site has been assessed as having a Biodiversity Unit score of 3.51 and a Hedgerow Unit score of 1.36.
- If the ecological constraints and opportunities plans presented in this report are used to inform design then a 10% net gain in biodiversity units on site appears feasible.
- An Ecological Impact Assessment of the finalised design is recommended.
- An Invasive Species Management Plan is recommended to manage risks of spreading Himalayan balsam and any other undetected species.
- A CEMP (Biodiversity) is recommended to manage residual construction risks of harm to retained habitat, nesting birds, reptiles and badgers.
- A BMP is recommended to show how retained and new habitats on site can maximise their biodiversity potential and contribute to Biodiversity Net Gain.

Introduction

1. Brooks Ecological Ltd was commissioned by Legal and General Modular Homes to carry out a Preliminary Ecological Appraisal (PEA) of land at Hart Road, Thundersley, Essex.
2. This report is produced with reference to British Standard BS:42020 'Biodiversity Code of Practice for Planning and Development' and the CIEEM (2017) Guidelines for Preliminary Ecological Appraisal.
3. In anticipation of the adoption of DEFRA's Biodiversity Metric 2.0 we have used the UK Habitat Classification descriptions rather than the long established JNCC codes. These habitat classifications and 'the metric' are work in progress and could be subject to future change.

Purpose of a PEA

4. A PEA is an *initial assessment* of the baseline for a proposed development site and establishes whether the Site is likely to be constrained by ecology, and whether more information is needed to identify the ecological baseline.
5. The subsequent Preliminary Ecological Appraisal Report (PEAR) is intended to give guidance to a developer and assist with the early stages of project planning and design. Where a site is not complex or constrained, and no additional ecological input is necessary the PEAR *may* be sufficient, and suitable to support a planning application.
6. Biodiversity Accounting metrics are used to quantify the value of a Site in Biodiversity Units - which helps in the later stage of assessing the ecological impacts of the proposed development.
7. Biodiversity Units can help to inform avoidance, or on-Site mitigation levels required; or as a last resort can translate to a direct monetary value where compensation (off-Site) is required. Please be aware that they *can* significantly impact on costs and viability.

The Site

8. The application site 'the Site' comprises a series of horse paddocks, stables and a house and its curtilage.
9. The assessment uses a 2km area of search around the Site for records of protected and notable species and locally or nationally designated wildlife sites.

Figure 1 The Site boundary - red line

Desk Study

Landscape

10. The Site is located in Thundersley, South Essex, between the towns of Basildon and Southend-on-Sea. Residential properties, Hart Road and small woodland blocks form the northern and eastern boundaries. A school is noted to the west with agricultural field to the south.

11. The surrounding landscape is dominated by residential development interspersed with blocks of woodland and small pockets of pasture to all directions before opening out into land associated with the Thames Estuary 2.5km south. The Site is underlain by Bagshot formation -sand, giving rise to slowly permeable seasonally wet acid loamy and clayey soils.

Wildlife Corridors

12. A small drainage ditch appears to make up parts of the Site's west and south boundaries. This looks to be culverted some distance before Prittle Beck, a potential wildlife corridor found 600m south east from the Site. Tree-lines and hedgerows are also likely to provide small scale corridors within close proximity.

13. Numerous blocks of woodland are seen within the surrounding landscape including Thundersley Common and Glen, Pound Wood and West Wood which Prittle Beck runs through. Apart from the latter woodland, there is limited connectivity noted between the Site and larger woodlands. Hedgerows may provide a loose link to a small isolated pocket of woodland 200m south.

Waterbodies

14. No ponds are seen on mapping within 500m.

Figure 2 Analysis of wildlife corridors and higher value habitat in relation to the Site

Designated Sites

Statutory Designations

15. A search has been made to identify any nationally designated sites within a 2km radius of the Site, or internationally designated sites within a 10km radius. The results are shown in the below table.

Table 1 Statutory Designated Sites.

Site Name	Distance from Site	Designation	Summary Interest
Thundersley Great Common	0.5m N	Site of Special Scientific Interest (SSSI)	Rich mosaic of wet and dry heathland merging with acid grassland.
Benfleet and Southend Marshes	1.8km S	SSSI	Extensive series of salt marshes, mud flats, scrub and grassland.
Great Wood & Dodd's Grove	1.9km SE	SSSI	Part of the ancient Hadleigh Great Wood – large area of coppice with standards oak woodland lying on periglacial sands, gravel and clay.
Belfairs		Local Nature Reserve (LNR)	
Benfleet and Southend Marshes	2.8km S	Special Protection Area (SPA)	Annex 1 species including dark bellied brent goose, dunlin, red knot, common ringed plover, grey plover.
		Ramsar	Extensive saltmarshes, mudflats and grassland supporting wintering waterfowl. Qualifying species; Dark-bellied brent goose, grey plover and red knot.
Crouch and Roach Estuaries (Mid-Essex coast Phase 3)	6km N	SPA	Of importance for wintering waterbirds, especially dark-bellied brent goose.
		Ramsar	
Essex Estuaries		Special Area of Conservation (SAC)	Annex 1 habitats include estuaries, mudflats and sandglats, Salicornia saltmarshes, Spartina swards, Atlantic salt meadows and Mediterranean and thermo-Atlantic halophilous scrubs.
Thames Estuary & Marshes	7.8km 7.8km	SPA	Annex 1 species & regularly occurring migratory birds; Dunlin, red knot, common ringed plover, hen harrier, black-tailed godwit, grey plover, pied avocet, common redshank
		Ramsar	Of importance for wintering waterfowl as above.

16. Given lack of functional links to the Site, direct impacts as a result of the Site's development are unlikely. Indirect impacts in the form of additional recreational pressure on SSSI's are likely to be negligible given the size and nature of the proposals and the network of public footpaths that already exist.

Habitat Regulations Assessment

17. The Site falls within the Zone of Influence for Benfleet and Southend Marshes (ZOI: 4.5km) and Thames Estuary and Marshes (ZOI: 8.1km) SPA and Ramsar sites.

18. Given the Site's location within the ZOI, should proposals fall into one the relevant residential development types, 'likely significant effect' to a European site in terms of increased recreational disturbance can be concluded. This triggers the need for a HRA Stage 2: Appropriate Assessment, to assess recreational disturbance impacts on the above designated sites.

SSSI Impact Risk Zones (IRZs)

19. The Site falls within the 2km impact risk zone for the Thunderseley Great Common and Benfleet and Southenend Marshes SSSI's. Dependant on proposals, development at the Site may fulfil the criteria requiring the Local Planning Authority to consult Natural England in relation to potential impact on these sites.

Non-Statutory Designations

20. There are 14 Local Wildlife Sites in the search area. Of these 2 are of potential relevance to the application:

    - CPT24 - West Wood some 500m south east and potentially hydrologically linked via drainage ditches which border the Site. Terrestrially separated by development.
    - CPT23 – This includes the southern part of the Site and habitats extending south and east of the Site and includes remaining blocks of old plotland habitat; mosaic of grassland, woodland and scrub.

21. The loss of a lower value part of this LWS which falls withing the red line boundary is considered in later sections. Measures will need to implement to reduce impacts on any remaining adjacent habitat and West Wood to reduce direct and indirect impacts.

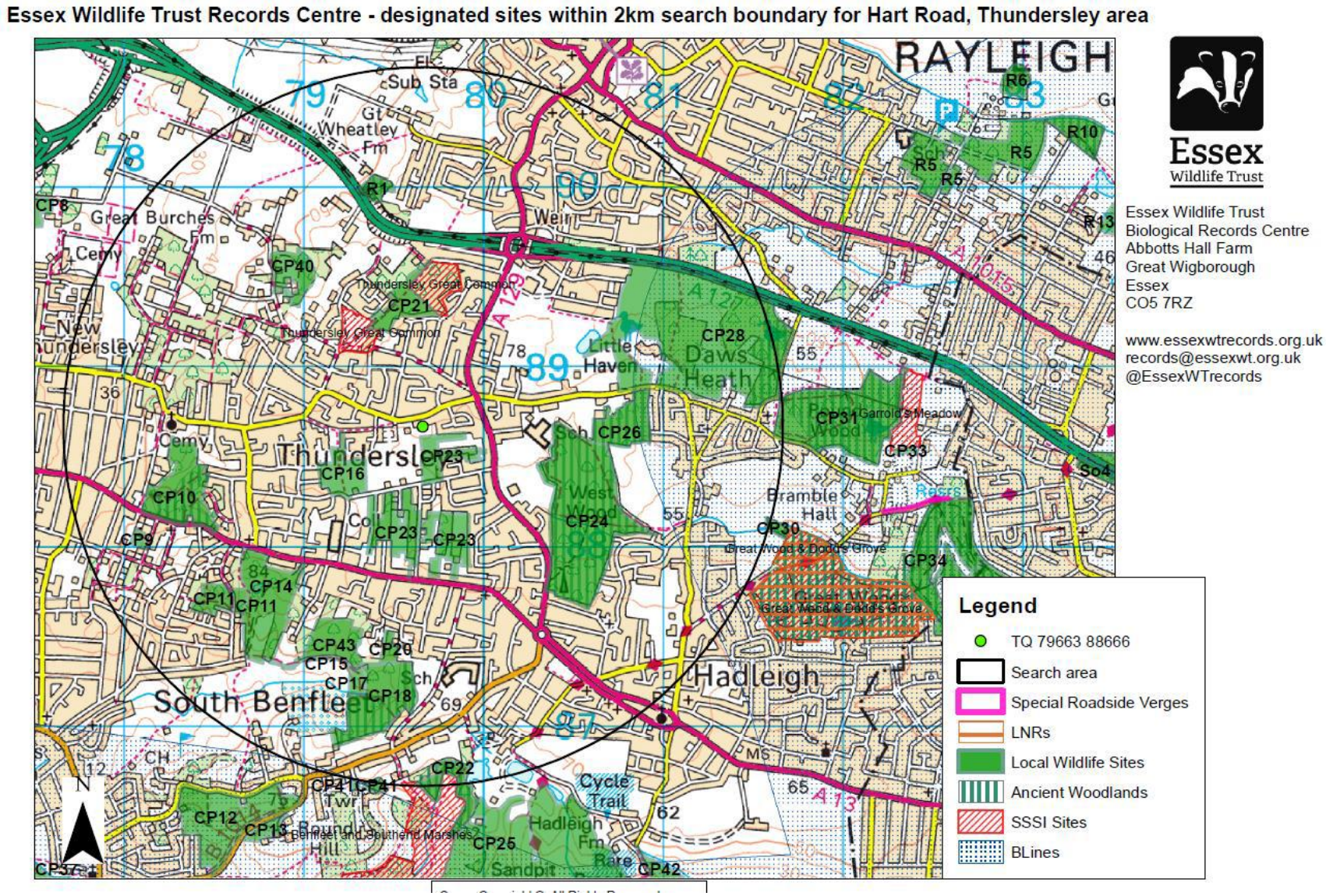
22. Direct impacts on all remaining sites as a result of this development are unlikely due to the Sites separation and distance.

Granted EPSM Licenses

23. No granted licenses show up within 1km of the Site.

Figure 3 LWS CPT23 in relation to the Site

Figure 4 Essex Wildlife Trust Records Centre - Designated Sites



Survey

Method

24. The survey was carried out during November 2020[1] and followed the principles of Extended Phase 1 Habitat Survey methodology (JNCC, 2010).

Limitations

25. Enough time was afforded the surveyor to carry out the survey. The survey was not constrained by poor weather.

26. The survey was carried out in November when not all plant species are visible and vegetation was very heavily grazed and damaged. However this is unlikely to have affected the experienced authors ability to assess the habitat types and condition assessment.

Habitat Appraisal

Habitats identified

27. The Site supports a range of mostly degraded habitat associated with an urban/paddock landscape. The range of habitats classified are shown overleaf.

28. Each habitat is discussed in the following pages individually and the estimated area of these listed[2]. The areas can be used to quantify the impacts of development in an Ecological Impact Assessment if this is required by the Local Planning Authority.

Condition Assessment

29. Our condition assessment for each habitat described references where available the criteria set out in The Biodiversity Metric 2.0 auditing and accounting for biodiversity TECHNICAL SUPPLEMENT Beta Edition.

Habitats Summary Evaluation

30. The habitats are ascribed our own qualitative value, based on their plant community make up. This evaluation is independent of faunal value which is considered in later sections.

[1] This Report has been prepared during November 2020 following a visit to the site in November 2020 and our findings are based on the conditions of the site that were reasonably visible and accessible at that date. We accept no liability for any areas that were not reasonably visible or accessible, nor for any subsequent alteration, variation or deviation from the site conditions which affect the conclusions set out in this report.

[2] The location and areas of habitats in this report are estimated and should not be relied on as a definite location and extent of any habitat or feature.

Figure 5 All habitats identified to UK Habitat Classification.

g4 Modified grassland

Area: 0.303 ha
Distinctiveness: 2 Low
Condition: 1 Poor
Connectivity: 1 1 Low
Strategic sig: 1 1 Low

Biodiversity units: 0.61

31. Neutral grassland on clay soils that is dominated by sown grasses such as perennial rye-grass (Lolium perenne) meadow grasses (Poa spp.) and bents (Agrostis spp.). Heavily compacted and damaged by horses leading to poor drainage and locally wet areas following rainfall. Forbs are very poorly represented with the handful noted being daisy (Bellis perennis) and dandelion (Taraxacum agg.).

Summary Evaluation

32. A highly degraded species poor grassland of low value unlikely to support any notable or otherwise important plant species.

Figure 6 Typical appearance of this habitat

Defra Metric Condition Assessment **Poor**

33. Meets 1 out of 5 criteria.

	Condition Assessment Criteria Grassland habitat type	Meets criteria?
1	Clearly and easily recognizable as a good example of this type of habitat.	No
2	Appearance and composition very closely matches the characteristics for the specific Priority Habitat	No
3	Wildflowers, sedges and indicator species for the specific Priority grassland habitat are very clearly and easily visible throughout the sward and occur at high densities in high frequency.	No
4	Undesirable species and physical damage is below 5% cover.	No
5	Cover of bare ground greater than 10%	No
6	Cover of bracken less than 20% & cover of scrub and bramble less than 5%.	Yes

g4 Modified grassland

Area:	0.913 ha
Distinctiveness:	2 Low
Condition:	1 Poor
Connectivity:	1 1 Low
Strategic sig:	1.15 1.15 High
Biodiversity units:	2.1

34. Neutral grassland on clay soils that is dominated by sown grasses such as perennial rye-grass (Lolium perenne) meadow grasses (Poa spp.) and bents (Agrostis spp.). Heavily compacted and damaged by horses leading to poor drainage and locally wet areas following rainfall. Forbs are very poorly represented with competitive species like broad leaved dock (Rumex obtusifolius) and creeping buttercup being more prevalent to the south close to scrubby margins.

Summary Evaluation

35. A severely damaged species poor grassland of low value unlikely to support any notable or otherwise important plant species. Higher strategic significance than adjacent field due to falling in LWS.

Figure 7 Typical appearance of this habitat

Defra Metric Condition Assessment **Poor**

36. Meets 1 out of 5 criteria.

	Condition Assessment Criteria Grassland habitat type	Meets criteria?
1	Clearly and easily recognizable as a good example of this type of habitat.	No
2	Appearance and composition very closely matches the characteristics for the specific Priority Habitat	No
3	Wildflowers, sedges and indicator species for the specific Priority grassland habitat are very clearly and easily visible throughout the sward and occur at high densities in high frequency.	No
4	Undesirable species and physical damage is below 5% cover.	No
5	Cover of bare ground greater than 10%	No
6	Cover of bracken less than 20% & cover of scrub and bramble less than 5%.	Yes

r1Ditch Ditches

Area: 0.0813 ha
Distinctiveness: 4 Medium
Condition: 2 Moderate
Connectivity: 1 1 Low
Strategic sig: 1.15 1.15 High

Biodiversity units: 0.75

37. Ditch associated with a hedge. It supports gently flowing water with a channel width of around 50cm and average depth of 20cm. Water appears clear but supports few in stream aquatic plants. The banks are characterised by scrub and woodland ground flora such as bramble (Rubus fruticosus), nettle (Urtica dioica), bittersweet (Solanum dulcamara), cow parsley (Anthriscus sylvestris), cleavers (Galium aparine), and Himalayan balsam (Impatiens glandulifera).

Summary Evaluation

38. Though not species rich or appearing to support any notable species this is the most important habitat on site. However, its value its potential value reduced by current management and presence of invasive plants. Higher strategic significance for being in a LWS and being connected to other off-site habitats.

Figure 8 Typical appearance of this habitat

Defra Metric Condition Assessment **Moderate**

39. Ditches habitat is assessed under Pond criteria. Meets 3 out of 9 criteria.

	Condition Assessment Criteria Pond habitat type	Meets criteria?
1	Good water quality, with clear water (substrate can be seen) and no obvious signs of pollution in the water body.	Yes
2	Water body has semi-natural riparian land for at least 10m from the pond edge.	No
3	Non-woodland ponds - dominated by plants, be they submerged or floating (note dominance of duckweed is a sign of eutrophication).	No
4	Non-woodland ponds - not shaded more than 50%	No
5	Pond is fishless, or contains native fish assemblage.	No
6	Pond is not artificially connected to other water bodies, e.g. ditches.	No
7	Water levels able to fluctuate naturally throughout the year,	Yes
8	Non-native species absent.	No
9	Less than 10% of the pond covered with duckweed or filamentous algae	Yes

u1c Artificial unvegetated, unsealed surface

Area:	0.1228 ha
Distinctiveness:	0 V.Low
Condition:	0 N/A - Other
Connectivity:	1 1 Low
Strategic sig:	1 1 Low
Biodiversity units:	0

40. Includes the horse menage, unvegetated very large pile of largely unvegetated horse manure and an open active chicken run.

Summary Evaluation

41. Man-made habitats of negligible value

Figure 9 Typical appearance of this habitat

Defra Metric Condition Assessment **N/A**

42. Automatically assigned 0 Biodiversity Units.

u1b Developed land; sealed surface

Area:	0.1515 ha
Distinctiveness:	0 V.Low
Condition:	0 N/A - Other
Connectivity:	1 1 Low
Strategic sig:	1 1 Low
Biodiversity units:	0

43. Includes a house and associated carparking, a concrete equestrian yard and stable buildings. Vegetation restricted to tiny areas of pioneer mosses in falling concrete.

.

Summary Evaluation

44. Man-made habitats of negligible value. Faunal potential of buildings is evaluated in later sections.

Figure 10 Typical appearance of this habitat

Defra Metric Condition Assessment **N/A**

45. Automatically assigned 0 Biodiversity Units.

231 Vegetated garden

Area:	0.0362 ha
Distinctiveness:	2 Low
Condition:	1 Poor
Connectivity:	1 1 Low
Strategic sig:	1 1 Low
Biodiversity units:	0.07

46. Front and rear house gardens and a patch of ancillary irregularly managed amenity lawn. Supports typical garden vegetation of ornamental shrubs, herbaceous material, and lawns.

.

Summary Evaluation

47. Man-made disturbed habitats of very low value.

Figure 11 Typical appearance of this habitat

Defra Metric Condition Assessment **N/A**

48. Automatically assigned a condition of 1 – Poor.

HR7 Native Hedgerow with trees

Length: 0.095 km
Distinctiveness: 2 Low
Condition: 1 Poor
Connectivity: 1 Low
Strategic sig: 1.15 1.15 High

Biodiversity units: 0.22

49. Species poor near defunct gappy hedge dominated by hawthorn (Crataegus monogyna), with occasional blackthorn (Prunus spinosa), plum (Prunus sp.), elder and ash with ash dieback. The base is dominated by competitive flora, nettle, cleavers and hemlock (Conium maculatum).

Summary Evaluation

50. Gappy unmanaged hedge species poor, subject to ongoing damage. Not a clear habitat link.

Figure 12 View of hedge

Defra Metric Condition Assessment ***Poor***

51. Meets 2 of 8 criteria

	Favorable condition attributes and criteria: Hedgerows		Pass/fail
A1	Height	>1.5m average along length	Pass
A2	Width	>1.5m average along length	Pass
B1	Gap – hedge base	Gap between ground and base of canopy <0.5m for >90% length	Fail
B2	Gap – hedge canopy continuity	Gaps make up <10% of total length and no canopy gaps >5m	Fail
C1	Undisturbed ground and perennial vegetation	>1m width of undisturbed ground with perennial herbaceous vegetation for >90% of length & present on one side of hedge at least	Fail
C2	Undesirable perennial vegetation	Plant species indicative of nutrient enrichment of soils <20% cover of area of undisturbed ground	Fail
D1	Invasive and neophyte species	>90% of hedgerow and undisturbed ground is free of invasive non-native and neophyte species	Fail
D2	Current damage	>90% of hedgerow of undisturbed ground is free of damage caused by human activities	Fail

HR5 Native Hedgerow with trees - Associated with bank or ditch

Length: 0.096 km
Distinctiveness: 4 Medium
Condition: 2 Moderate
Connectivity: 1 Low
Strategic sig: 1.15 1.15 High

Biodiversity units: 0.88

52. Moderately diverse continuous hedge dominated by hawthorn with hazel (Corylus avellana), elm (Ulmus sp.), sallow (Salix caprea), elder and ash. Mature pedunculate oak (Quercus robur) standards. The base is dominated by competitive floras, ivy (Hedera helix), cow parsley, nettle and cleavers with Himalayan balsam.

Summary Evaluation

53. Unmanaged hedge but moderately species rich and structurally diverse. Strategically valuable by association with ditch and in LWS. Affected by presence of Invasives.

Figure 13 View of hedge

Defra Metric Condition Assessment ***Moderate***

54. Meets 5 of 8 criteria

	Favorable condition attributes and criteria: Hedgerows		Pass/fail
A1	Height	>1.5m average along length	Pass
A2	Width	>1.5m average along length	Pass
B1	Gap – hedge base	Gap between ground and base of canopy <0.5m for >90% length	Pass
B2	Gap – hedge canopy continuity	Gaps make up <10% of total length and no canopy gaps >5m	Pass
C1	Undisturbed ground and perennial vegetation	>1m width of undisturbed ground with perennial herbaceous vegetation for >90% of length & present on one side of hedge at least	Pass
C2	Undesirable perennial vegetation	Plant species indicative of nutrient enrichment of soils <20% cover of area of undisturbed ground	Fail
D1	Invasive and neophyte species	>90% of hedgerow and undisturbed ground is free of invasive non-native and neophyte species	Fail
D2	Current damage	>90% of hedgerow of undisturbed ground is free of damage caused by human activities	Fail

HR7 Native Hedgerow with trees

Length: 0.093 km
Distinctiveness: 2 Low
Condition: 2 Moderate
Connectivity: 1 Low
Strategic sig: 1.15 1.15 High

Biodiversity units: 0.43

55. Continuous hedge dominated by early mature pedunculate oak as lines of coalescing standard trees with shaded out sparse gappy line of mostly hawthorn with holly (Ilex aquifolium), elder and ash. The base is dominated by competitive floras, ivy, cow parsley, nettle and cleavers. Locally woodland field and ground layer flora will be present on the off-site side. On site side damaged by horses.

Summary Evaluation

56. Unmanaged hedge/line of trees, not species rich but structurally diverse. Strategically valuable by association with connected woodland blocks and ditch in LWS.

Figure 14 View of hedge

Defra Metric Condition Assessment ***Moderate***

57. Meets 5 of 8 criteria

	Favorable condition attributes and criteria: Hedgerows		Pass/fail
A1	Height	>1.5m average along length	Pass
A2	Width	>1.5m average along length	Pass
B1	Gap – hedge base	Gap between ground and base of canopy <0.5m for >90% length	Pass
B2	Gap – hedge canopy continuity	Gaps make up <10% of total length and no canopy gaps >5m	Pass
C1	Undisturbed ground and perennial vegetation	>1m width of undisturbed ground with perennial herbaceous vegetation for >90% of length & present on one side of hedge at least	Pass
C2	Undesirable perennial vegetation	Plant species indicative of nutrient enrichment of soils <20% cover of area of undisturbed ground	Fail
D1	Invasive and neophyte species	>90% of hedgerow and undisturbed ground is free of invasive non-native and neophyte species	Fail
D2	Current damage	>90% of hedgerow of undisturbed ground is free of damage caused by human activities	Fail

DEFRA Metric (Baseline)[3]

58. This metric sets out the baseline for the Site - proposals should seek to achieve at least a 'no net loss' situation through **Avoiding** areas of higher value, **Mitigating** any loss on-Site through retention and enhancement, or habitat creation. The Local Planning Authority *may* require you to **Compensate** any residual loss elsewhere - either through direct works or an off-setting contribution.

Hart Road Thundersley

A-1 Site Habitat Baseline

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	Habitats and areas			Habitat distinctiveness	Habitat condition	Ecological connectivity	Strategic significance	Suggested action to address habitat losses	Ecological baseline
Ref	Broad Habitat	Habitat type	Area (hectares)	Distinctiveness	Condition	Ecological connectivity	Strategic significance		Total habitat units
1	Grassland	Grassland - Modified grassland	0.3	Low	Poor	Low	Area/compensation not in local strategy/ no local strategy	Same distinctiveness or better habitat required	0.60
2	Grassland	Grassland - Modified grassland	0.91	Low	Poor	Low	Within area formally identified in local strategy	Same distinctiveness or better habitat required	2.09
3	Lakes	Lakes - Ditches	0.08	Medium	Moderate	Low	Within area formally identified in local strategy	Same broad habitat or a higher distinctiveness habitat required	0.74
4	Urban	Urban - Artificial unvegetated, unsealed surface	0.12	V.Low	N/A - Other	N/A	Area/compensation not in local strategy/ no local strategy	Compensation Not Required	0.00
5	Urban	Urban - Developed land; sealed surface	0.15	V.Low	N/A - Other	N/A	Area/compensation not in local strategy/ no local strategy	Compensation Not Required	0.00
6	Urban	Urban - Vegetated garden	0.04	Low	Poor	N/A	Area/compensation not in local strategy/ no local strategy	Same distinctiveness or better habitat required	0.08
7									
8									
9									
		Total site area ha	1.60					Total Site baseline	3.51

[3] Our report provides an estimate of the sites value in Biodiversity Units. This is based on thorough assessment at the time of survey and using the information available at this time. In this assessment we have used the latest version of DEFRA's Biodiversity Metric Tool, the UK Habitats Classification and relevant guidance. This assessment requires subjective judgments to be made in terms of habitat type and condition and could be open to other interpretations. Reliance on the Unit Score, or conversion of this into a monetary value, would be at the developer's own risk.

Hart Road Thundersley

B-1 Site Hedge Baseline

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	UK Habitats - existing habitats			Habitat distinctiveness	Habitat condition	Ecological connectivity	Strategic significance		Ecological baseline
Baseline ref	Hedge number	Hedgerow type	length KM	Distinctiveness	Condition	Ecological connectivity	Strategic significance	Suggested action to address habitat losses	Total hedgerow units
1	1	Native Hedgerow with trees	0.05	Low	Poor	Low	Within area formally identified in local strategy	Same distinctiveness band or better	0.115
2	2	Native Hedgerow with trees - Associated with bank or ditch	0.09	Medium	Moderate	Low	Within area formally identified in local strategy	Like for like or better	0.828
3	3	Native Hedgerow with trees	0.09	Low	Moderate	Low	Within area formally identified in local strategy	Same distinctiveness band or better	0.414
4									
5									
6									
7									
8									
		Total Site length/KM	0.23					Total Site baseline	1.36

Faunal Appraisal

59. The following pages discuss only the groups and species that could be reasonably expected to be found on the type of habitats present on, or adjacent to, the site.

Amphibians

Desk evidence

60. There are no records of great crested newt (GCN) returned for the area. Records of common frog and palmate newt are detailed 1km from the Site.
61. No ponds can be seen mapped within 500m of the site.

Field Evidence

62. No amphibians were noted during the survey. The ditch habitat has enough of a flow to make it unsuited to amphibian breeding.

Summary Evaluation

63. The site is unlikely to support significant amphibian populations and protected species are likely absent.

Further Surveys

64. No further surveys or precautions are considered necessary.

Birds

Records

65. No significant bird records exist for the site or the developments sphere of influence. No records were returned for species associated with the Benfleet and Southend Marshes, Crouch and Roach Estuaries (Mid-Essex coast Phase 3) and Thames Estuary & Marshes SPA/Ramsar sites.

Field Evidence

66. A small number of common bird species were noted during the survey.

Summary Evaluation

67. The site will support a small number of bird territories in hedges and buildings but the site will not be important for significant bird species or assemblages.

Further Surveys

68. No further surveys are considered necessary to demonstrate current baseline in respect of birds.
69. Standard precautions apply in relation to pre-clearance.

Bats

Desk evidence

70. Records have been returned of common and soprano pipistrelle, brown long-eared and noctule bats. The most substantial roost is a common pipistrelle maternity some 1km north of the Site, recorded in 2007.

Field Evidence

Potential Roost sites

Buildings: three buildings/ building groups are found on site al labelled on the figure opposite. These have been assessed for potential roost features (PRF's) and are summarised in the table below, photographic evidence overleaf.

Ref:	Notes	Suitability
B1	Interwar detached two-story house. Roof and chimneys in very good repair no PRFs Eaves completely sealed No PRFs. One hole to single story section. Evidence of use as nest site for bird this season.	Negligible
BG2	Building group comprising single skin wooden stable blocks and chicken sheds. No PRFs.	Negligible
B3	Single skin brink open shed with mineral sheet roof. No evidence of use.	Negligible

Trees: No trees on site were found with potential roost features. Assessed as negligible suitability.

Foraging and commuting habitat

71. Bats are likely to forage along the site boundaries, but the interior is unlikely to be a significant foraging resource due to the intensity of grazing and lack of invertebrate habitats.

Summary Evaluation

72. Bat roosting unlikely on site and foraging likely restricted to site boundaries. Measures to retain and enhance boundary habitats should cater for the conservation status of bats locally.

Figure 15 Buildings on Site.

Further Surveys

73. So long as boundary habitats can be retained and enhanced no further survey are considered necessary.

Bat Roost Suitability Assessment

Figure 16 Bat roosting suitability: see figure above for building references.

View of B1 in very good repair

Showing sealed eaves B1

Showing the only hole in eaves, occupied by bird nest B1

B2 general view

B2 rear view

BG2 exterior view

BG2 interior view

BG2 sealed eaves, single skin wood roof

BG2 interior heavily cobwebbed

BG2 general configuration

BG2 sealed eaves, single skin wood roof

Showing sealed eaves BG3

Badgers

Records

74. There are badger records within 500m of the Site, and they are known to make use of the local area.

Field Evidence

75. Plenty of evidence of badgers using the site to forage and access surrounding gardens was observed but no setts were found. The figure right shows evidence noted which includes well used paths, hairs, footprints and foraging snuffle holes. Foraging was restricted to small areas less damaged by compaction and grazing.

Badger hair on fence

Badger footprints

Summary Evaluation

76. Badgers clearly make use of the site for foraging but the carrying capacity of the site for badgers will be low due to damaged soils and low earthwork density. However, development will reduce the local foraging resource for badgers. Mitigation needs to be designed into the scheme to minimise negative effects on badgers

Further Surveys

77. Pre-start surveys are recommended to check that badger setts have not been established prior to earth working.

Figure 17 Badger evidence

THIS PAGE CONTAINS SENSITIVE INFORMATION ON BADGERS – DO NOT PLACE IN THE PUBLIC DOMAIN

Otters

Desk evidence

78. No records of otters have been returned for the search area.

Field Evidence

79. None was found. There is insufficient cover to attract otter to holt or couch on site.

Summary Evaluation

80. The flowing ditch on site has potential to be occasionally used as a commuting corridor but is unlikely to be a useful foraging habitat supporting too little water.

Further Surveys

81. The risk of affecting otter is very low and as such no further surveys are considered necessary

Water voles

Desk evidence

82. No records have been returned.

Field Evidence

83. Suitable habitat but no evidence (feeding remains, holes, footprint or droppings) was found.

Summary Evaluation

84. Water voles are assessed as likely absent.

Further Surveys

85. No further surveys are considered necessary to demonstrate current baseline in respect of water voles.

Hedgehogs

Desk evidence

86. Hedgehogs are recorded within the search area.

Field Evidence

87. No evidence of hedgehogs was found on site.

Summary Evaluation

88. The Site provides suitable habitat for this species and measures to allow them to access gardens need to be planned for.

Further Surveys

89. Presence assumed no further surveys are considered necessary. A hedgehog mitigation plan incorporated in a BMP (Biodiversity) is recommended.

White clawed crayfish

Desk evidence

90. No records in search area.

Field Evidence

91. Ditch marginally suitable but no evidence found.

Summary Evaluation

92. Species is likely to be absent from the ditch and locally extinct.

Further Surveys

93. Not required.

Reptiles

Desk evidence

94. Records of slow worm and common lizard have been returned for within 500m of the Site from 2012; in the wider Thundersley Plotlands LWS. There are also records of grass snake within the search area. The most recent reptile record was returned in 2019.

Field Evidence

95. No field evidence was found and most of the site is made unsuitable by very heavy grazing and compaction. However, some marginally suitable habitat was found associated with the ditch corridor and the large horse manure pile could be used as an egg laying substrate for grass snakes when it is actively rotting and generating heat.

Summary Evaluation

96. Reptiles are assessed as likely to make occasional use of the site in very low densities and frequencies.

Further Surveys

97. Further surveys are unlikely to yield results due to predicted low densities and difficulties with horses being present (trampling or moving refuges). A precautionary reptile mitigation plan incorporated in a CEMP (Biodiversity) and habitat features for reptiles presented in a BMP is considered more suitable.

Invasive Non-Native Species (INNS)

98. INNS are species listed on Schedule 9 of the Wildlife and Countryside Act (1981), for which it is an offence to cause or allow it to grow in the wild. The following species were noted[4]:

    - Himalayan balsam

Survey constraints

99. This survey is slightly constrained by season and the damage to ground caused by horses and small Site investigation trial pits. These could have affected our ability to detect the full range and extent of species on site.

100. Although some INNS have been identified in this preliminary survey it is not always possible to conclude extent or range from preliminary survey alone due to factors such as season, accessibility, 3rd party attempts to hide evidence or undisclosed treatment programmes. For this reason, this report should not be relied upon as definitive evidence of absence of INNS.

101. This site presents a fairly low but present risk of supporting undetected INNS based on the following factors:

    - Areas of site inaccessible to survey
    - Suboptimal survey season
    - Potential for recent earthworks or management which may have obscured viable material
    - Proximity to nearby potential sources of infection
    - Potential for tipping of material from adjacent gardens.

102. Should further assurances be needed in relations to INNS you should commission a dedicated Invasive Weed Survey in the growing season.

[4] Whilst our ecologists are trained in the identification of invasive species this report is not a dedicated invasive species survey. Detectability of invasive plant species can be affected by several factors, and conclusive determination status, or extent, is not possible through preliminary survey alone. As the presence of invasive species can generate significant costs to development, the client may wish to instruct a dedicated invasive species survey prior to entering into contracts.

Ecological Constraints

103. The Site is policy constrained by over half its area being in a Local Wildlife Site. However, the ecological value of this designation currently appears limited to the boundaries and the ditch that flows to the south. If the principles of development is agreed then it will be important to buffer these boundaries making space for measures to improve their condition, maintain connectivity within then wider LWS and maximise their biodiversity serving function.

104. Badgers make regular use of the Site but this appears to be limited to passing through and minor foraging on the few scraps of ground not severely damaged by horses. Facilitating movement of badgers through the site will need to be considered in the design.

105. Himalayan balsam is present and will spread once grazing is removed. This will need a programme of control prior to and during development.

106. Grass snakes and slow worm could occasionally pass through the site and breeding in dung heaps is possible. Measures should be followed to prevent them being killed or injured during site clearance and allow them to move through the site post development.

Figure 18 Constraints identifiable at the PEA stage*

*(further constraints may be identified by any additional surveys recommended in this or other reports.

Ecological Opportunities

107. The key ecological opportunity here would be to provide a valuable strip of wildflower grassland and enhanced scrub to buffer the southern ditch. This will also help maintain and enhance connectivity between separated parts of the Local Wildlife Site.

108. Boundary hedges can be enhanced though additional panting and management. ~this will be especially valued on the western hedge which is in poor condition and needs 'gapping up'. Hedgerow standard trees should be included here to increase structural value.

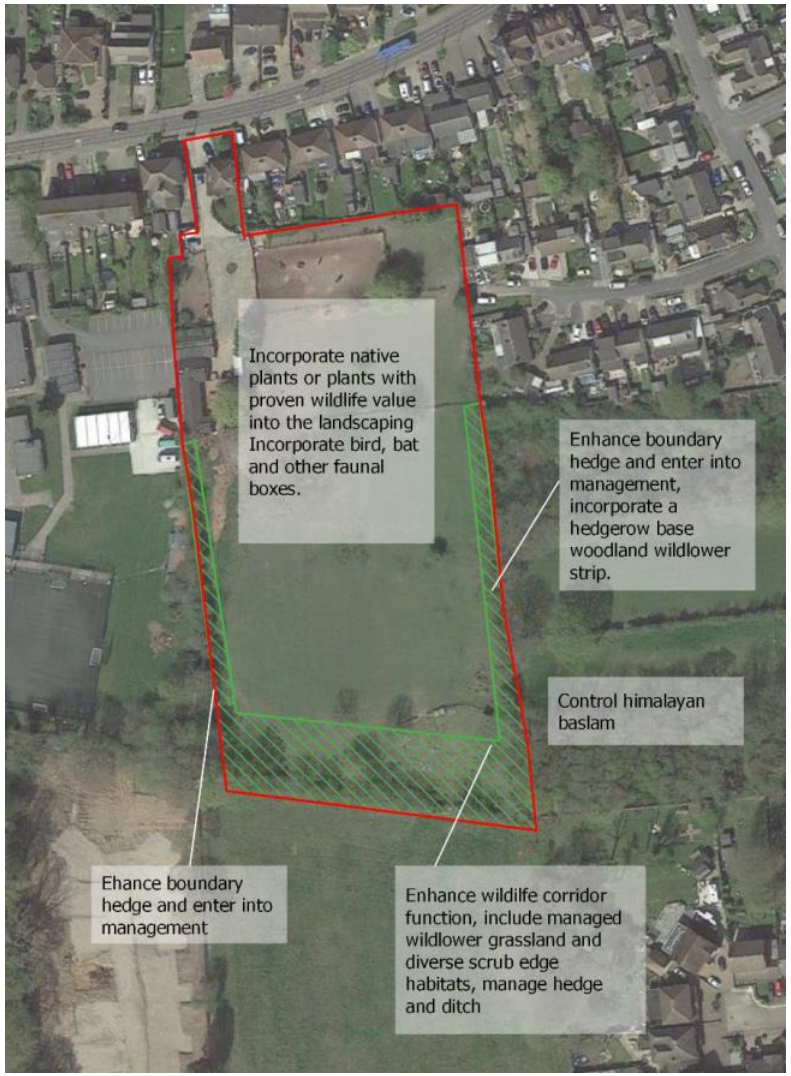
109. Creating greenspace and gardens on a site that is currently largely devoid of valuable vegetation will be beneficial for wildlife.

110. Use of native plants and plants with proven benefit to wildlife in the sites landscaping should be considered.

111. Installing roosting, nesting or hibernation features for fauna will also be beneficial.

112. Garden fences should be permeable so that hedgehogs can have access through the Site.

Figure 19 Ecological Opportunities



Conclusions and Recommendations

113. A relatively low value site severely damaged by current management practices but policy constrained by being in a LWS. Measures will need to be agreed with the Local Planning Authority to compensate for loss of significant parts of this designation. The following recommendations are made:

Planning considerations		
Recommendation	**Rationale**	**When**
R1 Produce a layout which minimises loss of biodiversity	Proposals will need to consider the NPPF hierarchy of Avoid - Mitigate – Compensate in minimising any loss of biodiversity. Engage with the Constraints and Opportunities set out above, involve your ecologist in designs at an early stage.	During the design process
R2 Landscape strategy	Produce a Green Infrastructure Plan or an ecologically led Landscape Concept Design* to submit with the application.	During the design process
R3 Ecological Impact Assessment (EcIA)	Once the layout has been fixed an EcIA can then be produced which summarises the potential impacts of the proposed development on the Site's baseline. As part of this assessment, the final Biodiversity Net Gain calculations will be completed, with post development metrics being based on the Site Layout and Landscape Masterplan; with measurements provided by the client/ architect.	Prior to submission.
R4 Produce a Biodiversity Management Plan	To specify in detail how the development will cater for biodiversity on site and to show how habitats will be maintained in the condition that the Biodiversity Calculations(for R3) were based on.	Suitable for planning condition. But may be needed to overcome Local Wildlife site obstacle
R5 Produce a CEMP (Biodiversity)	To show how the site will be built without affecting surrounding habitats. The CEMP will detail protection measures to ensure development doesn't impact on sensitive habitats or functionally linked designated sites, dealing with invasive species and pre/during clearance ecology checks for protected species, nesting birds or additional Invasive species.	Suitable for planning condition.

* Due to the increasing adoption of biodiversity net gain Brooks Ecological has taken the step of providing our own in-house landscape design team, we are in a position to help you produce any of the landscape plans needed for submission. Please contact our team for further details.

Other considerations (managing legal or financial risks)		
Issue	**Rationale**	**When**
R6 INNS Management Plan	This provides a formal INNS Survey and sets out management prescriptions and timings in detail. It can provide security for the Main Contractor and assurance for future Site operators / purchasers / owners.	Best initiated at an early stage (INNS Survey would ideally be complete April - October)

Outline Biodiversity Net Gain (BNG) Implications

137. The NPPF and most aligned local policies require that development achieves a 'no net loss' or unquantified 'net gain' situation for biodiversity. The forthcoming (2020/21) Environment Bill is likely to mandate a 10% net gain position and many LPA's have pre-empted this with revised policies and SPG's, some are providing a means of developers contributing to strategic off off-Site enhancement where BNG can't be secured on Site.

138. Pre-application discussions with the LPA should aim to identify their approach to BNG from an early stage.

139. Outline BNG Implications at this Site have been calculated below. This is based on *outline calculation from the assumption that the Site will all fall into the category 'Suburban mosaic of developed and natural surface'. Figures are provided for habitat area units only.

140. **This is not the final calculation** but provides what is hoped is a useful illustration to work forward from. Proposals will still be required to work within the NPPFs mitigation hierarchy of Avoid, Mitigate, Compensate and by doing so losses are likely to reduce. Similarly, high quality landscaping proposals and provision of natural green space would also help to reduce any deficit.

Pre-development Baseline Units	Post Development Units *	Units required to achieve No Net Loss	Units Required to achieve 10% Net Gain
3.51	3.55	-0.04	0.35

141. BNG is very much an evolving situation and the importance of pre-application discussions is again emphasised. For purely illustrative purposes if this project was in the district of Leeds the 'backstop' position of achieving BNG through the LPA's contribution scheme would incur a cost of £20,000 /unit plus 20% facilitation and monitoring fees https://www.leeds.gov.uk/planning/conservation-protection-and-heritage/achieving-net-gain-in-biodiversity-guidance-for-developers

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The UK Habitat Classification Habitat Definitions Version 1.0 UK Habitat Classification Working Group May 2018

Appendix 1 List of species recorded

Field maple	*Acer campestre*
Sycamore	*Acer pseudoplatanus*
Yarrow	*Achillea millefolium*
Ground elder	*Aegopodium podagraria*
Horse chestnut	*Aesculus hippocastanum*
Common bent	*Agrostis capillaris*
Bent	*Agrostis sp.*
Creeping bent	*Agrostis stolonifera*
Garlic mustard	*Alliaria petiolata*
Meadow foxtail	*Alopecurus pratensis*
Sweet vernal grass	*Anthoxanthum odoratum*
Cow parsley	*Anthriscus sylvestris*
Burdock	*Arctium sp.*
Silverweed	*Argentina anserina*
False oat grass	*Arrhenatherum elatius*
Michaelmas daisy	*Aster amellus*
Common orache	*Atriplex patula*
Daisy	*Bellis perennis*
Rough-stalked feathermoss	*Brachythecium rutabulum*
Butterfly bush/buddleia	*Buddleia davidii*
Pointed spear moss	*Calliergonella cuspidata*
Bindweed	*Calystegia sepium*
Shepherd's purse	*Capsella bursa-pastoris*
Pendulous sedge	*Carex pendula*
Knapweed	*Centaurea nigra*
Common mouse-ear	*Cerastium fontanum*
Creeping thistle	*Cirsium arvense*
Spear thistle	*Cirsium vulgare*
Hemlock	*Conium maculatum*
Hazel	*Corylus avellana*
Hawthorn	*Crataegus monogyna*
Crested dogstail	*Cynosurus cristatus*
Cock's-foot	*Dactylis glomerata*
Wild carrot	*Daucus carota*
Teasel	*Dipsacus fullonum*
Male fern	*Dryopteris filix-mas*
Couch grass	*Elymus repens*
Willowherb	*Epilobium sp.*
Field horsetail	*Equisetum arvense*
Canadian fleabane	*Erigeron canadensis*
Red fescue	*Festuca rubra agg.*
Ash	*Fraxinus excelsior*
Cleavers	*Galium aparine*
Wood avens	*Geum urbanum*
Common ivy	*Hedera helix*
Hogweed	*Heracleum sphondylium*
Yorkshire fog	*Holcus lanatus*
St John's wort	*Hypericum sp.*
Holly	*Ilex aquifolium*
Himalayan balsam	*Impatiens glandulifera*
Ragwort	*Jacobaea vulgaris*
Common feather moss	*Kindbergia praelonga*
Perennial rye grass	*Lolium perenne*
Mallow	*Malva sp.*
Pineapple weed	*Matricaria discoidea*
Black medick	*Medicago lupulina*
Wild parsnip	*Pastinaca sativa*
Ribwort plantain	*Plantago lanceolata*
Rat's tail/ greater plantain	*Plantago major*
Annual meadow grass	*Poa annua*
Meadow grass	*Poa sp.*
Creeping cinquefoil	*Potentilla reptans*
Selfheal	*Prunella vulgaris*
Damson	*Prunus domestica*
Blackthorn	*Prunus spinosa*
Pendunculate oak	*Quercus robur*
Creeping buttercup	*Ranunculus repens*
Dog rose	*Rosa canina*
Bramble	*Rubus fruticosus*
Curled dock	*Rumex crispus*
Broad leaved dock	*Rumex obtusifolius*
Procumbent pearlwort	*Sagina procumbens*
Goat willow	*Salix caprea*
Willow	*Salix sp.*
Elder	*Sambucus nigra*
Bittersweet	*Solanum dulcamara*
Snowberry	*Symphoricarpos sp.*
Dandelion	*Taraxacum officinale agg.*
Lesser trefoil	*Trifolium dubium*
White clover	*Trifolium repens*
Coltsfoot	*Tussilago farfara*
English elm	*Ulmus procera*
Nettle	*Urtica dioica*

Appendix 2 Explanatory Notes and Resources Used

Site Context

Aerial photographs published on commonly used websites were studied to place the site in its wider context and to look for ecological features that would not be evident on the ground during the walkover survey. This approach can be very useful in determining if a site is potentially a key part of a wider wildlife corridor or an important node of habitat in an otherwise ecologically poor landscape. It can also identify potentially important faunal habitat (in particular ponds) which could have a bearing on the ecology of the application site. Ponds may sometimes not be apparent on aerial photographs so we also refer to close detailed maps that identify all ponds issues and drains.

Designated Sites

A search of the MAGIC (Multi-Agency Geographic Information for the Countryside) website was undertaken. The MAGIC site is a Geographical Information System that contains all statutory (e.g. Sites of Special Scientific Interest [SSSI's]) as well as many non-statutory listed habitats (e.g. ancient woodlands and grassland inventory sites). It is a valuable tool when considering the relationship of a potential development site with nearby important habitats. In addition, information from the local record holders was referred to on locally designated sites.

Functional linkage with off-Site habitats

When assessing these we consider whether the Site could be functionally linked to them, considering links such as;

- Hydrological links - is the Site upstream downstream, or could ground water issues affect it?
- Physical links - is the site in close proximity and could it be directly or indirectly affected by construction and operational effects? Conversely it may be that despite proximity major barriers separate the two.
- Recreational links - do footpaths and roads make it likely that increased recreational pressure could be felt?
- Habitat links - is the site part of a network of similar habitat types in the wider area? These could be joined by linear corridors or could simply be 'stepping stones of habitat of similar form or function.

Method

Phase 1 habitat survey methodology (JNCC, 2010). This involves walking the site, mapping and describing different habitats (for example: woodland, grassland, scrub). The survey method was "Extended" in that evidence of fauna and faunal habitat was also recorded (for example droppings, tracks or specialist habitat such as ponds for breeding amphibians). This modified approach to the Phase 1 survey is in accordance with the approach recommended by the Guidelines for Baseline Ecological Assessment (IEA, 1995) and Guidelines for Preliminary Ecological Appraisal (CIEEM 2017).

Faunal Appraisal

This section first looks at the types of habitat found on Site or within the sphere of influence of potential development, then considers whether these could support protected, scarce or NERC Act 2006 Section 41 species (referred to collectively as 'notable species').

Records of notable species supplied from a 2km area of search by Essex Wildlife Trust are used to inform this appraisal.

We discuss further only notable species or groups which could be a potential constraint due to the presence of suitable habitat and their presence (or potential presence) in the wider area. We screen out and do not present accounts of notable species or groups which do not meet these criteria – in some cases it may be necessary to explain this reasoning.

Table 1 lists the local Species Actions Plans for the Essex biodiversity project. The following table lists the priority species and habitats listed on the plan.

Species	Habitats
Great Crested Newt	Urban
Shrill Carder Bee	Ancient Woodlands
Stag Beetle	Old Orchards
Skylark	Ancient and/or species rich hedgerows
Bittern	Cereal field margins
Oxlip	Coastal and floodplain grazing marsh
Fisher Estuarine Moth	Lowland heathland
Hogs Fennel	Reedbeds
Stone Curlew	Saline lagoons
Grey Partridge	Seagrass beds
Song Thrush	
Heath Fritillary	
Freshwater White Clawed Crayfish	
Allis Shad	
Twaite Shad	
Hornet robberfly	
Water vole	
Brown Hare	
Otter	
Dormouse	
Harbour Porpoise	
Pipistrelle Bat	
Shining ram's-horn snail	
Desmoulin's whorl snail	
Bright wave (moth)	
Black Poplar	

Bats

Bat roosting potential is classified according to the following criteria set out below, taken from the Bat Conservation Trust Good Practice Guidelines (2016).

Bat Roosting Suitability of Buildings and Trees

Suitability	Criteria
Negligible	Negligible habitat features on site likely to be used by roosting bats.
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions, and/or suitable surrounding habitat to be used on a regular basis or by a larger numbers of bats (i.e. unlikely to be suitable for maternity or hibernation). A tree of sufficient size and age to contain PRFs but with none seen from the ground or features seen with only very limited roosting potential.
Moderate	A structure or tree with one or more potential roost sites that could be used due to their size, shelter, protection, conditions, and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only - the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed).
High	A structure or tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protections, conditions and surrounding habitats.

Evaluation

In evaluating the Site, the ecologist will take into account a number of factors in combination, such as;

- the baseline presented above,
- the site's position in the local landscape,
- its current management and
- its size, rarity or threats to its integrity.

There are a number of tools available to aid this consideration, including established frameworks such as Ratcliffe Criteria or concepts such as Favourable Conservation Status. Also of help is reference to Biodiversity Action Plans in the form of the Local BAP and Section 41 of the NERC Act (2006) to determine if the site supports any Priority habitats or presents any opportunities in this respect.

The assessment of impacts considers the generic development proposals from which potential effects include:

- Vegetation and habitat removal
- Direct effects on significant faunal groups or protected species
- Effects on adjacent habitats or species such as disturbance, pollution and severance
- Operation effects on wildlife such as noise and light disturbance

Appendix 3 Bat Activity Survey Rationale

The Bat Conservation Trust Guidelines (BCTG) (Collins 2016) is now widely accepted as providing a basis and rationale for scoping and conducting bat surveys. It is acknowledged that the guidelines provide a wealth of background and are a very useful tool in standardising approaches to survey, it is also felt that an over reliance on some of the guidelines within this document can result in the provision of complicated surveys where they have significant consequences for the cost, or timescale of a large project, but could never deliver positives for bat conservation.

Taking the BCTG document as a whole, Chapter 2 helps the reader understand whether or not surveys are required, and that in the context of planning and development survey is required in relation to ensure;

- the avoidance of legal offences, and;

- the provision of a sufficient level of information - such that will allow the Local Planning Authority to make an informed decision on the proposals and their potential impacts on the Favourable Conservation Status (FCS) of bats.

Attendance at seminars presented by, and discussions with, those involved in production of the BCTG document has emphasised the point that it is within the remit of the consultant ecologist to make a decision on the necessity and scope of surveys - they will use the guidelines in doing so but are not in any way bound by them: this is reflected in Section 1.1 of the guidelines -

> *'The Guidelines do not aim to either override of replace knowledge and experience. It is accepted that departures from the guidelines (e.g. either decreasing or increasing the number of surveys carried out or using alternative methods) are often appropriate. However, in this scenario an ecologist should provide documentary evidence of (a) their expertise in making this judgement and (b) the ecological rationale behind the judgement. '*

Such decisions require a consideration of the potential of the project to impact on bat habitat, alongside analysis of the value of habitat on and around the site and of local records and the likelihood that bats might occur in significant numbers. Our reports aim to present information on how we have arrived at our decision on the Site, what assumptions we have based this on, and where further survey is recommended we indicate what the objective of this survey should be and how best this would be achieved.

Use of the site by bats can be predicted and so long as boundary habitats are retained, and enhanced surveys are not considered necessary.
This assessment has been made by Peter Brooks who has 20 years' experience of scoping and delivering bat surveys and has carried out innumerable activity surveys in very similar sites to this one.

Appendix 4 Wildlife Legislation, Policy and Guidance

This is not an exhaustive list but sets out briefly the relevance of Legislation, Policy and Guidance in terms of planning applications and this assessment.

Legislation

Council Directive 92/43/EEC on the Conservation of natural habitats and of wild fauna and flora (EC Habitats Directive).

Provides framework at an international (EU) level for the consideration / protection of European Protected Species (EPS), and habitats through the designation of sites.

Council Directive 79/409/EEC on the Conservation of wild birds (EC Birds Directive) and The Ramsar Convention on Wetlands of International Importance (1971)

Provides framework at an international (EU) level for the consideration / protection of important bird populations and the sites on which they are dependant.

The Conservation of Habitats and Species Regulations (2010)

This transposes 1) into UK law and provides the basis on which all EPS are protected and impacts on them can be licensed in the UK.

The Wildlife and Countryside Act (1981) as amended

This provides the basis on which UK species are legally protected or restricted and confers protection on Sites of Special Scientific Interest SSSIs. It contains annexes of plants and animals which are legally protected as well as those which are considered to be invasive or harmful. It provides the basis on which impacts on such species can be licensed in the UK and provides controls on work on or near SSSIs.

The Countryside and Rights of Way Act 2000 (CRoW)

Provides a statutory basis for nature conservation, strengthens the protection of SSSIs and UK protected species and requires the consideration of habitats and species listed on the UK and Local Biodiversity Action Plans (UKBAP / LBAP).

Natural Environment and Rural Communities Act 2006 (NERC)

Sets out the responsibilities of Local Authorities in conserving biodiversity. Section 41 of the Act requires the publishing of lists of habitats and species which are "of principal importance for the purpose of conserving biodiversity". At present these largely reflect those making up the UKBAP lists.

Hedgerows Regulations (1997)

Define and provide protection for Important Hedgerows.

Protection of Badgers Act (1992)

Protects badgers from persecution, this includes excavation / development in the proximity of setts.

Protected Sites

Statutory EU / International Protected Sites

Special Areas of Conservation (SACs); and Special Protection Areas (SPAs) and Ramsar Sites contain examples of some of the most important natural ecosystems in Europe. Work on or near these sites is strictly protected and Local Authorities will be expected to carry out 'Appropriate Assessment' of development in proximity of them. In this case there is often an increased burden on the developer in relation to provision of information and assessment.

Statutory UK Protected Sites

Local Nature Reserves (LNRs); National Nature Reserves (NNRs); Sites of Special Scientific Interest (SSSIs) all receive strict protection under UK legislation. Work in or in proximity to these sites would be restricted with any needing to be agreed with Natural England. Natural England now provide guidance on the nature of development which could impact on SSSIs through Impact Risk Zones.

Locally Protected Sites

Local Authorities have a variety of protected wildlife sites designated at a local or regional level. These are gradually being brought under the banner of Local Wildlife Sites (LWS) but at present a plethora of different designations exist - all subject to local policy.

Protected Species

European Protected Species

A number of species (most relevantly bats, great crested newts [GCN], and otters) receive strict protection from killing, injury and disturbance under The Conservation of Habitats and Species Regulations (2010). Protection is also conferred on the habitats on which they rely such as roost space in the case of bats and ponds and fields etc. in the case of GCN.

UK Protected Species

A number of species (including bats, GCN, watervole and white clawed crayfish) are strictly protected under The Wildlife and Countryside Act (1981) as amended, from killing, injury, disturbance and damage or destruction of their resting places etc. Certain species (such as reptiles) and some birds (such as barn owl) receive partial protection e.g. at certain times of the year or form certain activities only. All nesting bird species are protected from damage or destruction of their nests - whilst active.

Invasive species

Schedule 9 of the Wildlife and Countryside Act (1981) as amended, lists these species and makes it an offence to cause or allow their spread in the wild. This often has impacts on development and planning in relation to the presence of invasive plant species such as: himalayan balsam (*Impatiens glandulifera),* japanese knotweed (*Fallopia japonica*) and giant hogweed *(Heracleum mantegazzianum*).

Planning Policy / Guidance

The National Planning Policy Framework (NPPF):
The National Planning Policy Framework was updated in February 2019. The most relevant paragraphs from the NPPF are set out below.

The approach to assessing the natural environment is now embedded within the definition of what 'sustainable development' is and this falls under one of three objectives of the planning system – the 'environmental objective' applying in this case. Paragraph 8c (P8c) of the NPPF states that sustainable development should "*contribute to protecting and enhancing our natural environment*" and "*help to improve biodiversity*". P10 sets out the Framework's presumption in favour of sustainable development.

Section 11 of the NPPF details making effective use of land. The Framework states that planning policies and decisions should "*take opportunities to achieve net environmental gains – such as developments that would enable new habitat creation*" and should "*recognise that some undeveloped land can perform functions for wildlife*" (P118).

Section 15 details conserving and enhancing the natural environment; policies and decisions should be "*protecting and enhancing sites of biodiversity value*", "*recognise the intrinsic character and beauty of the countryside*" and contribute to conserving and enhancing the natural environment and reducing pollution (P170). Allocations of land for development should, "*prefer land of lesser environmental value, where consistent with other policies in this Framework and take a strategic approach to maintaining and enhancing networks of habitats*" (P171).

The Framework sets out ways to minimise the impacts on biodiversity through "*identifying, mapping and safeguarding components of local wildlife rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity*" and the "*conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and (the need to) identify and pursue opportunities for securing measurable net gains for biodiversity*" (P174).

It is made clear in P175 that local planning authorities should apply principles when determining planning applications. Planning permission should be refused "*if significant harm to biodiversity resulting in development cannot be avoided, adequately mitigated, or, as a last resort, compensated for*". Development should not normally be permitted where an adverse effect on a SSSI is likely and "*opportunities to incorporate biodiversity improvements in and around developments should be encouraged, especially where this can secure measurable net gains for biodiversity*".

Biodiversity 2020: A Strategy for England's Wildlife and Ecosystem Services.
This strategy builds on the Natural Environment White Paper (June 2011) - Setting out the current UK Government's approach to nature conservation. It promotes a more coherent and inclusive approach to conservation and the valuing in economic and social terms of economic resources.

The strategy promotes initiatives such as Biodiversity Offsetting, Nature Improvement Areas and a focus on well-connected natural networks and introduces the concept of securing a 'no net loss' situation with regard to UKBAP / Section 41 habitats and species.

ODPM circular 06/05 (2005) Biodiversity and Geological Conservation - Statutory Obligations and Their Impact Within the Planning System
Provides guidance to Local Authorities on their obligations to biodiversity – particularly in relation to assessing planning applications and ensuring the adequacy of information.

BSI (2013) British Standards Institute BS 42020:2013 Biodiversity — Code of Practice for Planning and Development.
Provides a standard for the biodiversity assessment and development industries and decision makers such as Local Planning Authorities to work to.