



Surrey Wildlife Trust
Ecology Services

Ecology Report

Kew Gardens: Wild Play

Royal Botanic Gardens Kew



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Wildlife Trust
Consultancies



Constructionline
Gold Member



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Validity of report (CIEEM, 2019)	In most cases, this report will be valid for 12 months. Where habitat management has not been altered and new features have not formed, it is possible the report remains valid for between 12 and 18 months, however it is advised an updated site visit is undertaken to confirm this. Where more than 18 months have elapsed an ecologist should review the information to confirm whether the information in this report can be relied upon. Reports more than three years old are unlikely to remain valid.		

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Acronyms

Acronym	Definition
AONB	Area of Outstanding Natural Beauty
BCT	Bat Conservation Trust
BNG	Biodiversity Net Gain
BSI	British Standard Institute
CEMP	Construction Environmental Management Plan
CIEEM	Chartered Institute of Ecology and Environmental Management
CIRIA	Construction Industry Research and Information Association
DAFOR	Dominant, Abundant, Frequent, Occasional, Rare
DBH	Diameter at Breast Height
DEFRA	Department for Environment, Food and Rural Affairs
GCN	Great crested newt
GIS	Geographic Information System
GPS	Global Positioning System
HMMP	Habitat Management and Monitoring Plan
HPI	Habitats of Principal Importance
IEMA	Institute of Environmental Management and Assessment
ILP	Institute for Lighting Professionals
IRZ	Impact Risk Zone
JNCC	Joint Nature Conservation Committee
LED	Light-emitting diode
LNR	Local Nature Reserve
LPA	Local Planning Authority
NERC	Natural Environment and Rural Communities
NGO	Non-governmental organisation
NPPF	National Planning Policy Framework
PEA	Preliminary Ecological Appraisal
PRF	Preliminary Roost Feature
SAC	Special Areas of Conservation
SPA	Special Protection Areas
SPI	Species of Principal Importance
SSSI	Site of Special Scientific Interest
SWT	Surrey Wildlife Trust
VAT	Value Added Tax

Table 1: Ecological impact assessment planning checklist

EcIA criteria ¹		Addressed	Report section
Pre-app/ scope	Where pre-application has been received from the LPA and/or an NGO and/or statutory body (e.g. Natural England's Discretionary Advice Service), it has been fully accounted for in the EcIA.	N/A	N/A
	The scope, structure and content of the EcIA is in accordance with published good practice.	Yes	4
Surveys, sites, species and habitats	Adequate and up to date: Desk study has been undertaken. Phase 1 habitat survey (or equivalent) has been undertaken. Phase 2 ecology surveys have been undertaken (where necessary).	Yes	4 (plus relevant appendices)
	All statutory and non-statutory sites likely to be significantly affected are clearly and correctly identified.	Yes	4
	All protected or priority species and priority habitats likely to be significantly affected are clearly and correctly identified, and adequate surveys have been undertaken to inform the baseline.	Yes	4 and 5
	Any invasive non-native plant species present are clearly and correctly identified.	Yes	4, 5
	Where a separate PEA Report states that Phase 2 ecology surveys are required, these have been undertaken in full and results submitted with the application (or lack of such surveys is justified).	Yes	4
Impacts and Effects	The assessment is based on clearly defined development proposals along with relevant drawings/plans (and any plans used are the same version number as those submitted with the application) or The residual ecological effects are considered to be not significant at any geographical scale irrespective of the detailed development proposals, and the assessment is based on a worst-case scenario.	Yes	2.1
	The report clearly describes and assesses all likely significant ecological effects (including cumulative effects) clearly stating the geographical scale of significance (where relevant).	Yes	4 and Table 4
Mitigation, compensation and enhancement	The mitigation hierarchy has been clearly followed.	Yes	6 and Table 6
	The report: Clearly identifies the proposed mitigation and compensation measures and explains how these will adequately address all likely significant adverse effects. Includes, where necessary, proposals for post-construction monitoring. Recommends how proposed measures may be secured through planning conditions/obligations and/or necessary licences.	Yes	5 and Table 4
	A summary table of proposed mitigation and compensation measures has been provided.	Yes	1
	The need for any mitigation licences required in relation to protected species is clearly identified.	Yes	1
	Proposals to deliver ecological enhancement/Biodiversity Net Gain have been provided.	Baseline only, landscape drawings to be designed	6 and Tables 5 and 6
Competence/ good practice	Limitations of the ecological work have been correctly identified and the implications explained.	Yes	Table 3
	All relevant key timing issues (e.g. site vegetation clearance or roof removal) that may constrain or adversely affect the proposed timing of development have been identified.	Yes	Table 4
	All ecological work and surveys accord with published good practice methods and guidelines OR deviation from such guidelines is made clear and fully justified, and the implications for subsequent conclusions and recommendations made explicit in the report.	Yes	4, Table 3 and relevant appendix for habitats and species
	All ecologists and surveyors hold appropriate species licences (where relevant) and/or have all necessary competencies to carry out the work undertaken.	Yes	Relevant appendix for habitat and species
Conclusions	The report clearly identifies where the proposed development complies with relevant legislation and policy, highlighting any possible non-compliance issues, and highlighting circumstances where a conclusion cannot be drawn as it requires an assessment of non-ecological issues (such as socio-economic ones).	Yes	3, Table 4
	The report provides a clear summary of losses and gains for biodiversity, and a justified conclusion of an overall net gain for biodiversity.	TBC	6 and Table 5
	Justifiable conclusions based on sound professional judgement have been drawn as to the significance of effects on any designated site, protected or priority habitat/species or other ecological feature, and a justified scale of significance has been stated.	Yes	4

¹ To ensure decisions are based on adequate information in accordance with Clauses 6.2 and 8.1 of BS42020:2013

1 Summary

- 1.1.1 This Ecology Report has been prepared to inform a planning application. The key results and recommendations are detailed below.
- 1.1.2 Where further surveys are recommended, these will need to be completed prior to determination and this report updated to reflect the results and ensure the mitigation strategies adequately minimise the impact on the ecological receptors; in line with best practice (CIEEM, 2022b).

Executive summary

Project overview

Aim of the report	Identify the ecological receptors present (i.e. baseline conditions). Assess the impact of the proposals on the ecological receptors present. Characterise the impacts (e.g. extent, magnitude, duration, reversibility, timing and frequency). Identify the cumulative impacts. Recommend: - Measures to avoid impacts on the ecological receptors (e.g. alternative designs) - Mitigation measures to minimise the impact on the ecological receptors - Opportunities for ecological compensation where residual impacts are unavoidable and include onsite and offset biodiversity net gain - Enhancement opportunities to provide net benefits for biodiversity over and above the minimum requirements Conclude on the residual impacts with the implementation of the mitigation measures.
Project description	No finalised landscaping plans have been provided at the time of writing this report. The proposed development is to create a wild play area incorporating the following design ideas: - Extend south footpath arc into the wider field. - Create a 'look out' to the High Weald. - Hedges/ field boundaries to merge into play area. - Create a new pond. - Remove existing block wall to open up views and space for kiosk. - Thin out trees to extend views and bring the wider landscape in. - Arrival space near to the existing toilets. - Retain main access route through.
Planning consent type	Full planning consent.
Local planning authority	Mid Sussex District Council.
Survey information	Survey dates are detailed in Table 3. No residual limitations were recorded during the assessment and as such all data can be relied upon for the EcIA.

Baseline information scoped into the EcIA

1.1.3 Baseline information scoped into the EcIA is detailed below. The full survey information is provided in the relevant appendix for the sites, habitats and species considered, along with information as to why these were unlikely to be impacted by the proposals and scoped out of the EcIA.

Habitats of ecological consideration recorded in the desk study

Waterbodies within 250 m	Three waterbodies – one pond within 15 m with indirect impacts.
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Habitats

UK habitat classification and code	Compartment number (refer to Figure 1)	Confirmed as HPI ²	Habitat condition	Summary of opportunities for enhancement
Habitat Code: g4 - Modified grassland	1, 2 and 4	No	Good	The grassland should be monitored for high levels of trampling; reseeding may be required if areas of bare ground >5%. These compartments are already in good condition has limited opportunities for enhancement within its habitat type but could be enhanced to "other neutral grassland". Full details of how to achieve the relevant uplift would be incorporated into an HMMP once landscaping plans are confirmed. If the habitat cannot be enhanced, this compartment should be managed to retain its existing "good" condition.
Habitat Code: g3c – Other neutral grassland	3	No	Moderate	By managing the grassland to increase the species diversity (increase of ≥0.4 species/m²) would enhance the grassland compartment to "good" condition. Full details of the required management measures to achieve the relevant uplift would be incorporated into an HMMP once landscaping plans are confirmed.
Habitat Code: w1h - Other woodland; mixed Additional Codes: 48 - Non-native	5, 6	No	Poor	Where possible, creation of deadwood through the woodland using materials (brush, logs etc) from site vegetation clearance. Other measures include rotational management of the shrub and ground layer. Enhancement of retained woodland by reduction of non-native species, such as rhododendron and bamboo, and planting of native shrub species.
Habitat Code: w1h5 - Other woodland; mixed; mainly broadleaved	7	No	Poor	The condition of woodland will be maintained through ongoing management, as detailed within the HMMP to ensure the BNG objectives are met.

² Confirmed through surveys or MAGIC mapping of HPI boundaries

UK habitat classification and code	Compartment number (refer to Figure 1)	Confirmed as HPI ²	Habitat condition	Summary of opportunities for enhancement
Habitat Code: w1h6 - Other woodland; mixed; mainly conifer	8	No	Poor	The condition of woodland will be maintained through ongoing management, as detailed within the HMMP to ensure the BNG objectives are met.
Habitat Code: h3d - Bramble scrub	9	No	Not applicable – equivalent to poor	Where possible, retain scrub habitat within the site boundary. Retained bramble scrub should be enhanced to mixed scrub through additional planting of other scrub species. Where this habitat is lost, it should ideally be offset with the creation of habitat of the same broad type (i.e. mixed scrub). Mixed scrub (containing species such as blackthorn, holly and elder) should be incorporated into the development design to retain the niches that this habitat provides. This will ensure the site has the same opportunities for reptiles, birds and amphibians that rely on this habitat.
Habitat Code: u1c – Artificial unsealed surface	11	No	Not applicable	None.
Habitat Code: u1b – developed land; sealed surface	12	No	Not applicable	None.
Habitat Code: 1160 Introduced shrub Additional Codes: 48 - Non-native	13	No	Not applicable – equivalent to poor	Consider planting additional native species and/or those known to benefit wildlife in this area. If this area is being lost, this could be planted with a higher distinctiveness habitat, which can achieve a higher condition.
Habitat Code: u1b5 – buildings	B1, B2, B3	No	Not applicable	Avoid impacts to the PRF found on B3.
Habitat Code: h2b – Non-native hedgerow	H1	No	Poor – pre-determined by habitat type	Consider planting additional native species known to benefit wildlife. If the hedgerow is to be lost as part of the development, this should be replaced with a native hedgerow (ideally species-rich) and maintained to good condition.
Habitat Code: h2a native hedgerow	H2	Yes	Good	There is opportunity to create additional native species rich hedgerows across the site. This would enhance the ecological value of the site. The condition of H1 should be maintained through ongoing management.
Habitat Code: u1e – built linear feature Additional Codes: 853 – mortared wall	LF1	No	Not applicable	This feature is being lost. Removal of this feature will allow wildlife to travel through and from compartment 7 to the rest of the site more freely.
Individual trees	T1-T4	No	Good	Avoid impacts to tree with roosting potential (T1, T3 and T4).

Species

Species group	Species	Recorded in the desk study	Summary of survey results	Further ecological surveys required to complete EcIA	Optimal seasonal timing as per Appendix 7 and number of survey visits
Invertebrates		Not applicable	Suitability for invertebrates within the woodland, introduced shrub, scrub and grassland.	No	None required
Amphibians		No	Suitability for amphibians within the pond within 15 m, woodland, scrub and grassland.	No	None required
Reptiles		Not applicable	Suitability for reptiles within the pond within 15 m, woodland, scrub and grassland.	No	None required
Birds		Not applicable	Suitability for birds within the woodland, hedgerows, trees and scrub.	No	None required
Mammals	Badger	Not applicable	Suitability for badger within the woodland, scrub and grassland.	Yes	All year; at least one visit to record mammal hole locations with setts monitored for three weeks.
	Bats	No	Suitability for bats within the woodland, trees, building, and grassland.	Yes	In the instance B3, T1, T3 and T4 are retained, and the PRFs are not impacted, no further surveys are required.

Species group	Species	Recorded in the desk study	Summary of survey results	Further ecological surveys required to complete EclA	Optimal seasonal timing as per Appendix 7 and number of survey visits
			One building (B3) with low suitability for roosting bats. Three trees with PRF-M suitability for roosting bats.		Where there are impacts to B3, T1, T3 and T4, the following surveys are required: • Presence/likely absence survey of the B3 with low suitability between May to August. • Presence/likely absence survey tree with PRF-M May to September
	Hazel dormouse	Not applicable	Suitability for hazel dormouse within the woodland, hedgerows and scrub.	No	None required
	Hedgehog	Not applicable	Suitability for hedgehog within the woodland, hedgerows, scrub and grassland.	No	None required
	Other mammals	Not applicable	Suitability for other mammals within the woodland, hedgerows, scrub and grassland.	No	Not applicable
All species	Invasive, non-native species	Not applicable	Large portions of the survey area comprise non-native species due to the function of the site as public gardens.	No	None required

Summary of ecological impact assessment

Summary of mitigation measures that need to be incorporated into the construction phase of the project

- Preparation of a CEMP, including but not limited to, the following:
 - Protective fencing (including hoarding and dust sheets) is to be placed around habitat protection zones.
 - Trees will be protected during construction using root protection fencing around the root zones in accordance with British Standards BS 5837 2012.
 - Precautionary method of working where clearing vegetation between April to September, for reptiles and amphibians.
 - Undertake vegetation removal between September and February, outside the breeding bird season. If this period cannot be avoided, works to be supervised by an ecologist, and identified nests adequately protected until chicks have fledged.
 - Construction lighting to be directed away from the areas of retained woodland and hedgerows and specifically trees T1, T3 and T4.
 - Undertake walkover survey within development area and a 30 m buffer within 30 days prior to any vegetation removal, in relation to badger should they be present.
 - Cover any holes or trenches overnight, placing a ramp in larger holes so that fallen animals can escape in the eventuality they fall into the holes.
 - To prevent the spread of invasive species during works, biosecurity will be adhered to.

Summary of mitigation measures that need to be incorporated into project design (operational phase)

- Well-designed development design to avoid the loss of habitats, specifically those of medium and high distinctiveness (woodland, hedgerows, trees, other neutral grassland).
- Consider creating additional areas of species-rich wildflower grassland through plug planting and sowing seed mixtures. The landscape plan should incorporate native species in planting mix.
- Production of a HMMP that details how habitats will be managed over 30 years to deliver the objectives of the biodiversity net gain that has been detailed within this report.
- Enhancements incorporated to benefit amphibians and reptiles, including log piles created within the woodland from woodland management.
- Comply with best practise guidance for any new lighting within the survey area.
- Leaving areas of unmanaged habitat with leaf litter, scrub and decaying wood to encourage hedgehog and smaller mammals.

Ecological receptors with residual negative impacts larger than minor

- None.

Ecological receptors with residual positive impact

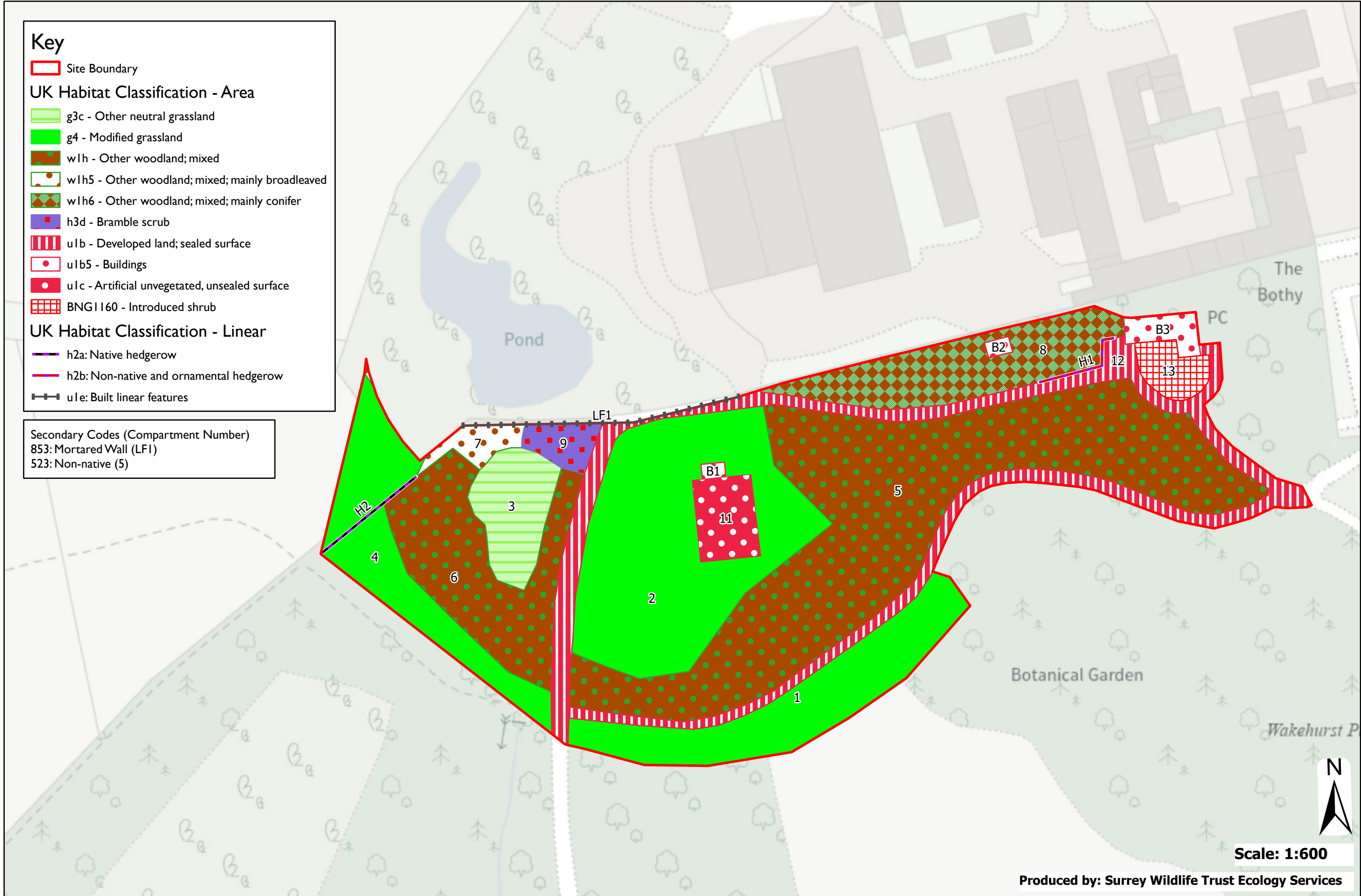
- Management to improve the retained grassland condition and enhancing the modified grassland to other neutral grassland (species-rich wildflower meadow)
- Management to improve the woodlands conditions and create features suitable for species such as reptiles, amphibians and hedgehog.
- Creation of new areas of mixed native shrub planting.
- Opportunities to create new pond within the development which would benefit reptiles and amphibians.
- Opportunities to enhance the scrub through planting of native species.
- Opportunities to create new species-rich native hedgerows.
- Additional enhancements to benefit wildlife including bat and bird boxes, hedgehog house and log piles.

Summary of biodiversity net gain assessment

Onsite baseline units	Habitat units	7.11
	Hedgerow units	0.16

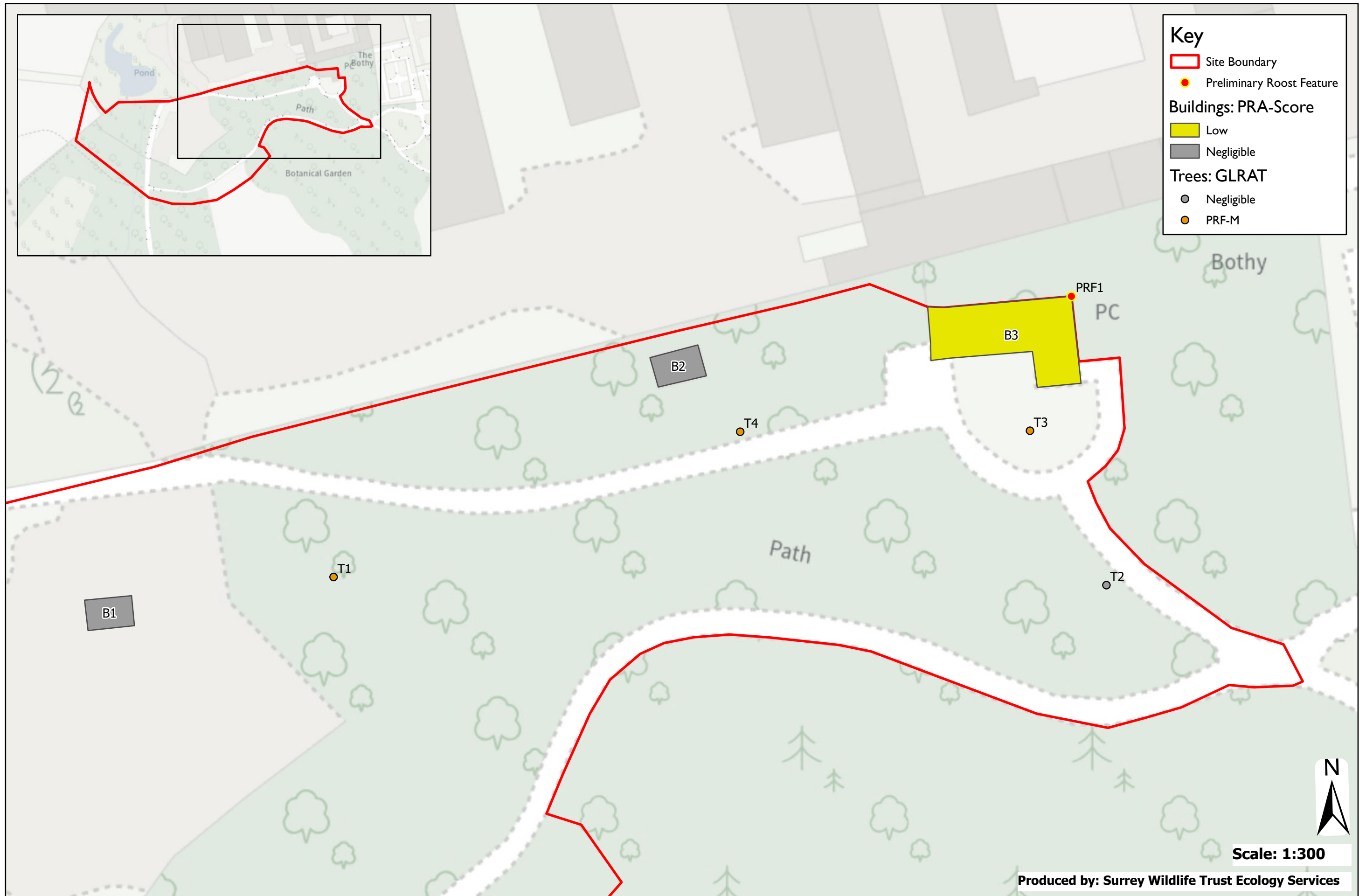
Summary of biodiversity enhancement measures for species

Feature type	Species suitability	Where to place	Number of features required
Bat box	Soprano pipistrelle Common pipistrelle Natterer's Whiskered Brandt's	Integrated bat box to the southern aspect of a retained tree.	2
Bird box	Small garden bird species such as blue tit, house sparrow and robin.	To be placed on the southern aspect on a retained tree within the woodland.	3
Hedgehog house	Hedgehog	To be placed within the woodland during construction.	2
Log pile	Amphibians and reptiles	Place log piles within an undisturbed corner of the woodland. Create log piles using wood from felled trees.	2
Total			9



**Figure 1: Royal Botanic Gardens Kew,
Wakehurst, Wild Play Area
Baseline Habitat Survey**





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Ordnance Survey

Created By: EB

6136-7, November 2024

**Figure 2: Royal Botanic Gardens Kew,
Wakehurst, Wild Play Area
Bat Preliminary Roost Assessment & GLRAT**



Surrey Wildlife Trust
Ecology Services

2 Introduction

2.1 Project proposals

2.1.1 The project proposals for the development of a wild play area incorporates the following design ideas:

- Extend south footpath arc into the wider field.
- Create a 'look out' to the High Weald.
- Hedges/ field boundaries to merge into play area.
- Create new pond.
- Remove existing block wall to open up views and space for kiosk.
- Thin out trees to extend views and bring the wider landscape in.
- Arrival space near to the existing toilets.
- Retain main access route through.

2.2 Survey area

2.2.1 The survey area, presented in Figure 1, comprises the development. It is approximately 0.86 ha, located at Kew Gardens Wakehurst, Selsfield Rd, Haywards Heath, RH17 6TN (central grid reference TQ 33760 31425).

3 Legislative and planning policy framework

- 3.1.1 All projects need to comply with relevant UK legislation, as detailed in Appendix 1.
- 3.1.2 Projects must also comply with relevant national and local planning policies, as detailed in Appendix 1. The relevance of these was reviewed to ensure recommendations relating to sites, habitats and species in the EclA reflected legal and planning policy consideration, as detailed in Section 5.

4 Methods

4.1 Collection of baseline information

4.1.1 Table 2 presents a summary of the scope of work and methods undertaken to identify the ecological receptors currently or potentially present in the survey area (baseline conditions), with detailed survey methods and results provided in the relevant appendix. All surveys have been undertaken by appropriately trained and competent ecologists.

Table 2: Scope of work and methods undertaken

Scope type	Species group	Scope of work and methodology	Appendix number with detailed methods and results	Date surveys commenced	Residual limitations recorded	Further assessment required to inform EcIA/HRA
Desk Study		Review of local plan	2	17/10/2024	No	No
		Review of mitigation licences	2	17/10/2024	No	No
		Review of parcels of ancient woodland	2	17/10/2024	No	No
		Review of parcels of habitats of principal importance	2	17/10/2024	No	No
		Review of impact risk zones for statutory designated sites	2	17/10/2024	No	No
Habitat survey		UK habitat classification	3	25/09/2024	No	No
		Habitat condition assessment	3	25/09/2024	No	No
Bats		Check for mitigation licences within 2km	4	17/10/2024	No	No
		Preliminary Roost Assessment that includes an external and internal inspection of three buildings.	4	25/09/2024 (external) and 30/09/2024 (internal)	Yes	Yes
		Preliminary Ground Level Roost Assessment of up to 20 trees.	4	25/09/2024	No	No
Biodiversity net gain assessment		Baseline biodiversity net gain assessment Provision of design advice to maximise biodiversity net gain within the survey area Analysis of development proposals Completion of the baseline Statutory BNG Metric	5	N/A	No	No

4.2 Ecological Impact Assessment

- 4.2.1 Following the collation of baseline information, the EclA was undertaken to ascertain how the project proposals at the construction and operational phase could impact the ecological receptors and determine whether a measurable change from baseline conditions is predicted, resulting in a significant effect. The EclA was undertaken in line with best practice methodology (CIEEM, 2022b) and reflected the scale of the project to ensure a proportionate approach was undertaken. Ecological features that would not be impacted by the proposals were scoped out of the assessment.
- 4.2.2 Throughout the process, the ecologist used the best available scientific knowledge in assessing impacts and applied a precautionary principle. Therefore, where insufficient information was available to justify a robust conclusion of no significant effect, a significant effect was assumed.
- 4.2.3 For the ecological receptors scoped into the assessment, the impact of the development proposals was assessed. Impacts were considered significant where a measurable change from baseline conditions are predicted. Factors that were considered included are presented in Table 3, as defined in (CIEEM, 2022b).

Table 3: Impact characteristics

Characteristic	Definition
Positive or negative impact	Positive impact results in an improvement in the quality of the environment, such as increasing connectivity or extending habitat; increasing conservation status of a species, habitat or designated site, in terms of distribution and/or population size.
	Negative impact results in a change which reduces the quality of the environment, such as destruction or fragmentation of habitat; decreasing conservation status in terms of distribution and/or population size.
Extent	Spatial or geographical area affected
Magnitude	Amount affected by the project, including size, amount, intensity and volume. Impacts are also defined as being direct, indirect, secondary or cumulative.
Duration	Defined in relation to the ecological feature. Effects are described as short, medium or long-term and permanent or temporary.
Frequency or timing	The number of times an event occurs, and timing relates to a particular season
Reversibility	Defined as reversible or irreversible.

5 Ecological Impact Assessment

5.1.1 The following ecological receptors were scoped into the EclA:

- Waterbodies within 250m
- Habitats
- Species

5.1.2 The impact of the proposed development on each ecological receptor scoped into the assessment is presented in the table below.

Table 4: EclA for ecological receptors scoped into the assessment

Ecological receptor name	Construction phase			Operational phase			Recommended actions
	Initial impact	Mitigation measures	Residual impact	Initial impact	Mitigation measures	Residual impact	
Habitats							
Modified grassland	The principles of the wild play design indicate there will be direct impacts to areas of the grassland, including: • Compartment 2 may become a village glade where a suite of wooden houses and towers may be built. • Compartment 1 may become a ridge and furrow lawn, resulting in digging within the area. There are opportunities for areas of parcel 4 to be left to grow longer, creating habitat for invertebrates, birds, reptiles and amphibians. • A lookout structure may be erected to the far west of compartment 4. Impacts will be Minor Negative at a Site Level.	Careful project design of the development should aim to avoid loss of grassland where possible. Consider enhancing any retained modified grassland to be species-rich other neutral grassland with a good condition in order to improve biodiversity on the site. Use of protective fencing between development and all retained areas of vegetation. Measures to be detailed in CEMP (biodiversity).	With the implementation of the mitigation measures, residual risk is considered to be Minor positive at a Site Level.	Deterioration of habitat through anthropogenic footfall and behaviour (such as littering) and increase in artificial lighting. Specifically, trampling is likely from the use of the grassland as a play area, however this habitat type responds well to trampling. Bins should be erected across the site to reduce the effects of littering. Minor Negative Impact at a Site Level.	The condition of the grassland will be improved through ongoing management as detailed within the HMMP to ensure the BNG objectives are met. The grassland should be monitored for high levels of trampling; reseeded if areas of bare ground >5%. Production and implementation of HMMP, detailing long-term habitat management.	With the implementation of the mitigation measures, residual impact is Minor positive at a Site Level.	Retain grassland where possible. Bins to be placed across site to reduce littering. Enhance retained grassland by following an HMMP and CEMP (biodiversity).
Other neutral grassland	The principles of the wild play design indicate direct loss of some other neutral grassland due to the creation of a pond. Minor Negative Impact at a Site Level.	Careful project design of the development should aim to avoid loss of neutral grassland where possible. Consider enhancing any retained neutral grassland to good condition in order to improve biodiversity on the site. Use of protective fencing between development and all retained areas of vegetation. Measures to be detailed in CEMP (biodiversity).	With the implementation of the mitigation measures, residual risk is considered to be Negligible at a Site Level.	Deterioration of habitat through anthropogenic footfall and behaviour (such as littering) and increase in artificial lighting. Decrease in habitat condition through exposure to water due to the creation of gill stream or splash pool in the vicinity. Minor Negative Impact at a Site Level.	The condition of the other neutral grassland will be improved through ongoing management as detailed within HMMP to ensure the BNG objectives are met. Production and implementation of HMMP, detailing long-term habitat management.	With the implementation of the mitigation measures, residual impact is Minor Positive at a Site Level.	Retain neutral grassland where possible. Enhance retained neutral grassland by following an HMMP and CEMP (biodiversity).

Ecological receptor name	Construction phase			Operational phase			Recommended actions
	Initial impact	Mitigation measures	Residual impact	Initial impact	Mitigation measures	Residual impact	
Other woodland; mixed	Direct impacts to compartments 5, 6 and 7 whereby woodland areas will undergo tree thinning, path creation and the addition of stepping stones. A tree fort will be erected in compartment 5 whereby towers and platforms are built around existing trees. Potential spread of invasive non-native species found within the mixed woodland. Minor Negative Impact at a Site Level.	Careful project design of the development should aim to avoid loss or fragmentation of woodland where possible. Enhancement of retained woodland by reduction of non-native species, such as bamboo, and planting of native shrub species. Use of protective fencing between development and all retained areas of vegetation. Trees will be protected during construction using root protection fencing around the root zones in accordance with British Standards BS 5837 2012. Follow mitigation measures identified in the invasive species row below. Measures to be detailed in CEMP (biodiversity).	With the implementation of the mitigation measures, residual risk is considered to be Negligible at a Site Level.	Deterioration of woodland through anthropogenic footfall and behaviour (such as littering) and increase in artificial lighting. Minor Negative Impact at a Site Level.	Woodland condition will be improved through ongoing management as detailed within a HMMP to ensure the BNG objectives are met. This will include the removal of the Schedule 9 species rhododendron. Where possible, creation of deadwood through the woodland using materials (brush, logs etc) from site vegetation clearance. Other measures include rotational management of the shrub and ground layer. Production and implementation of HMMP, detailing long-term habitat management.	With the implementation of the mitigation measures, residual impacts are assessed as Minor Positive at a Site Level.	Use protective fencing around retained trees. Consider thinning non-native species and retaining native species. Remove Schedule 9 species from the woodland (rhododendron). Enhance the woodland by following an HMMP and CEMP (biodiversity).
Other woodland; mixed; mainly broadleaved	Potential indirect impacts caused from the removal of the wall, including dust/pollution leading to a potential deterioration of the woodland condition. Minor Negative Impact at a Site Level.	Use of protective fencing between development and all retained areas of vegetation. Measures to be detailed in CEMP (biodiversity).	Negligible Impact at a Site Level.	Potential deterioration on retained habitat through anthropogenic activities, such as high levels of disturbance through noise and lighting. Minor Negative Impact at a Site Level.	The condition of woodland will be maintained through ongoing management, as detailed within the HMMP to ensure the BNG objectives are met. Where possible, creation of deadwood through the woodland using materials (brush, logs etc) from site vegetation clearance. Production and implementation of HMMP, detailing long-term habitat management	With the implementation of the mitigation measures, residual risk is considered to be Minor Positive Impact at a Site Level.	Protective fencing to be installed. Maintain habitat by following an HMMP and CEMP (biodiversity).

Ecological receptor name	Construction phase			Operational phase			Recommended actions
	Initial impact	Mitigation measures	Residual impact	Initial impact	Mitigation measures	Residual impact	
Other woodland; mixed; mainly conifer	No direct impacts are outlined in the wild play design principles to the northern woodland. Potential indirect impacts include dust/pollution during the construction phase leading to a potential deterioration of the woodland condition. Negligible Impact at a Site Level.	Use of protective fencing between development and all retained areas of vegetation. Measures to be detailed in CEMP (biodiversity).	Negligible Impact at a Site Level.	Potential deterioration on retained habitat through anthropogenic activities, such as high levels of disturbance through noise and lighting. Negative Impact at a Site Level.	The condition of woodland will be maintained through ongoing management, as detailed within the HMMP to ensure the BNG objectives are met. Production and implementation of HMMP, detailing long-term habitat management	With the implementation of the mitigation measures, residual risk is considered to be Minor Positive Impact at a Site Level.	Protective fencing to be installed. Maintain habitat by following an HMMP and CEMP (biodiversity).
Bramble scrub	Potential direct loss of habitat through the creation of a new splash pool, which the initial plans indicate will be within the same area. Minor Negative Impact at a Site Level.	Where this habitat is lost, it should ideally be offset with the creation of habitat of the same broad type (i.e. mixed scrub). Mixed scrub (containing species such as blackthorn, holly and elder) should be incorporated into the development design in order to retain the niches that this habitat provides. This will ensure the site has the same opportunities for reptiles, birds and amphibians that rely on this habitat. Use of protective fencing between development and all retained areas of vegetation. Measures to be detailed in CEMP (biodiversity).	With the implementation of the mitigation measures, residual risk is considered to be Minor Positive at a Site Level.	Potential loss of scrub habitat through development designs. Minor Negative Impact at a Site Level.	The condition of any newly created areas of mixed scrub will improve through ongoing management as detailed within HMMP to ensure the BNG objectives are met. Production and implementation of HMMP, detailing long-term habitat management.	With the implementation of the mitigation measures, residual impacts are assessed as Minor Positive at a Site Level.	Retain scrub wherever possible. Create areas of good quality mixed scrub to compensate for any loss of bramble scrub. Maintain habitat by following an HMMP and CEMP (biodiversity).

Ecological receptor name	Construction phase			Operational phase			Recommended actions
	Initial impact	Mitigation measures	Residual impact	Initial impact	Mitigation measures	Residual impact	
Pond	Potential indirect impacts to the pond located within 15 m north of the site. This includes impacts such as dust/pollution during the construction phase leading to a potential deterioration of the pond condition. There is opportunity for a new pond to be created in the site area. Potential positive impacts to the retained pond through thinning of woodland, results in less shading. Excavation of ground may cause harm or kill hibernating reptiles or amphibians. Minor Negative Impact at a Site Level.	Excavation should take place during the reptile active season (April to September) to avoid harm to reptiles. Any new ponds should be dug out using machinery and left to fill naturally over time. Ponds that have a variety of depths are known to benefit wildlife. Excavation machinery should use a toothed bucket to reduce harm to any species that may be within the excavation zone. Consider using the excavated soil on site to create the ridge and furrow lawn in the modified grassland. Measures to be detailed in CEMP (biodiversity).	With the implementation of the mitigation measures, residual risk is considered to be Minor Positive at a Site Level.	Water source is intended to be used for paddling, which will result in high levels of physical disturbance as well as potential pollution. Minor Negative Impact at a Site Level.	Bins will be placed within the vicinity to reduce the littering in the area. The pond will not be artificially stocked with fish.	With the implementation of the mitigation measures, residual impacts are assessed as Minor Positive at a Site Level.	Excavation should take place outside reptile active season (April – September). Consider using excavated material to create mounds on grassland habitats. Stock bins around the site to reduce littering. Preparation of a CEMP (biodiversity) and HMMP.
Introduced shrub	There are no expected direct impacts to the introduced shrub. Potential indirect impacts include dust/pollution during the construction phase leading to a potential deterioration of the shrub condition. Negligible Impact at a Site Level.	Use of protective fencing between development and all retained areas of vegetation. Consider planting additional native species known to benefit wildlife. Measures to be detailed in CEMP (biodiversity).	Negligible Impact at a Site Level.	Deterioration of habitat through anthropogenic footfall and behaviour (such as littering) and increase in artificial lighting Negative Impact at a Site Level.	The condition of the mixed scrub will improve through ongoing management as detailed within HMMP to ensure the BNG objectives are met. Production and implementation of HMMP, detailing long-term habitat management.	With the implementation of the mitigation measures, residual impacts are assessed as Minor Positive at a Site Level.	Maintain the introduced shrub as detailed in an HMMP and CEMP (biodiversity). Any new planting should comprise native species or those known to benefit wildlife.
Non-native hedgerow	There are no expected direct impacts to the non-native hedgerow. Potential indirect impacts include dust/pollution during the construction phase leading to a potential deterioration of the hedgerow condition. Negligible Impact at a Site Level.	Use of protective fencing between development and all retained areas of vegetation. Consider planting additional native species known to benefit wildlife. Measures to be detailed in CEMP (biodiversity).	Negligible Impact at a Site Level.	Deterioration of habitat through anthropogenic footfall and behaviour (such as littering) and increase in artificial lighting Minor Negative Impact at a Site Level.	The condition of the hedgerow will be maintained through ongoing management as detailed within HMMP to ensure the BNG objectives are met. Production and implementation of HMMP, detailing long-term habitat management.	With the implementation of the mitigation measures, residual impacts are assessed as Minor Positive at a Site Level.	Maintain the hedgerow as detailed in an HMMP and CEMP (biodiversity).

Ecological receptor name	Construction phase			Operational phase			Recommended actions
	Initial impact	Mitigation measures	Residual impact	Initial impact	Mitigation measures	Residual impact	
Native hedgerow	The wild play principles indicate there will be impacts to the native hedgerow through alterations to the hedge shape in order to create a play area. Potential additional planting of hedgerows to create new arrangements. Minor Negative Impact at a Site Level.	Careful project design of the development should aim to avoid any loss of the native hedgerow. There is opportunity to create additional native species rich hedgerows across the site. This would enhance the ecological value of the site. Appropriate fencing will be positioned around retained vegetation. Measures to be detailed in CEMP (biodiversity).	With the implementation of the mitigation measures, residual risk is considered to be Minor Positive Impact at a Site Level.	Indirect impacts include potential deterioration on retained/created terrestrial habitat through anthropogenic activities, such as high levels of disturbance through noise and lighting Minor Negative Impact at a Site Level.	The condition of H1 will be maintained through ongoing management in addition to the creation of any new hedgerows, as detailed within the HMMP to ensure the BNG objectives are met. Production and implementation of HMMP, detailing long-term habitat management.	With the implementation of the mitigation measures, residual risk is considered to be Minor Positive Impact at a Site Level.	Retain and maintain the native hedgerow. Create additional species rich native hedgerows. Preparation of a CEMP (biodiversity) and HMMP.
Individual trees	Direct impacts to compartment 5 where T1 and T2 are located. Woodland is expected to undergo tree thinning, path creation and the addition of stepping stones. Direct impacts to very large trees through the erection of a tree fort whereby towers and platforms are built around existing trees. Minor Negative Impact at a Site Level.	Avoid impacting trees with potential roosting features to support tree fort structures, this includes T1, T3 and T4. Use of protective fencing between development and all retained areas of vegetation. Trees will be protected during construction using root protection fencing around the root zones in accordance with British Standards BS 5837 2012. Measures to be detailed in CEMP (biodiversity).	With the implementation of the mitigation measures, residual risk is considered to be Negligible at a Site Level.	Deterioration of tree condition increase in artificial lighting. Minor Negative Impact at a Site Level.	Production and implementation of HMMP, detailing long-term habitat management.	With the implementation of the mitigation measures, residual impacts are assessed as Minor Positive at a Site Level.	Avoid impacts to T1, T3 and T4. Use protective fencing around retained trees. Production of an HMMP and CEMP (biodiversity).

Ecological receptor name	Construction phase			Operational phase			Recommended actions
	Initial impact	Mitigation measures	Residual impact	Initial impact	Mitigation measures	Residual impact	
Urban	Alterations are expected to the layout of the existing paths around the site. Loss of one block wall in the north of the site. Potential impacts to a building with suitability for roosting bats (B3) Negligible Impact at a Site Level.	See mitigations for bats below where B3 will be impacted.	Negligible Impact at a Site Level.		None.		None.
Species							

Ecological receptor name	Construction phase			Operational phase			Recommended actions
	Initial impact	Mitigation measures	Residual impact	Initial impact	Mitigation measures	Residual impact	
Invertebrates	Loss of areas of woodland, scrub and grassland which may support pollinators or other invertebrates. Deterioration of retained habitat including woodland, scrub and grassland. Minor Negative Impact at Site Level.	Careful project design to avoid unnecessary loss of habitat. Any dead wood piles should be checked and dismantled by an ecologist to relocate any stag beetles that may be present on site. Stag beetles are most active at twilight and can be attracted to light sources. Construction is to take place during the day and construction lighting should be directed away from the woodland. Preparation of a CEMP (biodiversity) and HMMP.	With mitigation, Negligible Impact at Site Level.	Increased foot traffic and trampling of the grassland areas will reduce herbaceous coverage and would potentially increase noise pollution and disturbance to invertebrates. Minor Negative Impact at Site Level.	There are opportunities to create new areas of mixed scrub to offset potential loss of bramble scrub. Enhance the retained grassland through the sowing of wildflower mixes which will support pollinators. Wood piles should be set up within the woodland – ideally away from the designated paths. Woodland management should lead to an increase in species that could provide other foraging opportunities for foraging for invertebrates. Foot paths through the woodland should be created to keep the disturbance to specific areas of the woodland, allowing for areas of reduced disturbance. Information boards detailing the integrity and ecology of the invertebrates. Long-term programme of habitat management to ensure all habitats to be created remain of high quality for invertebrates.	Minor Positive Impact at Site Level	Enhance the site for invertebrates through sowing of wildflower mixes and creation of wood piles. Preparation of a CEMP (biodiversity) and HMMP.

Ecological receptor name	Construction phase			Operational phase			Recommended actions
	Initial impact	Mitigation measures	Residual impact	Initial impact	Mitigation measures	Residual impact	
Amphibians	Direct impacts to terrestrial scrub, grassland and woodland with close connectivity to a waterbody within 15 m of the site. In the process of construction amphibians could be injured or killed. Without mitigation, High Negative Impact at Site Level.	Site induction to all contractors to brief on PMoW required for GCN and other amphibians Retention and creation of habitat protection zones Habitat manipulation (two-step mowing process) of grassland during amphibian active period, March – October, in suitable weather conditions. Comprising a first cut to 150mm, and a second cut to ground level after 24 hours. Supervised destructive search of any habitat with suitability to be used for refuge by amphibians. Appropriate storage of any stored materials/waste piles and other site materials. Any trenches should be covered over-night. In the unlikely event a great crested newt is recorded during the works, these must cease and an ecologist and Natural England contacted. Preparation of a CEMP (biodiversity) and HMMP.	With the implementation of the mitigation measures, residual impact is assessed as being Negligible at a Site Level.	Potential deterioration on retained/created terrestrial habitat through anthropogenic activities, such as littering. Minor Negative impact at a Site Level.	Enhancements incorporated to benefit amphibians, including log piles created within the woodland from any felled trees. The management of the grassland and woodland in accordance with the HMMP to improve condition would also maintain it as suitable habitat for amphibians	With the implementation of the mitigation measures, residual impact is considered to be a Minor Positive at a Site Level.	Creation habitat protection zones within retained habitat. Vegetation clearance to follow a PMoW. Enhancements to the site including the creation of log piles. Preparation of a CEMP (biodiversity) and HMMP.
Reptiles	Loss of habitat with suitability for reptiles within the bramble scrub, woodland and neutral grassland mosaic. Disturbance to retained habitats with suitability for reptiles, within the woodland and modified grassland. In the process of construction reptiles could be injured or killed. Without mitigation, High Negative Impact at Site Level.	Adopt the same approach as for amphibians.	With the implementation of the mitigation measures, residual impact is assessed as being Negligible at a Site Level.	Potential deterioration on retained/created terrestrial habitat through anthropogenic activities, such as littering. Minor negative impact at a Site Level.	Enhancements incorporated to benefit reptiles, including log piles created within the woodland from any felled trees The management of the grassland and woodland in accordance with the HMMP to improve condition would also maintain it as suitable habitat for reptiles.	With the implementation of the mitigation measures, residual impact is considered to be a Minor Positive at a Site Level.	See above, as for amphibians.

Ecological receptor name	Construction phase			Operational phase			Recommended actions
	Initial impact	Mitigation measures	Residual impact	Initial impact	Mitigation measures	Residual impact	
Birds	Loss of breeding bird habitat through woodland thinning. Potential disturbance to nesting birds through the erection of the erection of a tree fort around existing trees. Minor Negative Impact at Site Level.	Undertake vegetation removal or building demolition between September and February, outside the breeding bird season. Where this cannot be avoided, works will need to be supervised by an ecologist, and identified nests adequately protected until chicks have fledged. Preparation of a CEMP (biodiversity) and HMMP.	With the implementation of the mitigation measures, residual impact is assessed as being Negligible at a Site Level.	Potential deterioration on retained/created terrestrial habitat through anthropogenic activities, such as high levels of disturbance through noise and lighting Minor Negative impact at a Site Level	Enhancement of habitats for breeding birds within the development are recommended. The measures in Table 6 will provide opportunities for breeding birds. These will be located in areas that are likely to experience less disturbance/lighting.	With the implementation of the mitigation measures, residual impact is considered to be a Minor Positive at a Site Level.	Undertake vegetation removal outside of breeding bird season (September to February) or under ECoW supervision. Enhance the site for birds, see Table 6. Preparation of a CEMP (biodiversity) and HMMP.

Ecological receptor name	Construction phase			Operational phase			Recommended actions
	Initial impact	Mitigation measures	Residual impact	Initial impact	Mitigation measures	Residual impact	
Bats	Direct habitat loss through woodland thinning. Disturbance to three trees and one building with bat roosting potential. Potential disturbance to nesting birds through the erection of the erection of a tree fort around existing trees. Moderate Negative Impact at Site Level.	Avoid impacting trees with roosting potential by retaining these through project design. Building B3 has been assigned low bat roosting suitability and requires one presence/likely absence survey undertaken between May and August. Trees T1, T3, and T4 have been assigned a PRF-M bat roosting suitability. Should these be impacted, or be scheduled for removal, these require three dusk emergence surveys between May and September (with two occurring between May and August). Surveys would need to be undertaken by experienced ecologists, following best-practice guidance (Collins, 2016) with the number of surveyors required, reflecting the number and location of potential roosting features. The information collected during further surveys may be used to inform a bat mitigation licence if roosting bats are confirmed in the building. Should a bat roost be present in B3, T1, T3 or T4 appropriate mitigation will need to be incorporated into the future project design. Construction lighting to be directed away from trees with potential roosting features (T1, T3 and T4). Preparation of a CEMP (biodiversity) and HMMP.	With the implementation of the mitigation measures, residual impact is assessed as being Negligible at a Site Level.	Potential deterioration on retained/created terrestrial habitat through anthropogenic activities, such as high levels of disturbance through noise and lighting Minor Negative Impact at a Site Level.	Lighting for the proposed development should be designed as per best practice guidance (BCT and Institute of Lighting Professionals, 2023). Methods of achieving this would include: • Recess lighting within the building. • Siting windows to avoid areas of particular interest for bats, identified during the further survey. • Incorporating dark zones within the woodland in line with foraging and commuting habitat and maintaining these post-development. • For outside areas, using LED lighting that are in the warm spectrum (2700 K) to minimise impacts on bats. Timers, dimmers and off-times could be considered, where possible.	With the implementation of the mitigation measures, residual impact is considered to be a Minor Positive at a Site Level.	Avoid impacting trees (T1, T3, T4) and building (B3) with bat roosting suitability. Undertake bat presence likely absence surveys where impacts cannot be avoided. Follow guidance in relation to artificial lighting. Production of a CEMP and HMMP.

Ecological receptor name	Construction phase			Operational phase			Recommended actions
	Initial impact	Mitigation measures	Residual impact	Initial impact	Mitigation measures	Residual impact	
Badger	Disturbance to habitats with suitability for foraging badger, including within the woodland and grassland areas, although no setts currently identified. Minor Negative Impact at Site Level.	Prior to any vegetation removal, undertake walkover survey within works area and a 30m buffer: - Three months before works commence (to allow for any mitigation licenses to be applied for prior to works commencing) - One month before works commence (to allow for monitoring to occur to determine level of use prior to works commencing) - One day before works commence Best-practice construction methods are recommended, including: - Establishing appropriate exclusion zones, reflective of walkover survey results - Avoiding noisy plant and machinery work in close proximity to mammal holes, 2 hours before sunset - Directing security lighting near mammal holes - Covering any holes or trenches overnight, placing a ramp in larger holes so that fallen animals can escape in the eventuality they fall into the holes. - Safeguarding water sources Preparation of a CEMP (biodiversity) and HMMP.	With the implementation of the mitigation measures, residual impact is assessed as being Negligible at a Site Level.	Potential deterioration on retained/created terrestrial habitat through anthropogenic activities, such as high levels of disturbance through noise and lighting Minor Negative Impact at a Site Level.	Minimising lighting within the woodland. Encourage enhancement of grassland areas and woodland habitat to encourage a high earthworm density. Erect signage or fencing to encourage guests to use paths and reduce disturbance in the woodland.	With the implementation of the mitigation measures, impacts are assessed as being Minor Positive at a Site Level.	Undertake a badger walkover three months, one month and one day prior to any vegetation clearance. Preparation of a CEMP (biodiversity) and HMMP.

Ecological receptor name	Construction phase			Operational phase			Recommended actions
	Initial impact	Mitigation measures	Residual impact	Initial impact	Mitigation measures	Residual impact	
Hazel dormouse	Direct impacts to the hedgerow and woodland habitats which have suitability for hazel dormouse. Moderate Negative Impact at Site Level.	Vegetation removal should occur between September and October, outside the most sensitive period for hazel dormouse. Where this cannot be achieved, clearance should occur under the supervision of an ECoW. Where required, habitat manipulation techniques can be used to encourage hazel dormouse to areas that will not be impacted by the proposals. In these instances, remaining habitat must be connected to larger hazel dormouse habitat. As a last resort hazel dormouse translocation may be required. Evidence must be provided that this measure will be successful. In such instances, the hazel dormouse must be kept in the same home range, the new habitat must not already support a hazel dormouse population, and the habitat must be ready before translocation takes place. Preparation of a CEMP (biodiversity) and HMMP.	With the implementation of the mitigation measures, residual impact is assessed as being Minor Negative at a Site Level.	Potential deterioration on retained/created terrestrial habitat through anthropogenic activities, such as high levels of disturbance through noise and lighting. Minor Negative Impact at a Site Level.	Creating new habitat with features suitable for hazel dormouse, including mixed scrub containing hazel and bramble and installation of dormouse boxes. Creating habitat linkages including hedgerows with gaps less than 100m. Enhancing existing habitats through development of an understory with shrub species.	With the implementation of the mitigation measures, impacts are assessed as being Minor Positive at a Site Level.	Vegetation removal to occur outside of hazel dormouse active period, or under the presence of ECoW. Preparation of a CEMP (biodiversity) and HMMP.

Ecological receptor name	Construction phase			Operational phase			Recommended actions
	Initial impact	Mitigation measures	Residual impact	Initial impact	Mitigation measures	Residual impact	
Hedgehog	Direct impacts to the woodland, grassland and scrub which has suitability for hedgehog. Minor Negative Impact at Site Level.	Covering any holes or trenches overnight, placing a ramp in larger holes so that fallen animals can escape in the eventuality they fall into the holes. Any formed log piles in winter (November to February) will be checked by an appropriately qualified ecologist and dismantled by hand. In retained habitat, deploy shelters to encourage the species to use these. Aim to ensure retained habitat is connected to the wider area. Preparation of a CEMP (biodiversity) and HMMP.	With the implementation of the mitigation measures, residual impact is assessed as being Negligible at a Site Level.	Potential deterioration on retained/created terrestrial habitat through anthropogenic activities, such as high levels of disturbance through noise and lighting Minor Negative Impact at a Site Level.	Leaving areas of unmanaged habitat with leaf litter, scrub and deadwood. Encourage patches of scrub (supporting bramble). Creation of species-rich hedgerows. Leaving a 13cm x 13cm hole at the base of any newly erected fences or brick walls to allow connectivity around the landscape. Landscaping will allow for sloped access/escape routes for ground-dwelling animals.	With the implementation of the mitigation measures, impacts are assessed as being Minor Positive at a Site Level.	Cover holes or trenches overnight. Enhance the site for hedgehogs through scrub planting and fence holes for hedgehog connectivity. Preparation of a CEMP (biodiversity) and HMMP.
Other mammals	Direct impacts to the woodland, grassland and scrub which has suitability for other mammals such as fox. Minor Negative Impact at Site Level.	During the survey, no mammal holes were found, should these form before clearance, any works should avoid disturbing or blocking active mammal holes. Where active mammal holes, not including badger, require removal, this should be undertaken under the supervision of a suitably experienced ecologist following a precautionary method of working to ensure the works comply with the Wild Mammals (Protection) Act 1996. Preparation of a CEMP (biodiversity) and HMMP.	With the implementation of the mitigation measures, residual impact is assessed as being Negligible at a Site Level.	Potential deterioration on retained/created terrestrial habitat through anthropogenic activities, such as high levels of disturbance through noise and lighting Minor Negative Impact at a Site Level.	See mitigation methods for hedgehog.	With the implementation of the mitigation measures, impacts are assessed as being Minor Positive at a Site Level.	See above, as for hedgehog. Preparation of a CEMP (biodiversity) and HMMP.

Ecological receptor name	Construction phase			Operational phase			Recommended actions
	Initial impact	Mitigation measures	Residual impact	Initial impact	Mitigation measures	Residual impact	
Invasive/non-native species	Potential spread of invasive non-native species found within the mixed woodland. Minor Negative Impact at Site Level.	Areas of invasive, non-native species to be marked out on site. For Schedule 9 listed species, such as rhododendron, specialist contractor to develop and implement an invasive species strategy. To prevent the spread of invasive species during works, biosecurity will be adhered to including: • Check clothes and equipment for plant material and remove and leave on site. • Clean clothes and equipment thoroughly. • After cleaning, ensure clothes and equipment are thoroughly dried. • Boots and vehicle wheels may require leaning prior to leaving site. • Wash stations will be provided by the site access. Preparation of a CEMP (biodiversity) and HMMP.	With the implementation of the mitigation measures, residual impact is assessed as being Minor Negative at a Site Level.	None	Monitoring and continued treatment in line with invasive species strategy outlined in the HMMP. Landscape plan to incorporate native species in planting mix.	Negligible impact at a Site Level.	Biosecurity will be adhered to when impacting invasive species. New planting should comprise native species. Preparation of a CEMP (biodiversity) and HMMP.

6 Biodiversity net gain and biodiversity enhancements

6.1 Habitats

- 6.1.1 The target biodiversity net gain for this project is 10%.
- 6.1.2 The full Statutory Biodiversity Net gain and habitat condition assessment forms accompany this report with a summary of the outcomes detailed below. Full habitat descriptions are detailed in Appendix 5, along with survey methods and results.
- 6.1.3 The BNG assessment provided in this report is for the baseline habitats only. The detailed design plans are not available at time of writing, and these will be required to finalise the BNG assessment for the project.
- 6.1.4 The baseline BNG assessment is provided in Table 5. The BNG principles should be met by:
- **Avoid:** Where possible, retain habitats with high ecological value within the development zone. Specifically, this includes the broadleaved woodland (7), neutral grassland (3) and native hedgerow (H2). Appropriate habitat protection fencing will be installed to ensure the habitats are protected during works.
 - **Minimise:** Measures to minimise impacts to habitats have been identified in Table 4. Tree loss should be minimised to only those which are non-native or pose a risk to health and safety.
 - **Restore:** Management of retained habitats will improve the condition scores in order to meet biodiversity net gain. Specifically, this includes enhancements to the woodland to increase percentage cover of native species, and neutral grassland by increasing herbaceous density. For example, the areas of modified grassland have potential to become a species rich wildflower meadow, which provides greater benefit to wildlife. Any additional planting should comprise of native species or species known to benefit wildlife.
 - **Compensate:** Creation of additional species rich hedgerows in the west of the site will increase habitat. Compensation for the loss of any scrub and grassland would be achieved through creation of new areas of species-rich mixed native shrub habitat and where possible, new parcels of species rich wildflower meadows (other neutral grassland). Where tree thinning occurs within the woodlands, this will be of non-native tree species. Any new planting will comprise native species or species known to benefit wildlife.
- 6.1.5 An HMMP will need to be prepared that details how the habitats on site will be managed. The plan will cover the following 30 years and include a monitoring regime to ensure the target habitat types and conditions are being met and remedial action can be implemented when the desired habitats and/or their condition is not being met.
- 6.1.6 The finalised BNG assessment will be provided on receipt of the finalised and detailed landscape design plans, and through collaboration with the architect and ecologists. If the above recommendations are incorporated into the design, and the BNG Principles are followed, it is assessed that the targets of the BNG for this project could be achieved onsite. This will be confirmed once the finalised BNG assessment is complete.

Table 5: Summary of baseline biodiversity net gain assessment

6.1.7 This has been extracted from the BNG metric.

Onsite baseline units	Habitat units	7.11
	Hedgerow units	0.16

6.2 Species

6.2.1 To provide additional enhancements for protected species and species of conservation concern the measures detailed in Table 6 should be incorporated into the project design.

Table 6: Biodiversity enhancement features for species

Feature type	Species suitability	Where to place	Number of features required
Bat box	Soprano pipistrelle Common pipistrelle Natterer's Whiskered Brandt's	Integrated bat box to the southern aspect of a retained tree.	2
Bird box	Small garden bird species such as blue tit, house sparrow and robin.	To be placed on the southern aspect on a retained tree within the woodland.	3
Hedgehog house	Hedgehog	To be placed within the woodland during construction.	2
Log pile	Amphibians and reptiles	Place log piles within an undisturbed corner of the woodland. Create log piles using wood from felled trees.	2
Total			9

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Appendix 1: Legislation

Legislation

Conservation of Habitats and Species Regulations 2017 (as amended)

Provides for the protection of Natura 2000 sites (SACs, SPAs and Ramsar sites), European Protected Species and habitats. Species listed under Schedule 2 are protected from:

- Deliberate capture, injury or killing.
- Deliberate disturbance [...], such that it impairs their ability to breed, reproduce or rear their young, hibernate or migrate or significantly affect their local distribution or abundance.
- Deliberate taking or destroy effect.
- Damage or destroying a breeding site or resting place.
- Keeping, transporting, selling or exchanging any live, dead or part.

Species listed under Schedule 2 include, but are not limited to:

- Great crested newt
- Natterjack toad
- Otter
- Smooth snake
- Sand lizard
- All bat species
- Hazel dormouse

The LPA will be aware of its legal duty under Regulation 9(3) of Conservation of Habitats and Species Regulations 2017, as amended, which states that “*a competent authority in exercising any of its functions, must have regard to the requirements of the Directives so far as they may be affected by the exercise of those function*”.

Also, under Regulation 55 (9b) of the above regulations, the LPA must apply the following three tests when deciding whether to grant planning permission where a Protected Species (bats) may be harmed, in line with of the Conservation of Habitats and Species Regulations 2017, as amended.

- The activity must be for imperative reasons of overriding public interest or for public health and safety;
- There must be no satisfactory alternative;
- Favourable conservation status of the species must be maintained.

Natural England has stated that they would expect these three tests to be adequately considered by the LPA before planning permission is granted. Natural England will require evidence from the applicant that the LPA has considered the three tests and how they were met, before a mitigation licence can be issued. Where a mitigation licence is required to avoid breach of legislation, development cannot proceed even where a valid planning permission is granted.

Wildlife and Countryside Act 1981 (as amended)

Key piece of legislation consolidating existing wildlife legislation to incorporate the requirements of the Bern Convention and Birds Directive. It includes additional protection

measures for species listed under the Conservation of Habitats and Species Regulations 2017 (as amended) and includes a list of species protected under the Act. It also provides for the designation and protection of Sites of Special Scientific Interest (SSSI).

Development which would adversely affect a SSSI is not acceptable except only in special cases, where the importance of a development outweighs the impact on the SSSI when planning conditions or obligations would be used to mitigate the impact. Developments likely to impact on a SSSI will likely require an Environmental Impact Assessment (EIA).

The Impact Risk Zones dataset is a GIS tool which details zones around each SSSI according to the particular sensitivities of the features for which it is notified and specifies the types of development that have the potential to have adverse impacts. Natural England uses the Impact Risk Zones to make an initial assessment of the likely risk of impacts on SSSIs and to quickly determine which consultations are unlikely to pose risks and which require more detailed consideration. Local Planning Authorities (LPAs) have a duty to consult Natural England before granting planning permission on any development that is in or likely to affect a SSSI.

Further information on specific legislation relating to species protected under the Wildlife and Countryside Act 1981 (as amended) is detailed below, under Protection of Protected Species and Habitats.

Environment Act (2021)

The Environment Act (2021) makes a provision for biodiversity net gain to be a condition of planning permission in England. Planning applications will need to demonstrate a 10% biodiversity net gain can be met. A biodiversity net gain plan must be submitted and must include:

- (a) information about the steps taken or to be taken to minimise the adverse effect of the development on the biodiversity of the onsite habitat and any other habitat
- (b) the pre-development biodiversity value of the onsite habitat,
- (c) the post-development biodiversity value of the onsite habitat,
- (d) any registered offsite biodiversity gain allocated to the development and the biodiversity value of that gain in relation to the development,
- (e) any biodiversity credits purchased for the development,

Countryside and Right of Way Act 2000

Amends and strengthens the Wildlife and Countryside Act 1981 (as amended). It also details habitats and species for which conservation measures should be promoted.

Natural Environment and Rural Communities Act 2006

Section 40 of the Act places a duty on local planning authorities to conserve and enhance biodiversity in England whilst carrying out their normal functions. Section 41 comprises a list of Habitats of Principal Importance (HPIs) and Species of Principal Importance (SPIs) which should be considered.

Section 41 details 56 HPIs, of which the following could be present in south-east England: Lowland calcareous grassland, Lowland dry acid grassland, Lowland meadows, Lowland Heathland, Open Mosaic Habitats on Previously Developed Land, Lowland fens, Lowland

raised bog, Reedbeds, Lowland beech and yew woodland, Lowland mixed deciduous woodland and Wet woodland.

Impacts to HPI are of material planning consideration.

The LPA will need to have particular regard to any relevant local nature recovery strategies, and any relevant species conservation strategy or protected site strategy prepared by Natural England.

Hedgerows Regulations 1997

Under the Hedgerows Regulations 1997 it is against the law to remove or destroy certain hedgerows without permission from the LPA, which are also the enforcement body for offences created by the Regulations. LPA permission is normally required before removing hedges that are at least 20 m in length, more than 30 years old and contain certain plant species. The authority will assess the importance of the hedgerow using criteria set out in the regulations. The regulations **do not** apply to hedgerows within the curtilage of, or marking a boundary of the curtilage of, a dwelling house.

Hedgerow is a HPI.

Wild Mammals (Protection) Act 1996

Under this act wild mammals are protected from the intentional unnecessary suffering by crushing and asphyxiation.

ODPM Circular 06/05: Biodiversity and Geological Conservation – Statutory Obligations and Their Impact within the Planning System (2005)

The Government's Office of the Deputy Prime Minister (ODPM) Circular 06/05 (ODPM 2005) presents the legal requirement for planning authorities with regard to statutory designated sites. Planning approval should not be granted where impacts to statutory designated sites that are not connected to the site maintenance for nature conservation or will have a significant effect on the site's conservation objectives and/or affect the site's integrity. Permission may be granted if the proposed development overrides public interest.

The presence of a protected species is a material planning consideration. The Circular clearly outlines that it is essential that the presence or otherwise of protected species, and the extent that they may be affected by the proposed development, is established before planning permission is granted. Otherwise, all relevant considerations may not have been addressed in making the decision.

Protection of protected species and habitats

Amphibians

Natterjack toad, pool frog and great crested newt are protected under the Conservation of Habitats and Species Regulations 2017 (as amended). They are also afforded additional protection under the Wildlife and Countryside Act 1981 (as amended).

Natterjack toad, common toad, great crested newt and northern pool frog are also SPIs.

Reptiles

Smooth snake and sand lizard are protected under the Conservation of Habitats and Species Regulations 2017 (as amended). They are afforded additional protection under the Wildlife and Countryside Act 1981 (as amended).

Adder, grass snake, common lizard and slow-worm are all protected from killing and injury under the Wildlife and Countryside Act 1981 (as amended). All UK reptile species are SPIs.

Birds

All wild birds are protected under the Wildlife and Countryside Act 1981 (as amended). This includes damage and destruction of their nests whilst in use, or construction. Species listed under Schedule 1 of the Act, such as barn owl, are afforded protection from disturbance during the nesting season.

The following 50 bird species are SPIs: lesser redpoll, aquatic warbler, marsh warbler, skylark, white-fronted goose, tree pipit, scaup, bittern, dark-bellied brent goose, stone-curlew, nightjar, hen harrier, northern harrier, hawfinch, corncrake, cuckoo, Bewick's swan, lesser spotted woodpecker, corn bunting, curl bunting, yellowhammer, reed bunting, red grouse, herring gull, black-tailed godwit, linnet, twite, Savi's warbler, grasshopper warbler, woodlark, common scoter, yellow wagtail, spotted flycatcher, curlew, house sparrow, tree sparrow, grey partridge, wood warbler, willow tit, marsh tit, dunnoek, Balearic shearwater, bullfinch, roseate tern, turtle dove, starling, black grouse, song thrush, ring ouzel and lapwing.

Badger

Badger is protected under the Protection of Badgers Act 1992. Under this legislation it is an offence to kill or injure a badger; to damage, destroy or block access to a badger sett; or to disturb badger in its sett. The Act also states the conditions for the Protection of Badgers licence requirements.

Bats

All bat species are protected under the Conservation of Habitats and Species Regulations 2017 (as amended), as detailed above. Bats are further protected under the Wildlife and Countryside Act 1981 (as amended), making it an offence to:

- Deliberately or recklessly damage or destroy any structure or place which bat(s) use for shelter or protection.
- Disturb bat(s) while occupying a structure or place which it uses for shelter or protection.
- Obstruct access to any structure or place which they use for shelter or protection.

Greater horseshoe, lesser horseshoe, Bechstein's and barbastelle are Annex II species for which Special Areas of Conservation have been designated.

Furthermore, seven bat species are SPIs, covered under Section 41 of the NERC Act 2006. These include western barbastelle, Bechstein's, noctule, soprano pipistrelle, brown long-eared, lesser horseshoe and greater horseshoe.

Beaver

Beaver is provided under Conservation of habitats and Species Regulations 2017 (as amended). Beaver is also afforded additional protection under the Wildlife and Countryside Act 1981, as amended.

Hazel dormouse

Hazel dormouse is protected under the Conservation of Habitats and Species Regulations 2017 (as amended). It is afforded additional protection under the Wildlife and Countryside Act 1981 (as amended), including obstruction to a place of shelter or rest.

Hazel dormouse is also a SPI.

Otter

Otter is protected under the Conservation of Habitats and Species Regulations 2017 (as amended) and is afforded additional protection under the Wildlife and Countryside Act 1981 (as amended). Otter is also a SPI.

Water vole

Water vole is fully protected from capture, killing or injury; damage, destruction or blocking access to a place of shelter; disturbance whilst in a place of shelter or possessing, selling any part of a water vole, dead or alive under the Wildlife and Countryside Act 1981 (as amended).

Water vole is also a SPI.

Other mammals

West European hedgehog, brown hare, mountain hare, pine marten, harvest mouse, polecat and red squirrel are all SPIs.

The following mammals are listed under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended): wildcat, brown hare (Schedule 5A), mountain hare (Schedule 5A), pine marten and red squirrel.

Invertebrates

Fifty-seven terrestrial and freshwater invertebrate species (excluding molluscs) are listed under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). These include Reddish buff, Norfolk hawk, Purple emperor, High brown fritillary, Northern brown argus, White-clawed crayfish, Pearl-bordered fritillary, DeFolin's lagoon snail, Chequered skipper, Fairy shrimp, Rainbow leaf beetle, New Forest cicada, Southern damselfly, Large heath, Small blue, Wartbiter, Fen raft spider, Ivell's sea anemone, Mountain ringlet, Ladybird spider, Marsh fritillary, Spangled diving beetle, Mole cricket, Field cricket, Duke of Burgundy, Silver-spotted skipper, Medicinal leech, Lesser silver water beetle, Moccas beetle, Wood white, Violet click beetle, Large copper, Freshwater pearl mussel, heath fritillary, Glanville fritillary, Glutinous snail, Starlet sea anemone, Large tortoiseshell, Brackish hydroid, Swallowtail, Bembridge beetle, Barberry carpet, Silver-studded blue, Adonis blue, Chalk hill blue, Fiery clearwing, Sandbowl snail, Black hairstreak, White-letter hairstreak, Black-veined moth, Sussex emerald, Brown hairstreak, Northern hatchet-shell, Lulworth skipper, Tadpole shrimp, New Forest burnet.

A total of 294 (excluding molluscs) invertebrates are Species of Principal Importance. These include: beetles (including stag beetle), butterflies (high brown fritillary, large heath, small blue,

white-letter hairstreak, brown hairstreak, damselflies (southern damselfly), moths (marsh moth), ants, bees etc. Impacts to SPI must be considered by the LPA when assessing planning applications.

Higher and lower plants (rare/notable species)

Creeping marshwort, Lady's-slipper orchid, Early gentian, Fen orchid, Floating water-plantain, Slender naiad, Shore dock and Yellow marsh-saxifrage are listed under Schedule 5 of the Conservation of Habitats and Species Regulations 2017 (as amended) making it illegal to be in position or control, transport, sell or exchange or offer to sell or exchange any live or dead plant, or part of a plant.

105 higher plant species are listed under Schedule 8 of the Wildlife and Countryside Act 1981, as amended which makes it illegal for a person to intentionally pick, uproot or destroy any wild plant listed under Schedule 8.

145 higher plant species are listed as Species of Principal Importance.

Non-native invasive plant species

Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) is a list of non-native plant species for which Section 14 of the Act applies. It is an offence to plant, or otherwise cause to grow in the wild species listed under Schedule 9 of the act. These include, but are not limited to:

- Himalayan balsam
- Cotoneaster sp.
- Japanese knotweed
- Giant hogweed

Planning policy

National Planning Policy Framework (2023)

Details the Government's planning policies for England and how these should be applied, particularly to contribute to the Government's commitment to halt the decline of biodiversity. When assessing planning applications, LPAs should have regard to conserving and enhancing biodiversity by applying a number of principles, including:

- Avoiding impacts to biodiversity through appropriate site selection.
- Mitigating residual impacts.
- Encouraging the preservation and enhancement of biodiversity.
- Preventing the development of protected sites, such as SSSIs.
- Refusing permission where habitats that cannot be recreated, such as ancient woodland, would be lost.
- Encouraging good design that limits light pollution.

Relevant paragraphs in the NPPF (2023) are detailed below.

Paragraph number	Detail
180	Planning policies and decisions should contribute to and enhance the natural and local environment by:

Paragraph number	Detail
	(a) protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan); (b) recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland; (c) maintaining the character of the undeveloped coast, while improving public access to it where appropriate; (d) minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures; (e) preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans; and (f) remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate.
183	“When considering applications for development within National Parks, the Broads and Areas of Outstanding Natural Beauty, permission should be refused for major development 64 other than in exceptional circumstances, and where it can be demonstrated that the development is in the public interest. Consideration of such applications should include an assessment of: (a) the need for the development, including in terms of any national considerations, and the impact of permitting it, or refusing it, upon the local economy; (b) the cost of, and scope for, developing outside the designated area, or meeting the need for it in some other way; and (c) any detrimental effect on the environment, the landscape and recreational opportunities, and the extent to which that could be moderated.”
186	“When determining planning applications, local planning authorities should apply the following principles: (a) if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused; (b) development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest; (c) development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons 67 and a suitable compensation strategy exists; and (d) development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to improve biodiversity in and around developments should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate.”
187	“The following should be given the same protection as habitats sites: (a) potential Special Protection Areas and possible Special Areas of Conservation; (b) listed or proposed Ramsar sites 68; and (c) sites identified, or required, as compensatory measures for adverse effects on habitats sites, potential Special Protection Areas, possible Special Areas of Conservation, and listed or proposed Ramsar sites.”

Paragraph number	Detail
188	"The presumption in favour of sustainable development does not apply where the plan or project is likely to have a significant effect on a habitats site (either alone or in combination with other plans or projects), unless an appropriate assessment has concluded that the plan or project will not adversely affect the integrity of the habitats site."

Local planning policy

Policy Reference	Policy number/Paragraph Number	Detail
Mid Sussex District Council		
(Mid Sussex District 2018)	DP4	The Habitats Regulations require that the competent authority (Mid Sussex District Council) assess the effects of land use plans on European sites to determine whether there will be likely significant effects (LSEs) on European sites as a result of the plan's implementation (either on its own or 'in combination' with other plans or projects). The European site of interest is Ashdown Forest, which is located in neighbouring Wealden district.
	DP7	Strategic Development at Burgess Hill: 1. Identify and respond to environmental, landscape and ecological constraints and deliver opportunities to enhance local biodiversity and contribute to the delivery of green infrastructure in and around the town in accordance with policies elsewhere in the Plan including DP38: Biodiversity.
	DP8	Strategic Development to the east of Burgess Hill at Kings Way: 1. Implement long-term management of the Ditchling Common Site of Special Scientific Interest (SSSI) and protect and enhance this adjoining area from the impacts of strategic development (on site provision together with appropriate mitigation measures). 2. Consider the close proximity of the South Downs National Park. 3. Provide additional informal open space on site. 4. Avoid unnecessary damage to the characteristic field pattern and historic hedgerow and tree lines.
	DP9	Strategic Development to the north and north-west of Burgess Hill: 1. Identify and take account of environmental, landscape and ecological constraints including where possible avoiding or minimising harm to sensitive receptors and appropriately responding to the landscape setting including retention of woodland, hedgerows and other important natural features wherever possible and appropriate landscaping and safe design of balancing ponds and water/drainage features; and deliver opportunities and requirements as set out in Policy DP7.
	DP10	Strategic Development to the east of Pease Pottage: 1. Provide appropriate mitigation to reduce the impact of the development on the landscape and to ensure that development respects and where possible enhances the natural beauty and characteristics of the High Weald Area of Outstanding Natural Beauty. 2. Identify and respond to environmental and ecological constraints and deliver opportunities to enhance green infrastructure and local biodiversity, including the provision of an appropriate buffer to the Ancient Woodland to the east of the site.
	DP11	Strategic Development to the north of Clayton Mills, Hassocks: 1. Identify and respond to environmental and ecological constraints and deliver opportunities to enhance green infrastructure and local biodiversity.
	DP16	Development within the High Weald Area of Outstanding Natural Beauty (AONB), will only be permitted where it conserves or enhances natural beauty and has regard to the High Weald AONB Management Plan, in particular; • the identified landscape features or components of natural beauty and to their setting; • the traditional interaction of people with nature, and appropriate land management; • character and local distinctiveness, settlement pattern, sense of place and setting of the AONB; and • the conservation of wildlife and cultural heritage. Small scale proposals which support the economy and social well-being of the AONB that are compatible with the conservation and enhancement of natural beauty will be supported. Development on land that contributes to the setting of the AONB will only be permitted where it does not detract from the visual qualities and essential characteristics of the AONB, and in particular should not adversely affect the views into and out of the AONB by virtue of its location or design.
	D17	To protect valued landscapes for their visual, historical and biodiversity qualities, Policy DP17 sets out an avoidance and mitigation strategy to reduce the impact of recreational disturbance on Ashdown Forest Special Protection Area (SPA) and Special Area of Conservation (SAC). The District Council will monitor the effectiveness of this policy for the impacts on the Ashdown Forest SPA and SAC and review/amend the approach, including any mitigation requirements, set out in this policy as necessary. 1. In order to prevent adverse effects on the Ashdown Forest SPA and SAC, new development likely to have a significant effect, either alone or in combination with other development, will be required to demonstrate that adequate measures are put in place to avoid or mitigate any potential adverse effects. Within a 400 metres buffer zone around Ashdown Forest, mitigation measures are unlikely to be capable of protecting the integrity of the SPA and, therefore, residential development will not be permitted. 2. Within a 7km zone of influence around the Ashdown Forest SPA, residential development leading to a net increase in dwellings will be required to contribute to mitigation through: 1) The provision of Suitable Alternative Natural Greenspace (SANG) to the minimum level of 8Ha per 1,000 net increase in population; or a financial contribution to SANGs elsewhere; or the provision of bespoke mitigation; and 2) A financial contribution to the Ashdown Forest Strategic Access Management and Monitoring (SAMM) Strategy. 3. Large schemes proposed adjacent or close to the boundary of the 7km zone of influence may require mitigation for the SPA. Such proposals for development will be dealt with on a case-by-case basis. 4. Where bespoke mitigation is provided, these measures will need to be in place before occupation of development and must be managed and maintained in perpetuity. The effectiveness of such mitigation will need to be demonstrated prior to approval of the development. Bespoke mitigation will need to be discussed and agreed by the District Council as the competent authority following advice from Natural England.
	DP18	Mid Sussex District Council works in partnership with the South Downs National Park Authority to protect and enhance the natural beauty of the South Downs National Park. The areas of land surrounding the South Downs National Park contribute to the setting of the South Downs National Park. 1. Development within land that contributes to the setting of the South Downs National Park will only be permitted where it does not detract from, or cause detriment to, the visual and special qualities (including dark skies), tranquillity and essential

Policy Reference	Policy number/Paragraph Number	Detail
		characteristics of the National Park, and in particular should not adversely affect transitional open green spaces between the site and the boundary of the South Downs National Park, and the views, outlook and aspect, into and out of the National Park by virtue of its location, scale, form or design. 2. Development should be consistent with National Park purposes and must not significantly harm the National Park or its setting. Assessment of such development proposals will also have regard to the South Downs Partnership Management Plan and emerging National Park Local Plan and other adopted planning documents and strategies.
	DP37	'Trees, Woodland and Hedgerows' The District Council will support the protection and enhancement of trees, woodland and hedgerows, and encourage new planting. Ancient woodland and aged or veteran trees will be protected. Development that will damage or lead to the loss of trees, woodland or hedgerows that contribute, either individually or as part of a group, to the visual amenity value or character of an area, and/ or that have landscape, historic or wildlife importance, will not normally be permitted. Proposals for new trees, woodland and hedgerows should be of suitable species, usually native, and where required for visual, noise or light screening purposes, trees, woodland and hedgerows should be of a size and species that will achieve this purpose. Trees, woodland and hedgerows will be protected and enhanced by ensuring development: • incorporates existing important trees, woodland and hedgerows into the design of new development and its landscape scheme; and • prevents damage to root systems and takes account of expected future growth; and • where possible, incorporates retained trees, woodland and hedgerows within public open space rather than private space to safeguard their long-term management; and • has appropriate protection measures throughout the development process; and • takes opportunities to plant new trees, woodland and hedgerows within the new development to enhance on-site green infrastructure and increase resilience to the effects of climate change; and • does not sever ecological corridors created by these assets. Proposals for works to trees will be considered taking into account: 4 Policies Adopted District Plan 92 • the condition and health of the trees; and • the contribution of the trees to the character and visual amenity of the local area; and • the amenity and nature conservation value of the trees; and • the extent and impact of the works; and • any replanting proposals. The felling of protected trees will only be permitted if there is no appropriate alternative. Where a protected tree or group of trees is felled, a replacement tree or group of trees, on a minimum of a 1:1 basis and of an appropriate size and type, will normally be required. The replanting should take place as close to the felled tree or trees as possible having regard to the proximity of adjacent properties. Development should be positioned as far as possible from ancient woodland with a minimum buffer of 15 metres maintained between ancient woodland and the development boundary.
	DP38	'Biodiversity' Biodiversity will be protected and enhanced by ensuring development: • Contributes and takes opportunities to improve, enhance, manage and restore biodiversity and green infrastructure, so that there is a net gain in biodiversity, including through creating new designated sites and locally relevant habitats, and incorporating biodiversity features within developments; and • Protects existing biodiversity, so that there is no net loss of biodiversity. Appropriate measures should be taken to avoid and reduce disturbance to sensitive habitats and species. Unavoidable damage to biodiversity must be offset through ecological enhancements and mitigation measures (or compensation measures in exceptional circumstances); and • Minimises habitat and species fragmentation and maximises opportunities to enhance and restore ecological corridors to connect natural habitats and increase coherence and resilience; and • Promotes the restoration, management and expansion of priority habitats in the District; and • Avoids damage to, protects and enhances the special characteristics of internationally designated Special Protection Areas, Special Areas of Conservation; nationally designated Sites of Special Scientific Interest, Areas of Outstanding Natural Beauty; and locally designated Sites of Nature Conservation Importance, Local Nature Reserves and Ancient Woodland or to other areas identified as being of nature conservation or geological interest, including wildlife corridors, aged or veteran trees, Biodiversity Opportunity Areas, and Nature Improvement Areas. Designated sites will be given protection and appropriate weight according to their importance and the contribution they make to wider ecological networks. Valued soils will be protected and enhanced, including the best and most versatile agricultural land, and development should not contribute to unacceptable levels of soil pollution. Geodiversity will be protected by ensuring development prevents harm to geological conservation interests, and where possible, enhances such interests. Geological conservation interests include Regionally Important Geological and Geomorphological Sites.

Appendix 2: Desk study

Methods

7.1.1 The desk study comprised:

- A review of waterbodies and watercourses within 250 m of the survey area using aerial imagery and publicly available information.
- DEFRA mapping (DEFRA, 2024) specifically looking at:
 - Statutory designated sites, non-statutory designated sites, parcels of Habitats of Principal Importance and parcels of ancient woodland 2 km of the survey area.
 - Mitigation licences that have been issued within 2km of the survey area
 - Parcels of ancient woodland
 - Parcels of Habitats of Principal Importance
 - Impact Risk Zones for statutory designated sites
 - Important Bird Areas
- Local plan, as detailed in Appendix 1.

Limitations

7.1.2 None.

Results

7.1.3 The following tables present assessment results:

- Table 7 for the statutory and non-statutory designated sites.
- Table 8 for habitats.
- Table 9 for species

Table 7: Statutory and non-statutory designated sites desk study results

Type of designation	Site name	Reasons for designation	Distance from survey area (m)	Within impact risk zone	Scope in for further assessment
Statutory	High weald AONB	High weald AONB is a medieval landscape of wooded, rolling hills; studded with sandstone outcrops and a rich patchwork of small fields, scattered farmsteads and ancient routeways. The High Weald National Landscape covers 1,461 square kilometres across the counties of Kent, Sussex and Surrey. It is the fourth-largest National Landscape in England and Wales.	0 m	Yes	No ³
	Wakehurst and Chiddingly Woods SSSI	Wakehurst and Chiddingly Woods contain extensive exposures of sandrock, a nationally rare habitat, which are of biological and geological importance. This site has the richest sandrock community in the country, supporting a unique flora. It is the locality of an uncommon crane-fly, and has a diverse breeding community of woodland birds.	200 m	Yes	No ⁴
	Ardingly Reservoir LNR	Wetland, reedbed, deciduous woodland, hazel coppice and hay meadow. Good for autumn and spring bird migrations. Great crested grebe and kingfishers' nest on site. Biodiversity Action Plan species include barn owl, osprey, various bat species, dormice and glow worms. The Ardingly sandstone outcrops support a rare community of ferns, mosses, liverworts and lichens.	1650 m	No	No
	Philpot's and Hook Quarries SSSI	This quarry exposes the upper parts (4m) of the Ardingly Sandstone Member of the upper Lower Tunbridge Wells Sand Formation and the lower member of the Grinstead Clay Formation (8.2m) capped by the base of the Cuckfield Stone Member (upper Hastings Beds Group). Dinosaur bones are frequent in this sandstone, and a headless articulated skeleton of Iguanodon has been found.	1800 m	Yes	No
	Ashdown Forest SSSI IRZ	Ashdown Forest is an extensive area of common land lying between East Grinstead and Crowborough. The soils are derived from the predominantly sandy Hastings Beds. It is one of the largest single continuous blocks of heath, semi-natural woodland and valley bog in south-east England, and it supports several uncommon plants, a rich invertebrate fauna, and important populations of heath and woodland birds.	6000 m	Yes	No

Table 8: Habitats of ecological consideration identified in the desk study

Habitat type	Number (for waterbodies/watercourses only)	Closest distance to survey area	Situated within survey area	Situated within 15m of survey area	Situated within impact risk zone	Scope in for further assessment?
Ancient woodland	Not applicable	60 m	No	No	No	No
Veteran trees	Not applicable	160 m	No	No	No	No
Deciduous woodland ⁵	Not applicable	0 m	No	Yes	No	No
Wood pasture and parkland ⁶	Not applicable	0 m	No	Yes	No	No
Waterbodies within 250 m of the survey area	Three	0 m	Yes	Yes – one pond within 15 m	Yes	Yes
Watercourses within 250 m of the survey area ⁷	One	0 m	No	Yes	No	No

Table 9: Mitigation licences returned within 2km of the survey area

Species	Mitigation licences recorded within 2km of the survey area
Amphibian - common frog, common toad, smooth newt	No
Bats	No
Hazel dormouse	No

³ Considering the principles of the design are linked to creating a wild ecosystem, it is considered the proposals are in line with the character of High weald AONB and would not result in any damage to the AONB.

⁴ Considering the small footprint of the site works, it is not considered likely that the proposals would result in any damage to the SSSI or features of special interest.

⁵ Whilst deciduous woodland was recorded within the survey area during the desk study, the site visit confirmed that deciduous woodland was not present within the survey area.

⁶ Whilst wood pasture and parkland were recorded within the survey area during the desk study, the site visit confirmed that deciduous woodland was not present within the survey area.

⁷ Whilst one ditch was recorded within the survey area during the desk study, the site visit confirmed there was not a ditch within the survey area.

Appendix 3: Habitat survey

Methods

UK habitat classification survey

- 7.1.4 Habitats in the survey area were mapped using the UK habitat classification survey methodology (UKHab Ltd, 2023).
- 7.1.5 UK habitat classification survey is a comprehensive system for classifying and mapping habitats within the UK. The aim of the survey is to identify and map habitats using aerial imagery and ground-truthing the information in a consistent and unified way such that this can be used for ecological impact assessment and habitat metrics.
- 7.1.6 The whole survey area was walked by an experienced ecologist and habitats identified, classified and mapped. Each habitat is coded in line with the survey methodology, using secondary codes to define specific features, such as management measures, land use and other specific features. Where these secondary codes are used in the report, the definitions are also provided.
- 7.1.7 Within each habitat type a record of the vascular plant species was made and an assessment of their abundance recorded. Abundances of each vascular plant species within each habitat type are based on the DAFOR scale, presented below.
- D – Dominant
 - A – Abundant
 - F – Frequent
 - O – Occasional
 - R – Rare
- 7.1.8 The survey included an assessment of the habitats present to determine their suitability for protected species and species of conservation concern. A record was made of any signs of protected species, or species of conservation concern, such as runs, droppings and/or foraging remains.
- 7.1.9 A record was also made of any fauna that was incidentally recorded.
- 7.1.10 The presence of any non-native invasive species was noted, and their location and distribution mapped.
- 7.1.11 Notable observations were recorded during the survey as target notes.
- 7.1.12 Nomenclature of vascular plants followed (Stace, 2019). Common names are presented in the text, with scientific names detailed in Appendix 1.
- 7.1.13 Fauna species mentioned in this report will be referred to by their common name. Scientific names for these species are detailed in Appendix 2.
- 7.1.14 The date and weather conditions are detailed in the table below. The survey was undertaken by Sarah Monkhouse BSc (Hons) – Assistant Ecologist.

Table 10: Survey dates and weather conditions

Date of Survey	Survey time	Temp °C	Cloud (%)	Rain	Wind ⁸
25.09.24	10:20	14	90%	No rain	1 - Light air

Habitat Condition Assessment

7.1.15 The habitat condition assessment was undertaken on 25/09/2024 by Sarah Monkhouse BSc (Hons) – Assistant Ecologist, who has the relevant skills and knowledge to assess condition for the habitats encountered.

7.1.16 The habitat condition assessment involved completing the habitat condition forms in line with best practice guidance (DEFRA, 2024b). Habitat condition assessment forms were completed, and the condition assigned based on the number of criteria passed for the habitat type. For some habitat types, the condition has been pre-determined, such as rhododendron and bramble scrub.

7.1.17 For ease of reference, habitat compartments in Figure 1 have been numbered as per below.

- Grassland: 1 - 4
- Woodland: 5 - 8
- Scrub: 9
- Urban: 11 - 16
- Hedgerow: H1, H2

7.1.18 The habitat condition forms accompany this report.

Limitations

7.1.19 Habitat surveys can be undertaken at any time of year, with the optimal season being between March and September, when most plant species are visible. Where feasible, all efforts were made to schedule the habitat survey in optimal weather conditions and time of year. Nevertheless, field surveys usually fail to record all species present for various reasons, including the seasonal absence of some species, and short survey duration. Rare or cryptic species are often missed in short surveys.

7.1.20 Based on the above, a full appraisal of the plant species and habitats present could be undertaken at the time of the survey as the survey was conducted within the optimal timeframe.

7.1.21 Habitat condition assessments should be undertaken at the optimal time of year for the habitat. The habitat condition assessment was undertaken in September which is considered to be optimal.

⁸ Beaufort scale

Results

UK habitat classification

7.1.22 The UK habitat classification survey and habitat condition assessment results are detailed in the table below. Habitat condition forms and a completed biodiversity net gain metric, detailing the baseline conditions, accompanies this report and must be read in conjunction with this report.

Table 11: UK habitat classification survey results

Habitat and Code	Compartment Number	Description	Condition	HPI	Photograph
Habitat Code: g4 - Modified grassland	1, 4	Grassland to the south of the site. Better condition is less mown area to the west. Species include: • Perennial rye-grass D • Creeping buttercup A • Greater plantain O • Yorkshire-fog A • Soft-rush R • Creeping bent F • White clover F • Daisy R • Ribwort plantain F • Cock's-foot R • Dandelion sp. F • Red clover R • Yarrow R Ecological function: Open grassy areas offer foraging space for bats and birds, as well as commutable land for mammals, reptiles and amphibians. As compartments 1 and 4 are well maintained, it offers less ecological function than grasslands with greater sward height variation and a higher density of herbs.	Good	No	
Habitat Code: g4 - Modified grassland	2	Circular amenity grassland with a rectangular cut out of turf underneath a tarp covering. Grassland is mowed and bounded by a gravel path and woodland. Species include: • Perennial rye-grass D • White clover A • Creeping buttercup F • Daisy O • Yorkshire-fog F • Cock's-foot F • Common bird's-foot trefoil R • Broad-leaved dock F • Red fescue F • Field chamomile R • Creeping thistle O • Hedge woundwort R • Hedge bindweed R • Ribwort plantain R, • Herb Robert R, • Creeping bent O, • Common ragwort R, Ecological function: The grassland offers foraging space for mammals such as bats, badger, fox and hedgehog. Herbs within the	Good	No	

Habitat and Code	Compartment Number	Description	Condition	HPI	Photograph
		grassland offer food for pollinators, although there are limited flowering herbs within this area.			
Habitat Code: g3c – Other neutral grassland	3	Patch of neutral grassland that acts as a glade within compartment 6 and 9. Not mown or trampled, with a longer and more varied sward composition and height than compartment 1, 2 and 4. Species include: • Perennial rye-grass A • Cock's-foot A • Yorkshire-fog D • Wood speedwell F • Creeping jenny O • Creeping buttercup O • Ivy R • Moss sp. R • Creeping bent F • Common bird's-foot trefoil O • Herb-Robert O • Bramble O • Hogweed F • Dandelion R • Daisy R • Common knapweed R • Common ragwort R • Red clover R • Smaller cat's-tail R Ecological function: Grassland offers function to pollinators and habitat for reptiles and amphibians. Compartment 3 is an open grassy space within a mosaic of scrub and woodland edge which offers greater ecological function.	Moderate	No	

Habitat and Code	Compartment Number	Description	Condition	HPI	Photograph
Habitat Code: w1h - Other woodland; mixed Additional Codes: 48 - Non-native	5	Woodland with non-natives planted throughout. No dominant species, all species are fairly evenly distributed across the woodland. Lots of shrub species with a few large or very large trees scattered around. Species include: • <i>Nothofagus cunninghamii</i> O • <i>Rhododendron</i> sp. O • Wilsons honeysuckle O • Ivy O • Silver birch O, • Lonicera 'winter beauty' O, • Bush flax <i>stelia fragrans</i> O. • <i>Libertia ixiodes</i> O, • <i>Skimmia japonica subsp</i> O • Japonica 'red princess' O, • <i>Athersperma moschatum</i> O, • Bush flax <i>astelia nervosa</i> O, • Silver banksia <i>banksia marginata</i> O, • Beech O, • Cyclamen R, • Herb Robert R, • Ground ivy R, • Virburnum tinus 'eve princess' O, • <i>Skimmia japonica</i> 'bowles dwarf female' O, • Common nettle O, • Bamboo O, • Fir sp. O, • Myrtus 'glenleam gold' O, • Sycamore O, • Bramble O, • <i>Houhere</i> sp. O Ecological function: The woodland provides roosting opportunities for bats within the trees, breeding bird habitat for birds within the trees and larger scrubs, and foraging opportunities for pollinators within the flowering shrubs.	Poor	No	

Habitat and Code	Compartment Number	Description	Condition	HPI	Photograph
Habitat Code: w1h - Other woodland; mixed	6	Woodland surrounding compartment 3. Mostly a group of trees rather than developed woodland. Largely non-native. Species include: • Sycamore R, • Holly O, • Fir sp. A, • Cherry laurel A, • Ivy O, • Pedunculate oak R, • Redwood R, • Scots pine R, • Common nettle O, • Bramble O Ecological function: The woodland provides roosting opportunities for bats within the trees, breeding bird habitat for birds within the trees and larger scrubs, and shelter for smaller mammals.	Poor	No	
Habitat Code: w1h - Other woodland; mixed	7	Woodland habitat in the north-west of the site. Brick wall delineates the south. Pond inside the woodland. Sycamore dominated in the east and becomes a young wood to the west dominated by field maple with young oak and birch too. Bounded by wooden post and fire fence. Not accessible internally, so only one condition assessment taken. Species include: • Holly A, • Sycamore D, • Bramble A, • Ivy A, • Fir sp. R, • Hawthorn O, • Great hairy willowherb O, • Broad leaved dock O, • Creeping thistle O, • Creeping buttercup O, • Creeping bent O, • Silverweed R, • Field maple D, • Birch O, Ecological function: The woodland provides roosting opportunities for bats within the trees, breeding bird habitat for birds within the trees and larger scrubs, and shelter for smaller mammals.	Moderate	No	

Habitat and Code	Compartment Number	Description	Condition	HPI	Photograph
Habitat Code: w1h6 - Other woodland; mixed; mainly conifer	8	Fir trees woodland with a few deciduous species. Species include: • Fir sp. D, • Pedunculate Oak O, • Birch R, • Sycamore R, • Ivy A, • Holly R, Ecological function: The woodland provides roosting opportunities for bats within the trees, breeding bird habitat for birds within the trees and shelter for smaller mammals.	Poor	No	
Habitat Code: h3d - Bramble scrub	9	Bramble scrub in three patches around the edge of G2. Trees surround the grassland and scrub. May count at the edge of the woodland. Species include: • Bramble D, • Common nettle F, • Pendulous sedge R, • Creeping thistle O, • Pedunculus oak R, • Fern sp. R, • Ground ivy F, • Broad leaf dock O, • Hogweed, R • Ivy O, • Hart tongue fern R Ecological function: The bramble scrub is located near to the pond, making it suitable shelter for reptiles and amphibians.	N/A – automatically achieves poor	No	
Habitat Code: u1c – Artificial unsealed surface	11	Astroturf underneath tarp gazebo Ecological function: N/A	N/A	No	

Habitat and Code	Compartment Number	Description	Condition	HPI	Photograph
Habitat Code: u1b5 – developed land; sealed surface	12	Path that navigates the perimeter of the site. Ecological function: N/A	N/A	No	
Habitat Code: 1160 Introduced shrub Additional Codes: 48 - Non-native	13	Area of nonnative scrub species to the south of the toilet blocks. T3 oak stands in the centre of the area with its canopy over the compartment. Species include: • <i>Skimmia japonica</i> 'ruby dome' F • Chilean fire bush F • Orange charmer F Ecological function: The introduced shrub will support pollinators and foraging birds.	N/A	No	
Habitat Code: h2b – Non-native hedgerow	H1	Cherry laurel hedgerow. Along northern boundary to the west of the toilet block. Species include: • Cherry laurel D, • <i>Skimmia japonica</i> thunb.R • Holly O, • Sycamore R, • Ivy O, Ecological function: This non-native hedge offers little ecological function but may provide refuge for small mammals or breeding birds.	N/A	No	

Habitat and Code	Compartment Number	Description	Condition	HPI	Photograph
Habitat Code: h2a native hedgerow	H2	Maintained hornbeam hedge bounding the west of the site. Species include: • Hawthorn A, • Hornbeam D, • Sycamore R, • Bramble R Ecological function: The native hedgerow will provide nesting opportunities for breeding birds, commuting routes for bats and shelter for smaller mammals such as mice, shrew and hedgehog.	Good	Yes	
Habitat Code: u1e – built linear feature Additional Codes: 853 – mortared wall	LF1	Stone wall that stands within woodland 7 and separates the pond from the area of bramble scrub. The wall has ivy growing on parts.	N/A	No	

Appendix 4: Bat survey

Habitat assessment

Daytime walkover survey

A daytime walkover survey was undertaken to identify the habitats present within the survey area and surrounding areas that could be used by roosting, foraging and commuting bats. During the survey, the presence of habitat types was recorded along with whether bats could use these. Particular attention was paid to the presence of tree lines, hedgerows, scattered trees, woodland, diverse grassland and waterbodies and their connectivity to the wider landscape and other habitats that could be used by bats.

The daytime walkover survey also included identifying any trees, buildings, built structures and/or underground sites that could be used by roosting bats

The information was used to determine the habitats and buildings/trees/built structures and underground sites suitability for roosting, foraging and commuting.

Preliminary roost assessment (buildings)

Within the survey area, three buildings (B1, B2 and B3) were recorded. A systematic external search was undertaken of each building to locate potential roosting features and their access points, the location of which was recorded. These can include, but are not limited to:

- Raised, missing and broken roof, hanging or ridge tiles;
- Gaps in soffits/fascias
- Gaps between wooden cladding boards;
- Missing mortar and cracks in brickwork
- Gable apex
- Raised lead flashing.

Signs of bat activity were searched for, and their location recorded, where identified.

Where safe access was provided, an internal inspection was undertaken of B1 and B2, including any lofts and cellars, where present, to systematically searched for potential roosting features and their access points. Suitable roosting features include, but are not limited to:

Cracks and crevices in timbers, between mortise and tenon joints

Along the ridge beam

Internal gaps in brick/blockwork

Cavity walls

Wall tops

Behind purlins.

Signs of bat activity were search for and their location recorded, where identified.

Where potential roosting features were identified internally and externally, their location and type were recorded, mapped and photographed and where possible, the following information was collected:

- Type
- Size

- Perching points
- Roosting surfaces
- Aspect
- Orientation
- Temperature
- Humidity
- Lighting

The information collected during the external and internal inspections was used to assign a roosting suitability.

Bat ground level roost assessment of trees

The survey included an external inspection of four trees present within the survey area to assess the roosting resource, and specifically identify whether trees supported potential roosting features, including:

- Woodpecker holes
- Rot holes
- Hazard beams and other horizontal cracks and splits in stems and branches
- Partially detached platey bark
- Knot and other holes
- Cankers
- Hollows and cavities
- Double leaders forming compression forks with included cavities
- Gaps between overlapping branches
- Partially detached ivy with stem diameter exceeding 50mm
- Bat, bird or hazel dormouse boxes.

During the survey, the following information was collected:

- Tree number
- Tree GPS location
- Tree species
- Tree height
- Tree DBH

Signs of bat activity.

Where potential roosting features were observed, the following information was collected:

- Location of potential roosting feature (on limb or on stump)
- Type
- Height
- Direction
- Photograph

The information collected was used to assign a tree roosting suitability in line with best practice methods, as detailed below.

Assigning roosting, foraging and/or commuting suitability

The aim of the assessment was to determine suitability of the survey area for bats, and to advise on the appropriate next steps to inform the Ecological Impact Assessment. Habitat suitability was defined in line with the tables below for buildings/built structure/underground sites or trees (Collins ed, 2023).

Suitability is assessed irrespective of whether bats are confirmed as present, as it is based on suitability of Potential Roosting Features for various bat roosts. Where a roost is confirmed, this is recorded as a separately.

Table 12: Habitat suitability roosting in structures, foraging and commuting bats

Suitability	Roosting suitability in buildings/built structure/underground sites ⁹	Foraging and commuting habitat suitability
None	No habitat features present that could be used by bats at any time of the year.	No suitable habitat present.
Negligible	No obvious features present suitable for use by roosting bats, however a small amount of uncertainty remains.	No obvious habitat, but some uncertainty present
Low	A structure with one or more potential roost sites that could be used by a small number of bats opportunistically for summer and winter roosts. However, features do not provide enough space, shelter, protection or environmental conditions to be used on a regular basis or by larger number of bats (i.e. unlikely to be a maternity or large hibernation roost).	Habitat that could be used by small numbers of bats as flightpaths, such as gappy hedgerow or unvegetated streams, generally not well connected to the landscape. Also, where there is a small, isolated tree or isolated habitat patch that could be used by a small number of foraging bats.
Moderate	A structure or tree that supports one or more potential roost sites that could be used by bats due to their size and conditions, but unlikely to support a roost of high conservation status with respect to roost type and irrespective of species conservation status.	Continuous habitat connected to the wider landscape. Likely to be used regularly for foraging and commuting. E.g. River valleys, streams, hedgerows, lines of trees, woodland edge and larger areas of grassland/scrub
High	A structure or tree which supports 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, protection, condition and / or surrounding habitat. These structures have the potential to support high conservation status roosts (e.g. maternity or classic cool/stable hibernation site)	Continuous, high-quality habitat present which is well connected. Likely to be regularly used by commuting and foraging bats. E.g. broadleaved woodland, tree-lined watercourses, grazed parkland. Close to and connected to known roosts.

⁹ Adapted from (Collins ed, 2023).

Table 13: Roosting suitability of trees

Suitability	Roosting suitability in trees ¹⁰
None	Either no potential roosting features are recorded, or these are unlikely to be present.
FAR	Further assessment required to establish whether potential roosting features are present.
PRF	A tree with at least one potential roosting feature.

Table 14: Roosting suitability of potential roosting features in trees

Suitability	Roosting suitability in trees ¹¹
PRF-I	Suitable for individual bats or very small number of bats due to the size or lack of suitable surrounding habitats
PRF-M	Suitable for multiple bats and may therefore be used by a maternity colony.

Limitations

Habitat assessment

Daytime walkover survey

Daytime walkover surveys can be undertaken at any time of year. The survey was undertaken in optimal conditions and the results can be relied upon to inform the impact assessment.

Preliminary roost assessment (building, built structures and underground sites)

Preliminary roost assessment can be undertaken at any time of year.

Where evidence of bats is recorded during a preliminary roost assessment not supported by further presence/likely absence surveys, it is possible to confirm the presence of a roost. However, in these instances, a roost characterisation survey is required to inform the impact assessment and bat mitigation licence.

Where no evidence is recorded, this does not mean bats are absent. If potential roosting features are recorded, further surveys are required to determine presence or likely absence of bats. Recommendations for further survey must be followed to confirm presence or likely absence prior to a planning application being submitted.

Bat ground level roost assessment of trees

The optimal time of year to undertake a ground level roost assessment of trees is between November and April, when no leaves occur on the trees. The survey was undertaken in September. Whilst this is outside the optimal time frame, the trees were exposed enough for the surveyors to fully assess each tree for bat roosting features and the results can be relied upon to inform the impact assessment.

¹⁰ Adapted from (Collins ed, 2023).

¹¹ Adapted from (Collins ed, 2023).

Results

Habitat assessment

Daytime walkover survey

Habitats recorded in the survey area and their suitability for bats are presented in the table below.

Table 15: Habitats in the survey area suitable for use by bats

Habitat	Suitable Use for Bats
Woodland	Foraging/roosting
Grassland	Foraging
Buildings	Roosting
Pond	Foraging
Hedgerows	Commuting

Habitats in the survey area were assessed as being of high for foraging and commuting bats as the survey area is located within Kew Gardens which provides a wide expanse of habitat with suitability for bats, such as woodland, trees and open grassland. The survey area has direct connections to Wakehurst and Chiddingly Woods SSSI which offers extensive habitat opportunities for bats.

Preliminary roost assessment (building, built structures and underground sites)

The results of the preliminary roost assessment of each building are presented below.

Table 16: B1 preliminary roost assessment results

Structure number	B1	Description	B1 is a wooden garden shed with a bitumen felt roof. The south facing wall has four windows which floods the internal space with light. No external or internal roosting features were found in the structure. No evidence of bats was found within the structure. 		
Structure summer roost suitability	Negligible	Justification	There are no potential roosting features within B1.	Further summer presence/likely absence survey required	No
Structure winter roost suitability	Negligible	Justification	There are no potential roosting features within B1.	Further winter presence/likely absence survey required	No

Table 17: B2 preliminary roost assessment results

Structure number	B2	Description	B2 is a wooden garden shed with a bitumen felt roof, of similar construction to B1, although slightly larger. The south facing wall has four windows allowing light into the internal space. The shed is situated within a wooded area (compartment 8) which makes it more shaded than B1. No external or internal roosting features were found in the structure. No evidence of bats was found within the structure. 		
Structure summer roost suitability	Negligible	Justification	There are no potential roosting features within B2.	Further summer presence/likely absence survey required	No
Structure winter roost suitability	Negligible	Justification	There are no potential roosting features within B2.	Further winter presence/likely absence survey required	No

Table 18: B3 preliminary roost assessment results

Structure number	B3	Description	B3 is a one storey toilet block which does have a loft space, accessible through the disabled toilet stall. The structure is multi-gabled ended with brick walls and machine-made tiles. The roof has a high density of moss, which covers all aspects.	
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Loft space	L1	Description	The loft space extends to the entire footprint of the building, at approximately 1 m tall. The toilet block has a false ceiling, which will mean the internal conditions of the loft space will fluctuate in accordance with those in the toilet block. The loft space had ridge beam which can provide suitable roosting space for bats, however no external features were found that would allow access to the internal loft void.	
Potential roosting features				
Feature number	Description		Photograph	

PRF1	Gaps underneath the edges of the bottom ridge tile, allowing a small space for crevice dwelling bats to roost within. This feature is located on the north east corner of the building.				
Structure summer roost suitability	Low	Justification	B3 has low suitability for bats as there is only one potential roosting feature which appears to lead to a small crevice under tiles, which would be able to support individual bats.	Further summer presence/likely absence survey required	Yes
Structure winter roost suitability	Negligible	Justification	The size and position of the potential roosting feature does not provide suitability for a wintering hibernation. The crevice would leave bats exposed to the cold and the moss-covered roof indicated the space retains damp. These conditions are not suitable for hibernation.	Further winter presence/likely absence survey required	No

Bat ground level roost assessment of trees

The results of the ground level roost assessment are presented in the tables below for each tree, their locations are presented in Figure 2.

Table 19: T1 ground level roost assessment survey results

Tree number	T1	
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Species	Pedunculate oak			
Height	20 m			
GLTA Roosting suitability	PRF			
Potential roosting features				
Feature number	Description	Signs of bat activity	PRF suitability	Photograph
1	Dead limbs	No	PRF-I	

2	Knot holes	No	PRF-I	
3	Wounds from missing branches	No	PRF-I	

4	Loose bark	No	PRF-I	
Presence/likely absence survey required		Yes		

Table 20: T2 ground level roost assessment survey results

Tree number	2		
Species	Beech		
Height	20 m		
GLTA Roosting suitability	FAR		
There are no potential roosting features on this tree.			
Presence/likely absence survey required	No		

Table 21: T3 ground level roost assessment survey results

Tree number	3		
Species	Pedunculate oak		
Height	17 m		
GLTA Roosting suitability	PRF		
Potential roosting features			
Feature number	Description	Signs of bat activity	PRF suitability
1	A bat box is placed on this tree.	No	PRF-M
Presence/likely absence survey required	Yes		

Table 22: T4 ground level roost assessment survey results

Tree number	4		
Species	Pedunculate oak		
Height	20 m		
GLTA Roosting suitability	PRF		
Potential roosting features			
Feature number	Description	Signs of bat activity	PRF suitability
1	A bat box is placed on this tree.	No	PRF-M
2	Ivy is found on the northern aspect of the tree. Ivy may obscure additional PRF and can be a feature in it's own right.	No	PRF-M
Presence/likely absence survey required		Yes	

Appendix 5: Biodiversity net gain assessment

Methods

Biodiversity net gain is a process applied to a project that aims to deliver a net positive change in biodiversity throughout a project lifecycle by implementing eight principles and rules (DEFRA, 2024a) (CIEEM, CIRIA, IEMA, 2019) (BSI, 2021).

To deliver a net gain in biodiversity, the following rules must be adhered to:

Rule 1: Trading rules must be followed

Rule 2: Biodiversity unit outputs, for each type of unit, must not be summed, traded or converted between types and at least 10% gain applies to each type of unit (e.g. habitats, hedgerows and watercourses).

Rule 3: To accurately calculate the gains, the statutory biodiversity metric calculation tool, or small sites biodiversity metric tool where applicable, must be used.

Rule 4: In exceptional circumstances, deviation from the biodiversity net gain metric methodology may be permitted by the relevant planning authority.

Nine principles, detailed in the statutory guidance, underpin the biodiversity metric tool.

The Local Planning Authority must take account how a development has implemented the Biodiversity Gain Hierarchy, as set in Town and Country Planning (Development Management Procedure) (England) Order 2015 (Department for Levelling Up, Housing and Communities, 2024), which is to:

- **Avoid** impacts where possible through careful project design, and specifically to habitats that have a medium, high and very high distinctiveness
- **Minimise** impacts where these cannot be avoided, prioritising the minimisation in order of distinctiveness
- **Restore** habitats that are retained or could be impacted by the project
- As a last resort, **compensate** for the loss or damage of habitats through habitat creation primarily within the red line boundary, and if this is not possible, offsite compensation can be considered. Where offsite offsets are considered, these should be as close as possible to the impact site.

The biodiversity net gain assessment was undertaken in line with the statutory metric (DEFRA, 2024a).

Baseline biodiversity units

Calculating baseline biodiversity units requires information on a habitat's area, distinctiveness, condition, and strategic significance. The habitat areas and habitat condition are based on the habitat survey methods detailed above.

Distinctiveness refers to the relative scarcity of the habitat and its importance for nature conservation. The distinctiveness categories are pre-determined by the metric.

Strategic significance is assessed against information in the local plan or policies for that habitat and its location. This is considered separately for each habitat type.

The data were inputted into the statutory biodiversity net gain metric accessed on 13/11/2024 (DEFRA, 2024a). The completed metric accompanies this report.

The baseline units were calculated for:

- Habitats
- Hedgerows
- Watercourses

Individual trees

Individual trees can either be classed as urban, where they are bounded or near hard standing, or rural trees for all other tree types. These are categorised by size:

- Small: diameter at breast height > 7.5cm - ≤ 30cm
- Medium: diameter at breast height >30cm - ≤ 60cm
- Large: diameter at breast height > 60cm - ≤ 90cm
- Very large: diameter at breast height > 90 cm

Individual trees in private gardens were only recorded where these were larger than medium.

Trees removed from hedgerow, traditional orchard, wood-pasture and parkland that are larger than medium are recorded as individual trees.

Hedgerows

Standard methodology was used to assess hedgerows. Where double hedgerows were observed, these were recorded as two hedgerows (DEFRA, 2024a) (DEFRA, 2024b).

Post-development calculations

The latest landscaping plans were reviewed by an ecologist and predicted post-construction habitat types were allocated a UK habitat classification and likely habitat condition by the ecologist. Strategic significance was also determine based on available information in the local plan.

In calculating the post-development impacts the following key elements were considered:

- If habitats that are retained cannot be maintained in their current condition, the habitat will be recorded as:
 - Lost
 - Lower condition
 - Habitat created in advance to + 30 years
 - Explanation in the assessor's comments
- Habitat enhancements are those where:
 - The condition is improved compared with the baseline state.
 - A change to a higher distinctiveness habitat in the same broad habitat group
 - Restoration of relict high or very high distinctiveness habitats.
 - Existing high or very high distinctiveness habitats may be shown as an enhancement however sufficient plant communities for the target habitat must be evidenced as present to achieve this.
- Habitat creation is considered where there is a loss of baseline habitat and it is replaced with another, or a change in broad habitat type (e.g. grassland to woodland).

- Advance or delayed habitat creation
 - The time selected for this is reflective of the difference between when the habitat will be created versus when it was removed. For example, if the landscaping works are undertaken in Year 2 after vegetation clearance, a “2” will be selected in the appropriate column. Where possible, advance creation should be encouraged to reduce the temporal risk factor applied and will reduce the number of biodiversity units required to deliver the biodiversity net gain.

Individual trees

The post-intervention trees were based on the trees identified during the baseline surveys.

Trees located in private gardens were not counted.

Newly planted trees were selected a small size, unless a larger size was selected at planting.

Limitations

The survey was undertaken in optimal conditions and the results can be relied upon to inform the impact assessment.

Results

Full habitat survey results are detailed in the biodiversity net gain metric that accompanies this report.

Habitat condition assessment forms are provided as a separate document which should be read in conjunction with this report.

Appendix 6: Vascular plant species recorded during the survey

This appendix presents vascular species recorded during the survey.

Compartment ID	Habitat code	Scientific name	Common name	Abundance (DAFOR)
1	g4	<i>Lolium perenne</i>	Perennial Rye-grass	D
		<i>Trifolium repens</i>	White clover	A
		<i>Ranunculus repens</i>	Creeping buttercup	F
		<i>Bellis perennis</i>	Daisy	O
		<i>Holcus lanatus</i>	Yorkshire-fog	F
		<i>Dactylis glomerata</i>	Cock's-foot	F
		<i>Lotus corniculatus</i>	Common Bird's-foot-trefoil	R
		<i>Rumex obtusifolius</i>	Broad-leaved Dock	F
		<i>Festuca rubra</i> agg.	Red fescue	F
		<i>Chamaemelum nobile</i>	Chamomile	R
		<i>Cirsium arvense</i>	Creeping thistle	O
		<i>Stachys sylvatica</i>	Hedge woundwort	R
		<i>Calystegia sepium</i>	Hedge bindweed	R
2	g3c	<i>Lolium perenne</i>	Perennial Rye-grass	A
		<i>Dactylis glomerata</i>	Cock's-foot	A
		<i>Holcus lanatus</i>	Yorkshire-fog	D
		<i>Veronica montana</i>	Wood speedwell	F
		<i>Lysimachia nummularia</i>	Creeping jenny	O
		<i>Ranunculus repens</i>	Creeping buttercup	O
		<i>Hedera helix</i>	Ivy	R
		<i>Bryophyta</i> sp.	Moss sp.	R
		<i>Agrostis stolonifera</i>	Creeping bent	F
		<i>Lotus corniculatus</i>	Common Bird's-foot-trefoil	O
		<i>Geranium robertianum</i>	Herb-robert	O
		<i>Rubus fruticosus</i> agg.	Bramble	O
		<i>Heracleum sphondylium</i>	Hogweed	F
		<i>Taraxacum</i> agg.	Dandelion	R
		<i>Bellis perennis</i>	Daisy	R
		<i>Centaurea nigra</i>	Common knapweed	R
		<i>Jacobaea vulgaris</i>	Common ragwort	R
		<i>Trifolium pratense</i>	Red clover	R
		<i>Phleum bertolonii</i>	Smaller Cat's-tail	R
3	g4	<i>Lolium perenne</i>	Perennial Rye-grass	D
		<i>Ranunculus repens</i>	Creeping buttercup	A
		<i>Plantago major</i>	Greater plantain	O
		<i>Holcus lanatus</i>	Yorkshire-fog	A
		<i>Juncus effusus</i>	Soft-rush	R
		<i>Agrostis stolonifera</i>	Creeping bent	F
		<i>Trifolium repens</i>	White clover	F
		<i>Bellis perennis</i>	Daisy	R

Compartment ID	Habitat code	Scientific name	Common name	Abundance (DAFOR)
		<i>Plantago lanceolata</i>	Ribwort plantain	F
		<i>Dactylis glomerata</i>	Cock's-foot	R
		<i>Taraxacum</i> agg.	Dandelion	F
		<i>Trifolium pratense</i>	Red clover	R
		<i>Achillea millefolium</i>	Yarrow	R
5	w1h	<i>Nothofagus cunninghamii</i>	Nothofagus cunninghamii	O
		<i>Rhododendron ponticum</i>	Rhododendron	O
		<i>Lonicera ligustrina</i> var. <i>yunnanensis</i>	Wilson's honeysuckle	O
		<i>Hedera helix</i>	Ivy	O
		<i>Betula pendula</i>	Silver birch	O
		<i>Lonicera</i> 'winter beauty'	Lonicera 'winter beauty'	O
		<i>stelia fragrans</i>	Bush flax	O
		<i>Libertia ixiodes</i>	Libertia ixiodes	O
		<i>Skimmia japonica</i> subsp	Skimmia japonica subsp	O
		<i>Japonica</i> 'red princess'	Japonica 'red princess'	O
		<i>Athersperma moschatum</i>	Athersperma moschatum	O
		<i>astelia nervosa</i>	Bush flax astelia nervosa	O
		<i>banksia mariginata</i>	Silver banksia banksia mariginata	O
		<i>Fagus sylvatica</i>	Beech	O
		<i>Cyclamen</i> sp.	Cyclamen sp.	R
		<i>Geranium robertianum</i>	Herb-robert	R
		<i>Glechoma hederacea</i>	Ground-ivy	R
		<i>Virburnum tinus</i>	Eve princess'	O
		<i>Skimmia japonica</i>	'Bowles dwarf female'	O
		<i>Urtica dioica</i>	Common nettle	O
		<i>Bambusoideae</i>	Bamboo sp.	O
		<i>Cotoneaster ignescens</i>	Firebird cotoneaster	O
		<i>Myrtus</i> sp.	'Glenleam gold'	O
		<i>Acer pseudoplatanus</i>	Sycamore	O
		<i>Rubus fruticosus</i> agg.	Bramble	O
		<i>Houhere</i> sp.	Houhere sp.	O
6	w1h	<i>Acer pseudoplatanus</i>	Sycamore	R
		<i>Ilex aquifolium</i>	Holly	O
		<i>Pinaceae</i> sp.	Fir sp.	A
		<i>Prunus laurocerasus</i>	Cherry laurel	A
		<i>Hedera helix</i>	Ivy	O
		<i>Quercus robur</i>	Pedunculate oak	R
		<i>Sequoia semperivens</i>	Coastal redwood	R
		<i>Pinus sylvestris</i>	Scots pine	R
		<i>Urtica dioica</i>	Common nettle	O

Compartment ID	Habitat code	Scientific name	Common name	Abundance (DAFOR)
		<i>Rubus fruticosus</i> agg.	Bramble	O
7	w1h	<i>Ilex aquifolium</i>	Holly	A
		<i>Acer pseudoplatanus</i>	Sycamore	D
		<i>Rubus fruticosus</i> agg.	Bramble	A
		<i>Hedera helix</i>	Ivy	A
		<i>Pinaceae</i> sp.	Fir sp.	R
		<i>Crataegus monogyna</i>	Hawthorn	O
		<i>Epilobium</i> sp.	Willowherb sp.	O
		<i>Rumex obtusifolius</i>	Broad-leaved Dock	O
		<i>Cirsium arvense</i>	Creeping thistle	O
		<i>Ranunculus repens</i>	Creeping buttercup	O
		<i>Agrostis stolonifera</i>	Creeping bent	O
		<i>Potentilla anserina</i>	Silverweed	R
		<i>Acer campestre</i>	Field maple	D
		<i>Betula pubescens</i>	Downy birch	O
		<i>Pinaceae</i> sp.	Fir sp.	D
		<i>Quercus robur</i>	Pedunculate oak	O
		<i>Betula pubescens</i>	Downy birch	R
		<i>Acer pseudoplatanus</i>	Sycamore	R
		<i>Hedera helix</i>	Ivy	A
		<i>Ilex aquifolium</i>	Holly	R
8	w1h6	<i>Pinaceae</i> sp.	Fir sp	D
		<i>Quercus robur</i>	Pedunculate Oak	R
		<i>Betula pubescens</i>	Downy Birch	R
		<i>Acer pseudoplatanus</i>	Sycamore	R
		<i>Hedera helix</i>	Ivy	R
		<i>Ilex aquifolium</i>	Holly	R
9	h3d	<i>Rubus fruticosus</i> agg.	Bramble	D
		<i>Urtica dioica</i>	Common nettle	F
		<i>Carex pendula</i>	Pendulous sedge	R
		<i>Cirsium arvense</i>	Creeping thistle	O
		<i>Quercus robur</i>	Pedunculate oak	R
		<i>Polypodiopsida</i> sp.	Fern sp.	R
		<i>Glechoma hederacea</i>	Ground-ivy	F
		<i>Rumex obtusifolius</i>	Broad-leaved Dock	O
		<i>Heracleum sphondylium</i>	Hogweed	R
		<i>Hedera helix</i>	Ivy	O
		<i>Asplenium scolopendrium</i>	Hart's-tongue	R
13	1160	<i>Skimmia japonica</i>	'Ruby dome'	F
		<i>Embothrium coccineum</i>	Chilean fire bush	F
		<i>Pyracantha</i>	Orange charmer	F
H1	h2b	<i>Prunus laurocerasus</i>	Cherry laurel	D
		<i>Skimmia japonica thunb</i>	Skimmia japonica thunb	R
		<i>Ilex aquifolium</i>	Holly	O

Compartment ID	Habitat code	Scientific name	Common name	Abundance (DAFOR)
H2	h2a	<i>Acer pseudoplatanus</i>	Sycamore	R
		<i>Hedera helix</i>	Ivy	O
		<i>Crataegus monogyna</i>	Hawthorn	A
		<i>Carpinus betulus</i>	Hornbeam	D
		<i>Acer pseudoplatanus</i>	Sycamore	R
		<i>Rubus fruticosus agg.</i>	Bramble	R

Appendix 7: Survey calendar

This survey calendar should be used as guidance only and is based on current industry best-practice.

Survey type	January	February	March	April	May	June	July	August	September	October	November	December	
Habitat				UK habitat classification survey and National Vegetation Classification (habitat dependant for specific survey months)									
				Habitat condition assessment (habitat specific suitable month)									
Invertebrate													
Amphibian (including great crested newt)	Habitat suitability index												
				eDNA presence/absence									
			Presence/absence and population size class assessment										
Reptiles													
Birds	Wintering birds		Migratory/breeding birds	Breeding birds						Migratory birds		Wintering birds	
Badger		Bait marking and sett search								Bait marking and sett search			
Bats	Preliminary Roost Assessment (all year); Preliminary Ground Level Tree Roost Assessment (optimal between November and March)												
	Winter roost presence/likely absence				Presence/likely absence summer survey and activity survey							Winter roost presence/likely absence	
Hazel Dormouse				Nest tube (nut search from September to December)									Nut search
Otter			Preferable survey season										
Water Vole													
Rare/notable plant or invasive species													
	Survey sub-optimal	Survey optimal	Survey outside acceptable season										