Ecological Impact Assessment

Bugle Nurseries, Upper Halliford Road, Shepperton, TW17 8SN

Presented to: Angle Property (RLP Shepperton) LLP

Issued: November 2022

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Report Details

Client	Angle Property (RLP Shepperton) LLP
Report Title	Ecological Impact Assessment
Site Address	Bugle Nurseries, Upper Halliford Road, Shepperton, TW17 8SN
Project No.	17-0684.14
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Quality Assurance

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1	Final	16th November 2022		J. Britt		
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INOGEN ALLIANCE

Non-Technical Summary

Delta-Simons Ltd was instructed by Angle Property (RLP Shepperton) LLP (the 'Client') to undertake an Ecological Impact Assessment (EcIA) of an area of land comprising Bugle Nurseries on Upper Halliford Road, Shepperton (hereafter referred to as the 'Site') to inform a planning application for residential development (the 'Proposed Development') at the Site.

This EcIA addresses the potential effects of the Proposed Development on ecology and nature conservation. The Report describes the methods used to assess the effects; the baseline conditions currently existing at the Site and within the immediate surrounding area; the mitigation measures required to prevent, reduce or offset any significant adverse effects and the likely residual effects after these measures have been adopted, as well as any proposed enhancement measures. A summary of residual effects is provided overleaf.

An ecological desk study undertaken in January 2022 identified two internationally designated statutory sites within 6 km of the Site, no nationally designated statutory sites and 10 locally designated non-statutory sites within 2 km of the Site. The Site falls within a Site of Special Scientific Interest (SSSI) Impact Risk Zones (IRZ). However, as the Proposed Development does not meet any of the criteria for which the LPA would need to consult with Natural England over risks posed by development (for internationally and nationally designated statutory sites), and due to the development's type and distance from all these designated sites, it is considered unlikely that the Proposed Development would have a significant adverse impact on designated sites.

The habitats on Site were surveyed and assessed for their suitability to support protected/otherwise notable species by Delta-Simons in January 2022. The Site covers an area of 4.8 ha and comprises dense scrub, scattered scrub, scattered broadleaved trees, scattered coniferous trees, neutral semi-improved grassland, poor semi-improved grassland, amenity grassland, introduced shrub, species-poor hedgerow, fencing, earth bank, buildings and wall. There are no Habitats of Principal Importance present on Site and the habitats present on Site are widespread on both a local and national scale, with none of the habitats being considered rare. The proposals will result in the loss of the majority of on-Site habitats, although a number of scattered trees are to be retained. This loss of habitat will be compensated for through the provision of new native/wildlife-friendly planting within the landscaping strategy, with the area of public open space comprising a total of 2.98 ha. The plants included in the landscape strategy have been carefully chosen in line with best practice guidance to maximise the Site's biodiversity value post-development such that a net gain in biodiversity of over 10% can be achieved, as well with a considerable gain in linear habitat (hedgerow, 33%). Therefore, any impact resulting from the loss of habitat on Site will be minor beneficial and non-significant.

The Site was found to be suitable for bats, with one building assessed as having low Bat Roost Potential (BRP), one moderate and one high, such that further nocturnal dusk emergence surveys were undertaken. The results of the surveys indicate that roosting bats are likely to be absent from the Site, however, given that in 2018 Building 4 at the Site was recorded to support an individual soprano pipistrelle during one of three nocturnal surveys of it, such that the building was considered to support an occasionally used day roost of a lone male(s) or non-breeding female(s), there remains the potential for these buildings to be used as a roost in the future, such that a precautionary approach to demolition must be undertaken. Furthermore, a number of trees were recorded to have low BRP such that a precautionary approach will also be undertaken in relation to felling.

Lighting at the Site during the operational phase of works has the potential to adversely affect bat activity within retained and adjacent off-Site habitats. A sensitive lighting plan will be put in place as part of the operational phase of works, and this together with the landscape strategy retaining opportunities for foraging and commuting bats at the Site, and provision of integrated roosting features within at least 10% of residential properties, is anticipated to result in a neutral effect on local bats that is non-significant.

The construction phase will result in the loss of suitable bird nesting habitat including buildings, trees, hedgerow and dense scrub. Suitable habitat will be removed either outside the main nesting bird season, or subsequent to a nesting bird check by a suitably experienced ecologist immediately prior to removal.

Further, appropriate mitigation through the implementation of the proposed landscaping strategy with appropriate management going forward, and the provision of integrated nest boxes within at least 10% of the residential properties for species known to occur locally, is anticipated to result in a negligible effect for birds in the local area that is of neutral significance.

Whilst no evidence of reptiles has been recorded on-Site, areas of it offer suitable habitat. The scrub covered earth bund in the west of the Site is to be largely retained as part of the development design, with the construction phase resulting in the loss of small areas of suitable reptile habitat to facilitate landscaping of the public open space. Therefore, there is the potential for the killing/injuring of reptiles, if present within the Site, as a result of this clearance. If habitats retained during construction are not managed appropriately during the operational phase of works, then there is the potential for additional habitat loss from the Site.

Clearance of any suitable reptile habitat will be undertaken with an awareness for the potential presence of reptiles, and under precautionary working methods. The proposed landscape plan includes habitat suitable to support reptiles, if present, and an appropriate management plan will be applied to minimise risks of harm to these species. The Proposed Development is anticipated to result in a negligible effect for reptile species in the local area that is of neutral significance.

Whilst the Site did not support any evidence to indicate badgers were actively using or inhabiting it, there is a suitable habitat for the species on-Site and in the wider area. It is a possibility that badgers within the local area may disperse across the Site. There is, therefore, the direct risk of harm to them should they fall into pits or trenches left open overnight during the works, such that measures must be put in place. The proposed development will result in the short-term loss of suitable habitat within the western area of the Site, however, this area is to be relandscaped for public open space, and once re-established is considered to provide potential foraging opportunities for badgers. The potential residual effects are expected to be neutral and, therefore, non-significant on badgers.

Whilst no evidence of this hedgehogs was recorded during the survey visits, hedgehogs may use the Site for foraging, sheltering and dispersal. Clearance of the Site, therefore, has potential to kill/injure any individuals present. Furthermore, there is the potential for any hedgehogs venturing onto Site to become trapped within any open excavations or pipework. Appropriate measures will be put in place to ensure that they are not harmed. The proposed development will result in the loss of available habitat, however, given the extent of habitat loss (relatively low, considering the abundance of similar habitat in the surrounding area), and the proposals for re-landscaping at the Site, subsequent to the application of mitigation, the residual effects are considered to be negligible and not significant.

Caterpillars of the oak processionary moth (OPM), were previously identified on an oak within the north-western paddock. This species causes significant damage to oak trees on which the caterpillars feed, as well as their hairs causing a severe allergic reaction in humans. As such, this caterpillar could cause harm during clearance works and post development if not eradicated from Site.

The whole Site could not be accessed or visually assessed due to the storage of materials and parked vehicles. Whilst no signs of invasive weeds were recorded, there is potential that they could be present within inaccessible areas and checks should be made prior to works once the Site has been vacated.

An appropriate treatment programme should be implemented in order to eradicate OPM caterpillars from the Site. Provided the eradication plan is successful, there will be no significant residual effects.

It is concluded that provided the Proposed Development is built as proposed and all relevant mitigation is implemented during construction and operation, it has the potential to result in at least a 10% net gain for biodiversity.

Summary of Residual Effects

Important Ecological Feature	Geographic Value	Characterisation of Unmitigated Impact	Significance Before Mitigation	Avoidance, Mitigation and Compensation	Residual Effect Significance
Habitats	Local	Habitat loss Damage to structure, roots and health of habitat	Minor adverse Non-significant	Adherence to BS5837:2012 Biodiversity enhancement of the Site through landscaping with inclusion of native tree, shrub and hedgerow species, wildflower grassland and ornamental planting to include nectar/ pollen/ fruiting species.	Negligible Neutral
Birds	Local	Habitat loss Nest destruction/ disturbance Noise and vibration	Minor adverse Non-significant	Sensitive timing of works and/or watching brief with regards to the removal of, and works within close proximity to, suitable nesting habitat Creation of new bird nesting habitat in the form of integrated nest boxes within 10% properties Landscape enhancements	Negligible Neutral

Important Ecological Feature	**Geographic Value**	**Characterisation of Unmitigated Impact**	**Significance Before Mitigation**	**Avoidance, Mitigation and Compensation**	**Residual Effect Significance**
Bats	Local	Increased lighting on Site Killing/ injury of bats if roost present	Minor adverse Non-significant	Precautionary approach to demolition of buildings and felling of trees with BRP. Creation of new bat roost habitat in the form of integrated roost boxes within 10% properties Landscape enhancements	Negligible Neutral
Reptiles	Local	Risk of killing/injury during Site clearance	Minor adverse Non-significant	Precautionary approach to clearance Landscape enhancements	Negligible Neutral
Hedgehogs	Local	Risk of killing/injury during Site clearance	Minor adverse Non-significant	Precautionary approach to clearance Landscape enhancements	Negligible Neutral
Invasive species Oak Processionary Moth	n/a	Risk of spread, damage to oak trees and harm to contractors/ residents if contact made	Minor adverse Non-significant	Suitable eradication strategy	Negligible Neutral

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1.0 Introduction

1.1 Purpose and Scope of the Survey

Delta-Simons Ltd was instructed by Angle Properties (RLP Shepperton) LLP (the 'Client') to undertake an Ecological Impact Assessment (EcIA) of the proposed residential development of land at Bugle Nurseries off Halliford Road in Shepperton, Surrey (hereafter referred to as the 'Site').

The purpose of this report is to:

- Establish baseline ecological conditions at the Site.
- Provide details of ecological mitigation measures incorporated through design evolution as an intrinsic part of the project design.
- Detail any ecological mitigation measures to be implemented during Site clearance, construction and operation.
- Identify any residual ecological effects after avoidance and mitigation measures have been considered.
- Identify any compensation measures required to offset residual effects.
- Provide recommendations for how mitigation and compensation may be secured and monitored.
- Set out details of ecological enhancement measures to be included within the Proposed Development.
- Provide sufficient information to determine whether the project accords with relevant nature conservation policies and legislation and, where appropriate, to allow conditions or obligations to be proposed by the relevant authority.

The Site location is shown in Figure 1.

1.2 Site Description

The Site is centred at Ordnance Survey (OS) grid reference TQ 08988 68651, to the north of Shepperton in Surrey. The Site covers an area of 4.8 ha and comprises a number of occupied buildings and hardstanding within the east of the Site alongside structures relating to the former Bugle Nurseries. The hardstanding was being used to store several vehicles, metal containers and waste materials. A bungalow in the north-east was surrounded by managed gardens and trees, whilst the former nurseries land supported old polytunnel frames and had become overgrown with scrub. Horse-grazed paddocks characterised the central area of the Site, with an earth mound colonised by scrub characterising the west.

The Site is surrounded by Halliford Lake, grassland and a former public house to the north; Upper Halliford Road to the east with parkland, a car park and residential properties beyond; residential properties and allotments to the south; and to the west a railway line, further grassland and a recycling centre, beyond which is the M3.

The existing Site layout is shown in Figure 2.

1.3 Proposed Development

It is understood that the proposed development will comprise the construction of 80residential properties, with associated gardens and access in the south-east of the Site. The remainder of the Site will be landscaped for use as public open space (Drawing 1).

2.0 Legislation & Policy Summary

Planning guidelines, international commitments, legislation and planning policies relevant to the protection, conservation and enhancement of nature conservation interests are detailed below.

2.1 National Policy and Guidance

Specific habitats and species of relevance to the Site receive legal protection in the United Kingdom under various pieces of legislation, including:

- National Planning Policy Framework (NPPF, revised 2021);
- The Conservation of Habitats and Species Regulations 2017 (as amended);
- The Wildlife and Countryside Act (WCA) 1981 (as amended);
- The Countryside and Rights of Way (CRoW) Act 2000;
- The Natural Environment and Rural Communities Act (NERC) 2006;
- The Hedgerow Regulations 1997; and
- The Protection of Badgers Act 1992.

Where relevant, this assessment takes account of the legislative and policy protection afforded to specific habitats and species. Delta-Simons do not purport to provide specialist legal advice and where necessary the reader should also consult the original legislation, references to which are included in Appendix A.

2.2 Local Policy and Guidance

Local planning policies relating to ecology are generally based on national planning policy, the conservation of species protected under the above legislation and the protection of designated sites. However, relevant local policy and guidance documents for Spelthorne Borough Council are outlined below.

Emerging Local Plan 2022-2037

The Council is currently working on an emerging Local Plan which contains the overall vision and framework for future development in the area. The emerging Local Plan will set out how the local area will develop over at least the next 15 years and once adopted, will replace the 2009 Development Plan.

Core Strategy and Policies Development Plan Document 2009

The Council's Core Strategy and Policies Development Plan Document is part of the Local Development Framework.

"Policy EN8: Protecting and Improving the Landscape and Biodiversity The Council will seek to protect and improve the landscape and biodiversity of the Borough by:

a) safeguarding sites of international and national importance;

b) working with partners in the public, private and voluntary sectors to develop and secure the implementation of projects to enhance the landscape and create or improve habitats of nature conservation value, and to secure the more effective management of land in the Borough;

c) ensuring that new development, wherever possible, contributes to an improvement in the landscape and biodiversity and also avoids harm to features of significance in the landscape or of nature conservation interest;

d) refusing permission where development would have a significant harmful impact on the landscape or features of nature conservation value;

e) safeguarding the Borough's Common Land and working with other interested parties to protect and where appropriate enhance its nature conservation and recreational value."

3.0 Methodology

The baseline for the EcIA has been established through a combination of desk study and field surveys.

3.1 Scope of the Assessment and Zone of Influence

The features considered for this assessment were designated sites, Habitats and Species of Principal Importance (HPI/SPI) for conservation, and species protected by wildlife legislation.

Given the size and location of the Site, the zone of influence (ZoI) was taken to be the Site boundary and its immediate environs only. The exception for this was for designated sites and Great Crested Newt (GCN) *Triturus cristatus,* and details of the zone of influence for these features is provided in Section 3.2, below.

3.2 Desk Study

3.2.1 Data Search

In January 2022, available records of protected and notable species were collated from the local record centre, Surrey Biodiversity Information Centre (SBIC), along with the non-statutory designated sites from within 2 km of the Site centre.

A search for internationally, nationally and regionally designated statutory sites for nature conservation was undertaken using the Multi-Agency Geographic Information for the Countryside (MAGIC) website. The search radius was 6 km from the Site for internationally designated statutory sites and 2 km from the Site for nationally and regionally designated statutory sites. A search for non-statutory ancient woodland was undertaken within 2 km of the Site, and an assessment was made regarding the HPIs on or near the Site using the MAGIC webpage.

In addition, free and publicly accessible Ordnance Survey maps and aerial photographs were searched for waterbodies on, or within, 500 m of the Site boundary. This information has been used to assess the Site for its potential to support GCN the results of which are found in Section 4.3.

3.2.2 Previous Reports

Where available, information was gathered on any previous ecological surveys that have been conducted at the Site. The following survey reports were reviewed:

- Delta-Simons (2018) Preliminary Ecological Appraisal, Bugle Nurseries, Upper Halliford Road, Shepperton, TW17 8SN. Report ref. 17-0684.08;
- Delta-Simons (2018) Bat Survey Report, Bugle Nurseries, Upper Halliford Road, Shepperton, TW17 8SN. Report ref. 17-0684.06;
- Delta-Simons (2020) Updated Ecological Walkover Report, Bugle Nurseries, Upper Halliford Road, Shepperton, TW17 8SN. Report ref. 17-0684.10; and
- Delta-Simons (2020) Bat Survey Report, Bugle Nurseries, Upper Halliford Road, Shepperton, TW17 8SN. Report ref. 17-0684.10.

3.3 Preliminary Ecological Appraisal Survey

The habitats on Site, were surveyed on 20th January 2022 by Alexandra Jackson MZool (Hons), who has over four years' experience in ecological surveying.

The following was undertaken during the survey:

- Habitats were classified and mapped using the standard JNCC Phase 1 habitat classification and methodology (JNCC, 2010). Dominant plant species were recorded in each different habitat. The plant species nomenclature followed that of Stace (2010);
- Habitats on-Site were surveyed for the presence of, or field signs to indicate the presence of protected or notable birds, amphibians, reptiles, mammals and widespread invasive plants. This included an external visual assessment of any trees and buildings on the Site for potential bat roost features and any evidence of bat activity, and an assessment of the Site's suitability to support commuting and foraging bats (Appendix B), in line with Collins (2016).

3.4 Bat Survey

Following the PEA and preliminary roost assessment, three dusk emergence surveys were carried out in line with the Bat Mitigation Guidelines (2004), Collins (2016) and professional judgement to determine bat activity associated with the Buildings (B) 1, 4 and 5 at the Site assessed as having Bat Roost Potential (BRP). The surveys were carried out by the following surveyors experienced in carrying out bat surveys:

- Alexandra Jackson MZool (Hons);
- Beck Harrington-Harding BSc (Hons) MCIEEM - 2020-49364-CLS-CLS; and
- Richard Ball.

The dusk surveys commenced approximately fifteen minutes prior to sunset and ceased approximately one and a half hours following sunset. The surveyors were equipped with Echo Meter Touch 2 Pro bat detectors. Recordings were made of any bats seen and/or heard and the species, the timing, activity, location and direction of flight.

Any bat calls that could not be identified in the field at the time of the individual surveys were subject to analysis.

Building (B)1 was assessed as having low BRP and required one survey, B5 was assessed as having moderate BRP, requiring two visits and B4 was assessed as having high BRP, requiring three visits.

Table 1, below, provides details of the surveys. Surveyors were positioned to observe those aspects of the buildings supporting features suitable for roosting bats, and infra-red cameras were also employed to provide additional survey information.

Table 1 – Timings, Weather Conditions and Location of Surveyors of the Building Surveys

Date	Building Surveyed	Timing	Weather
9th June 2022	B4; B5	21:01 – 22:46 (sunset 21:16)	Start: 17°C, 8/8 cloud cover, 2 wind End: 17°C, 8/8 cloud cover, 3 wind
29th June 2022	B4; B5	21:07 – 23:07 (sunset 21:22)	Start: 16°C, 8/8 cloud cover, 2 wind End: 15°C, 8/8 cloud cover, 2 wind
13th July 2022	B4; B1	20:59 – 22:44 (sunset 21:14)	Start: 24°C, 4/8 cloud cover, 2 wind End: 21°C, 2/8 cloud cover, 1 wind

With reference to the Bat Mitigation Guidelines (2004), Collins (2016) and professional judgement, the weather conditions during the dusk surveys were considered suitable for bat activity.

3.5 Survey Limitations

The baseline conditions described in this report were accurate at the time at which the survey was undertaken. Should at least two years pass by, and/or conditions on Site/Site usage change prior to the commencement of works, an update survey should be undertaken.

3.5.1 PEA Survey

At the time of the survey, Delta-Simons was not able to access the interior the buildings at the Site. However, the design and structure allowed sufficient information to assess their BRP.

The residential house and garden in the north-east of the Site could not be accessed during the survey. The habitats within this area could be viewed from outside of the walls and fencing, and as such along with previous survey data, this limitation is not considered to have affected the results or conclusions of the survey.

There were no limitations to the survey in terms of timing and weather conditions.

3.5.2 Bat Survey

Following the publication of the BCT Interim Guidance Note in May 2022, all surveys were carried out at dusk. Based on the Guidance Note, which supports the "*…transition away from the standard use of dawn surveys, particularly as a method for presence/absence surveys, in favour of dusk surveys…*", it is considered that the lack of any dawn surveys of the building is not a significant limitation, as the surveys undertaken comprise sufficient survey effort to confirm the likely absence of bat roosts in the buildings.

There were no limitations to the survey in terms of access and weather conditions.

3.6 Ecological Impact Assessment Methodology

An EcIA has been carried out following the principles set out within the Guidelines for Ecological Impact Assessment (EcIA) in the UK and Ireland; Terrestrial, Freshwater, Coastal and Marine updated by the Chartered Institute of Ecology and Environmental Management (CIEEM) in 2019, the full details of which are provided in Appendix C.

4.0 Baseline Conditions

The following section describes the baseline ecological conditions at the Site, outlining the results of the desk study and field survey findings. Current management is anticipated to remain unchanged up until development and, therefore, baseline conditions at the time of writing this Report are anticipated to reflect those at the commencement of the Proposed Development. The conservation importance of the features identified have been evaluated using the geographical scale outlined in the previous section.

The pertinent information from the data search is set out in Section 4.1 below for designated sites, whilst data search records and any information gathered from previous reports for the species are discussed in the relevant species sections. Full results of the data searches are available to the Client on request.

4.1 Desk Study

4.1.1 Designated Sites

The results of the MAGIC data search and the SBIC desk search indicate that there are two international statutory designations within 6 km of the Site. The South West London Waterbodies Ramsar and Special Protection Area (SPA) are situated approximately 2.35 km to the east of the Site.

There are no national or regional statutory designated sites within 2 km of the Site, however, there are 10 non-statutory designations that are situated within the 2 km buffer of the Site, all of which are Sites of Nature Conservation Interest (SNCI). The closest is Ashford Plant, located 640 m north. Tables 2 and 3, below, set out the designated sites identified:

Table 2 - International Statutory Designated Sites within 6 km of the Site

Site Name	Designation	Distance and Direction from Site Boundary	Designation Criteria Summary
South West London Waterbodies	Ramsar	2.35 km east	The South West London Waterbodies site comprises a series of reservoirs and former gravel pits covering 828 ha. It is designated under Ramsar Criterion 6 – Bird species/ populations occurring at levels of international importance. Qualifying species / populations (as identified at designation) are: • Species with peak counts in spring/autumn – northern shoveler 397 individuals, representing an average of 2.6% of the GB population (5 year peak mean 1998/9 -2002/3). • Species with peak counts in winter – gadwall *Anas strepera strepera* 487 individuals, representing an average of 2.8% of the GB population (5 year peak mean 1998/9 -2002/3).
South West London Waterbodies	SPA	2.35 km east	This site qualifies under Article 4.2 of the Directive (79/409/EEC) by supporting populations of European

			importance of the following migratory species. Over winter: • Gadwall, 786 individuals representing at least 2.6% of the wintering Northwestern / Central Europe population (5 year peak mean 1991/2 – 1995/6). • Shoveler, 1075 individuals representing at least 2.7% of the wintering Northwestern / Central Europe population (5 year peak mean 1991/2 – 1995/6).

Table 3 – Non-Statutory Designated sites within 2 km of the Site centre

Site Name	Designation	Distance and Direction from Site Boundary	Designation Criteria Summary
Ashford Plant	SNCI	640 m north	Eutrophic lakes and surrounding vegetation of willows & other broadleaved trees. Site selected as important for wildfowl & wintering birds, particularly shoveler.
River Ash, Splash Meadow	SNCI	790 m south-west	River with good aquatic and marginal flora and a recreation field with reclaimed gravel pit selected due to its macroinvertebrate diversity. 8m buffer corridor on either side.
River Ash: Splash Meadow to Gaston Bridge	SNCI	810 m south	River with good aquatic and marginal flora and a recreation field with reclaimed gravel pit selected due to its macroinvertebrate diversity. 8m buffer corridor on either side.
River Ash: Shepperton Green	SNCI	830 m west	Short section of gently flowing river with overgrown riverbank containing good marginal and aquatic vegetation. 8m buffer corridor on either side. Selected due to its macro-invertebrate diversity. Supports the BAP priority species, european eel and three Nationally Scarce species; fringed water-lily *Nymphoides peltata*, intermediate water-starwort *Callitriche hamulate* & yellow water-lily *Nuphar lutea*.
Queen Mary Reservoir	SNCI	860 m north-west	The site is of International Importance within the UK for Lesser black-backed gull *Larus fuscus* and of National Importance in Great Britain for herring gull *Larus argentatus ssp. pontoppidan*. The site is of National Importance in Great Britain for great crested grebe *Podiceps cristatus*.

River Ash: Gaston Bridge to Watersplash Farm	SNCI	890 m south-east	Includes the river and 8m buffer corridor on either side selected for its macroinvertebrates. It supports the BAP priority species, European eel and the VC17 scarce water crowfoot *Ranunculus aquatilis* has been recorded here. The site supports swamp habitat (NVC community S5).
Littleton Lake	SNCI	950 m west	30 year old gravel working with mature stands of willows and scrub around the lake. Supports diverse marginal vegetation with the near threatened (IUCN 2001) flat-stalked pondweed *Potamogeton friesii* recorded in the past. It supports wetland habitats including NVC communities S6 and S7 and has also been reported as a refuge for wintering wildfowl including the occasional shoveler and gadwall.
Sunbury Park	SNCI	1.25 km east	Selected for wood pasture and veteran trees, as a site supporting one or more nationally rare or declining species as listed in the latest Red Data Books.
River Thames	SNCI	1.45 km south-east at its closest	Entire length of the River Thames through Surrey is supported by English Nature and Environment Agency for macroinvertebrate species present (BMWP, 2000-2003). Fringing habitats provide a corridor for species migration and act as a buffer zone to riverine. Important for migratory birds and fish. Includes the river (to the top of the bank) and semi-natural habitats associated with the towpath. NB. The SNCI boundary includes the river (to top the top of the bank) and semi-natural habitats
Sheepwalk Lane	SNCI	1.99 km south-west	Important wetland for both wintering and summer breeding birds. Nearly 300 terrestrial and aquatic species have been recorded including a County rarity and other notable species.

SSSI Impact Risk Zones

The Site lies within a Site of Special Scientific Interest (SSSI) IRZ in which the LPA is required to consult Natural England on the likely risks from certain development proposals. However, the proposals for the Site do not fall within any of the risk categories identified, such that the IRZ is not considered further within this Report.

4.1.2 Review of Previous Surveys

The majority of the Site was found to be comparable to the findings of the 2018 Preliminary Ecological Appraisal Report and Update Ecological Walkover Report in 2020, both prepared by Delta-Simons. Since the surveys, sections of hedgerow along the paddock boundaries and B3 have been removed and scrub habitats have spread and colonised surrounding grasslands.

In 2018, the PEA assessed B4 and a dead tree in the north-east of the grassland field as having moderate BRP. Buildings 1 and 5 and five on-Site trees were assessed as having low BRP, and a large number of oak trees overhanging the northern boundary and one overhanging the southern boundary were also assessed as having low BRP.

Following on from the 2018 PEA, bat surveys were undertaken in June and July. A single soprano pipistrelle *Pipistrellus pygmaeus* was recorded emerging from the southern aspect of B4, during the second of three

nocturnal surveys (a third survey was recommended following the discovery of this roost). The bat emerged from a gap beneath the overhanging roofline. It was not recorded on either of the other two survey occasions. From the survey results, this roost was anticipated to occasionally support an individual, or small number of a commonly occurring and widespread bat species, most likely a day roost of a lone male(s) or non-breeding female(s). It was, therefore, considered to be of low conservation status. No roosting activity was recorded to be associated with either Building 1 or 5. An aerial inspection of the tree previously assessed as having moderate BRP identified the crack to be superficial, and to not be of an adequate depth to support roosting bats currently. Overall bat activity at the Site was low, and it was dominated by individual soprano pipistrelle bats commuting and foraging predominately along vegetated corridors. Occasional common pipistrelle *Pipistrellus pipistrellus* and noctule *Nyctalus noctula* passes were also recorded.

In 2020, the Update Ecological Walkover Report found no significant changes to the buildings at the Site or their potential to support roosting bats. Similarly, no change in BRP of the trees was identified.

The report identified that the earth mound in the west of the Site was considered to offer basking, shelter and foraging opportunities for reptiles, and recommended a precautionary approach to its removal.

Caterpillars of the oak processionary moth *Thaumetopoea processionea,* were identified on one of the oaks within the north-western paddock. As this species causes significant damage to oak trees and can cause a severe allergic reaction in humans, an appropriate treatment programme was recommended.

In June 2020, a dusk survey was carried out on B4. No bats were recorded to emerge from the building and overall low levels of bat activity were recorded.

4.2 Habitats

Figure 2 shows the extent of habitat types and boundary features. Descriptions of the habitat types and dominant plant species found at the Site are provided below. Habitat descriptions are by broad habitat type, as listed in the Phase 1 Habitat Survey Manual (JNCC, 2010). Target Notes (TNs) are listed under Appendix D whilst photographs of the Site survey are located in Appendix E.

Habitats recorded on Site are:

Dense Scrub

Areas of dense bramble *Rubus fruticosus* agg. scrub, with occasional butterfly-bush *Buddleja davidii,* were present in the east of the Site, around the former polytunnels of the old nursery (Photograph 1). Further bramble scrub extended along the top of the earth bund dividing the hardstanding from the grassland in the south-east (Photograph 1), and surrounded hawthorn *Crataegus monogyna* trees within the paddocks. The south-western corner and portions of the earth bund had also been colonised by dense bramble scrub (Photograph 2).

Scattered Scrub

Scattered bramble scrub was present around several of the buildings, within the old nursery, covering the bund in the west and along the fences extending along the track separating the grazed grassland fields (Photograph 3). Species present included elder *Sambucus nigra*, bramble and butterfly-bush.

Scattered Broadleaved Trees

Within the residential garden were a small number of cherry *Prunus* sp. trees, alongside pedunculate oak *Quercus robur*, a single horse chestnut *Aesculus hippocastanum* and an ash *Fraxinus excelsior*, whilst further ash and a fruit tree *Prunus* sp. overhung the Site from within the hedgerow. A group of ash trees was present within the southern field, whilst within the northern field were hawthorn with a single pedunculate oak and silver birch *Betula pendula*. Further trees were located in the east of the Site including an ash to the rear of one of the workshops, a number of immature willow *Salix* sp. adjacent to the former polytunnels and immature ash within the boundary vegetation.

Scattered Coniferous Trees

A number of western red cedar *Thuja plicata* were present within the residential garden and east of the workshops. Two Leyland cypress *Cupressus x leylandii* were present west of the hardstanding. Two rows of Leyland cypress were present along the south-eastern boundary (Photograph 4).

Neutral Semi-Improved Grassland

A small patch of neutral semi-improved grassland was present in the east, where the old nursery used to be (Photograph 5). Species present included abundant perennial ryegrass *Lolium perenne*, annual meadow grass *Poa annua* and Yorkshire fog *Holcus lanatus,* with frequent ribwort plantain *Plantago lanceolata,* cock's-foot *Dactylis glomerata*, bramble, wild carrot *Daucus carota* and false oat-grass *Arrhenatherum elatius,* and occasional ivy *Hedera helix,* prickly sow thistle *Sonchus asper* and creeping thistle *Cirsium arvense*.

Poor Semi-Improved Grassland

Horse paddocks were present in the west of the Site, containing poor semi-improved grassland habitat with a short sward and patches of bare ground as a result of poaching. (Photographs 6 and 7). Perennial ryegrass dominated with frequent meadow grass *Poa* sp., greater plantain *Plantago major*, ribwort plantain, cranesbill *Geranium* sp. and yarrow *Achillea millefolium,* and occasional hogweed *Heracleum sphondylium*, cleavers *Galium aparine* and common nettle *Urtica dioica*.

Amenity Grassland

Surrounding the residential property, in the north-eastern corner was amenity grassland (Photograph 8) dominated by perennial ryegrass.

Introduced Shrub

Within the residential garden were a small number of shrubs including laurel *Laurus nobilis*, viburnum *Viburnum tinus,* rose *Rosa* sp. and honeysuckle *Lonicera periclymenum*.

Species-Poor Hedgerow

A Leyland cypress hedgerow was present in the south-east of the Site (Photograph 9).

Along the road edge were short sections of defunct hawthorn hedgerow with frequent bramble and occasional ivy.

No hedgerow at the Site supported sufficient species or features to meet the criteria of an 'Important' hedgerow according to the Hedgerow Regulations (1997).

Fence

Across the Site were a mixture of fencing types including wooden post and rail approximately 1.2 m high around the paddocks in the west, concrete post and panel around the residential garden, metal palisade fencing around the yard in the north of the Site, and metal mesh fencing along Upper Halliford Road.

Wall

A length of decorative 2 m high wall was present along the northern boundary of the garden whilst short sections were present at the entrance on Upper Halliford Road.

Earth Bank

A bank of earth approximately 3 m high and 5 m wide extended adjacent to the eastern edge of the southern paddock, screening it from the buildings and land to the east (Photograph 1). Bramble dominated the bund with frequent common nettle and butterfly-bush.

Along the western boundary and continuing around to the western edge of the southern field was a large earth mound between 5-10 m high (Photograph 2). Scattered scrub covered the mound, including butterfly-bush, bramble, bindweed *Convolvulus* sp. and burdock *Arctium* sp.

Buildings

Thirteen buildings were present on-Site, labelled B1, B2 and B4-B14 on Figure 2. Building 3 was present on Site at the time of the initial surveys but has since been demolished and as such is not included. Descriptions of each of these buildings are provided in Table 3 below:

Table 4 – Building Descriptions

Building Reference	Description
1	Occupied brick-built bungalow with a pitched tiled roof (Photograph 8). The building had uPVC windows, doors, fascias and soffit boxes. Two gable ends were present on the eastern aspect and a single one was located on the western aspect.
2	North of the bungalow was a single brick garage with a pitched tiled roof, with sky lights present.
4	An office building constructed of brick, with a sloped section of felted roof on the northern aspect and a tiled pitched roof to the south. Sections of hanging tiles were present on the eastern and western aspects (Photograph 10).
5	A brick-built workshop supporting a pitched tiled roof, with hanging tiles present on the eastern and western aspects. A metal roller shutter door was present on the western aspect alongside a door and window (Photograph 11).
6	A single-storey brick-built building, rendered on a number of aspects, supporting a sloped corrugated metal sheet roof, with a small section of tiles with felt behind, on the eastern aspect above three large metal roller doors. A small number of windows and doors were present on three aspects. No roof void was present (Photograph 12).
7	The building comprised a breeze block base with pebble dashed walls (Photograph 13). The building had a pitched corrugated metal sheet roof, with no roof void. On the eastern aspect were a number of wooden framed windows, whilst on the western aspect were larger windows and two sliding metal doors.
8	Adjacent to the large storage unit was a small portable building with a flat roof in poor condition (Photograph 13). It had thin walls with sections of wood that appeared to be rotting and a flat roof that was partially covered by plastic sheeting.
9	A single garage with a roller door on the northern aspect, with a flat felt roof (Photograph 13).
10	A building supporting corrugated metal sheet walls and a gently sloping corrugated metal sheet roof (Photograph 14). A metal roller door was present on the western extent.
11	Attached to Building 10 was a single storey, corrugated metal sheet structure (Photograph 14). It had a gently sloped corrugated metal roof and a large metal roller door on the western aspect.

Building Reference	Description
12	A single storey unit formed of corrugated sheet metal with a flat roof (Photograph 14). It had three metal roller shutter doors on the western aspect.
13	A small breeze block workshop with sections of pebble dashing. The building had a flat corrugated metal roof that rested on a frame above the height of the wall, leaving large gaps (Photograph 15).
14	A portable building used as an office/ staff room, supporting a flat felt roof. This building was in poor condition (Photograph 15).

In addition, within the grounds of the bungalow was a wooden shed with a pitched felt-covered roof. The shed had a broken window and the door was wide open. In the fields were two old stables, one was formed from wooden sheeting and old pallets with a flat corrugated metal roof, whilst the second was formed from metal sheeting. Both were draughty and exposed internally. Old metal storage containers were present throughout the Site.

Bare Ground

A bare ground track separated the northern and southern horse paddocks in the west and led to an area where materials were burnt at the base of the western earth bund (Photograph 1 and TN1).

Hardstanding

A tarmacadam access road entered the Site from upper Halliford Road and continued around the workshops. Block paved parking was present west of the bungalow and a paved footpath and patio was present around the house. Poorly maintained tarmacadam was present north and west of the workshops and was used as a turning area and long-term storage for vehicles, containers and waste materials (Photograph 16, TN2). Occasional colonising vegetation including greater plantain, willowherb *Epilobium* sp. and shepherd's purse *Capsella bursa-pastoris* was noted around the parked vehicles and land west of Building 7 was colonised by common nettle, creeping thistle, broadleaved dock, cleavers and bramble as well as piles of discarded, scattered refuse (Photograph 17).

The hedgerows, trees, grassland and scrub are considered to be of Local value, whilst the remaining habitats are considered of negligible value.

4.3 Species

Amphibians

No recent records for GCNs were returned in the data search.

A review of aerial photographs and OS maps revealed that there are eight waterbodies within 500 m of the Site. The location of these waterbodies is shown on Figure 3 and they are discussed in more detail below.

Adjacent to the northern boundary is Halliford Lake, a private fishery, known to contain carp *Cyprinus carpio*, pike *Esox lucius*, tench *Tinca tinca* and roach *Rutilus rutilus*. The lake is over 25,000 m^2 with surrounding woodland and an area of rough grassland to the east. Sparse vegetation was present around the banks of the waterbody and mute swan *Cygnus olor*, mallard *Anas platyrhynchos* and moorhen *Gallinula chloropus* were recorded within the lake. As the pond is known to be heavily stocked with fish, and given the poor bankside vegetation and its large size, it is considered unsuitable to support GCN.

Located approximately 150 m south-west of the Site, beyond the railway line, is a large waterbody within land next to the recycling centre on Charlton Lane, which was not accessible at the time of survey. The pond only appears on aerial maps suggesting it is newly constructed. Given this and the heavy traffic on-site, it is considered unlikely to support GCN.

Five waterbodies lie to the east of the Site, beyond residential housing, which presents a significant barrier to amphibian dispersal. In addition, they are situated near areas of grassland and trees which provide suitable terrestrial habitat should GCNs or other amphibians be present. One large lake lies approximately 435 m north-west of the Site, however, the M3 presents a significant barrier to amphibian dispersal.

On-Site the area of the former nurseries provided rough grassland and scrub suitable for GCN, however, it is isolated from other suitable terrestrial habitat and waterbodies. Given the lack of records and suitably connected ponds, amphibians are not considered to be a constraint at this Site and are not considered further within this Report.

Reptiles

No records for reptiles were returned within the 2 km data search.

The dense and scattered scrub and earth mound along the western boundary was considered to offer basking, shelter and foraging opportunities for reptiles. Furthermore, this area of the Site has connectivity to other suitable habitat, with the railway corridor immediately to the west and allotments to the south-west.

The horse-grazed paddocks supported too short a sward height to provide consistent cover for reptiles.

Habitats in the east, such as the area of grassland and scrub where the nursery used to be, and dense scrub covering the earth mound provided suitable habitat for reptiles, however, these areas were relatively small and isolated.

This species group is considered to be of local value.

Birds

The data search only included recent records for swallow *Hirundo rustica* and starling *Sturnus vulgaris* within 2 km of the Site, the latter of which is listed on the Red List of Birds of Conservation Concern (BoCC, Stanbury *et al, 2021*).

Bird species recorded at the time of the survey were blackbird *Turdus merula*, robin *Erithacus rubecula* and song thrush *Turdus philomelos*. Although no birds listed on Schedule 1 of the WCA (1981) as amended were recorded, song thrush is listed on the Amber List of BoCC. It should be noted that this is not a comprehensive inventory of the bird species which may be present at the Site.

Habitats featured on the Site suitable for nesting birds include the trees, scrub, shrubs and hedgerows. a number of the buildings also provided nesting opportunities.

This species group is considered to be of local value.

Bats

The data search provided records for at least four species of bat and these are detailed below:

- Two records of common pipistrelle– the closest and most recent is located approximately 1.6 km south, in 2017;
- Six records of soprano pipistrelle – the closest and most recent is located approximately 1.6 km south, in 2017, however a soprano pipistrelle was seen to emerge from B4 on-Site in 2018, which has not shown up on the data records;
- One record of Leisler's bat *Nyctalus leisleri* – located approximately 1.7 km east in 2017; and
- Three records of noctule *Nyctalus noctula* – the closest located approximately 1.5 km south-west, in 2012.

Previous bat surveys at the Site in 2018 and 2020 recorded noctule, common pipistrelle and soprano pipistrelle activity on/ above the Site.

Preliminary Roost Assessment

All of the on-Site buildings were reassessed in terms of their BRP. Overall, the buildings at the Site were found to be in a similar condition to previously reported, with the majority lacking the structural or environmental conditions suitable to support roosting bats and being assessed as negligible BRP. Building 1, 4 and 5 continue to offer roost potential. The BRP survey results for these buildings are presented in Table 4 below.

Table 5 – Roost Potential of on-Site Buildings

Building Reference	Potential Roost Features	Suitability
B1	In 2018 and 2020, the building was assessed as having low BRP due to gaps behind the soffit boxes and under the tiles at the eastern and western aspects. Although B1 could not be inspected closely, due to access restrictions, it is considered to retain its low BRP status.	Low
B4	Missing tiles on the western gable end on the southern pitch, creating gaps under a number of the tiles suitable for roosting bats. The tiles on the southern aspect did not sit flush to each other creating gaps beneath each tile suitable for roosting bats (Photograph 10). Gaps were also available under the tiles at the south-western corner. The hanging tiles on the western and eastern aspect had minor gaps behind the bottom row. Given the previous confirmation of a bat roost in this building, it is considered to be of high suitability.	High
B5	Gaps were present at the corners where the wooden fascia and soffit boxes ended (Photograph 18) as well as at the apex of the western aspect. Hanging tiles were missing and occasional gaps were present at the top of the rows of hanging tiles.	Moderate

Several trees across the Site were covered in dense ivy *Hedera helix* and were, therefore, assessed as having low BRP. These included an oak tree in the north-eastern corner of the garden (T5), a mature oak overhanging the southern boundary (part of TG25) and several mature oak trees overhanging the northern boundary from the adjacent fishing lake. In addition, an ash tree in the south-eastern corner (T20) supported cracks on the trunk where a branch had split off. Due the height, it is not known if the split is superficial or leads to further damage.

Preliminary Commuting and Foraging Habitat Assessment

The grassland, scrub and trees in the west of the Site were unlit and would offer moderate foraging habitat for bats, linking the wetland and woodland habitat to the north and allotments in the south.

The south-east of the Site was predominantly hardstanding and buildings, with limited areas of scrub and hedgerows. This area is heavily lit and provides poor foraging and commuting bats in the local area.

Building Roost Emergence/Re-entry Surveys

No bats were recorded to emerge from any of the buildings surveyed.

During the first dusk survey when the surveyors were observing B4 and B5, the first bat to be recorded was a single common pipistrelle at 21:12, four minutes before sunset which could indicate a roost in close proximity.

During the second dusk survey, observing B4 and B5, the first bat recorded was at 21.35 and comprised a noctule 21 minutes before sunset.

During the third dusk survey, observing B1 and B4, the first bat recorded was at 21.33 comprising a noctule at 11 minutes after sunset and the only other bat recorded was at 22:37 when a single common pipistrelle was seen foraging 75 minutes after sunset.

Given the inconsistent use of B4 by an individual soprano pipistrelle bat, which was considered to be either a lone male or non-breeding female, such that the roost previously identified is of low conservation status, as well as the overall suitability of foraging habitat across the Site as a whole, the geographic value of bats is considered to be Local.

Badgers

The data search did not include records from the local badger group.

Whilst no evidence of this species was recorded during the survey, the grassland and scrub habitat within the west of the Site could provide suitable habitat for badgers, and if they are present within local area there is a possibility that they may venture onto the Site.

The geographic value of this species is considered to be Local.

Other Protected Species

The data search revealed four records of European hedgehog *Erinaceus europaeus,* all located within residential gardens over 1 km from the Site, with the most recent record being from 2020.

The scrub and grassland habitats at the Site, provide suitable commuting, foraging and sheltering habitat for hedgehogs in the local area.

Hedgehog are considered to be of Local value.

Invasive Non-Native Species

Caterpillars of the oak processionary moth, were previously identified on an oak within the north-western paddock (OS grid reference TQ 08952 68726). This species is a recent introduction to southern England on tree saplings brought in from elsewhere in Europe unintentionally and causes significant damage to oak trees on which the caterpillars feed, as well as causing a severe allergic reaction in humans.

4.4 Summary of Important Ecological Features and Geographic Value

The species scoped out as important ecological features above due to their likely absence from Site cannot experience effects from the Proposed Development and are not, therefore, considered below.

The 'important ecological features' identified above with the potential to experience effects as a result of the Proposed Development are listed in Table 5 below, along with their geographic importance. These features will be the subject of the ecological impact assessment in Section 5.0.

Table 5 – Identified Important Ecological Features

Important Ecological Feature	**Geographic Value**
Designated Sites	International Local
Habitats	Local
Reptiles	Local
Nesting Birds	Local
Bats	Local
Badgers	Local
Hedgehog	Local
Invasive Species	n/a

5.0 Assessment of Effects

The evaluation in this section is based on the baseline information presented above, review of design proposals, consultation with the design team, knowledge of likely construction practices to be employed, and reasonable assumptions regarding operation.

For purposes of the assessment, it is assumed there has been no change in the condition of the Site since the Site surveys (unless otherwise stated).

5.1 Important Ecological Features for Which No Effect is Anticipated

The South West London Waterbodies Ramsar site and SPA lies approximately 2.35 km east of the Site boundary. Both sites are designated for their bird populations and supports habitats distinct from those at the Site, such that the development would not result in the loss of suitable habitat for these wetland species. There is not anticipated to be any direct impact upon the sites themselves given their distance, and the nature of the proposed re-development. Given the number of proposed dwellings and the provision of open space at the Site, it is considered unlikely there would be any significant adverse impact on these two statutory designations as a result of recreational pressure.

Ten SNCIs have been recorded within 2 km of the Site centre, eight of which are either reservoirs or sections of river and thus unlikely to experience significant effects as a result of increased recreational pressure from the development. Sunbury Park SNCI is Accessible Natural Greenspace that is managed for visitors. As such, this too is unlikely to experience significant effects as a result of increased recreational pressure. The closest SNCI is Ashford Plant, located 640 m north. This SNCI lies beyond the M3, which presents a significant dispersal barrier to the majority of species groups other than birds. Whilst the off-Site waterbody to the north of the Site has the potential to be used by wildfowl and wintering birds for which the SNCI is designated, the retention of the grassland in the west of the Site will maintain the existing habitat buffer to this waterbody. As such significant adverse impacts to the Ashford Plant SNCI and the features for which it is designated are not anticipated.

5.2 Important Ecological Features and Potential Effects

5.2.1 Habitats

Potential Impacts and Effects During Construction and Operation

The habitats present on Site are widespread on both a local and national scale, with none of the habitats being considered rare. The proposed development will result in the permanent loss of habitat within the residential footprint in the south-east of the Site, including demolition of the existing buildings. The central and western area of the Site is proposed for relandscaping as public open space, with trees retained, where possible and the majority of the earth bund at the western boundary also retained. Any works (including vehicular movement and equipment storage) within close proximity to any trees retained/adjacent to the Site, have the potential to cause damage to the structure, roots and health of the trees.

Inappropriate management of the soft landscaping during the operation of the development also has the potential to result in a reduction of biodiversity value, and failure to meet the ecological objectives for the Site.

Given that these habitats are prevalent in the local area and the likely low scale of the impacts, this is considered to have a minor adverse effect that is not significant.

Avoidance and Mitigation

<u>During Construction</u>

Trees retained on, and adjacent to, the Site will receive appropriate protection during the construction phase of works through the use of tree root protection zones and barriers in accordance with BS5837: 2012 - Trees

in relation to design, demolition and construction, where appropriate. In addition, best practice measures will be followed with regards to dust and pollution prevention.

During Operation

An appropriate landscape management and monitoring plan will be followed to promote the long-term biodiversity value of the retained and proposed habitats.

Compensation

A Biodiversity Net Gain Assessment is appended to this Report which indicates that the development has the potential to achieve a net gain in biodiversity in line with national and local policies and objectives.

Assessment of Residual Effects

Following the application of the above mitigation measures, the potential residual effects are considered to be minor beneficial and non-significant.

5.2.2 Reptiles

Potential Impacts and Effects

The scrub covered earth bund in the west of the Site is to be largely retained as part of the development design, with the construction phase resulting in the loss of small areas of suitable reptile habitat to facilitate relandscaping of the public open space. Therefore, there is the potential for the killing/injuring of reptiles, if present within the Site, as a result of this clearance. The extent of the habitat to be lost is considered to be negligible compared with the resource retained and available adjacent to the Site.

If habitats retained during construction are not managed appropriately during operation, then there is the potential for additional habitat loss from the Site.

In the absence of avoidance and mitigation, the potential effects on reptile species, if present at the Site, during the construction and operational phases of development are considered likely to be minor-adverse and non-significant.

Avoidance and Mitigation

During Construction

- Clearance of any suitable reptile habitat will be undertaken with an awareness for the potential presence of reptiles, and under precautionary working methods to include appropriate timing of works to avoid the hibernation period (November to March, inclusive), phased strimming to encourage the dispersal of any individuals into retained or off-Site habitat, and the presence of a suitable experienced ecologist as required.

During Operation

The proposed landscape plan includes habitat suitable to support reptiles, if present, and an appropriate management plan will be applied to minimise risks of harm as well as to promote the biodiversity opportunities for the Site.

Assessment of Residual Effects

Following the application of avoidance and mitigation measures, the potential residual impacts of the proposed development on reptiles are considered to have a negligible effect, which is of neutral significance.

5.2.3 Birds

Potential Impacts and Effects During Construction and Operation

During Construction

The construction phase will result in the loss of trees, hedgerow and scrub habitat, as well as potential nesting opportunities within the buildings to be demolished. There is, therefore, potential for direct adverse effects on nesting birds that are permanent in nature as a result of such clearance.

In addition, construction works being carried out within proximity to nesting birds may affect them indirectly, depending on the works being carried out, and the species of bird affected. Noise and vibration disturbance effects may result in birds being repeatedly flushed off nests, causing disruption to feeding activity, or even abandonment of nests. This is considered to be a temporary impact.

Further to the potential direct effects on birds whilst they are actively nesting, the removal of suitable habitat will result in the direct loss of available bird nesting habitat, as well as a loss of foraging and sheltering opportunities.

During Operation

During operation, if habitats retained and/or planted during construction are not managed appropriately, then there is the potential for impacts to nesting birds through disturbance and a lack of resource.

Without mitigation, the impact on birds is considered likely to have a minor adverse effect that is non-significant

Avoidance and Mitigation

During Construction

Where practicable, vegetation clearance and building demolition at the Site will be undertaken outside of the main nesting bird season (i.e. clearance carried out between September and February inclusive). Conflict with the development can be avoided by managing the land to discourage nesting birds up to the works commencing.

If these works cannot be restricted to within this period, an Ecological Watching Brief will be maintained during the main bird breeding season to ensure that no nesting birds are adversely affected. This will entail checking all suitable habitat for nesting birds due to be removed, and a buffer of at least 10 m beyond that area, by a suitably qualified ecologist prior to the commencement of works. If, during the Ecological Watching Brief, birds are found to be within the area due to be cleared or the buffer zone, measures to prevent any disturbance to breeding birds, including the cessation of tree and vegetation clearance, or construction works in areas close to breeding sites until the birds have completed breeding, will be put in place until the chicks have fledged.

During Operation

The proposed development includes landscaping both within the residential development and particularly across the public open space which will offer nesting and foraging opportunities for birds. Furthermore, integrated bird boxes will be incorporated into at least 10% of the residential properties at the Site.

An appropriate management plan will be applied to minimise risks of harm as well as to promote the biodiversity opportunities for the Site.

Assessment of Residual Effects

Following mitigation, the impact on birds is considered likely to have a negligible effect of neutral significance.

5.2.4 Bats

Potential Impacts and Effects During Construction and Operation

Despite no evidence of bat activity recorded during the 2020 or 2022 building surveys, given the record of a small soprano pipistrelle day roost associated with B4 in 2018, there is a risk that the buildings at the Site supporting suitable roost features may become (re)colonised prior to the commencement of works on Site. The construction phase is, therefore, considered to result in the direct permanent loss of roosting opportunities, and the potential to result in the killing or injury of any bats present during demolition.

In addition, loss of a small number of trees assessed as offering low BRP may result in similar impacts in relation to loss of suitable features and direct harm to any bats present.

The Site offers opportunities for foraging and commuting bats, particularly in the west of the Site which is not subject to the light disturbance experienced in the east. Whilst the proposed development will result in the loss of habitat at the Site, the development footprint is focused in the south-eastern area of the Site, with the proposed landscape planting aimed to strengthen the area of public open space in the remainder of the Site.

In certain circumstances, for example, in late autumn or early spring when daylight hours are limited but weather conditions may be suitable for bats to be active, there may be a brief overlap between bat activity and on-Site construction works. During this period, lighting may be required to enable the construction works to progress, and this along with any associated noise, may temporarily alter bats foraging and commuting activity across an area of the Site. However, the combined effects of lighting and noise from construction works during these occasional circumstances would only be a temporary deterrent to foraging and commuting bats in a concentrated area, and not across the wider Site and this is not anticipated to have any adverse impact upon bats, particularly considering the existing light levels at the Site.

Considering the conservation status of the previously identified roost, and the overall availability of potential roosting opportunities at the Site, the construction phase is considered to result in a minor adverse impact which is not significant.

Lighting at the Site during the operational phase has the potential to adversely affect bat activity within retained and adjacent off-Site habitats. Considering the particularly low level of bat activity recorded during the surveys of the Site, and the species recorded, the potential impacts of the operational phase of the development on bats is, therefore, considered to have a minor adverse effect that is non-significant.

Avoidance and Mitigation

<u>During Construction</u>

A precautionary approach must be employed in relation to the demolition of B1, 4 and 5, assessed as offering BRP:

- As a precaution, demolition of the buildings will be undertaken during the active bat season (April-October, inclusive) to ensure that no hibernating bats are disturbed;
- A 'tool-box talk' will be given to all contractors working on the Site before works commence. This will outline the law with regards to bats. They will also be briefed on the correct procedure to follow if bats are discovered on the Site;
- A dawn return bat survey will be undertaken of each of the buildings on the morning the works are due to commence, by a licenced bat ecologist and suitably experienced assistants to cover all aspects of the buildings;
- If no bats are found to be roosting within the buildings then works to demolish the building will commence immediately;

- Careful dismantling and removal of suitable roosting features (roof tiles, ridge tiles, wooden boarding) will be undertaken under the supervision of the licenced bat worker;
- Once each building has been deemed by the licenced ecologist to be unsuitable for roosting bats, works to demolish will proceed; and
- In the event that a bat(s) is discovered, all works will stop immediately, and the licenced bat worker will be contacted to determine the most appropriate way forward. It may be necessary to stop works until a licence has been sought from Natural England.

A precautionary approach will also be undertaken in relation to felling of any trees identified as having potential to support roosting bats, to include an aerial inspection of suitable features by a licenced bat ecologist, or pre-dawn survey where works are undertaken during the active season. In the event that a bat(s) is discovered, all works will stop immediately, and the licenced bat worker will be contacted to determine the most appropriate way forward. It may be necessary to stop works until a licence has been sought from Natural England.

<u>During Operation</u>

In order to prevent negative impacts to more light tolerant species of bat, the detailed lighting plan on-Site should be functional and directional and in line with current guidance (BCT and ILP, 2018). Habitat retained, enhanced or planted for roosting, foraging and/or commuting bats will need to be considered within a suitable lighting plan in order to be used by bats. Where designing with bats in mind:

- Light emitting diodes (LED) should be used, as these typically feature no UV component and as a result are less attractive to invertebrates and less disturbing to bats;
- Only luminaires with 0 % upward light ratio should be used and fitted on the horizontal to avoid excessive up-lighting, back lighting and light spill onto boundary hedgerows and trees;
- A warm white spectrum (ideally under 2700 Kelvin) should be used in order to reduce blue light component, therefore reducing the number of invertebrates attracted to the lights;
- Internal luminaires can be recessed where installed in proximity to windows to reduce glare and light spill;
- The use of specialist bollard or low-level downward directional luminaires to retain darkness above can be considered, although this has certain drawbacks and should only be used as directed by a lighting professional;
- Column heights should be carefully considered to minimise light spill;
- Any external security lighting should be set on motion-sensors and short (e.g. 1 minute) timers;
- Luminaires should feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats;
- As a last resort, accessories such as baffles, hoods or louvres can be used to reduce light spill and direct it only to where it is needed; and
- Where habitat needs to be unlit (e.g. important foraging and commuting corridors/roost sites), illuminance should be below 0.2 lux on the horizontal plane and below 0.4 lux on the vertical plane.

Landscaping at the Site will retain foraging opportunities for bats, with the inclusion of new linear planting in the form of hedgerows and parkland trees to strengthen foraging/ commuting routes. The installation of integrated bat roost features within at least 10% of the residential properties on-Site will ensure roosting opportunities are retained for bat species within the local area.

Assessment of Residual Effects

Subsequent to the application of avoidance and mitigation, the residual effects are considered to be neutral and not significant.

5.2.5 Badgers

Potential Impacts and Effects During Construction and Operation

Whilst the Site did not support any evidence to indicate badgers were actively using or inhabiting it, there is a suitable habitat for the species on-Site and in the wider area. It is a possibility that badgers within the local area may disperse across the Site. There is, therefore, the direct risk of harm to them should they fall into pits or trenches left open overnight during the works.

The proposed development will result in the short-term loss of suitable habitat within the western area of the Site, however, this area is to be relandscaped for public open space, and once re-established is considered to provide potential foraging opportunities for badgers.

The potential impact to badgers is considered to have a minor adverse effect that is non-significant.

Avoidance and Mitigation

During Construction

During the construction phase of works, no open pits or trenches will be left uncovered or alternatively without a mammal escape ladder overnight.

<u>During Operation</u>

The proposed landscaping at the Site is considered to offer suitable foraging for badgers.

Assessment of Residual Effects

The potential residual effects are expected to be neutral and, therefore, non-significant.

5.2.6 Hedgehog

Potential Impacts and Effects During Construction and Operation

Whilst no evidence of this species was recorded during the survey visits, hedgehogs may use the Site for foraging, sheltering and dispersal. Clearance of the Site, therefore, has potential to kill/injure any individuals present. Furthermore, there is the potential for any hedgehogs venturing onto Site to become trapped within any open excavations or pipework. The proposed development will result in the loss of available habitat, however, given the extent of habitat loss (relatively low, considering the abundance of similar habitat in the surrounding area), the potential impact to hedgehogs during the construction phase of works are considered to have a minor adverse effect that is non-significant.

Avoidance and Mitigation

<u>During Construction</u>

Clearance of any hedgerow habitat will be undertaken with an awareness for the potential presence of hedgehog and any individuals found should be caught with gloved hands and moved to an alternative suitable habitat away from the proposed works.

During the construction phase of works, no open pits or trenches will be left uncovered or alternatively without a mammal escape ramp overnight.

During Operation

The proposed landscaping at the Site is considered to offer suitable habitat for hedgehog.

Assessment of Residual Effects

Subsequent to the application of mitigation, the residual effects are considered to be negligible and not significant.

5.2.7 Invasive Non-Native Species

Potential Impacts and Effects During Construction and Operation

Caterpillars of the oak processionary moth (OPM), were previously identified on an oak within the north-western paddock. This species causes significant damage to oak trees on which the caterpillars feed, as well as their hairs causing a severe allergic reaction in humans. As such, this caterpillar could cause harm during clearance works and post development if not eradicated from Site.

The whole Site could not be accessed or visually assessed due to the storage of materials and parked vehicles. Whilst no signs of invasive weeds were recorded, there is potential that they could be present within inaccessible areas and checks should be made prior to works once the Site has been vacated.

Avoidance and Mitigation

During Construction

An appropriate treatment programme should be implemented in order to eradicate OPM caterpillars from the Site. This can be done one of three ways: Biological control, insect growth regulators or synthetic insecticides. Further information about the treatment and control of OPM caterpillars can be found in the Oak Tree Owners OPM Manual (https://www.forestresearch.gov.uk/tools-and-resources/pest-and-disease-resources/oak-processionary-moth-thaumetopoea-processionea/opm-manual-5-surveying-trees-and-timing-of-control-measures/).

Assessment of Residual Effects

Provided the eradication plan is successful, there will be no significant residual effects.

5.3 Cumulative Effects

Given the nature of the development and the non-significant residual effects from the Proposed Development, no other schemes have been identified for which the Site may contribute to an in-combination cumulative effect on ecologically important features within the ZOI of the Site.

5.4 Enhancement

The revised National Planning Policy Framework (NPPF), sets out, amongst other points, how "*Planning policies and decisions should contribute to and enhance the natural and local environment by:*

Minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressure"

As demonstrated within the biodiversity net gain calculations for the Site, the Proposed Development has the potential to result in a biodiversity net gain on Site of at least 10%, provided all new habitat creation is appropriately installed and maintained for at least 30 years. The inclusion of hedgerows, trees, scrub and grassland at the Site is also anticipated to enhance the Site for birds, reptiles, and invertebrate species.

In addition, the following principles of design should be included:

- Installation of integrated bird nesting features within at least 10% of the residential properties on-Site;
- Installation of integrated bat roost features within at least 10% of the residential properties on-Site; and
- Installation of habitat/log piles within the public open space.

6.0 Conclusions

The habitats present on Site are widespread, in both a local and national context. Whilst there is likely to be a temporal delay in achieving the biodiversity objectives for the Site (i.e. whilst new habitats become established), it is anticipated that in the long term there will be no significant residual effects on habitats or protected species resulting from the Proposed Development.

7.0 Disclaimer

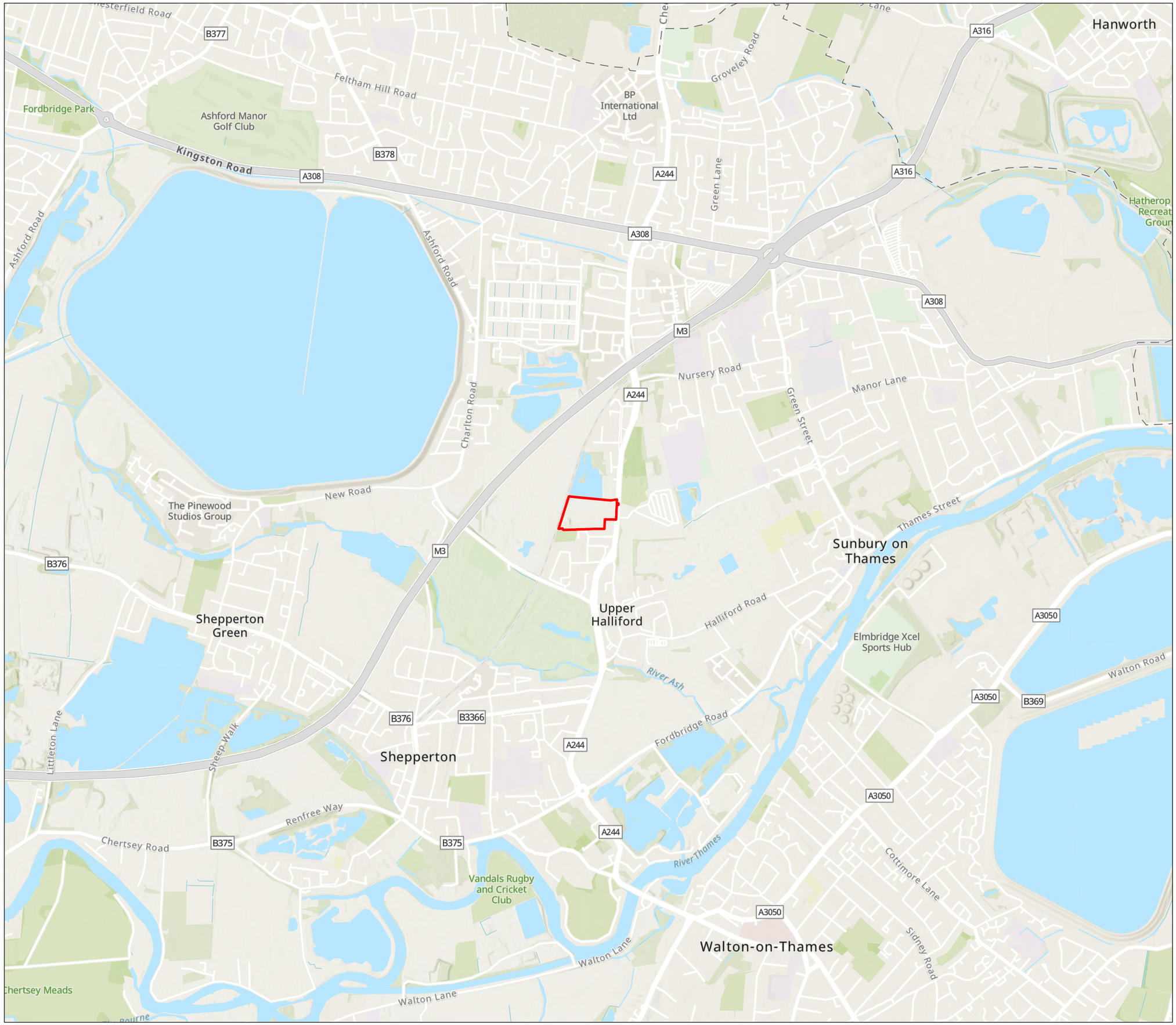
The recommendations contained in this report represent Delta-Simons' professional opinions, based upon the information referred to in Section 1.0 of this report, exercising the duty of care required of an experienced Ecology Consultant. Delta-Simons does not warrant or guarantee that the Site is free of bats or other protected species.

The behaviour of animals can be unpredictable and may not conform to characteristics recorded in current scientific literature. This report, therefore, cannot predict with absolute certainty that animal species will or will not occur in apparently suitable locations or habitats or that they will not occur in locations or habitats that appear unsuitable.

No part of the survey included an assessment of the materials and conditions of any buildings. No part of the survey included an asbestos assessment, nor did it represent an appraisal of other deleterious materials or hazardous substances.

This report was prepared by Delta-Simons for the sole and exclusive use of the Client and for the specific purpose for which Delta-Simons was instructed as defined in Section 1.0 of this report. Nothing contained in this report shall be construed to give any rights or benefits to anyone other than the Client and Delta-Simons, and all duties and responsibilities undertaken are for the sole and exclusive benefit of the Client and not for the benefit of any other party. In particular, Delta-Simons does not intend, without its written consent, for this report to be disseminated to anyone other than the Client or to be used or relied upon by anyone other than the Client. Use of the report by any other person is unauthorised and such use is at the sole risk of the user. Anyone using or relying upon this report, other than the Client, agrees by virtue of its use to indemnify and hold harmless Delta-Simons from and against all claims, losses and damages (of whatsoever nature and howsoever or whensoever arising), arising out of or resulting from the performance of the work by the Consultant.

Figure 1 – Site Location Plan



Legend

Site boundary

0 200 400 600 800 Meters

-N-

Figure	Site Location Plan		
Job	Bugle Nurseries, Upper Halliford Road, Shepperton, TW17 8SN		
Client	Angle Property (RLP Shepperton) LLP		
Figure No. 1	Revision A	Date 03/10/2022	
Drawn AJ	Checked SW	Scale 1:20,000 @ A3	
Job No. 17-0684.14		Central GR 508994E 168653N	

DO NOT SCALE.
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Figure 2 – Phase 1 Habitat Plan

Legend

- Site boundary
- Scrub - dense/continuous
- Scrub - scattered
- SI — Neutral grassland - semi-improved
- SI — Poor semi-improved grassland
- A — Amenity grassland
- Introduced shrub
- Buildings
- Hardstanding
- Bare ground
- Intact hedge - species-poor
- Defunct hedge - species-poor
- Line of trees
- Fence
- Wall
- Scattered scrub
- Scattered tree

0 15 30 45 60 Meters

N

Figure	Phase 1 Habitat Plan		
Job	Bugle Nurseries, Upper Halliford Road, Shepperton, TW17 8SN		
Client	Angle Property (RLP Shepperton) LLP		
Figure No. 2	Revision A	Date 15/11/2022	
Drawn BB	Checked JB	Scale 1:1,250 @ A3	
Job No. 17-0684.14		Central GR 508994E 168650N	

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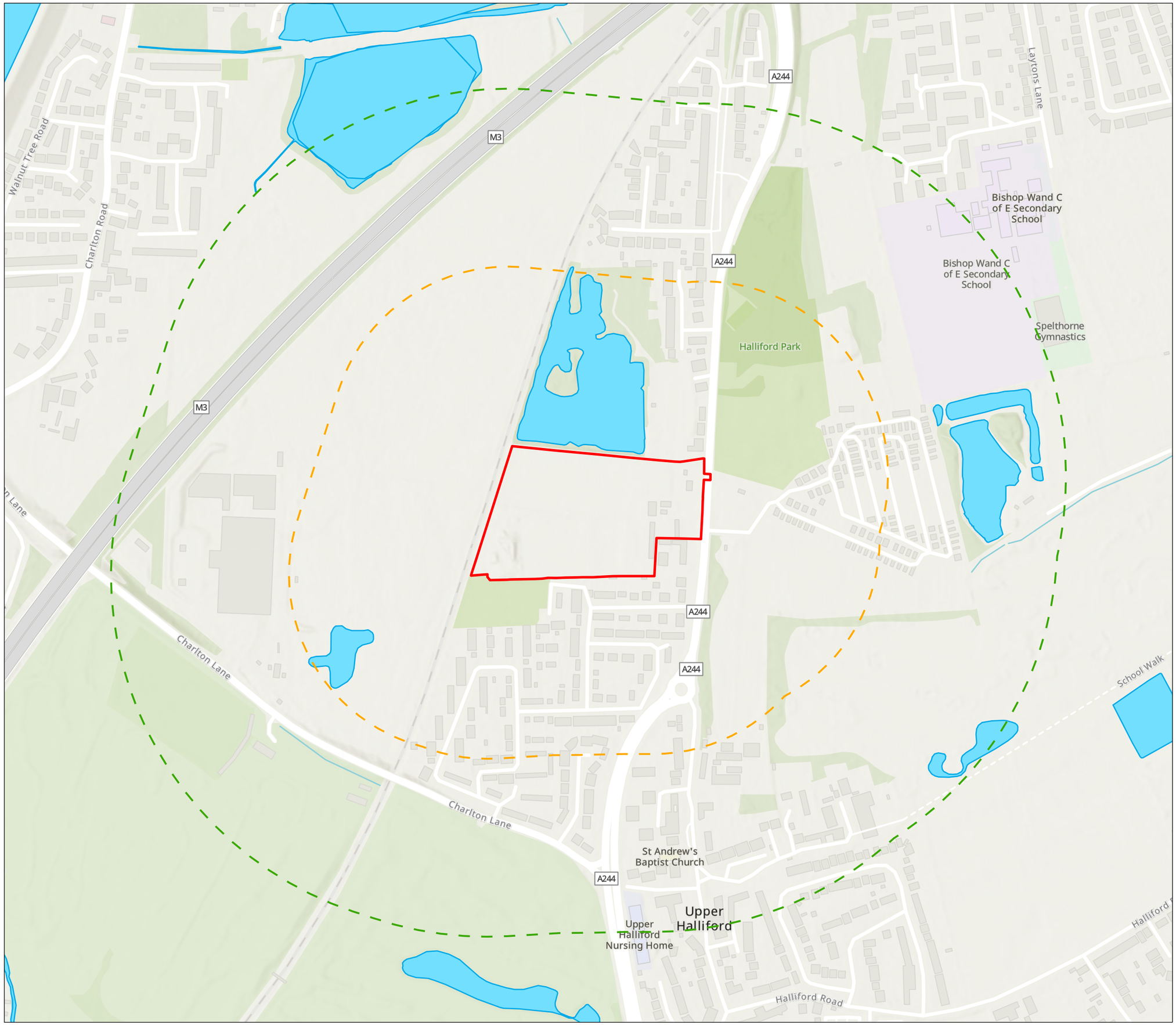
Figure 3 – Waterbody Locations



Legend

- Site boundary
- Site boundary 500m buffer
- Site boundary 250m buffer
- Waterbody

0 50 100 150 200 Meters

N

Figure	Waterbody Locations		
Job	Bugle Nurseries, Upper Halliford Road, Shepperton, TW17 8SN		
Client	Angle Property (RLP Shepperton) LLP		
Figure No. 3	Revision A	Date 03/10/2022	
Drawn AJ	Checked SW	Scale 1:5,000 @ A3	
Job No. 17-0684.14		Central GR 508991E 168651N	

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Drawing 1 – Landscape Masterplan

New pedestrian and cycle linkages connecting wider landscape to the public open space, recreational lake and public rights of way

Parkland specimen trees define boundary between residential development and new public open space

Active frontages to plots in this area overlooking public open space

Ornamental tree, hedge and shrub planting are proposed within the development will create individual characteristics to areas of the site. Tree and specimen shrubs will add a vertical interest to the street scene

Proposed formal hedgerow and tree planting to Upper Halliford Road frontage

Section of existing bund retained to form visual separation from the site and railway. This will also aid as an acoustic barrier.

Proposed new bund formations created from cleaned and consolidated existing soil in this area, New land formations create recreational and visual interest, whilst acting as a visual and acoustic barrier from the railway line. Native tree, shrub and wildflower planting will enhance the sites biodiversity

Informal kickabout area

UPPER HALLIFORD

177

175

139

137

11.3m

Proposed tree planting to southern boundary of site, to contain views and create a defensible edge from existing residential development

BRAMBLE CLOSE

NOTES:
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0m 10m 20m 40m

Key:

- Application Site Boundary
- Proposed Existing Vegetation
- Proposed Street Tree Planting
- Proposed Garden Tree Planting
- Proposed Open Space Trees Planting
- Proposed Ornamental Shrub Planting
- Proposed Native Shrub Planting
- Proposed Feature Shrub Planting
- Proposed Ornamental Hedge Planting
- Proposed Playspace
- Proposed Wildflower

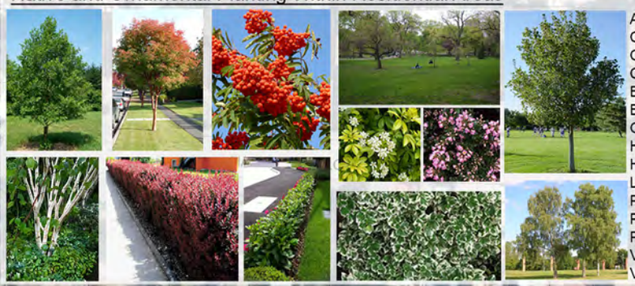
Public Open Space Potential

Bike Trails
Play Mounds
Natural Play Features
Walking and Cycle Ways
Viewing Mounds

Native Planting

Downy Birch
Hazel, Hawthorn,
Holly, Blackthorn,
Oak, Hornbeam,
Rowan, Elder,
Dogwood, Privet,
Bird Cherry, Crab Apple.

Native and Ornamental Planting Within Residential Areas



Aucuba japonica
Choisya ternata
Ceanothus 'Concha'
Cistus x corbariensis
Escallonia 'Apple Blossom'
Euonymus fortunei
Genista lydia
Hebe 'Red Edge'
Hebe 'Green Globe'
Lavandula angustifolia
Perovskia 'Blue Spire'
Potentilla 'Red Ace'
Photinia 'Red Robin'
Viburnum davidii
Vinca minor

REV	DATE	NOTE	DRAWN	CHK'D
D	09.11.22	Updated to latest layout	AS	CJ
C	21.3.22	Updated to latest layout	SB	CJ
B	11.4.18	Landscape updated to new layout	BS	AM
A	10.4.18	Landscape updated to client comments	BS	AM

REVISIONS

aspect landscape planning

TITLE

Bugle Nurseries, Shepperton Landscape Masterplan

CLIENT

Angle Properties

SCALE	DATE	DRAWN	CHK'D
1:1000 @ A3	MAR 2018	BS	AM

DRAWING NUMBER	REVISION
6500/LM / ASP4.0	D

Appendix A – References

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Appendix B – Assessment of Structures, Trees and Habitats for Bats

Assessment of Structures, Trees and Habitats for Bats

Suitability	Description	
	Roosting	**Commuting and Foraging**
Negligible	An inspected structure or tree which is considered to have no features of importance for roosting bats. No further constraints apply to the method or timing of proposed works.	Negligible habitat features on-Site to support commuting or foraging bats.
Low	A structure with at least one or more features suitable to support opportunistic individual bats. However, inadequate space, shelter, protection and conditions, and the low suitability of surrounding habitats means that it is unlikely to be used as a maternity or hibernation roost site. A tree of adequate age and stature to support potential roosting features, however, either no features, or only features of limited potential recorded from the ground.	Habitat with potential to support low numbers of commuting bats due to its quality and connectivity. For example, a gappy hedgerow or unvegetated stream that is isolated from the surrounding landscape. Alternatively, suitable but isolated habitats suitable to support low numbers of foraging bats such as a lone tree or a patch of scrub.
Moderate	A structure or tree with one or more potential roost sites that are of adequate size, shelter and protection, with suitable conditions and surrounding habitat to support a bat roost not of high conservation status (with respect to roost type not individual species conservation status).	Linear habitat continuity connecting to the wider landscape offering potential to support commuting bats, such as rows of trees and scrub or linked back gardens. Habitat such as trees, scrub, grassland or a waterbody with connectivity to the wider landscape offering foraging opportunities for bats.
High	A structure or tree with one or more potential roost sites that are suitable for use by large numbers of bats on a regular basis and for long periods of time due to their size, shelter, protection, conditions and the surrounding habitat.	Continuous high-quality habitat with strong connectivity to the wider landscape that is likely to be used by commuting bats on a regular basis, such as flowing waterbodies, hedgerows, rows of trees and woodland edges. High quality habitat with strong connectivity to the wider landscape that is likely to be regularly used by foraging bats, such as broadleaved woodland, tree-lined watercourses and grazed parkland. Site is close to, and connected to, known roost sites.

Guidance on Assessing the Potential Suitability of Development Sites to Support Bats (adapted from Collins, J. (ed)).

Appendix C – Ecological Impact Assessment Methodology

Ecological Impact Assessment Methodology

The methodology for the EcIA follows the principles set out within the Guidelines for Ecological Impact Assessment (EcIA) in the UK and Ireland; Terrestrial, Freshwater, Coastal and Marine updated by the Chartered Institute of Ecology and Environmental Management (CIEEM) in 2019 and comprises a staged approach to assessing the potential impacts resulting from the proposed development on the ecological features within the ZOI.

The EcIA has involved the following stages:

- Determination of baseline conditions;
- Identification of important ecological features;
- Identification of potential impacts and effects;
- Identifying likely significant effects;
- Designing appropriate avoidance and/or mitigation for impacts and effects;
- Assessment of residual effect significance;
- Assessment of cumulative impacts and effects; and
- Identification of compensation and enhancement measures.

Baseline Conditions

Baseline conditions have been established following the methodology outlined in the above sections.

Important Ecological Features

Important ecological features have been identified based on existing statutory, policy and conservation objectives. In accordance with the CIEEM Guidelines the value or potential value of an ecological resource has been determined within a defined geographical context in line with the table below.

Potential Impacts and Effects

The potential impacts on any important ecological features are identified during construction and operation, and prior to any mitigation, based on available baseline data, an assessment of design proposals and construction methods, and available information on the existing conservation status of the features in question.

Impacts are then characterised in terms of the following attributes:

- Positive or negative – i.e. a change that improves or reduces the quality of the environment;
- Magnitude – i.e. the size of an impact in quantitative terms where possible;
- Extent – i.e. the area over which an impact occurs;
- Duration – i.e. the time for which an impact is expected to last;
- Reversibility – i.e. is the impact permanent or temporary; and
- Timing and frequency – e.g. related to breeding seasons.

The likely effects of potential impacts on important ecological features largely depend upon their sensitivity, whilst the level of certainty that an impact will occur as predicted is based on professional judgment. Only the impacts likely to result in significant effects have been described in detail within the report. Impacts that are either unlikely to occur, or if they did occur are unlikely to be significant have been scoped out and justification for scoping out provided.

Geographic Scale	Example Criteria for Classification at each Geographic Scale
International	Habitats meeting the criteria for Wetlands of International Importance (Ramsar), Special Area of Conservation (SAC) or Special Protection Area (SPA) site. A species present in internationally important numbers (>1% of international population). Notable species which is part of the cited interest of an SPA or SAC and which regularly occurs in internationally or nationally important numbers.
National	Habitats meeting the criteria for a Site of Special Scientific Interest, Marine Conservation Zone (MCZ), or National Nature Reserve (NNR). A species present in nationally important numbers (>1% of UK population). A species which is part of the cited interest of a SSSI and which regularly occurs in internationally or nationally important numbers. Rare breeding species (e.g. birds with <300 UK breeding pairs).
Regional	A local site with important regional habitats or significant populations of Species of Principal Importance (SPIs) under the NERC act. Species present in regionally important numbers (>1% of regional population). Species listed as priority species, which are not covered above, and which regularly occur in regionally important numbers. Sustainable populations of a species that is rare or scarce within a region. Species on the Birds of Conservation Concern (BoCC) Red or Amber List and which regularly occur in regionally important numbers.
County	A local site with a habitat that is characteristic of the county or rare on a county scale, or with significant populations of locally important species. Species present in county important numbers (>1% of county population). Species listed as priority species, which are not covered above, and which regularly occur in county important numbers. Sustainable population of a species that is rare or scarce within a county. A site designated for its county important assemblage of species. Species on the BoCC Red or Amber List and which regularly occur in county important numbers.
Local	A site which has wildlife corridors likely to be essential to allow viable movement of species or improve the biodiversity of the area. Species listed as priority species, which are not covered above, and are rare in the locality. Species present in numbers just under county importance (<1% of county population). Sustainable population of a species that is rare or scarce within the locality. A site whose designation is just under for inclusion for its county important assemblage of a particular species on site. Other species on the BoCC Red or Amber List and which are considered to regularly occur in locally important numbers.

Likely Significant Effects

In accordance with the CIEEM guidelines, an ecologically significant effect is 'an effect that either supports or undermines the biodiversity conservation objectives for 'important ecological features' or for biodiversity in general'.

Using an approach to valuing impacts that involves professional judgement and reference to available conservation objectives, neutral and minor effects are considered to be not significant, while moderate and major effects are assessed to be significant. The table below provides a comparison of the terms used.

Effect Significance	Type of Effect	Equivalent CIEEM Assessment
Significant	Major beneficial	Significant positive impact on biodiversity conservation objectives at given geographical context
	Moderate beneficial	Positive impact on biodiversity conservation objectives at given geographical context
Non-significant	Minor beneficial	Limited positive impact on biodiversity conservation objectives at given geographical context
Neutral	Negligible	No significant impact on biodiversity conservation objectives at given geographical context
Non-significant	Minor adverse	Limited adverse impact on biodiversity conservation objectives at given geographical context
Significant	Moderate adverse	Adverse impact on biodiversity conservation objectives at given geographical context
	Major adverse	Significant adverse impact on biodiversity conservation objectives at given geographical context

The evaluation of significant effects has been based on the best available scientific evidence. Where sufficient evidence is not available, the precautionary principle has been applied. Therefore, where it is not possible to robustly justify a conclusion of no significant effect, a significant effect has been assumed. Any uncertainty has been acknowledged within the report.

Avoidance and/or Mitigation

Negative impacts have been avoided and/or mitigated where possible, in line with the mitigation hierarchy as presented within the CIEEM Guidelines.

Assessment of Residual Effect Significance

Once the impacts of the proposed development have been assessed, and all attempts to avoid and mitigate ecological impacts have been finalised, an assessment of the residual impacts is undertaken to determine the significance of their effects upon ecological features.

Cumulative Impact Assessment

The following types of future development within the same zone of influence have been considered as part of the cumulative impact assessment in relation to each important ecological feature:

- Proposals for which consent has been applied which are awaiting determination and are visible on the local planning portal;

- Projects which have been granted planning consent, but which have not yet been started or which have been started but are not yet completed (i.e. under construction); and
- Proposals which have been refused permission but which are subject to appeal and the appeal is undetermined.

Compensation and Enhancement

Compensation measures were taken to offset residual effects resulting in the loss of, or permanent damage to ecological features despite mitigation, where required. Compensation has only been considered as a last resort, in line with the mitigation hierarchy.

Enhancement measures have been agreed over and above any mitigation or compensation measures, in order to provide a biodiversity net gain.

Appendix D – Site Photographs

Site Photographs

Photograph 1 – Dense scrub bordering the southern horse paddock

Photograph 2 – Dense scrub covering the earth mound at the edge of the hardstanding

Photograph 3 – Scattered scrub covering the earth mound in the west

Photograph 4 – Line of Leyland cypress trees in the south-east

Photograph 5 – Neutral semi-improved grassland in the east

Photograph 6 – Southern horse paddock

Photograph 7 – Northern horse paddock

Photograph 8 – Amenity grassland in the north-east, surrounding B1

Photograph 9 – Leyland cypress hedgerow present in the south-east of the Site

Photograph 10 – B4, with gaps beneath tiles on the western aspect

Photograph 11 – B5

Photograph 12 – B6

Photograph 13 – From left to right: B7, B8 and B9

Photograph 14 – From left to right: B10, B11 and B12

Photograph 15 – From left to right: B13 and B14

Photograph 16 – Storage materials in the east of the Site

Photograph 17 – Rubbish between B11 and B9

Photograph 18 – Gaps on the corners where the wooden fascia and soffit end

Appendix E – Results of the Roost Presence/Absence Surveys

Results of The Roost Presence/Absence Surveys

Dusk Survey 9th June 2022

Surveyor Location	Time of Sighting	Location of Sighting	Species	Behaviour (e.g. swarming, foraging, commuting)	No of passes within time frame	Comments
North-west of B4	21.50	Heard not seen	Soprano Pipistrelle	Commuting	1	No emergences reported
	21.50	Heard not seen	Noctule	Commuting	1	
	21.50	Heard not seen	Noctule	Commuting	1	
	22.00	Heard not seen	Noctule	Commuting	1	
South-west of B5	21.12	Flew in front of B5 and flew to the east	Common Pipistrelle	Commuting	1	No emergences reported
	21.53	Heard not seen	Noctule	Commuting	1	
		Heard not seen	Noctule	Commuting		
	22.12	Heard not seen	Common Pipistrelle	Social call	1	

Dusk survey 29th June 2022

Surveyor Location	Time of Sighting	Location of Sighting	Species	Behaviour (e.g. swarming, foraging, commuting)	No of passes within time frame	Comments
North aspect of B4	21.33	Heard not seen	Noctule	Commuting	1	No emergences reported
	22.37	Heard not seen	Common Pipistrelle	Foraging	1	
Infra Red Camera south-east of B5	No emergences recorded					

Dusk survey 13th July 2022

Surveyor Location	Time of Sighting	Location of Sighting	Species	Behaviour (e.g. swarming, foraging, commuting)	No of passes within time frame	Comments
South-west corner of B1	21.35	Heard not seen	Noctule	Commuting	1	No emergences reported
	21.48	Heard not seen	Noctule	Commuting	1	
	21.49	Heard not seen	Soprano Pipistrelle	Commuting		
	21.50	Heard not seen	Soprano Pipistrelle	Foraging	1	
	21.55	Heard not seen	Soprano Pipistrelle	Foraging	1	
	22.01	Heard not seen	Noctule	Commuting	1	
	22.28	Heard not seen	Noctule	Commuting	1	
Infra Red Camera North-east of B1	No emergences recorded					
North-west B4	21.47	Flew high over towards the west	Noctule	Commuting	1	No emergences recorded
	22.20	Flew between buildings and over to the west	Soprano Pipistrelle	Commuting	1	
	22.33	Heard not seen	Noctule	Commuting		