

Hillingdon Hospital

Preliminary Ecological Appraisal

The Hillingdon Hospitals NHS Foundation Trust

Project number: 60642181
THHR-ACM-ZZ-XX-RP-Y-000010

July 2021

Quality information

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Revision History

Revision	Revision date	Details	Authorized	Name	Position
V1	17.12.2020	Draft for comment	18.12.2020	SG	Regional Director
V2	13.01.2021	Change of boundary and other minor changes	13.01.2021	SG	Regional Director
V3	30.07.2021	Update after further surveys started on site.	30.07.2021	PS	Regional Director

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Executive Summary

This Preliminary Ecological Appraisal (PEA) has been prepared by AECOM Ltd. on behalf of the Hillingdon Hospitals NHS Foundation Trust (the Client) in support of the redevelopment of the existing Hillingdon Hospital site (the Site) within the London Borough of Hillingdon.

Hillingdon hospital is located at Field Heath Rd, Uxbridge, UB8 3NN. It consists of a main 10-storey tower block with associated hospital buildings (A&E and a maternity building) as well as car parking and landscaping. The site layout is shown in Figure 1 within Appendix A.

The PEA was commissioned to identify whether there are known or potential ecological receptors (defined as nature conservation designations and, or protected or notable species or habitats) that may constrain or influence the design and implementation of the Proposed Development.

The Proposed Development will comprise a new hospital area, residential units and complimentary uses (comprising medical and healthcare research and development, education and nursery uses) of mixed heights buildings and car parking spaces.

Prior to the site visit, a desk study was carried out to check for nature conservation sites and protected and scheduled invasive non-native species records nearby. Greenspace Institute for Greater London (GiGL) was contacted for protected and scheduled invasive non-native species records within 1 km and statutory/non-statutory site designations for nature conservation within 1 km. Statutory site designations within 5 km were obtained from the Multi-Agency Government Information for the Countryside (MAGIC) website.

Two AECOM ecologists visited the Site on the 26th and 27th November 2020. It was found that the Site had value for biodiversity, containing priority habitats and the potential for protected species. Deciduous woodland (0.52ha), hedgerow (376m) and a watercourse (175m) (tributary of the River Pinn, a main river) were found on-site and it is recommended that these habitats should be retained, protected and incorporated into the design of the development. Other habitats found on-site include hardstanding (4.26ha), buildings (2.77ha), amenity grassland (1.29ha), bare ground (0.58ha), introduced shrub (0.13ha), scrub (0.03%) and trees.

A peregrine falcon (*Falco peregrinus*) was seen perching close to the Site and it is reported that breeding occurred within the Site in 2020. Monitoring surveys prior to planning submission are recommended to confirm the presence of this species, or not, within the Site and preparation of a Peregrine Mitigation Strategy is recommended for planning works within the Site. The peregrine falcon surveys would provide an opportunity to investigate the potential occurrence of two other Schedule 1 bird species potentially relevant to the Site – red kite (*Milvus milvus*) and black redstart (*Phoenicurus ochruros*). During the surveys undertaken for peregrine falcon and breeding birds in spring/summer 2021, peregrine falcon was confirmed breeding on site.

Several buildings and trees on the Site had the potential to support roosting bats. The woodland, hedgerow and watercourse provide foraging and commuting habitat for bats. Presence/absence roost surveys are recommended on 16 buildings and eight trees with suitability for roosting bats. An internal inspection is recommended on the High suitability building, The Furze (B10 in Figure 1 within Appendix A), and moderate suitability buildings (Pinewood Complex, B21-26). Further surveys will confirm the requirement for a Natural England European Protected Species (EPS) mitigation licence if bats are present or any other requirements for mitigation. 23 trees with low suitability for roosting bats will require ecological supervision by a bat licensed ecologist if their removal or trimming is required.

There were five invasive non-native plant species found on the Site (Himalayan balsam (*Impatiens glandulifera*), Himalayan cotoneaster (*Cotoneaster simonsii*), entire-leaved cotoneaster (*Cotoneaster integrifolius*), three-cornered garlic (*Allium triquetrum*) and rhododendron (*Rhododendron ponticum*)) that are listed in Schedule 9 of the Wildlife and Countryside Act and Himalayan balsam is listed under the Invasive Alien Species (Enforcement and Permitting) Act 2019. It is recommended that an Invasive Non-native Plant Management Plan is produced to undertake a risk assessment and provide recommendations for their removal, where necessary, and biosecurity considerations during works. During an updated survey undertaken during the growing season for plants (June) 2021, Japanese knotweed (*Reynoutria japonica*) was also recorded within the Site, to the south-east, on the river embankment and hollyberry cotoneaster (*Cotoneaster bullatus*) growing in a hedge south of the Elderly Day Hospital. Both species are also listed on schedule 9.

It is recommended that a Water Framework Directive Screening and Scoping is undertaken to assess any potential impacts on the watercourse on the Site as a result of the Proposed Development. The watercourse is a

tributary of the River Pinn, which is a non-statutory designated site for nature conservation located 800m to the west.

The design for the Proposed Development will avoid woodland, watercourse and hedgerow habitats.

Mitigation measures are recommended to avoid and reduce the risk of negative impacts on habitats and protected species during future works:

- Avoid works to the building where the peregrine falcon has nested during the peregrine nesting season (February-July);
- Use low level-lighting during works and within final design to avoid disturbance to commuting and foraging bats.
- Check any vegetation or trees cleared during the bird nesting season (March to September inclusive) using a suitably qualified ecologist.
- Avoid scrub and vegetation clearance during the hedgehog hibernation period (Nov-March). If clearing dense scrub, hand-search for hedgehogs hibernating under leaf debris.
- Undertake biosecurity measures to prevent the spread of invasive species during works on Site.
- Implement a Construction Environmental Management Plan (CEMP) during the construction phase of the Proposed Development to avoid any indirect impact on the adjacent habitats, watercourses and nearby non-statutory sites.

In accordance with the National Planning Policy Framework (NPPF) and regional and local planning policies, biodiversity net gain and the provision for ecological protection, appropriate ecological enhancements are recommended for the Site.

The built environment could include green roof, living walls and artificial nest/roost boxes in the final building design. A peregrine nest box should be placed on the new hospital building before the demolition of the building where they nested in 2021. The associated soft landscaping should include native or wildlife-friendly plant species of benefit to biodiversity.

The woodland should be enhanced with the creation of log/brush piles for hedgehogs and artificial nest/roost boxes in trees and deadwood piles for stag beetles and removal of invasive species. The creation of a wildlife pond from the existing temporary waterbody should be considered by the design team. Fencing suitable to allow hedgehog transit across the Site should be established in the south of the Site.

1. Introduction

This Preliminary Ecological Appraisal (PEA) has been prepared by AECOM Ltd. on behalf of the Hillingdon Hospitals NHS Foundation Trust (the Client) in support of the redevelopment of the existing Hillingdon hospital (the Site) (postcode UB8 3NN) within the London Borough of Hillingdon.

1.1 Site Location

Hillingdon hospital is located at Pield Heath Rd, Uxbridge UB8 3NN. It consists of a main 10-storey tower block with associated hospital buildings (A&E and a maternity building) as well as car parking, landscaping, a stream and woodland.

The Site is shown in Figure 1 in Appendix A.

1.2 Purpose

This PEA was commissioned to identify whether there are known or potential ecological receptors (defined as nature conservation designations and protected or notable species or habitats) that may contain or influence the design and implications of the Proposed Development. The approach applied when undertaking this PEA accords with the Guidelines for Preliminary Ecological Appraisal, Second Edition, published by the Chartered Institute of Ecology and Ecological Management (CIEEM, 2017).

In order to deliver the PEA, a desk study and an extended Phase 1 Habitat Survey was undertaken by a suitably qualified ecologist.

The purpose of the PEA was to;

- identify and categorise all habitats present within the Site and any areas immediately outside of the Site where there may be potential for direct or indirect effects (the zone of influence) as a result of the Proposed Development;
- carry out an appraisal of the potential of the habitats recorded to support protected or notable species of fauna and flora;
- provide advice on any potential ecological constraints and opportunities within the Site and its zone of influence, including the identification (where relevant) of any requirements for follow-up habitat and species surveys and/or requirements for ecological mitigation; and provide a map showing the location of the identified ecological receptors or relevance; and
- make recommendations such that the Proposed Development will achieve a net gain in biodiversity.

This PEA is intended for advice in respect of Proposed Development design, site layout and / or site investigation. The report identifies the scope of further ecological surveys) and/or ecological impact assessment (including detailed mitigation measures) may be required in connection with a planning application or to contribute to an Ecological Impact Assessment (EclA) once the Proposed Development proposals have been finalised and any required surveys have been completed. High level recommendations are made to inform options for the avoidance, mitigation or compensation of the potential impacts of the Proposed Development (where known) on the identified ecological receptors, and of potential enhancements to biodiversity and ecosystem services.

1.3 Proposed Development

As part of the Government's Health Infrastructure Plan (HIP), funding is provided for six new hospitals by 2025 and it is proposed to build one of these on the existing Hillingdon hospital site. The Proposed Development consist of a new hospital area, residential units, other buildings (comprising medical and healthcare research and development, education and nursery uses) of mixed heights and car parking spaces.

1.4 Quality Assurance

All AECOM ecologists follow the Chartered Institute of Ecology and Environmental Management (CIEEM) code of professional conduct when undertaking ecological work and many of them are Full Members. They are appropriately qualified and will conduct their work with all reasonable skill and care. Many senior ecologists are Chartered Environmentalists and Ecologists.

2. Wildlife Legislation and Planning Policy

2.1 Wildlife Legislation

The following wildlife legislation is potentially relevant to the Site:

- Wildlife and Countryside Act (WCA) 1981 (as amended);
- Countryside and Rights of Way (CROW) Act 2000;
- Natural Environment and Rural Communities (NERC) Act 2006;
- Protection of Badgers Act 1992;
- Conservation of Habitats and Species Regulations 2017 (as amended) (the Habitat Regulations)¹;
- The Hedgerows Regulations 1997;
- The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017; and
- Invasive Alien Species (Enforcement and Permitting) Order 2019.

The above legislation was considered when planning and undertaking this PEA using the methods described in Section 3 when identifying potential constraints to the Proposed Development, and when making recommendation for further surveys, design options and mitigation as discussed in Section 5. Compliance with legislation may require the attainment of relevant protected species licences prior to implementation of the Proposed Development.

Further information on the requirements of the above legislation is provided in Appendix D.

2.2 National Planning Policy

The National Planning Policy Framework (NPPF) was originally published on 27th March 2012 and detailed the Government's planning policies for England and how these are expected to be applied. The NPPF was then revised on the 24th July 2018, 19th February 2019 and 20th July 2021.

The NPPF stated the commitment of the UK Government to minimising impacts on biodiversity and providing net gains in biodiversity where possible, contributing to the Government's commitment to halt the overall decline in biodiversity.

It specifies the obligations that Local Authorities and the UK Government have regarding statutory designated sites and protected species under UK and international legislation and how this is to be delivered in the planning system. Protected or notable habitats and species can be a material consideration in the planning system. Protected or notable habitats and species can be a material consideration in planning decisions and may therefore make some sites unsuitable for particular types of development. If development is permitted, mitigation measures may be required to avoid or minimise impacts on certain habitats and species, or where impact is unavoidable, compensation may be required.

The NPPF is clear that pursuing sustainable development includes moving from no net loss of biodiversity to achieving net gains for nature, and that a core principle for planning is that it should contribute to conserving and enhancing the natural environment and reducing pollution.

Further information in the relevant parts of the NPPF is provided in Appendix D.

¹ The UK is no longer a member of the European Union (EU). EU legislation as it applied to the UK on 31 December 2020 is now a part of UK domestic legislation. EU legislation which applied directly or indirectly to the UK before 11.00 p.m. on 31 December 2020 has been retained in UK law as a form of domestic legislation known as 'retained EU legislation'. The Secretary of State for the Environment, Food and Rural Affairs and Welsh Ministers have made changes to parts of the *Conservation of Habitats and Species Regulations 2017* (referred to as the 2017 Regulations) so that they operate effectively. Most of these changes involve transferring functions from the European Commission to the appropriate authorities in England. All other processes or terms in the 2017 Regulations remain unchanged and existing guidance is still relevant.

2.3 Regional Planning Policy

Relevant regional planning policies for the site is detailed in the following documents:

- The Mayor's Biodiversity Strategy (2002);
- The Mayor's London Environment Strategy (2018);
- London Biodiversity Action Plan (Greenspace Information for Greater London, 2007);
- London Plan. The Spatial Development Strategy for Greater London (2021); and
- The London Plan (adopted March 2021).

Table 1 provides a summary of the relevant regional planning policies. For a precise wording of each specific policy please refer back to the source document. This planning policy has been considered when assessing potential ecological constraints and opportunities identified by the desk study and field surveys; and, when assessing requirements for further survey, design options and ecological mitigation, as described in Section 5 (Identification of Ecological Constraints and Recommendations) and Section 6 (Opportunities for Ecological Enhancements).

Table 1. Summary of Regional Planning Policy

Document	Policy	Purpose
The Mayor's Biodiversity Strategy (2002)	Chapter 4: Policies and Proposals	Giving priority to the "protection of biodiversity, positive measures to encourage biodiversity action, promoting the management, enhancement and creation of valuable green space, incorporating biodiversity into new development, and access to nature and environmental education".
	Policy 1	Protection, management and enhancement of London's biodiversity. This will be implemented through a no net loss of important wildlife habitat, and a net increase in habitat through enhancement and habitat creation.
	Policy 5	Ensure that opportunities are taken to green the built environment within development proposals.
The Mayor's London Environment Strategy (2018)	Objective 5.1 Make more than half of London's area green by 2050:	Policy 5.1.1 Protect, enhance and increase green areas in the city, to provide green infrastructure services and benefits that London needs now and in the future. Policy 5.1.2 Protect, conserve, and enhance the landscape and cultural value of London's green infrastructure.
	Objective 5.2 Conserving and enhancing wildlife and natural habitats:	Policy 5.2.1 Protect a core network of nature conservation sites and ensure a net gain in biodiversity.
	Objective 5.3 Value London's natural capital as an economic asset and support greater investment in green infrastructure	Policy 5.3.1 Address under investment, and improve the management of London's green infrastructure, by developing new business models and improving the awareness of the benefits of London's green infrastructure.
London Biodiversity Action Plan (Greenspace Information for Greater London 2007)	Protected Species	Habitats and species that are of importance for biodiversity in London. Priority habitats of relevance to the Site are "Parks and urban green spaces", which support biodiversity and provide contact with nature. Measures to conserve and enhance biodiversity in London are contained within a document entitled Design of Biodiversity in London, which includes recommendations such as the inclusion of green and brown roofs with new developers.
London Plan. The Spatial Development Strategy for Greater London (2021)	Policy G1 Green Infrastructure	London's network of green and open spaces, and green features in the built environment should be protected and enhanced. Green infrastructure should be planned, designed and managed in an integrated way to achieve multiple benefits. Development proposals should incorporate appropriate elements of green infrastructure that are integrated into London's wider green infrastructure network
	Policy G2 London's Green Belt	The Green Belt should be protected from inappropriate developments. The enhancement of the Green Belt to provide appropriate multi-functional beneficial uses for Londoners should be supported

Document	Policy	Purpose
	Policy G4 Open Space	Development Plans should promote the creation of new areas of publicly accessible open space particularly green space should not result in the loss of protected open space.
	Policy G5 Urban greening	Major development proposals should contribute to the greening of London by including urban greening as a fundamental element of site and building design, and by incorporating measures such as high-quality landscaping (including trees), green roofs, green walls and nature-based sustainable drainage. In the interim, the Mayor recommends a target Urban Greening Factor (UGF) score of 0.4 for developments that are predominately residential, and a target score of 0.3 for predominately commercial development (excluding B2 and B8 uses).
	Policy G6 Biodiversity and access to nature	Sites of Importance for Nature Conservation (SINCs) should be protected. Development Plans should support the protection and conservation of priority species and habitats that sit outside the SINC network and promote opportunities for enhancing them using Biodiversity Action Plans and seek opportunities to create other habitats, or features such as artificial nest sites, that are of particular relevance and benefit in an urban context. Development proposals should manage impacts on biodiversity and aim to secure net biodiversity gain. This should be informed by the best available ecological information and addressed from the start of the development process.
	Policy G7 Trees and woodlands	London's urban forest and woodlands should be protected and maintained, and new trees and woodlands should be planted in appropriate locations in order to increase the extent of London's urban forest. 'Veteran' trees and ancient woodland should be protected and opportunities for tree planting in strategic locations identified. Development proposals should ensure that, wherever possible, existing trees of value are retained. If trees are removed there should be adequate replacement based on the existing value of the benefits of the trees removed

2.4 Local Planning Policy

Relevant local planning policies for the development within the Site are detailed in the following documents:

- London Borough of Hillingdon Local Plan Part 1: Strategic Policies (Adopted 2012); and
- London Borough of Hillingdon Local Plan Part 2: Development Management Policies (January 2020).

Table 2 provides a summary of relevant local planning policies. For the precise wording of each specific policy please refer back to the source document. This planning policy has been considered when assessing potential ecological constraints and opportunities identified by the desk study and field surveys; and, when assessing requirements for further survey, design options and ecological mitigation, as described in Section 5 (Identification of Ecological Constraints and Recommendations) and Section 6 (Opportunities for Ecological Enhancements).

Table 2. Summary of Local Planning Policy

Document	Planning Policy	Purpose
London Borough of Hillingdon Local Plan Part 1: Strategic Policies (2012)	EM3 Blue Ribbon Network	The Council will continue to promote and contribute to the positive enhancement of the strategic river and canal corridors and the associated wildlife and habitats through the Biodiversity Action Plan and the Thames River Basin Management Plan, and developer contributions where appropriate
	EM4 Open Space and Informal Recreation	The Council will seek to protect existing tree and landscape features and enhance open spaces with new areas of vegetation cover (including the linking of existing fragmented areas) including front and back gardens for the benefit of wildlife and a healthier lifestyle, mitigating climate change.
	EM7 Biological and Geological Conservation	The protection and enhancement of all Sites of Importance for Nature Conservation. Sites with Metropolitan and Borough Grade 1 importance will be protected from any adverse impacts and loss. Borough Grade 2 and Sites of Local Importance will be protected from loss with harmful impacts mitigated through appropriate compensation. The protection and enhancement of populations of protected species as well as priority species and habitats identified within the UK, London and the Hillingdon Biodiversity Action Plans. Appropriate contributions from developers to help enhance Sites of Importance for Nature Conservation in close proximity to development and to deliver/ assist in the delivery of actions within the Biodiversity Action Plan. The provision of biodiversity improvements from all development, where feasible.

Document	Planning Policy	Purpose
		The provision of green roofs and living walls which contribute to biodiversity and help tackle climate change. The use of sustainable drainage systems that promote ecological connectivity and natural habitats.
London Borough of Hillingdon Local Plan Part 2: Development Management Policies (2020)	DMHB 11: Design of New Development	All new developments must include landscaping and tree planting to protect and enhance amenity, biodiversity and green infrastructure.
	DMHB 14: Trees and Landscaping	All developments will be expected to retain or enhance existing landscaping, trees, biodiversity or other natural features of merit. Development proposals will be required to provide a landscape scheme that includes hard and soft landscaping appropriate to the character of the area, which supports and enhances biodiversity, particularly in areas deficient of green infrastructure. Where space for ground level planting is limited, such as high rise buildings, the inclusion of living walls and roofs will be expected where feasible. Where trees are to be removed, proposals for replanting of new trees on-site must be provided or include contributions to offsite provision.
	DMEI 1: Living walls and Roofs and on-site vegetation	All development proposals are required to comply with the following: All major development should incorporate living roofs and/or walls into the development. Suitable justification should be provided where living walls and roofs cannot be provided; Major development in Air Quality Management Areas must provide onsite provision of living roofs and/or walls. A suitable offsite contribution may be required where onsite provision is not appropriate.
	DMEI 5: Green Chains	Development in Green Chains will only be supported if it conserves and enhances the visual amenity and nature conservation value of the landscape, improve biodiversity in and around the area.
	DMEI 7: Biodiversity Protection and Enhancement	The design and layout of new development should retain and enhance any existing features of biodiversity or geological value within the site. Where loss of a significant existing feature of biodiversity is unavoidable, replacement features of equivalent biodiversity value should be provided on-site. Where development is constrained and cannot provide high quality biodiversity enhancements on-site, then appropriate contributions will be sought to deliver off-site improvements through a legal agreement. If development is proposed on or near to a site considered to have features of ecological or geological value, applicants must submit appropriate surveys and assessments to demonstrate that the proposed development will not have unacceptable effects. The development must provide a positive contribution to the protection and enhancement of the site or feature of ecological value. Proposals that result in significant harm to biodiversity which cannot be avoided, mitigated, or, as a last resort, compensated for, will normally be refused.

3. Method

3.1 Desk Study

A desk study was carried out to identify nature conservation designations of notable habitats and species, including invasive non-native species potentially relevant to the Site and the Proposed Development.

A stratified approach was taken when defining the desk study based on the zone of influence of the Proposed Development on different ecological receptors and an understanding of the maximum distance typically considered by statutory consultees. Accordingly, the desk study identified any international and national nature conservation designations within 5km of the red line boundary, other non-statutory conservation designations, protected habitats and species within 1km of the red line boundary. The desk study was carried out using the data sources detailed in Table 3.

The search included statutory designated sites such as Special Areas of Conservation (SACs), Special Protection Areas (SPAs), Sites of Special Scientific Interest (SSSIs), Ramsar sites, National Nature Reserves (NNRs) and Local Nature Reserves (LNRs).

Table 3. Desk Study Data Sources

Data Source	Accessed	Data Obtained
Multi-Agency Geographic Information for the Countryside (MAGIC) website	November 2020	International statutory designations within 5km. Other statutory designations within 5km. Ancient woodlands and notable habitats within 2km. Higher Level Environmental Stewardship agreements applied to the Site. Information on habitats and habitat connections (based of aerial photography) relevant to interpretation of planning policy can assessment of potential protected and notable species constraints.
Greenspace Institute for Greater London (GiGL)	November 2020	Non-statutory designations within 1km Protected and notable species records within 1km (records for the last 10 years only)
Ordnance Survey 1:2500 Pathfinder maps and aerial photography	November 2020	Information on habitats and habitat connections (based of aerial photography) relevant to interpretation of planning policy can assessment of potential protected and notable species constraints.

3.2 Field Survey

A Phase 1 Habitat Survey was carried out on the 26th and 27th of November in accordance with the standard methods (Joint Nature Conservation Committee, 2010)². Phase 1 Habitat Survey is a standard method of environmental audit which involves categorising different habitat types and habitat features within a survey area. The information gained for the survey was used to determine the likely ecological value of a site, and to direct any more specific survey work, which may need to be carried out prior to submission of a planning application. The standard Phase 1 Habitat Survey method was extended to record target notes on protected, notable and invasive non-native species.

The survey area encompassed all safely accessible parts of the Site.

3.2.1 Appraisal of Potential Suitability to Support Protected and Notable Species

An appraisal was made of the potential suitability of the habitats present to support protected and notable species of plants and/or animals. Field signs, habitat features with potential to support protected species and any sightings or auditory evidence were recorded when encountered, but no detailed surveys were carried out for any particular species.

A note was made of visible instances of invasive non-native plant species listed under Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) including Japanese knotweed (*Reynoutria japonica*) and likewise for

² JNCC (2010) Handbook for Phase 1 Habitat Survey - a technique for environmental audit. JNCC

species listed on the Invasive Alien Species (Enforcement and Permitting) Act 2019 (as amended). Locations of plants or stands of any such invasive non-native plant species found when recorded.

Section 6 of this report identifies further requirements for species survey based on the results of the Phase 1 Habitat Survey. These surveys should be completed prior to submission of a planning application as the results are likely to be material for determination of a planning application.

3.2.2 Plant Abundance (DAFOR)

Plant species were recorded for different habitat types and reflect the conditions at the time of the survey. Phase 1 habitat surveys are not identified to be a detailed inventory of the plant species present on the survey area, nor it is required to possess a full list of species found within the red-line boundary. The frequency of plant species present were recorded using the DAFOR scale, and the overall values of species within habitat blocks are recorded in Section 4.2.1 and expanded on in Appendix C. The DAFOR scale measures the relative abundance of plant species on site based on relative percentage cover as shown in Table 4.

Table 4. Plant Abundance (DAFOR) Scale Designations

Abundance	Relative Cover (percentage)
D = Dominant	50-100
A = Abundance	30-50
F = Frequent	15-30
O = Occasional	5-15
R = Rare	<5

Source: Guidance Notes for Recording DAFOR, source Norfolk Wildlife Trust³

3.2.3 Initial Bird Nesting Assessment

An assessment of the buildings, hedges and trees on the Site for their suitability to support nesting birds was carried out on the 26th and 27th of November concurrent with the Phase 1 habitat survey. Features searched for using close focusing binoculars included nests both in use and recently abandoned, as well as cavities in trees that could be used by larger species such as owls and woodpeckers.

3.2.4 Initial Bat Roosting Assessment

An assessment of the structures and trees on and surrounding Site was carried out on the 26th and 27th of November to determine their suitability to support roosting bats. The survey was conducted in line with the Bat Conservation Trust (BCT) survey guidelines⁴.

Close focusing binoculars were used to conduct an external assessment of structures and trees where access was permitted. It should be noted that this only provided an initial assessment of features with suitability for roosting bats, through the presence of Potential Roost Features (PRFs). Checks of interior spaces of trees and structures were not completed.

On the basis of the external assessment, the overall suitability of these trees and structures to support roosting bats was classified according to the scale outlined in Table 5 with the follow up survey effort requirement outlined in Table 6 (based on Collins, 2016³).

Table 5. Criteria used to describe Bat Roost Suitability

Suitability Level	Type of Roost		
Habitat Suitability	Summer/Transitional Roost used by non-breeding bats	Maternity Roost	Hibernation Roost
Confirmed	Presence of bats or evidence of bats. Confirmation of roost status may require further survey.		
High	Feature with multiple roosting opportunities for one or more species of bats with good	Feature with multiple roosting opportunities for breeding bats (size, temperature), with close	Large site that offers cool stable conditions with multiple roosting

³ <https://www.norfolkwildlifetrust.org.uk/documents/downloads/cwa/handout-9-using-dafor>

⁴ Collins, J. (editor) (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd Edition). Bat Conservation Trust: London

Suitability Level	Type of Roost		
Habitat Suitability	Summer/Transitional Roost used by non-breeding bats	Maternity Roost	Hibernation Roost
	connectivity to high quality foraging habitat.	proximity and connectivity to high quality foraging habitat.	opportunities in close proximity to high quality foraging habitat.
Moderate	Feature with some roosting opportunities and connectivity to moderate or high-quality foraging habitat.	Feature providing some roosting opportunities with some connectivity to moderate or high-quality foraging habitat.	Medium sized feature with some roosting opportunities and some connectivity to moderate or high-quality foraging habitat
Low	Feature with a limited number of roosting opportunities with poor connectivity to foraging habitat.	Feature with a limited number of roosting opportunities for breeding bats with low proximity and connectivity to low or moderate quality foraging habitat.	Small sized feature which may be subject to disturbance or environmental variations, with a limited number of roosting opportunities and poor connectivity to foraging habitat.

Table 6. Survey Effort for Bat Roosts based on Roost Suitability

Roost/Location	Low Suitability	Medium Suitability	High Suitability
Building/Structure	One survey visit; either a dusk emergence or dawn re-entry survey.	Two separate survey visits. One dusk emergence and a separate dawn re-entry survey.	Three separate survey visits consisting of at least one dusk emergence and a separate dawn re-entry survey, with the third visit either a dusk or dawn survey.
Tree	No Survey Required, precautionary working methods only.	Two separate survey visits. One dusk emergence and a separate dawn re-entry survey.	Three separate survey visits consisting of at least one dusk emergence and a separate dawn re-entry survey, with the third visit either a dusk or dawn survey.

3.3 Limitations

There were several enclosed courtyards and an existing construction site inaccessible to the surveyors within the hospital complex on the day of the survey. The area not accessed was 1.82ha or 15.9% of the Site.

The survey was carried out in November which was within the sub-optimal season for plant identification. Identification of plants was made from available features such as leaves, twigs and berries.

The aim of a desk study is to help characterise the baseline context of a proposed development and provide valuable background information that would not be captured by a single site survey alone. Information obtained during the course of a desk study is dependent upon people and organisations having made and submitted records for the area of interest. As such, a lack of records for a particular habitats or species does not necessarily mean that the habitats or species do not occur in the study area. Likewise, the presence of records for particular habitats and species does not automatically mean that these still occur within the area of interest or are relevant in the context of the proposed development.

Where habitat boundaries coincide with physical boundaries recorded on OS maps, the resolution is as determined by the scale of mapping. Elsewhere, habitat mapping is as estimated in the field and/or recorded by hand-held GPS. Where areas of habitat are given, they are approximate and should be verified by measurement on site where required for design or construction.

An ecological survey represents a 'snapshot' in time of the ecological condition of a site. The ecological character of a site can change substantially throughout both the course of a year, and from year to year impacting on the extent and quality of habitats potential to support protected species. As the survey was carried outside the main plant growing season for both native and invasive non-native species it is probable that some species weren't present during the time of survey. A PEA is however not a detailed inventory of plant species present and the potential oversight of some species is not a constraint for this level of survey.

None of these limitations either singly or in combination is significant enough to affect the baseline, impact assessment and resulting mitigation or enhancement referenced in this report.

3.4 Report Lifespan

The findings and recommendations outlined here will need to be reassessed if there is a significant change to the type or scale of development proposed, or if there are any significant changes in the use or management of the land that would affect the habitats and species.

If a planning application is made 18 months or more after a PEA, it is advisable to review and update the survey data. This follows guidance from the Chartered Institute of Ecology and Environment Management (CIEEM, 2019⁵).

⁵ CIEEM, 2019. Advice Note on the lifespan of Ecological Reports and Surveys. April 2019

4. Results

4.1 Nature Conservation Designations

4.1.1 Sites Statutorily Designated for their biodiversity value

Based on the methods given in Section 3.1 of this report, the desk study identified nine sites statutorily designated for their nature conservation value or ancient status within 5km of the red line boundary of the Site. There are no international designations within 5km of the Site. There are three nationally designated Sites (Sites of Special Scientific Interest (SSSIs)) and six Local Nature Reserves (LNRs) within 5km of the boundary of the Site. The statutorily designated sites within 5km are shown below in Table 7 and are listed with the closest sites in ascending order of distance.

Table 7. Statutory Designated Sites

Site and Designation	Reasons for Designations	Approximate Relationship to Site
Yeading Woods Local Nature Reserve (LNR) (31.59ha)	The reserve has a small meadow, river bank and coppiced woodland. Species include bluebells in spring, broad leaved helleborine orchid (<i>Epipactis helleborine</i>), kingfisher (<i>Alcedo atthis</i>) along the Yeading Brook, and the continental wasp spider (<i>Argiope bruennichi</i>).	2.9km north east of the Site
Yeading Meadows LNR (29.96ha)	The hundred year old pedunculate oak (<i>Quercus robur</i>) plantation over hazel (<i>Corylus avellana</i>) coppice which forms Ten Acre Wood adjoins the flower rich Yeading Brook Meadows. The woodland is mostly oak, planted in the late 19th Century with an understory of mainly hawthorn (<i>Crataegus monogyna</i>) and hazel	3km to the east of the Site
Yeading Brook Meadows LNR (5.69ha)	Wild flowers and grasses dominate this meadow, hosting an array of insect life from Roesel's bush-cricket and shield bugs to skipper butterflies and moths. Other species that can be seen are skylark and snipe; five-spotted burnet moth; narrow-leaved water-dropwort, small heath and common spotted-orchid; common frog	3.1km north east of the Site
Frays Valley LNR (71.87ha)	The wildlife-rich Frays River meanders through the Frays Farm Meadows SSSI. Species recorded to be present include marsh marigold (<i>Caltha palustris</i>) and ragged-robin (<i>Lychnis flos-cuculi</i>).	3.8km north of the Site
Denham Country Park LNR (19.82ha)	Located on the banks of the rivers Colne, Misbourne and Frays. Herons and kingfishers and damselflies and dragonflies can be seen at the wet meadows.	3.8km north of the Site
Fray's Farm Meadows SSSI (26.3ha)	The land was designated as SSSI because it represents one of the last remaining areas of relatively unimproved wet alluvial grassland habitat in the Greater London area and Colne Valley. The meadows contain a variety of grassland communities which range from the grazed grassland of sweet vernal-grass (<i>Anthoxanthum odoratum</i>), crested dog's-tail (<i>Cynosurus cristatus</i>) and perennial rye-grass (<i>Lolium perenne</i>) through to areas of tall sedge dominated marshy grassland with lesser pond sedge (<i>Carex acutiformis</i>) and reed-grass (<i>Glyceria maxima</i>). The linear features of the site - ditches, hedges and railway embankment - add further habitat diversity, and contribute to the richness of plants and animals present.	3.8km north of the Site
Kingcup Meadows and Oldhouse Woods SSSI (12.9ha)	Consisted of a mosaic of habitats adjacent to the River Alderbourne, which includes woodland, unimproved pastures and semi and unimproved meadowland. The fields are comprised of dry grassland, wet grassland and areas of fen and swampy vegetation. Oldhouse Wood has been managed in the past as coppice-with-standards and retains a wide range of native trees and shrubs, along with many woodland species indicative of ancient woodland The grassland has a high diversity throughout with a high proportion of forbs to grasses. The wetter patches are similarly rich. Characteristic plants present include meadowsweet (<i>Filipendula ulmaria</i>), knapweed (<i>Centaurea nigra</i>), water dropwort (<i>Oenanthe aquatica</i>) and greater trefoil (<i>Lotus pedunculatus</i>). The semi-improved field is recovering well as a result of the restoration management undertaken including the spreading of hay from the end field	4.2km north west of the Site
Dernham Quarry Park LNR (29.61ha)	The park is home to a mix of wildlife features and habitats including wet meadows and a flooded quarry. Denham Quarry Park is close by to Frays Valley Local Nature Reserve in the Greater London area.	4.3km north of the Site
Denham Lock Wood SSSI (6.82ha)	Diverse area of open mire and wet woodland which shows a zonation of wetland habitats. The woodland herb flora is particularly varied and reflects subtle differences in topography and drainage	4.3km to the north of the Site

4.1.2 Sites Non-statutorily Designated for their biodiversity value

Table 8 details the non-statutory nature conservations designations identified by the desk study methods as described in Section 3.1 of this report. The search included non-statutory designations within 1km such as Local Wildlife Sites (LWS) sometimes referred to as Sites of Importance for Nature Conservation (SINCs). These are recognised by the Greater London Authority and London borough councils as important wildlife sites.

There are three tiers of such sites:

- Sites of Metropolitan Importance (SMINC);
- Sites of Borough Importance (borough Grade I and borough Grade II) (SBINC); and
- Sites of Local Importance (SLINC).

The designations are listed in descending order of importance for each designation, with those closest to the Site listed first.

Table 8. Non-Statutory Designations

Site and Designation	Reasons for Designations	Approximate Relationship to Site
Borough Grade II Sites		
The Grove SINC (2.99)	A sequence of shaded ponds runs the length of this nature reserve, surrounded by lush grassland and woodland. The smaller ponds and wet areas support a range of wetland plants including reed sweet-grass (<i>Glyceria maxima</i>), yellow iris (<i>Iris pseudacorus</i>) and water starwort (<i>Callitriche stagnalis</i>). Sparse willows (<i>Salix caprea</i> and <i>S. cinerea</i>), ash (<i>Fraxinus excelsior</i>) and hawthorn (<i>Crataegus monogyna</i>) grow around these ponds. The reserve consists of woodland, scrub and small patches of grassland, becoming overgrown with bramble (<i>Rubus fruticosus</i> aggregate) and dewberry (<i>Rubus caesius</i>). The woodland is mainly English oak (<i>Quercus robur</i>) with an understory of rowan (<i>Sorbus aucuparia</i>), cherry laurel (<i>Prunus laurocerasus</i>) and rhododendron (<i>Rhododendron ponticum</i>).	The SINC is located 210m to the north of the Site.
River Pinn and Manor Farm Pastures (33.32ha)	This stretch of the River Pinn is bordered on both sides by open grassland, much of which comprises rank grasses and tall herbs with scattered scrub, although some of it is managed as sports fields. The river is generally lined by trees and shrubs such as alder (<i>Alnus glutinosa</i>), crack willow (<i>Salix fragilis</i>) and blackthorn (<i>Prunus spinosa</i>). The heavy shade and competition has led to a dearth of aquatic and wetland plants except for the invasive non-native species, Japanese knotweed (<i>Reynoutria japonica</i>), giant hogweed (<i>Heracleum mantegazzianum</i>) and Indian balsam (<i>Impatiens glandulifera</i>). Two of the fields to the west of the River Pinn are grazed by horses and contain false oat-grass (<i>Arrhenatherum elatius</i>), bent (<i>Agrostis</i> sp.) and yarrow (<i>Achillea millefolium</i>). The rest are either mown infrequently or have been left unmanaged for a year or so.	The SINC is located 400m to the west-north west of the Site.
Uxbridge and Hillingdon Cemeteries SINC (7.66ha)	These two cemeteries contain flower-rich grassland with mouse-ear hawkweed (<i>Pilosella officinarum</i>), burnet saxifrage (<i>Pimpinella saxifraga</i>), germander speedwell (<i>Veronica chamaedrys</i>) and yarrow (<i>Achillea millefolium</i>) within a sward dominated by red fescue (<i>Festuca rubra</i>). Patches of taller grasses and flowers provide variation. The gravestones and walls are well-vegetated with lichens and bryophytes and are worthy of a further survey. This SINC includes an area of woodland consisting of pedunculate oak (<i>Quercus robur</i>), ash (<i>Fraxinus excelsior</i>) and sycamore (<i>Acer pseudoplatanus</i>) with an understory of elder (<i>Sambucus nigra</i>) and rhododendron (<i>Rhododendron ponticum</i>).	SINC is located 650m to the north-north west of the Site
Stockley Park Country Park SINC (17.73ha)	This large, hilly country park contains extensive grassland and other habitats including tall herbs, scrub, trees and hedgerows, much of which has been planted. The grasslands include perennial rye-grass (<i>Lolium perenne</i>), creeping bent (<i>Agrostis stolonifera</i>) and Yorkshire fog (<i>Holcus lanatus</i>). A large variety of flowers occur within a number of sown wildflower meadows including ox-eye daisy (<i>Leucanthemum vulgare</i>), meadow vetchling (<i>Lathyrus pratensis</i>) and hairy tare (<i>Ervilia hirsuta</i>). A small pond supports a dense stand of common reed (<i>Phragmites australis</i>).	SINC is located 675m to the south-south east of the Site

4.1.3 Notable Habitats

There were nine blocks of deciduous woodland listed on the National Forest Inventory within 2km of the Site. None of these blocks of woodland were directly connected to the hospital campus. These blocks of woodland are listed in Table 9 in ascending order distance away from the Site. No ancient woodland was found within 1 km of the Site.

Table 9. Blocks of Woodland within 2km of the Site

Habitat Type	Description	Approximate Relationship to Site
Deciduous Woodland (1.79ha)	Woodland listed on the National Forest Inventory 2014	Woodland is located 300m to the north of the Site
Traditional Orchards	HAP Inventory 2020	Woodland is located 450m to the north west of the Site
Deciduous Woodland (0.09ha)	Woodland listed on the National Forest Inventory 2014	Woodland is located 500m to the north west of the Site
Deciduous Woodland (0.699ha)	Woodland listed on the National Forest Inventory 2014	Woodland is located 600m to the south west of the Site
Deciduous Woodland (0.05ha)	Woodland listed on the National Forest Inventory 2014	Woodland is located 600m to the east of the Site.
Traditional Orchards	HAP Inventory 2020	Woodland is located 900m to the north west of the Site
Deciduous Woodland (0.49ha)	Woodland listed on the National Forest Inventory 2014	Woodland is located 900m to the south of the Site
Deciduous Woodland (0.48ha)	Woodland listed on the National Forest Inventory 2014	Woodland is located 900m to the north west of the Site.
Deciduous Woodland (0.63ha)	Woodland listed on the National Forest Inventory 2014	Woodland is located 1km to the north east of the Site
Deciduous Woodland (0.81ha)	Woodland listed on the National Forest Inventory 2014	Woodland is located 1.5km to the south west of the Site
Deciduous Woodland (0.8ha)	Woodland listed on the National Forest Inventory 2014	Woodland is located 1.6km to the north of the Site
Wood Pasture		Woodland is located 1.8km to the north of the Site
Parkland Habitat		Woodland is located 1.9km to the east of the Site

4.2 Field Survey

4.2.1 Phase 1 habitats

The habitats recorded in the Phase 1 Habitat Survey, their extent and distribution are shown in Table 10 and in Appendix A, along with Target Notes (TN) in Appendix B. For a more comprehensive species list and their abundance within each of the following listed habitats; see Appendix C. The total area of habitats measured in hectares is listed in Table 11. The location of the different areas, Areas 1 to 13 can be found in Figure 1 in Appendix A.

Table 10. Habitats present on Site

Habitat	Brief Description
Area 1 – Western Car Park	
Hard Standing	The majority of this area comprised of car parking spaces and pavements.
Amenity Grassland	A single block of amenity grassland ran along the northern edge of the car park. This block of vegetation was dominated by perennial rye grass (<i>Lolium perenne</i>) with occasional greater plantain (<i>Plantago major</i>) and daisy (<i>Bellis perennis</i>). A single black poplar (<i>Populus nigra betulifolia</i>) and pedunculate oak (<i>Quercus robur</i>) were also present growing within this grassland.
Introduced Shrub	Three blocks of introduced shrub; one hedge running along the edge of the substation, and two islands within the car park were present within this area. The introduced hedge present was dominated by Portuguese laurel (<i>Prunus lusitanica</i>) with two silver birch trees (<i>Betulus pendula</i>) emergent from the hedgerow.

Habitat	Brief Description
	The most northern island of introduced shrub had an abundant canopy of Norway maple (<i>Acer platanoides</i>) with an understory comprising of frequent Himalayan cotoneaster (<i>Cotoneaster simonsii</i>) and buddleia (<i>Buddleja davidii</i>) (TN9). The southern island of introduced shrub was dominated by coralberry (<i>Symphoricarpos orbiculatus</i>) with a few specimens of silver birch in the understory.
Line of Trees	A defunct line of trees ran north to south along the western edge of the carpark. This line of trees was dominated by beech (<i>Fagus sylvatica</i>) trees, with frequent examples of field maple (<i>Acer campestre</i>) and occasional instances of hawthorn (<i>Crataegus monogyna</i>), large-leaved lime (<i>Tilia platyphyllos</i>) and willow (<i>Salix</i> species).

Area 2 – Accident and Emergency Department

Buildings	The large A&E Building (B6) and Education Centre (B30) were located within this area.
Hard Standing	Hard standing that comprised the roads and pathways of this areas was present on site.
Amenity Grassland	Two blocks of amenity grassland running along the northern edge of the A&E building. This block of amenity grassland was dominated by perennial rye grass with occasional instances of dandelion (<i>Taraxacum officinale</i> aggregate) and greater plantain (<i>Plantago major</i>). A few pedunculate oaks were also growing within this block of habitat.
Introduced Shrub	Two blocks of introduced shrub were present, one running along the north of the A&E Department behind the bare ground and amenity grassland, and the second block ran along the edge of the ramp up to the A&E Department. The first block of introduced shrub had frequent instances of Japanese spindle (<i>Euonymus japonicus</i>) and Mexican orange (<i>Choisya ternata</i>) with occasional examples of cherry laurel (<i>Prunus laurocerasus</i>) and Oregon-grape (<i>Mahonia japonica</i>). The second block of introduced shrub had frequent instances of <i>Viburnum tinus</i> with occasional examples of cherry laurel. Two large Norway spruce (<i>Picea abies</i>) trees were also present within this block of habitat.
Bare Ground	A strip of bare ground runs along the roadside of the A&E building, between the amenity grassland and the hard standing.
Line of Trees	A line of trees on the traffic islands on the western edge of the A&E Department. This line of trees is dominated by English oak with rare examples of blackthorn (<i>Prunus spinosa</i>) and lime.

Area 3 – Maternity Ward

Buildings	A single large building, the Maternity Ward (B9), was present within the area on site.
Hard Standing	The roads and pathways made up the majority of the hard standing on site.
Amenity Grassland	Two blocks of amenity grassland, one north of the Maternity Ward, and one within a courtyard were present within this block of habitat. The block of external grassland was dominated by perennial rye grass with occasional shining cranesbill (<i>Geranium lucidum</i>) and daisy. The courtyard block of grassland was also dominated by perennial rye grass with occasional specimens of daisy and dandelion with a single instance of buddleia.
Introduced Shrub	Two blocks of introduced shrub, one represented by a hedge and the other a block of vegetation within the amenity grassland on site. The introduced hedge had frequent examples of wintergreen barberry (<i>Berberis julianae</i>) with occasional instances of Portuguese laurel and bearberry cotoneaster. The block of introduced vegetation was dominated by New Zealand hebe (<i>Hebe speciosa</i>) with frequent Chinese photinia (<i>Photinia serratifolia</i>) and a single large false acacia (<i>Robinia pseudoacacia</i>) tree emergent from the vegetation (TN1)
Scrub	A single block of scrub was located to the north east of the Maternity building. This block of scrub was dominated by a covering of English ivy (<i>Hedera helix</i>), with a frequent tree cover of holly (<i>Ilex aquifolium</i>).

Area 4 – Eastern Car Park

Hard Standing	The car park and existing road network makes up the majority of the hard standing in this area.
Amenity Grassland	A block of amenity grassland was present to the east of the car park space. The block of grassland was dominated by perineal rye grass with frequent examples of shining cranesbill and occasional examples of daisy. Two specimens of elm (<i>Ulmus minor</i> aggregate) and one pedunculate oak and false acacia were also growing within this block of vegetation.
Introduced Shrub	A block of introduced shrub was present on the eastern edge of the site. This vegetation was dominated by bramble (<i>Rubus fruticosus</i> aggregate) with frequent examples of Atlantic ivy (<i>Hedera hibernica</i>) and green alkanet (<i>Pentaglottis sempervirens</i>) with occasional occurrences of mugwort (<i>Artemisia vulgaris</i>) and stinging nettle (<i>Urtica dioica</i>).

Habitat	Brief Description
Semi Natural Broadleaved Woodland	Two blocks of semi natural broad-leaved woodland (TN5 and TN6), one either side of the car park with the block of introduced shrub between them. Both blocks of vegetation had frequent Turkey oak (<i>Quercus cerris</i>) with occasional sycamore (<i>Acer pseudoplatanus</i>) and rare instances of ash (<i>Fraxinus excelsior</i>) trees. The understory of these areas had occasional instances of snowberry (<i>Symphoricarpos albus</i>), elm and rhododendron (<i>Rhododendron ponticum</i>).

Area 5 – Greenacre Building

Building	The Greenacre Building (B20) is present within this area.
Hard Standing	The paths and road around the Greenacre Building make up the hard standing on site.
Amenity Grassland	A block of amenity grassland is present on the eastern edge of the Greenacre Building. This block of habitat was dominated by perennial rye grass with occasional examples of greater plantain. A single large wayfaring tree (<i>Viburnum lantana</i>) was present within this habitat.
Line of Trees	A line of trees ran along the north of the Greenacre Building. This line of trees had frequent instances of field maple and occasional instances of bearberry cotoneaster and hawthorn with rare instances of entire-leaved cotoneaster (<i>Cotoneaster integrifolius</i>) (TN12).

Area 6 – Pinewood Building Complex

Building	The Pinewood Complex that consists of the SIM Centre, Pinewood Building, INR, Rehab Building, Middlesex Suite and Pagett Ward (B21-26) is located within this area on the Site.
Hard Standing	The hard standing comprises of the road and pathways on site. Several planters near the Rehab building (B24) contained specimens of Japanese spindle, New Zealand hebe and wax begonia (<i>Begonia semperflorens</i>).
Amenity Grassland	Multiple unconnected blocks of amenity grassland were present around the Pinewood Building. These blocks of grassland were dominated by perennial rye grass with other typical species such as ribwort plantain (<i>Plantago lanceolata</i>), daisy and shining cranesbill present.
Introduced Shrub	A small block of introduced shrub was present to the north of the Pinewood Building was dominated by tri-cornered garlic (<i>Allium triquetrum</i>) with occasional instances of thyme (<i>Thymus vulgaris</i>) and dwarf mallow (<i>Malva neglecta</i>).
Bare Ground	A block of bare ground where two buildings (B27 & B28) had been demolished within this area of habitat.

Area 7 – Child Development Centre

Hard Standing	Hard standing comprising of the car park and pavement had a few rare examples of Norway maple growing in planters within this habitat.
Amenity Grassland	A block of amenity grassland surrounding the watercourse was dominated by perennial rye grass with frequent examples of creeping cinquefoil and occasional examples of greater plantain.
Bare Ground	A block of bare ground to the north of the car parking had occasional instances of cherry (<i>Prunus avium</i>) with rare specimens of ash and rose of Sharon (<i>Hypericum calycinum</i>) also present within this habitat.
Introduced Shrub	Two blocks of introduced shrub, one running along an access ramp and one hedge are present within this area. The ramp introduced shrub was dominated by cherry laurel with frequent examples of Atlantic ivy and occasional instances of Japanese spindle. The introduced hedge was dominated by box honeysuckle (<i>Lonicera nitida</i>) with occasional examples of cherry laurel.
Scrub	A block of scrub dominated by young sycamore trees with occasional examples of holly were present within this habitat.
Watercourse	A watercourse running through the amenity grassland and scrub had occasional instances of angelica (<i>Angelica sylvestris</i>) and bramble with rare examples of sycamore.

Area 8 – Furze Building

Building	The Furze (B9) building was located within this area.
Hard Standing	The roads, pavement and patio within this area makes up the hard standing of this area. A London plane tree (<i>Platanus x acerifolia</i>) is also present growing in the car park within this area.
Broad Leaved Woodland	A linear stretch of broad-leaved woodland was located south of the Furze building along the watercourse. The woodland canopy had frequent pedunculate oak and sycamore trees with occasional instances of ash. The understory had frequent holly and occasional cherry laurel and dogwood (<i>Cornus sanguinea</i>).

Habitat	Brief Description
	Rare cover of Himalayan balsam (<i>Impatiens glandulifera</i>) was present in close proximity to the watercourse (TN3).
Amenity Grassland	The amenity grassland south of the Furze building between the patio and woodland was dominated by perennial rye grass with frequent shining cranesbill and creeping cinquefoil. A single large Atlas cedar (<i>Cedrus atlantica</i>) with a holly tree growing from its trunk was also present within this block of habitat.
Introduced Shrub	An ornamental flower bed containing frequent Japanese spindle, with occasional yew (<i>Taxus baccata</i>) and English ivy was located south of the Furze building.
Species Poor Hedge	A species poor hedge runs along the eastern edge of the site contained elder (<i>Sambucus nigra</i>), English oak, holly and lime trees.
Watercourse	The watercourse running through the broad-leaved woodland had rare cover of yellow flag iris (<i>Iris pseudacorus</i>).

Area 9 – Busy Bees Centre

Building	The Busy Bees Nursery Centre (B18) is located within this area of the Site.
Hard Standing	The pavement and car parking spaces make up the hard standing within this area of Site.
Amenity Grassland	The amenity grassland surrounding the Busy Bees Centre was dominated by perennial rye grass with occasional examples of ribwort plantain and dandelion. Multiple specimens of downy birch (<i>Betula pubescens</i>) were present within this block of grassland.
Line of Trees	A line of trees runs along the western edge of the Site. This line of trees was dominated by lime trees, with occasional English ivy and rare cover Norway maple, silver birch and copper beech (<i>Fagus sylvatica purpurea</i>).

Area 10 – Alderbourne Rehabilitation Centre

Building	The Alderbourne Rehabilitation Centre (B19) and the Elderly Day Hospital (B17) were present within this area of Site.
Hard Standing	The road, car parking spaces and pavements make up the hard standing on the site.
Amenity Grassland	The amenity grassland was east of the Elderly Day Hospital was dominated by perennial rye grass with frequent greater plantain and occasional daisy and shining cranesbill. A single example of buddleia and a small block of cherry laurel were also present within this area.
Introduced Shrub	Two blocks of introduced shrub were located within this area, one to the south of the Alderbourne Rehabilitation Centre, and one within the amenity grassland within the area. The block of introduced shrub south of the Alderbourne Rehabilitation Centre had frequent Leyland cypress (<i>Cupressus x leylandii</i>) and Japanese mahonia (<i>Mahonia japonica</i>) with occasional firethorn (<i>Pyracantha angustifolium</i>) and Canadian fleabane (<i>Erigeron canadensis</i>). The block of vegetation within the amenity grassland was dominated by firethorn with occasional English ivy and Norway maple.

Area 11 – Woodland

Broad-leaved Woodland	A large block of woodland was located to the south of the site. The canopy of this block of woodland is dominated by pedunculate oak with occasional ash trees, with an understory of occasional yew, field maple and hawthorn. The forest floor has frequent bramble and English ivy and occasional cleavers (<i>Galium aparine</i>) and pendulous sedge.
Amenity Grassland	A block of amenity grassland was located in the garden west of the woodland. This block of amenity grassland was dominated by perennial rye grass.
Introduced Shrub	Blocks of introduced shrub are present within the garden west of the woodland. These blocks of introduced shrub contain species such as Pampas grass (<i>Cortaderia selloana</i>), Spanish dagger (<i>Yucca gloriosa</i>) and thyme.
Watercourse	The watercourse that runs through the woodland contains frequent pendulous sedge (<i>Carex pendula</i>) and rare cover of yellow flag iris (TN17).
Hard Standing	A path runs through the garden to the west of the broad-leaved woodland.

Area 12 - Site (South)

Hard Standing	The road and carpark within this area makes up the hard standing on site.
Amenity Grassland	The amenity grassland on the eastern end of the area was dominated by perennial rye grass with occasional greater plantain. Multiple ash trees were also present growing within the habitat on site.

Habitat	Brief Description
Semi-Natural Woodland	A block of semi natural woodland on the eastern end of the line of trees was present within this area. The canopy of this block of woodland was dominated by English oak with an understory of frequent European spindle and holly.
Fence	A fence running along the edge of the site has a line of Norway maple and hawthorn running along its length.
Line of Trees	A line of trees runs along the southern edge of the habitat from the Busy Bees Centre to the woodland. This line of trees has frequent pedunculate oak with occasional examples of Norway maple and lime, with a ground cover of frequent cleavers and occasional instances of bramble and English ivy.

Area 13 – Tudor Building

Buildings	Two buildings; the Tudor Building (T14) and the Old Creche (T15) are both located within this area.
Hard Standing	The pathway within this area makes up the hard standing in this area.
Amenity Grassland	Three blocks of amenity grassland were present within this area on site, one block south of the Old Creche building, one block south of the Tudor Building and the third block north of the buildings. The block of grassland south of the Tudor Building was dominated by perennial rye grass with frequent daisy and occasional ribwort plantain. Single examples of firethorn and Siberian dogwood (<i>Cornus alba</i>) were growing within this habitat. The block of grassland behind the Old Creche was dominated by perennial rye grass with occasional examples of greater plantain. The block north of the buildings was dominated by perennial rye grass with frequent examples of greater plantain.
Introduced Shrub	Two blocks of introduced shrub, one within the Tudor building garden, and one north of the same building on the banks of the watercourse. The block of introduced shrub in the Tudor garden was dominated by rosemary (<i>Salvia rosmarinus</i>) with frequent Chinese gooseberry (<i>Actinidia</i> species) and occasional examples of garden thyme (<i>Thymus vulgaris</i>) and shrubby St John's wort (<i>Hypericum prolificum</i>). The block of introduced shrub to the north of the Tudor building was dominated by firethorn with occasional staghorn sumac (<i>Rhus typhina</i>), ash and pendulous sedge.
Scrub	A single block of scrub was present within the Tudor Building garden. This scrub had frequent examples of Leyland cypress and occasional examples of green alkanet, bramble and holly.

Table 11. Habitats on Site listed by area (in hectares)

Habitat	Area (in hectares)	% of Site
Hard Standing	4.26	37.3%
Building	2.77	24.2%
Not Accessed	1.82	15.9%
Cultivated/ Disturbed Land - Amenity Grassland	1.29	11.3%
Bare Ground	0.58	5.0%
Broadleaved Woodland - Semi-natural	0.52	4.5%
Introduced Shrub	0.13	1.2%
Scrub - Dense/ Continuous	0.03	0.3%
Running Water	0.02	0.2%
Other Tall Herb and Fern - Ruderal	0.002	0.02%
Total	11.42 ha	100%

The total length of hedgerow is approximately 376metres.

4.2.2 Notable habitats

Table 12 provides a summary of notable habitats found on the Site based on the results of the Phase 1 habitat survey and with reference to guidance for the recognition of NERC Act S41 and Site of Importance for Nature Conservation (SINC) quality habitats. These habitats should be retained, protected and incorporated into the design of the development. Table 13 contains photographs of notable habitats.

Table 12. Notable Habitats within the Site

Habitat	NERC Act	LBAP	LWS Quality	Supporting Comments
Rivers and streams	✓	X	X	The watercourse with the Site is a tributary of the River Pinn, which is a UK BAP habitat.
Hedgerows	✓	X	X	There was one species-rich hedgerow along the western boundary of the Site that conforms to the Habitat of Principal Importance (i.e. UKBAP definition) of a 'hedgerow'.
Lowland mixed deciduous woodland	✓	X	X	Woodland bordered the northern, eastern and southern boundaries is suitable to qualify as the Habitat of Principal Importance Lowland Mixed Deciduous Woodland.

Key to symbols: ✓ = yes, X = no

Table 13. Photographs of notable habitats

Broadleaved woodland	
	
Watercourse	
	



4.3 Protected and Notable Species

Table 14 provides a summary of potentially relevant protected and/or notable species identified through a combination of desk study and field surveys. The table summarises the conservation status of each species and provides comment on their likelihood of presence on and surrounding site. Where species are identified as likely or possible, they are likely to represent planning or legal constraints. Further surveys may be required to determine presence or probable absence. Requirements for further survey are identified in Section 5.4 of this report.

Table 14. Data Records for Protected and Notable Species

Species	Legally Protected Species	Species of Principal Importance	Other Notable Species	Present on Site?	Present/Potentially Present on Site	Supporting Comments
Notable Invertebrates	-	✓	✓	-	X	
Small Heath (<i>Coenonympha pamphilus</i>)						Three records of small heath butterfly and 55 records of stag beetle were recorded within 1km of Site over the last 10 years.
Stag Beetle (<i>Lucanus cervus</i>)						Stag beetle was recorded on site in June 2021 around the building B10 during one emergence survey for bats. Deadwood habitat suitable for stag beetle was present within the woodland parcels. The Site lacked rough grassland suitable for small heath caterpillars.
Reptiles	✓	✓	✓	-	X	
Slowworm (<i>Anguis fragilis</i>)						Six records of slowworms were recorded within 1km of Site over the last 10 years. The site lacked hibernation and basking sites suitable for slow worms and all grassland was well-managed.
Breeding Birds	✓	✓	✓	✓	✓	
Barn Swallow (<i>Hirundo rustica</i>)						Grey wagtail, dunnock and greater spotted woodpecker were recorded during the visit on site.
Bullfinch (<i>Pyrrhula pyrrhula</i>)						Multiple breeding bird species were recorded within 1km of Site over the last 10 years.
Dunnock (<i>Prunella modularis</i>)						There was suitable habitat for breeding birds on Site.
Greater Spotted Woodpecker (<i>Dendrocopos major</i>)						
Grey Wagtail (<i>Motacilla cinerea</i>)						
House Martin (<i>Delichon urbicum</i>)						
House Sparrow						

Species	Legally Protected Species	Species of Principal Importance	Other Notable Species	Present on Site?	Present/Potentially Present on Site	Supporting Comments
(<i>Passer domesticus</i>)						
Mistle Thrush (<i>Turdus viscivorus</i>)						
Song Thrush (<i>Turdus philomelos</i>)						
Swift (<i>Apus apus</i>)						
Willow Warbler (<i>Phylloscopus trochilus</i>)						
Schedule 1 Birds	✓	✓	✓	-	✓	Sightings of red kite and peregrine falcon were recorded during the survey visit close to the Site.
Kingfisher (<i>Alcedo atthis</i>)						Three records of kingfisher and two records of red kite were recorded within 1km of the site over the last 10 years.
Red Kite (<i>Milvus milvus</i>)						During the breeding bird surveys undertaken in spring/summer 2021, peregrine falcon was recorded breeding within the Site.
Peregrine Falcon (<i>Falco peregrinus</i>)						
Bats	✓	✓	✓	-	✓	Multiple bat records were recorded within 1km of the site over the last 10 years.
Brown Long-eared Bat (<i>Plecotus auritus</i>)						Buildings and trees on Site were suitable for bats.
Common Pipistrelle (<i>Pipistrellus pipistrellus</i>)						
Leisler's Bat (<i>Nyctalus leisleri</i>)						
Myotis species						
Nathusius's Pipistrelle (<i>Pipistrellus nathusii</i>)						
Noctule Bat (<i>Nyctalus noctula</i>)						
Serotine (<i>Eptesicus serotinus</i>)						
Soprano Pipistrelle (<i>Pipistrellus pygmaeus</i>)						
Other Mammals (Excluding Bats)	✓	✓	✓	-	✓	Eight records of hedgehog and two records of badger were recorded within 1km of the site over the last 10 years.
Badger (<i>Meles meles</i>)						The woodland and gardens were suitable for badger and hedgehog however these were isolated habitats in a wider urban context.
Hedgehog (<i>Erinaceus europaeus</i>)						
Invasive Non-native Species	✓	-	✓	✓	✓	Multiple non-native invasive species were recorded on site during the survey visits. These are marked with an *asterisk.
*Buddleia (<i>Buddleja davidii</i>)						In an updated invasive non-native species survey in June 2021, Japanese knotweed was recorded within the Site, within an area to the south of the Site (TN19).
Cherry Laurel (<i>Prunus laurocerasus</i>)						Multiple non-native invasive species were recorded within 1km of the Site over the last 10 years.
*Entire Leaved Cotoneaster (<i>Cotoneaster integrifolius</i>)						
*False Acacia (<i>Robinia pseudoacacia</i>)						
Floating Pennywort (<i>Hydrocotyle ranunculoides</i>)						
Giant Hogweed (<i>Heracleum mantegazzianum</i>)						
Goat's Rue (<i>Galega officinalis</i>)						
*Green Alkanet (<i>Pentaglottis sempervirens</i>)						
Highclere Holly (<i>Ilex x altaclerensis</i>)						
*Himalayan Balsam (<i>Impatiens glandulifera</i>)						
*Himalayan Cotoneaster (<i>Cotoneaster simonsii</i>)						
*Holm Oak (<i>Quercus ilex</i>)						
*Rhododendron						

Species	Legally Protected Species	Species of Principal Importance	Other Notable Species	Present on Site?	Present/Potentially Present on Site	Supporting Comments
(<i>Rhododendron ponticum</i>)						
*Snowberry						
(<i>Symphoricarpos albus</i>)						
*Three Cornered Garlic						
(<i>Allium triquetrum</i>)						
*Turkey Oak (<i>Quercus cerris</i>)						

4.3.1 Schedule 1 birds

There was a single peregrine falcon identified close to the Site during the survey. It was seen on the roof of a water tower and on the ledge of the chimney 200m north of the Site. The hospital staff confirmed that a pair of peregrine falcons had previously successfully nested on the Site.

Further bird surveys undertaken by AECOM within the Site in spring/summer 2021 confirmed the use of a building within the Site for breeding peregrine falcons. Due to confidentiality requirements around Schedule 1 bird species, this report that will be on public domain will not detail the location of the nest. A separate report is prepared for the peregrine falcon and breeding bird survey⁶.

Other Schedule 1 birds identified within the desk study include kingfisher and red kite.

The watercourse on site was channelised and exposed and was unlikely to provide opportunity for kingfisher (*Alcedo atthis*) to create burrows for breeding. The shallow stream did not have much flowing water, was highly disturbed and was unlikely to contain fish for foraging, although it was connected to the River Pinn, located 800m west that provides more suitable habitat for kingfisher. No kingfisher was recorded during the breeding bird survey undertaken on site.

A pair of red kites was seen flying over the site during the survey. The area of woodland on-site contained some tall semi-mature trees that would be suitable for nesting red kites however this was a small isolated woodland within an urban context and it may be possible that red kites nest in more suitable woodlands nearby as identified in Table 9. Red kite pairs are known to have up to five nest sites within their breeding territory⁷.

There were no black redstart (*Phoenicurus ochruros*) records within 1km of the Site within the last 10 years returned from GiGL, however the London Bird Atlas⁸ indicates that there have been records from within the borough. The Site lacked extensive industrial brownfield habitat suitable for black redstart and the adjacent habitat was suburban with several green spaces that had less suitability for black redstart. No black redstart was recorded during the breeding bird survey undertaken on site.

4.3.2 Breeding birds

The trees, woodland, scrub, introduced shrub, gardens, watercourse and buildings on the Site were suitable to support breeding birds, including red/amber listed birds⁹ records returned from GiGL (see Table 14). Grey wagtail, dunnoek and greater spotted woodpecker were recorded during the site visit.

⁶ AECOM, 2021. Hillingdon Hospital. Peregrine falcon and Breeding Bird Report.

⁷ <https://www.rspb.org.uk/birds-and-wildlife/wildlife-guides/bird-a-z/red-kite/nesting-and-breeding-habits/>

⁸ Woodward I., Arnold, R. & Smith N. (2017) The London Bird Atlas. Joint published by the British Trust for Ornithology and the London Natural History Society.

⁹ BTO (2015) Birds of Conservation Concern 4

4.3.3 Roosting bats

Preliminary Roost Assessment – Buildings

There were several buildings on Site with suitability for roosting bats. The suitability of the buildings along with Potential Roost Features (PRFs) present is summarised in Table 15 and shown in Appendix A, Figure 2.

There was one building with **High** suitability for roosting bats:

- The Furze building (B10) was a complex two storey building with multiple pitched roofs, covered with sections of slate and clay pitched tiles. There were gaps suitable for bats under lifted flashing, dormer windows, slipped tiles, gaps in brickwork and under guttering.

There were 7 buildings with **Moderate** suitability for roosting bats:

- The Beaconsfield building (B16) was an in-use, single-story building with a hipped bitumen roof and wooden panelling / barge boards on the walls with several gaps. A staff corridor connects it to several other hospital buildings.
- The Alderbourne Rehabilitation Centre (B19) was a complex, single-story building with a hipped bitumen roof and wooden panelling / barge boards on the walls with several gaps.
- The SIM Centre (B21), Pinewood (B22), Rehab (B24) Middlesex Suite (B25) and the Pagett Ward (B26) were several single-storey buildings connected by corridors with pitched bitumen and asbestos roof panels. There were several gaps suitable for roosting bats in the gables ends, barge boards and damaged soffits.

There were 8 buildings with **Low** suitability for roosting bats:

- The main hospital building and Tower Block (B6) was a large complex with a 10-storey section. No gaps were identified but due to the scale of the building there may be some unidentified gaps.
- The Maternity building (B9) was a large 6-storey L-shaped building with a flat roof. Some gaps were identified at the entrance porch but due to the scale of the building there may be some unidentified gaps.
- The Tudor building (B14) was a two-storey hospital residence with a pitched tiled clay roof and was constructed of red brickwork. There were several gaps in the ridge tiles suitable for roosting bats.
- The Old Creche (B15) was a single-storey flat-roofed temporary building in poor condition with gaps in the soffits suitable for roosting bats.
- The Elderly Day Hospital (B17) was a single-story building with a hipped bitumen roof and wooden panelling / barge boards on the walls with a few gaps suitable for roosting bats.
- The Nursery (B18) was a single-story building with a pitched tiled roof.
- The INR (B23) was a single-storey building connected by corridors with pitched bitumen and asbestos roof panels. There was a gap suitable for roosting bats under the barge boards.
- The Education Centre (B30) was a large two-storey building with a pitched tiled roof and wooden bargeboard panelling on the wall. There were gaps in damaged soffits suitable for roosting bats.

There were three other buildings with **Negligible** suitability for roosting bats, including the Bevan ward (B8), Green Acres (B20), and a plant room (B29). These buildings lacked suitable Potential Roost Features, or where suitable gaps existed, these were in unsuitable locations in well-used and well-lit areas.

Five buildings appearing on the Ordnance Survey base mapping had been demolished prior to the ecology survey (B7, B11, B12, B27, B28) and one building (B13) was within an active construction site and so was not assessed for its suitability to support roosting bats.

Table 15. Preliminary roost assessment – Buildings

ID	Name	PRF ID	PRF description	Overall BRP	Notes
B6	Main hospital & Tower Block		Not all PRFs could be identified due to building height	Low	
B7	Endoscopy				Not present, previously demolished
B8	Bevan Ward			Negligible	
B9	Maternity Building	9a	Gaps in porch soffit	Low	Entrance to busy maternity ward, well-lit. Not all PRFs could be identified due to building height
		9b	Gaps in porch soffit		
		9c	Lifted bitumen		Security lighting
B10	The Furze	10a	Slipped roof tiles & gaps in brickwork	High	Photo 2
		10b	Gaps in dormer windows		
		10c	Gaps in dormer windows		
		10d	Gap under gutter at roof level		
		10e	Gaps in dormer windows		
		10g-h	Various gaps in 3 pitched roofs		
		10i	Lifted lead flashing and gaps in brickwork		
B11	Sheds				Not present, previously demolished
B12	Paediatric Building 1				Not present, previously demolished
B13	Paediatric Building 2				Within a current construction zone. Not assessed
B14	Tudor Centre	14a-c	Ridge tiles with vents on pitched roof, no security lighting, adjacent to garden corridor	Low	
B15	Old Creche	15a	Damaged soffit	Low	
		15b	Gap in soffit		
B16	Beaconsfield	16a	Gap in barge boards on canopy	Moderate	Photo 3
		16b	Gap in barge boards on gable end		
B17	Elderly Day Hospital	17a	Ivy on barge boards	Low	
		17b	Gap in barge boards on gable end		
		17c	Gap in barge boards on canopy		
		17d	Gap in barge boards on roof hip		
		17e	Missing soffit panel on staff corridor		
B18	Nursery		No PRFs identified	Low	Survey recommended as a precaution
B19	Alderbourne Rehabilitation Centre	19a	Gaps in barge boards	Moderate	
		19b	Gaps in barge boards		
		19c	Hole leading to cavity wall		
		19d	Gap in lead flashing on ridge		

ID	Name	PRF ID	PRF description	Overall BRP	Notes
		19e	Gap in barge boards		
		19f	Gap in barge boards		
		19g	Gap in barge boards		
		19h	Gap in barge boards		
B20	Green Acres			Negligible	
B21	SIM Centre	21a	Lifted bitumen on west gable end	Moderate	
		21b	Gap in east gable end airing door		
		21c	Gap in barge boards on porch		
B22	Pinewood	22a	Gap in west gable end		
		22b	Gaps in east gable end		
B23	INR	23a	Gap in barge boards	Low	
B24	Rehab	24a	Gap in barge boards	Moderate	
		24b	Gap in barge boards		
		24c	Gap under soffit		
		24d	Gap in east gable end airing door		
		24e	Damaged soffit corner		
B25	Middlesex Suite	25a	Hole leading to cavity wall	Moderate	
		25b	Gap in west gable end		
		25c	Gap in barge boards		
		25d	Gap in barge boards on porch		
		25e	Gap in west gable end		
		25f	Gap in soffit		
B26	Pagett Ward	26a	Gap in under asbestos roof sheets at gable end	Moderate	Photo 4
		26b	Gap under eaves of asbestos roof sheets		
		26c	Gap in airing door at gable end apex		
B27					Not present, previously demolished
B28					Not present, previously demolished
B29	Plant room		Holes in panelling	Negligible	
B30	Education Centre	30a	Gap in damaged soffit	Low	Photo 1
		30b	Gap in damaged soffit		

The photographs below indicate some key potential roost features (PRFs) associated with the buildings (Table 16) as example of some of the PRFs identified.

Table 16. Photographs of PRFs on Site

 Photo 1. Gap in soffit (B30)	 Photo 2 Slipped slates (B10)
 Photo 3. Gaps in bargeboards (B16)	 Photo 4 Gap in porch (B26)

Preliminary Roost Assessment – Trees

There were eight trees with **Moderate** suitability for roosting bats and 23 trees with **Low** suitability for roosting bats. Trees with Negligible suitability were omitted from the assessment, except for T165 which had suitable cavities but was in a busy unsuitable location, with a small trunk (less than 15cm diameter). The suitability of the trees along with Potential Roost Features (PRFs) present is summarised in Table 17 and shown in Appendix A, Figure 2.

Table 17. Preliminary roost assessment – Trees

ID	Species (check against arb survey)	PRF description	PRF height	PRF aspect	Overall BRP Notes
T4	Yew	Dense ivy on trunk	n/a	n/a	Low
T5	Yew	Dense ivy on trunk	n/a	n/a	Low
T8	Sycamore	Dense ivy on trunk	n/a	n/a	Low
T9	Dawn redwood	Dense ivy on trunk	n/a	n/a	Low
T10	Sycamore	Dense ivy on trunk	n/a	n/a	Low
T11	Oak	Dense ivy on trunk	n/a	n/a	Low
T12	Cedar of Lebanon	Woodpecker hole	6m	West	Moderate
		Healed wound	4m	East	

ID	Species (check against arb survey)	PRF description	PRF height	PRF aspect	Overall BRP	Notes
T14	Oak	Dense ivy on trunk			Moderate	
		Woodpecker hole	8m	East		
		Split branch	12m	South		
T24	Sycamore	Dense ivy on trunk	n/a	n/a	Low	
T49	False Acacia	Dense ivy on trunk	n/a	n/a	Low	
T59	Horse chestnut	Split trunk	3.5m	West	Moderate	
		Callus roll	2m	South		
T68	English oak	Split branch	12m	East	Low	Within wooded area
T70	English oak	Callus roll	8m	East	Low	Within wooded area
T95	Oak	Callus roll on branch	12m	South west	Moderate	
		Dense ivy on trunk	n/a	n/a		
T97	Ash	Dense ivy on trunk	n/a	n/a	Low	
T98	Ash	Dense ivy	n/a	n/a	Low	
T99	Oak	Woodpecker hole on trunk	6m	South	Moderate	
		Woodpecker hole on branch	3m	South west		
T102	Ash	Callus roll on branch	8m	East	Moderate	
T107	Ash	Dense ivy on trunk	n/a	n/a	Low	
T110	Oak	Dense ivy on trunk	n/a	n/a	Low	
T117	Oak	Dense ivy on trunk	n/a	n/a	Low	
T128	Oak	Dense ivy on trunk	n/a	n/a	Low	
T129	Oak	Dense ivy on trunk	n/a	n/a	Low	
T130	Ash	Rot hole on trunk extending vertically	2.5m	South	Moderate	
T143	Sycamore	Dense ivy on trunk	n/a	n/a	Low	2 trees
T154	Cherry	Trunk split	2m	South	Low	
T176	Oak	Gap in wound on branch	10m	South	Moderate	Tall mature street tree
T178a	Plum	Dense ivy on trunk	n/a	n/a	Low	Located close to well-disturbed, well-lit hospital entrance
T178b	Plum	Dense ivy on trunk	n/a	n/a	Low	
T165	Plum	Knothole and peeling bark	1.5m	East	Negligible	Well disturbed during the day, thin specimen (trunk less than 15cm diameter)
T181	Oak	Rot hole in branch wound	5m	South-east	Low	Mature street tree close to street lights
T182	Oak	Split branch	15m	South	Low	Mature street tree close to street lights

At the time of writing this report, July 2021, some bat emergence and re-entry surveys have been undertaken on site for buildings and trees. Two suspected bat roost have been identified, one in a building to the west of the Site (B19) and the other in a tree (T14).

4.3.4 Other Mammals (excluding bats)

Eight records of hedgehog and two records of badger were recorded within 1km of the site over the last 10 years. Hedgehog is a species listed on section 41 of the NERC Act as a species of Principal Importance and badger are protected under the Protection of Badgers Act 1992.

The woodland and gardens in the south of the Site were suitable for hedgehog and badger. However, these were small, isolated habitats in a wider urban context.

A mammal hole was found in the woodland (TN16 in Figure 1) and a single mammal path was seen in a garden in the south of the Site (TN18 in Figure 1). The hole looked small and not heavily used and more likely associated with a red fox (*Vulpes vulpes*).

4.3.5 Invertebrates

Stag beetles were recorded in different locations around the Furze (B10) in June 2021 during bat emergence surveys. Stag beetle is a species of Principal Importance listed on Section 41 of the NERC Act. Stag beetles live in woodland edges, hedgerows and parks. The larvae feed on decaying wood under the ground. Suitable habitat is present on site within the woodland areas.

4.3.6 Invasive species

Five invasive non-native species listed on Schedule 9 of the Wildlife and Countryside Act (WCA) and 8 species listed on the London Invasive Species Initiative were recorded on site in November 2020. Most of these species had become established in the wild and had the potential to spread into other areas of site if left unmanaged. Table 18 lists these species, as well as the relevant legislation or policy that covers them. Photographs are shown in Table 19.

Table 18. List of Invasive Non-Native Plants

Species Name	Legislation/Policy	Further Details
Bearberry Cotoneaster (<i>Cotoneaster dammeri</i>)	LISI	LISI Category 2: Species of high impact or concern present at specific sites that require attention (control, management, eradication etc).
Buddleia (<i>Buddleja davidii</i>)	LISI	Category 3: Species of high impact or concern which are widespread in London and require concerted, coordinated and extensive action to control/eradicate.
Cherry Laurel (<i>Prunus laurocerasus</i>)	LISI	Category 3: Species of high impact or concern which are widespread in London and require concerted, coordinated and extensive action to control/eradicate.
Entire-leaved Cotoneaster (<i>Cotoneaster integrifolius</i>)	Schedule 9/LISI	Schedule 9 plants are illegal to let spread into a neighbouring property. LISI Category 2: Species of high impact or concern present at specific sites that require attention (control, management, eradication etc).
False Acacia (<i>Robinia pseudoacacia</i>)	LISI	Category 4: Species which are widespread for which eradication is not feasible but where avoiding spread to other sites may be required
Green Alkanet (<i>Pentaglottis sempervirens</i>)	LISI	Category 6: Species that were not currently considered to pose a threat or have the potential to cause problems in London
Himalayan Cotoneaster (<i>Cotoneaster simonsii</i>)	Schedule 9/LISI	Schedule 9 plants are illegal to let spread into a neighbouring property. LISI Category 2: Species of high impact or concern present at specific sites that require attention (control, management, eradication etc).
Himalayan Balsam (<i>Impatiens glandulifera</i>)	Schedule 9/LISI	Schedule 9 plants are illegal to let spread into a neighbouring property. Category 3: Species of high impact or concern which are widespread in London and require concerted, coordinated and extensive action to control/eradicate.
Holm Oak (<i>Quercus ilex</i>)	LISI	Category 5: Species for which insufficient data or evidence was available from those present to be able to priorities

Species Name	Legislation/Policy	Further Details
Hollyberry cotoneaster	Schedule 9/LISI	Schedule 9 plants are illegal to let spread into a neighbouring property. LISI Category 2: Species of high impact or concern present at specific sites that require attention (control, management, eradication etc).
Japanese knotweed (<i>Reynoutria japonica</i>)	Schedule 9/LISI	Schedule 9 plants are illegal to let spread into a neighbouring property. Category 3: Species of high impact or concern which are widespread in London and require concerted, coordinated and extensive action to control/eradicate
Rhododendron (<i>Rhododendron ponticum</i>)	Schedule 9/LISI	Schedule 9 plants are illegal to let spread into a neighbouring property. LISI Category 2: Species of high impact or concern present at specific sites that require attention (control, management, eradication etc).
Snowberry (<i>Symphoricarpos albus</i>)	LISI	LISI Category 2: Species of high impact or concern present at specific sites that require attention (control, management, eradication etc).
Three Cornered Garlic (<i>Allium triquetrum</i>)	Schedule 9/LISI	Schedule 9 plants are illegal to let spread into a neighbouring property. Category 4: Species which are widespread for which eradication is not feasible but where avoiding spread to other sites may be required
Turkey Oak (<i>Quercus cerris</i>)	LISI	Category 5: Species for which insufficient data or evidence was available from those present to be able to priorities

There are two additional non-native species, coralberry (*Symphoricarpos orbiculatus*) and western snowberry (*Symphoricarpos occidentalis*) on site which are not included on either the Wildlife and Countryside Act or LISI, which also have the potential to become invasive and spread across site.

During an update survey in June 2021, Japanese knotweed (*Reynoutria japonica*) (see TN19 in Figure 1 in Appendix A) and hollyberry cotoneaster (*Cotoneaster bullatus*), both Schedule 9 species, were identified within the Site.

Table 19. Photographs of INNS

		
Himalayan balsam	Rhododendron	Cotoneaster species

5. Identification of Ecological Constraints and Recommendations

5.1 Approach to the Identification of Constraints

Relevant ecological receptors that may represent constraints to the Proposed Development, or that provide opportunities to deliver ecological enhancements in accordance with planning policy are identified in Section 2 of the report.

Compliance with the planning policy required that the Proposed Development considers and engaged the following mitigation hierarchy where they impact on relevant ecological receptors.

- a. Avoided biodiversity features where possible;
- b. Minimise impact by design, method of working or other measures (mitigation) e.g. by enhancing existing features; and
- c. Compensate for significant residual impacts, for example by providing suitable habitats elsewhere (whether in the confines of the Site or otherwise).

The hierarchy required the highest level to be applied where possible. Only where this cannot reasonably be adopted should lower levels be considered. The rationale for the proposed mitigation and/or compensation should be provided with planning applications, including significant detail to show that these measures are feasible and would be provided.

The likelihood of the relevant ecological features constraining the Proposed Development has been assessed with reference to the scale described in Table 20. The higher the importance of the ecological feature for the conservation of biodiversity at national and local scales, the more likely it is to be a material consideration during determination of a planning application. In pursuance of the NPFF of providing net gains in biodiversity where possible, consideration should be given to the scope for enhancement as part of the Proposed Development. This should represent biodiversity net gain over and above that achieved through mitigation and compensation. Enhancement can also be achieved within and/or outside the red line boundary of the Proposed Development.

Opportunities for ecological enhancement can be identified in the accompanying appraisal. There may be scope where existing habitat features could be improved or enhanced within the Proposed Development as designed, or with only minor amendment to the design. Ecological enhancement may not be possible where there is little scope to accommodate enhancement within the Proposed Development, e.g. due to a lack of utilisable space, or where the land is required for essential mitigation. Consideration could also be given to enhancing biodiversity in the vicinity of the Site.

Table 20. Scale of Constraint to Development

Likelihood	Definition
High	An actual or potential constraint that is subject to relevant legal protection and is likely to be a material consideration in determining the planning application (e.g. statutory nature conservation designations and European/nationally protected species). Further survey likely to be required (as detailed in this report) to support a planning application.
Medium	An actual or potential constraint that is covered by national or local planning policy and, depending on the level of the potential impact as a result of the proposed development, may be a material consideration in determining the planning application. Further survey may be required (as detailed in this report) to support a planning application.
Low	Unlikely to be a constraint to development or require further survey prior to submission of a planning application. Mitigation is likely to be covered under Construction Environmental Management Plan (CEMP) or precautionary working method statement (e.g. generic requirements for the management of nesting bird risks).

5.2 Constraints and Recommendations for Further Surveys – Designated Sites

5.2.1 Statutory designations

The desk study identified that there were nine sites with statutory designations within 5km of the Site. The nearest is Yeading Woods LNR designated for its woodland, meadows and river habitats, located 2.9km to the north-east.

There is unlikely to be any potential negative impacts on the statutorily designated sites within 5 km as there are a lack of pathways to the Proposed Development. No significant impacts on the designated sites by the increase of recreational pressure (up to 375 new dwellings) are expected due to distance from the Site and the retention and improvement of the woodland and river environs within the Site as on Site greenspace provision.

Any potential indirect impacts on statutory sites will be avoided by preparing and implementing a CEMP detailing measures to control dust deposition, pollution/spillage, noise, vibration or lighting pollution during construction.

5.2.2 Non-statutory designations

The desk study identified that there were four sites with non-statutory designations within 1km of the Site, the closest 210m to the north of the Site (The Grove)

One of these sites, the River Pinn and Manor Farm Pastures (Borough Grade II), is designated for its floodplain habitats and is located 400m north-west. The watercourse within the Site is a tributary of the River Pinn and a separate aquatic ecological assessment should be undertaken to identify potential impacts.

Potential indirect impacts on the other three non-statutory sites will be avoided by preparing and implementing a CEMP detailing measures to control dust deposition, pollution/spillage, noise, vibration or lighting pollution during construction. No significant impacts on the designated sites by the increase of recreational pressure (up to 375 new dwellings) are expected due to distance from the Site and the retention and improvement of the woodland and river environs within the Site as on Site greenspace provision.

5.3 Constraints and Recommendations for Further Surveys – Habitats

There were three habitats on-site that are recognised as priority habitats under Section 41 of the NERC Act 2006; the watercourse (175m), a species-rich hedge with trees (220m) and deciduous woodland (4.5 ha).

It is recommended that a Water Framework Directive Screening and Scoping is undertaken to assess any impacts on the watercourse.

It is recommended that the woodland and hedgerow should be retained, protected and incorporated into the design of the development.

Some trees on the Site may be trimmed back or felled as a result of Proposed Development. Trees are a material constraint in the planning process, therefore an Arboriculture Impact Assessment (AIA) should be prepared for the Site to support planning application and recommendations should be followed. The tree survey has been undertaken by Landmark Trees Ltd in November 2020 and January 2021.

5.4 Constraints and Recommendations for Further Surveys – Protected and Notable Species

5.4.1 Schedule 1 Birds (Peregrine falcon)

There were no records of peregrine falcon in the desk study but it is understood that the peregrine falcons have recently bred on Site and were seen during the Phase 1 Habitat Survey on site and resting on adjacent areas.

It is recommended that further surveys are carried out during the peregrine nesting season (February-July) and the results submitted in the planning application. Surveys spaced approximately one month apart are recommended from February to July 2021 (nesting season) to determine whether there is an active nest or not.

Peregrine falcons are listed on Schedule 1 of the W&CA and so are afforded special protection. A Schedule 1 licence may be required to protect the peregrines if they are nesting during the demolition and construction period. However, it is recommended that works commence either well before, or immediately after, the nesting period to avoid potential disturbance and the requirements for a licence.

The peregrine falcon surveys would provide an opportunity to investigate the potential occurrence of two other Schedule 1 bird species potentially relevant to the Site – red kite and black redstart.

Peregrine falcons were recorded breeding on site during the recommended surveys during spring and summer. Due to confidentiality requirements around Schedule 1 bird species, information around peregrines (such as exact location) will be reported separately. Please refer to the Peregrine falcon and Breeding Bird report for more details⁶.

5.4.2 Breeding birds

Birds and their nests are protected by the Wildlife and Countryside Act 1981 (as amended).

It is recommended to retain all trees, woodland and scrub on Site. However, it is recommended that any necessary vegetation clearance is undertaken (where possible) outside of the period that bird species are likely to be breeding (between March and August inclusive). Although there is no legally defined breeding season, it is widely accepted that removal of suitable habitat should be avoided between the core nesting season from March to August inclusive.

If the vegetation is to be cleared between March and August inclusive, an ecologist will need to confirm the absence of active bird nests immediately prior to works commencing to avoid a breach of legislation. It is also recommended that the amenity grassland is continued to be mown to avoid ground nesting birds becoming established.

If a nest is discovered, clearance or other construction works should be stopped immediately within a species-specific exclusion zone. The exclusion zone will be demarcated appropriately. The nest will subsequently be monitored, typically on a weekly basis, by a suitably qualified ecologist. Once it is confirmed that all fledglings have flown and ceased to return to the nest, and that no other nests are in use within the exclusion zone, the vegetation can be removed.

5.4.3 Bats

As described in Section 4.3.3, several buildings and trees had suitability to support roosting bats due to suitable gaps in the buildings' structure and trees.

In order to investigate the presence / absence of roosting bats in the buildings, further surveys are recommended. Bat surveys should be carried out in the bat active season (May to August) by surveyors covering the potential roost features, as described in Table 15 and Table 17. Nocturnal emergence (dusk) or re-entry (dawn) surveys will be required and the number of surveys per building is recommended according to the methods outlined in Section 3.2.4. A summary of recommended surveys per building is provided in Table 21 and shown in Appendix A, Figure 2.

Further surveys for the 8 trees with **Moderate** suitability for roosting bats are recommended. The trees should be climbed (if safe to do so), and the potential roost features inspected by a bat-licensed ecologist. Where inspected features are found to be suitable for roosting bats but inconclusive for evidence of roosting bats, two dusk or dawn surveys between May and August will be required. The following trees: T12, T14, T59, T95, T99, T102, T130 and T176 are recommended for further surveys.

No further surveys are required for 23 trees with **Low** suitability for roosting bats and it is recommended to retain these trees. Where it is not possible to retain these, any works to these trees should be section felled under supervision by a Natural England-licensed bat ecologist.

In addition, an internal inspection for hibernating bats (focussing on the roof void) of the **High** suitability building (The Furze - B10) and moderate suitability buildings (Pinewood Complex B21-26) should be carried out (if safe to do, i.e. asbestos and internal access) to check for evidence of roosting bats. This should be undertaken between December and February to include the potential hibernation period.

Two suspected bat roosts were identified during the recommended bat surveys undertaken on site in July 2021, one in B19 and the other in T14. The completion of the bat surveys will confirm or not the presence of a bat roost on these locations.

Further surveys will confirm the requirement for a Natural England European Protected Species (EPS) mitigation licence if bats are present and/or any other requirements for mitigation. The bat survey report to be produced at the end of the scheduled bat surveys will identify the requirements.

Table 21. Summary of recommended number of bat surveys and surveyors per building

ID	Name	Overall bat suitability	No. of surveyors	Number of surveys
B6	Main hospital & Tower Block	Low	4	1
B8	Bevan Ward	Negligible		
B9	Maternity Building	Low	4	1
B10	The Furze	High	5	3
B14	Tudor Centre	Low	3	1
B15	Old Creche	Low	2	1
B16	Beaconsfield	Moderate	2	2
B17	Elderly Day Hospital	Low	3	1
B18	Nursery	Low	2	1
B19	Alderbourne Rehabilitation Centre	Moderate	5	2
B20	Green Acres	Negligible		
B21	SIM Centre	Moderate	2	2
B22	Pinewood	Moderate	2	2
B23	INR	Low	1	1
B24	Rehab	Moderate	2	2
B25	Middlesex Suite	Moderate	2	2
B26	Page Ward	Moderate	2	2
B29	Plant room	Negligible		
B30	Education Centre	Low	2	1
Total			43	25

5.4.4 Other Mammals (excluding bats)

No further surveys for badger or hedgehog are required. However precautionary measures are recommended.

All wild mammals, including red fox, are protected by the Wild Mammals (Protection) Act 1996, which makes it an offence to intentionally cause any wild mammal unnecessary suffering by certain methods. A mammal hole has been identified within the site, and as there is a risk that a mammal may venture onto the site during ground preparation works.

Site clearance should be avoided during the hedgehog hibernation period (November to March). If clearing dense scrub during this period, a hand-search for hedgehogs hibernating under leaf debris should be undertaken.

A CEMP should include the covering of all deep holes and trenches overnight and/or the provision of planked escape routes for any wildlife that may fall in. In addition, any liquids held on-site should be stored in a secure lock-up. Hoarding around the perimeter of the site should also minimise the likelihood of any wild mammals gaining access to the site.

The inclusion of access features in any boundary fencing (particularly in the south of the Site) should be included to allow movement of hedgehog across the Site, by leaving a gap at the bottom of the fence to allow hedgehogs and other animals to pass through¹⁰.

¹⁰ British Hedgehog Preservation Society (2019) Hedgehogs and Development - Guidance Booklet. Produced in collaboration with the People's Trust for Endangered Species.

5.4.5 Invertebrates

Stag beetles were recorded on site. It is recommended to retain woodland habitat on site, including deadwood present at ground level, to retain suitable habitat for this species.

5.4.6 Invasive Non-native Species

Measures should be taken immediately to cordon off the Japanese knotweed in order to ensure that it is not inadvertently spread within or beyond the Site boundary, the latter could be a contravention of the Wildlife and Countryside Act. It is recommended that an updated survey during the growing season of plants and an Invasive Non-Native Plant Management Plan is produced to undertake a risk assessment of those invasive non-native species of plants present on the Site, particularly the Schedule 9 listed species (Himalayan balsam, Himalayan cotoneaster, entire-leaved cotoneaster, three-cornered garlic, Japanese knotweed, hollyberry cotoneaster and rhododendron). This would provide advice on how to ensure that none of these plants are spread from the Site into the wild and detail the management to achieve this. The plan would recommend, where appropriate replacement areas of soft landscaping comprising native or near-native plant species that would help to achieve a net gain in biodiversity, e.g. of value to local invertebrates, birds and bats.

An Invasive Non-Native Plant Management Plan would also detail biosecurity measures to prevent the spread of invasive non-native plants to surrounding areas during the works and minimise the risk of any other invasive species being brought onto the Site.

Please refer to the Invasive Species Assessment: Biosecurity and Management Plan prepared for the Site for more details¹¹.

5.5 Summary Appraisal of Ecological Constraints and Recommended Further Surveys

Potential ecological constraints to the Proposed Development are summarised in Table 22 and Table 23 below.

Table 22. Summary Appraisal of Features of Ecological Constraints and Recommended Further Action

Receptor	Scale of constraint (see Table 20)	Further requirements (including potential mitigation)	Driver	When is action likely to be required		
				To inform design	Before planning application	Pre-construction onwards
Designated sites	Low	Implementation of measures of the Construction and Environmental Management Plan (CEMP).	Legislation and planning policy	-	-	✓
Water-course, woodland, hedgerow (habitats of principal importance)	High	Water Framework Directive Screening and Scoping Assessment for the watercourse. Implementation of measures in the CEMP for protection of the watercourse. Retention of the hedgerow and deciduous woodland within the Site to provide habitat corridors for wildlife and to support Biodiversity Net Gain within the London Borough of Hillingdon.	Legislation and planning policy	✓	✓	✓
Bats	High	Undertake bat roost presence/absence surveys on suitable buildings on Site. Where required, obtain EPSML for bats. Undertake an internal inspection of The Furze (B10) and moderate suitability buildings (Pinewood Complex, B21-26) for hibernating bats.	Legislation and planning policy	✓	✓	✓

¹¹ AECOM, 2021. Hillingdon Hospital. Invasive Species Assessment: Biosecurity and Management Plan.

Receptor	Scale of constraint (see Table 20)	Further requirements (including potential mitigation)	Driver	When is action likely to be required		
				To inform design	Before planning application	Pre-construction onwards
		Retain trees, woodland and watercourse on Site for foraging and commuting bats. Consideration of bats within the CEMP e.g. low-level security lighting on a timer at night.				
Peregrine falcon	High	Undertake monthly survey visits (February and July) to determine the presence of peregrine, use of the Site as a breeding territory, location of any nest sites and confirmation of breeding success. If required, obtain a Schedule 1 licence for peregrine⁶. Prepare a Peregrine Mitigation Strategy to plan the works. Avoid works affecting peregrine habitat Feb-July. Provision of alternative nesting habitat (e.g. peregrine ledge) within the final design before the demolition of the building where the nest is located.	Legislation	-	✓	✓
Other species of breeding birds	Medium	Any clearance of vegetation and trees to be undertaken outside the nesting season. If vegetation or trees are cleared during the nesting season (March to August inclusive), they should be checked by a suitably qualified ecologist. Provision of alternative nesting habitat such as bird boxes (colony-nesting species) within the final design and plant species that provide berries and cover for birds.	Legislation and Planning policy	✓	✓	✓
Other mammals (excluding bats)	Low	Consideration of fox, badger and hedgehog within the CEMP e.g. covering excavations at night to prevent possible injury to mammals. Avoid site clearance during the hedgehog hibernation period (Nov-March). If clearing dense scrub, hand-search for hedgehogs hibernating under leaf debris. The final development design should include habitat features and planting suitable for hedgehog and enhancing connectivity.	Legislation and planning policy	✓	x	✓
Stag beetle	Low	Retention of deadwood within the woodlands of the Site	BAP	-	-	✓
Non-native invasive species (INNS)	Medium	A site walkover in the optimum season to check for aquatic and terrestrial INNS. Preparation of an INNS management plan which will include biosecurity measures to prevent the spread of invasive species¹¹.	Legislation	✓	✓	✓

Table 23. Summary of recommended further surveys and methods

Survey	Season	Method	Why required	When required		
				To Inform Design	Before Planning Application	Pre-construction Onwards
Peregrine falcon	Feb-July	Hardey <i>et al.</i> (2014). Raptors: A Field Guide for Surveys and Monitoring	To monitor the tall buildings for nesting peregrines	✓	✓	X
Bats – Presence/absence roost survey of buildings and trees	May to September	Collins (2016)	To investigate the buildings and trees for the potential to support roosting bats	✓	✓	X
Bat internal survey	December to February	Collins (2016)	To investigate the potential of the Furze (B10) and moderate suitability buildings (Pinewood Complex B21-26) for hibernating bats	✓	✓	X
Non-native invasive species (INNS)	May to September (optimal)		To investigate the need for an invasive species management plan	✓	✓	X

6. Opportunities for Ecological Enhancement

In accordance with the NPPF, regional and local planning policies, biodiversity net gains and the provision for ecological protection, enhancements, and creation are provided for below. Enhancements within the final design should be detailed within a Landscape and Ecological Management Plan (LEMP) for the Proposed Development, showing how enhancements are incorporated, their design, creation and maintenance.

A Biodiversity Net Gain assessment is being prepared for the Site to ensure a biodiversity net gain for the Proposed Development¹².

6.1 Green roof

A green roof or roofs could be installed on the top floors of the buildings within the Proposed Development. Green roofs provide benefits such as a reduction in water runoff, reduction of heating and cooling costs, an increase of roof lifespan as well as providing aesthetic and ecological benefits. They should follow the Green Roof Code of Practice¹³. Green roofs and the retained green infrastructure and the additional green areas will provide stepping-stones for commuting wildlife, increasing the connectivity with other green spaces of the borough.

A commercial seed mix, blanket system or plug planting scheme will provide species of native (and some non-native) flowering plants, grasses, sedges and sedum will provide a nectar and pollen rich habitat, providing foraging opportunities to a wide range of urban birds, butterflies, bees, other invertebrates and bat species. An opportunity present here is to choose species mix such as a Bauder Wildflower Blanket XF118 or similar, that can also mitigate city pollutants, such as CO₂ emissions, would be installed by a professional supplier such as Bauder, ANS, or LindumGreen.

Green roofs would be enhanced with a variable topography and features such as rubble/log piles, insect boxes or banks of exposed earth to increase their attractiveness to wildlife.

Extensive green roofs (low nutrient with a shallow substrate depth of less than 100mm) are compatible with the installation of solar panels and do not require intense maintenance. An intensive green roof would require irrigation as it would be more akin to a domestic garden and would have a substrate depth of +200mm.

6.2 Living Wall

The incorporation of living walls into the Proposed Development would be an excellent method of enhancing the ecology of the area. Note also that trellis and cables can be used on boundary fences or walls.

The most basic living walls can be created by planting wall shrubs and climbers and encouraging them to grow up or down trellises or cables attached to walls. At the other end of the spectrum are engineered solutions that consist of modules attached to walls that contain a substrate that plants can be grown in. Engineered walls will most likely require irrigation systems as well as professional installation and maintenance.

There is a diverse range of plants that are suitable for use in living walls. The Royal Horticultural Society (RHS) recommends species that are suited for a range of different types of living wall. It is preferred that native species of climbers are used. This is because native species are often more valuable as a larval food source for invertebrates as well as providing a nectar source for pollinators. Examples include English ivy (*Hedera helix*), honeysuckle (*Lonicera periclymenum*) and traveler's joy (*Clematis vitalba*) and native climbing rose species (*Rosa* species) can also be used, but native species should be used.

The species should be chosen according to its ability to thrive in the local conditions, such as light levels and water availability.

Green walls are known to provide a number of benefits to the surrounding area. They provide a nectar source for invertebrates which in turn provide a food source for birds such as house sparrows. They can also help to deflect water away from walls during heavy rain and provide buildings with an extra layer of insulation.

¹² AECOM, 2021. Hillingdon Hospital. Biodiversity Net Gain Assessment.

¹³ Available at: <http://www.thegreenroofcentre.co.uk/Library/Default/Documents/GRO%20ONLINE.pdf>

6.3 Landscape Planting for Biodiversity

The woodland, hedgerow and watercourse should be retained within the Proposed Development's landscape design. These habitats can be enhanced for biodiversity, through the planting of native species and alternative management.

Providing native species or species of benefit to biodiversity (e.g. suitable for pollinating insects, nesting birds or providing berries as a food source) throughout any new or modified soft landscaping would greatly increase the value of the Site for biodiversity, in particular invertebrates.

These include suitable native plant species appropriate for an urban setting and also a range of non-native species of benefit for biodiversity as listed within RHS 'Plants for Pollinators'¹⁴, Natural England advice notes for wildlife friendly gardening¹⁵ or other comparable guides to gardening for biodiversity.

Specific examples could include:

- Planting native shrub species (e.g. blackthorn, hawthorn, hazel, field-maple) to provide nesting opportunities for some red/amber list bird species (dunnock, mistle thrush, song thrush, bullfinch) identified within the desk study (Table 14).
- Selection of suitable tree species as street specimens which support invertebrates as larval food sources, flowers as nectar sources, berries for wintering birds and to provide opportunity for nesting.
- Planting beds with flowering plants for pollinators, particularly to provide nectar sources throughout the year.
- Use of shrub species providing berries for birds or winter and / or dense structure for nesting.
- Use of rain gardens or minor drainage features planted with damp tolerant species to increase biodiversity.
- Providing native shrub or flowering species within planting beds as larval food sources for invertebrates.
- Minimising and avoiding use of pesticides wherever possible to increase landscaping habitat value for invertebrates.

6.4 Peregrine nest box/ledge

A suitable nesting site for peregrine falcons is recommended within the design of the Proposed Development. A new tall building to the west of the Site would be appropriate location. The box should be installed before the demolition of the current location. The nest box should be open fronted with a sheltered cavity containing a substrate such as gravel and pebbles, and enough space to allow the young to exercise in safety as they develop. A raised edge at the entrance to the nest box will help retain the substrate and eggs *in situ*, as well as the juveniles as they become more active. The box should face north-east or east, away from direct sunlight. In the UK, successful nest sites have been recorded at heights from 20m to 200m¹⁶. Once installed, the nest box should be monitored annually during the breeding season (Feb-July).

6.5 Bird boxes

Suitable boxes for common garden birds (e.g. wren, blue tit, great tit, greenfinch, goldfinch, blackbird) would be appropriate within the retained woodland and retained/new trees within the Proposed Development. Boxes such as the Schwegler 1B Nest Box (with either a 26/32mm hole, an oval hole or open fronted) would cater towards common garden birds.

Suitable boxes such as for a colony nesting species (house sparrow, starling or swift) would be appropriate for the buildings within the Proposed Development. There is potential to support breeding birds by installing bird boxes on the façade. In order to maximise these impacts, ecological enhancements will target local bird species that are in greatest need of support. Boxes such as the Schwegler 1SP Sparrow Terrace cater towards urban bird species such as house sparrow. Additional boxes incorporated into the building catering to swifts (*Apus apus*) on the upper floors could also be reviewed as an enhancement option.

6.6 Bat boxes

Suitable boxes for bats would be appropriate within the retained woodland and retained/new trees within the Proposed Development. Boxes such as the Schwegler 1FF large Bat Box or the 2F Schwegler Bat Box with

¹⁴ <https://www.rhs.org.uk/science/conservation-biodiversity/wildlife/plants-for-pollinators>

¹⁵ Berry, S (2007). Plants for Wildlife Friendly Gardens Natural England

¹⁶ Dixon, N and Shawyer, C. (undated). Peregrine Falcons. Provision of Artificial Nest Sites on Built Structures. RPSB

Double Front Panel would cater towards common and widespread bat species such as brown long eared, common pipistrelle, soprano pipistrelle or noctule.

Suitable bat boxes appropriate for the external walls of new buildings within the Proposed Development would be 1FQ Schwegler Bat Roost or the 2FE Schwegler Wall-Mounted Bat Shelter and would cater towards common and widespread crevice-dwelling bat species such as common pipistrelle or soprano pipistrelle.

The bat survey report to be undertaken at the end of the bat surveys will identify any additional recommendations for enhancements.

6.7 Wildlife pond

A temporary water body was recorded within the woodland (TN14 in Figure 1). If feasible and practical, it could form part of the Sustainable Drainage System (SuDS) strategy. A SuDS has been designed to the west of the Site.

The pond should not be fully shaded and should have some sunlight throughout the day. It should consist of both shallow and deep areas, with some shelved areas to provide safe access for wildlife. Once a pond is created, plants will colonise it naturally over time. Initially, the pond should be planted up with native plants of local provenance. Yellow flag iris and pendulous sedge were recorded on Site and would be appropriate in the new pond. Additionally, water mint (*Mentha aquatica*) or common water-starwort (*Callitriche stagnalis*) could be added. Invasive non-native aquatic plant species should be avoided. Stocking the pond with fish should be avoided. The pond should be managed appropriately depending on the season, for example spring is the best time of year to clear surface duckweed and autumn is the best time of year to clear leaves and excess silt (taking care to leave some silt as it will contain developing invertebrate larvae)¹⁷.

Having a pond as well as retained woodland on the Site would enhance ecological connectivity within the immediate area.

6.8 Log/brush piles for hedgehogs

Piles of dead wood and brush piles can be created in the retained woodland in the south of the Site or other new landscaped areas, such as behind hedges out of the way, creating hibernation opportunities.

6.9 Insect refugia

There is potential to include insect boxes, either as part of a green roof or log/brush piles within the retained woodland within new areas of soft landscaping. Insect boxes provide shelter to a number of species, specifically solitary bees, which provide pollination services to plants included within the landscaping. Boxes catered towards solitary bees are safe to include on developments due to the non-swarming nature of the insects, and their generally placid nature. Insect boxes should be located in areas where chances of vandalization is reduced, but where maintenance can easily be carried out when required. Log/brush piles should be located in undisturbed areas, such as behind a hedge.

Deadwood piles targeting stag beetles could be incorporated into the design to provide additional habitat for stag beetles currently living in the area. People's Trust for Endangered Species stag beetle guidance should be followed for its construction¹⁸.

¹⁷ Froglife (2013) How to build a wildlife pond.

¹⁸ <https://ptes.org/wp-content/uploads/2016/11/Build-a-log-pile-for-stag-beetles.pdf>

7. Conclusions

The Site had value for biodiversity and contained three priority habitats – watercourse, deciduous woodland and hedgerow. To avoid any impacts to these habitats, it is recommended that they are protected and retained within the final design.

The Site supports protected and notable species (i.e. peregrine falcon, nesting birds, bats and stag beetle). The Site has suitability to potentially support red fox, badger and hedgehog. There were several invasive non-native plant species growing on the Site.

Due to the ecological receptors identified and potential impact from the Proposed Development, it is recommended the production of an Ecological Impact Assessment (EclA) once the Proposed Development proposals have been finalised and any required surveys have been completed.

The following further surveys are recommended to inform a EclA:

- Peregrine falcon – Monitoring surveys
- Bats – Presence/absence roost survey of buildings and trees
- Bats – Tree climbing inspection
- Bats – Internal inspection of high suitability building The Furze (B10) and moderate suitability buildings (Pinewood Complex B21-26)
- Invasive non-native plants – Survey of invasive non-native plants in a different time of year

It is expected that the further detailed mitigations plans will be required:

- Peregrine Mitigation Strategy
- Bat Mitigation Strategy
- Invasive Non-Native Plant Management Plan
- Water Framework Directive Screening and Scoping Assessment for the watercourse

The following mitigation measures are recommended, any further mitigation measures will be required based on the results of further surveys:

- Avoid works to the building where the peregrine falcon has nested during the peregrine nesting season (February-July);
- Use low level-lighting during works and within final design to avoid disturbance to commuting and foraging bats;
- Ecological Supervise the removal of those trees with low suitability for roosting bats using a Natural England-licensed ecologist;
- Check that vegetation or trees are cleared during the bird nesting season (March to August inclusive) by a suitably qualified ecologist;
- Avoid scrub and vegetation clearance during the hedgehog hibernation period (November-March). If clearing dense scrub, hand-search for hedgehogs hibernating under leaf debris;
- Undertake biosecurity measures to prevent the spread of invasive species during works on the Site;
- Implement a CEMP during the construction phase of the Proposed Development to avoid any indirect impact on the adjacent habitats, watercourses and nearby non-statutory sites.

The following opportunities for ecological enhancements could be included in the design of the Site. The inclusion of biodiversity measures will support the local planning policies and objectives, as well as the National Planning Policy Framework:

- Enhance the deciduous woodland and hedgerows to provide habitat corridors for wildlife, by planting with native species;
- Create a wildlife pond within the woodland by enhancing the existing temporary water body;

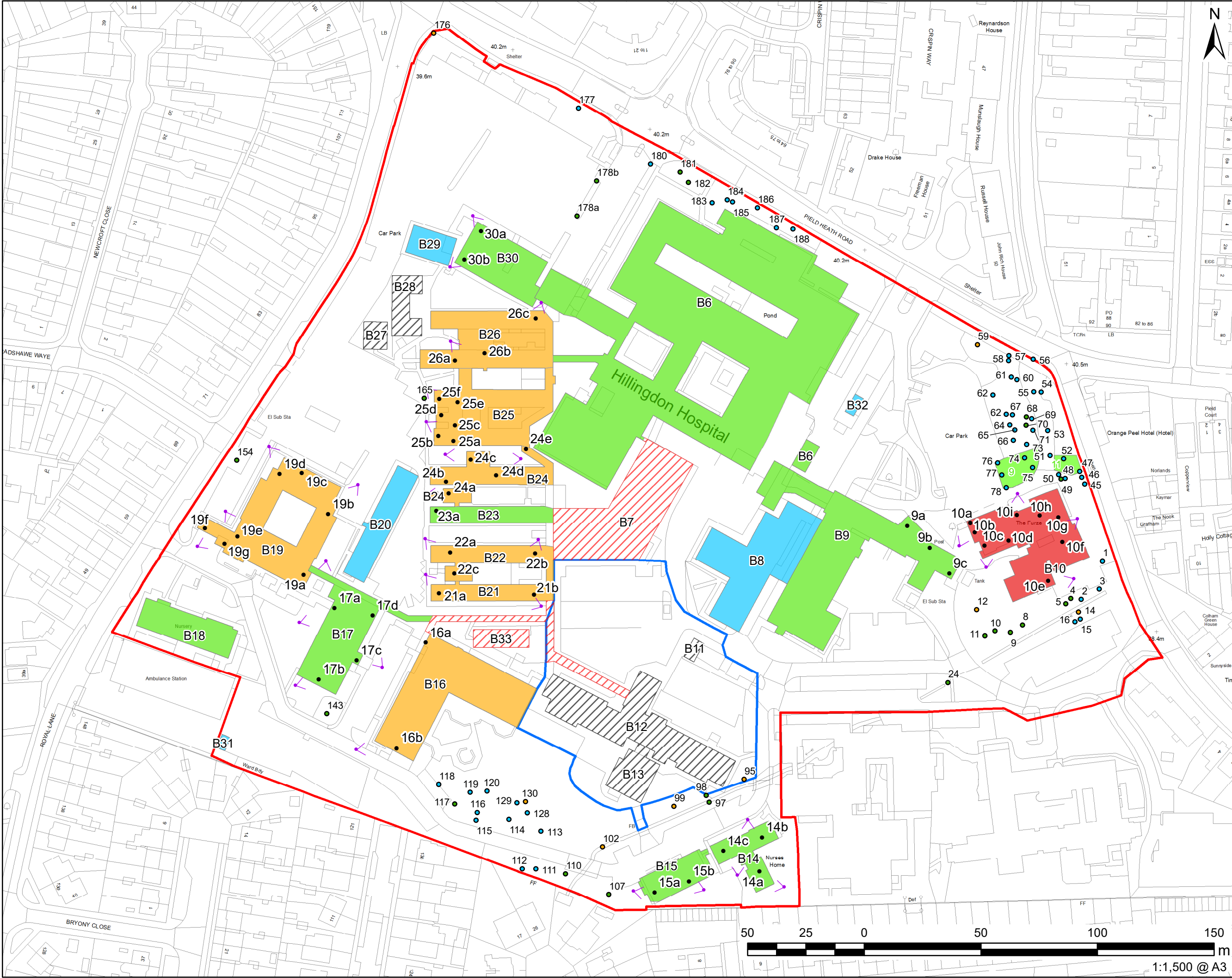
- Create log/brash piles for hedgehogs within the woodland;
- Enhance the built environment on Site by designing green roof and living walls on buildings;
- Install artificial nest/roost sites for peregrine falcon, bats, birds and invertebrates (including stag beetle) on buildings and trees;
- Undertake biodiverse planting within the soft landscaping; and
- Use fencing suitable for hedgehog transit in the south of the Site.

Appendix A Figures

Figure 1. Phase 1 Habitat Map



Figure 2. Bat Roost Assessment



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LEGEND

Red Line Boundary

Existing Construction Boundary

Potential Roost Features on Buildings

Proposed Surveyor Locations

Suitability for Bat Roost

Moderate

Low

Negligible

Bat Roost Potential

High

Moderate

Low

Negligible

Demolished

Inaccessible

NOTES
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ISSUE PURPOSE
FOR INFORMATION

PROJECT NUMBER
60642181

SHEET TITLE
Bat Roost Suitability Assessment

SHEET NUMBER
Figure 02

Appendix B Target Notes

TN Number	Target Notes
TN1	False Acacia in block of Introduced Shrub
TN2	Buddleia in block of Introduced Shrub
TN3	Himalayan Balsam growing along watercourse running through woodland
TN4	Species Poor Hedge growing along edge of Site
TN5	Semi-natural Broadleaved Woodland with emergent Turkey Oak and invasive species understory
TN6	Semi-natural Broadleaved Woodland with emergent Turkey Oak and invasive species understory
TN7	Bare ground – Amenity Grassland Mosaic Habitat
TN8	Cherry Laurel in block of Introduced Shrub
TN9	Himalayan Cotoneaster growing in Introduced Shrub
TN10	Three-cornered Garlic growing in planters
TN11	Bare ground where buildings have been removed
TN12	Entire-leaved Cotoneaster growing in line of trees
TN13	Garden area surveyed remotely by binoculars
TN14	Temporary water body in the centre of the woodland on site
TN15	No access to the active construction site. B11, B12 and B13 were demolished at the time of the site visit.
TN16	Mammal hole located in the block of woodland on site
TN17	Watercourse running through the woodland on site
TN18	Mammal commuting trails through area of scrub on Site
TN19	Japanese knotweed stand recorded in June 2021.

Appendix C DAFOR Plant List

Car Park - West

Species		Abundance (DAFOR)				
Common Name	Latin Name	Amenity Grassland (North)	Line of Trees (West)	Introduced Shrub Island (North)	Introduced Island (South)	Introduced Shrub (Hedge)
Ash	<i>Fraxinus excelsior</i>	-	Occasional	-	-	-
Beech	<i>Fagus sylvatica</i>	Occasional	Dominant	-	-	-
Black Poplar	<i>Populus nigra</i>	Rare	-	-	-	-
Box	<i>Buxus sempervirens</i>	-	Rare	-	-	-
Buddleia	<i>Buddleja davidii</i>	-	-	Frequent	-	-
Cherry	<i>Prunus avium</i>	-	Occasional	-	-	-
Cherry Laurel	<i>Prunus laurocerasus</i>	-	Rare	Occasional	-	-
Coralberry	<i>Symphoricarpos orbiculatus</i>	-	-	-	Dominant	-
Creeping Cinquefoil	<i>Potentilla repens</i>	Occasional	-	-	-	-
Daisy	<i>Bellis perenis</i>	Occasional	-	-	-	-
Dogwood	<i>Cornus sanguinea</i>	Rare	-	-	-	-
English Ivy	<i>Hedera helix</i>	-	Occasional	-	-	-
English Oak	<i>Quercus robur</i>	Rare	-	-	-	-
Field Elm	<i>Ulmus minor</i>	-	Occasional	-	-	-
Field Maple	<i>Acer campestre</i>	-	Frequent	-	-	-
Greater Plantain	<i>Plantago major</i>	Occasional	-	-	-	-
Hawthorn	<i>Crataegus monogyna</i>	-	Occasional	-	-	-
Hazel	<i>Corylus avellana</i>	-	Rare	-	-	-
Himalayan Cotoneaster	<i>Cotoneaster simonsii</i>	-	-	Frequent	-	-
Holly	<i>Ilex aquifolium</i>	-	Rare	-	-	-
Lime	<i>Tilia platyphyllos</i>	-	Occasional	-	-	-
Norway Maple	<i>Acer platanoides</i>	-	Rare	Abundant	-	-
Perennial Rye Grass	<i>Lolium perenne</i>	Dominant	-	-	-	-
Portuguese Laurel	<i>Prunus lusitanica</i>	-	-	-	-	Dominant
Ribwort Plantain	<i>Plantago lanceolata</i>	Occasional	-	-	-	-
Shining Cranesbill	<i>Geranium lucidum</i>	Occasional	-	-	-	-
Silver Birch	<i>Betula pendula</i>	-	-	Occasional	Rare	Rare
Turkey Oak	<i>Quercus cerris</i>	-	-	Occasional	-	-
Willow	<i>Salix species</i>	-	Occasional	-	-	-
Yarrow	<i>Achillea millefolium</i>	Rare	-	-	-	-

A&E Department

Species		Abundance				
Common Name	Latin Name	Amenity Grassland - Front	Amenity Grassland/Bare Ground Mosaic	Introduced Shrub - Front	Line of Trees (Car Park)	Introduced Shrub - West
Beech	<i>Fagus sylvatica</i>	-	Occasional	-	-	-
Blackthorn	<i>Prunus spinosa</i>	-	-	-	Rare	-
Cherry Laurel	<i>Prunus laurocerasus</i>	-	-	Occasional	-	Occasional
Daisy	<i>Bellis perennis</i>	-	-	-	-	Occasional
Dandelion	<i>Taraxacum officinale</i>	Occasional	-	-	-	-
Downy Birch	<i>Betula pubescens</i>	-	-	-	-	Frequent
English Ivy	<i>Hedera helix</i>	Occasional	-	-	Occasional	-
English Oak	<i>Quercus robur</i>	Rare	-	Frequent	Dominant	-
Firethorn	<i>Pyracantha angustifolium</i>	-	-	Rare	-	-
Greater Plantain	<i>Plantago major</i>	Occasional	-	-	-	-
Holly	<i>Ilex aquifolium</i>	-	-	Rare	-	Rare
Japanese Laurel	<i>Aucuba japonica</i>	-	-	Rare	-	-
Japanese Mahonia	<i>Mahonia japonica</i>	-	-	Occasional	-	Rare
Japanese Spindle	<i>Euonymus japonicus</i>	-	-	Frequent	-	-
Leyland Cypress	<i>Cupressus x leylandii</i>	-	-	Rare	-	-
Lime	<i>Tilia platyphyllos</i>	-	-	-	Rare	-
Mexican Orange	<i>Choisya ternata</i>	-	-	Frequent	-	-
Norway Maple	<i>Acer platanoides</i>	-	-	Occasional	-	-
Norway Spruce	<i>Picea abies</i>	-	-	-	-	Rare
Oregon Grape	<i>Berberis aquifolium</i>	-	-	Rare	-	-
Perennial Rye Grass	<i>Lolium perenne</i>	Dominant	Dominant	-	-	Occasional
Ribwort Plantain	<i>Plantago lanceolata</i>	-	-	-	-	Occasional
Shining Cranesbill	<i>Geranium lucidum</i>	Occasional	-	-	-	-
Silver Birch	<i>Betula pendula</i>	-	-	-	-	Frequent
Spear Thistle	<i>Cirsium vulgare</i>	-	-	-	-	Rare
<i>Viburnum tinus</i>	<i>Viburnum tinus</i>	-	-	-	-	Frequent
Yew	<i>Taxus baccata</i>	-	-	-	Rare	-

Maternity Ward

Species		Abundance				
Common Name	Latin Name	Amenity Grassland - North	Amenity Grassland - Courtyard	Introduced Shrub	Introduced Hedge	Scrub
Bearberry Cotoneaster	<i>Cotoneaster dammeri</i>	-	-	-	Occasional	-
Buddleia	<i>Buddleja davidii</i>	-	Rare	-	-	-
Chinese Photinia	<i>Photinia serratifolia</i>	-	-	Frequent	-	-

Species		Abundance				
Common Name	Latin Name	Amenity Grassland - North	Amenity Grassland - Courtyard	Introduced Shrub	Introduced Hedge	Scrub
Cleavers	<i>Galium aparine</i>	-	-	-	-	Rare
Daisy	<i>Bellis perennis</i>	Occasional	Occasional	-	-	-
Dandelion	<i>Taraxacum officinale</i>	-	Occasional	-	-	-
Dogwood	<i>Cornus sanguinea</i>	-	-	-	Rare	-
English Ivy	<i>Hedera helix</i>	-	-	-	Rare	Dominant
False Acacia	<i>Robinia pseudoacacia</i>	-	-	Rare	-	-
Field Elm	<i>Ulmus minor</i>	-	-	-	Rare	-
Garden Sage	<i>Salvia officinalis</i>	-	-	Occasional	-	-
Greater Plantain	<i>Plantago major</i>	Occasional	-	-	-	-
Hawthorn	<i>Crataegus monogyna</i>	-	-	-	Occasional	-
Holly	<i>Ilex aquifolium</i>	-	-	-	Occasional	Frequent
Hornbeam	<i>Carpinus betulus</i>	Rare	-	-	-	-
Japanese Barberry	<i>Berberis thunbergii</i>	-	-	-	Rare	-
Mock Orange	<i>Philadelphus coronarius</i>	-	-	-	Rare	-
New Zealand Hebe	<i>Hebe speciose</i>	-	-	Dominant	-	-
Pendulous Sedge	<i>Carex pendula</i>	-	-	-	-	Occasional
Perennial Rye Grass	<i>Lolium perenne</i>	Dominant	Dominant	-	-	-
Portuguese Laurel	<i>Prunus lusitanica</i>	-	-	-	Occasional	Occasional
Red Dead Nettle	<i>Lamium purpureum</i>	-	-	-	-	Rare
Ribwort Plantain	<i>Plantago lanceolata</i>	-	Occasional	-	-	-
Scarlet Firethorn	<i>Pyracantha coccinea</i>	-	-	-	Rare	-
Shining Cranesbill	<i>Geranium lucidum</i>	Occasional	-	-	-	-
Wintergreen Barberry	<i>Berberis julianae</i>	-	-	-	Frequent	-
Yarrow	<i>Achillea millefolium</i>	-	Rare	-	-	-
Yew	<i>Taxus baccata</i>	-	-	-	-	Rare

Carpark - East

Species Name		Abundance		
Common Name	Latin Name	Amenity Grassland	Semi-Natural Broadleaved Woodland (w Introduced Shrub Understory)	Introduced Shrub
Ash	<i>Fraxinus excelsior</i>	-	Rare	-
Atlantic Ivy	<i>Hedera hibernica</i>	-	-	Frequent
Bramble	<i>Rubus fruticosus aggregate</i>	-	-	Dominant
Buddleia	<i>Buddleja davidii</i>	-	-	Rare

Species Name		Abundance		
Common Name	Latin Name	Amenity Grassland	Semi-Natural Broadleaved Woodland (w Introduced Shrub Understory)	Introduced Shrub
Cleavers	<i>Galium aparine</i>	-	Frequent	-
Daisy	<i>Bellis perenis</i>	Occasional	-	-
English Ivy	<i>Hedera helix</i>	-	Occasional	Rare
False Acacia	<i>Robinia pseudoacacia</i>	Rare	Rare	-
Field Elm	<i>Ulmus minor</i>	Rare	Occasional	-
Green Alkanet	<i>Pentaglottis sempervirens</i>	-	-	Frequent
Herb Robert	<i>Geranium robertianum</i>	Rare	-	-
Holly	<i>Ilex aquifolium</i>	-	Frequent	-
Holm Oak	<i>Quercus ilex</i>	-	-	Rare
Lime	<i>Tilia platyphyllos</i>	-	Rare	-
Mugwort	<i>Artemisia vulgaris</i>	-	-	Occasional
Perennial Rye Grass	<i>Lolium perenne</i>	Dominant	-	-
Rhododendron	<i>Rhododendron ponticum</i>	-	Occasional	-
Shining Cranesbill	<i>Geranium lucidum</i>	Frequent	-	-
Snowberry	<i>Symphoricarpos albus</i>	-	Occasional	-
Sycamore	<i>Acer pseudoplatanus</i>	-	Occasional	-
Stinging Nettle	<i>Urtica dioica</i>	-	-	Occasional
Turkey Oak	<i>Quercus cerris</i>	-	Frequent	-
Western Snowberry	<i>Symphoricarpos occidentalis</i>	-	Rare	-

Greenacre Building

Species		Abundance	
Common Name	Latin Name	Amenity Grassland	Line of Trees
Bearberry Cotoneaster	<i>Cotoneaster dammeri</i>	-	Occasional
Bramble	<i>Rubus fruticosus</i> aggregate	-	Occasional
Broad Leaved Dock	<i>Rumex obtusifolius</i>	Rare	-
Burnet Rose	<i>Rosa pimpinellifolia</i>	-	Rare
Creeping Cinquefoil	<i>Potentilla repens</i>	Rare	-
Dog Rose	<i>Rosa canina</i>	-	Rare
English Ivy	<i>Hedera helix</i>	-	Occasional
English Oak	<i>Quercus robur</i>	-	Rare
Entire-leaved Cotoneaster	<i>Cotoneaster integrifolius</i>	-	Rare
Field Maple	<i>Acer campestre</i>	-	Frequent
Greater Plantain	<i>Plantago major</i>	Occasional	-
Hawthorn	<i>Crataegus monogyna</i>	-	Occasional
Perennial Rye Grass	<i>Lolium perenne</i>	Dominant	-

Species		Abundance	
Common Name	Latin Name	Amenity Grassland	Line of Trees
Wayfaring Tree	<i>Viburnum lantana</i>	Rare	-

Pinewood Complex

Common Name	Latin Name	Amenity Grassland Pinewood	Amenity Grassland - Simgate	Amenity Grassland - Lister	Amenity Grassland - Haematology	Hard Standing - Haematology	Introduced Shrub - Pinewood
Bristly Oxtongue	<i>Helminthotheca echinoides</i>	-	Rare	-	-	-	-
Copper Beech	<i>Fagus sylvatica purpurea</i>	-	-	-	-	Rare	-
Daisy	<i>Bellis perennis</i>	Occasional	Occasional	Occasional	Rare	-	-
Dandelion	<i>Taraxacum officinale</i>	-	Occasional	Occasional	-	-	-
Domestic Plum	<i>Prunus domestica</i>	-	-	-	-	Rare	-
Dwarf Mallow	<i>Malva neglecta</i>	Occasional	-	-	-	-	Occasional
Greater Plantain	<i>Plantago major</i>	Rare	-	-	Rare	-	-
Hawkbit	<i>Scorzoneroideis autumnalis</i>	-	-	-	-	-	Rare
Japanese Spindle	<i>Euonymus japonicus</i>	-	-	-	-	Rare	-
New Zealand Hebe	<i>Hebe speciosa</i>	-	-	-	-	Rare	-
Perennial Rye Grass	<i>Lolium perenne</i>	Dominant	Dominant	Dominant	Dominant	-	-
Red Dead Nettle	<i>Lamium purpureum</i>	-	-	Rare	-	-	-
Ribwort Plantain	<i>Plantago lanceolata</i>	-	Occasional	Occasional	-	-	-
Shining Cranesbill	<i>Geranium lucidum</i>	Frequent	-	Frequent	-	-	-
Silver Birch	<i>Betula pendula</i>	-	-	-	-	Rare	-
Spear Thistle	<i>Cirsium vulgaris</i>	-	Rare	-	-	-	-
Three-Cornered Garlic	<i>Allium triquetrum</i>	-	-	-	-	-	Dominant
Thyme	<i>Thymus vulgaris</i>	-	-	-	-	-	Occasional
Wax Begonia	<i>Begonia semperflorens</i>	-	-	-	-	Rare	-

Child Development Centre

Common Name	Latin Name	Amenity Grassland	Bare Ground	Watercourse	Introduced Shrub – Ramp	Introduce d Hedge	Scrub
Angelica	<i>Angelica sylvestris</i>	-	-	Occasional	-	-	-
Ash	<i>Fraxinus excelsior</i>	-	Rare	-	-	Rare	-

Common Name	Latin Name	Amenity Grassland	Bare Ground	Watercourse	Introduced Shrub – Ramp	Introduced Hedge	Scrub
Atlantic Ivy	<i>Hedera hibernica</i>	-	-	-	Frequent	-	-
Box	<i>Buxus sempervirens</i>	-	Rare	-	-	-	-
Box Honeysuckle	<i>Lonicera nitida</i>	-	-	-	-	Dominant	-
Bramble	<i>Rubus fruticosus</i> aggregate	-	-	Occasional	-	-	-
Cherry	<i>Prunus avium</i>	-	Occasional	-	-	-	-
Cherry Laurel	<i>Prunus laurocerasus</i>	-	-	-	Dominant	Occasional	-
Creeping Cinquefoil	<i>Potentilla repens</i>	Frequent	-	-	-	-	-
Daisy	<i>Bellis perennis</i>	Rare	-	-	-	-	-
Dwarf Mallow	<i>Malva neglecta</i>	-	Rare	-	-	-	-
Elder	<i>Sambucus nigra</i>	-	-	-	Rare	-	-
English Oak	<i>Quercus robur</i>	-	-	-	Rare	-	Frequent
Greater Plantain	<i>Plantago major</i>	Occasional	-	-	-	-	-
Holly	<i>Ilex aquifolium</i>	-	-	-	-	-	Occasional
Japanese Spindle	<i>Euonymus japonicus</i>	-	-	-	Occasional	-	-
Leyland Cypress	<i>Cupressus x leylandii</i>	-	Rare	-	-	-	-
Perennial Rye Grass	<i>Lolium perenne</i>	Dominant	-	-	-	-	-
Prickly Sow Thistle	<i>Sonchus asper</i>	-	-	-	Rare	-	-
Reflexed Stonecrop	<i>Sedum reflexum</i>	-	Rare	-	-	-	-
Rose of Sharon	<i>Hypericum calycinum</i>	-	Rare	-	-	-	-
Shining Cranesbill	<i>Geranium lucidum</i>	Frequent	-	-	-	-	-
Silver Birch	<i>Betula pendula</i>	-	Occasional	-	-	-	-
Sycamore	<i>Acer pseudoplatanus</i>	-	Rare	Rare	-	-	Dominant
Vetch	<i>Vicia species</i>	-	-	Rare	-	-	-

Furze Building

Species		Abundance					
Common Name	Latin Name	Amenity Grassland	Broad Leaved Woodland	Watercourse	Hard Standing	Introduced Shrub	Species Poor Hedge
Ash	<i>Fraxinus excelsior</i>	-	Occasional	-	-	-	-
Atlas Cedar	<i>Cedrus atlantica</i>	Rare	-	-	-	-	-
Bald Cypress	<i>Taxodium distichum</i>	-	Rare	-	-	-	-
Bramble	<i>Rubus fruticosus</i> aggregate	-	Occasional	-	-	-	-

Species		Abundance					
Common Name	Latin Name	Amenity Grassland	Broad Leaved Woodland	Waterco urse	Hard Standing	Introduced Shrub	Species Poor Hedge
Buddleia	<i>Buddleja davidii</i>	-	-	-	-	Rare	Rare
Cabbage Palm	<i>Palmetto sabal</i>	-	-	-	-	Rare	-
Cherry Laurel	<i>Prunus laurocerasus</i>	-	Occasional	-	-	-	-
Chinese Mugwort	<i>Artemisia verlotiorum</i>	-	-	-	-	-	Rare
Cleavers	<i>Galium aparine</i>	-	-	-	-	-	Occasional
Creeping Cinquefoil	<i>Potentilla repens</i>	Frequent	-	-	-	-	-
Daisy	<i>Bellis perenis</i>	Occasional	-	-	-	-	-
Dandelion	<i>Taraxacum officinale</i>	-	Rare	-	-	-	-
Dogwood	<i>Cornus sanguinea</i>	-	Occasional	-	-	-	-
Elder	<i>Sambucus nigra</i>	-	-	-	-	-	Occasional
English Ivy	<i>Hedera helix</i>	-	Occasional	-	-	Occasional	Dominant
English Oak	<i>Quercus robur</i>	-	Frequent	-	-	Rare	Rare
Firethorn	<i>Pyracantha angustifolium</i>	-	Occasional	-	-	-	-
Fuchsia	<i>Fuchsia species</i>	-	-	-	-	Rare	-
Greater Plantain	<i>Plantago major</i>	Occasional	-	-	-	-	-
Green Alkanet	<i>Pentaglottis sempervirens</i>	-	Rare	-	-	-	-
Himalayan Balsam	<i>Impatiens glandulifera</i>	-	Rare	-	-	-	-
Holly	<i>Ilex aquifolium</i>	Rare	Frequent	-	-	Rare	Rare
Japanese Privet	<i>Ligustrum japonicum</i>	-	-	-	-	-	Occasional
Japanese Spindle	<i>Euonymus japonicus</i>	-	-	-	-	Frequent	-
Korean Mulberry	<i>Morus australis</i>	-	-	-	-	-	Frequent
Lime	<i>Tilia platyphyllos</i>	-	-	-	-	-	Rare
London Plane	<i>Platanus x acerfolia</i>	-	-	-	Rare	-	-
Perennial Rye Grass	<i>Lolium perenne</i>	Dominant	-	-	-	-	-
Shining Cranesbill	<i>Geranium lucidum</i>	Frequent	-	-	-	-	-
Sneezeweed	<i>Helenium autmnale</i>	-	-	-	-	Rare	-
Stinging Nettle	<i>Urtica dioica</i>	-	Frequent	-	-	-	Rare
Sycamore	<i>Acer pseudoplatanus</i>	-	Frequent	-	-	-	Occasional
Thyme	<i>Thymus vulgaris</i>	-	-	-	-	Rare	-
White Bryony	<i>Byronia alba</i>	-	Occasional	-	-	-	-
Yellow Flag Iris	<i>Iris pseudacorus</i>	-	-	Rare	-	-	-
Yew	<i>Taxus baccata</i>	-	Occasional	-	-	Occasional	-

Bees Centre

Species		Abundance	
Common Name	Latin Name	Amenity Grassland	Line of Trees
Creeping Cinquefoil	<i>Potentilla repens</i>	Rare	-
Copper Beech	<i>Fagus sylvatica purpurea</i>	-	Rare
Daisy	<i>Bellis perenis</i>	Rare	-
Dandelion	<i>Taraxacum officinale</i>	Occasional	-
Downy Birch	<i>Betula pubescens</i>	Occasional	-
English Ivy	<i>Hedera helix</i>	-	Occasional
Lime	<i>Tilia platyphyllos</i>	-	Dominant
Norway Maple	<i>Acer platanoides</i>	-	Rare
Perennial Rye Grass	<i>Lolium perenne</i>	Dominant	-
Ribwort Plantain	<i>Plantago lanceolata</i>	Occasional	-
Shining Cranesbill	<i>Geranium lucidum</i>	Occasional	-
Silver Birch	<i>Betula pendula</i>	-	Rare
Thyme	<i>Thymus vulgaris</i>	Rare	-
Yarrow	<i>Achille millefolium</i>	Rare	-

Alderborne Rehabilitation Centre Building

Species		Abundance		
Common Name	Latin Name	Amenity Grassland	Introduced Shrub – Hedge	Introduced Shrub - East
Buddleia	<i>Buddleja davidii</i>	Rare	-	-
Cabbage Palm	<i>Palmetto sabal</i>	-	-	Rare
Canadian Fleabane	<i>Conyza canadensis</i>	-	-	Occasional
Cherry Laurel	<i>Prunus laurocerasus</i>	Occasional	-	-
Cleavers	<i>Galium aparine</i>	Rare	-	Occasional
Daisy	<i>Bellis perenis</i>	Occasional	-	-
English Ivy	<i>Hedera helix</i>	Occasional	Occasional	-
European Raspberry	<i>Rubus idaeus x strigosus</i>	-	-	Occasional
Firethorn	<i>Pyracantha angustifolium</i>	-	Dominant	Occasional
Greater Plantain	<i>Plantago major</i>	Frequent	-	-
Japanese Mahonia	<i>Mahonia japonica</i>	-	-	Frequent
Leyland Cypress	<i>Cupressus x leylandii</i>	-	-	Frequent
Lobelia	<i>Lobelia species</i>	-	-	Rare
Marguerite Daisy	<i>Argyranthemum frutescens</i>	-	-	Rare
Norway Maple	<i>Acer platanoides</i>	-	Occasional	-
Perennial Rye Grass	<i>Lolium perenne</i>	Dominant	-	-
Privet	<i>Ligustrum vulgare</i>	-	Rare	-
Shining Cranesbill	<i>Galium lucidum</i>	Occasional	-	-
Sneezeweed	<i>Helenium autumnale</i>	-	-	Rare
Spanish Dagger	<i>Yucca gloriosa</i>	Rare	-	-

Common Name	Species	Abundance		
	Latin Name	Amenity Grassland	Introduced Shrub – Hedge	Introduced Shrub - East
Thyme	<i>Thymus vulgaris</i>	-	-	Occasional

Broad-Leaved Woodland and Garden

Common Name	Latin Name	Semi Natural Broadleaved Woodland	Watercourse	Introduced Shrub - Garden	Amenity Grassland - Garden
Ash	<i>Fraxinus excelsior</i>	Occasional	-	-	-
Beech	<i>Fagus sylvatica</i>	-	-	Occasional	-
Bramble	<i>Rubus fruticosus</i> aggregate	Frequent	Occasional	-	-
Broad Leaved Dock	<i>Rumex obtusifolius</i>	Rare	-	-	-
Buddleia	<i>Buddleja davidii</i>	-	-	Rare	-
Chinese Silver Grass	<i>Miscanthus sinensis</i>	-	-	Rare	-
Cleavers	<i>Galium aparine</i>	Occasional	-	-	-
Daisy	<i>Bellis perennis</i>	-	-	-	Rare
Dwarf Mallow	<i>Malva neglecta</i>	-	-	Rare	-
English Ivy	<i>Hedera helix</i>	Frequent	-	-	-
English Oak	<i>Quercus robur</i>	Dominant	-	-	-
European Spindle	<i>Euonymus europaeus</i>	Rare	-	-	-
Field Maple	<i>Acer campestre</i>	Occasional	-	-	-
Hawthorn	<i>Crataegus monogyna</i>	Occasional	-	-	-
Holly	<i>Ilex aquifolium</i>	Rare	-	-	-
Low St John's Wort	<i>Hypericum perforatum</i>	Rare	-	-	-
Norway Maple	<i>Acer platanoides</i>	Rare	-	-	-
Natal Lilly	<i>Clivia miniata</i>	-	-	Rare	-
Pampas Grass	<i>Cortaderia selloana</i>	-	-	Occasional	-
Pendulous Sedge	<i>Carex pendula</i>	Occasional	Frequent	-	-
Perennial Rye Grass	<i>Lolium perenne</i>	-	-	-	Dominant
Red Dead Nettle	<i>Lamium purpureum</i>	Rare	-	-	-
Shining Cranesbill	<i>Geranium lucidum</i>	-	-	-	Occasional
Spanish Dagger	<i>Yucca gloriosa</i>	-	-	Rare	-
Thyme	<i>Thymus vulgaris</i>	-	-	Occasional	-
<i>Viburnum tinus</i>	<i>Viburnum tinus</i>	Rare	-	-	-
Yellow Flag Iris	<i>Iris pseudacorus</i>	-	Rare	-	-
Yew	<i>Taxus baccata</i>	Occasional	-	-	-

Tudor Building - South

Species		Abundance			
Common Name	Latin Name	Amenity Grassland	Semi-Natural Broad Leaved Woodland	Fence	Line of Trees - South
Ash	<i>Fraxinus excelsior</i>	Occasional	-	-	Rare
Bramble	<i>Rubus fruticosus</i> aggregate	-	Occasional	-	Occasional
Cleavers	<i>Galium aparine</i>	-	-	-	Frequent
Daisy	<i>Bellis perennis</i>	Rare	-	-	-
Dog Rose	<i>Rosa canina</i>	-	-	-	Rare
Downy Birch	<i>Betula pubescens</i>	-	-	-	-
Dwarf Mallow	<i>Malva neglecta</i>	-	-	-	Rare
English Ivy	<i>Hedera helix</i>	-	Occasional	Occasional	Occasional
English Oak	<i>Quercus robur</i>	-	Dominant	-	Frequent
European Spindle	<i>Euonymus europaeus</i>	-	Frequent	-	-
Field Maple	<i>Acer campestre</i>	-	-	-	-
Firethorn	<i>Pyracantha angustifolium</i>	-	Occasional	-	-
Greater Plantain	<i>Plantago major</i>	Occasional	-	-	-
Hawthorn	<i>Crataegus monogyna</i>	-	-	Rare	-
Herb Robert	<i>Geranium robertianum</i>	-	Rare	-	-
Holly	<i>Ilex aquifolium</i>	-	Frequent	-	-
Japanese Privet	<i>Ligustrum japonicum</i>	-	-	-	-
Leyland Cypress	<i>Cupressus x leylandii</i>	-	-	-	-
Lime	<i>Tilia platyphyllos</i>	-	-	-	Occasional
Mugwort	<i>Artemisia vulgaris</i>	-	-	-	Rare
Norway Maple	<i>Acer platanoides</i>	-	-	Dominant	Occasional
Pendulous Sedge	<i>Carex pendula</i>	-	Rare	-	-
Perennial Rye Grass	<i>Lolium perenne</i>	Dominant	-	-	-
Red Dead Nettle	<i>Lamium purpureum</i>	-	-	-	Rare
Ribwort Plantain	<i>Plantago lanceolata</i>	-	-	-	Rare
Shining Cranesbill	<i>Geranium lucidum</i>	Rare	-	-	-
Spurge Laurel	<i>Daphne laureola</i>	-	Rare	-	-
Yew	<i>Taxus baccata</i>	-	-	-	Rare

Tudor Building

Common Name	Latin Name	Tudor – Amenity Grassland	Tudor Garden – Amenity Grassland	Tudor Centre – Introduced Shrub	Old Creche Garden – Amenity Grassland	Old Creche Centre – Introduced Shrub	Old Creche Centre - Scrub
Apple	<i>Malus domestica</i>	-	Rare	-	-	-	-

Common Name	Latin Name	Tudor – Amenity Grassland	Tudor Garden – Amenity Grassland	Tudor Centre – Introduced Shrub	Old Creche Garden – Amenity Grassland	Old Creche Centre – Introduced Shrub	Old Creche Centre - Scrub
Ash	<i>Fraxinus excelsior</i>	-	Occasional	Occasional	-	-	-
Bramble	<i>Rubus fruticosus</i> aggregate	-	-	Occasional	-	-	Occasional
Chinese Gooseberry	<i>Actinidia species</i>	-	-	-	-	Frequent	-
Climbing Prairie Rose	<i>Rosa setigera</i>	-	-	-	Rare	-	-
Cleavers	<i>Galium aparine</i>	Rare	-	-	-	-	Occasional
Daisy	<i>Bellis perennis</i>	Occasional	Rare	-	Frequent	-	-
Dwarf Mallow	<i>Malva neglecta</i>	-	-	-	Rare	Rare	-
English Ivy	<i>Hedera helix</i>	-	Occasional	-	-	-	Rare
Firethorn	<i>Pyracantha angustifolium</i>	-	Occasional	Dominant	Rare	-	-
Greater Plantain	<i>Plantago major</i>	Frequent	Occasional	-	Occasional	-	-
Green Alkanet	<i>Pentaglottis sempervirens</i>	-	-	-	-	-	Occasional
Hard Rush	<i>Juncus inflexes</i>	Rare	-	-	-	-	-
Holly	<i>Ilex aquifolium</i>	-	-	-	Rare	-	Occasional
Leyland Cypress	<i>Cupressus x leylandii</i>	-	-	-	-	-	Frequent
Moss Rose	<i>Portulaca grandiflora</i>	-	-	-	-	Rare	-
Pendulous Sedge	<i>Carex pendula</i>	-	-	Occasional	-	-	-
Perennial Rye Grass	<i>Lolium perenne</i>	Dominant	Dominant	-	Dominant	-	-
Red Dead Nettle	<i>Lamium purpureum</i>	-	-	Rare	-	-	-
Ribwort Plantain	<i>Plantago lanceolata</i>	-	-	-	Occasional	-	-
Rosemary	<i>Salvia rosmarinus</i>	-	-	-	-	Dominant	-
Shrubby St John's Wort	<i>Hypericum prolificum</i>	-	-	-	-	Occasional	-
Siberian Dogwood	<i>Cornus alba</i>	-	-	-	Rare	-	-
Staghorn Sumac	<i>Rhus typhina</i>	-	-	Occasional	-	-	-
Thyme	<i>Thymus vulgaris</i>	-	-	-	-	Occasional	-
True Myrtle	<i>Myrtus communis</i>	-	-	Occasional	-	-	-

Appendix D Legislation

7.1.1 The Conservation of Habitats and Species Regulations 2017 (as amended)

The Habitats Regulations consolidate all the various amendments made to the Conservation (Natural Habitats, &c.) Regulations 1994 in respect of England and Wales. The 1994 Regulations transposed Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (EC Habitats Directive) into national law. The Regulations came into force on 30th October 1994. In Scotland the Habitats Directive is transposed through a combination of the Habitats Regulations 2017 (in relation to reserved matters) and the 1994 Regulations. The Conservation (Natural Habitats, &c) Regulations (Northern Ireland) 1995 (as amended) transpose the Habitats Directive in relation to Northern Ireland.

The Regulations provide for the designation and protection of 'European sites', the protection of 'European protected species', and the adaptation of planning and other controls for the protection of European Sites.

Under the Regulations, competent authorities i.e. any Minister, Government department, public body, or person holding public office, have a general duty, in the exercise of any of their functions, to have regard to the EC Habitats Directive.

The Regulations place a duty on the Secretary of State to propose a list of sites which are important for either habitats or species (listed in Annexes I and II of the Habitats Directive respectively) to the European Commission. Once the Commission and EU Member States have agreed that the sites submitted are worthy of designation, they are identified as Sites of Community Importance (SCIs). The EU Member States must then designate these sites as Special Areas of Conservation (SACs) within six years. The Regulations also require the compilation and maintenance of a register of European sites, to include SACs and Special Protection Areas (SPAs) classified under Council Directive 79/409/EEC on the Conservation of Wild Birds (the Birds Directive). These sites form a network termed Natura 2000.

The Regulations enable the country agencies to enter into management agreements on land within or adjacent to a European site, in order to secure its conservation. If the agency is unable to conclude such an agreement, or if an agreement is breached, it may acquire the interest in the land compulsorily. The agency may also use its powers to make byelaws to protect European sites. The Regulations also provide for the control of potentially damaging operations, whereby consent from the country agency may only be granted once it has been shown through Appropriate Assessment that the proposed operation will not adversely affect the integrity of the site. When considering potentially damaging operations, the country agencies apply the precautionary principle' i.e. consent cannot be given unless it is ascertained that there will be no adverse effect on the integrity of the site.

In instances where damage could occur, the appropriate Minister may, if necessary, make special nature conservation orders, prohibiting any person from carrying out the operation. However, an operation may proceed where it is or forms part of a plan or project with no alternative solutions, which must be carried out for reasons of overriding public interest. In such instances the Secretary of State must secure compensation to ensure the overall integrity of the Natura 2000 system. The country agencies are required to review consents previously granted under the Wildlife and Countryside Act 1981 for land within a European site and may modify or withdraw those that are incompatible with the conservation objectives of the site.

The Regulations make it an offence (subject to exceptions) to deliberately capture, kill, disturb, or trade in the animals listed in Schedule 2, or pick, collect, cut, uproot, destroy, or trade in the plants listed in Schedule 4. However, these actions can be made lawful through the granting of licenses by the appropriate authorities. Licenses may be granted for a number of purposes (such as science and education, conservation, preserving public health and safety), but only after the appropriate authority is satisfied that there are no satisfactory alternatives and that such actions will have no detrimental effect on wild population of the species concerned.

The Regulations make special provisions for the protection of European marine sites, requiring the country agencies to advise other authorities of the conservation objectives for a site, and also of the operations which may affect its integrity. The Regulations also enable the establishment of management schemes and byelaws by the relevant authorities and country agencies respectively, for the management and protection of European marine sites.

7.1.2 Wildlife and Countryside Act 1981 (as amended)

The Wildlife and Countryside Act 1981 is the major domestic legal instrument for wildlife protection in the UK, and is the primary means by which the following are implemented:

- The Convention on the Conservation of European Wildlife and Natural Habitats ('the Bern Convention'); and
- The Council Directive 79/409/EEC on the Conservation of Wild birds (the 'Bird Directive')

7.1.2.1 Wild Birds

The Act makes it an offence (with exception to species listed in Schedule 2) to intentionally:

- kill, injure, or take any wild bird,
- take, damage or destroy the nest of any wild bird while that nest is in use or being built (also [take, damage or destroy the nest of a wild bird included in Schedule ZA1] under the Natural Environment and Rural Communities Act 2006), or
- take or destroy an egg of any wild bird.

Special penalties are available for offences related to birds listed on Schedule 1, for which there are additional offences of disturbing these birds at their nests, or their dependent young. The Secretary of State may also designate Areas of Special Protection (subject to exceptions) to provide further protection to birds. The Act also prohibits certain methods of killing, injuring, or taking birds, restricts the sale and possession of captive bred birds, and sets standards for keeping birds in captivity.

7.1.2.2 Other Animals

The Act makes it an offence (subject to exceptions) to intentionally kill, injure or take any wild animal listed on Schedule 5, and prohibits interference with places used for shelter or protection, or intentionally disturbing animals occupying such places. The Act also prohibits certain methods of killing, injuring, or taking wild animals.

7.1.2.3 Flora, Fungi and Lichens

The Act makes it an offence (subject to exceptions) to intentionally pick, uproot or destroy:

- any wild plant listed in Schedule 8, or
- unless an authorised person, to intentionally uproot any wild plant not included in Schedule 8,
- to sell, offer or expose for sale, or possess (for the purposes of trade), any live or dead wild plant included in Schedule 8, or any part of, or anything derived from, such a plant.

7.1.2.4 Invasive Non-Native Species

The Act contains measures for preventing the establishment of non-native species which may be detrimental to native wildlife, prohibiting the release of animals and planting of plants listed in Schedule 9 in England and Wales. It also provides a mechanism making any of the above offences legal through the granting of licences by the appropriate authorities.

7.1.3 Countryside and Rights of Way (CROW) Act 2000

The Countryside and Rights of Way Act 2000 applies to England and Wales only. Part III of the Act deals specifically with wildlife protection and nature conservation.

The Act places a duty on Government Departments and the National Assembly for Wales to have regard for the conservation of biodiversity and maintain lists of species and habitats for which conservation steps should be taken or promoted, in accordance with the Convention on Biological Diversity.

Schedule 9 of the Act amends the SSSI provisions of the Wildlife and Countryside Act 1981, including increased powers for their protection and management of SSSIs. The provisions extend powers for entering into management agreements; place a duty on public bodies to further the conservation and enhancement of SSSIs; increase penalties on conviction where the provisions are breached; and include an offence whereby third parties can be convicted for damaging SSSIs.

Schedule 12 of the Act amends the species provisions of the Wildlife and Countryside Act 1981, strengthening the legal protection for threatened species. The provisions make certain offences 'arrestable', include an offence of reckless disturbance, confer greater powers to police and wildlife inspectors for entering premises and obtaining wildlife tissue samples for DNA analysis, and enable heavier penalties on conviction of wildlife offences.

7.1.4 Natural Environment and Rural Communities (NERC) Act 2006

The Natural Environment and Rural Communities (NERC) Act came into force on 1st October 2006. Section 41 (S41) of the Act required the Secretary of State to publish a list of habitats and species which are of principal

importance for the conservation of biodiversity in England. The list was drawn up in consultation with Natural England, as required by the Act.

The S41 list is used to guide decision-makers such as public bodies, including local and regional authorities, in implementing their duty under section 40 of the Natural Environment and Rural Communities Act 2006, to have regard to the conservation of biodiversity in England, when carrying out their normal functions.

Fifty-six habitats of principal importance are included on the S41 list. These are all the habitats in England that were identified as requiring action in the (now withdrawn) UK Biodiversity Action Plan (UK BAP) and continue to be regarded as conservation priorities in the subsequent UK Post-2010 Biodiversity Framework. They include terrestrial habitats such as upland hay meadows to lowland mixed deciduous woodland, and freshwater and marine habitats such as ponds and subtidal sands and gravels.

There are 943 species of principal importance included on the S41 list. These are the species found in England which were identified as requiring action under the (now withdrawn) UK BAP and which continue to be regarded as conservation priorities under the UK Post-2010 Biodiversity Framework. In addition, the hen harrier has also been included on the list because without continued conservation action it is unlikely that the hen harrier population will increase from its current very low levels in England.

7.1.5 Protection of Badgers Act 1992

Badgers and their setts (burrows) are protected under the Act. This makes it an offence to kill or take a badger, to cruelly ill-treat a badger, or to interfere with a badger sett, including disturbing a badger while it is occupying a sett.

Licences to permit otherwise prohibited actions can be granted under section 10 of the Act for various purposes. This includes licences to interfere with a badger sett for the purpose of development as defined by section 55(1) of the Town and Country Planning Act 1990.

Licences may be granted in order to close down setts, or parts of setts, prior to development or to permit activities close to a badger sett that might result in disturbance. A licence will be required if a sett is likely to be damaged or destroyed in the course of development or if the badger(s) occupying the sett will be disturbed.

Licences can be applied for at any time, but a licence for development will not normally be issued unless full planning permission has been granted. The closure of setts under licence is normally only permitted during July to November, inclusive.

7.1.6 The Hedgerow Regulations 1997

The intention of the Act is to protect important countryside hedges from destruction or damage. The Act does not apply where planning permission has been granted. There are various other exemptions under the Act, including:

- To make a new opening in substitution for an existing one that gives access to land. For example, a gate. However, the old opening must be filled in within 8 months;
- To obtain access to land where other means are not available or are only available at disproportionate cost;
- For the proper management of the hedgerow. This means real management, such as coppicing. But if the hedgerow is deliberately 'over-managed' this might qualify as removal.

If the proposed works are not exempt or subject to a current planning permission then the landowner must serve a Hedgerow Removal Notice in writing on their local planning authority. The authority then has 42 days (which period can be extended if the applicant agrees) to determine whether or not the hedge is considered 'important' under the regulations, and if so, whether or not to issue a Hedgerow Retention Notice. The local authority does not have to issue a Retention Notice, even if the hedgerow counts as important. If they do not issue a notice for an important hedge this is often on condition that certain things are done, e.g. reinstatement or replanting to a certain standard, or creation of an equivalent boundary elsewhere.

7.1.7 Water Framework Directive (WFD) 2017

The Water Framework Directive (WFD) (2000/60/EC) introduced a comprehensive river basin management planning system to help protect and improve the ecological health of our rivers, lakes, estuaries and coastal and groundwaters. This is underpinned by the use of environmental standards to help assess risks to the ecological

quality of the water environment and to identify the scale of improvements that would be needed to bring waters under pressure back into a good condition.

7.1.8 Invasive Alien Species (Permitting and Enforcement) Order 2019

The Invasive Alien Species (Enforcement and Permitting) Order 2019 came into effect on 1st December 2019. This allows for the enforcement of the EU Invasive Alien Species Regulation 1143/2014 on the prevention and management of invasive alien plant and animal species in England and Wales, including the relevant licenses, permits and rules for keeping invasive alien species.

If it is not a species of EU concern, then the Wildlife & Countryside Act (WAC; Section 14, Schedule 9) still applies.

The IAS Regulation lists species of concern which cannot be imported, kept, bred / grown, transported, sold, used, allowed to reproduce, or released into the environment. There are currently 49 species listed, which can be found in the Annex of Regulation (EU) No. 2016/1141 adopting a list of invasive alien species of Union concern pursuant to Regulation (EU) No 1143/2014. Unless species are being moved for the purpose of eradication, then a licence would be needed from Natural England to carry this action out. The Order also makes it an offence to: import, keep, breed, place on the market, exchange, allow to grow, cultivate or permit to reproduce and, finally, release into the environment a listed species.

This Order applies to England and Wales and the UK's offshore marine area. It also applies to controls on imports and exports from the UK. The civil penalties available via this Order are not relevant to Scotland and Northern Ireland.

Offences and penalties

Criminal offences are introduced for breaches of the main restrictions of The IAS Regulation, as well as offences relating to:

- false statements;
- altering, or not meeting, the conditions of permits and licences;
- attempts to commit offences;
- obstruction; and
- offences for companies and partnerships.

It is also an offence to:

- Allow the escape or release into the wild an animal that is not normally a resident or regular visitor to Great Britain, or an animal listed in Part 1 of Schedule 2, including species of crabs, ducks and squirrel.
- Plant, or allow to grow in the wild, plants listed in Part 2 of Schedule 2.
- Sell, or be involved in the sale of, any plant listed in Part 3 of Schedule 2, including Water Primrose and Floating Pennywort.

Each member state is also required to implement Management Measures to enable the Control, Containment and Eradication of those species identified as being widely spread in England and Wales – Japanese knotweed is not included (not designated as a Species of Concern within the EU IAS Regulation). Plant species included under Management Measures are:

- Nuttall's waterweed (*Elodea nuttallii*)
- Chilean rhubarb (*Gunnera tinctoria*)
- Giant hogweed (*Heracleum mantegazzianum*)
- Floating pennywort (*Hydrocotyle ranunculoides*)
- Himalayan balsam (*Impatiens glandulifera*)
- Curly waterweed (*Lagarosiphon major*)

- American skunk cabbage (*Lysichiton americanus*)
- Parrot's feather (*Myriophyllum aquaticum*)

Otherwise, 'Species of Concern' not included above but which are known to be present in the UK (e.g. Tree of heaven, Persian Hogweed), will be dealt with under 'Rapid eradication' permits.

The government considers that the prohibitions set out in the Order should be treated as seriously as those for the Wildlife and Countryside Act 1981: The maximum penalty upon summary conviction is 6 months imprisonment, a fine or both and the maximum penalty for conviction on indictment, is imprisonment for a term not exceeding two years, a fine or both.

7.1.9 National Planning Policy

The latest version of the NPPF came into being in July 2021, relevant sections are as follows:

Section 15 of the NPPF relates specifically to 'Conserving and Enhancing the Natural Environment'. *Paragraph 174 states that 'Planning policies and decision should contribute to and enhance the natural and local environment by:*

- *protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan);*
- *recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland;*
- *maintaining the character of the undeveloped coast, while improving public access to it where appropriate;*
- *minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;*
- *preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, considering relevant information such as river basin management plans; and*
- *remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate.'*

Paragraph 175 states that '*Plans should: distinguish between the hierarchy of international, national and locally designated sites; allocate land with the least environmental or amenity value, where consistent with other policies in this Framework; take a strategic approach to maintaining and enhancing networks of habitats and green infrastructure; and plan for the enhancement of natural capital at a catchment or landscape scale across local authority boundaries.*'

Paragraph 179 states that '*To protect and enhance biodiversity and geodiversity, plans should:*

- *Identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity; wildlife corridors and stepping stones that connect them; and areas identified by national and local partnerships for habitat management, enhancement, restoration or creation; and*
- *promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity.*'

Paragraph 180 states that '*When determining planning application, local planning authorities should apply the following principles:*

- *if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;*
- *development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not*

normally be permitted. The only exception is where the benefits of the development in the location proposed clearly

- *outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest;*
- *development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists; and*
- *development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to improve biodiversity in and around developments should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate.'*

Paragraph 181 states that *'The following should be given the same protection as habitats sites:*

- *potential Special Protection Areas and possible Special Areas of Conservation;*
- *listed or proposed Ramsar sites; and*
- *sites identified, or required, as compensatory measures for adverse effects on habitats sites, potential Special Protection Areas, possible Special Areas of Conservation, and listed or proposed Ramsar sites.'*

Paragraph 182 states that *'The presumption in favour of sustainable development does not apply where the plan or project is likely to have a significant effect on a habitats site (either alone or in combination with other plans or projects), unless an appropriate assessment has concluded that the plan or project will not adversely affect the integrity of the habitats site.'*

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