

Dunsbury Park, Havant

**Reserved Matters Application
Plot 3B Development**

Ecological Impact Assessment

Portsmouth City Council

March 2018



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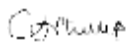
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Non- Technical Summary

Non-technical Summary Application Site Details	Dunsbury Park, Havant Plot 3 Total – 2.4 Ha. Plot 3B - Size 1 ha situated in the southern half of Plot 3.
Scheme Details	A hybrid Outline Planning Application for the phased development of Dunsbury Hill Farm into a business park, named Dunsbury Park was approved in 2014 with detailed planning for a link road (hereafter referred to as the Wider Site). This report only refers to the Reserved Matters Application to develop Plot 3B, of Dunsbury Park (hereafter referred to as the Application Site), for the proposed construction of a warehouse distribution unit, hereafter referred to as the Scheme.
Desk Studies and Field Surveys	A review of existing desk study data, an update check of the MAGIC Website for designated sites and review of ongoing field survey data has been undertaken in February 2018 prior to writing this report. An updated extended Phase 1 habitat survey of Plot 3 (covering Plot 3A and 3B) and Phase 2 surveys for bats and dormice were undertaken in 2017 between July and September for bats and June and October for dormice, the results of which also inform this Ecological Impact Assessment (EclA).
Relevant Ecological Features	Designated Sites There are twelve non-statutory Sites of Importance for Nature Conservation (SINCs) within 1 km of the Application Site. Cherry Tree Row Woodland, a relic ancient woodland strip, borders the west side of the Application Site. Bats - Eight species of bat, including the Barbastelle bat, were recorded during activity surveys of the wider site during 2017 and confirm the continued use of Hedgerow 2 (approximately 200 m north-west of the Application Site) and Hedgerow 3 (approximately 450 m to the north of the Application Site) as a commuting route, possibly between areas of woodland. Park Lane which runs in a north south direction on the eastern side of the Dunsbury Park (starting approximately 60 m to the north east of the Application Site) also recorded high levels of activity. No roosts were recorded. - Mist netting survey for the adjacent Plot 2 development recorded Bechstein's and Barbastelle bats (which are both an Annex II European protected species) in 2015 in Cherry Tree Row woodland. - The desk study carried out for the adjacent Plot 2 development in 2014 identified one large housing development proposed on land east of Horndean, 4.5 km north of Dunsbury Park, affecting Bechstein's bats. A Bechstein's bat maternity roost is situated 3 km north of the Application Site. Dormice - No evidence of dormice was recorded in the woodland surrounding the Application Site in 2017, however, surveys recorded continued presence of dormice in hedgerows to the north of the Application Site and the link road - Dormice were recorded across the Wider Site, including the woodland strips adjacent to the Application Site, during the original surveys in 2010/2011. - Evidence of dormice was recorded in Cherry Tree Row woodland during surveys for the development of Plot 2 in 2015. (Plot 2 is situated to the west

	of Plot 3, separated by Cherry Tree Row woodland which is approximately 35m wide at the narrowest point). Reptiles All four common reptile species, slow worm, common lizard, grass snake and adder, are present at Dunsbury Park and considered likely to be present in habitat bordering the Application Site.
Potential Impacts and Effects	• Damage to root protection zones of mature trees within Cherry Tree Row west of the Application Site and the non-designated woodland to the south and east of the Application Site. • Loss of woodland edge habitat that provides suitable habitat for birds, dormice and reptiles. • Species poor semi-improved grassland (a former arable field) will be lost as a result of the Scheme which will result in habitat loss for common reptile species and common bird species. • Disturbance to bats using the woodland and species poor semi-improved grassland (former arable field) for commuting and foraging from lighting during construction and operation of the Scheme. Loss of the grassland field will also reduce foraging habitat available for bats.
Avoidance, Mitigation and Compensation Measures	Mitigation to be implemented during the development and operation of the Scheme is as follows: • The retained woodland edges will be protected in accordance with British Standards BS5837: 2012 Trees in Relation to Design, Demolition and Construction, during construction by heras fencing to prevent encroachment by machinery, to ensure that the tree roots are not damaged and that marginal habitat is retained along the woodland edge for small mammals, including dormouse, birds and reptiles. • Vegetation clearance will be undertaken outside of the core breeding bird season which is the 1st March to the 31st August. If this is not possible a suitably experienced ecologist will carry out a search of nesting birds no more than 24 hours prior to clearance. • Small areas of vegetation clearance of bramble scrub and goat willow, which does not result in any fragmentation of habitat, will be undertaken under a Precautionary Method of Working (PMW) to be determined and overseen by a suitably experienced ecologist. • Vegetation clearance or removal of potential reptile refugia will be undertaken under a PMW with regard to reptiles. • All works to be carried out during the day (which is taken to be 30 minutes after dawn to 30 minutes before dusk). Any security lighting required at night will be low level and directional to avoid light spill onto adjacent habitat and disturbance to foraging and commuting bats. • A lighting plan for the operation of the development will be designed and implemented to reduce the light spill onto adjacent woodland habitat to avoid disturbance to bats. • Woodland edges will be maintained as dark corridors within the development to reduce disturbance and impact to bats commuting and foraging across the Wider Site. • Environment Agency and CIRIA pollution prevention guidelines will be adhered to in order to prevent pollution and run off to adjacent habitats, including woodland drains.

Significance of Residual Effects	Providing the mitigation detailed in this report is implemented, there will be no significant negative residual effects of the Scheme on important ecological features.
Biodiversity Enhancement Measures	Log and brash piles will be created using cut material from any bramble or willow scrub cleared from the Application Site. Log piles will be placed at the woodland edge or within gaps in the northern boundary to recreate connectivity for reptiles and dormice until landscape planting has matured. Spoil from stock piles will be used in a habitat creation area to the north of Dunsbury Park to create a landscaped area with more woodland and wildflower meadow planting.

1. Introduction

1.1. Terms of Reference

Hybrid outline planning permission for the phased development of Dunsbury Hill Farm into a business park named Dunsbury Park¹ (hereafter referred to as the Wider Site) was granted in 2014 (Reference APP/12/00338). Atkins was commissioned by Portsmouth City Council to undertake an Ecological Impact Assessment (EcIA) in connection with a reserved matters application for the proposed construction of a warehouse unit and associated infrastructure (hereafter referred to as the Scheme) within Plot 3B of Dunsbury Park.

The Scheme is located to the north west of Havant and approximately 10 km north of Portsmouth in Hampshire, centred on Ordnance Survey grid reference SU700 088 and is identified by the red line boundary on the Scheme Design Drawing (Drawing No. DHF-BAMD -Z3-XX-D-A-10002 P.07) in [Appendix A](#) (hereafter referred to as the Application Site). The Wider Site including the existing built environment and habitat features referred to in this report are shown in Figure A2 included in [Appendix A](#).

The hybrid outline planning permission of the Wider Site included:

- Full planning permission granted for “a new access link road named Fitzwygram Way, with bus gate to Woolston Road; together with landscaping, infrastructure and associated works (hereafter referred to as “the link road”).”
- Outline planning permission for “the development for employment uses and a hotel with conference facilities; together with landscaping, infrastructure and associated works.”

Construction of the link road has now been completed as has development of the first plot (Plot 2) which was the first Reserved Matters Application submitted in relation to the hybrid outline planning permission.

A reserved matter planning application has also been granted planning permission with regard to levelling of each of the development plots prior to development.

This report presents ecological information obtained during a desk study, field survey work and pre-construction survey work undertaken since the hybrid Outline Planning Permission was granted with regard to the Wider Site in 2014. The methodology of these surveys is detailed in [Appendix B](#) and relevant legislation is summarised in [Appendix C](#).

This EcIA evaluates the nature conservation value of the Application Site and its ecological features, assesses the significance of any impacts of the Scheme on these features and sets out mitigation measures in respect of impacts. This assessment takes into account mitigation and compensation measures previously agreed by the applicant within the hybrid outline planning permission.

This EcIA has been undertaken with reference to current good practice² and forms part of the technical information lodged with the Plot 3A planning application submission.

1.2. The Application Site

Plot 3, a fallow arable field, is the southernmost plot within the Wider Site located to the south of the new link road. The Application Site that this report refers to is Plot 3B, which is within the southern half of Plot 3 and is bounded by semi-natural ancient woodland to the west called Cherry Tree Row – designated as a Site of Importance for Nature Conservation (SINC), as well as further woodland strips to the south and east. The northern boundary of the Plot 3 is a remnant hedgerow which is now scrub and scattered trees which does not form a solid boundary. The link road access to the Application Site has already been constructed. The

¹ <http://dunsburypark.co.uk/>

² CIEEM (January, 2016). *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater and Coastal 2nd edition*. Chartered Institute of Ecology and Environmental Management, Winchester.

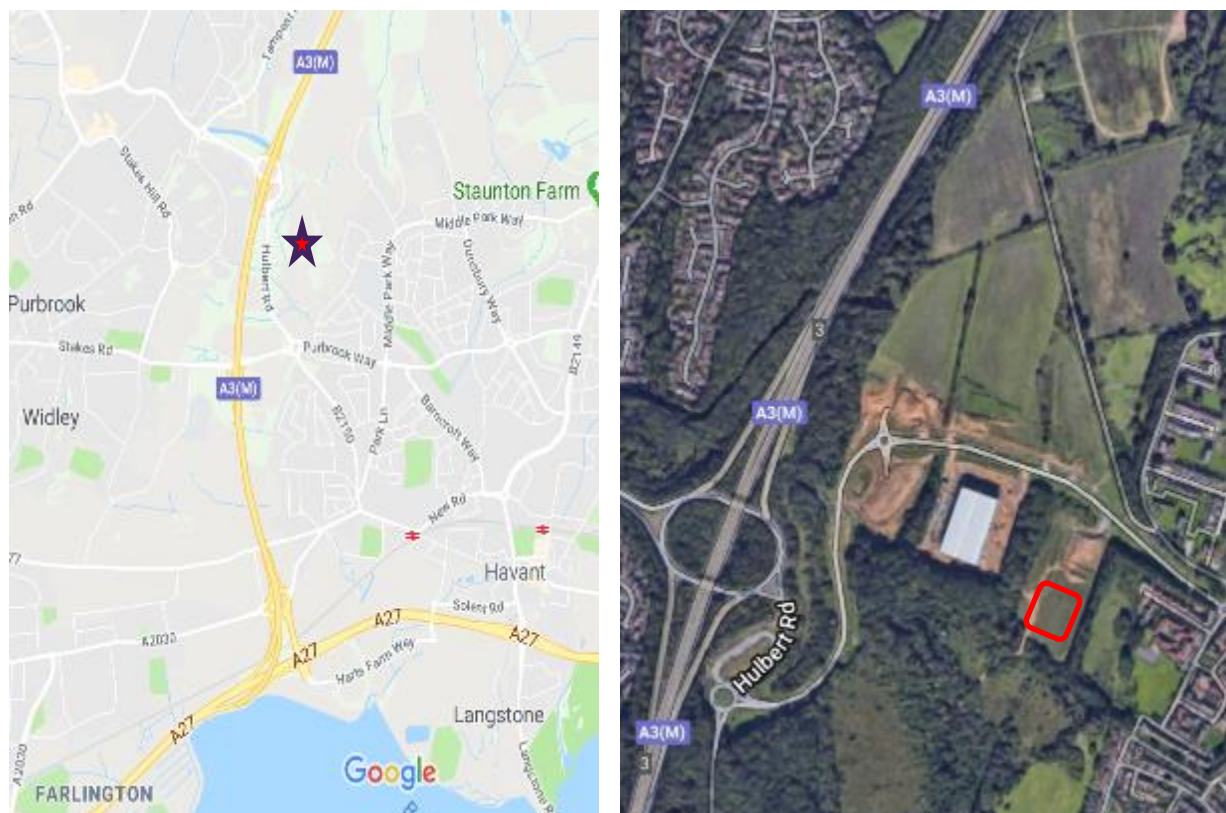
reserved matters application for Plot 3A, a vehicle maintenance depot, was submitted in February 2018 and works are due to commence in May 2018 subject to the reserved matters application being accepted.

The Wider Site is bounded to the west by the A3(M), by woodland and grassland to the south and north and by residential areas of Havant to the east and south east.

The Application Site was formerly arable land which has not been farmed, cut or grazed since 2014. Spoil material from the link road construction and construction of attenuation ponds to the south of the Wider Site, has already been placed within this field. The spoil will require removal prior to development and the levelling works on this site to remove the topsoil and level and stabilise the area for development³ has already been completed.

The Phase 1 Habitat Map provided as Figure 1 in [Appendix D](#) shows the habitat (prior to the levelling works) within and adjacent to the Application Site. This EclA assesses the development taking into account the habitat present before the spoil heaping and cut and fill exercise although the recommendations take into account the current habitat on Site.

Figure 1. Indicative Location Map and Imagery showing Dunsbury Park and Application Site (red star) and indicative red line boundary.



Map Data © 2018 Google

Imagery © 2018 Google

1.3. The Scheme

The Wider Site occupies 20.2 ha of land and will be developed in separate phases over a number of years. Once all the phases are complete, this development will provide approximately 650,000 sq. ft of new employment floor space, with a hotel and conference centre. The new junction to connect the Dunsbury Park development to the A3(M) via Hulbert Road, and the link road (Fitzwygram Way) to define a primary circulation route through the development site has already been completed. The existing bridleway (Park Lane) which runs through the wider Dunsbury Park will be maintained and improved.

³ The reserved matters consent for the cut and fill is application reference APP/17/00866

The Application Site (Plot 3B) is situated in the south east of the Wider Site, to the south of the link road. Scheme will include 42 parking spaces, two of which will be disabled access and 26 loading bays.

Small areas of woodland edge will require clearing to enable the construction. Following this, the retained woodland edge will be protected throughout construction with heras fencing to avoid encroachment of any construction activity onto potential dormouse and reptile habitat and to avoid damage to the root zones and canopies of the mature trees.

The Scheme is shown on the Scheme Design Drawing (Drawing No. DHF-BMP-23-00-DR-A-10003-PO1) provided in [Appendix A](#). This reserved matters EclA refers to the development plot only as depicted by the red line boundary. The access road to this plot from the link road is being constructed under discharge of conditions under Condition B9 of APP/15/00732. This road is being constructed at the same time as Plot 3A and Plot 3B and therefore mitigation stated in this report will also mitigate impacts from the construction of this road as also stated in the EclA for Plot 3A.⁴

1.4. Background and Scope of the Assessment

Ecological survey work has been undertaken across the Wider Site since 2010 in connection with planning applications and pre-construction survey work. An Environmental Statement (ES)⁵ was lodged with the submission of the hybrid outline planning application in 2012. The ES identified the presence of habitats and species across the Wider Site that would be affected by the Wider Site development and provided an outline of proposed mitigation.

The design of the Wider Site development has aimed to avoid such effects as far as possible through minimising habitat loss (retention of hedgerows and woodland edges) and the implementation of sensible lighting schemes. In addition to this, the applicant agreed to allocate a 3.4 ha former arable field specifically for habitat creation where various ecological features will be created and managed throughout the life of the Dunsbury Park development and beyond to enhance biodiversity. The habitat creation area is located approximately 450 m north of the Application Site. In the short term this area is now being utilised for spoil storage but will be landscaped and planted with trees and shrubs at the northern end to provide connectivity to the woodland and wildflower grassland to provide increased food resource for pollinators and habitat for birds, reptiles and other mammals present at the site such as deer.

Following the granting of the Full Planning Permission for the link road, mitigation licences for bats and dormice pertaining to the link road construction were granted by Natural England in 2014. A Habitat Management and Maintenance Plan⁶ was produced as part of the dormouse mitigation licence⁷, which covers the link road and associated infrastructure. It outlined the general vision for the Dunsbury Park development in terms of nature conservation and provided information regarding measures that will be undertaken for species present such as dormice and bats. This document was updated in 2016 following the Plot 2 development, which included mitigation as stated in the Plot 2 dormouse mitigation licence granted by Natural England in 2016⁸, and will be updated for each of the subsequent phases of development once they have reached detailed design stage. Masterplans were also produced for the link road phase and subsequently Plot 2 as part of the bat and dormouse mitigation licences⁹. These documents set out the various phases of the Dunsbury Park overall development in the view to help assess the overall impacts of the proposed development on the bat population, and the future mitigation across the whole project. The information within the ES, mitigation licences and ecological survey work across the Wider Site carried out in connection with detailed design work for each plot was used to inform this reserved matters application.

The proposals at the Application Site considered in this EclA build on the principles approved and described in the general vision for the Dunsbury Park development site (Wider Site) in terms of nature conservation, habitat creation and enhancements which would take place in the open space around the development to

⁴ Atkins, 2018, *Dunsbury Park Reserved Matters Application for Plot 3A, Ecological Impact Assessment*.

⁵ Atkins, 2012. *Dunsbury Hill Farm Site, Environmental Statement*.

⁶ Atkins, 2014. *Dunsbury Hill Farm Habitat Management and Maintenance Plan. (updated in January 2016)*

⁷ *Dormouse Licence for Dunsbury Park Link Road - 2014-456-EPS-MIT*

⁸ *Dormouse Licence for Plot 2 - 2016-21182-EPS-MIT*

⁹ Atkins, 2014. *Dunsbury Hill Farm Bat and Dormouse Masterplans (pertaining to Natural England licences 2014-412-EPS-MIT of bats and 2014_456-EPS-MIT for dormouse and 2 2016-21182-EPS-MIT*

minimise any long-term impact on habitats and species, as previously agreed in the hybrid Outline Planning Permission.

This report also presents ecological information obtained during dormice and bat activity surveys that were updated in 2017.

2. Methodology

2.1. Ecological Zone of Influence

The EZoI is an area defined by the assessment in which there may be ecological features subject to impacts and subsequent effects ((both positive and negative) as a result of the Scheme. The EZoI is determined through an assessment of many interacting factors (see **Appendix B** for more details).

The EZoI of the Scheme, has been determined as the Site and habitat within 1 km of the Site.

Determining the EZoI occurs at two stages of the assessment. The first stage (initial EZoI) is to determine the geographical area for obtaining ecological data through desk and field based studies based on the potential impacts and effects of the Scheme on ecological features. The second stage (final EZoI) is to determine the geographical area for assessing the impacts and subsequent effects (both positive and negative) of the Scheme on important ecological features based on all the available information.

The initial EZoI is detailed in **Appendix B**. The final EZoI is detailed in Section 4.1.

2.2. Desk Study

Due to the phased nature of the Wider Site and continuing surveys for protected species (dormice and bats), a new desk study request from the local record centre was not considered necessary. However, the MAGIC¹⁰ website was checked for any new or proposed statutory designated sites for nature conservation. A review of the previous desk study was undertaken and survey results from 2015 and 2017 surveys were taken into consideration. Previous desk study methodology is detailed in **Appendix B**.

2.3. Ecological Surveys

The survey work used to inform this EclA is based on information gathered across the Dunsbury Park development site to inform the ES and the dormouse and bat mitigation licences^{7,8} for the link road and Plot 2. The Dunsbury Park development site was intensively surveyed between 2010 and 2015 to establish information regarding habitats and species across the Wider Site. The baseline data gathered from this information is relevant for use within this EclA. Updated survey work has been undertaken across the Wider Site in 2017 where deemed necessary (see below for the Phase 1 habitat survey and Phase 2 surveys).

With this in mind, the field methodology information included below covers only the most recent detailed survey work completed within and immediately surrounding the Application Site in 2017.

2.3.1. Extended Phase 1 Habitat Survey

An ecological walkover survey of areas within and adjacent to the Application Site was undertaken in June 2017, broadly following the Phase 1 habitat survey methodology¹¹ where access was possible, due to some of the Site already being used for storing spoil (refer to survey limitations in Section 2.3.3). The survey included a search for any new evidence of notable or protected species (such as badgers) within or in close proximity to the Application Site boundary.

Full details of the extended phase 1 habitat survey methodology are provided in **Appendix B**. The results of the extended phase 1 habitat survey are provided in **Appendix D**.

2.3.2. Phase 2 Surveys

In order to update the information on the use of the Application Site by dormice and bats further surveys were carried out during 2017. Full methodology of phase 2 surveys is included in **Appendix B**.

- Dormice presence/ absence surveys were carried out across the Wider Site, including the woodland adjacent to the Application Site, as shown in the dormouse report included in Annex A. Nest tubes were

¹⁰ <http://www.natureonthemap.naturalengland.org.uk/>

¹¹ Joint Nature Conservation Committee (2010). *Handbook for Phase 1 habitat survey - a technique for environmental audit*.

installed in March 2017 and checked in June, July, September and October of 2017. All hazel dormouse surveys were undertaken in accordance with good practice guidance¹² and CIEEM competencies for undertaking hazel dormouse surveys¹³.

- Bat Activity Surveys including two dusk surveys and a dusk and dawn survey were carried out across the Wider Site, including the boundaries of the Application Site, in July, August and September 2017. Bat surveys were carried out in accordance with good practice guidelines¹⁴. Static bat detectors were also left out at Hedgerow 3 to monitor continued usage of this linear feature. Bat survey methodology is detailed in **Appendix B** and Bat Survey results are included in a report within Annex A.

2.3.3. Survey Limitations

It was not possible to obtain a full species list of the entire grassland field due to some of the land already being used for spoil heap storage since the construction of the link road and subsequently for spoil from the attenuation pond creation in 2017. This is not considered to be a significant limitation as the species were consistent throughout the field, and consistent with the species recorded in the adjacent Plot 2, except for the wet grassland species, in 2015 for which a full species list was obtained,

Due to changing construction activities and security measures across the Application Site, access was often limited leading to small changes in the transect routes completed during the bat surveys. Traffic incidents also led to delayed arrival on the September transect resulting in a delayed start. Bat activity surveys were not always carried out under optimum weather conditions. Despite these limitations, data obtained is considered to provide sufficient information to conclude that a diverse range of species are continuing to use the Application Site.

The list of invasive plant species included on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) is extensive and these plants are found in a range of different habitats, including aquatic habitats. The extended phase 1 habitat survey checked the presence of (Japanese knotweed, giant knotweed, hybrid knotweed, giant hogweed, Himalayan (Indian) balsam, rhododendron and cotoneaster species. No invasive species have been recorded within the Wider Site and, therefore, it is considered that this survey is sufficient to identify any constraints posed by invasive species.

Ecological surveys are limited by factors which affect the presence of plants and animals such as the time of year, migration patterns and behaviour. The ecological surveys undertaken to support this EcIA have not therefore produced a complete list of plants and animals and the absence of evidence of any particular species should not be taken as conclusive proof that the species is not present or that it will not be present in the future. However, the results of these surveys have been reviewed and are considered to be sufficient to undertake this EcIA.

2.4. Temporal Scope

Potential impacts on ecological features have been assessed in the context of how the predicted baseline conditions of the site have changed in that the re-levelling exercise started in Autumn 2017 and is now nearing completion. Based on discussion with the client it is assumed that construction of the new development will commence in summer 2018 subject following reserve matters planning approval and be operational by the end of 2018.

2.5. Nature Conservation Evaluation and Impact Assessment

The methodology for assessing the nature conservation value of an ecological feature, and the assessment of impacts and effects (including both positive and negative effects and cumulative impacts and effects) of the Scheme are provided in **Appendix B**.

¹² English Nature (2006). *The Dormouse Conservation Handbook* (2nd edition).

¹³ CIEEM (April, 2013) *Competencies for Species Survey: Hazel Dormouse*.

¹⁴ Bat Conservation Trust (2012) *Bat Surveys: Good Practice Guidelines, 2nd Edition*

2.6. Mitigation Hierarchy

The principles of the mitigation hierarchy^{15,16} have been adopted and used when considering impacts and subsequent effects on ecological receptors within the EZoI.

The principles of the mitigation hierarchy are that in order of preference impacts on biodiversity should be subject to:

1. Avoidance;
2. Mitigation; and
3. Compensation.

Opportunities for biodiversity enhancements are also identified.

¹⁵ Department for Communities and Local Development (2012). National Planning Policy Framework, para 118.
<https://www.gov.uk/government/publications/national-planning-policy-framework--2>

¹⁶ CIEEM (January, 2016). *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater and Coastal 2nd edition, Paragraph 1.16*. Chartered Institute of Ecology and Environmental Management, Winchester.

3. Existing Baseline Conditions

Sections 3.1 to 3.4 below summarise the ecological baseline relevant to the Scheme recorded during the desk and field based studies undertaken to inform this EcIA.

3.1. Designated Sites, Ancient Woodland

There are no statutory designated sites within 2 km of the Application Site. Table 3.1 and Table 3.2 summarise the non-statutory designated sites for nature conservation and ancient woodlands situated within 1 km of the Application Site. Full citations for the designated site adjacent to the Site and Site of Importance for Nature Conservation (SINC) criteria are given in **Appendix E**.

Table 3-1 Designated Sites (Non-Statutory) and Ancient Woodland within the initial Ecological Zone of Influence (1 km)

Designated Site	Approximate Location of Designated Site ¹⁷	Features of Interest ¹⁸
Cherry Tree Row SINC (SINC Criteria 1A)	Adjacent and partly within the southern boundary of the Application Site.	Ancient (relic) semi-natural woodland including oak, ash and hazel with areas of wet woodland and ditches and banks features. There is a rich ground flora including bluebell, wood spurge, goldenrod, pignut and yellow archangel.
Neville's Park Areas 2 & 3 (SINC Criteria 2A)	10 m south of the Application Site. This area is situated south of the wooded southern boundary of the Application Site.	Forb rich unimproved grasslands with developing scrub. Two attenuation ponds have now been created at this site.
Bushy Lease (SINC Criteria 1A)	300 m south of the Application Site on the southern side of Hermitage Stream.	Ancient semi-natural woodland
Neville's Park East Wood SINC (SINC Criteria 1A)	330 m south-west of the Application Site, on the southern side of Hermitage Stream.	Oak, hazel and ash woodland adjacent to Hulbert Road to the south of Dunsbury Hill Park.
Beech Wood East SINC (SINC Criteria 1A, 1B)	375 m north-west of the Application Site.	Ancient semi-natural broad-leaved woodland with areas of replanted coniferous trees and birch stands.
Dunsbury Hill Wood SINC (SINC Criteria 1Cii)	460 m north-east of the Application Site.	Semi-natural woodland comprising valley alderwood which is an important community type of restricted distribution in the County
Neville's Park areas 4 – 10 (SINC Criteria 1B, 1Cii, 2A, 2D)	525 m south-west of the Application Site on the southern side of Hermitage Stream.	Neville's Park areas 4 – 10 Broadleaved woodland with some ancient woodland remaining and woodland of restricted distribution within the county – i.e. alder swamp. Includes agriculturally unimproved grasslands.
Neville's Park Wood West (SINC Criteria 1B)	580 m south-west of the Application Site but on the western side of a minor road.	Woodland with some remaining ancient woodland.

¹⁷Where designated sites are situated outside of the Application Site boundary, the approximate distance and direction is given at the closest point of the designated site from the Application Site

¹⁸Information on non-statutory designated sites provided by Hampshire Biodiversity Record Centre.

Designated Site	Approximate Location of Designated Site ¹⁷	Features of Interest ¹⁸
Cabbage field Row (SINC Criteria 1A)	650 m north-east of the Application Site.	Ancient semi-natural woodland
Dunsbury Hill Grassland 2 (SINC Criteria 2B)	680 m north-east of the Application Site.	Good semi-improved grassland with some areas of unimproved grassland.
Meadow by Bell's Copse SINC (SINC Criteria 2A, 2D)	795 m north-east of the Application Site.	Designated for its agriculturally designated grassland
Dunsbury Hill Areas 5 & 6 (SINC Criteria 2A)	965m north of the Application Site.	Agriculturally unimproved grassland.

3.2. Main Habitats

All of the main habitats are indicated on the extended phase 1 habitat survey plan in **Appendix D** with specific features highlighted by target notes (TN) on the drawing. TN descriptions and photographs are provided in **Appendix D**.

Table 3-2 Main Habitats within Ecological Zone of Influence

Habitat Type	Relevant Target Notes	Summary Description of Habitat	Location of Habitat	Approximate % of Application Site
Species poor Semi-improved grassland	TN1	Fallow field colonised by grasses and weeds has now been levelled. The remainder of the field has been used for spoil storage (see TN5)	Application Site	35%
Broadleaved Woodland (including Cherry Tree Row SINC above)	TN2	Broadleaved woodland comprising oak, willow, ash and hawthorn. The western boundary is designated as Cherry Tree Row SINC (see Table 3.1)	Within and bordering the Application Site on the west, east and southern sides.	5%
Scattered Trees	TN3	Young oaks and ash trees within northern boundary	Bordering the wider Plot 3 to the north but outside the Application Site	n/a
Scrub	TN4	Hawthorn scrub forming a defunct hedge with areas of bracken and bramble. The embankment to the link road is planted with new landscape planting to strengthen the connectivity of this vegetation.	Bordering Plot 3 to the north but outside of the Application Site.	n/a
Bare Earth	TN5	Spoil heaps located on what was previously species poor semi-improved grassland. This soil will be removed as part of the levelling exercise for the development of Plot 3.	Application Site	60 %

3.3. Protected and Notable Species

The results of the desk study and field surveys undertaken for protected and notable¹⁹ species are summarised below in Table 3.3. Detailed phase 2 species survey results for bats and dormice are provided as reports in **Annex A**. A summary of the extended phase 1 habitat survey and phase 2 species survey methodologies is provided in **Appendix B**.

Table 3-3 Protected and Notable Species within Application Site and/or initial EZol

Species or Species Group	Desk Study Records ²⁰ and previous survey results.	2017 Field Survey Results ²¹
Bats (Common)	The desk study returned a small number of common pipistrelle and brown long-eared bat records within 1 km of the Application Site²². Common pipistrelle species were trapped during mist netting in Cherry Tree Row in 2015 as part of the Plot 2 surveys approximately 50 m from the Application Site. Common pipistrelle, soprano pipistrelle, serotine and noctule bats were recorded during activity surveys of Plot 2 in 2015. The activity was recorded along woodland edges. Brown long-eared bats were recorded in a bat box installed under the bat licence for the link road within Neville's Park Woodland in 2016.	Based on survey results in 2015 for Plot 2, further bat activity surveys and static recording were carried out to confirm continued activity across the Dunsbury Park despite the ongoing development. Three activity surveys using an echo meter touch pro detector and passive monitoring using an SM2 detector between July and September 2017 have indicated that bats are foraging along the woodland margins and dark corridors formed by public footpaths surrounding the Application Site on the east, west and south sides. Surveys also indicate that bats forage and commute along the hedgerows to the north of the link road bordering Plot 4 and 5 and along the Park Lane bridleway to the east of Plot 4 and 5. The majority of the bats observed/recorded were common pipistrelle and soprano pipistrelle, with serotine and Myotis species recorded less frequently and occasional recordings of nathusius, noctule and brown long-eared bats. Bat activity was generally low during the updated transect surveys as they were in previous bat activity surveys in 2010, 2011 and 2015.
Bats (Bechstein's and barbastelle) Annex II species.	There is a Special Area of Conservation (SAC) designated for bats within 30 km of the Application Site, namely Singleton and Cocking Tunnels SAC which is in West Sussex, approximately 18 km to the east. It is designated for supporting significant numbers of barbastelles and Bechstein's bats. There is a Bechstein's maternity roost located approximately 3 km to the north of the Application Site. A non-lactating female Bechstein's bat was trapped during mist netting in Cherry Tree Row in 2015 as part of the Plot 2 surveys approximately 100 m from the Application Site	A barbastelle was recorded on a passive detector (SM2) in September 2017, commuting along Hedgerow 3, located approximately 195 m to the north west of the Application Site as detailed in the bat survey results included in Annex A. This indicates that barbastelle bats are still present in the Wider Site and are using the hedgerow (Hedgerow 3) to the north of the link road to commute to areas of woodland surrounding the Application Site. The passive monitoring recorded 19 Myotis species passes. It is extremely difficult to distinguish Bechstein's calls from other Myotis species from sound analysis of the calls and so it is not possible to confirm whether Bechstein's bats, known to be present within the surrounding

¹⁹Notable species are taken as principal species for the conservation of biodiversity listed under Section 41 of the Natural Environment and Rural Communities Act 2006; any species listed in an IUCN Red Data Book; and any other species listed under LOCAL BAP.

²⁰Only recent records of species are provided here, where recent is taken to be in the last 10 years

²¹Further details are provided in Annex A

²²The records are not detailed enough to identify the closest roost to the Application Site

		woodland, are using the hedgerow for commuting or foraging.
Hazel Dormouse	There are previous records of hazel dormouse approximately 400 m to the north of the Application Site. 2010 – 2011 surveys for the ES recorded dormice present within the woodland strip to the south and west of the Application Site. 2015 surveys for Plot 2 of Cherry Tree Row recorded four unoccupied dormouse summer nests within the woodland located approximately 160 m from the Application Site. This woodland strip is connected to woodland bordering the Application Site.	2017 presence/ absence surveys did not record any dormice within woodland on the east and south side of the Application Site but did confirm that dormice are still present in Hedgerow 2, located approximately 200 m to the north west of the Application Site and Hedgerow 3 situated approximately 450 m to the north of the Application Site (as detailed in the Dormouse Survey report included in Annex A). However, due to the link road construction across the Wider Site and slow establishment of mitigation planting, these areas are no longer connected to Cherry Tree Row woodland that borders the Application Site. Monitoring surveys of Cherry Tree Row woodland in connection with the link road and Plot 2 licences also did not record the presence of any dormice in 2017 surveys, however, many of the boxes were not found due to overgrown vegetation. Due to an abundance of natural nest sites, dormouse absence cannot be assumed.
Common Species of Reptile	All four common species of reptile (slow worm, common lizard, grass snake and adder) have been recorded within the Wider Site. Adders were translocated from a hedgerow in Plot 2 to a habitat creation area north of Dunsbury Park. Slow worm were displaced and translocated from the attenuation pond area immediately south of the Application Site to adjacent habitat.	It was not possible to undertake further reptile surveys of the Application Site due to continued construction traffic within the area for other parts of the Scheme (i.e. drainage works, spoil management). Based on previous survey data across the Wider Site it is considered likely that common species of reptile will be present within the long grassland and woodland edges of the Application Site. These are most likely to be slow worm, common lizard and adder.
Badger	The original desk study returned no records of badgers within 1 km of the Application Site. A badger sett has previously been recorded within Beech Wood East (approximately 350 west of the Application Site adjacent to the A3 Motorway) and foraging signs have been observed during 2017 in Plot 6, located approximately 300 m to the north east of the Application Site on the eastern side of Park Lane bridleway.	No evidence of badger was recorded within 50 m of the Application Site. However, due to evidence of badger within the Wider Site, it is considered likely that badgers will be foraging within the Application Site and/or adjacent woodland.
Other Protected or Notable Species	Brown hairstreak butterfly has been recorded approximately 300 m to the south of the Application Site.	No suitable habitat for any other protected or notable species or species group assessed during the extended phase 1 habitat survey (see Appendix B) is present within the Survey Area.
Breeding Birds	The original desk study for the Wider Site returned records of 44 species of birds, two of which (firecrest and hobby) are Schedule 1 species (see Legislation Table in Appendix C). A breeding bird	The woodland and scrub surrounding the Application Site offers suitable nesting and foraging habitat for common bird species.

	survey carried out for the ES recorded 30 species, including redwing, a Schedule 1 species ²³ . However, this was winter passage rather than breeding at the Site.	
Great Crested Newts (GCN)	There are no desk study records of GCN within 500 m of the Wider Site. There are no established ponds within 500 m of the Application Site. A woodland drain in Cherry Tree Row is unsuitable for GCN and is generally dry or flowing after heavy rains. It is not connected to another water body. The hermitage stream is too fast flowing. Attenuation Ponds created approximately 150 m south of the Application Site were only completed in November 2017. There are no other ponds within 500m of these attenuation ponds and therefore it is considered unlikely that GCN will have colonised these areas.	No GCN are considered to be present within 500 m of the Application Site.

3.4. Non-native Invasive Plant Species

The extended phase 1 habitat survey checked for the presence of Japanese knotweed, giant knotweed, hybrid knotweed, giant hogweed, Himalayan balsam, rhododendron and cotoneaster species.

No evidence of these species was recorded within the Application Site or within the Wider Site.

²³ Dunsbury Park, Environmental Statement. Appendix 15.6 Breeding Bird Survey Report, Atkins (2013)

4. Evaluation of Ecological Features

4.1. Final Ecological Zone of Influence

Once the data gathering exercises from both the desk study and field surveys were completed and all Scheme details were available, the initial EZoI was finalised for both the construction and operational phases of the Scheme, as detailed below.

4.1.1. Designated Sites

Although this report refers to a small part of the Wider Site, it is part of an ongoing phased development with hydrological connections via the hermitage stream and surface water drainage to statutory designated sites²⁴, via the Hermitage Stream and owing to the impact of construction and operational works it is considered necessary to assess the impact on those designated sites which are present within, and up to 500 m of the Application Site. There are six locally designated SINCS within 500 m of the Application Site. The nearest are Cherry Tree Row SINC, relic ancient woodland, adjacent to the west of the access road to the Application Site and Neville's Park unimproved grassland SINC which is approximately 10 m south of the Application Site.

In setting the EZoI for designated sites, through discussion with the applicant it has assumed that the Environment Agency pollution prevention guidelines²⁵ and CIRIA pollution prevention guidance²⁶ will be implemented to prevent any impacts on nearby watercourses and habitats within, immediate adjacent or downstream of the Scheme.

4.1.2. Main Habitats

Owing to the scale and nature of the Scheme proposals and the predicted level of the impact of the construction and operational works, it was considered appropriate to assess impacts only on those main habitats which are present within or directly adjacent to the Application Site. This includes semi-natural ancient and broadleaved woodland strips bordering the Application Site.

4.1.3. Protected and Notable Species

The final EZoI for protected and notable species either recorded within, or considered likely to be present within, the Application Site has been defined on a species-specific basis based on the likely effects of the Scheme as detailed in Table 4.1 (distances are taken from the Application Site boundary).

Table 4-1 Ecological Zone of Influence for Impact Assessment on Protected and Notable Species

Species	Distance from the Application Site boundary		Justification
	Construction	Operation	
Bats common	3 km	3 km	Direct impact from killing and injury will not occur within the Application Site as there will be no loss of features

²⁴ Chichester and Langstone Harbour Ramsar Site, SPA, the Solent Maritime and Solent and Isle of Wight Lagoons SAC are approximately 3.5km to the South of Dunsbury Park Site.

²⁵ Pollution prevention guidelines (PPGs) Pollution Prevention Guidelines (PPGs) with particular reference to PPG1 (general guide to the prevention of water pollution), PPG3 (use and design of oil separators in surface water drainage systems), PPG5 (works near or liable to affect watercourses) and PPG6 (working at construction and demolition sites). Pollution Prevention Guidelines (PPGs) are a series of documents developed by the Environment Agency for England and Wales, the Northern Ireland Environment Agency (NIEA) for Northern Ireland and the Scottish Environment Protection Agency (SEPA) for Scotland. Each PPG is targeted at a business or activity and covers environmental good practice to minimize pollution. The PPGs also make reference to environmental legal obligations, but that information is currently out of date and requires updating. The PPGs are available from <http://webarchive.nationalarchives.gov.uk/20140328084622/http://www.environment-agency.gov.uk/business/topics/pollution/39083.aspx>.

²⁶ The CIRIA documents are a series of publications developed by the Construction Industry Research and Information Association. Each document is targeted at a particular type of business or activity and covers environmental good practice to minimise pollution. Particular attention should be given to CIRIA C532 (Control of water pollution from construction sites, 2001). The CIRIA publications also make reference to environmental legal obligations and are available from: http://www.ciria.org/CIRIA/Resources/Resource_overview/Resources_overview.aspx?hkey=a80608d2-a045-4d72-8bb9-5ecf23f8d761.

Species	Distance from the Application Site boundary		Justification
	Construction	Operation	
and Annex II			suitable for roosting bats. Impacts from loss of foraging habitat (grassland and woodland margins) will occur within the Application Site whilst disturbance (noise and lighting) on foraging and commuting bats is likely to occur within the first 500 m from the Application Site. However, following discussions with the County Ecologist during reserved matters application for Plot 2, and the discovery of several Bechstein's roosts (including maternity roosts) at a proposed development site near Horndean in 2014 (approximately 3 km north of Dunsbury Park ²⁷ , the EZoI was increased to 3 km.
Dormice	500 m	50 m	Dormice have a large home range. Direct impacts from killing or injury is only likely to occur within the Application Site in suitable habitat such as the bordering woodland and scrub of which some clearance may be required. Impacts on dormouse from disturbance such as noise and lighting on foraging, breeding and hibernating dormice are likely to occur within 500 m from the Application Site. There is potential that habitat loss could fragment corridors of habitat providing links to suitable habitat beyond the footprint of the Scheme (some habitat bordering the Application Site has already been fragmented in order to install drainage pipes, and is undergoing replanting under a dormouse licence for Plot 2).
Reptiles	Application Site boundary	Application Site boundary	Impacts on reptiles could occur through habitat loss (grassland field and a small amount of woodland edge habitat). Given that commuting corridors within retained habitat adjacent to the Site will be protected during construction and maintained as part of the Scheme it is not anticipated that the proposed works will result in impacts to reptiles beyond the Application Site boundary.
Badger	30 m from the Application Site	Application Site Boundary	Badger sett tunnels typically extend up to 20 m from the sett entrance. Vibrations from heavy machinery and excavation of soils within 30 m of a sett entrance may cause collapse of tunnels. Significant impacts on a sett beyond 30 m from the Application Site are not anticipated.
Breeding Birds	Application Site boundary	Application Site boundary	Very little woodland and scrub which provides breeding bird habitat will be lost due to this development. There is an abundance of suitable habitat and larger areas of woodland surrounding the Application Site. The grassland habitat to be lost could provide suitable habitat for ground nesting birds however there is also more suitable habitat to the south of the Application Site. Light spill into the woodland will be limited as per mitigation for bats.

4.2. Evaluation of Ecological Features

All of the ecological features present or considered likely to be present within the final EZoI of the Scheme have been valued according to the criteria outlined in **Appendix B**.

²⁷ See Planning Application: "Land east of Horndean" http://planningpublicaccess.easthants.gov.uk/online-applications/applicationDetails.do?activeTab=documents&keyVal=_EHANT_DCAPR_233593

Features outside the final EZol will not be affected by any activities or processes involved in the Scheme and are therefore not considered further in this EclA.

Table 4-2 Evaluation of Ecological Features within the Final EZol

Ecological Feature(s)	Nature Conservation Value	Rational for Valuation
Broadleaved Woodland	County	Non-statutory designated and undesignated woodland provides connective habitat providing nesting/ roosting and foraging opportunities for protected species such as dormice, bats (including two Annex II species) and reptiles as well as for birds.
Scattered Trees	Application Site	Several young oak and ash trees are present within the scrub boundary of the Application Site. These trees provide suitable habitat for nesting birds but are valued within the context of the Application Site only due to the abundance of woodland habitat within the area.
Species poor semi-improved grassland (former arable field)	Application Site	Very little grassland habitat will be retained within this development. The habitat is considered to be of low botanical value but provides suitable habitat for species such as reptiles and invertebrates and foraging areas for birds and other mammals. It is valued within the context of the Application Site only due to similar habitat to the south of the Application Site and in the wider landscape.
Scrub - woodland edge and the northern boundary of the Application Site.	Application Site	This habitat provides foraging and nesting opportunities for birds, dormice and reptiles and connective foraging habitat for bats. It is valued within the context of the Application Site only due to similar habitat to the south of the Application Site and in the wider landscape.
Dormouse	County	Dormouse is a European Protected Species and a species of Principle Importance in the UK and a local BAP priority species. The Hampshire BAP states that Hampshire is a national stronghold for dormice holding at least 10% of the national population. However, the species is categorised as declining, scarce and highly threatened within Hampshire.
Bats (common)	Local	All native bats are European Protected Species. In addition, serotine and pipistrelle (common and soprano) are Hampshire Biodiversity Action Plan Species.
Bats (Annex II) Barbastelle and Bechstein's	Regional	Barbastelle are considered rare in the UK and throughout its range. Barbastelle have been recorded commuting along a retained hedgerow in the middle of the Wider Site towards the woodland surrounding the Site. Barbastelle bats will be valued at Regional Level in accordance with Good Practice Guidance 'Valuing Bats in Ecological Impact Assessment'. ²⁸ In addition, Bechstein's and barbastelle bats priority species within Hampshire. Bechstein's bat is considered rare on a European and UK level and the Application Site is located approximately 3 km south east from the only confirmed Hampshire population of

²⁸ S. Wray et al., 2010. Valuing Bats in Ecological Impact Assessment (IEEM In Practice Magazine, December 2010)

Ecological Feature(s)	Nature Conservation Value	Rational for Valuation
		breeding Bechstein's outside of the New Forest ²⁹ . An adult female Bechstein's was trapped in early September 2015 in Cherry Tree Row woodland approximately 350 m south of the Application Site. No Bechstein's were recorded in the more open habitat on the activity transects in 2017. Past studies ³⁰ have shown that Bechstein's bats favour foraging under closed canopy woodland with a strong understorey ³¹ which is well represented in Cherry Tree Row woodland to the south of the Application Site. Given the foraging habitat and commuter routes across the Application Site towards the woodland, Bechstein's will be valued at Regional Level in accordance with Good Practice Guidance 'Valuing Bats in Ecological Impact Assessment'. ³²
Reptiles - common species – Adder, grass snake, slow worm, common lizard.	Application Site	Four species of common reptiles are present and breeding within the Wider Site. Although reptile foraging habitat will be lost, there is connectivity to more suitable grassland and aquatic habitat to the south. No suitable hibernation habitat will be lost as a result of the building construction. However, small areas of woodland edge vegetation clearance may involve the removal of brash or dense bracken which may offer suitable hibernation habitat.
Breeding Birds	Application Site	Thirty species of birds were recorded during the original breeding bird surveys. However, very little nesting (trees and shrubs) for these birds will be lost and suitable habitat is available adjacent to the Application Site. Grassland habitat for any ground nesting birds has been lost due to spoil heaping and site levelling. Suitable habitat for ground nesting birds is available to the south of the Application Site.

4.3. Determination of Important Ecological Features

Habitats, species and species groups that are considered to have a nature conservation value in the context of the Application Site and its immediate environs are not considered important ecological features³³ in the context of this EclA. Any impact on such a feature as a result of the Scheme is considered unlikely to have a significant effect on the conservation status of such habitats or species on a local, regional, national or international scale.

Therefore, features of nature conservation value in the context of the Application Site, or those considered to have negligible nature conservation value, or those that will not be affected by the development have been scoped out of the ecological impact assessment in Section 5. These features are as follows:

- **Designated Sites (except Cherry Tree Row, detailed below)** – Due to the distances between the Application Site and the majority of the SINCS located within the EZoI, the closest of which is Neville's Park Areas 2 & 3 SINC (designated as agriculturally unimproved grassland) 10 m from the Application Site boundary, and the adoption of relevant Construction Code of Practice (CCoP) to

²⁹ WYG, October 2014. Highwood Land (Horndean) Limited and CALA Homes (South Home Counties) Limited. Land East of Horndean Bat Survey Report.

³⁰ Schofield, H. & Harris, C., 2000. Ranging behaviour and habitat preferences of female Bechstein's bat *Myotis bechsteinii* (Kuhl 1818), in summer. Report held by the Vincent Wildlife Trust

³¹ Harris, S. & Yelden, D.W., 2008. *Mammals of the British Isles: Handbook*. 4th Edition. Southampton: The Mammal Society

³² S. Wray et al., 2010. Valuing Bats in Ecological Impact Assessment (IEEM In Practice Magazine, December 2010)

³³ See **Appendix B** for more information on important ecology features.

include Pollution Prevention Guidelines (Environment Agency²⁵ and CIRIA²⁶), no significant effects on any additional designated sites are anticipated to occur from the Scheme;

- **Habitats** – Species poor semi-improved grassland within the Application Site, scrub forming the defunct northern boundary and scattered trees on the northern boundary of the Application Site have been valued as being important within the context of the Application Site and its immediate environs only. This evaluation is based on the fact that there is other similar habitat within the local area and these habitats do not qualify as being notable³⁴. In addition, the scattered trees are not anticipated to be impacted by the works.
- **Birds** The Application Site does not possess any features that would suggest it would be of any special ornithological value, with the habitats present being common and widespread in the Havant Borough and woodland within the Wider Site providing suitable habitat. Therefore, detailed update breeding and wintering bird surveys have not been undertaken. No effects on the local breeding bird assemblage are anticipated to occur from the Scheme. Mitigation to prevent individual nests being damaged or destroyed during clearance works has been outlined below in Section 5.
- **Reptiles** - The woodland edge habitat adjacent to the Application Site comprises bramble, blackthorn and goat willow scrub with areas of bracken that provides suitable habitat for common reptile species. Due to the small areas of vegetation clearance required it is not expected that substantial numbers of reptiles will be encountered and it is not anticipated that any reptiles will become isolated as a result of the proposed works due to the presence of further suitable connective habitat bordering the Site including woodland and also extensive wet grassland and scrub habitat to the south of the Application Site. Therefore, the Scheme is considered unlikely to have a significant effect on the conservation status of common reptiles. Mitigation to prevent individual reptiles from being injured or killed during clearance works have been outlined below in Section 5.

³⁴ JNCC (2012) UK Post-2010 Biodiversity Framework.

5. Impact Assessment, Agreed Mitigation Measures and Significance of Residual Effects

This Section characterises the impacts and the subsequent effects (both positive and negative) of the Scheme on the important ecological features within the final EZoI, sets out agreed avoidance, mitigation, compensation and enhancement measures, and assesses the significance of the residual effects (both positive and negative) of the Scheme on these features.

The applicant has agreed that the general mitigation measures identified in Section 5.1 onwards will be incorporated into the detailed design proposals for the Scheme and implemented as part of the overall development of the Application Site.

5.1. General Mitigation Measures

5.1.1. Design Mitigation Measures

The following avoidance, mitigation and/ or compensation measures have been incorporated into the design of the Scheme to comply with national and local planning policy, current legislation and good practice:

General measures to avoid or alleviate negative impacts upon ecological receptors are as follows;

- **Woodland** - Apply measures to protect trees immediately adjacent to the Application Site boundary within the adjacent woodland in accordance with British Standards³⁵. An arboricultural survey will advise the buffer zone required between the construction Site and the woodland edge in order to protect the root protection zones on the trees. Stabilised heras fencing will be used to protect the woodland edge so that it cannot be moved during the construction period. It is anticipated that a small amount of woodland edge habitat will be cleared to facilitate the construction of the Site as follows;
 - Cherry Tree Row western boundary - A maximum of 1.5 m x 25 m length of self-seeded willow scrub and bramble/blackthorn scrub is proposed to be cleared to facilitate the development of the access road and to provide construction access to the south of the development plot.
 - Southern boundary – an area of approximately 3m x 4m of bramble and blackthorn scrub to be cleared to facilitate construction of the building.
 - Eastern boundary – small areas of bramble scrub up to 1 m depth not extending under the canopy of the mature trees.

The vegetation removal of Cherry Tree Row woodland edge habitat forming the western boundary of Plot 3 has been reduced by 2 m due to the alteration of the original design which removes a pedestrian pavement at the western side of the access road. No works to any mature trees is anticipated. Should this change an ecologist must be consulted with regards to the potential for them to support roosting bats or breeding birds.

- **Birds** - Any vegetation clearance of grassland, scrub and trees will be minimised and undertaken outside the core bird nesting season (1st March and 31st August) to avoid damage or destruction of occupied nests or harm to breeding birds (see **Appendix C**). If this cannot be achieved, works within the core bird nesting season will be carried out under a Precautionary Method of Working (PMW) written by an ecologist which will require an inspection of vegetation to be cleared for breeding birds and their occupied nests by a suitably qualified ecologist no more than 24 hours prior to any works being undertaken. If any nesting birds are identified during the survey they will be left *in situ* for their entire

³⁵ British Standards Institution (2012). *Guide for Trees in relation to design, demolition and construction: recommendations*. BS 5837:2012.

nesting period and alternative approaches to the work proposed. This may include leaving an exclusion zone around the nests to avoid disturbance. Following this mitigation, it is not considered likely that there will be a significant effect on common breeding bird populations.

- **Reptiles** –Although valued at Application Site level, vegetation clearance works at the woodland edges will be carried out under Precautionary Methods of Working (PMW) to be implemented and overseen by an ecologist to prevent killing or injury of individual reptiles and consequently an offence under the Wildlife and Countryside Act. The PMW will include measures such as removing any potential refugia, such as logs and brash piles, within the area to be cleared by hand and directional clearance of scrub vegetation in phases towards retained habitat, allowing reptiles to move to safety (if clearance occurs within the active season between March and October). If individual reptiles need to be moved from the Site they will be moved by a suitably experienced ecologist to adjacent grassland habitat (Neville's Park area 2, grassland SINCE) adjacent to the south of the Site. The PMW will detail actions to be taken should hibernating reptiles be found, depending on the timing of the works. Following this mitigation, it is not considered likely that there will be a significant effect on common reptile species.
- An **Ecological Clerk of Works (ECW)** will be employed to implement Precautionary Methods of Working to ensure that measures to avoid or alleviate impacts on nature conservation receptors are implemented, for example during vegetation clearance;
- **Lighting** – a lighting strategy to avoid or minimise light spill onto woodland habitats immediately adjacent to the Application Site is to be agreed by a suitably qualified ecologist. The lighting strategy will follow the latest guidelines issued by the Bat Conservation Trust³⁶ (such as using narrow spectrum light sources that emit minimal ultra-violet light; avoidance of white and blue wavelengths of the light spectrum) and using full cut-off luminaires which emit no light above the horizontal and emit light in a forward direction. The lighting strategy (Drawing P115-2800-03) is submitted with the planning application. There is virtually no light spill on the eastern side of the Plot 3B development and any light spill to the southern and western woodland edges is between 1 and 5 lux.
- **Good practice working methods** will be adhered to which to prevent any adverse impact to wildlife present at the site such as deer, foxes and badgers. Materials will not be left overnight in an area accessible to wildlife and excavations will not be left uncovered overnight. If any excavations are required to be left open overnight, a ramp should be created to allow any animals to escape.
- A **Habitat Creation Area** for the Wider Site is being created in a former arable field approximately 500 m to the north of the Application Site. Spoil from the construction of the sites will be landscaped and planted with native trees and hedgerow species and wildflower grassland. The habitat creation includes two reptile hibernacula (already created), and the creation of two scrapes which will create shallow waterbodies. Landscape planting for the wider scheme (link road and other development plots) is also covered by Planning Condition A1 which requires the submission of an "Landscape, Open Space and Ecology Strategy"

5.1.2. General Construction and Operation Mitigation Measures

The following avoidance, mitigation and/ or compensation measures will be implemented during the construction phase of the Scheme to comply with national and local planning policy, current legislation and good practice:

Construction activities have the potential to result in adverse effects of varying magnitude and duration through, for example, killing, injury or disturbance of protected species, loss of habitat, and pollution effects on aquatic biota from hydrocarbon spills, and sediment ingress to watercourses.

The following avoidance and mitigation measures will be implemented during the construction phase of the Scheme to comply with current legislation and good practice.

- **Construction and Environmental Management Plan (CEMP):** Appropriate measures will be taken to prevent pollution of adjacent woodland, woodland drains and streams that lead to the Hermitage Stream.

³⁶ Bat Conservation Trust, 2014. *Artificial lighting and wildlife Interim Guidance: Recommendations to help minimise the impact artificial lighting.*

Construction practices will be managed through the implementation of a CEMP to mitigate construction risks to of pollution to adjacent habitats. The construction works will adhere to the following Environment Agency PPG ²⁶ and CIRIA²⁷ guidance documents:

- C532 - Control of water pollution from construction sites. Guidance for consultants and contractors (2001); and
- R134 - Sediment management in urban drainage catchments (1995).

5.2. Designated Sites – Cherry Tree Row SINC

5.2.1. Construction Impacts, Mitigation and Residual Effects

The construction zone within the Application Site is bordered to the west by Cherry Tree Row SINC, a locally designated site on relic ancient semi-natural woodland. There would be short term adverse impacts associated with construction namely the risk of pollution from dust or lime from soil stabilisation and potential run off from bare earth once vegetation is cleared from the site. However, pollution prevention measures and a buffer zone will be implemented to minimise these risks. These short-term impacts are not anticipated to affect the integrity of the designated site. Temporary fencing would be used to avoid accidental incursion into the woodland. There would be a loss of a small area to a maximum of 1.5m x 25m) of goat willow and bramble scrub which borders the woodland on the west of the site to allow for the earthworks to take place for the construction of an access road. However, adjacent areas of the woodland edge in the north-west corner of Plot 3 are to be planted with a native species mix of woodland buffer planting and some areas allowed to regenerate naturally in order to protect the woodland edges (as stated in the ES and secured by Planning Condition A1 with the submission of a Landscape, Open Space and Ecology Strategy). Therefore, these impacts are assessed as not significant.

5.2.2. Operational Impacts, Mitigation and Residual Effects

The building position within the Application Site does not abut the designated woodland habitat of Cherry Tree Row to the west of the Application Site. No solid barrier fencing will be installed on the west side of the Application Site adjacent to Cherry Tree Row and therefore the development is not anticipated to negatively impact the woodland due to shading.

Following sensitive lighting design (as mentioned in 5.1), establishment of any new woodland buffer as part of the Wider Site Landscape Plan, and regeneration of woodland scrub the operational long-term impacts on the SINC habitat (Cherry Tree Row) are not expected to be significant.

5.3. Main Habitats - Woodland

5.3.1. Construction Impacts, Mitigation and Residual Effects

Broad leaved woodland, which is undesignated, borders the Application Site on the eastern and southern side. As stated above in Section 5.2.1 there is potential for the woodland adjacent to the Site to be impacted by the construction works or pollution events which could result in damage to vegetation which supports a population of dormice and provides foraging and commuting routes for bats. The woodland edge and tree canopies will be protected by stabilised heras fencing so that it cannot be pushed/ moved or knocked over by construction vehicles. Very minor vegetation clearance is anticipated to this woodland as a result of this Scheme.

Following this mitigation, it is not considered likely that there will be a significant effect on the broad leaved Woodland during construction.

5.3.2. Operational Impacts, Mitigation and Residual Effects

The building position within the Application Site abuts the edge of the woodland canopy. The proposed building is 10 metres high which could have detrimental impacts to the woodland and ground flora due to shading. There will be limited space to implement any buffer planting to create the desired tiered woodland edge adjacent to the Application Site. A sensitive lighting design will also be implemented to reduce light spill to the woodland (as stated in Section 5.1)

In agreement with Portsmouth Council, woodland buffer planting can be planted on the eastern side of the woodland strip to mitigate the shading effect on the western side caused by the building. This land is currently a grassland field owned by Portsmouth County Council.

Following this mitigation, it is not considered likely that there will be any long-term significant effect on the broad-leaved woodland during operation.

5.4. Notable Species

5.4.1. Construction Impacts, Mitigation and Residual Effects

5.4.1.1. Dormice

Dormice were not recorded within the woodland directly adjacent to the Application Site during the presence/absence surveys in the 2017, however, they have been recorded in the adjacent Cherry Tree Row woodland SINCE in 2015. Therefore, their continued presence is likely in woodland adjacent to the Application Site in low numbers. The Scheme will result in the loss of a strip of woodland edge scrub habitat including a goat willow and bramble with bracken to facilitate the development of an access road. This woodland scrub provides suitable summer nesting and foraging habitat for dormice but is considered less likely to provide good hibernation habitat.

Any vegetation removal of woodland edge habitat or scrub habitat will be kept to a minimum. Design changes have been made to reduce the amount of woodland scrub to be removed. The current design of the road encroaches on the scrub habitat by approximately 1.1 m. Clearance of small amounts of vegetation will be undertaken using a Precautionary Method of Working (PMW) produced and overseen by a suitably experienced dormouse surveyor. Larger areas of vegetation removal and fragmentation of habitat is not anticipated but if this changes and further vegetation clearance is required over what has already been agreed by the ecologist, a Natural England Development licence may be required to enable removal of suitable dormouse habitat.

The methodology of works involving vegetation clearance and groundworks in suitable dormouse habitat will be carefully planned to minimise risks of harm to individual dormice. Methodology will be detailed in the PMW and will include;

- A thorough inspection of all vegetation to be cleared will be undertaken by a suitably qualified ecologist prior to clearance, to search for winter hibernation nests at ground level but also for evidence of active dormice. As vegetation clearance will now be undertaken in early April subject to reserved matters planning permission, dormice may be emerging from hibernation depending on the weather conditions at this time. Vegetation clearance will be undertaken in a phased manner using hand tools only, following the inspection for dormouse nests. Any brash, log piles and arisings will be removed by hand to avoid impacts on dormice.
- Undertaking ground disturbance, such as grubbing out tree roots and soil stripping after dormice have emerged from hibernation in May overseen by an ecologist. If this is not possible due to the schedule of works, a through hand search for hibernation nests will be undertaken by a suitably experienced ecologist;

Woodland habitat will be protected by stabilised heras fencing to minimise risks of accidental incursion. Such precautions will minimise risks of killing or injuring individual dormice during construction.

There is little scope for landscape planting within the proposed Scheme area. However, measures implemented in the wider Dunsbury Park development site such as hedgerow strengthening, habitat creation and additional planting on the northern edge of the Application Site (outside the construction boundary) and to the east of the Application Site will improve dormice habitat by including species that dormice rely on for feeding, nesting and hibernating such as hazel and honeysuckle. These measures will also retain

connectivity of habitat across the Wider Site to help maintain the local dormouse population. This additional planting is captured under the Landscape, Open Space and Ecology Strategy as Planning Condition A1³⁷.

Taking these measures into account, the impacts on dormice would be not significant.

5.4.1.2. Annexe II bat species

It is understood that no mature trees will be directly affected by the Scheme as the construction of the Scheme and associated infrastructure is located within a former arable field, with the exception of loss of some goat willow and scrub on the edge of woodland. Therefore, direct impacts on roosting bats are not anticipated but loss of field margins and some woodland edge habitat may reduce the amount of feeding habitat in the short term, until it either regenerates or replacement habitat has established. Mitigation measures for Annex II bat species during construction will include:

- New planting in the form of buffer zones where possible on the Site as well as in the Wider Site, along with hedgerow strengthening and habitat creation, will provide compensation for loss of any woodland edge habitat in the medium to long term;
- Lighting is known to have adverse impacts on some bat species. In particular, the slower flying, broad-winged species, such as long-eared bats, barbastelle, greater and lesser horseshoe bats and the Myotis species (which include Brandt's, whiskered, Daubenton's, Natterer's and Bechstein's bats) generally avoid external lights³⁸; and
- Adverse impacts caused by light pollution will be minimised by using full cut-off luminaires which emit no light above the horizontal. During construction, works will be carried out during daylight hours (taken to be 30 mins after sunrise and 30 minutes before sunset) and temporary lighting design will minimise light spill into the woodland areas that are used by bats for foraging and commuting.

Taking into account the proposed mitigation the impacts on Annex II bat species is not considered to be significant.

5.4.2. Operational Impacts, Mitigation and Residual Effects

5.4.2.1. Dormice

There will be no impacts to dormice as a result of the operational phase of the Scheme as the operational activities will not extend into habitat adjacent to the Site. Additional planting both on Site and as part of the Wider Scheme will provide additional habitat for dormice.

5.4.2.2. Annexe II bat species

Barbastelle are particularly sensitive to external and artificial lighting. This could affect their foraging behaviours and the dispersal of the species throughout the landscape. Mitigation measures for Annex II bat species during operation will include:

- A sensitive lighting design will be implemented in consultation with a suitably qualified ecologist, to ensure that there is minimal light spill (less than 5 lux) onto the adjacent woodland to provide a dark corridor for bats to move between woodlands. This will be further reduced by fitting blinkers to lighting columns or ensuring only forward light emission.
- Minimal or no lighting will be used along the access road to the Application Site. However, if they are subsequently required for health and safety reasons, low level bollards will be installed;
- No additional security lighting will be installed by the tenants of the Application Site that does not conform to the lighting strategy requirements; and
- If the building is operational at night, shutters or blinds will be used within the building to stop any excess light spill from windows.

As the habitat creation areas mature, foraging, commuting and roosting habitat in the long term will improve. This will be compensation for the construction phase habitat loss. The lighting design for the Site will aim to

³⁷ 'A' conditions apply to the entire Dunsbury Park Site. Planning condition A1 - Development in accordance with approved Landscape, Open Space & Ecology Strategy, 2015 (updated 2017)

³⁸ Bat Conservation Trust (2014) Artificial Lighting and Wildlife. Interim Guidance: Recommendations to help minimise the impact of artificial lighting.

minimise light spill to the edge of the woodland so that the Site will still retain commuting and foraging opportunities for bats. Attenuation ponds completed in 2017 to the south of Plot 3 in Neville's Park SINC areas 2, as part of the drainage strategy for the Wider Site creates enhanced foraging habitat for bat species. Overall, it is considered that impacts on Annex II bat species will not be significant.

5.5. Landscape, Open Space and Ecology Strategy.

Planning Condition A1³⁹ of the outline planning permission for Dunsbury Park refers to the approved Landscape, Open Space and Ecology Strategy, approved in 2015 and updated in 2017, which states that individual plot landscaping for each phase of the development will adhere to the Habitat Maintenance and Management Plan. This plan will be updated for each new phase of the wider development site. It will detail the planting within landscape areas and will include lists of species to be used and how the habitats will be managed to enhance and maintain their nature conservation value.

As part of this condition a Habitat Creation Area for the Wider Dunsbury Park Scheme is being created in a former arable field to the north of the Application Site. New planting will provide habitat for dormice and reptiles, scrapes will provide additional habitat for amphibians and insects and therefore provide additional foraging habitat for bats.

5.6. Biodiversity Enhancements

Currently, the Habitat Creation Area created as part of the Landscape, Open Space and Ecology Strategy is being used to manage the amount of spoil on the Site and eventually the spoil mound will be landscaped with additional planting to that stated in the original Landscape Strategy. It will be planted with native trees and scrub to provide additional habitat for dormice, over and above what is lost due to the development, and the majority will be seeded with wildflower grassland to benefit pollinating insects. Several scrapes will be created once the spoil works are complete which will provide enhanced habitat for invertebrates, amphibians, birds, bats and other wildlife.

Any goat willow cut down at the Application Site will be used to create log piles. These along with any brash will be placed alongside replacement planting in gaps in the hedgerow to the north and south of the Application Site in order to create immediate connectivity of habitat for dormice and habitat for insects and reptiles. The locations of log piles and brash will be chosen in consultation with a suitably qualified ecologist.

6. Conclusion

This EcIA is based on a desk study and ecological surveys undertaken across the Application Site since 2010 and updated in 2017. The scope of the surveys was based on the initial EZoI of the Scheme and included an extended phase 1 habitat survey, and updated dormouse and bat activity surveys. The ecological features present within the Application Site are shown in the extended phase 1 habitat drawing in **Appendix D** and survey results are included in **Annex A**. Once all relevant available information was obtained, the final EZoI of the Scheme was determined and the significance of impacts and subsequent effects (both positive and negative) on important ecological features was assessed.

The applicant has agreed that the avoidance, mitigation and/ or compensation measures identified in Section 5 above will be incorporated into the detailed design proposals for the Scheme and implemented as part of the overall development of the Application Site. The Scheme has maximised opportunities to incorporate and enhance biodiversity within the proposals wherever possible, if not within the Application Site, within the Wider Site and habitat creation areas.

³⁹ 'A' conditions apply to the entire Dunsbury Park Site. Planning condition A1 - Development in accordance with approved Landscape, Open Space & Ecology Strategy 2015 (updated 2017)

Taking avoidance, mitigation and/ or compensation measures into account, the Scheme conforms in respect of biodiversity to the National Planning Policy Framework (NPPF)⁴⁰ Section 11 (*minimising impacts on biodiversity and providing habitat corridors*),

Impacts from the construction or operational phases of the Scheme are predicted to result in none of the following significant negative residual effects within the final EZoI:

Undermine the conservation objectives or condition of designated sites and their features of interest;

A change in ecosystem structure and function; and,

Threaten the conservation status of undesignated habitats or protected and notable species.

The Scheme incorporates measures to avoid significant harm to valued ecological features, and where this isn't possible appropriate mitigation or compensation has been agreed with Portsmouth City Council. As summarised below in **Table 5**, the Scheme will not result in any significant residual effects on the conservation status of valuable ecological features within the Application Site and the EZoI as a result of the construction or operation of the proposed Scheme. Taking this into account, the Scheme accords with the principles of UK and local planning policy.

⁴⁰ Communities and Local Development (2012). *National Planning Policy Framework*.

Table 5 Summary of Ecological Impact Assessment

Ecological Feature	Survey Results	Nature Conservation Value	Potential Impacts & Effects	Summary of Mitigation	Significance of Residual Effects
Cherry Tree Row Woodland SINC and other broadleaved woodland.	Immediately adjacent to Application Site	County	- Pollution -hydrological and dust during construction and hydrological during operation; - Loss of woodland edge (willow and bramble scrub) resulting in degraded quality and functionality of the woodland.	- Erect protection fencing during construction to avoid incursion; - Buffer planting; - Compliance with Environment Agency and CIRIA Pollution Prevention Guidelines.	Impacts assessed as not significant. No residual effects are predicted on the designated site within the EZol.
Bats	Common Species: Common and soprano, nathusius pipistrelles, serotine, noctule and brown long-eared bats were recorded on site.	Local	- Loss of some woodland edge habitat (goat willow scrub) - Increased noise during construction; - Increased light spill during construction and operation, resulting in loss of foraging and commuting habitat, disturbance from noise and lighting potentially reducing ecological fitness of existing potential roosting habitat.	- Buffer planting; - Implementation of lighting design to minimise light spill onto adjacent woodland habitat in consultation with ecologist;	Impacts assessed as not significant. No residual effects predicted on the conservation status of the populations of common and soprano pipistrelle, serotine, noctule and Bechstein's and barbastelle within the EZol.
	Annex II species: Bechstein's bat was trapped on site using a harp trap in 2015.	Regional			
Dormouse	Dormice were found within Cherry Tree Row SINC in 2011 and again in October 2015 (unoccupied nests) Dormice were not recorded here in 2017.	County	Loss of woodland edge resulting in loss of foraging and nesting habitat, and potential killing and injury during construction.	- Vegetation clearance to be kept to a minimum; - Vegetation clearance up to approximately 1.5 m strip of woodland edge habitat where dormouse not recorded or unsuitable habitat to be carried out under a Precautionary Method of Working in consultation with ecologist;	Impacts assessed as neutral and not significant. No long-term residual negative effects predicted on the conservation status of dormouse within the EZol due mitigation and implementation of landscape management plan.

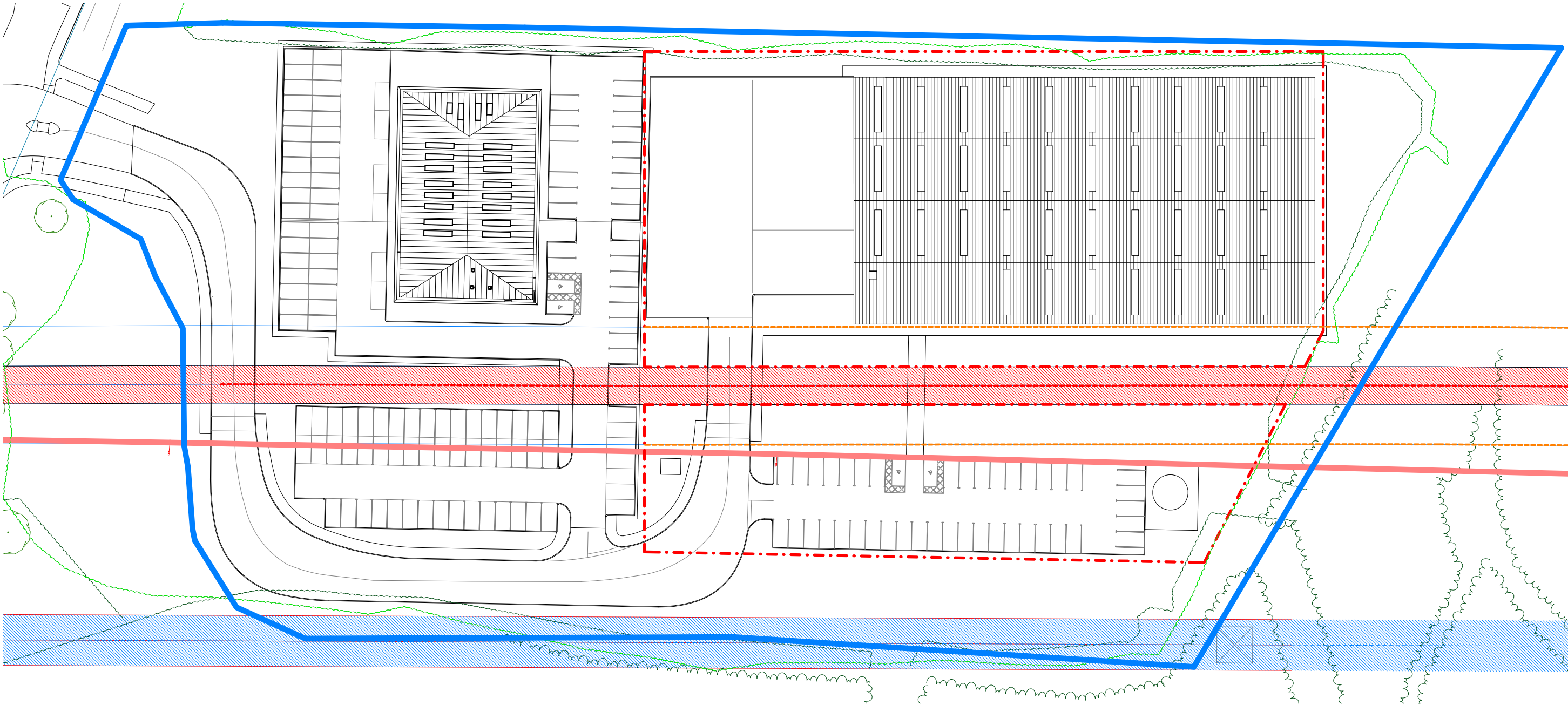
Ecological Feature	Survey Results	Nature Conservation Value	Potential Impacts & Effects	Summary of Mitigation	Significance of Residual Effects
				- Vegetation clearance of larger areas of woodland edge habitat where dormouse are recorded or any severance of habitat is to be carried out under a Natural England Dormouse Licence. - Buffer planting including species to increase food and nesting resource (e.g. hazel, honeysuckle)	

Appendices



Appendix A. Site Drawings

A.1. Scheme Design Drawing.



- Site Plan Legend**
- Site Boundary
 - Demarcation Boundary
 - Gas Main - Centre
 - Gas Main - 3m Exclusion
 - Gas Main - 9m Exclusion
 - 33kV Electrical Main - Centre
 - 33kV Electrical Main - 4.5m Exclusion
 - Below Ground Electrical Main
 - Woodland Edge
 - Pylon Exclusion Zone

Suitability Code (as defined in BS1150)

Work in Progress (WIP)

S0 - Work in Progress

Shared (Non-Contractual)

S1 - Suitable for Co-ordination

S2 - Suitable for Information

S3 - Suitable for Review & Comment

S4 - Suitable for Stage Approval

S5 - Not Used

S7 - Suitable for AM Authorisation

WIP to Published (Non-Contractual)

D1 - Suitable for Costing

D2 - Suitable for Tender

D3 - Suitable for Contractor Design

D4 - Suitable for manufacture/procurement

Published Documentation (Contractual)

A1, A2, A3, Etc - Approved and accepted as stage complete

B1, B2, B3, Etc - Partially signed off with minor comments from the Client

Published for AM Acceptance

CR - As Construction Record Documentation



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Project Dunsbury Park - Plot 3B

Site Plan

Scale

As indicated @

Date 08/03/18

Project Code

DHF-

BMD-

Z3BXX-DR-A-

10001 P1

KEY PLAN

Tab-select then edit family
to add your keyplan

CLIENT LOGO

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to add your logo

PROPOSED

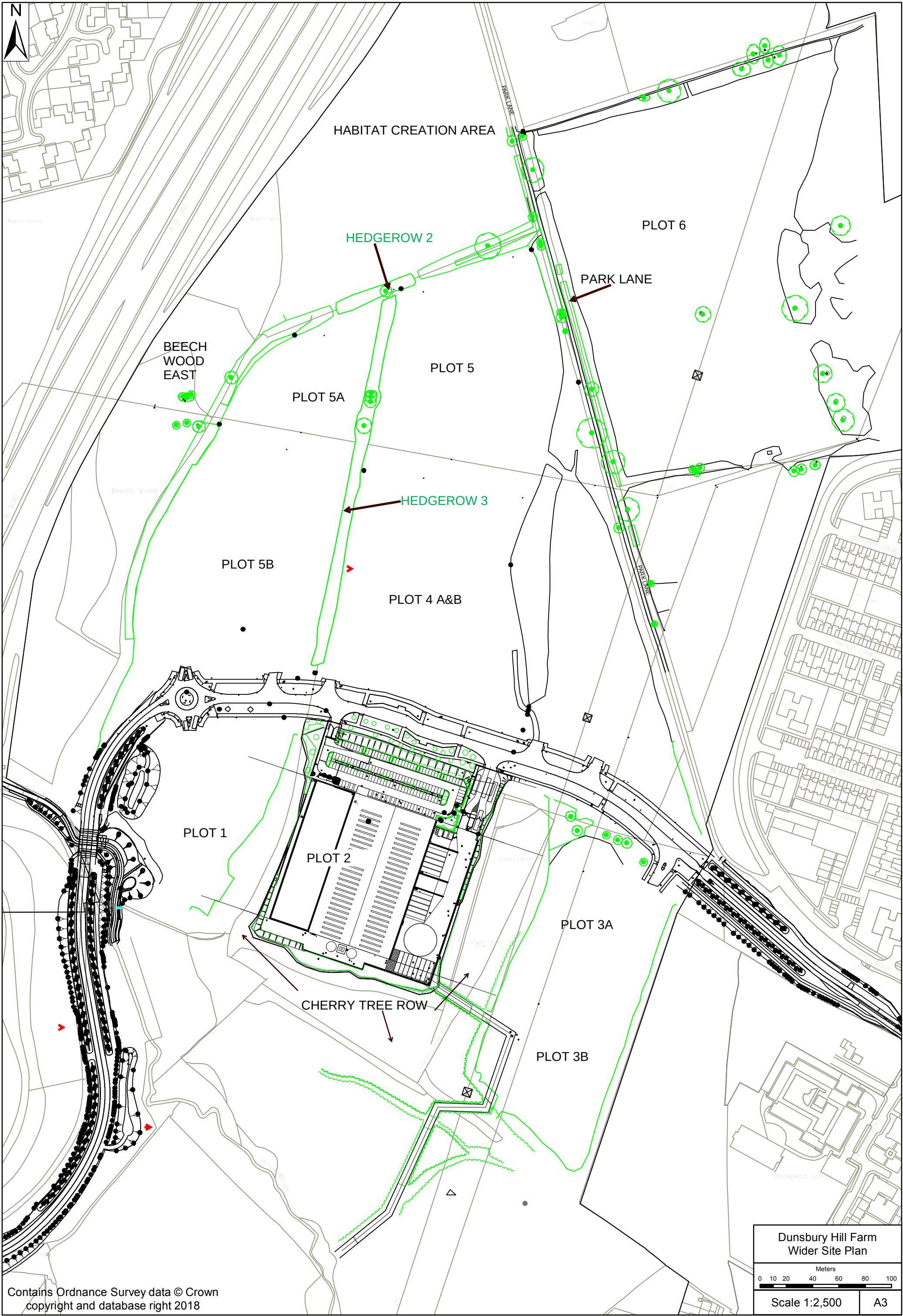
purpose of use

Scale

4330

S4

A.2. Wider Site Plan



Appendix B. Methodology of Assessment

B.1. Ecological Zone of Influence

B.1.1. Data Gathering (initial EZoI)

The first stage (initial EZoI) is to determine the geographical area for obtaining ecological data through desk and field based studies based on the potential impacts and effects of the Scheme on ecological features. The initial EZoI was based on the Scheme design, construction and operation information available at the time and an initial review of the Application Site conditions and the surrounding landscape using publicly accessible aerial imagery.

The constituent distances that inform the initial EZoI are detailed below in Sections B.2 (desk study), B.3 (extended phase 1 habitat survey) and B.4 (phase 2 surveys).

B.1.2. Impact Assessment (final EZoI)

The EZoI was reviewed and amended once all field surveys were completed, records were received from the desk study, and responses received from relevant consultees.

The final EZoI determines the geographical area for assessing the impacts and subsequent effects (both positive and negative) of the Scheme on important ecological features based on all the available information.

B.2. Desk Study

In 2010 the local record centre Hampshire Biodiversity Information Centre (HBIC) was contacted to obtain the following ecological data for the original Environmental Statement produced in 2011⁴¹.

- Records of non-statutory designated sites 1 km of the Application Site boundary;
- Records of legally protected and notable species (fauna and flora) within 1 km and 5 km for bats of the Application Site boundary, including *Species of Principal Importance for the Conservation of Biodiversity* listed under Section 41 of the Natural Environment & Rural Communities Act 2006 in the England Biodiversity List⁴².

The Multi-Agency Geographic Information for the Countryside (MAGIC) website (www.magic.gov.uk) was reviewed for information on designated sites of nature conservation importance (statutory sites only) within 2km of the Application Site including internationally designated sites; these being Special Protection Areas (SPAs), Wetlands of International Importance (Ramsar sites) and Special Areas of Conservation (SACs).

Ordnance Survey maps and the *Where's the Path* website (<http://wtp2.appspot.com/wheresthepath.htm>) were used to initially identify the presence of water bodies within 500 m of the Application Site boundary, in order to establish if the land within and immediately surrounding the Application Site could be used as terrestrial habitat for great crested newts. This species typically uses suitable terrestrial habitat up to 500 m from a breeding water body, however, there is a notable decrease in great crested newt abundance beyond a distance of 250 m from a breeding pond⁴³.

A review of local planning policy relevant to the Scheme was also undertaken as part of the desk study.

⁴¹ Atkins (2011) Dunsbury Hill ES_Vol1 Ecology Chapter

⁴² Section 40 of the Natural Environment & Rural Communities Act 2006 requires that every public authority must, in exercising its functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity. The Secretary of State, has drawn up, in accordance with Section 41 of the Act and in consultation with Natural England, a list of habitats and species of principal importance for the purpose of conserving biodiversity in England that is known as the England Biodiversity List

⁴³ Natural England (2004). *An assessment of the efficiency of capture techniques and the value of different habitats for the great crested newt (ENRR576)*. <http://publications.naturalengland.org.uk/publication/134002>.

B.3. Extended Phase 1 Habitat Survey

The extended phase 1 habitat survey was undertaken in June 2017 by Charlotte Phillips (Atkins ecologist), broadly following the phase 1 habitat survey methodology as set out in Joint Nature Conservation Committee guidance (JNCC, 2010)⁴¹. All land within and adjacent to the Application Site including land up to 50 m from the Application Site boundary (the Survey Area) was surveyed according to CIEEM guidance. Plant names recorded in this survey follow Stace (2010)⁴⁴.

This survey method records in particular:

- Potential roosting sites for bats within trees and structures (identification of suitable cracks and crevices) - survey undertaken from ground only. The assessment of potential value of the trees and structures for roosting sites for bats were categorised based on good practice guidance as detailed in **Appendix B.4.1.1**;
- Searching for signs of badger activity including setts, tracks, snuffle holes and latrines;
- Assessing the suitability of habitats for nesting birds (including any old nests);
- Assessing the suitability of habitats for common species of reptile (adder, grass snake, slow worm and common lizard);
- Assessing the suitability of habitats for hazel dormouse;
- Assessing the suitability of habitats for notable invertebrates; and,
- Searching for evidence of certain invasive plants listed on Schedule 9 of the *Wildlife and Countryside Act 1981* (as amended) and subject to strict legal control (e.g. Japanese knotweed, giant knotweed, hybrid knotweed, giant hogweed, Himalayan balsam, rhododendron and cotoneaster species).

B.4. Phase 2 Surveys

Bat and dormouse surveys were carried out across the Wider Site to inform future phased development.

B.4.1. Bats

All bat surveys detailed below have been undertaken in accordance with good practice guidance⁴⁵ and CIEEM competencies for undertaking bat surveys⁴⁶.

B.4.1.1. Activity Surveys

Bat activity transect surveys were carried out across the wider Dunsbury Park Site led by licensed bat ecologist Richard Law of Sylvatica Ecology (licence 2015-12576-CLS-CLS). Surveys included the boundaries of Plot 3, to identify levels of activity, key foraging and commuting areas and species present, specifically to see how bats are now using the hedges within the Site now the link road and Plot 2 development are operational and now there is considerable construction activity across the rest of the Site.

The transect route(s) are shown in the Bat Survey Report included in **Annex A**. Due to the size of the Application Site the Scheme extent and the habitats present; former arable fields, hedgerows with trees and adjacent woodland, each transect route was walked a total of three times.

Dusk surveys commenced at sunset, the transect took between 1.5 and 2.5 hours to complete. The dawn survey commenced at 03:45 and took 2 hours to complete.

⁴⁴ Stace, C. E. (2010). *New Flora of the British Isles*, 3rd edition. Cambridge University Press.

⁴⁵ Collins, J. (ed.) (2016) *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (3rd edition). The Bat Conservation Trust, London.

⁴⁶ CIEEM (April, 2013) *Competencies for Species Survey: Bats*.

The weather conditions during each survey period are summarised in the table below.

Table B1: Bat Activity Surveys Parameters and Weather Summary

Month of Survey	Sunset/Sunrise	Start/End Time	Start Temperature	Start/End Wind	Start/End Precipitation	Start/End Cloud Cover
July Dusk	21:11	21:10-23:12	21 °C	Light southerly breeze	None	Clear
August Dusk	20:35	20:35 – 22:37	23 °C	Still	None	50%
August Dawn	05:48	03:45 – 05:48	16 °C	Still	None	50%
September Dusk	19.03	19.35* – 21:37	19 °C	Light SW	None	25%

*Slightly later start due to traffic issues

To support the activity transects, automated detectors were deployed for a period of 5 consecutive nights along a hedgerow adjacent to Plot 4 during 1 week in both July and September. Data was processed, by a licensed bat surveyor, using Kaleidoscope and analysed using Analook.

B.4.2. Hazel Dormouse

All hazel dormouse surveys detailed below have been undertaken in accordance with good practice guidance⁴⁷ and CIEEM competencies for undertaking hazel dormouse surveys⁴⁸.

B.4.2.1. Nest Tube Survey

Hazel nest tubes were installed in March 2017 and presence/ likely absence surveys were carried out between June and October 2017.

The extent of the hazel dormouse survey was based on the predicted EZoI for this species and included suitable habitats within the Application Site and in connected habitat across the wider business Park Site. Monitoring surveys under Dormouse licences for the link road (2014_456-EPS-MIT) and Plot 2 (2016-21182-EPS-MIT number) are continuing within Beechwood East, Cherry Tree Row and Neville's Park Woodland.

The survey comprised the deployment of 54 nest tubes (black, square section plastic tubes with wooden inserts) in suitable hedgerow and woodland habitat within the Hazel Dormouse Survey Area.

The nest tubes were deployed in March 2017 and inspected during the hazel dormouse active period by a Natural England licenced ecologist – Richard Law of Sylvatica Ecology (licence 2015-13188-CLS-CLS) accompanied by Charlotte Phillips (Atkins ecologist) on the following dates:

Table B2: Hazel Dormouse Survey Dates

Survey Date - 2017	Index of Probability	Cumulative Index Score
March - installed		
April (no survey)	1	1
May (no survey)	4	5
14 th June	2	7
10 th July	2	9
August (no survey)	5	14

⁴⁷ English Nature (2006). *The Dormouse Conservation Handbook* (2nd edition).

⁴⁸ CIEEM (April, 2013) *Competencies for Species Survey: Hazel Dormouse*.

21 st September	7	21
30 th October	2	23

B.5. Nature Conservation Evaluation

A number of criteria have become accepted as a means of assessing the nature conservation value of a defined area of land which are set out in *A Nature Conservation Review* (Ratcliffe, 1977) and include diversity, rarity and naturalness.

The nature conservation value or potential value of an ecological feature is determined within the following geographic context:

- **International** (such as Special Areas of Conservation, Special Protection Areas, Ramsar sites);
- **National** (such as Sites of Special Scientific Interest);
- **Regional** for example, Environment Agency regional biodiversity indicators, important features in Natural England Natural Areas;
- **Metropolitan, County, Vice-County or Other Local Authority-wide Area** (such as Local Nature Reserves, Sites of Importance for Nature Conservation, ancient woodlands);
- **Local (parish)** (undesigned ecological features such as old hedges, woodlands, ponds);
- The **Application Site and its immediate environs** e.g. ex arable species, semi-improved grassland and woodland
- **Negligible** e.g. areas of hardstanding and amenity grassland.

B.6. Impact Assessment

The assessment of the potential effects of the Scheme takes into account both on-site effects and those that may occur to adjacent and more distant ecological features. Impacts can be permanent or temporary and can include:

- Direct loss of wildlife habitats;
- Fragmentation and isolation of habitats;
- Disturbance to species from noise, light or other visual stimuli;
- Changes to key habitat features; and,
- Changes to the local hydrology, water quality and / or air quality.

Effects are unlikely to be significant where features of low value or sensitivity are subject to small or short-term impacts. However, where there are a number of small scale effects that are not significant alone, the assessor may determine that, cumulatively, these may result in an overall significant effect. Significant effects have been determined as being either negative or positive.

For designated sites, effects are considered significant when a project and associated activities is likely to either undermine or support the conservation objectives or condition of the site(s) and its features of interest.

For ecosystems, effects are considered significant when a project and associated activities is likely to result in a change in ecosystem structure and function.

Consideration is given to whether:

- Any processes or key characteristics will be removed or changed;
- There will be an effect on the nature, extent, structure and function of component habitats; and,
- There is an effect on the average population size and viability of component species.

Functions and processes acting outside the formal boundary of a designated site has also been considered, particularly where a site falls within a wider ecosystem e.g. wetland sites.

Some ecosystems can tolerate a degree of minor changes, such as localised or temporary disturbance or changes in physical conditions, without such changes harming their function or value. For this EcIA, ecological effects have been considered in the light of any information available about the capacity of ecosystems to accommodate change.

The conservation status of undesignated habitats and species within a defined geographical area has been used in this assessment to determine whether the effects of the proposals are likely to be significant:

- For habitats, conservation status is determined by the sum of the influences acting on the habitat that may affect its extent, structure and functions as well as its distribution and its typical species within a given geographical area; and,
- For species, conservation status is determined by the sum of influences acting on the species concerned that may affect its abundance and distribution within a given geographical area.

When assessing potential effects on conservation status, the known or likely background trends and variations in status have been taken into account. The level of ecological resilience or likely level of ecological conditions, that would allow the population of a species or area of habitat to continue to exist at a given level, or continue to increase along an existing trend or reduce a decreasing trend, has been estimated where appropriate to do so.

The avoidance, mitigation and/or compensation measures described within the EcIA have been incorporated into the design and operational phasing programme and taken into account in the assessment of the significance of effects. These mitigation measures include those required to achieve the minimum standard of established good practice together with additional measures to further reduce any negative impacts of the Scheme. The mitigation measures include those required to reduce or avoid the risk of committing legal offences.

In addition to measures required to ameliorate negative effects on important ecological features, further biodiversity enhancement measures have been identified and will be incorporated into the Scheme as it is progressed.

Appendix C. Planning Policy and Legislation

C.1. National Planning Policy Framework, 2012

The National Planning Policy Framework (NPPF) ⁴⁰ sets out the Government's planning policies for England and how these are expected to be applied by Local Authorities within their Local Development Frameworks (LDF). Chapter 11 of the NPPF 'Conserving and enhancing the natural environment' sets out the requirements to consider biodiversity in planning decisions.

The paragraphs within Chapter 11 relevant to the Scheme are summarised below:

109 *The planning system should contribute to and enhance the natural and local environment by:*

- *Protecting and enhancing valued landscapes, geological conservation interests and soils;*
- *Recognising the wider benefits of ecosystem services; and,*
- *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, including by establishing coherent ecological networks that are more resilient to current and future pressures.*

114 *Local planning authorities should set criteria based policies against which proposals for any development on or affecting protected wildlife or geodiversity sites or landscape areas will be judged. Distinctions should be made between the hierarchy of international, national and locally designated sites, so that protection is commensurate with their status and gives appropriate weight to their importance and the contribution that they make to wider ecological networks.*

117 *Local planning authorities should set out a strategic approach in their Local Plans, planning positively for the creation, protection, enhancement and management of networks of biodiversity and green infrastructure.*

To minimise impacts on biodiversity and geodiversity, planning policies should:

- *Plan for biodiversity at a landscape-scale across local authority boundaries; identify and map components of the local 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 local partnerships for habitat restoration or creation;*
- *Promote the preservation, restoration and re-creation of priority habitats, ecological networks and the protection and recovery of priority species populations, linked to national and local targets, and identify suitable indicators for monitoring biodiversity in the plan; and,*
- *Aim to prevent harm to geological conservation interests; and where Nature Improvement Areas are identified in Local Plans, consider specifying the types of development that may be appropriate in these Areas.*

118 *When determining planning applications, local planning authorities should aim to conserve and enhance biodiversity by applying the following principles:*

- *If significant harm 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.*

Proposed development on land within or outside a Site of Special Scientific Interest likely to have an adverse effect on a Site of Special Scientific Interest (either individually or in combination with other developments) should not normally be permitted. Where an adverse effect on the site's notified special interest features is likely, an exception should only be made where the benefits of the development, at this site, clearly outweigh both the impacts that it is likely to have 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 proposals where the primary objective is to conserve or enhance biodiversity should be permitted;*
- *Opportunities to incorporate biodiversity in and around developments should be encouraged; and,*
- *Planning permission should be refused for development resulting in the loss or deterioration of irreplaceable habitats, including ancient woodland and the loss of aged or veteran trees found outside ancient woodland, unless the need for, and benefits of, the development in that location clearly outweigh the loss.*

C.2. Local Planning Policy

The Havant Borough Core Strategy Local Development Framework of 2011⁴⁹ sets out the policies to be adopted within the Local Authority Area. The Core Strategy includes a number of environment based planning policies. Those relevant to this assessment include:

Policy CS11: Protecting and Enhancing the Special Environment and Heritage of Havant Borough:
Planning permission will be granted for development that:

1. Ensures the key landscape and built form principles set out in the Havant Borough Townscape, Landscape and Seascape Character Assessment are protected and where possible enhanced by partnership working with developers, groups and the wider community.
2. Protects and where possible enhances the borough's statutory and non-statutory designated landscape, habitats and features of biological, hydrological or geological interest. Protection and enhancement will be achieved by appropriate adaptation and mitigation measures including wardening, education and information and the creation of new habitats, water bodies/courses planting of new trees and woodland.
3. Has particular regard to the following hierarchy of nature conservation designations within the borough (as identified on the Proposals Map):
 - (i) Special Protection Areas (SPA), Special Areas of Conservation (SAC) and Ramsar [International].
 - (ii) Sites of Special Scientific Interest (SSSI) and National Nature Reserves [National].
 - (iii) Sites of Importance for Nature Conservation (SINC), Local Nature Reserves (LNR), other Ancient Woodland not identified in (ii) above [Local].
4. Protects and where appropriate enhances the borough's statutory and non-statutory heritage designations by appropriately managing development in or adjacent to conservation areas, listed buildings, scheduled ancient monuments, historic parks and gardens, archaeological sites, buildings of local historic or architectural interest.
5. Supports an ongoing programme of survey of habitats and species and designation of Sites of Importance for Nature Conservation.
6. Incorporates partnership working with conservation organisations to improve public understanding of biodiversity and to manage public access to designated sites, particularly on the coast, to reduce harm to nature conservation interests.

⁴⁹ <http://www.havant.gov.uk/sites/default/files/documents/ADOPTED%20CORE%20STRATEGY%20.pdf>
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September 2015 | 5127287

7. Incorporates partnership working with landowners and developers to ensure land management practices restore, enhance and where appropriate create new valued landscapes, habitats and their soil structure, particularly the ancient woodland remnants of the Forest of Bere and coastal salt marsh.
8. Protects wildlife habitats and wildlife corridors to prevent the fragmentation of existing habitats and to allow species, for example Brent Geese, to respond to the impacts of climate change by making provision for habitat adaptation e.g. coastal managed realignment and species migration.
9. Maintains undeveloped gaps between the settlements of Emsworth/Havant; Havant/Waterlooville; Havant/Portsmouth; Emsworth/Westbourne and Leigh Park/Rowlands Castle as shown on the Proposals Map.
10. Protects the best and most versatile agricultural land that has the greatest potential for local food security.
11. Responds to the emerging evidence from the Solent Disturbance and Mitigation Project, the published recommendations, and future related research.

C.3. Local Biodiversity Action Plans

See Hampshire Biodiversity Action Plan: http://www3.hants.gov.uk/hampshire_bap_vol_2.pdf

C.4. Summary of Relevant Legislation

Species	Legislation	Offences	Licensing procedures and guidance
Bats <i>European protected species</i>	Conservation of Habitats and Species Regulations 2017 Reg 43	Deliberately ¹ capture, injure or kill a bat; deliberate disturbance ² of bats; or damage or destroy a breeding site or resting place used by a bat. [The protection of bat roosts is considered to apply regardless of whether bats are present.]	A Natural England (NE) licence in respect of development is required. Guidance documents: <i>NE Standing Advice for protected species 2013</i> <i>European Protected Species: Mitigation Licensing- How to get a licence</i> (NE 2013) <i>Bat Mitigation Guidelines</i> (English Nature 2004) <i>Bat Workers Manual</i> (JNCC 2004)
	Wildlife and Countryside Act 1981 (as amended) S.9	Intentionally or recklessly obstruct access to any structure or place used for shelter or protection or disturb ³ a bat in such a place.	Licence from NE is required for surveys (scientific purposes) that would involve disturbance of bats or entering a known or suspected roost site.
Hazel dormouse <i>European protected species</i>	Conservation of Habitats and Species Regulations 2017 Reg 43	Deliberately ¹ capture, injure or kill a hazel dormouse; deliberate disturbance ² of a hazel dormouse; or damage or destroy a breeding site or resting place used by a hazel dormouse.	A Natural England licence in respect of development is required. Guidance documents: <i>NE Standing Advice for protected species 2013</i> <i>European Protected Species: Mitigation Licensing- How to get a licence</i> (NE 2013) <i>Dormouse Conservation Handbook</i> (English Nature 2006)
	Wildlife and Countryside Act 1981 (as amended) S.9	Intentionally or recklessly obstruct access to any structure or place used for shelter or protection or disturb ³ a hazel dormouse in such a place.	Licence issued for survey and conservation by Natural England.
Adder Common lizard Grass snake Slow worm	Wildlife and Countryside Act 1981 (As amended) S.9(1) and S.9(5)	Intentionally kill or injure any common reptile species.	No licence is required. However, an assessment for the potential of a site to support reptiles should be undertaken prior to any development works which have potential to affect these animals. Guidance documents: <i>NE Standing Advice for protected species 2013</i>

Species	Legislation	Offences	Licensing procedures and guidance
Birds	Wildlife and Countryside Act 1981 (as amended) S.1	Intentionally kill, injure or take any wild bird; intentionally take, damage or destroy the nest of any wild bird while that nest is in use or being built; intentionally take or destroy the nest or eggs of any wild bird. Intentionally or recklessly disturb a Schedule 1 species while it is building a nest or is in, on or near a nest containing eggs or young; intentionally or recklessly disturb dependent young of such a species [e.g. most birds of prey, kingfisher, barn owl, black redstart, little ringed plover].	No licences are available to disturb any birds in regard to development. Licences are available in certain circumstances to damage or destroy nests, but these only apply to the list of licensable activities in the Act and do not cover development. General licences are available in respect of 'pest species' but only for certain very specific purposes e.g. public health, public safety, air safety. Guidance documents: <i>NE Standing Advice for protected species 2013</i>
White-clawed crayfish	Wildlife and Countryside Act 1981(as amended) S.9(1) only	Intentionally take from the wild.	Licences issued by Natural England for survey (to take crayfish by hand, by hand net or by crayfish trap). Use of crayfish traps for survey requires Environment Agency consent. Using crayfish traps to remove crayfish for maintenance or development activities in a watercourse requires a conservation licence from Natural England and a permit from the Environment Agency. No licences in respect of development are available. Guidance documents: <i>NE Standing Advice for protected species 2013</i>
Plants <i>Invasive species e.g. Japanese knotweed, hybrid knotweed, giant knotweed, giant hogweed, rhododendron, Himalayan balsam</i>	Wildlife and Countryside Act 1981 (as amended) S.14	It is illegal to plant or otherwise cause these species to grow in the wild.	Any contaminated soil or plant material is classified as controlled waste and should be disposed of in a suitably licensed landfill site, accompanied by appropriate Waste Transfer documentation, and must comply with section 34 of the Environmental Protection Act 1990. Guidance documents: <i>The Knotweed Code of Practice</i> (Environment Agency, 2013 version 3) <i>Managing Invasive Non-native Plants</i> (Environment Agency 2010) <i>Guidance on Section 14 of the Wildlife and Countryside Act, 1981</i> (Defra 2010)

Species	Legislation	Offences	Licensing procedures and guidance
Site Designation	Legislation	Protection	Guidance
Local Sites (eg County Wildlife Sites, Sites of Importance for Nature Conservation)	There is no statutory designation for local sites.	Local sites are given protection through policies in the Local Development Plan.	Development proposals that would potentially affect a local site would need to provide a detailed justification for the work, an assessment of likely impacts, together with proposals for mitigation and restoration of habitats lost or damaged. Guidance documents: The <i>National Planning Policy Framework</i> (Department for Communities and Local Government, March 2012), with particular reference to Policy 11, and the joint Circular.
Habitats & Species	Legislation	Guidance	
Species and Habitats of Principal Importance for the Conservation of Biodiversity	Natural Environment & Rural Communities Act 2006 S.40	S.40 of the NERC Act 2006 sets out the duty for public authorities to conserve biodiversity in England. Habitats and species of principal importance for the conservation of biodiversity are identified by the Secretary of State for England, in consultation with Natural England, are referred to in S.41 of the NERC Act for England. The list, known as the 'England Biodiversity List', of habitats and species can be found on the Natural England web site. The 'England Biodiversity List' is used as a guide for decision makers such as public bodies, including local and regional authorities, in implementing their duty under Section 40 of the NERC Act 2006 to have regard to the conservation of biodiversity in England when carrying out their normal functions. Ecological impact assessments should include an assessment of the likely impacts to these habitats and species.	
Hedgerows	The Hedgerows Regulations 1997	Under the regulations, it is against the law to remove or destroy certain hedgerows without permission from the local planning authority in Wales. In general, permission will be required before removing hedges that are at least 20 metres in length, over 30 years old and contain certain species of plant. The local planning authority will assess the importance of the hedgerow using criteria set out in the regulations.	

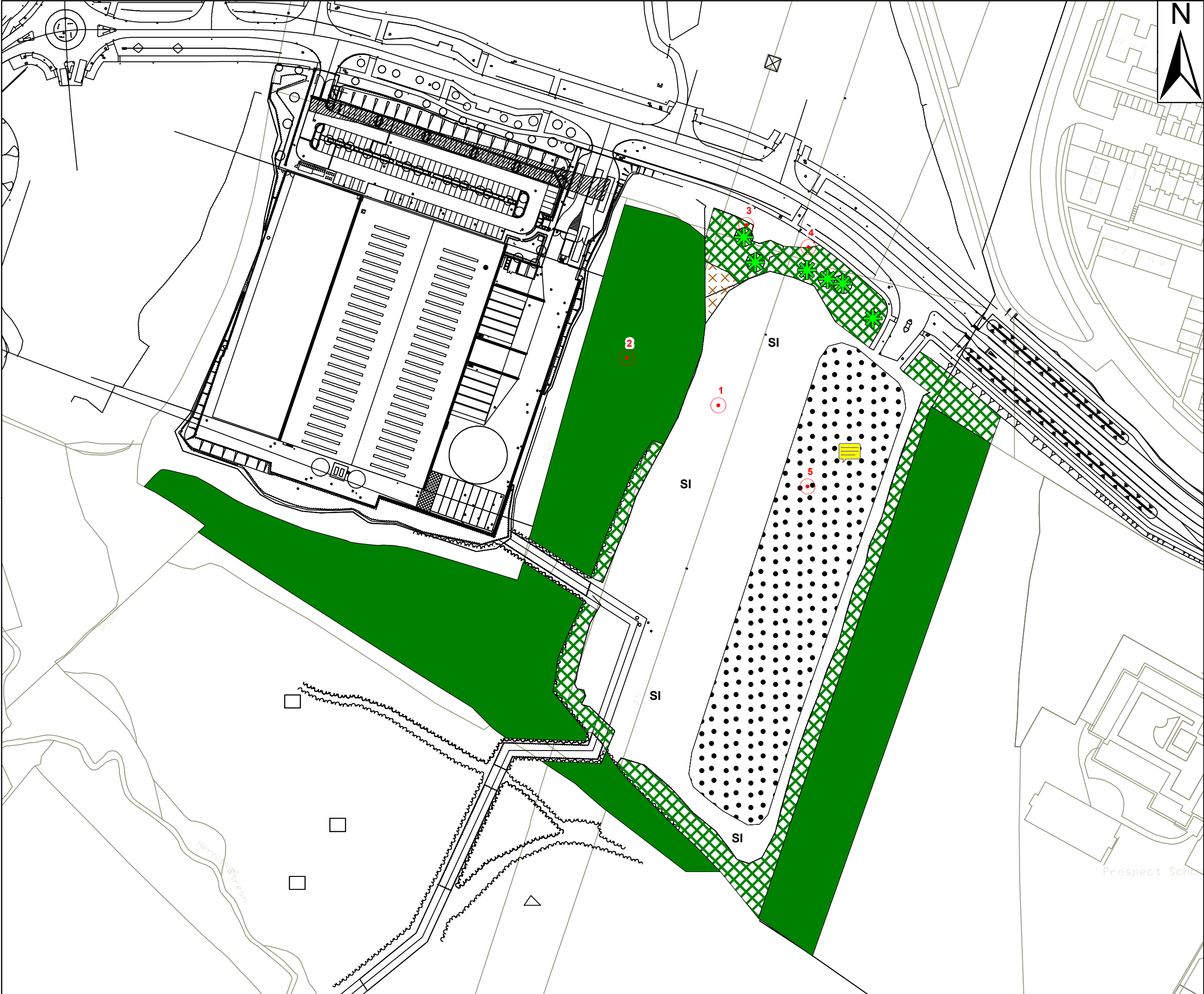
¹Deliberate capture or killing is taken to include "accepting the possibility" of such capture or killing

²Deliberate disturbance of animals includes in particular any disturbance which is likely a) to impair their ability (i) to survive, to breed or reproduce, or to rear or nurture their young, or (ii) in the case of animals of hibernating or migratory species, to hibernate or migrate; or b) to affect significantly the local distribution or abundance of the species to which they belong.

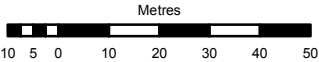
³Lower levels of disturbance not covered by the Conservation of Habitats and Species Regulations 2017 remain an offence under the Wildlife and Countryside Act 1981 (as amended) although a defence is available where such actions are the incidental result of a lawful activity that could not reasonably be avoided.

Appendix D. Extended Phase 1 Habitat Survey Plan and Target Notes

D.1. Extended Phase 1 Habitat Survey Plan – Plot 3



- Target Note
- Scattered Trees
- Broadleaved Woodland, Semi-Natural
- Scrub, Dense / Continuous
- Scattered Bracken
- Bare Ground
- SI Poor / Semi Improved Grassland



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Atkins Limited ©
Consulting Engineers
The Hub,
500 Park Ave,
Bristol,
South Gloucestershire,
England,
BS32 4RZ
Tel: +44(0)1454 662 000
Fax: +44(0)1454 663 333
www.atkinsglobal.com

Client



Project
DUNSBURY HILL FARM

Title
PHASE 1 HABITAT PLAN - PLOT 3

Sheet Size	Original Scale	Designed / Drawn	Checked	Authorised
A3	1:1,500	KB	CP	AW
Drawing Number		Date	Date	Date
20131366_DUN_PHS_HAB_01_GEO001		06/02/18	06/02/18	06/02/18
Rev				01

D.2. Target Notes and Photographs of Plot 3.

Target Note	Description	Photograph
TN1	The Site comprised species poor semi-improved grassland; a former arable field that has not been farmed or grazed since at least 2014. Grassland is long rough grassland including common and creeping bent, cock's foot, Yorkshire fog and ruderal species such as dock, and thistle	
TN2	Broadleaved woodland comprising oak, willow, ash and hawthorn. The western boundary is designated as Cherry Tree Row SINC which is generally closed canopy woodland with a dense understory (see Table 3.1). Woodland has bank and ditch features.	

Target Note	Description	Photograph
TN2	Area of vegetation to be cleared on western boundary of the Site comprises blackthorn, brambles and bracken approximately 1 m deep from the heras fence and one goat willow tree.	
TN3	Scattered trees: Young oaks and ash trees within scrub on the orthern boundary of Plot 3.	
TN4	Hawthorn scrub forming a defunct hedge with areas of bracken and bramble. The embankment to the link road to the north of the boundary is planted with new landscape planting to strengthen the connectivity of this vegetation.	

Target Note	Description	Photograph
TN5	Bare ground – Spoil from the construction of the link road and attenuation ponds have been stored on the grassland. Some areas have become vegetated. Remaining areas have now been levelled as shown in second photo.	

Appendix E.Designated Sites Citations

- E.1. Designated Site Citations for Site adjacent to Application Site**
- E.2. SINC Criteria**

Survey Summary

Cherry Tree Row 31/07/1996

Site Details

Grid Reference : SU69800890
Total Area : 1.89 ha
District : Havant
Vice-County : 11, South Hampshire

File Reference : 60-0198

Survey Details

Survey Type : Phase II
Survey Date : 31/07/1996
Survey Time on Site : 1.5 (hrs)
Data Owned By : Hampshire Habitat Survey Partnership
Data Recorded By : John Rowe

Site Summary

A POSSIBLY ANCIENT WOODLAND WHICH WAS FORMERLY A CORNER OF THE ANCIENT STAKESHILL COPSE. THE EAST IS MORE RECENT. THE WOODLAND IS OAK-ASH-HAZEL WITH A RICH GROUND FLORA INCLUDING BLUEBELL, WOOD SPURGE, GOLDENROD, PIGNUT & YELLOW ARCHANGEL.

Site Designations

Designation

Public Access
Site of Importance for Nature Conservation

Site Features

<u>Type</u>	<u>Description</u>
Geology	London Clay
Management	Unmanaged

BAP Habitats

Not determined at time of survey

BAP/Notable Species

None recorded

Survey Details

Cherry Tree Row 31/07/1996

Habitats Recorded

Phase 1 Habitat Classifications

A1, Woodland

Area

1.89 ha

Peterken Woodland Stand Types

3AA, Acid pedunculate oak-hazel-ash woods: Heavy soil form

Area

Species Recorded

<u>Taxon Name</u>	<u>Taxon Common Name</u>	<u>Frequency</u>	<u>Notable</u>
* <i>Acer campestre</i>	Field Maple	R	
<i>Agrimonia eupatoria</i>	Agrimony	R	
<i>Agrostis capillaris</i>	Common Bent	R	
<i>Agrostis stolonifera</i>	Creeping Bent	R	
<i>Alnus glutinosa</i>	Alder	R	
<i>Betula pendula</i>	Silver Birch	O	
<i>Brachypodium sylvaticum</i>	False-Brome	F	
* <i>Bromopsis ramosa</i>	Hairy Brome	O	
<i>Calystegia sepium</i>	Hedge Bindweed	O	
* <i>Carex pendula</i>	Pendulous Sedge	R	
* <i>Carex remota</i>	Remote Sedge	F	
* <i>Carex sylvatica</i>	Wood-Sedge	F	
<i>Circaea lutetiana</i>	Enchanter's-Nightshade	O	
<i>Cirsium arvense</i>	Creeping Thistle	R	
* <i>Conopodium majus</i>	Pignut	O	
<i>Cornus sanguinea</i>	Dogwood	R	
<i>Corylus avellana</i>	Hazel	F	
<i>Crataegus monogyna</i>	Hawthorn	F	
<i>Dactylis glomerata</i>	Cock's-Foot	O	
<i>Deschampsia caespitosa</i>	Tufted Hair-Grass	O	
<i>Dryopteris filix-mas</i>	Common Male Fern	O	
<i>Epilobium hirsutum</i>	Great Willowherb	R	
<i>Epilobium montanum</i>	Broad-Leaved Willowherb	R	
* <i>Euphorbia amygdaloides</i>	Wood Spurge	O	
<i>Fagus sylvatica</i>	Beech	R	
* <i>Festuca gigantea</i>	Giant Fescue	O	
<i>Fraxinus excelsior</i>	Ash	O	
<i>Galium aparine</i>	Cleavers	O	
<i>Geranium robertianum</i>	Herb-Robert	O	
<i>Geum urbanum</i>	Herb Bennet	O	
<i>Glechoma hederacea</i>	Ground-Ivy	R	
<i>Hedera helix</i>	Ivy	A	
<i>Heracleum sphondylium</i>	Hogweed	O	
<i>Holcus lanatus</i>	Yorkshire-Fog	O	
* <i>Holcus mollis</i>	Creeping Soft-Grass	O	
* <i>Hyacinthoides non-scripta</i>	Bluebell	F	
* <i>Ilex aquifolium</i>	Holly	R	
<i>Juncus conglomeratus</i>	Compact Rush	R	
<i>Juncus effusus</i>	Soft Rush	R	
* <i>Lamium galeobdolon</i>	Yellow Archangel	R	

<u>Taxon Name</u>	<u>Taxon Common Name</u>	<u>Frequency</u>	<u>Notable</u>
<i>Lapsana communis</i>	Nipplewort	R	
<i>Lonicera periclymenum</i>	Honeysuckle	F	
<i>Mercurialis perennis</i>	Dog's Mercury	R	
* <i>Moehringia trinervia</i>	Three-Nerved Sandwort	R	
<i>Oenanthe crocata</i>	Hemlock Water-Dropwort	R	
<i>Poa trivialis</i>	Rough Meadow-Grass	R	
<i>Potentilla anserina</i>	Silverweed	R	
* <i>Potentilla sterilis</i>	Barren Strawberry	R	
<i>Prunus spinosa</i>	Blackthorn	F	
<i>Pteridium aquilinum</i>	Bracken	O	
<i>Pulicaria dysenterica</i>	Common Fleabane	R	
<i>Quercus robur</i>	Pedunculate Oak	A	
* <i>Ribes rubrum</i>	Red Currant	R	
* <i>Rosa arvensis</i>	Field Rose	F	
<i>Rubus fruticosus agg.</i>	Bramble	F	
<i>Rumex sanguineus</i>	Wood Dock	F	
<i>Salix caprea</i>	Goat Willow	R	
<i>Salix cinerea subsp. oleifolia</i>	Willow	O	
<i>Scrophularia nodosa</i>	Common Figwort	R	
<i>Silene dioica</i>	Red Campion	R	
* <i>Solidago virgaurea</i>	Goldenrod	R	
<i>Stachys sylvatica</i>	Hedge Woundwort	O	
<i>Stellaria holostea</i>	Greater Stitchwort	O	
* <i>Tamus communis</i>	Black Bryony	R	
<i>Taraxacum officinale agg.</i>	Dandelion	R	
<i>Tussilago farfara</i>	Colt's-Foot	R	
<i>Ulex europaeus</i>	Gorse	R	
<i>Urtica dioica</i>	Common Nettle	O	
<i>Veronica chamaedrys</i>	Germander Speedwell	O	
* <i>Veronica montana</i>	Wood Speedwell	O	
* <i>Viburnum opulus</i>	Guelder-Rose	R	
<i>Viola riviniana</i>	Common Dog-Violet	O	

Species Summary

Total no. of species :	72
No. of woodland species :	67
* No. of AWVP indicators :	20

Notes

Habitat Classifications :

BAP Priority: Habitats identified as the highest priority for conservation action in the UK

NVC: A system of classifying natural habitat communities according to species associations

Phase 1: A standardised system for surveying, classifying and mapping broad wildlife habitats including urban areas

Peterken: A stand type classification that describes woodlands by tree species

Indicators Species :

- * Ancient Woodland Vascular Plants (AWVP) - species most strongly associated with ancient woodland and are typical components of botanically rich ancient woodland communities
- # Acid/neutral grassland indicators - species which seldom occur outside of unimproved acid/neutral grasslands or are indicative of a long period of uninterrupted grassland management
- ~ Chalk grassland indicators - species characteristic of unimproved chalk downland or have a strong affinity to calcareous soil

Species Abundance:

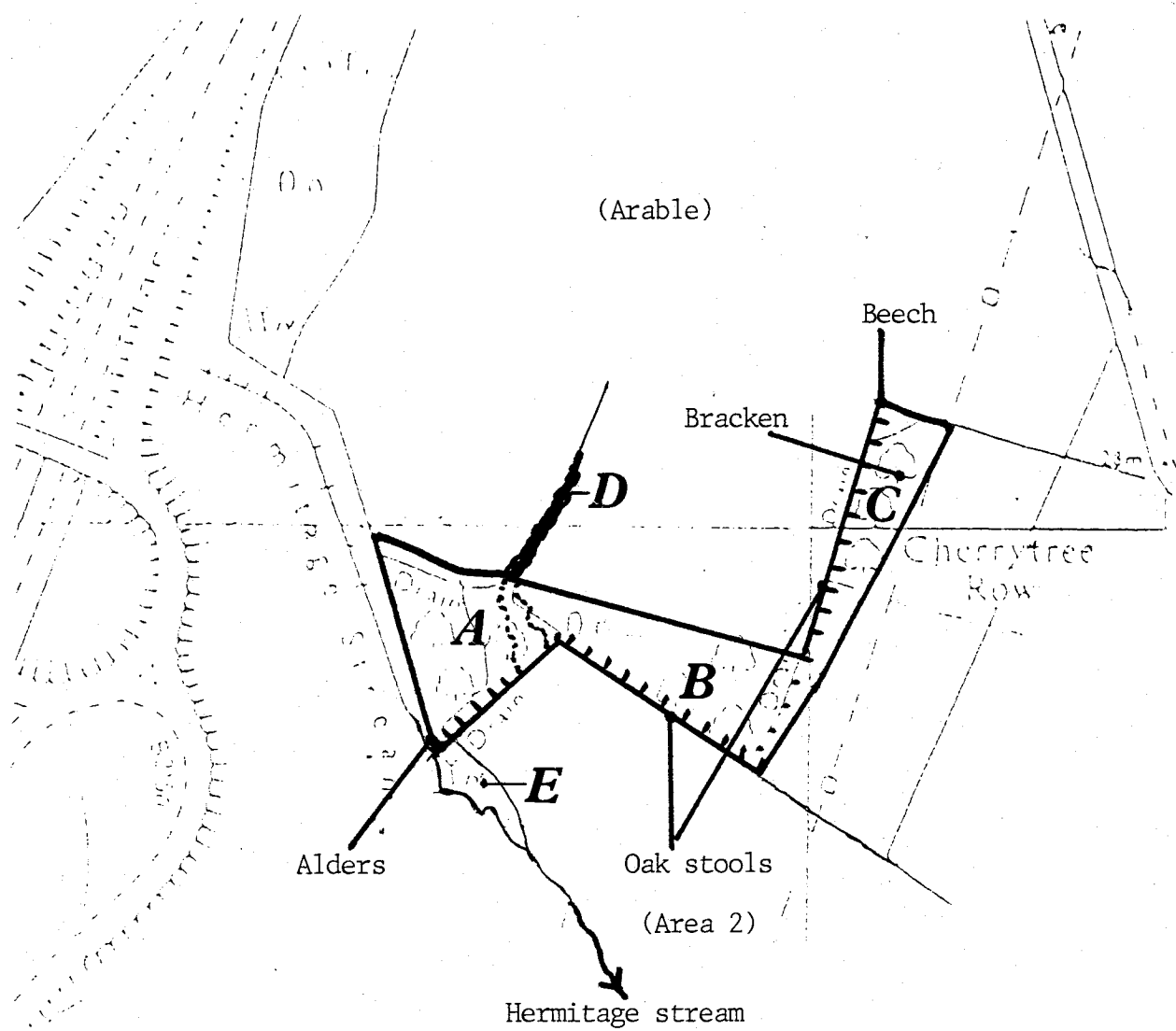
Frequency: D=dominant A=abundant F=frequent O=occasional R=rare L=locally

Frequencies within brackets () indicate non-native occurrences

Habitat and Species designations and statuses:

Habitat designations/categories and species legislation/statuses are correct at the time the report was generated and may not necessarily reflect those applicable either at the time of survey or later than the generated date.

CHERRYTREE ROW
(NEVILLES PARK AREA 1)



NEVILLE'S PARK pSINC

Area 1 - "Cherrytree Row"

I have adopted the name of the eastern limb (clear, and named, on 1870 OS map) for the whole site; though consisting of three distinct parts it is developing into a satisfying whole. 72 species, 20 AWVP.

A. This is presumably a corner of Ancient Stakeshill Coppice, detached by the A3(M). There is an ancient woodbank on the south-east side, and woodland has been advancing over it into Area 2 for some time.

Canopy of Oak, rare Ash, over dense Hazel, Honeysuckle and tree re-gen (including very abundant Oak seedlings). Ground flora of Bluebell, Wood Spurge, Goldenrod, Pignut, Archangel etc. By the stream there are some large Alder stools, one recently re-coppiced.

B. An old bank with coppiced Oaks along the south edge has been the source for generations of Oak re-gen and there is now quite a wide belt of closely stocked young trees, with very abundant seedlings. Ground flora is grassy, with lots of Wood Dock, but also Remote Sedge, Giant Fescue, Wood Speedwell etc.

C. Again, an old bank has large Oak (and Ash) stools, running along the west edge. This is definitely an ancient wood "relic", with Bluebells and Creeping Soft Grass common right to the northern end. Mostly it is dense thorns, Hazel and Ash though, with little herbaceous flora (overhead lines skirt the edge here and may have necessitated a felling). There is a small Bracken glade. The only Beech is at the northern end.

(D is a thick hedgerow, including a large Ash stool and E is well-developed Ash-Hazel "scrub" outside the ancient bank with AWVP in the ground flora).

Area 2

A large expanse of tall forb-rich grassland, with developing scrub. It is easily accessible and well-used by walkers. It is unclear when, or how, it was last managed; "coarse" grasses, rushes and Creeping Thistle are abundant but it is still remarkably rich and colourful vegetation.

Frequent species include Yarrow, Agrimony, Angelica, Knapweed, Silverweed, Creeping Cinquefoil, Fleabane, Meadow Buttercup and Sorrel. There is some Gypsywort and Spotted Orchids in damper areas, locally abundant Hairy Willowherb in the east, plantains and clovers etc along paths.

Five indicators, all Occasional; Meadow Barley, Sneezewort, Corky Water Dropwort, Pepper Saxifrage and Hoary Ragwort.

Centre has just very scattered bushes, Bramble and tree saplings, but there is some well developed scrub of Sallow and Alder close to (but separated from) the Hermitage Stream, billowing Bramble and Blackthorn along the north edge - with one fair sized Oak, and Sallow in the east. There are some planted Alder, Birch and Abele in the southern corner.

(Note recreation ground to east, close mown but still with Meadow Barley and Corky Water Dropwort).

Criteria for selecting Sites of Importance for Nature Conservation in Hampshire

The criteria below define those sites which are considered to be of particular importance for nature conservation within Hampshire. These sites are in addition to the statutorily designated sites and are referred to as Sites of Importance for Nature Conservation (SINCs).

Woodland

- 1A** Ancient¹ semi-natural² woodlands.
- 1B** Other woodland where there is a significant element of ancient semi-natural woodland surviving.
- 1C** Other semi-natural woodland if;
 - (ii)** they comprise important community types of restricted distribution in the County, such as yew woods and alder swamp woods
- 1D** Pasture woodland and wooded commons, not included in any of the above, which are of considerable biological and historical interest.

¹ *Ancient - refers to woodlands which have developed particular ecological characteristics as a result of their long continuity. Those identified to date which are over 2ha are included on the Hampshire Inventory of Ancient Woodlands (Provisional).*

² *Semi-natural - modified types of vegetation in which the dominant and constant species are accepted natives to Britain and that locality, and the structure of the community conforms to the range of natural vegetation types.*

Neutral/acid/calcareous grassland

- 2A** Agriculturally unimproved grasslands³
- 2B** Semi-improved grasslands which retain a significant element of unimproved grassland.
- 2D** Grasslands which have become impoverished through inappropriate management but which retain sufficient elements of relic unimproved grassland to enable recovery.

³ *Agriculturally unimproved grassland - grassland that is composed of a mixed assemblage of indigenous species in essentially semi-natural communities which has been allowed to develop without the major use of herbicides or inorganic fertilisers.*

Heathland

- 3A** Areas of heathland vegetation; including matrices of dwarf shrub, acid grassland, valley mires and scrub.
- 3B** Areas of heathland which are afforested or have succeeded to woodland if;
 - (i)** they retain significant remnants of heathland vegetation which would enable their recovery, or
 - (ii)** they are contiguous with, or form an integral part of an open area of heathland,

Coastal habitats

- 4A** Semi-natural coastal and estuarine habitats, including saltmarsh, intertidal mudflats, sand dunes, shingle, brackish ponds, grazing marsh and maritime grasslands.

Wetlands

- 5A** Areas of open freshwater (eg. lakes, ponds, canals, rivers, streams and ditches) which support outstanding assemblages of floating/submerged/ emergent plant species, invertebrates, birds or amphibians.
- 5B** Fens, flushes, seepages, springs, inundation grasslands etc. that support a flora and fauna characteristic of unimproved and waterlogged (seasonal or permanent) conditions.

Species

- 6A** Sites which support one or more notable species⁴.
- 6B** Sites which regularly support a significant population of a species which has a restricted distribution or has substantially declined in population or range. Such sites may be used seasonally or for only one part of a species life-cycle.
- 6C** Sites which support an outstanding assemblage of species.

⁴ *Notable species include Red Data Book species, Nationally Scarce species, species covered under Schedules 1,5 and 8 of the Wildlife & Countryside Act 1981, Annex 1 of the EC Bird Directive 79/409 and Annex II & 1V of the EC Directive 92/43/EEC 'The Habitats Directive', and those covered by the Bern, Bonn and Ramsar Conventions. Notable species will also include species which are considered 'County Rare' or 'County Scarce'. County Rare = those species recorded in 1% or less tetrads in Hampshire or either of the two vice-counties (11 & 12) separately. County Scarce = 4% or less tetrads.*

Social value

- 7A** Sites of nature conservation interest which occur in areas otherwise deficient in such interest, and/or are known to be of particularly high value to local communities e.g. community wildlife sites.

Sites selected under this criteria will be rigorously confined to those which, if lost, would result in a considerable and demonstrable loss to the local community which would be very difficult/impossible to replace. Because of the widespread distribution of sites of nature conservation interest in Hampshire, and the high threshold used to define critical importance, only a limited number of sites are likely to meet this criteria.

Geology and geomorphology

- 8A** Sites which have been designated as Regionally Important Geological/Geomorphological Sites (RIGS)

Regionally Important Geological/Geomorphological Sites are sites of regional importance excluding SSSIs. RIGS are analogous to biological non-statutory sites.

Annex A. Phase 2 Survey Results

Annex A1: Bat Activity Survey 2017 Report (Sylvatica)

(submitted separately)

Annex A2. Dormouse Survey Report (Atkins)

(submitted separately)

Atkins Limited
The Hub
500 park Avenue
Aztec West
Almondsbury
Bristol
BS32 4RZ

Email: ecology@atkinsglobal.com

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