Land off High Street, Colney Heath

Ecological Impact Assessment (Low Impact EcIA)

Client:

Tarmac

Report Reference:

RSE_5500_R1_V2_LECIA

Issue Date:

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RammSanderson

ECOLOGY
FLOOD RISK
ARBORICULTURE
HABITATS
TRAINING

CIEEM
REGISTERED PRACTICE 2021-2022

PROJECT				
Client:	Tarmac			
Project:	Land off High Street, Colney Heath			
Reference	RSE_5500_R1_V2_LECIA			
Report Title	Ecological Impact Appraisal (Low Impact)			

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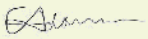
Originated:	**Emilia Adamson** MBiolSci	Ecologist		17/11/2021
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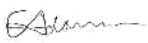
Revisions (Updated layout):	**Emilia Adamson** MBiolSci	Ecologist		27/01/2022

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1 EXECUTIVE SUMMARY

1.1 Background

i RammSanderson Ecology Ltd was instructed by Tarmac to carry out a Preliminary Ecological Appraisal of land off High Street, Colney Heath, to inform proposals for a new housing development and area of open space.

ii The site formed an area of arable field with grassland margins and boundary hedgerows. No further surveys are required; however mitigation will be required as detailed below.

Table 1: Summary of Ecological Features

Ecological Feature	Comment	Avoidance	Mitigation	Compensation/Enhancement	Residual Impact
Designated Sites	The nearest non-statutorily designated site was Sleapshyde Gravel Pit Local Wildlife Site (LWS), located adjacent to the north-east of the site. The nearest statutory designated site was Colney Heath Local Nature Reserve (LNR) located 81m south.	N/A	The area of the site adjacent to the LWS is to be used as a landscape buffer. This area should be enhanced with native planting as far as possible. Woodland in the north-eastern corner of the site should not be removed. Pollution prevention guidelines and dust suppression techniques to minimise impact upon LWS should be adhered to, and detailed within a CEMP.	N/A	Negligible
Habitats	The works will impact arable habitat with limited ecological value. The boundaries are particularly noted for their hedgerows, tree lines and poor semi-improved grassland providing commuting corridors for protected species.	Under current plans, boundaries are to be retained.	N/A	The eastern aspect of the site is to be allocated as a landscape buffer, with habitats including scrub, trees, grassland and a SUDs feature.	Negligible

Ecological Feature	Comment	Avoidance	Mitigation	Compensation/Enhancement	Residual Impact
Great Crested Newt	Two ponds are present within 250m of the site, however the ponds north-east of the site are stocked fishing lakes, minimising their suitability to support GCN. Furthermore, the site is dominated by arable field, and as such no further surveys are required. The boundary habitats may provide habitat for transient commuting/foraging GCN but these are largely to be retained.	Retain boundary habitats where possible.	Precautionary method of works regarding any areas of hedgerow, tree line or poor semi-improved grassland that may be removed.	N/A	Negligible
Bats	The building that borders the site offers negligible scope for roosting. The trees on site were not assessed as offering bat roost potential, however further assessment may be required if removal of mature trees is needed. The site provides suitable habitat for foraging and commuting bats due to the hedgerows and tree lines. These are to be retained, however commuting and foraging bats may be impacts by lighting within the development.	Retain hedgerows and tree lines where possible.	Avoidance of light spill onto the boundary habitats which will form a dark corridor in the area. Lighting requirements within the completed development should be carefully considered and avoided where possible	Installation of bat boxes within retained trees.	Negligible
Badger	A latrine was identified on site, as well as mammal paths, suggesting that badgers are present within the area. No setts were recorded, however a pre-commencement check for new badger setts is recommended.	N/A	Pre-commencement check for badger setts within the site and Zone of Influence. Best practice should be followed during works for any large mammals that may pass through the site.	N/A	Negligible

Ecological Feature	Comment	Avoidance	Mitigation	Compensation/Enhancement	Residual Impact
Birds	The boundary hedgerows and tree lines offer suitable habitat to support nesting birds. The arable field may support ground nesting birds; however, the loss will not result in a significant loss of available habitat locally.	Retain hedgerows and tree lines where possible.	Any tree or hedgerow clearance should be completed during the period Sept-end Feb to avoid nesting birds. Where this is not possible	Bird boxes recommended within retained trees.	Negligible
Reptiles	The boundary habitats may provide habitat for transient commuting/foraging reptiles however the arable land is of negligible suitability.	Retain boundary habitats were possible.	Precautionary method of works regarding any areas of hedgerow, tree line or poor semi-improved grassland that may be removed.	N/A	Negligible
Water Vole and Otter	No suitable habitats on site of within ZoI	N/A	N/A	N/A	N/A
Terrestrial Invertebrates	The arable field is limited in its potential to support protected invertebrates. The boundary habitats offer suitable habitat however they are not extensive.	Retention of boundary habitats where possible.	N/A	N/A	N/A
Aquatic Invertebrates	No suitable habitats on site of within ZoI	N/A	N/A	N/A	N/A
Fish	No suitable habitats on site of within ZoI	N/A	N/A	N/A	N/A
Principal Species	Species such as hedgehog and hare are potentially present locally, but no significant loss of habitat is proposed.	N/A	Best practice methods with regards to mammals that may traverse the site during the works period.	N/A	N/A

Ecological Feature	Comment	Avoidance	Mitigation	Compensation/Enhancement	Residual Impact
Invasive Species	No invasive species present on site.	N/A	N/A	N/A	N/A
Biodiversity	Current proposals with included enhancement recommendations result in a net gain on site of 22.56% for habitats and 15.53% for hedgerows. This would be through the creation of a wildlife buffer including SUDs area, wildflower planting and scrub. Initial calculations based upon draft proposals and as such will need re-calculating following the final layout.	N/A	Retain boundary habitats where possible. Create valuable habitats within landscape buffer including wildflower grassland, SUDs, feature and scrub. Plant additional hedgerows as one is to be lost within current proposals.	N/A	Net gain if boundary habitats are retained and landscape buffer provides enhancements.

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2 INTRODUCTION AND BACKGROUND

2.1 Purpose and Scope of this Report

i RammSanderson Ecology Ltd was commissioned by Tarmac to assess the potential for protected species and habitats to be present on the site of proposed new housing development comprising up to 40 dwellings, plus associated car parking, hardstanding habitat and open space to the east. The site is located off High Steet, Colney Heath.

ii To complete an EcIA of the proposals, a desk-based assessment, Extended Phase 1 Habitat Survey and protected species assessments were carried out based upon the findings of the Preliminary Ecological Appraisal (PEA). This report is a stand-alone EcIA which has been prepared following current guidance (CIEEM, 2018) and can be used to lawfully determine a planning application in line with current planning policy. This report does not form part of a wider discipline Environmental Impact Assessment (EIA) of Environmental Statement (ES), nor does it confer the need for any such documentation.

iii The study area was defined depending on the proposals, desk study and applicable legislation (Appendix 1) as shown in the enclosed Site Location Plan (Figure 1) and Phase 1 Habitat plan (Figure 2) plus a buffer zone extended to include the Zone of Influence (see section below) of the proposals (hereafter referred to as the "Site").

iv This ecological impact assessment is based on a review of the development proposals provided by the Client in the concept master plan (Appendix 3), desk study data (third party information) and surveys of the Site. The aims of this report are to:

- Classify the habitat types at the site based on standard Phase 1 Habitat survey methodology;
- Evaluate any potential for protected species to be present;
- Identify any ecological constraints that may affect the scheme design;
- Provide recommendations for any further actions that might be required (for example, to monitor badger setts periodically through construction);
- Identify likely significant effects on ecological receptors;
- Assess if the proposals are compliant with legislation and policy relating to biodiversity; and
- Identify opportunities for ecological enhancement to provide net biodiversity gain in line with the National Planning Policy Framework (NPPF, 2019).

v This report pertains to these results only; recommendations included within this report are the professional opinion of an experienced ecologist and therefore the view of RammSanderson Ecology Ltd.

vi The surveys and desk-based assessments undertaken as part of this review and subsequent report including the Ecological Constraints and Opportunities Plan are prepared in accordance with the British Standard for Biodiversity Code of Practice for Planning and Development (BS42020:2013) and follow current guidance (CIEEM, 2018).

2.2 Zone of Influence

i The Zone of Influence (ZoI) is used to describe the geographic extent of potential impacts of a proposed development. The Zone is determined by the development proposals in relation to individual species ecological requirements indicated in best practice guidelines.

ii In relation to great crested newts (GCN), the zone of influence is considered to be up to 500m from the site boundaries, as this is the distance that Natural England would require to be considered in relation to GCN licensing. However, for this site the ZOI is only considered for water bodies within 250m of the site boundary. Guidance set out within Natural England's Method Statement template, to be used when applying for a Great Crested Newt development licence, states that surveys of ponds within 500m of the site boundary are only

required when '(a) data indicates that the pond(s) has potential to support a large great crested newt population, (b) the footprint contains particularly favourable habitat, (c) the development would have a substantial negative effect on that habitat and (d) there is an absence of dispersal barriers.' As the site is dominated by arable habitat, a 250m is sufficient.

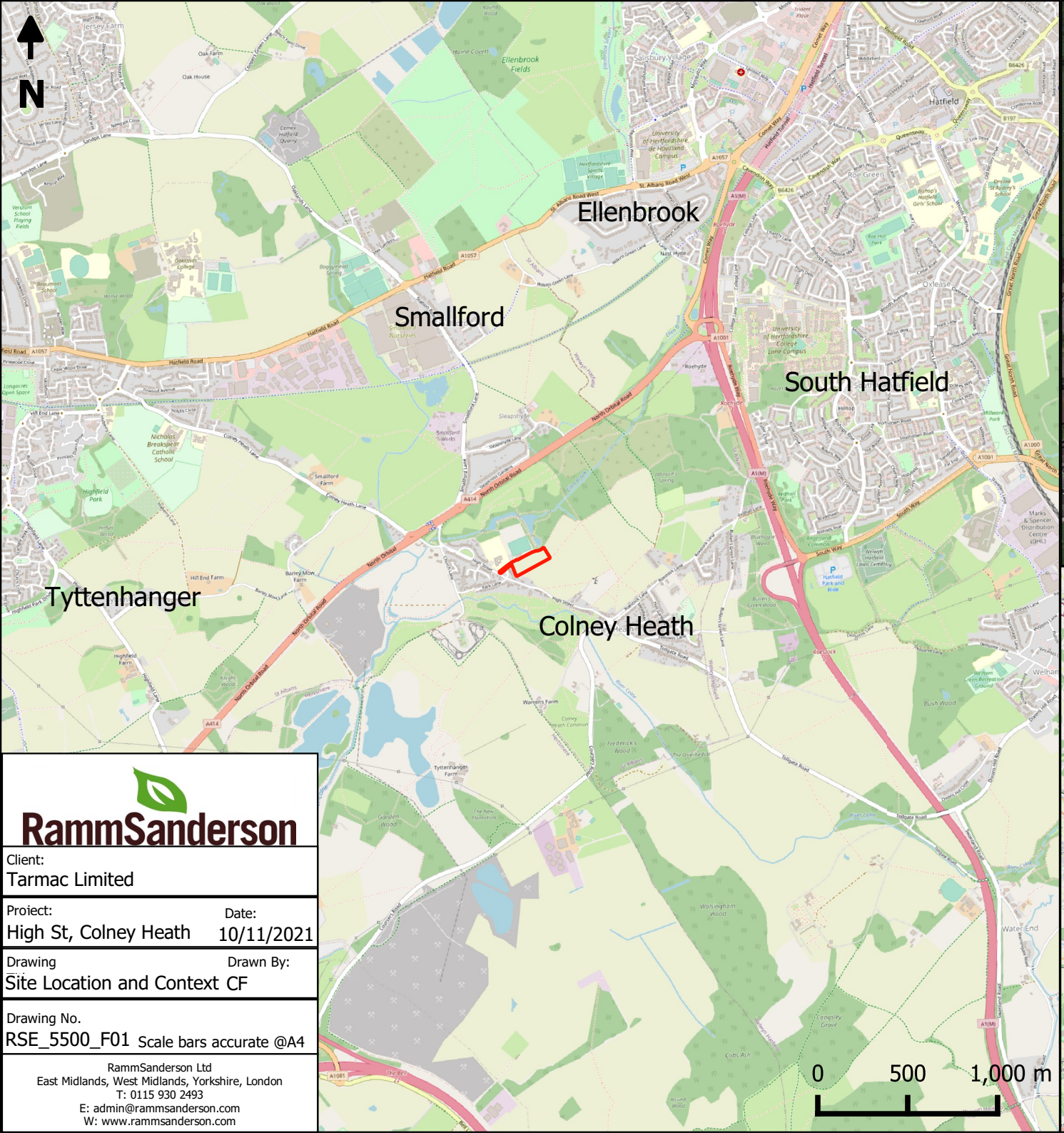
iii For badgers, the zone of influence is typically 30-50m from the Site boundary as this is the distance within which a sett can be damaged or disturbed by heavy machinery.

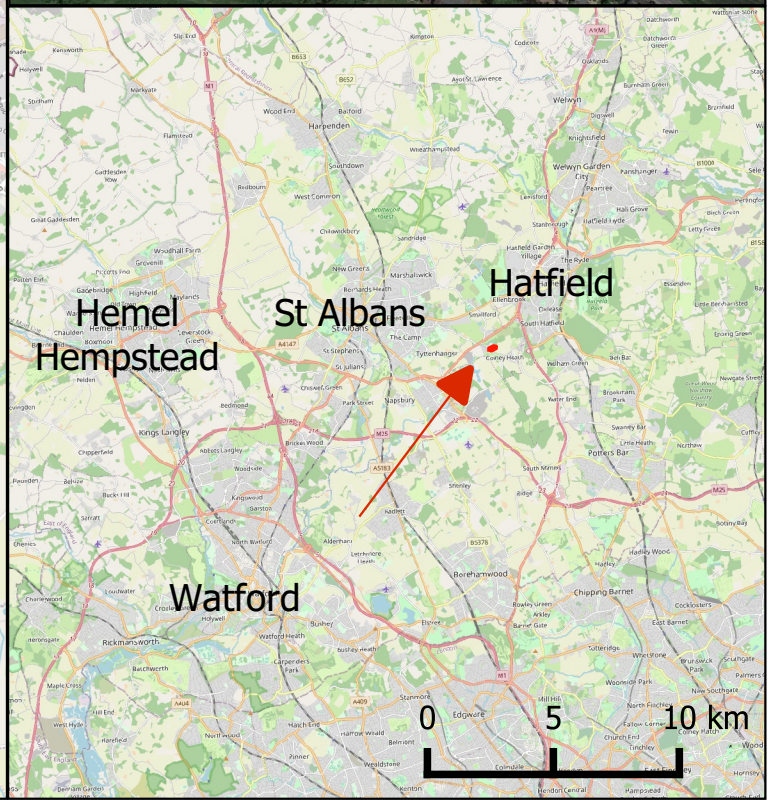
iv As bats are highly mobile species, the ZoI for these can be 5km from a site wherein high-quality habitat will be impacted by proposals.

v For designated sites, the Zone of Influence can be >10km from the site and this is termed the Impact Risk Zone (IRZ). Where sites occur within an IRZ the requirement for a Habitat's Regulations Assessment or Environmental Impact Assessment may be triggered.

2.3 Site Context and Location

i The site is located off High Street, Colney Heath, Hertfordshire, AL4 0NS (Central grid reference TL 20231 06132). It forms an arable field with poor semi-improved grassland margins, and boundary hedgerows. There are areas of amenity grassland and hardstanding habitat within the western extent of the site where it connects to High Street. The surrounding landscape is predominantly agricultural and rural residential, with the small village of Colney Heath located to the west. The centre of St. Albans is located c.5km to the north-west.





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Client:
Tarmac Limited

Project:
High St, Colney Heath

Date:
10/11/2021

Drawing
Site Location and Context

Drawn By:
CF

Drawing No.
RSE_5500_F01

Scale bars accurate @A4

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3 METHODOLOGY

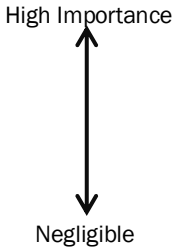
3.1 Ecological impact Assessment

i The ecological impact assessment is based on the standard best practice methodology provided by the Guidelines for Ecological impact Assessment (CIEEM, 2018). The assessment identifies important sites, habitats, species and other ecological features that are of conservation value based on factors such as legal protection, statutory or local site designations such as Sites of Special Scientific Interest (SSSI) or Local Wildlife Sites (LWS) or inclusion on Red Data Book Lists or Local Biodiversity Action Plans.

ii The importance of an ecological feature is considered within a defined geographical context. The following frame of reference is used, or adapted to suit local circumstances:

- International and European
- National
- Regional
- Metropolitan, County, vice-county or other local authority-wide area
- River Basin District
- Estuarine system/Coastal cell
- Local
- Below Local level e.g. on site only

Importance



iii Consideration of impacts at all scales is important, and essential if objectives for no net loss of biodiversity and maintenance of healthy ecosystems are to be achieved. In identifying impacts, the review considers the Client's Site proposals and any subsequent recommendations made are proportionate / appropriate to the site and have considered the Mitigation Hierarchy as identified below:

- **Avoid:** Provide advice on how the development may proceed by avoiding impacts to any species or sites by either consideration of site design or identification of an alternative option.
- **Mitigate:** Where avoidance cannot be implemented mitigation proposals are put forward to minimise impacts to species or sites as a result of the proposals. Mitigation put forward is proportionate to the site.
- **Compensate:** Where avoidance cannot be achieved any mitigation strategy will consider the requirements for site compensatory measures.
- **Enhance:** The assessment refers to planning policy guidance (e.g. NPPF) to relate the ecological value of the site and identify appropriate and proportionate ecological enhancement in line with both national and local policy.

iv For the purpose of this EcIA, a 'significant effect' is an effect that either supports or undermines biodiversity conservation objectives for 'important ecological features' (explained in 3.1.i.) or for biodiversity in general. Conservation objectives may be specific (e.g. for a designated site) or broad (e.g. national/local nature conservation policy) or more wide-ranging (enhancement of biodiversity). Effects are considered significant at the range of scales from international to local. A significant effect is an effect that is sufficiently important to require assessment and reporting so that the ecological consequences of the project are understood. In broad terms, significant effects encompass impacts on structure and function of defined sites, habitats or ecosystems and the conservation status of habitats and species (including extent, abundance and distribution).

v Note: The following definitions are used for the terms 'impact' and 'effect' throughout this report:

- **Impact** – Actions resulting in changes to an ecological feature. For example, the construction activities of a development removing a hedgerow.

- **Effect** – Outcome to an ecological feature from an impact. For example, the effects on a dormouse population from loss of a hedgerow.

3.2 Desk Based Assessment

i Data regarding statutory and non-statutory designated sites, plus any records of protected or Priority species and habitats was requested from the local ecological records centre and online resources, details of which are provided in Table 2 below.

Table 2: Consulted resources

Consultee/Resource	Data Sought	Search Radius from Boundary
Hertfordshire Environmental Records Centre	Non-Statutory Site Designations	2km
	Protected/Principal Species Records	2km
www.magic.gov.uk[1] [2]	Statutory Site Designations (Impact Risk Zones)	20km
	Habitats of Principal Importance (NERC Act, 2006)	1km
	European Protected Species Licences	5km

NB: Desk study data is third party controlled data, purchased or consulted for the purposes of this report only. RammSanderson Ecology Ltd cannot vouch for its accuracy and cannot be held liable for any error(s) in these data.

3.3 Phase 1 Habitat Survey

i An extended Phase 1 Habitat Survey of the site was completed to identify habitats present. All habitats within the site boundary were described and mapped following standard Phase 1 Habitat Survey methodology (JNCC, 2010), which categorises habitat type through the identification of individual plant species.

ii Nomenclature follows Stace (Stace, 2010) for vascular plant species and the DAFOR scale for relative abundance was used in the field to determine dominant plants within habitats and communities (D = dominant, A = abundant, F = frequent, O = occasional and R = rare).

3.4 Protected / Priority Species Scoping Assessment

i The habitats on site were assessed for their suitability for supporting any legally protected or Priority species that would be affected by the proposed development. This includes invasive non-native plant species such as Japanese knotweed (*Fallopia japonica*), Himalayan balsam (*Impatiens glandulifera*) and giant hogweed (*Heracleum mantegazzianum*).

3.5 Biodiversity Impact Assessment

3.5.1 Outline Procedure

i Biodiversity Impact Assessment of proposals was carried out in accordance with guidelines published by DEFRA and via the DEFRA Metric Calculation Tool 3.0. The existing value of individual habitats on site is initially calculated by accurately mapping the proposed development site from information collected during

[1] Multi Agency Geographic Information for the Countryside Interactive GIS Map.
[2] MAGIC resource was reviewed on the 18/11/2021

a Biodiversity Scoping Assessment/Phase 1 Habitat Survey and by dividing the land into individual habitat parcels. This part of the study is informed by JNCC Phase 1 habitat and UK habitats classification systems. The distinctiveness, condition, connectivity and strategic significance of these parcels is then assessed and together with the area of each habitat, a value is assigned. A summary of how habitat distinctiveness, condition assessment, connectivity and strategic significance is determined is detailed within DEFRA best practice literature

3.5.2 Calculation

ii Once the habitat types have been input into the Biodiversity Impact Assessment calculator, along with their area, distinctiveness, condition, connectivity and strategic significance an overall score in biodiversity units is calculated.

3.5.3 Compensation

iii Once the biodiversity value of existing on-site habitats has been quantified, the value of indicatively proposed habitats to achieve a net gain as part of development must be calculated. This is calculated using the methodology applied above, taking into account the area/length of indicatively proposed habitats, their distinctiveness, condition, connectivity and strategic significance once this is established. A further two parameters are also taken into consideration at this stage. These are the time it will take to reach this target condition and the difficulty of creating/restoring each habitat type proposed. By using these parameters, the calculation takes into account that the time it takes for a habitat to establish may result in a loss of biodiversity for a period of time and also the risk of failure associated with any habitat creation/restoration

3.6 Limitations

i It should be noted that whilst every effort has been made to provide a comprehensive description of the site, no investigation could ensure the complete characterisation and prediction of the natural environment.

3.7 Accurate lifespan of ecological data

i The majority of ecological data remain valid for only short periods due to the inherently transient nature of the subject. The survey results contained in this report are considered accurate for approximately 18 months from the date of survey, notwithstanding any considerable changes to the site conditions, the presence of mobile species such as bats, otters and badgers or where species/county specific guidance dictates otherwise (CIEEM, 2019).

4 BASELINE CONDITIONS

4.1 Surveyors Competency and Survey Conditions

i The survey was carried out by Vicky Rowe BSc (Hons) ACIEEM. Vicky holds a class 2 license for bats (2019-39607-CLS-CLS) and a class 1 license for GCN (2015-18127-CLS-CLS). She has been a professional ecologist for 14 years and is appropriately experienced and qualified to undertake this type of survey. The survey was completed during suitable conditions as detailed in the table below.

Table 3: Summary of conditions during survey

Abiotic Factor	Survey 1
Survey type	PEA
Date completed	18.08.2020
Temperature (°C)	13
Wind speed (Beaufort Scale)	5
Cloud cover (Oktas Scale)	8
Precipitation	2

4.2 Designated Sites

4.2.1 Statutory Designated Sites and Non-Statutory Designated Sites[3]

i The nearest statutorily designated site is Colney Heath Local Nature Reserve (LNR), located 81m south. This is designated as acid grassland. The nearest Site of Special Scientific Interest (SSSI) is Water End Swallow Holes SSSI, located 3km southeast, designated for swamp habitats. The site lies within the Impact Risk Zone for this designated site; however the works are not of a type listed and as such do not trigger a need for further survey. All remaining statutory designated sites were located more than 2.5km from the site and as such are too far afield to be impacted by the works.

ii The nearest non-statutorily designated site was Sleapshyde Gravel Pit, Local Wildlife Site (LWS), which borders the site to the north-east. This is designated for a mosaic of habitats including open water, wet neutral grassland, tall herbs, scattered scrub and plantation, and has ornithological interest. Due to the proximity of this LWS to the development, there is a risk of impacting the development during construction

iii The remaining non-statutory designated sites are further afield, and the use of best practice methodologies with regards to Sleapshyde Gravel Pit will minimise impacts upon other nearby designated sites.

4.3 Biodiversity

i When assessed against the DEFRA Metric 3.0 for biodiversity, the site contains 4.36 baseline biodiversity units for habitat areas and 2.53 for linear feature (e.g. hedgerows). The most distinctive habitat within the

[3] Full desk study results are provided in Appendix 5.

site was the woodland, with the poor semi-improved grassland accounting for the majority of biodiversity units due to the extensiveness of this habitat. The site was dominated by arable land which is of low biodiversity value.

4.4 Field Survey Results

i The survey area comprised an arable field with poor semi-improved grassland margins, and hedgerows and tree lines forming the boundaries. There were also areas of amenity grassland and hardstanding within the western aspect.

ii Habitats types detailed below are listed in order of the JNCC (2010) Handbook. The species list provided in this report reflect only those taxa observed during the survey.

Table 4: Results of Phase 1 Site Survey

Habitat	Description	Area (Ha)	Proportion of site (%)	Ecological Importance & Outcome of Proposal	Photograph
A3.1. Broadleaved Scattered Trees	A tree line ran along the northern boundary of the site. This was connected to the woodland adjacent to the north-eastern aspect of the site. The trees included occasional field maple (*Acer campestre*), blackthorn (*Prunus spinosa*), dog rose (*Rosa canina*), sycamore (*Acer pseudoplatanus*), ash (*Fraxinus excelsior*), goat willow (*Salix caprea*), Norway maple (*Acer platanoides*), hawthorn (*Crataegus monogyna*) and English oak (*Quercus robur*). An additional line of trees was located within the western aspect of the site, close to the entrance. This comprised frequent hornbeam (*Carpinus betulus*), ash and hawthorn, with frequent ivy (*Hedera helix*) growing on the fence.	Northern: 129m length Western: 31m	N/A	Ecologically important for foraging and commuting species. To be retained.	

Habitat	Description	Area (Ha)	Proportion of site (%)	Ecological Importance & Outcome of Proposal	Photograph
B6 Poor semi-improved grassland	The margins of the arable field comprised poor semi-improved grassland. The grassland margins varied from 0.5 to 2m wide, and the sward height was c.40cm. This habitat included abundant cock's foot (*Dactylis glomerata*), Yorkshire fog (*Holcus lanatus*), and perennial rye (*Lolium perenne*), with frequent meadow buttercup (*Ranunculus acris*) and cleavers (*Galium aparine*), and occasional chickweed (*Stellaria media*), bramble (*Rubus fruticosis*), nettle (*Urtica dioica*), herb Robert *(Geranium robertanium*), hedge bindweed (*Castylegia sepium*), yarrow (*Achillea millefolium*), prickly sow-thistle (*Sonchus asper*), *Geranium sp*,, wild angelica (*Angelica sylvestris*), broadleaved dock (*Rumex obtusifolius*), spear thistle (*Cirsium vulgare*), greater plantain (*Plantago major*), ribwort plantain (*Plantago lanceolata*) and daisy *(Bellis perennis*).	0.23	13.7	Moderate ecological importance. Impacted by proposals but stand-off from hedgerows will retain some.	
J1.1 Arable	The site was dominated by arable land with winter wheat (*Triticum aestivum*) growing at the time of survey.	1.25	80.8	Limited ecological importance but suitability for ground nesting birds. To be lost.	

Habitat	Description	Area (Ha)	Proportion of site (%)	Ecological Importance & Outcome of Proposal	Photograph
J1.2 Amenity grassland	There were a small number of amenity grassland verges within the peripheries of the hardstanding car park, in the western extent of the site. This were dominated by short mown amenity species such as perennial rye grass and red fescue (*Festuca rubra*).	0.02	1.2	Negligible ecological importance.	
J2.1.1 Intact Hedgerow – Species Rich	The western boundary comprised an intact hedgerow (H1) measuring 3 x3m. There were three mature ash trees set back slightly from the main hedgerow. The hedgerow was dominated by hawthorn, with occasional holly (Ilex aquifolium), hazel (Corylus avellana), dog rose, ash, dogwood (Cornus sanguinea) and ivy.	205 m length	N/A	Ecologically important for foraging and commuting species. To be retained	

Habitat	Description	Area (Ha)	Proportion of site (%)	Ecological Importance & Outcome of Proposal	Photograph
J2.1.1 Defunct Hedge – Species Rich	The southern hedgerow (H2) bounded the majority of the site on the south. This hedgerow was located over a dry ditch, and had a leggy base that formed gaps, making the hedgerow defunct. The hedgerow measures 1.5-2m high and 1-1.5m. There were no dominant species present, as all species were locally dominant. The species present were dogwood, hawthorn, ivy, hazel, holly, field maple, ash, oak, spindle (Euonymus europaeus), bramble, dog rose and hornbeam.	71m length	N/A	Ecologically important for foraging and commuting species. To be retained.	
J2.3.6 Dry ditch	A dry ditch was located at the base of H2.	N/A	N/A	Limited ecological importance but associated with hedgerow. Outcome unknown.	N/A
J3.6 Buildings	One small single storey building was located on the boundary of the site within the tarmacked area in the west of the site.	N/A	N/A	Negligible ecological importance.	

Habitat	Description	Area (Ha)	Proportion of site (%)	Ecological Importance & Outcome of Proposal	Photograph
J6 Hard standing	The access to the site was formed of a hardstanding car park.	0.07	4.2	Negligible ecological importance.	

Key

- Red Line Boundary
- B6 - Poor semi-improved grassland
- J1.1 - Cultivated/disturbed land - arable
- J1.2 - Cultivated/disturbed land - amenity grassland
- J6 - Hard Standing
- A3.1 - Broadleaved Parkland/scattered trees
- J2.1.1 - Intact hedge - native species-rich
- J2.2.1 - Defunct hedge - native species-rich
- J2.4 - Fence
- J2.6 - Dry ditch
- Deciduous Tree
- Target Note
  - TN1 - Badger latirne
  - TN2 - Mammal hole
  - TN3 - Mammal path

RammSanderson

Client:
Tarmac Limited

Project:
Land off High St, Colney Heath

Drawing Title:
Phase 1 Habitat Plan

Drawing No.: RSE_5500_F02
Rev: V2
Drawn By: CF
Scale: 1:1,500 @A4
Date: 15/11/2021

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5 IMPACTS AND MITIGATION (CUMULATIVE AND/OR IN ISOLATION)

5.1 Planning Application Search

i A planning application search found that the majority of recent planning applications within the St.Albans area were for householder/small developments, or were discharges pertaining to older applications. As there are no significant impacts upon local protected habitats or species anticipated as a result of the proposed development, an evaluation of cumulative effects was deemed disproportionate. The impacts of the proposed development are deemed a low enough level to not act in synergy with nearby planning applications.

5.2 Habitats

i The habitats on site were generally of limited ecological value. The arable land offers suitability for ground nesting birds but is otherwise limited. The hedgerows and tree lines were noted for their ecological value due to providing linear features for commuting and foraging species. Hedgerows are also listed as a Habitat of Principal Importance under the NERC Act 2006. As such, the hedgerows and tree lines are to be retained where possible. The current draft masterplan calls for a buffer of vegetation surrounding the proposed development, in which the hedgerows are to be retained and protected from impacts.

5.2.2 Invasive / Non-native Species

ii No invasive on non-native species were identified during the ecological survey, including those listed on Schedule 9 of the Wildlife and Countryside Act 1981.

5.3 Statutorily and Non-Statutorily Designated Sites

i No impacts upon statutory designated sites are anticipated from the proposals as it is not within the categories listed for any SSSI IRZ. The nearest LWS was located adjacent to the north of the site and therefore is at risk of being negatively impacted by the works. As such, pollution prevention measures and best practice methodology should be adhered to during the construction period and be detailed within a construction and ecology management plan (CEMP).

ii Impacts upon the wildlife site as a result of increased recreational use may occur, however this will be limited as the size of the development is small, comprising up to 40 dwellings. Furthermore, there will be an area of open space within the proposed development that can be utilised for leisure by the residents, and will act as a landscape buffer between the development and the designated site. There are no footpaths proposed leading from the development on to the LWS, which will help minimise footfall onto the LWS. Furthermore, the LWS is private land with public rights of way running through it, and as such it is expected that any use by an increased number of residents will be concentrate to the existing footpaths and not impact additional areas of the site and impacts are therefore not considered significant.

5.4 Fauna

5.4.1 Great Crested Newts

i There are no waterbodies (including ponds suitable for amphibian breeding) within the site. There were two pond within 250m of the site (P1 and P5), and three more ponds within 500m of the site. P1 is located c.18m from the site boundary and is in use as a fishing lake. Pond 5 is connected to P1 as part of a network of fishing lakes. These are stocked with fish and as such, any GCN within the lakes are likely to be subject to predation. Furthermore, the fishing lakes are connected to the nearby river Colne. Therefore, it is likely that flowing water passes through the fishing lakes, further limiting their suitability to support GCN.

ii In further assess the likelihood for GCN to be present within P1, a Habitat Suitability Index (HSI) assessment of the ponds was undertaken. The pond could not be accessed during the walkover survey, and as such a retrospective HSI was undertaken using aerial imagery. Some aspects such as shade, water quality and waterfowl were predicted using the information available. For example, due to being in a woodland the perimeters are likely shaded, and a goose was seen during the walkover survey and as such waterfowl was assessed as minor.

Table 5: HSI Assessment Results

Pond No	Water Quality	Geographic Location	Terrestrial Habitat	Pond Area	Shading %	Veg Cover %	Pond Drying	Water fowl	Fish	Pond Count	Quality
1	Moderate	Zone A	Good	1201-1600	100	35	Never	Minor	Major	12+	Poor

iii The habitats on site are largely suboptimal for GCN, being dominated by arable habitat with little cover from predation. The hedgerows, grassland margins and tree lines provide suitable foraging and commuting corridors for GCN that may traverse the site and as such, GCN may utilise these and enter site. However, the majority of the boundary habitats are to be retained, with minimal vegetation clearance happening in these areas. Furthermore, the eastern aspect of the site is to be developed as a landscape buffer with native planting and impacts from machinery here will be limited. As such, impacts upon GCN are deemed negligible. To further minimise risks in the unlikely event that transient commuting or foraging GCN enter the site, It is recommended that a precautionary method of works is implemented during the construction period with regard to any clearance of vegetation required. This will include the cutting of vegetation in two stages, first to a height of 30cm before being subject to a detailed inspection or left for 24 hours, followed by clearance of vegetation. Vegetation clearance should also be undertaken directionally, so that any herpetofauna can disperse towards the woodland outside of the site.

5.4.2 Bats

Bat Tree Roosts

iv No roosting features were identified during the preliminary ecological appraisal of the site. A number of mature trees were present within the hedgerows and boundaries; however no roosting features were noted from ground level, and the trees were early mature which limited the likelihood for suitable features to be present. The boundaries of the site are to be retained within current plans and as such, no impact upon tree roosting bats is anticipated. As plans are currently at draft stage, if removal of any mature trees is required, a ground level tree assessments is recommended.

Bat Foraging Habitat

v The site is dominated by an arable field which offers limited suitability for foraging bats, however the site is bordered by hedgerows and tree lines which offer suitable foraging and commuting corridors for bats. The hedgerows and tree lines provide linear features which are suitable for foraging, and they connect the site to the wider countryside to allow commuting. When assessed against criteria in best practice guidelines (Collins J., eds, 2016) the site was considered to offer low quality foraging and commuting habitat for bats. These boundary habitats are to be retained within current proposals, and as such bat activity surveys are not

required. However, foraging and commuting bats may be impacted as a result of increased levels of lighting upon the hedgerows and tree lines. As such, lighting should be designed to minimise impacts upon foraging and commuting bats. Light spill directly on to the hedgerows and tree lines should be avoided. Within the development, lighting should be minimised and should follow the guidance set out in Bats and Lighting in the UK (BCT and ILP, 2018). Therefore, associated site lighting proposals must consider the following:

- Avoid lighting where possible;
- Install lamps and the lowest permissible density;
- Lamps should be positioned to direct light to avoid upward spill onto any green corridors that could be used by commuting bats or features with bat roost potential;
- LED lighting – with no/low UV component is recommended;
- Lights with a warm colour temperature – 3000K or 2700K have significantly less impact on bats;
- Light sources that peak higher than 550nm also reduce impacts to bats; and
- The use of timers and dimmers to avoid lighting areas of the site all night is recommended.

vi If plans change and removal of the boundary hedgerows is required as part of the development, this methodology is to be reviewed with the possibility of bat activity surveys being required.

5.4.3 Bat Building Roost

vii There was one building present on the boundary of the site. This was subject to an external preliminary bat roost assessment and offered negligible potential to support roosting bats. Small structural cracks were present; however these were shallow and did not extend far enough to support roosting bats.

5.4.4 Birds

viii The tree lines and hedgerows along the boundaries of the site provide suitable habitat for nesting birds, including Birds of Conservation Concern (BoCC). There are records for protected birds locally, with many located c.90m from the site. Due to the size of the site, these habitats are not likely to support significant populations of protected birds. Furthermore, within current plans the boundaries are to be retained and as such, impacts upon nesting birds will be limited.

ix The arable field provides suitable habitat for ground nesting birds, however the site is limited by size and is connected to larger areas of arable habitat surrounding the site. As such, loss of the arable land will not result in a significant loss of available habitat for ground nesting birds locally.

x Any tree management works or vegetation clearance should take place outside the bird nesting season (which runs March to September inclusive) to ensure compliance with the general protection afforded to wild birds under the Wildlife and Countryside Act 1981 (as amended). If this is unavoidable, the trees and hedgerows should be carefully checked, by a suitably qualified ecologist, prior to removal. Where active nests are found, working restrictions would be put in place until follow up survey can demonstrate that all chicks have fledged.

5.4.5 Reptiles

xi The peripheries of the site offer suitable foraging, commuting and refuge seeking opportunities for reptiles due to the presence of tree lines, hedgerows and poor semi-improved grassland margins with a long sward height. The majority of the site is dominated by arable habitat which is limited in its ability tro support reptiles due to lack of cover. As such, reptiles are unlikely to persist on the site in significant numbers, however htye may traverse the site utilising the field margins as commuting corridors.

xii The margins are largely being retained within the current proposals, with the hedgerows and tree lines being retained, and a buffer from these meaning that sections of grassland are likely to be retained. Low levels of

impact may occur as a result of access, localised vegetation clearance and pollution. As such, a precautionary method of works regarding reptiles is recommended.

5.4.6 Water Vole, Otter and White-Clawed Crayfish

xiii There are no water bodies within the sites zone of influence. The nearest watercourse is the River Colne which is located c.150m south-west of the site.

5.4.7 Badgers and Principal Species

xiv A badger latrine was identified within the walkover survey of the site, within the south-western extent along the boundary hedgerow. There were also mammal paths throughout the site, including one along the southern boundary and several along the north-eastern boundary leading into the woodland which was located outside of the boundary. A mammal hole was also discovered along the southern boundary, but this is believed to have belonged to a fox.

xv No setts were identified during the survey, however there remains a risk that badgers utilise the site for foraging and commuting, as the presence of a latrine suggests that badgers are active within the area. As such, a pre-commencement check for badger setts within the site and Zone of Influence (30m) should be carried out, prior to construction works starting. If the commencement of works is delayed beyond six months from the issuing of this report, a badger survey should be carried out every six months.

xvi On this basis it is not considered necessary to conduct further assessment for badger in the area. However during construction, it is recommended that best practice is followed in respects to badger and any other mammals (i.e. Fox and hedgehog) which may be present locally. This should include

- Mammal ladders (such as a plank) or earth ramps to be placed in any open excavations at the end of each day;
- Cap off any open pipes at the end of each day;
- Cover any open holes, or install mammal ladders or earth ramps in any open excavations at the end of each day to prevent animals from becoming trapped;
- Keep all fuel and other harmful substances in a locked area;
- Ensure any spillages are treated with spill kits;
- If any fresh sett digging is observed notify an ecologist immediately and leave a 20m buffer around the area until an assessment can be made.

5.4.8 Biodiversity

xvii Following input of habitat data into the DEFRA Metric 3.0, it has been considered there will be quantified net gain in biodiversity of 0.85 habitat units (22.56%) and a gain of 0.39 linear units (15.53%) across the site. This is a first draft of the calculation based on the draft masterplan (Turley, 2021). It should be noted that this calculation also includes recommendations on how to achieve the gain, as detailed within this report and within the separately issued BIA (RammSanderson, 2021). This calculation includes the retention of sections of the boundary habitats where possible, the retention of the tree lines and two hedgerows, and the creation of habitats within the eastern section of the site. It is recommended that the landscape buffer is planted with a section of scrub, a SUDs feature and an area of wildflower grassland surrounding the SUDs feature. It is also recommended that in order to achieve a gain in linear habitats, additional hedgerows are created. The calculation will be repeated once landscape plans have been issued and exact areas of gardens in relation to housing are known.

xviii In addition, the provision of this habitat creation/enhancement also presents the opportunity to create habitat provisions for a variety of species, such as bat and bird boxes, as well as herpetofauna hibernacula/refugia, as described in Section 7.

6 DISCUSSION AND RECOMMENDATIONS

6.1 Protected / Priority Species and Habitats Impact Appraisal

i The potential for protected species or habitats to be present on site and impacted by the proposals is provided in Appendix 3. No further surveys were conducted to facilitate an assessment of ecological impacts post development. Recommended mitigation and residual impacts is provided in the table below.

Table 6: Summary of Residual Impacts

Ecological Feature	Importance (Geographic Frame of Reference)	Potential Effect	Mitigation Proposed	Proposed Mechanism to Secure	Residual Impact
Statutory Designated Sites	County or above	None	No	N/A	N/A
Non-statutory designated sites	County	Potential impact upon Sleapshyde Gravel Pit LWS during construction. Impacts a result of increased use are deemed limited as the development is small and includes open space. Furthermore, the LWS is private with public rights of way and as such any use by residents should be restricted to existing paths.	Construction phase mitigation recommended through the following of pollution prevention guidelines, dust suppression techniques, and provision of drip trays/spill kits. To be detailed within a CEMP.	Planning Condition	Not significant
Habitats including Priority flora	Negligible	Loss of habitats of low diversity	Retention of hedgerows and trees in accordance with root protection areas.	Planning Condition	Not significant
Reptiles	Negligible	Impact to individual commuting, foraging or refuge seeking reptiles during construction.	Precautionary methods during vegetation clearance of site boundaries. Retain boundaries where possible.	Planning Condition	Not significant
Bats – Roosting	N/A	None. However, if mature tree removal is required methodology should be re-evaluated.	No	N/A	N/A
Bats – Foraging/Commuting	Local	Commuting and foraging bats likely to be impacted by lighting upon hedgerows and tree lines.	Avoid lighting / use light spill accessories in any lighting that is adjacent to hedgerows and tree lines. Retain boundaries where possible.	Planning condition	Not significant

Ecological Feature	Importance (Geographic Frame of Reference)	Potential Effect	Mitigation Proposed	Proposed Mechanism to Secure	Residual Impact
Great crested newts	Negligible	Negligible risk of impact to GCN and breeding ponds due to the nearest ponds being stocked fishing lakes. A precautionary method of works is recommended to further reduce the low residual risk of impacting commuting or foraging GCN during vegetation clearance..	Precautionary methods during vegetation clearance of site boundaries. Retain boundaries where possible.	Planning Condition	Not significant
WWC	N/A	None	No	N/A	N/A
Water vole	N/A	None	No	N/A	N/A
Badgers	Local	Potential for killing/injury/disturbance of individuals passing through the site.	Pre-commencement check for badger setts within site and Zone of Influence. Best practice site working procedures in regards to mammals.	Planning Condition	Not significant
Breeding birds	Negligible	Damage or destruction of nests.	Precaution in relation to legislative protection of animals. Tree felling should be undertaken outside the bird nesting season. Tree felling should be limited as boundaries should be retained where possible.	Planning Condition	Not significant
Otter	N/A	None	No	N/A	N/A
Invasive Species	N/A	None	No	N/A	N/A
Biodiversity	Local	Current plants combined with recommendations provided, result in a 22.56% gain in habitat value, and a 15.53% gain in hedgerow value. Removal of low diversity and common habitats that support only limited protected species. Recommendations within this report would require adherence to meet this score. Recalculation of BIA required following final plans.	Creation of valuable habitats within eastern landscape buffer including area of wildflower grassland and scrub. Retain boundary habitats where possible. Create additional hedgerows.	Planning Condition – details within LEMP.	Significant positive

7 COMPENSATION AND ENHANCEMENT RECOMMENDATIONS

i The boundaries of the site are to be retained, and a section of the eastern aspect is to be utilised as a buffer between the development and the surrounding landscape. This area is to be subject to enhancements for the site.

7.1.2 Tree and Scrub Planting

ii Tree loss is to be minimal throughout the site due to the retention of the boundary habitats, however some clearance may be required for access or aesthetic reasons. It is recommended that tree loss offset through replacement trees elsewhere within the site. This could include provision of new Extra Heavy Standards including Rowan (*Sorbus aucuparia*) silver Birch (*Betula pendula*) and cherry (*Prunus avium*). All three are relatively quick growing with limited crown spread. Rowan in particular will provide berries capable of supporting local fauna such as birds.

iii Additional tree planting is proposed within the landscaping buffer, as well as the planting of scrub within this area to provide a range of size classes and increase biodiversity. Native species recommendations include hawthorn (Crataegus monogyna), elder (Sambucus nigra), hazel (Corylus avellana), as well as species that are native but also provide aesthetic value such as dogwood (Cornus sanguinea), honeysuckle (Lonicera pericycleum) and guelder rose (Viburnum opulus).

iv Any landscape planting associated with the new facility should also consider the use of native shrub species and also species which provide important sources for pollinating species such as lavender. The Royal Horticultural Society provide online resources to identify suitable plants for garden areas that are aesthetically pleasing but of significant value to local pollinators (www.rhs.org.uk/plantsforpollinators).

7.1.3 Hedgerow Planting

v Where gaps are present along the boundary hedgerows, these could be planted up using native species. Additionally, where proposed hedgerows are to be incorporated in the development, a minimum of six species is recommended, in order to achieve a species rich hedgerow. Recommended species include blackthorn (*Prunus spinosa*), field maple (*Acer campestre*), alder (*Alnus glutinosa*), common dogwood (*Cornus sanguinea*), hazel (*Corylus avellane*) and guelder rose (*Viburnum opulus*), Standard trees such as English oak (*Quercus robur*) and wild cherry (*Prunus avium*) can also be planted at 50m intervals.

vi Planting should be undertaken during early winter, providing the ground is not frozen. Planting up gaps can be done in conjunction with coppicing existing plants, to give new plants minimum competition. To further reduce competition and aid establishment of the planted-up sections, the bases of the plants would be kept weed free through spot treatment of herbicide for the first three years.

7.1.4 Meadow Grassland

vii As a section of the eastern aspect of the site is to be utilised as a landscaping area, it is recommended that an area of meadow grassland is incorporated here. A long season meadow mix such as those available on naturescape.co.uk is recommended. This will provide suitable habitat for pollinators, as well as herpetofauna and other foraging priority species.

viii The ground could be prepared for supplementary planting with minimal effort, using a chain harrow. Any existing vegetation should be removed, and the soil should be raked to break it up, producing a fine, firm later of soil. It is recommended that Long Season Meadow Mix (available from Naturescape) is used to allow for a long growing season, producing an aesthetically pleasing meadow of flowers, thus negating the

requirement for an extensive mowing regime. Seeds should be sowed during autumn or spring, and if there is a dry period, the soil being sowed should be watered.

ix Once established, the grassland will only require mowing in September (with the arisings being left for 48hrs prior to removal to allow the seeds to disperse for the following year). Any cutting should be removed from the ground, so that a low level of fertility is maintained, and any unwanted weeds such as nettles or thistles should be removed during the first year of management.

7.1.5 Balancing Pond

x A balancing pond is proposed within the eastern aspect of the site, as a floodwater attenuation feature. It is recommended that this is enhanced for wildlife, to provide habitat for invertebrates and increase the foraging capacity of the site for fauna (especially bats). Where pond basins are designed to hold some degree of permanent standing water, they could be planted with native marginal plug plant species and seeded with a grassland mix suitable for wet conditions such Naturescape N8 Water's Edge Meadow Mixture. This comprises 24 Wildflower species and 9 grass species and provides the added benefits as described above within the grasslands planting.

7.1.6 Additional Enhancements

xi Consideration to provision of bat boxes and bird nest boxes could also be given in respects to the retained trees. Use of boxes such as the Vivara woodstone bat box and Vivara Pro Seville bird box provide a long term solution requiring limited replacement unlike wooden boxes which need regular replacement as a result of weathering. These should be positioned on retained trees, facing south or south-west for additional warmth, with a clear flight path. Bat boxes should be placed 1.5m above bird boxes to enable both groups to inhabit boxes.

Figure 3: Vivara Woodstone Bat Box

© https://www.nhbs.com/vivara-pro-woodstone-bat-box

8 MONITORING

i None proposed or considered necessary.

9 REFERENCES

i BS 42020:2013 'Biodiversity – Code of Practice for Planning and Development 2013: The British Standards Institution'.

ii Chartered Institute of Ecology and Environmental Management (CIEEM), 2019. 'Advice Note: on the Lifespan of Ecological Report and Surveys'. Winchester: CIEEM.

iii Chartered Institute of Ecology and Environmental Management, 2018.' Guidelines for Ecological Impact Assessment in the UK and Ireland'. Terrestrial, freshwater and Coastal. 2nd ed. Winchester: CIEEM.

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v Collins J eds. 2016. 'Bat Surveys: Good Practice Guidelines, 3rd Edition'. London: Bat Conservation Trust.

vi Department of Communities & Local Government, 2019. 'National Planning Policy Framework', London: DCLG.

vii Joint Nature Conservancy Council, 2010. 'Handbook for Phase 1 habitat survey'. Peterborough: JNCC.

viii Office of the Deputy Prime Minister, 06/2005.' Government Circular: Biodiversity and Geological Conservation - Statutory Obligations and their impact within the planning system'. London: ODPM.

ix RammSanderson Ecology Ltd, 2021. Biodiversity Impact Assessment of Land at High Street, Colney Heath. RSE_5500_Biodiversity Metric 3.0.

x Turley, 2021. Land Adjacent to Colney Heath Football Club, Colney Heath. Concept Masterplan.

xi www.rhs.org.uk/plantsforpollinators (accessed 24/08/2020)

APPENDIX 1: LEGISLATION AND PLANNING POLICY

9.2 General & Regionally Specific Policies

i. Articles of British legislation, policy guidance and both Local Biodiversity Action Plans (BAPs) and the NERC Act 2006 are referred to throughout this report. Their context and application is explained in the relevant sections of this report. The relevant articles of legislation are:

- The National Planning Policy Framework (2021);
- ODPM Circular 06/2005 (retained as Technical Guidance on NPPF 2019);
- The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019;
- The Wildlife and Countryside Act 1981 (as amended);
- EC Council Directive on the Conservation of Wild Birds 79/409/EEC;
- The Protection of Badgers Act 1992;
- The Countryside and Rights of Way Act 2000;
- The Hedgerow Regulations 1997;
- The Natural Environment and Rural Communities (NERC) Act 2006; and
- Local Biodiversity Action Plan for Hertfordshire.

APPENDIX 2: DESK STUDY DATA

9.3 Desk Study Results

i A total of nine statutory designated sites were recorded within the search area, the details of which are summarised in the table below. The site was not within the IRZ of either site.

Table 7: Statutorily Designated Sites within 5km of Site Boundary

Site Name	Designation	Location	Brief Description
Colney Heath	LNR[4]	81m SE	One of the remaining acid grasslands in Hertfordshire and is managed to encourage heather and retain species diversity. The site is 60ha and borders the River Colne.
Oxleys Wood	LNR	2.6km ENE	Tree species such as oak, ash, elm, willow and poplar provide good habitat for insects, which in turn support a number of common bird species. There is a pond in the northern, wetter part of the wood.
Howe Dell	LNR	2.9km NE	A meandering stream lies at the bottom of a deeply incised valley clothed in woodland comprising mature hornbeam, oak and beech.
Water End Swallow Holes	SSSI	3.0km SE	Water End Swallow Holes are the only major sinkholes in chalk which are a permanent feature of the landscape, and they constitute the drainage outlet for the largest enclosed karstic basin in England. The willow carr/swamp community adjacent to the sinkholes is of biological importance. Also integral with the sinkhole group are semi-natural woodland, scrub and semi-improved grassland.
Redwell Wood	SSSI[5]	3.2km SE	Redwell Wood is a complex site comprising both ancient woodland of the Pedunculate Oak/Hornbeam type and heathland, together with well developed scrub and secondary woodland. The combination of ancient woodland and heathland habitats is uncommon in the county and both types have been greatly reduced in extent locally and nationally. Open areas with old pollarded oaks suggests past use as woodland pasture which has been succeeded by a dense growth of bracken Pteridium aquilinum. Relict heathland species include heather Calluna vulgaris and creeping willow Salix repens, a county rarity. Additional habitat is provided by the woodland rides.
The Wick Wood	LNR	3.9km NW	The Wick comprises 3.3 ha of woodland and 1.5 ha of informal playing field, with areas of conservation grassland margins. The main habitat of the site is ancient semi-natural woodland dominated by oak and

[4] LNR – Local Nature Reserve
[5] SSSI - Sites of Special Scientific Interest

Site Name	Designation	Location	Brief Description
			hornbeam. There is also a seasonal pond, historic field boundaries of bank and ditch and old Hornbeams. The playing field is largely close-mown and managed for amenity, around the edges providing a buffer to the hedges and woodland and habitat for a wide range of invertebrates.
Castle Lime Works Quarry	SSSI	4.3km SE	(**GEOLOGY**) This site covers a disused and partly backfilled chalk quarry where one face has been retained to show the chalk/soil interface. This reveals extensive piping in the top of the chalk resulting from solution at the Chalk - Tertiary sediment interface. Believed to have formed during the Tertiary and Pleistocene, it is the finest exposure of clay-filled pipes in the Chalk Karst of England.
Watercress Wildlife Site	LNR	4.7km W	It occupies the site of old watercress beds and allotments, bounded by the River Ver. Likely to see many birds, waterfowl and insects, and if you're lucky you might see something more exotic, for instance a Kingfisher, Water rail, Little grebe or Muntjac deer.
Stanborough Reedmarsh	LNR	5.0km NE	The reserve is composed of willow woodland, river bank and fine reed marsh. The wet woodland consists mainly of various types of willow. The reserve is important for species such as reed and sedge warblers, water voles and water birds.

ii The Site lies within 5km of 3 SSSI. The proposals are not of a type that is included within the Impact Risk Zones for these European and National designated sites.

- **Infrastructure**: Airports, helipads and other aviation proposals.
- **Minerals, Oil & Gas**: Oil & gas exploration/extraction.
- **Air Pollution**: Livestock & poultry units with floorspace > 500m², slurry lagoons & digestate stores > 750m², manure stores > 3500t.

iii Twenty-three non-statutorily designated sites were also identified within the search radius, details of which are provided in Table 8.

Table 8: Non-Statutory Designated Sites

Site Name	Designation	Location	Brief Description
Sleapshyde Gravel Pit	LWS	272m N	Former gravel pit restored to an amenity/wildlife park. The area supports a mosaic of habitats with open water, wet neutral grassland, tall herbs, scattered scrub and plantation.
Colney Heath Common	LWS	355m SW	Colney Heath common and a stretch of the River Colne. The common is of special interest supporting a remnant of Hertfordshire's once extensive heathland. Its mosaic of neutral, acid and marshy grasslands, heathland, scrub and riverine habitats collectively support a diverse flora, including several species scarce or locally distributed in the county

Site Name	Designation	Location	Brief Description
St. Mark's Churchyard & Graveyard	LWS	0.5km WWS	The grassland surrounding the church is predominantly species-rich (of between approximately 50-80% herbs), and most closely resembling NVC U1f. The cemetery, which is adjacent the churchyard on its southern edge, behind the Church Hall. Most of this area has been short-mown around paths and between graves, but many of the older graves have a natural community reflective of the surrounding grassland species.
St Marks Church	Veteran & Mature Trees	0.5km W	N/A
The Old Vicarage, St. Marks Close, Colney Heath	LWS	0.6km W	Building and environs important for protected species.
Sleapshyde Farm	LWS	0.8km NE	Buildings and environs important for protected species
Colney Heath Farm Meadows	LWS	0.9km SE	A mosaic of old unimproved neutral to acid grasslands along the River Colne, which forms part of a larger complex of heathland/wetland sites in the area.
Smallford Pit	LWS[6]	1.1km NW	A largely infilled former gravel pit supporting well developed secondary grassland along with some former old acid/neutral grassland remnants.
Land near Smallford Nurseries	LWS	1.4km WS	Area of semi-improved neutral grassland with scattered willow dominated scrub and a small remnant of Pedunculate Oak (Quercus robur)/Hornbeam (Carpinus betulus) coppiced woodland in the west.
Frederick's Wood	LWS	1.1km SSE	Mature plantation on old heathland/acid grassland, rides and clearings in the wood add further habitat diversity.
Tyttenhanger Gravel Pits North	LWS	1.6km SW	Former agricultural and park land adjacent to the River Colne supporting an area of sand and gravel pits, many of which are flooded. It is a complex site which has been partly restored. The range of habitats include large lakes, exposed sand banks, semi-natural neutral grassland, areas of unimproved acid grassland which may be remnants of the original heathland, scrub and broadleaf woodland.
Hazel Grove	Ancient Woodland Inventory	1.8km NNE	N/A
Knights Wood	Ancient Woodland Inventory	1.9km SSW	N/A

[6] LWS – Local Wildlife Site

Site Name	Designation	Location	Brief Description
Knight's Wood and Ponds	LWS	1.9km SW	Ancient semi-natural woodland with Pedunculate Oak (Quercus robur) dominant in the canopy plus occasional Ash (Fraxinus excelsior) and Wild Cherry (Prunus avium).
Hazel Grove	LWS	1.6km ENE	Ancient semi-natural woodland. The shrub layer is generally sparse. The ground vegetation in the wood is predominantly Bluebell (*Hyacinthoides non-scripta*) and Bramble (*Rubus fruticosus* agg.)
Copse at Nast Hyde	LWS	1.3km NE	Ancient semi-natural woodland remnants partly surrounded by more old secondary woodland and broadleaved plantation.
Coursers Farm Area	LWS	1.4km S	Building and environs important for protected species
Scrubby Grassland by Frederick's Wood	LWS	1.4km SSE	Area of unimproved acid grassland with some scattered to dense patches of Hawthorn (Crataegus monogyna).
Tollgate Wood	LWS	1.5km SE	Old, probably secondary, broadleaved woodland. A pond remnant is present in the east and rough clearings below power lines
The New Plantation	LWS	1.6km SSW	Old woodland surrounded by hedges with some old laid Hornbeam.
Hazel Grove	Veteran & Mature Trees	1.6km NE	N/A
River Colne by Bowmansgreen Farm	LWS	1.8km SW	Section of the River Colne supporting well vegetated banks and good communities of emergent aquatic vegetation. Water Voles (Arvicola amphibius) have been recorded on this stretch of river
North Mymms Park	LWS	2km SE	Parkland of semi-improved neutral grassland with frequent planted trees, either as singles or in clumps. The sward varies somewhat in species mix and diversity and is of most interest in the north-central area.

iv There are 80 Habitats of Principle Importance under Section 41 of the NERC Act, 2006 located within a 1km radius of the site. These are shown in a table below, with the distance and direction of the closest habitats in regard to the site referenced. The closest is a parcel of broad-leaved woodland on the north-eastern site boundary.

Table 9: Habitats of Principal Importance within 1km of the Site

Habitat	Quantity	Closest Habitat - Distance to Site	Closest Habitat - Direction to Site
Deciduous Woodland	55	Adjacent	N
Good quality semi-improved grassland	18	81m	SE
Lowland meadows	2	305m	SW

Coastal and Floodplain Grazing Marsh	2	475m	SE
Traditional Orchard	1	0.6km	ESE
Lowland Heath	2	0.7km	SES

v Records of previous European Protected Species Licences (EPSL) were discovered within a 5km search area around the site. This included:

- 7 records of bat licences covering brown long eared bats, soprano pipistrelle, common pipstrelle. The most recent licence was granted in 2017, 2017-31776-EPS-MIT-1 covered the destruction of a common pipistrelle resting place. This was also the closest licence 1.6km north of the site.
- 9 records of great crested newt licences. The closest licence was 1.4km south southeast overing the damage and destruction of a breeding place. The most recent licence was granted in 2015, 2015-16251-EPS-MIT-3 covered the damage and destruction of a resting place.

vi Protected species records were received from Hertfordshire Biological Records Centre. A summary of the records considered most relevant to the site and/or proposed development are provided in Table 10.

Table 10: Summary of protected and Priority species records

Common Name	Scientific Name	Records	Conservation Status
Amphibians			
Great crested newts	*Triturus cristatus*	23 records; closest record 1.2km SSW	EPS[7], NERC[8], WCA (5)[9]
Common toad	*Bufo bufo*	5 records; closest record 1.5km S	NERC, Partial Protection under WCA[10]
Mammal			
Pipistrelle	*Pipistrellus sp.*	7 records; closest record 450m W	
Brown long-eared bat	*Plecotus auritus*	5 records; closest record 451m W	EPS, WCA, NERC
European hedgehog	*Erinaceus europaeus*	10 records; closest record 0.5km NNW	NERC
Common pipistrelle	*Pipistrellus pipistrellus*	2 records; closest record 0.6km E	EPS, WCA
Soprano pipistrelle	*Pipistrellus pygmaeus*	1 record; 0.6km E	EPS, WCA, NERC
Natterer's bat	*Myotis nattereri*	2 records; closest record 0.7km N	EPS, WCA
Weasel		2 records; closest record 1.0km SW	

[7] EPS – European Protected Species - protected by the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019
[8] NERC – Species of Principle Importance under Section 41 of the Natural Environment Rural Communities Act (2006) Species of Principal Conservation Importance; UKBAP & LBAP
[9] WCA (5) – Schedule 5 protected species - Wildlife & Countryside Act (1981)
[10] WCA – Wildlife & Countryside Act (1981) Section 5 protecting against trade or sale of species.

Common Name	Scientific Name	Records	Conservation Status
Stoat		2 records; closest record 1.3km SSW	
Brown hare	*Lepus europaeus*	1 record; 1.7km NE	NERC
Eurasian badger	*Meles meles*	6 records within 2km of the site.	PBA[11]
Birds			
Bewick's swan	*Cygnus columbianus bewickii*	7 records; closest record 87m WSW	BoCCAmber, WCA (1), NERC
Black-headed gull	*Chroicocephalus ridibundus*	1398 records; closest record 87m WSW	BoCCAmber
Bullfinch	*Pyrrhula pyrrhula*	452 records; closest record 87m WSW	BoCCAmber, NERC
Common sandpiper	*Actitis hypoleucos*	785 records; closest record 87m WSW	BoCCAmber
Common crossbill	*Loxia curvirostra*	761 records; closest record 87m WSW	BoCCGreen, WCA (1)
Common gull	*Larus canus*	339 records; closest record 87m WSW	BoCCAmber
Common tern	*Sterna hirundo*	872 records; closest record 87m WSW	BoCCAmber
Dunnock	*Prunella modularis*	1036 records; closest record 87m WSW	BoCCAmber
Fieldfare	*Turdus pilaris*	514 records; closest record 87m WSW	BoCCRed, WCA (1)
Gadwall	*Anas strepera*	1292 records; closest record 87m WSW	BoCCAmber
Cuckoo	*Cuculus canorus*	166 records; closest record 87m WSW	BoCCRed, NERC
Great black-backed gull	*Larus marinus*	189 records; closest record 87m WSW	BoCCAmber
Green sandpiper	*Tringa ochropus*	1244 records; closest record 87m WSW	BoCCAmber, WCA (1)
Grey partridge	*Perdix perdix*	37 records; closest record 87m WSW	BoCCRed, NERC
Grey wagtail	*Motacilla cinerea*	327 records; closest record 87m WSW	BoCCRed
Herring gull	*Larus argentatus*	1025 records; closest record 87m WSW	BoCCRed, NERC
Hobby	*Falco subbuteo*	454 records; closest record 87m WSW	BoCCGreen, WCA (1)
House sparrow	*Passer domesticus*	329 records; closest record 87m WSW	BoCCRed, NERC

[11] PBA – Protection of Badgers Act 1992

Common Name	Scientific Name	Records	Conservation Status
Kestrel	*Falco tinnunculus*	1001 records; closest record 87m WSW	BoCCAmber
Kingfisher	*Alcedo atthis*	803 records; closest record 87m WSW	BoCCAmber, WCA (1)
Lapwing	*Vanellus vanellus*	1553 records; closest record 87m WSW	BoCCRed, NERC
Lesser black-backed gull	*Larus fuscus*	1445 records; closest record 87m WSW	BoCCAmber
Lesser redpoll	*Acanthis cabaret*	302 records; closest record 87m WSW	BoCCRed, NERC
Linnet	*Linaria cannabina*	645 record closest record 87m WSW	BoCCRed, NERC
Mallard	*Anas platyrhynchos*	1270 records; closest record 87m WSW	BoCCAmber
Meadow pipit	*Anthus pratensis*	406 records; closest record 87m WSW	BoCCAmber
Mistle thrush	*Turdus viscivorus*	310 records; closest record 87m WSW	BoCCRed
Redwing	*Turdus iliacus*	443 records; closest record 87m WSW	BoCCRed, WCA (1)
Skylark	*Alauda arvensis*	953 records; closest record 87m WSW	BoCCRed, NERC
Snipe	*Gallinago gallinago*	708 records; closest record 87m WSW	BoCCAmber
Song thrush	*Turdus philomelos*	736 records; closest record 87m WSW	BoCCRed, NERC
Starling	*Sturnus vulgaris*	810 records; closest record 87m WSW	BoCCRed, NERC
Stock dove	*Columba oenas*	715 records; closest record 87m WSW	BoCCAmber
Swift	*Apus apus*	367 records; closest record 87m WSW	BoCCAmber
Tree pipit	*Anthus trivialis*	125 records; closest record 87m WSW	BoCCRed, NERC
Tree sparrow	*Passer montanus*	1537 records; closest record 87m WSW	BoCCRed, NERC
Willow warbler	*Phylloscopus trochilus*	355 records; closest record 87m WSW	BoCCAmber
Yellow wagtail	*Motacilla flava*	320 records; closest record 87m WSW	BoCCRed, NERC
Yellowhammer	*Emberiza citrinella*	312 records; closest record 87m WSW	BoCCRed, NERC
Yellow Legged Gull	*Larus michahellis*	49 records; closest record 87m WSW	BoCCAmber
Red kite	*Milvus milvus*	1514 records; closest record 87m WSW	WCA1
Common (Mealy) Redpoll	*Acanthis flammea*	3 records; closest record 210m NE	BoCCAmber
Common Firecrest	*Regulus ignicapilla*	11 records; closest record 210m NE	WCA1
Grey plover	*Pluvialis squatarola*	102 records; closest record 210m NE	BoCCAmber

Common Name	Scientific Name	Records	Conservation Status
Osprey	*Pandion haliaetus*	27 records; closest record 210m NE	BoCCAmber, WCA (1)
Redstart	*Phoenicurus phoenicurus*	47 records; closest record 210m NE	BoCCAmber
Woodcock	*Scolopax rusticola*	47 records; closest record 210m NE	BoCCRed
Barn owl	*Tyto alba*	32 records; closest record 211m NE	BoCCGreen, WCA (1)
Brambling	*Fringilla montifringilla*	20 records; closest record 211m NE	BoCCGreen, WCA (1)
Oystercatcher	*Haematopus ostralegus*	811 records; closest record 211km NE	BoCCAmber
Tawny owl	*Strix aluco*	79 records; closest record 0.5km SW	BoCCAmber
Corn bunting	*Emberiza calandra*	6 records; closest record 0.6km S	BoCCRed, NERC
Cetti's Warbler	*Cettia cetti*	23 records; closest record 0.8km SW	WCA (1)
Teal	*Anas crecca*	1120 records; closest record 0.8km W	BoCCAmber
Caspian Gull	*Larus cachinnans*	223 records; closest record 0.9km SW	BoCCAmber
Common Ringed Plover	*Charadrius hiaticula*	371 records; closest record 0.9km SW	BoCCRed
Curlew	*Numenius arquata*	29 records; closest record 0.9km SW	BoCCRed, NERC
Dunlin	*Calidris alpina*	270 records; closest record 0.9km SW	BoCCAmber
Greenshank	*Tringa nebularia*	279 records; closest record 0.9km SW	BoCCAmber, WCA (1)
Little Ringed Plover	*Charadrius dubius*	966 records; closest record 0.9km SW	WCA (1)
Ruff	*Philomachus pugnax*	66 records; closest record 0.9km SW	BoCCRed, WCA (1)
Shelduck	*Tadorna tadorna*	281 records; closest record 0.9km SW	BoCCAmber
Spoonbill	*Platalea leucorodia*	1 record; closest record 0.9km SW	BoCCAmber, WCA (1)
Redshank	*Tringa tetanus*	662 records; closest record 0.9km SW	BoCCAmber
Whimbrel	*Numenius phaeopus*	31 records; closest record 0.9km SW	BoCCRed, WCA (1)
Wood Sandpiper	*Tringa glareola*	36 records; closest record 0.9km SW	BoCCAmber, WCA (1)

Common Name	Scientific Name	Records	Conservation Status
Avocet	*Recurvirostra avosetta*	30 records; closest record 1.0km SW	BoCCAmber[12], WCA (1)[13]
Barnacle goose	*Branta leucopsis*	181 records; closest record 1.0km SW	BoCCAmber
Bearded tit	*Panurus biarmicus*	31 records; closest record 1.0km SW	WCA (1)
Bean Goose	*Anser fabalis*	32 records; closest record 1.0km SW	BoCCAmber
Bittern	*Botaurus stellaris*	4 records; closest record 1.0km SW	BoCCAmber, NERC
Black redstart	*Phoenicurus ochruros*	10 records; closest record 1.0km SW	BoCCRed, WCA (1)
Black Tern	*Chlidonias niger*	18 records; closest record 1.0km SW	WCA (1)
Black-necked Grebe	*Podiceps nigricollis*	24 records; closest record 1.0km SW	BoCCAmber, WCA (1)
Black-tailed Godwit	*Limosa limosa*	76 records; closest record 1.0km SW	BoCCRed, WCA (1), NERC
Brent Goose	*Branta bernicla*	24 records; closest record 1.0km SW	BoCCAmber, NERC
Common scoter	*Melanitta nigra*	7 records; closest record 1.0km SW	BoCCRed, WCA (1), NERC
Garganey	*Anas querquedula*	57 records; closest record 1.0km SW	BoCCAmber, WCA (1)
Golden eye	*Bucephala clangula*	16 records; closest record 1.0km SW	BoCCAmber
Grasshopper Warbler	*Locustella naevia*	17 records; closest record 1.0km SW	BoCCRed, NERC
White-fronted goose	*Anser albifrons*	30 record; closest record 1.0km SW	BoCCRed, NERC
Greylag goose	*Anser anser*	976 records; closest record 1.0km SW	BoCCAmber
Hawfinch	*Coccothraustes coccothraustes*	58 records; closest record 1.0km SW	BoCCRed, NERC
Hoopoe	*Upupa epops*	9 records; closest record 1.0km SW	WCA (1)
Iceland Gull	*Larus glaucoides*	8 records; closest record 1.0km SW	BoCCAmber
Kittiwake	*Rissa tridactyla*	4 records; closest record 1.0km SW	BoCCRed
Lesser spotted woodpecker	*Dryobates minor*	24 records; closest record 1.0km SW	BoCCRed, NERC
Little gull	*Hydrocoloeus minutus*	13 records; closest record 1.0km SW	BoCCAmber, WCA (1)

[12] BoCC - Birds of Conservation Concern - split in to three categories of conservation importance - Red, Amber and Green. Red is the highest conservation priority, with species needing urgent action. Amber is the next most critical group, followed by green
[13] WCA (1) - Schedule 1 Wildlife and Countryside Act 1981 (as amended)

Common Name	Scientific Name	Records	Conservation Status
Little tern	*Sternula albifrons*	4 records; closest record 1.0km SW	BoCCAmber, WCA (1)
Marsh harrier	*Circus aeruginosus*	13 records; closest record 1.0km SW	BoCCAmber, WCA (1)
Mediterranean Gull	*Ichthyaetus melanocephalus*	81 records, closest record 1.0km SW	BoCCAmber, WCA (1)
Mute Swan	*Cygnus olor*	1194 records; closest record 1.0km SW	BoCCAmber
Peregrine	Falco peregrinus	229 records; closest record 1.0km SW	WCA1
Pintail	*Anas acuta*	14 records; closest record 1.0km SW	BoCCAmber
Pochard	*Aythya ferina*	746 records; closest record 1.0km SW	BoCCRed
Ring ouzel	*Turdus torquatus*	27 records; closest record 1.0km SW	BoCCRed, NERC
Sandwich Tern	*Thalasseus sandvicensis*	11 records; closest record 1.0km SW	BoCCAmber
Short-eared owl	*Asio flammeus*	3 records; closest record 1.0km SW	BoCCAmber
Shoveler	*Spatula clypeata*	996 records; closest record 1.0km SW	BoCCAmber
Spotted flycatcher	*Muscicapa striata*	52 records; closest record 1.0km SW	BoCCRed, NERC
Spotted Redshank	Tringa erythropus	4 records; closest record 1.0km SW	BoCCAmber
Temminck's stint	*Calidris temminckii*	32 records; closest record 1.0km SW	WCA (1)
Turnstone	*Arenaria interpres*	2 records; closest record 1.0km SW	BoCCAmber
Whinchat	*Saxicola rubetra*	81 records; closest record 1.0km SW	BoCCRed
Wigeon	*Mareca penelope*	423 records; closest record 1.0km SW	BoCCAmber
Marsh tit	*Poecile palustris*	26 records; closest record 1.1km SSW	BoCCRed, NERC
Arctic Tern	*Sterna paradisaea*	5 records; closest record 1.5km SW	BoCCAmber
Merlin	*Falco columbarius*	6 records; closest record 1.5km SW	BoCCRed, WCA (1)
Montagu's Harrier	*Circus pygargus*	1 record; 1.5km SW	BoCCAmber, WCA (1)
Pied flycatcher	*Ficedula hypoleuca*	3 records; closest record 1.5km SSW	BoCCRed
Smew	*Mergellus albellus*	7 records; closest record 1.5km SW	BoCCAmber
Turtle dove	*Streptopelia turtur*	8 records; closest record 1.5km SW	BoCCRed, NERC
Water Pipit	*Anthus spinoletta*	2 records; closest record 1.5km SW	BoCCAmber
Whooper Swan	*Cygnus cygnus*	1 record; 1.5km SW	BoCCAmber, WCA (1)

Common Name	Scientific Name	Records	Conservation Status
Wood Warbler	*Phylloscopus sibilatrix*	1 record; 1.5km SW	BoCCRed, NERC
Goshawk	*Accipiter gentilis*	2 records; closest record 1.8km SE	WCA (1)
Common Crossbill	*Loxia curvirostra*	1 record, closest record 1.8km SE	WCA (1)
Willow tit*	*Poecile montanus*	3 records; closest record 11.7km SW	BoCCRed, NERC
Common redstart	*Phoenicurus phoenicurus*	1 record; 11.7km SW	BoCCAmber
Common Nightingale*	*Luscinia megarhynchos*	3 records; closest record 11.7km SW	BoCCRed
Reptile			
Grass snake	*Natrix natrix*	5 records; closest record 287m SSE	Partial protection under WCA, NERC
Invasive Species			
Canada Goose	*Branta canadensis*	1009 records; closest record 87m WSW	WCA (9)[14]
Ring-necked Parakeet	*Psittacula krameri*	276 records; closest record 87m WSW	WCA (9)
Monk Parakeet	*Myiopsitta monachus*	1 record; 210m NE	WCA (9)
Japanese knotweed	*Reynoutria japonic*	8 records; closest record 281m W	WCA (9)
Chinese Muntjac	*Muntiacus reevesi*	4 records; closest record 0.8km SW	WCA (9)
Eastern Grey Squirrel	*Sciurus carolinensis*	9 records; closest record 0.5km NNW	WCA (9)
Mandarin Duck	*Aix galericulata*	50 records; closest record 0.8km SW	WCA (9)
Egyptian Goose	*Alopochen aegyptiacus*	161 records; closest record 1.0km SW	WCA (9)
Himalayan Balsam	*Impatiens glandulifera*	14 record; closest record 1.0km SW	WCA (9)
Ruddy Duck	*Sagittaria latifolia*	47 records; closest record 1.0km SW	WCA (9)
Black Swan	*Cygnus atratus*	2 records; closest record 1.5km SW	WCA (9)
Variegated Yellow Archangel	*Lamiastrum galeobdolon subsp. argentatum*	1 record; 11.7km SW	WCA (9)

NB: The desk study data is third party controlled data, purchased for the purposes of this report only. RammSanderson Ecology Ltd cannot vouch for its accuracy and cannot be held liable for any error(s) in these data.

[14] WCA (9) - Schedule 9 Wildlife and Countryside Act 1981 (as amended)

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KEY

- Application boundary
- Residential Development
- Open Space
- Attenuation Basin
- Local Area of Play (LAP)
- Proposed Structural Planting
- Retained Hedges and Trees
- Proposed Pedestrian Links
- Retained Farm Access

CLIENT:
Tarmac Ltd

PROJECT:
Land adjacent to Colney Heath Football Club
Colney Heath

DRAWING:
Concept Masterplan

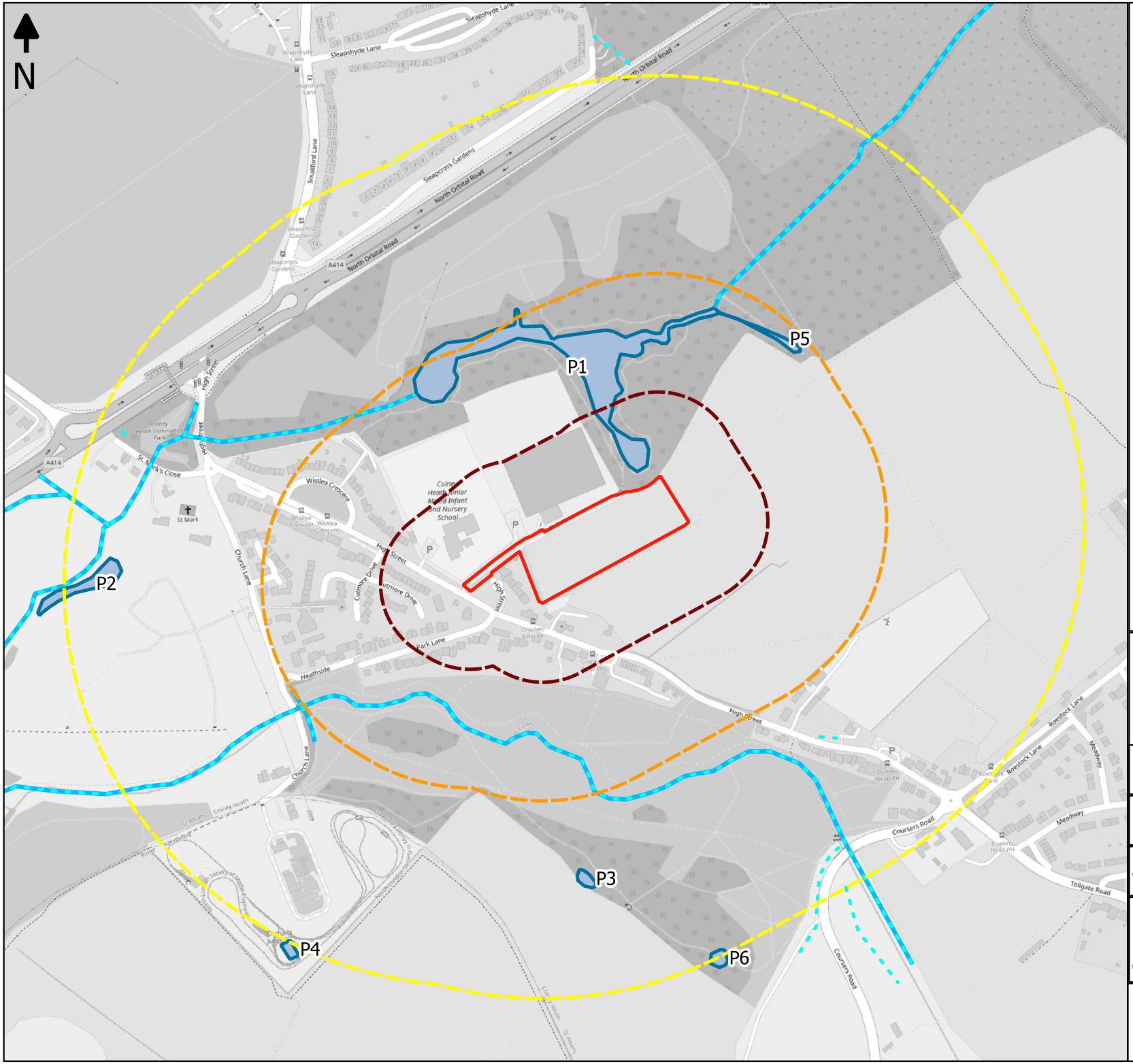
PROJECT NUMBER:
TARC3006

DRAWING NUMBER:	CHECKED BY:
3001	**CD**

REVISION:	STATUS:
D	**Final**

DATE:	SCALE:
20/01/2022	**1:1000 @ A3**

Turley



Key

- Red Line Boundary
- 100m Buffer
- 250m Buffer
- 500m Buffer
- Pond Locations
- Watercourse
- Ditch/Drain

RammSanderson

Client:
Tarmac Limited

Project:
Land off High St, Colney Heath

Drawing Title:
Waterbody Plan

Drawing No.: RSE_5500_Appendix 4
Rev: V2
Drawn By: CF
Scale: 1:6,500 @A4
Date: 27/01/2022

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Key

- Boundary
- Cereal crops
- Developed land; sealed surface
- Modified grassland
- Other woodland; broadleaved
- Line of Trees (w1g6NE2)
- Line of Trees - Associated with bank or ditch (w1g6NE4)
- Native Hedgerow (h2NE5)

RammSanderson

Client:
Tarmac

Project:
High Street, Colney Heath

Drawing Title:
BIA Baseline

Drawing No.: RSE_5500_BIA
Rev: V2
Drawn By: GC
Scale: 1:1,441.798
Date: 27/01/2022

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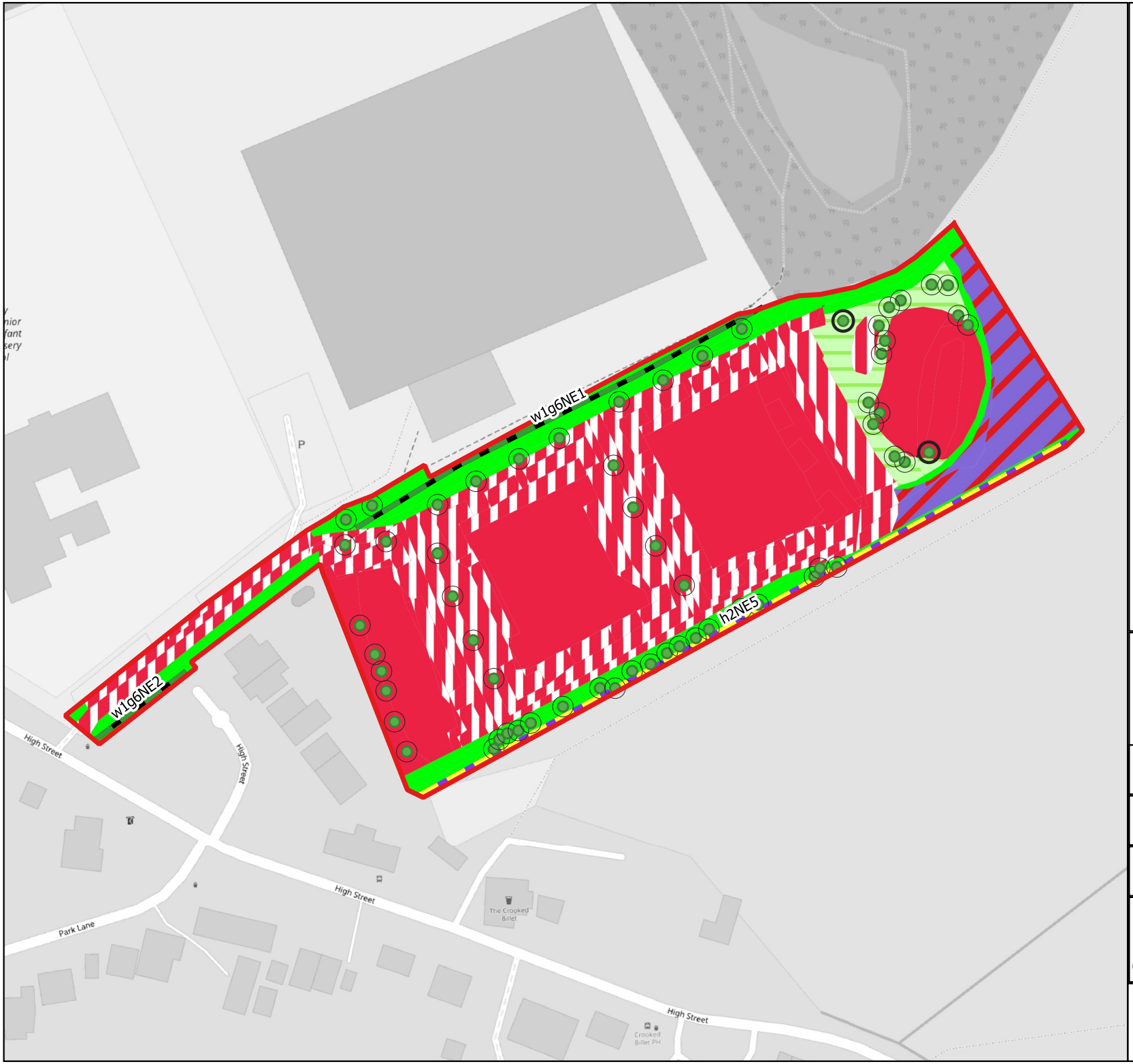

Key

- Boundary
- Line of Trees (w1g6NE2)
- Line of Trees - Associated with bank or ditch (w1g6NE4)
- Native Hedgerow (h2NE5)
- Developed land; sealed surface
- Mixed scrub
- Modified grassland
- Other neutral grassland
- Other woodland; broadleaved
- Sustainable urban drainage feature
- Vegetated garden
- Proposed Large
- Proposed Medium
- Proposed Small

RammSanderson

Client:
Tarmac

Project:
High Street, Colney Heath

Drawing Title:
BIA Proposals

Drawing No.: RSE_5500_BIA
Rev: V2
Drawn By: GC
Scale: 1:1,441.798
Date: 27/01/2022

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