

Land at Spencers Wood,
Wokingham, Berkshire

Ecological Impact Assessment (EcIA)



Client:

Richborough

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Executive Summary

i This Ecological Impact Assessment (EcIA) has been prepared by RammSanderson Ecology Ltd on behalf of Richborough ('the Applicant') in support of the submission of an outline planning application for mixed use development at land at Spencers Wood, Wokingham, Berkshire ('the Site').

ii The Site is approximately 38ha in size and dominated by arable cropland bound by native hedgerows, some of which support broadleaf trees and shallow ditches. The landscape surrounding the Site is dominated by arable farmland to the south and east with Spencers Wood village located to the north and west.

Table 1: Executive Summary

Ecological Feature	Potential to be affected by the Scheme	Proposed Mitigation	Significant Residual Impacts & Compensation?
Designated Sites – SSSI and SAC	Stanford End Mill and River Loddon SSSI is located 0.4km south of the Site, with a hydrological link affecting a restricted and isolated part of the Site. Potential for residual negative impacts to SSSI during construction from pollution events. Thames Valley Basin Heath SPA is located 3.5km southeast of the Site, potential for negative recreational pressure impacts to SPA qualifying features, during operation.	Pollution mitigation measures undertaken during construction to protect SSSI through hydrological links, captured within a Construction Ecological Management Plan (CEMP), secured by condition. In accordance with Wokingham Council Policy CP8, Scheme provides an extensive area of Suitable Alternative Natural Green Space (SANG), designed in accordance with Natural England's 2021 SANG guidelines and a site visit/consultation with Natural England officers.	No
Habitats (non-designated)	Scheme located largely within dominant areas of arable cropland. Extensive areas of open green space and habitat creation proposed within Scheme comprising wildflower meadow, native tree and scrub planting and SuDS features. Native hedgerows within the Site to be largely retained, some sectional removal required for vehicle and pedestrian access.	To control construction impacts to retained habitats, mitigation measures defined through CEMP, Arboricultural Method Statement (AMS) and Tree Protection Plan (TPP) secured through condition.	Positive residual effect due to extensive habitat creation.

Ecological Feature	Potential to be affected by the Scheme	Proposed Mitigation	Significant Residual Impacts & Compensation?
	Broadleaf trees present in association with hedgerows to be retained within Scheme and incorporated into areas of open green space. Potential for negative impacts to retained habitats (hedgerows, hedgerow trees and ditches) during construction and operation.		
Badgers	No evidence of badger setts or field evidence identified within the Site. Potential for badgers to build setts and/or disperse through the Site in the future.	Pre-commencement badger surveys to be undertaken prior to the start of construction. Best practice measures to be undertaken to protect badgers during construction. Measures to be captured within a CEMP, secured by condition.	No
Bats	Trees with Potential Roosting Features (PRFs) present within the Site but will be retained and incorporated into areas of open green space. Potential for negative construction impacts to trees (i.e. direct impacts strikes, disturbance) and negative urban edge effects (i.e. disturbance, vandalism) during operation. Artificial lighting spill during operation has the potential to displace and disturb foraging and commuting bats along woodland edges and hedgerows as well as PRF trees.	To control construction impacts to PRF trees during construction, mitigation measures defined through CEMP, AMS and TPP secured through condition. To control artificial lighting impacts to foraging/commuting habitats and PRF trees, Artificial Lighting Strategy secured through condition.	Positive residual effect due to extensive habitat creation.
Birds	Potential for impacts to nesting birds where Site vegetation removed during breeding season, to facilitate Scheme construction. Scheme will cause the loss of skylark nesting territories.	Avoid Site clearances during breeding season where possible. If not, nesting bird surveys prior to clearances to be undertaken. Measures to be captured within a CEMP secured by condition. Due to likely anthropological disturbance within areas of green space and the extent of residential development on existing cropland, it would not be possible	Positive residual effect due to extensive habitat creation for most bird species. Significant negative residual effect due to loss of skylark nesting territories which cannot be

Ecological Feature	Potential to be affected by the Scheme	Proposed Mitigation	Significant Residual Impacts & Compensation?
		to replace skylark breeding territories within the Scheme.	replaced within the Scheme. Off-site compensation for skylark could be discussed with the LPA to determine whether a suitable Developer Contribution Scheme exists.
Great crested newts (GCN)	GCN records present 200m from the Site. No suitable aquatic breeding habitat for GCN has been identified within the Site. Lack of access to offsite ponds proximal to the Site (<50m and <150m) has resulted in presence/absence of GCN not being determined. Site is dominated by sub-optimal terrestrial habitat for GCN, thereby movement of potential GCN along boundary habitats from offsite ponds is likely to be small in number, and transient/opportunistic in occurrence. Potential for killing and injuring of potential GCN during construction likely to be limited in extent affecting restricted and specific areas of boundary habitats, with low potential for impacts within areas arable cropland areas.	Mitigation Strategy to be secured through condition, which could explore and utilise the following mitigation measures through consultation with the LPA to determine the most proportionate approach. - Use of Precautionary Working Measures and a non-licenced method statement during construction, such as ecologist watching briefs and use of GCN detection dogs. - Join Naturespace's District Level Licensing (DLL) Scheme within Berkshire.	Positive residual effect due to extensive habitat creation (if GCN populations present in locality and able to colonise).
Reptiles	Reptiles likely to be restricted to boundary habitats within Site. Potential for impacts to individual reptiles if present within Site during vegetation clearances, particularly along boundary habitats.	Precautionary Working Measures such as habitat manipulation and ecologist watching briefs during Site clearances. Measures to be captured within a CEMP secured by condition.	Positive residual effect due to extensive habitat creation (if reptile populations present in locality and able to colonise).

Ecological Feature	Potential to be affected by the Scheme	Proposed Mitigation	Significant Residual Impacts & Compensation?
Otters, Water voles and white-clawed crayfish	Site ditches unsuitable for water vole and white-clawed crayfish.	Measures set out for habitat protection (Biodiversity Protection Zones) and badgers would mitigate residual impacts to otters during construction.	No
Other Notable Species	Potential for common toads, hedgehogs, brown hares and harvest mice to be present within Site habitats during vegetation clearances and construction.	Standard precautionary measures to be undertaken during construction, such as a systematic two-stage vegetation cut allowing animals to disperse naturally. Measures to be captured within a CEMP secured by condition.	Positive residual effect due to extensive habitat creation.

iii Extensive areas of open green space and habitat creation are proposed within Scheme (such as a SANG/Country Park) comprising wildflower meadows, native tree and scrub planting and SuDS features.

iv The Scheme would result in a Biodiversity Net Gain of 16.02% Habitat Units, 16.76% Hedgerow Units and 66.15% Watercourse Units. The potential to maximise net gain within the redline boundary of the Scheme has been explored, at this outline stage, based on the Scheme's design parameters and targeting realistic and deliverable habitats as part of the Scheme's soft landscaping. The mandatory requirement for 10% BNG has been achieved and for the Scheme and the Trading Rules have been met. A Biodiversity Gain Plan and Habitat Management and Monitoring Plan must be secured by condition.

v During the detailed design phase of the Scheme pursuant to a Reserved Matters application, opportunities to increase BNG scores should be explored, particularly in respect to the balance between amenity and biodiversity habitats, such as modified grassland and other neutral grassland.

vi The following enhancement measures are proposed to comply with national and local planning policy, current legislation and good practice, the detail of which is expected to be secured through planning condition:

- The installation of a variety of bat, bird and insect boxes on retained site trees;
- The creation of hedgehog highways within private gardens, to allow passage for these mammals and create foraging opportunities within the residential areas;
- The strategic installation of hedgehog domes/shelters under existing hedgerow features;
- The installation of swift, house sparrow, starling and house martin boxes and bat bricks on appropriate aspects of dwellings within the residential areas;
- The creation of bee banks and bee posts within the Country Park/SANG;
- The creation of herptile hibernacula within the Country Park/SANG and/or around attenuation areas;
- The creation of grass arising retention areas to provide egg laying sites for grass snake, such as permanent wooden structures, within the Country Park/SANG and/or around attenuation areas (consideration should be given to the potential for vandalism of such features, such as fires); and
- Measures to prevent amphibians becoming trapped within gully pots (i.e. dropped kerbs, Ecokerbs etc.).

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1 INTRODUCTION

1.1 Terms of Reference

- i This Ecological Impact Assessment (EcIA) has been prepared by RammSanderson Ecology Ltd on behalf of Richborough ('the Applicant') in support of the submission of an outline planning application for mixed use development at land at Spencers Wood, Wokingham, Berkshire ('the Site').
- ii The purpose of this EcIA is to demonstrate how the Scheme accords with relevant national and local planning policy and legislation. Further details on relevant planning policy and legislation are provided in Appendix 3.
- iii This EcIA details the methodology followed to undertake the assessment, describes the ecological baseline relevant to the Scheme and evaluates the nature conservation importance of ecological features present within the Study Area. The EcIA characterises the impacts (both positive and negative) of the Scheme on Important Ecological Features (IEF)¹, and where necessary, sets out appropriate and proportionate avoidance, mitigation and compensation measures that will be delivered within the Scheme. The significance of any residual effects (both positive and negative) of the Scheme on the IEFs has been assessed, and opportunities for enhancement are identified with the overall aim of achieving biodiversity net gain through the mitigation hierarchy.
- iv This EcIA forms part of the supporting technical documentation for the planning application submitted for the Scheme and has been undertaken with reference to current good practice² and is consistent with the requirements of British Standard 42020:2013 *Biodiversity. Code of Practice for Planning and Development*.

1.2 The Scheme

- i Outline planning permission is sought with all matters reserved for future determination, save for the means of access via Basingstoke Road, for: up to 430 dwellings (Use Class C3), an 80 bed care home (Use Class C2), 1ha of employment land (Use Class E(g)), primary school (Use Class F1), local centre (Use Class F2), GP Surgery (Use Class E(e)), 3G sports pitch and changing facility, public open space, SANG provision and associated infrastructure.

1.3 The Site

- i The Site is approximately 38ha in size and dominated by cropland bound by native hedgerows, some of which support broadleaf trees and shallow ditches. The landscape immediately surrounding the Site is dominated by arable farmland to the south with Spencers Wood village located to the north. The River Loddon runs approximately 0.5km to the south of the Site, with an extensive area of parkland and broadleaved woodland comprising Swallowfield Park beyond, to the south and southeast. To the west of the Site, beyond Basingstoke Road and associated urban development, are parcels of broadleaf woodland and pastureland bound by a network of hedgerows proximal to the A33 trunk road. To the east of the Site, pastureland with hedgerow boundaries dominate, forming the wider corridor of the River Loddon.
- ii A Site Context Plan is provided in Figure 1.

¹ Important Ecological Features are habitats, species, ecosystems and their functions and processes that are of conservation importance and could potentially be affected by the Scheme. Various characteristics contribute to a feature's importance including its rarity, diversity, size, population trend, distinctiveness, naturalness, fragility, typicalness, recorded history, potential value and intrinsic appeal.

² CIEEM (2018). Guidelines for Ecological Impact Assessment in the UK and Ireland. Terrestrial, Freshwater, Coastal and Marine. Chartered Institute of Ecology and Environmental Management, Winchester.

2 Methodology

2.1 Scope of the EcIA

i This EcIA has been undertaken as follows:

- Define the Study Area for the assessment, which considers the Zone of Influence³ (Zol) of the Scheme;
- Undertake desk and field-based assessments for designated sites, habitats and species to determine the ecological baseline for the Scheme within the Study Area;
- Determine the nature conservation importance of each ecological feature recorded during the desk and field-based assessments to determine which of those features are IEFs in the context of the EcIA;
- Assess the potential impacts on IEFs because of the Scheme;
- Design suitable avoidance and mitigation measures to address potential impacts;
- Determine the significance of any residual effects and design suitable compensation measures to address significant residual effects; and
- Identify opportunities for biodiversity enhancements including delivery of Biodiversity Net Gain through the mitigation hierarchy.

2.2 Important Ecological Features

i This EcIA has focused on the potential impacts to ecological features (habitats, species, ecosystems and their functions/processes) that are considered important and potentially affected by the Scheme. This EcIA has not carried out detailed assessments of features that are sufficiently widespread, unthreatened and resilient to impacts and which will remain viable and sustainable should the Scheme proceed as detailed in Section 1.

ii For this EcIA, the following are considered IEFs requiring detailed assessment:

- Statutory designated sites.
- Non-statutory designated sites.
- Habitats and species of principal importance (HoPI / SoPI) for the conservation of biodiversity in England⁴.
- Irreplaceable habitats including ancient woodland and veteran trees.
- Individual habitat types or mosaics that may not qualify as HoPI but form an important part of ecosystems and their function.
- Legally protected species⁵.
- Local Biodiversity Action Plan (LBAP) priority species and habitats⁶.
- Species of conservation concern, Red Data Book (RDB) species – UK⁷.
- Birds of Conservation Concern – UK⁸.

2.3 Study Area

i Desk and field-based studies have been undertaken to establish the biodiversity baseline that may be impacted by the Scheme. The scale of the Study Areas varies dependent upon the ecology of the feature being assessed and its vulnerability to change resulting from construction and operation of the Scheme. Ecological features outside of the Study Area are unlikely to be affected by the Scheme and are not considered in this EcIA.

ii Table 2 summarises the Study Area for the Scheme.

³ The Zone of Influence is the area over which ecological features may be affected by biophysical changes because of the Scheme and associated activities.

⁴ Listed under S41 of the Natural Environment and Rural Communities Act 2006.

<http://publications.naturalengland.org.uk/publication/4958719460769792>.

⁵ Legally protected species are those listed on the Wildlife and Countryside Act 1981, The Conservation of Habitats and Species Regulations 2018, Protection of Badgers 1992.

⁶ Berkshire Biodiversity Action Plan.

⁷ Species Status Assessment project published by Joint Nature Conservation Committee (JNCC) in 1999.

<http://jncc.defra.gov.uk/default.aspx?page=3352>.

⁸ Eaton MA, Aebischer NJ, Brown AF, Hearn RD, Lock L, Musgrove AJ, Noble DG, Stroud DA and Gregory RD (2023). Birds of Conservation Concern 6: the population status of birds in the United Kingdom, Channel Islands and Isle of Man.

Table 2 Background Records and Field Surveys Study Areas

Ecological Feature	Background Records Study Area ⁹	Field Survey Study Area ¹⁰
Designated sites and habitats	2km	Within and as applicable, adjacent to the Site
Great crested newts	2km	500m
Badgers	2km	30m
Other protected and notable species	2km	Within and as applicable, adjacent to the Site

2.4 Desk Study

2.4.1 Background Records

i A desk study has been undertaken to obtain background records relevant to the Scheme and the EcIA, including records of statutory and non-statutory designated sites and protected and notable species within the Study Areas detailed above in Table 1. The data obtained provides contextual information for the scope of field surveys, to aid the evaluation of field survey results, and to provide supplementary information where complete field survey coverage has not been possible.

ii Data has been obtained from the following organisations in December 2023:

- DEFRA Multi-Agency Geographic Information for the Countryside (MAGIC) website.
- Thames Valley Environmental Records Centre (TVERC).

2.4.2 Planning Policy

iii To demonstrate how the Scheme accords with relevant national and local planning policy, the following have been reviewed as part of this assessment:

- The National Planning Policy Framework 2024.
- Wokingham Borough Local Development Framework Adopted Core Strategy Development Plan Document January 2010.
- DRAFT Wokingham Borough Local Plan Update 2023 – 2040 Proposed Submission Plan.

2.5 Field Surveys

i Field surveys have been designed to collect information on the habitats and species present that may be affected by the Scheme. The geographical areas across which field surveys have been undertaken are the areas over which ecological features are likely to be subject to impacts from the construction or operation of the Scheme if they are present and accounting for the Scheme design detailed in Section 1.

ii Table 3 summarises the field surveys that have been undertaken to inform the EcIA.

iii Detailed methodologies for collection of field survey data, and any specific limitations and deviations encountered during these surveys, are presented in Appendix 4.

⁹ Distance measured from the Site Boundary.

¹⁰ Distance measured from the Site Boundary.

Table 3: Field Surveys undertaken to inform the EcIA

Ecological Feature	Survey Type	Date(s) of Survey(s)
Habitats	UK Habitats Survey	14/12/2023 Updated 29/08/2024
Protected Species	Preliminary Protected Species Assessment	14/12/2023 Updated 29/08/2024
Badgers	Presence/Absence Field Surveys	14/12/2023 Updated 29/08/2024
Birds	Breeding Birds	14/03/2024 11/04/2024 09/05/2024 13/06/2024 25/06/2024 11/07/2024
Bats	Ground Level Tree Assessment	08-09/05/2024
Bats	Aerial Tree Climbing Inspection	15-16/05/2024
Bats	Walked Transect Surveys x3	08/05/2024 07/08/2024 11/09/2024
Bats	Static Bat Detector Surveys x5	May-September 2024
Otter and Water Vole	Presence/Absence Field Surveys	15/05/2024 11/09/2024

i Reptile surveys were not undertaken within the Site as the prevailing arable cropland habitats are largely unsuitable for these species and any potential residual impacts, should reptiles be present in affected suitable habitats (such as boundary habitats), can be controlled through Precautionary Working Measures during construction.

2.6 Assessment Criteria

i This EcIA broadly follows CIEEMs Guidelines for Ecological Impact Assessment in the United Kingdom with the following clarifications specific to the Scheme.

2.6.2 Nature Conservation Evaluation

ii Several criteria have become accepted as a means of assessing the nature conservation importance of a defined area of land which are set out in *A Nature Conservation Review*¹¹ and include diversity, rarity and naturalness.

iii For this EcIA, the nature conservation importance or potential value of an ecological feature is determined within the following geographic context:

- International (Europe): such as Special Areas of Conservation (SAC) or Special Protection Areas (SPA);
- National (England): such as Sites of Special Scientific Interest (SSSI);
- Regional (*): such as populations of species which enrich biodiversity on a regional scale and whose loss would significantly affect the species national distribution;

¹¹ Ratcliffe, D. (1977). *A Nature Conservation Review*.

- County (Berkshire): such as Local Nature Reserves (LNR) or populations of species which qualify for Local Wildlife Site (LWS) designation;
- Local (Parish): undesignated ecological features such as old hedges, woodlands, ponds;
- Site: the feature has some ecological importance, but is not of a scale warranting consideration outside of the boundaries of the Site itself; and
- Negligible: the feature either has little or no importance for biodiversity, or is considered sufficiently widespread, unthreatened, and resilient to impacts and will remain viable and sustainable.

**A geographical area for Regional importance has not been defined. A feature is of Regional importance when it is of greater geographical importance than within the County of Berkshire but does not reach the threshold to be of National importance.*

iv Ecological features of Local or higher nature conservation importance are considered IEFs requiring detailed assessment. In addition, for the EcIA to demonstrate how the Scheme will comply with statutory requirements and policy objectives for biodiversity, some ecological features are considered IEFs even if they are not of Local or higher nature conservation importance. These are features that are protected by national legislation and include:

- Badgers, legally protected through the Protection of Badgers Act, 1992;
- Great crested newts and bats, legally protected through the Habitats Regulations 2017;
- All nesting birds, legally protected through the Wildlife and Countryside Act, 1981; and
- Non-native invasive plant species, listed on Schedule 9 of the Wildlife and Countryside Act, 1981.

v A detailed account of statutory legislation and policy in respect of biodiversity is provided in Appendix 3.

2.6.3 Temporal Scope

vi Potential impacts on IEFs have been assessed in the context of how the predicted baseline conditions might change between the surveys and the start of construction.

vii Long-term trend information was used to make judgements about the significance of an impact or effect on the conservation objectives or condition of a designated site, or the conservation status of a habitat or species (for example a species with a long term, national population decline may be more susceptible to impacts attributable to the Scheme). Where this information was available it is referenced in Section 4.

viii A high-level construction programme for the Scheme is outlined in Section 1. Once construction is complete, this EcIA has assumed that the operational phase of the Scheme will last for the foreseeable future.

2.6.4 Approach to Mitigation

ix Where impacts on IEFs are predicted, the approach to mitigation engages the following hierarchy:

- (1) Avoid features where possible;
- (2) Minimise impact by design, method of working or other measures, for example by enhancing existing features; and
- (3) Compensate for significant residual impacts (e.g., by providing suitable habitats elsewhere).

x The highest level of the hierarchy has been applied where possible. Only where this cannot reasonably be adopted have lower levels been considered. The rationale for the proposed level of mitigation has been detailed in Section 4, including sufficient detail to show that these measures are feasible and will be delivered within the Scheme.

xi NPPF (2024) states that “development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to improve biodiversity in and around developments should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate”.

xii Throughout this EcIA, the potential to secure biodiversity enhancement, and therefore overall net gain, has been considered through the mitigation hierarchy.

2.7 Limitations to the Assessment

i The ecological surveys undertaken to support this EcIA have not 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 in accordance with current industry best practice.

ii The red line planning boundary for the Site was updated in February 2025, incorporating minor areas of highway to the east and south-east comprising Basingstoke Road and Back Lane. This EcIA, associated plans and BIA has been updated to reflect those changes. No field surveys of the additional red line boundary areas have been undertaken to date, however broad habitats contained therein have been assessed using Google Earth Street View and comprise native hedgerows with trees, developed land; sealed surface and a very minor area of modified grassland, all within the highway boundary (H17-H20 Figure 3). In respect of the BIA, a precautionary approach has been undertaken, and the additional hedgerow and grassland habitats have been condition assessed as moderate.

3 Baseline Conditions and Nature Conservation Importance

i The following sections provide a summary of the baseline conditions relevant to the Scheme and assessment of nature conservation importance of ecological features. The baseline is based on the results of the desk and field-based studies undertaken within the Study Area to inform this EcIA.

ii Regarding biological records, 'recent' records are considered to be those no older than 10 years from the date of the desk study. Records outside of this period are historical and have only been reported where more recent records do not exist. Exceptions to this are detailed in the appropriate sections below.

iii Ecological features which are present or considered likely to be present within the Study Area have been assigned a geographical scale of nature conservation importance in line with the criteria detailed in Section 2.

iv Where it has not been possible to achieve 100% survey coverage for a habitat or species, the baseline conditions have been based on a reasonable precautionary approach, supported by the results of the desk study.

3.1 Designated Sites

3.1.1 Statutory Designated Sites

i The Site does not fall within the boundary of, or is located adjacent to, a statutory designated site.

ii A total of two statutory designated sites were recorded within the Study Area, the details of which are summarised in Table 4. Figure 4 illustrates the statutory designated sites within the Study Area.

Table 4: Statutory Designated Sites within the Study Area

Site Name	Designation	Location ¹²	Brief Description
Stanford End Mill and River Loddon	SSSI ¹³	0.4km S	Habitat consists of seasonally waterlogged hay meadows with a 4km stretch of the river Loddon.
Swallowfield Meadow	LNR ¹⁴	0.4km E	Lowland meadow habitat with native hedgerows and seasonal ponds.

iii The Site lies within the Impact Risk Zones of Stanford End Mill and River Loddon SSSI.

iv Thames Basin Heaths Special Protection Area (SPA) lies 3.5km to the southeast of the Site. The SPA comprises an extensive area of heathland which supports three species of rare ground nesting bird - Dartford warbler, nightjar, and woodlark. Whilst outside the specific Study Area defined within this EcIA, Wokingham Borough Council Local Plan Policy CP8 (and associated Appropriate Assessment) has identified that residential development of 50+ units proposed within 7km of the SPA is likely to result in a significant impact to the site, and thereby avoidance and mitigation measures would be required (Appendix 3). The SPA is also designated as a SSSI and the Site falls within its Impact Risk Zones.

v LNRs are considered to be of nature conservation importance at the County scale, SSSIs at the National scale and SPAs at the International scale.

3.1.2 Non-Statutory Designated Sites

vi The Site does not fall within the boundary of, or is located adjacent to, a non-statutory designated site.

vii Nine non-statutory designated sites were recorded within the Study Area, all LWS. Table 5 provides a summary of the LWS.

¹² From the Site boundary

¹³ Site of Special Scientific Interest

¹⁴ Local Nature Reserve

Table 5: Non-Statutory Designated Sites with the Study Area

Site Name	Designation	Location ¹⁵	Brief Description
River Lodden (part)	LWS ¹⁶	0.4km S	Seventeen kilometre stretch of river with additional marshland.
Clare's Green Road Grasslands	LWS	0.6km N	Lowland meadow habitat with native hedgerows and seasonal ponds.
Woods between Whitehouse and Highlands	LWS	0.7km W	Seventeen kilometre stretch of river with additional marshland.
Wood and ditch/moat	LWS	1.1km S	Habitat consisting of semi – improved grassland.
Normans Shaw	LWS	1.2km SW	A mature broadleaved woodland, possibly of planted origin, with an open oak dominated canopy with ash and occasional Scots pine and a varied shrub layer.
Moor Copse	LWS	1.6km E	Small area of semi – natural woodland by a large ditch/moat.
Great Wood	LWS	1.7km E	Ancient woodland site consisting of an oak and ash dominant canopy and hazel coppice understorey.
Highgrove Copse	LWS	1.9km S	Hazel coppice with area of recently planted oak.
Rounds Copse	LWS	1.9km NE	Small area of hazel coppice with oak standards.

3.2 Habitats

3.2.1 Desk Study

i Table 6 summarises relevant records of HoPI¹⁷, ancient woodlands and protected and/or notable¹⁸ flora¹⁹ (including veteran trees²⁰) within the Study Area.

Table 6: HoPI, Ancient Woodland and Protected and Notable Flora within the Study Area

Habitat/Flora Feature	Reason for Conservation Interest	Nearest Location Parcel ²¹
Wood pasture and parkland	Priority Habitat Local Biodiversity Action Plan Habitat	0.2km S
Traditional orchard	Priority Habitat	0.3km S
Deciduous woodland	Priority Habitat	0.4km W

¹⁵ From the Site boundary

¹⁶ Local Wildlife Site

¹⁷ Priority habitats are taken as principal habitats for the conservation of biodiversity listed under Section 41 of the Natural Environment and Rural Communities Act 2006.

¹⁸ Protected and/or notable flora are taken as principal flora for the conservation of biodiversity listed under Section 41 of the Natural Environment and Rural Communities Act 2006; any flora listed in an IUCN Red Data Book; and any other flora listed under the County Rare and Scarce Plants in Hertfordshire list.

¹⁹ For this assessment 'flora' includes: vascular and non-vascular plants, fungi and lichens.

²⁰ For this assessment the definition of a veteran tree is taken from Annex 2 of the National Planning Policy Framework (glossary): "A tree which, because of its great age, size or condition is of exceptional value for wildlife, in the landscape, or culturally."

²¹ Where features are situated outside of the Site boundary, the distance and direction is given at the closest point of the designated site from the Site.

Habitat/Flora Feature	Reason for Conservation Interest	Nearest Location Parcel ²¹
Coastal and floodplain grazing marsh	Priority Habitat	0.5km SE
Good quality semi-improved grassland	May be botanically species rich	0.5km N
Chalk rivers	Priority Habitat Local Biodiversity Action Plan Habitat	0.5km SE
High Copse	Ancient Woodland	0.9km NE
Open Mosaic	Can be diverse and support a rich assemblage of invertebrates	1.2km NE

3.2.2 UK Habitats Survey

ii Table 7 summarises the results of the habitat and botanical surveys. A UK Habitats Plan is provided in Figure 2.

Table 7: Habitats within Survey Area

Habitat	Description	Photograph(s)	Nature Conservation Importance
Cereal crops	The dominant habitat throughout the Site was cereal crops.		Site
Temporary grass and clover lays	During the Site walkovers, the land was identified as being sown with wheat, as winter stubble and freshly ploughed. Two fields located to the south and south-west of the Site had been sown with legumes, possibly in rotation with other crops as a soil enhancement measure. Red and white clovers were identified, as well as remnants of past crops such as wheat and buckwheat.		

Habitat	Description	Photograph(s)	Nature Conservation Importance
Other native hedgerow (with trees and/or ditch)	Site hedgerows were largely species-poor, generally managed and supported narrow and shallow ditches the majority of which were found to be dry during spring and summer site walkovers. Detailed descriptions of ditch habitats are provided in Appendix 8 (otter and water vole survey results). H2 was located along the northern boundary. Species included dominant blackthorn and hawthorn with occasional holly. No trees or ditch were associated with the hedgerow. H3 was located along the north-western boundary. Species included dominant blackthorn with occasional elm and holly. Oak trees were present in the hedgerow. No ditch was present in association with the hedgerow. H4 was located along the north-eastern boundary. Species included dominant field maple with frequent cherry, occasional oak and rarely recorded rowan. No trees or ditch were associated with the hedgerow. H5 was located along the eastern part of the northern boundary. Species included abundant hawthorn and blackthorn with occasional holly. Oak trees were present in the hedgerow. A narrow, shallow and dry ditch was associated with the hedgerow. H6 was located east of Basingstoke Road along the south-western boundary. The hedgerow was cut very low at the time of survey, species appeared to include hawthorn, blackthorn and hazel. A narrow, shallow and dry ditch was present in association with the hedgerow and is present as a roadside ditch, offsite. No trees were associated with the hedgerow. H7/H8 was located within the southern portion of the Site. To the south the hedgerow was defunct and dominated by hazel (H7). To the north the hedgerow was dominated by blackthorn with occasional holly, oak, rose and rarely recorded ash (H8). Oak trees were present in the hedgerow. A shallow, narrow and dry ditch was present in association with the hedgerow. H9 was located within the southern portion of the Site. The hedgerow was dominated by blackthorn, with occasional pedunculate oak, and rarely recorded hawthorn, holly and broom. Ash, oak and field maple trees were present within the hedgerow. A ditch was present in association with the hedgerow with a slow flowing and shallow water channel, with floating-leaved plants present (Starwort species). H10/H13 was located within the southernmost portion of the Site. The hedgerow to the northeast was dominated by hazel (H13). Oak trees were present in the hedgerow. In the longer section of hedgerow (H10), species included frequent hazel and blackthorn with rarely recorded hawthorn and ash. Oak, ash and field maple	 	Local

Habitat	Description	Photograph(s)	Nature Conservation Importance
	trees were present within the hedgerow. A shallow, narrow and dry ditch was present in association with the hedgerow. H11 was located east of Basingstoke Road along the southern most boundary edge of the Site. The hedgerow was cut very low at the time of survey, species appeared to include hawthorn, blackthorn and hazel. No trees were present in the hedgerow. A shallow, narrow and dry ditch was present in association with the hedgerow. H12 was located within the northern portion of the Site. The hedgerow was cut very low at the time of survey, species appeared to include hawthorn and blackthorn. Two oak trees were present at the end of the hedgerow. A shallow and narrow ditch was present in association with the hedgerow. H15 was a short section of hedgerow on the western boundary. Species included abundant hawthorn and bramble with occasional holly. Oak and ash trees are present in the hedgerow. A shallow and narrow ditch was present in association with the hedgerow. H16 was a short section of hedgerow on the western boundary facing Basingstoke Road. Species present included hawthorn, ash and elm. Silver birch and Leyland cypress trees were present within the hedgerow. Site hedgerows were not considered to be 'important' under the Hedgerow Regulations 1997 (wildlife and landscape criteria only) due to a lack of qualifying features. The submitted Arboricultural Assessment report has identified no veteran or ancient trees within the Site.		
Non-native and ornamental hedgerow	H1 was located along the northern boundary of the Site. Species included Leyland cypress, privet, oak and ash. H14 was located along the south-west boundary of the Site, east of Basingstoke Road. Species included Leyland cypress with alder trees.		Site

Habitat	Description	Photograph(s)	Nature Conservation Importance
Bramble scrub, modified grassland, sparsely vegetated urban land, and rural trees.	To the west of the Site, adjacent to Basingstoke Road, is a small, unmanaged area of land dominated by bramble scrub, with sparsely vegetated land, modified grassland and developed land (sealed surface), with scattered broadleaf trees. The bramble scrub formed dense patches and included occasional tall forbs along the scrub edges, including common nettle and mugwort. A low and narrow mound was present in association with this area and supported unmanaged modified grassland comprising false oat grass, perennial rye grass, hogweed, cock's-foot, and Yorkshire fog. The sparsely vegetated land was surrounded by the bramble scrub and included creeping thistle, bristly oxtongue, moss spp. and crane's-bill sp. Patches of concrete are present in this area. Small to medium scattered broadleaf trees are present with this unmanaged area, comprising apple, oak, ash, willow and hawthorn (T2-T8).		
Native hedgerow with trees (including modified grassland)	Within the highway boundary to the east and south-east of the Site are the carriageway and footway comprising developed land; sealed surface as well as native hedgerows with trees and a very minor area of modified grassland verge.		

3.3 Great Crested Newts (GCN)

3.3.1 Desk Study

i Fifteen recent records of GCN were returned within the Study Area. The closest of which is associated with an offsite pond, located approximately 200m northwest of the Site boundary (probably P4 – Figure 3). The closest GCN Class Survey License Return was granted in 2015 and was located 770m to the northwest of the Site, with a positive result for GCN.

ii A Waterbody Plan is presented in Figure 3. A total of 37 waterbodies (26 ditches, 10 ponds and 1 watercourse) are present within 500m of the Site. One waterbody, WC1 – River Loddon, has been screened out for further assessment because it is a flowing watercourse unsuitable for GCN²². The waterbodies located to the south of the River Loddon (D19, D22, D23 & P13) were screened out for further assessment as the river acts as a major barrier²³ to GCN movement towards the Site. Several waterbodies are present to the north and the west of the Site (P1-P5, P7, P8, P10, P12 & D7-D26), located beyond the built development edge of Spencers Wood village which includes Basingstoke Road and additional minor roads. These waterbodies were also scoped out for further assessment as the predominance of built development would act as a major barrier to GCN movement, particularly in consideration that the Site is dominated by arable land, a sub-optimal terrestrial habitat for GCN.

iii Three offsite ponds P6, P9 and P11 were deemed suitably close to the Site (P6/P9 <50m, P11 <150m) and free from major barriers to be scoped into the assessment, as well as the ditches present onsite/along Site boundaries (D1-D6, D24 & D26). There may be the potential for remnant populations of GCN to be present within these waterbodies, which may have been historically connected to waterbodies within the wider locality, one of which presence of GCN has been confirmed by records (probably P4 – Figure 3).

iv The offsite ponds P6, P9 and P11 were all located on third-party land. Requests were made to gain access to these ponds for eDNA survey in Spring 2024, however there was no response from landowners therefore eDNA surveys were not undertaken. The onsite ditches were proposed to be subject to eDNA surveys in Spring 2024, however a walkover in early spring 2024 identified that most ditches were dry. A few ditches held very shallow water of an unsuitable depth to carry out eDNA water sampling to the correct best practice methods.

3.3.2 Field Assessment

v The Site is dominated by arable cropland and is therefore considered overall, to provide sub-optimal terrestrial habitat for GCN. Should populations of GCN be present within ponds proximal to the Site (records suggest GCN are present in the wider locality), boundary habitats such as hedgerows and ditches would provide suitable terrestrial habitat for foraging and dispersal. As there are no ponds within the Site and onsite ditches were found to be dry or support only very shallow water, it is considered unlikely that the Site provides suitable habitat for GCN in their aquatic breeding phase.

vi Due to the sub-optimal habitats present within the Site and the fragmentation of many waterbodies within 500m of the Site by major barriers, a potential population of GCN within the Site is predicted to be of nature conservation importance at the Site to Local scale.

²² Great crested newts do not generally like running water, though they will inhabit very slow-flowing watercourses such as backwaters, ditches and canals.

²³ The following constitute major barriers to dispersal and are unlikely to be traversed by great crested newts: rivers and larger brooks; main roads such as A-roads, motorways or any other road with high traffic volume (i.e. high traffic volume during the night when great crested newt are more likely to be dispersing/commuting); and major urban infrastructure including extensive areas of hardstanding and buildings and dense networks of minor roads with little green space.

3.4 Common Species of Reptile

i 'Common species of reptile' refers to common lizard, slow worm, adder and grass snake. The Site does not support suitable habitat for smooth snake and sand lizard therefore these species are not considered in this EcIA.

3.4.1 Desk Study

ii Three recent records for grass snake were returned within the Study Area, the closest of which was located 1km southeast of the Site. No recent records were returned for any other common reptile species.

3.4.2 Field Assessment

iii The Site is dominated by arable cropland and is therefore considered overall, to provide unsuitable habitat for common reptile species.

iv Boundary habitats within the Site such as hedgerows and ditches could be utilized by common reptile species for foraging and dispersal, however these features do not appear to be connected to optimal areas of offsite reptile habitat from where reptiles could disperse more widely. The minor area of unmanaged bramble scrub and sparsely vegetated land to the east of the Site may support suitable shelter habitat for reptiles, but again, this area of the Site does not appear to be connected to optimal areas of reptile habitat.

v Reptile populations potentially present within the Site are predicted to be small in number and transient and opportunistic in occurrence (as stated in Section 2 surveys were considered disproportionate), therefore such a potential reptile population is predicted to be of nature conservation importance at the Site level.

3.5 Bats

3.5.1 Desk Study

i 120 recent records of bats were returned within the Study Area. Most records returned were for common pipistrelle, soprano pipistrelle and brown long-eared bats, with a smaller number of records for serotine and noctule bats. The nearest records were for common pipistrelle, soprano pipistrelle and brown long-eared bats, 0.02km from the Site.

ii The closest granted European Protected Species Application was from 2015, located 70m north of the Site, allowing for damage and destruction of a resting place for brown long-eared bat.

3.5.2 Field Surveys

Buildings

iii There were no buildings or built structures within the Site.

Ground Level Tree Assessment (GLTA)/Aerial Tree Climbing Surveys

iv Nine trees were identified as providing Potential Roosting Features (PRFs) for bats during the daytime GLTA walkover. All nine trees were subject to a single aerial tree climbing survey to classify in more detail the identified PRFs. A single aerial survey was considered sufficient and proportional to classify the identified PRFs given that all nine trees would be retained within the Scheme with adverse impacts having the potential to be mitigated, such as artificial light spill.

v The detailed results of the aerial surveys are provided in Appendix 5. Figure 5 plots the locations of the PRF trees and defines the roost classification in accordance with (Collins, 2023 – Appendix 4).

vi One tree was identified as being of negligible bat roosting potential (T9). Three trees were identified as being suitable for individual or small numbers of bats PRF-I (T1, T3 & T4). Five trees were identified as being suitable for multiple bats PRF-M (T2, T5-T8). No evidence of roosting bats was found within any of the PRF trees during the aerial surveys. All PRF trees were located within hedgerows or other boundary habitats – there are no field trees within the Site.

Walked Bat Transect Surveys

vii Three walked bat transect surveys were undertaken across the Site in accordance with current best practice (Collins , 2023 - see Appendix 4) – x1 in May (spring), x1 in August (summer) and x1 in September (autumn) 2024. Transect plans are provided in Figures 6-8 which also detail the walked transect route undertaken. Survey summaries of the transects are provided below. All transects were undertaken in appropriate weather conditions for bat surveys (above 10°C, no/light wind, no rain). Note that bats that were ‘heard but not seen’ have not been recorded on the transects plans; the descriptions below provides a concise overview of all bat activity encountered during the transects.

viii **Bat Transect 8th May 2024** – Bat species recorded during the transect were common pipistrelle, soprano pipistrelle, noctule and potentially brown-long eared. Most recorded bat activity was from common pipistrelle, with limited activity from soprano pipistrelle, noctule and brown long-eared. More activity was recorded towards the southern end of the Site in comparison to the north, with activity largely focussed along boundary habitats.

ix **Bat Transect 7th August 2024** - Bat species recorded during the transect were common pipistrelle, soprano pipistrelle, *Myotis spp.* and potentially brown-long eared and barbastelle. Most recorded bat activity was from common pipistrelle and occasionally soprano pipistrelle, with limited activity from *Myotis spp.* and brown-long eared, with one potential call from barbastelle recorded. Bat activity was recorded across the Site, although many bat calls were brief in duration and bats were generally not observed. Recorded bat activity was most notable within the north and western boundaries of the Site.

x **Bat Transect 11th September 2024** - Bat species recorded during the transect were soprano pipistrelle only. In comparison to other transect surveys, recorded bat activity was limited with occasional calls recorded in scattered locations across the Site.

Static Bat Detector Surveys

xi Static bat detectors were set out in two locations within the Site (see Plate 1 below):

- Static S1 – northern part of the site, along the southern fringe of Spencers Wood village comprising established hedgerows, trees and residential gardens. Arable cropland dominates to the south.
- Static S2 – southern part of the site, along a hedgerow with trees which is fragmented at its eastern end. Arable cropland surrounds.

Plate 1: Static Bat Detector Deployment Locations within the Site



xii Both static bat detectors were deployed on five separate occasions from May through to September during the time periods set out below. Raw data from the static bat detectors is provided in Appendix 7 which additionally provides analysis of weather conditions for each recording period. In most cases static bat detectors recorded at least five consecutive nights of activity. During August Static 2 did not record any data and presumably failed, as Static 1 recorded data in that month. The failure of this one static for one month only, is not considered to be a constraint to the overall survey effort. Static data was not recorded for the period of April, however, in consideration of full static dataset, recording was undertaken over the Spring (May), Summer (June to August) and Autumn (September) seasons, thereby sampling seasonal variability of bat activity across 2024. The lack of static data in April is not therefore considered to be a significant constraint. For most recording periods, overnight weather conditions were suitable for bat survey (Appendix 7). For the September recording period, overnights temperatures were consistently recorded below 10°C, however, it is notable that for both Static 1 & 2, more bat passes were recorded in September in comparison to the warmer summer overnight temperatures. Weather conditions are not considered to have significantly and negatively influenced the static data set presented in Appendix 7.

- Deployment 1 - 09-13.05.24
- Deployment 2 - 09-13.06.24
- Deployment 3 - 18-22.07.24
- Deployment 4 - 09-13.08.24
- Deployment 5 - 11-15.09.24

xiii The results from both static bat detectors are set out in Tables 8 and 9.

xiv The static detectors recorded a total of seven bat species within the Site – common pipistrelle, soprano pipistrelle, noctule, Leisler's, serotine, brown long-eared and barbastelle. The genus *Nyctalus spp.* and *Myotis spp.* were also recorded – the frequency and length of bat calls were insufficient to confidently identify to species level. It is likely that activity from brown-long eared bats was under recorded during static surveys, as this species typically produces low-amplitude quiet calls and generally uses eyes and ears to forage through gleaning.

Static Detector 1 (north of the Site)

xv Over the full recording period (May-September), the highest number of passes recorded was from common pipistrelle (64.1%) as well as soprano pipistrelle (14.7%) and noctule (11.6%), with the three species totalling 90.4% of all passes recorded. The three species were consistently detected across most recording months. Recorded passes were notably lower for Leisler's (2.3%), serotine (0.4%), *Nyctalus spp.* (0.2%), *Myotis spp.* (1.4%) and brown long-eared (0.3%). These species were infrequently detected across recording months. The total number of passes recorded for barbastelle over the recording period was 72 (4.2%), however there were notable spikes in recorded passes during May and August, and no or very limited number of passes in other months (<2).

Static Detector 2 (south of the Site)

xvi Over the full recording period (May-September), the highest number of passes recorded was from common pipistrelle (69.6%) as well as soprano pipistrelle (25.7%), with both species totalling 95.3% of all passes recorded. The two species were consistently detected across most recording months. Recorded passes were notably lower for noctule (3.1%) and *Myotis spp.* (0.4%). These species were infrequently detected across recording months.

Summary

xvii The static data appears to indicate comparably higher levels of foraging within the Site by common pipistrelle and soprano pipistrelle, which is consistent with the walked transect surveys undertaken and the presence of suitable hedgerow and hedgerow tree edge habitats within the Site. Comparably higher levels of activity from noctule bats were also recorded; this could indicate foraging over cropland but may also be indicative of noctule bats commuting high over the Site between offsite foraging areas. This is a typical trait of this species and is again consistent with the walked transects undertaken.

xviii Static Detector 1 recorded a total of seven bat species and additional recordings from two bat genus (which could not be identified to species level), whilst Static Detector 2 recorded a total of four bat species. Static Detector 1

was located on the northern site boundary comprising a relatively strong landscape feature of established hedgerows, trees and residential gardens, which is somewhat connected to other habitats within the wider landscape such as the River Lodden and the areas of parkland and woodland beyond of optimal quality for bats. In comparison, Static Detector 2 was located to the south of the Site on a hedgerow which is surrounded by arable cropland. On landscape and connectivity merits, the Static Detector 1 location appears to be a better bat foraging and commuting corridor than the Static Detector 2 location, which could potentially account for the differences in bat species recorded.

xix The comparably lower levels of bat activity from Leisler's, serotine, brown long-eared, barbastelle and *Myotis* spp. recorded on Static Detector 1 is indicative of occasional dispersal and foraging, which is considered consistent with the Site's geographical location and the connectivity of Static Detector 1 location to more optimal bat habitats in the wider landscape, as previously described. Barbastelle activity was recorded only on Static 1, with a comparable spike in activity in May (32 passes) and August (37 passes), with notably less activity in June (2 passes) and July (1 pass) and no activity in September. The Species Core Sustainance Zone (SCZ) for barbastelle is determined to be 6km (Table 3.5 Collins, 2023). As previously described, the northern boundary of the Site on which Static 1 was located forms a strong landscape feature connected to offsite optimal habitats for bats, including barbastelle (i.e. parkland). The activity recorded from barbastelle along the northern site boundary is considered to be as a result of transient barbastelle movement across an extensive SCZ for this species. In comparison, the SCZs for common pipistrelle and soprano pipistrelle, of which comparably higher of activity were recorded along this northern Site boundary, are 2km and 3km respectively.

Table 8: Static Bat Detector S1 – Summary of Bat Activity

PIPI – Common pipistrelle, *PIPY* – Soprano pipistrelle, *PIPSOC* – Pipistrelle social call, *NYNO* – noctule, *NYLE* – Leisler's *NYCsp* – *Nyctalus* species, *MYsp* – *Myotis* species, *ESPE* – Serotine, *BLE* – Brown long-eared, *BARBAR* – barbastelle

Month	PIPI	PIPY	PIPSOC	NYNO	NYLE	NYCsp	MYsp	ESPE	BLE	BARBAR	TOTAL NO OF PASSES	AVERAGE PASSES PER NIGHT (ALL SPECIES)
May	184	82	3	3	5	3	0	0	5	32	297	59.4
June	63	12	1	0	0	0	0	0	0	2	78	15.6
July	266	30	0	46	25	0	8	0	0	1	376	75.2
August	487	94	8	32	8	0	16	6	0	37	688	137.6
September	81	25	0	111	0	0	0	0	0	0	217	43.4
TOTAL PASSES/SPECIES	1061	243	12	192	38	3	24	6	5	72		
AVERAGE PASSES/SPECIES	30.3	6.9	0.3	5.5	1.1	0.08	0.67	0.2	0.1	2.1		
% PASSES/SPECIES	64.1	14.7	0.7	11.6	2.3	0.2	1.4	0.4	0.3	4.3		

Table 9: Static Bat Detector S2 – Summary of Bat Activity

PIPI – Common pipistrelle, *PIPY* – Soprano pipistrelle, *PIPSOC* – Pipistrelle social call, *NYNO* – noctule, *NYCsp* – *Nyctalus* species, *MYsp* – *Myotis* species, *ESPE* – Serotine, *BLE* – Brown long-eared, *BARBAR* – barbastelle

Month	PIPI	PIPY	PIPSOC	NYNO	NYLE	NYCsp	MYsp	ESPE	BLE	BARBAR	TOTAL NO OF PASSES	AVERAGE PASSES PER NIGHT (ALL SPECIES)
May	784	376	0	0	0	0	10	0	0	0	1170	234
June	212	100	15	0	0	0	0	0	0	0	327	65.4
July	18	142	0	53	0	0	0	0	0	0	213	42.6
August	0	0	0	0	0	0	0	0	0	0	0	0
September	952	107	2	35	0	0	2	0	0	0	1115	223
TOTAL PASSES/SPECIES	1966	725	17	88	0	0	12	0	0	0		
AVERAGE PASSES/SPECIES	56.2	20.7	0.5	2.5	0	0	0.3	0	0	0		
% PASSES/SPECIES	69.6	25.7	0.6	3.1	0	0	0.4	0	0	0		

Summary and Assessment of Nature Conservation Importance

xx To assess the importance of bat assemblages within the Site as a whole, the standard approach within Table 3.3 of the Bat Mitigation Guidelines was used (Reason & Wray, 2023). This method combines scores of bat species rarity to compare against a maximum theoretical score and identify a specific geographical level of nature conservation importance.

xxi As previously detailed, bat transect and static surveys identified the presence of seven bat species within the Site - common pipistrelle, soprano pipistrelle, noctule, Leisler's, serotine, brown long-eared and barbastelle. Given that all *Nyctalus spp.* were recorded within the Site (noctule, Leisler's, serotine), the data for this genus does not count for an additional species. Recordings for the *Myotis* genus were determined to be the species identified as 'widespread in many geographies, but not as abundant in all' in Table 3.3, given the Site's geographical location and prevailing arable cropland habitats.

xxii Utilizing Table 3.3 (Southern England) of the Bat Mitigation Guidelines, the total recorded bat assemblage within the Site scores 17-points which is below the threshold for County importance (20-points) or above. For the context of this specific assessment and the *Myotis* genus recorded within the Site, only one species was counted to achieve the 17-point total. Three *Myotis* species would need to have been recorded within the Site to pass the County importance threshold.

xxiii Despite the above outcome, across the full recording period, recorded passes were notably lower for Leisler's, serotine, brown long-eared, *Myotis spp.* and barbastelle, less than 5% of total passes for any one species. These species were also infrequently detected across recording months on both static detectors and were not recorded during walked transect surveys (apart from one possible pass from barbastelle). Therefore, the current baseline data suggests limited and/or transient use of Site habitats by these species.

xxiv Most of the bat activity recorded during walked transect and static surveys within the Site were for common pipistrelle, soprano pipistrelle and noctule bats. Utilizing Table 3.3 (Southern England) of the Bat Mitigation Guidelines, this bat assemblage scores 5 points and would in this context, be of nature conservation importance at the Site level.

xxv Utilizing professional judgement, the bat assemblage within the Site, based on a baseline comprising a predominance of activity from widespread bat species and transient use by rarer or restricted distribution bat species, would be of nature conservation importance at the Local level.

3.6 Birds

3.6.1 Desk Study

i Recent records for 37 bird species were returned within the Study Area, with over 201 individual records returned. No recent records were returned for the Site itself.

ii The closest recent records were for black-headed gull, herring gull, red kite, dunnoek and song thrush, located 0.36km from the Site. Recent records up to 0.5km from the Site included skylark, meadow pipit, greenfinch, woodpigeon, whitethroat, kestrel, linnet, bullfinch, starling, wren, fieldfare, lesser black-backed gull, redwing, mistle thrush, lapwing and barn owl. Recent notable²⁴ records within the wider Study Area relevant to the habitat pattern within and adjacent to the Site included house sparrow, swift, house martin and yellowhammer.

²⁴ Notable bird species are taken as those listed: on Annex I of the EC Birds Directive (2009/147/EC); on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended); as Species of Principal Importance (SPI) for the Conservation of Biodiversity in England listed in Section 41 of the Natural Environment and Rural Communities Act 2006; as Red or Amber in the Birds of Conservation Concern (BoCC) 4 (Eaton MA, Aebischer NJ, Brown AF, Hearn RD, Lock L, Musgrove AJ, Noble DG, Stroud DA and Gregory RD (2023). Birds of Conservation Concern 6: the population status of birds in the United Kingdom, Channel Islands and Isle of Man.

3.6.2 Field Assessment

iii Appendix 10 provides a summary of the notable bird species recorded within the Site during the breeding bird surveys, along with their likely breeding status. Results of the bird surveys are illustrated in Figures 9. Survey methodology is provided in Appendix 4.

iv A total of fifty-one bird species were recorded within the Site.

v Of these species, two species were listed on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended): red kite and redwing; both were non-breeding within the Site.

vi Nine species were red listed: greenfinch, yellowhammer, mistle thrush, linnet, starling, house sparrow, spotted flycatcher, herring gull and skylark. Spotted flycatcher was identified foraging within a mature oak tree during one survey occasion only and was determined to be non-breeding. Herring gull was also confirmed as non-breeding. Mistle thrush and greenfinch were predicted as possibly breeding within the Site along boundary habitats, with one breeding territory recorded each. Skylark were confirmed breeding and predicted as probably breeding across arable cropland within the Site, with six confirmed breeding territories and three probable breeding territories recorded. Yellowhammer was also a confirmed breeder within the Site, with starling, house sparrow and linnet predicted to be probably breeding.

vii Fifteen amber listed bird species were recorded within the Site: rook, kestrel, song thrush, whitethroat, woodpigeon, wren, mallard, dunnoek, willow warbler, sparrowhawk, tawny owl, black-headed gull, reed bunting, meadow pipit and lesser black-backed gull. Five amber species were recorded as probably breeding within the Site: dunnoek, wren, whitethroat, song thrush, and woodpigeon. Four of amber species were recorded as possibly breeding within the Site: willow warbler, reed bunting, meadow pipit and tawny owl. Mallard, black-headed gull, rook, lesser black-backed gull, kestrel and sparrowhawk were confirmed as non-breeding.

viii The remaining twenty-eight bird species recorded were all green listed, apart from Canada goose, which is a non-native invasive species and common pheasant, little owl and red-legged partridge which are introduced species and have since become 'naturalised'. Green listed bird species included great spotted woodpecker, blackcap, chaffinch, goldcrest, jackdaw, magpie and robin. Of the green listed bird species, seven possible breeders and eleven probable breeders were recorded.

ix The bird species recorded within the Site are considered typical of the prevailing habitat pattern comprising arable cropland bound by hedgerows and hedgerow trees, as well as residential gardens. Current field evidence identifies that the Site is of nature conservation importance for birds at the Site to Local level.

3.7 Otter and Water Vole

3.7.1 Desk Study

i A single recent record of otter was returned for the Study Area, located 1.9km to the north of the Site, which was a record of roadkill otter.

ii No recent records of water vole were returned for the Study Area.

3.7.2 Field Survey

iii Otter and water vole surveys were undertaken in May and September 2024 on the ditches present within the Site: D1-D6, D24 & D26 (Figure 3). The full details of the otter and water vole surveys including habitat descriptions of the Site ditches is provided in Appendix 8.

iv No evidence of otter or water voles was found within any of the Site ditches during the spring and autumn survey periods.

v The Site ditches are all associated with hedgerows, supporting mostly narrow and shallow channels dominated by tall ruderal grasses and herbs as well as bramble scrub. Most ditches were found to be dry and at best held only shallow patches of standing water with no aquatic vegetation present. The only ditch found to hold running water was D2, which was found to support shallow running water during the spring and autumn surveys with patches of aquatic plants present (which were also present during the winter walkover). Several of the ditches were found to hold water during the winter 2023 walkover of the Site, however, an ephemeral and seasonal hydrological cycle would be a typical trait of such narrow and shallow hedgerow ditches.

vi The ditch network within the Site is to some extent interconnected to the south-east, however an assessment of current Ordnance Survey mapping suggests that Site ditches do not connect to more notable watercourses located offsite, such as the River Loddon.

vii Although Site ditches provide suitable burrowing substrates for water vole, the absence of water vole records, the lack of ditch connection to other watercourses, the dominance of ruderal vegetation within ditch channels and the overall ephemeral nature of the ditch network would significantly limit the likelihood of permanent water vole occupation. Dispersal by water voles through the ditch network within the Site is also judged to be highly unlikely, given the lack of connection to other watercourses.

viii Water voles have not been assigned a geographical scale of nature conservation importance and this species is not considered further in this assessment.

ix Although returned records do not support the presence of otters along the River Loddon (located 0.4km south of the Site), this species is highly likely to be utilising this watercourse. The record of a dead otter along the A33 to the east of Spencers Wood village indicates an element of overland movement by this species within the area. The ditch and associated hedgerow network within the Site may therefore be utilised by otters for overland dispersal, although most likely transient in occurrence.

x The habitat pattern within the Site is predicted to be of nature conservation importance to otters at the Site level.

3.8 Badgers

3.8.1 Desk Study

i Eight recent records for badgers were returned within the Study Area, the nearest of which was located 1km from the Site.

3.8.2 Field Survey

ii No evidence of badger setts or field signs was identified within the Site during site walkovers to date. However, boundary habitats such as hedgerows and ditches provide suitable habitat for dispersal and minor sett building, therefore presence of badgers within the Site at a future date cannot be discounted.

iii Current field evidence identifies that the Site is of nature conservation importance for badgers at the Site level.

3.9 Hazel Dormice

3.9.1 Desk Study

i A single recent record for hazel dormouse was returned within the Study Area. The record is associated with a hedgerow and line of trees located approximately 1.2km northwest from the Site.

3.9.2 Field Assessment

ii Overall, the Site provides sub-optimal habitat for hazel dormice due to the dominance of arable cropland, with suitable habitat features restricted to hedgerows. The landscape adjacent and proximal to the Site is dominated by arable farmland and residential development, with no or very limited suitable hazel dormice habitats such as woodlands and native scrub. Parcels of woodland with well-connected hedgerow networks more suitable for hazel dormice are present within the wider landscape to the south-east and north-west of the Site, however such areas are fragmented by the River Loddon and build development/roads which would present major barriers to the dispersal of hazel dormice towards the Site. In consideration of the identified limiting factors, hazel dormice are determined to be absent from the Site.

iii Dormice have not been assigned a geographical scale of nature conservation importance and this species is not considered further in this assessment.

3.10 Other Notable Species

3.10.1 Desk Study

i 22 recent records for hedgehog were returned within the Study Area, the nearest of which was located 0.02km from the Site. 47 recent records of stag beetle were returned within the Study Area, the nearest of which was located adjacent to the Site within a private garden.

ii No recent records were returned for other notable species such as white-clawed crayfish, harvest mice, brown hare or polecat.

3.10.2 Field Assessment

iii There are no suitable aquatic habitats within the Site for white-clawed crayfish, the ditches within the Site are largely ephemeral habitats.

iv The boundary habitats including hedgerows and ditches provide opportunities for foraging, dispersing and refuge-seeking hedgehogs and common toads.

v Although records of stag beetle were identified within a private garden adjacent to the Site, the Site itself is dominated by arable cropland and does not support the deadwood and tree dominated habitats favoured by this species.

vi The arable cropland within the Site may provide suitable habitat for brown hares and harvest mice. No evidence of brown hares was identified within the Site during any surveys – brown hares are typically a conspicuous species.

vii The habitat pattern within the Site is predicted to be of nature conservation importance to other notable species at the Site level.

3.11 Future Baseline

i The agricultural management of the Site is unlikely to change between the time the surveys were undertaken and development of the Scheme. Therefore, the baseline described above is not expected to change prior to development of the Scheme.

3.12 Summary of Nature Conservation Importance

i Table 10 summarises the IEFs that have been recorded in the Study Area and their nature conservation importance.

Table 10: Summary of Nature Conservation Importance

Ecological Feature	Geographical Scale of Nature Conservation Importance
Designated Sites (Offsite)	County to International
Site Habitats	Site to Local
Great Crested Newts	Site to Local
Reptiles	Site
Bats	Local
Birds	Site to Local
Badgers	Site

Ecological Feature	Geographical Scale of Nature Conservation Importance
Otter	Site
Other Notable Species	Site

4 Impact Assessment, Agreed Mitigation Measures and Significance of Residual Effects

i This Section characterises the impacts of the Scheme on IEFs during the construction and operation phases, sets out agreed avoidance and mitigation measures, and assesses the significance of the residual effects (both positive and negative) of the Scheme on these features. Where significant residual effects will occur, appropriate compensation measures are identified to offset those effects.

ii The Scheme assessed in this section is derived from the submitted Development Framework Plan and Outline Landscape Strategy.

iii Mitigation and compensation measures identified in Section 4.1 onwards will be incorporated into the detailed design parameters for the Scheme and implemented as part of the overall development of the Site pursuant to a Reserved Matters application.

4.2 Stanford End Mill and River Loddon SSSI

4.2.1 Construction Impacts and Mitigation

i Stanford End Mill and River Loddon SSSI is located 0.4km south of the Site, therefore this separation distance would negate most negative direct and indirect impacts to the SSSI during construction. However, a potential hydrological link between the Site and the SSSI is identified through ditch D16 (Figure 3), located adjacent to the south-eastern corner of the Site.

ii The hydrological link affects a limited and highly isolated part of the Site, in an area proposed for open green space rather than the construction of built development. However, there is the potential for adverse residual impacts to the SSSI as a result of pollution events during construction, particularly if this area of the Site is utilised for temporary construction compounds and/or storage. Therefore, appropriate avoidance and mitigation measures to control pollution events would be implemented during construction such as (but not limited to):

- Wherever possible, the avoidance of sighting temporary construction compounds and/or storage as well as refuelling stations in proximity to ditch D16 where potential pollution pathways would otherwise be created;
- The appropriate bunding of fuels and construction chemicals in accordance with current industry best practice; and
- The provision of spills kits and training for the workforce on how to use them.

iii The detail of construction mitigation measures for Stanford End Mill and River Loddon SSSI are expected to be captured in a Construction Ecological Management Plan (CEMP) for the Scheme, secured through condition pursuant to a reserved Matters Application.

4.2.2 Operation Impacts and Mitigation

iv There are no direct public rights of way between the Site and Stanford End Mill and River Loddon SSSI. Additionally, an extensive area of Suitable Alternative Natural Greenspace (SANG) is proposed within the Scheme which is intended to mitigate recreational pressure on near-by designated sites, principally the Thames Basin Heath SPA. Therefore, no significant negative indirect impacts to the SSSI are expected to occur arising from recreational pressure or 'urban edge effects'.

4.2.3 Residual Effects and Compensation Measures

v No significant residual effects are expected to occur to River Stanford End Mill and River Loddon SSSI and no compensation is proposed.

4.3 Thames Basin Heath SPA

4.3.1 Construction Impacts and Mitigation

i Thames Valley Basin Heath SPA is located 3.5km southeast of the Site. Given this separation distance, no adverse direct or indirect impacts are predicted during construction and therefore no mitigation is proposed.

ii The submitted (and recently updated) Air Quality Assessment states in Sections 3.16-3.18 that there would be no significant air pollution effects arising from increases in traffic to nearby ecological receptors, including Thames Valley Basin Heath SPA.

4.3.2 Operation Impacts and Built-In Mitigation

iii Wokingham Borough Council Local Plan Policy CP8 (and associated Appropriate Assessment) (Appendix 3) has identified that any residential development of 50+ units proposed within 7km of the Thames Valley Basin Heath SPA is likely to result in a significant effect to the site's qualifying features. To address likely significant effects to the SPA, Policy CP8 further states that avoidance and mitigation would need to comprise the provision of Suitable Alternative Natural Greenspace (SANG) within the residential scheme, to be '*provided and maintained in perpetuity in line with the quality and quantity standards advocated by Natural England*'.

iv In accordance with Policy CP8, the Scheme provides an extensive area of SANG which has been designed in accordance with Natural England's 2021 SANG guidelines and through a site visit and consultation with Natural England officers. The SANG design is illustrated in the submitted Development Framework Plan. The core design principles for the SANG are set out in the submitted Landscape and Visual Impact Assessment (LVIA) report and not repeated here.:

v As stated within the submitted LVIA report, in accordance with Policy CP8, the SANG provision within the Scheme delivers avoidance and mitigation measures which addresses the likely significant effects upon the Thames Valley Basin Heath SPA.

4.3.3 Residual Effects and Compensation Measures

vi No significant residual effects are expected to occur to Thames Valley Basin Heath SPA and no compensation is proposed.

4.3.4 Consideration of the Requirement for a Shadow Stage 1 Habitat Regulations Assessment

vii In respect of Thames Valley Basin Heath SPA, the Scheme incorporates a SANG in accordance with Natural England's 2021 SANG guidelines and Policy CP8, and further no significant affects from increases in traffic and air pollution have been identified.

viii Therefore, the Scheme is predicted to have no likely significant effects on Thames Valley Basin Heath SPA and a Shadow Stage 1 HRA is not considered to be necessary at this stage.

4.4 Site Habitats

4.4.1 Scheme Design

i The Scheme proposes up to 430 dwellings (Use Class C3), an 80-bed care home (Use Class C2), 1ha of employment land (Use Class E(g)), primary school (Use Class F1), local centre (Use Class F2), GP Surgery (Use Class E(e)), 3G sports pitch and changing facility, public open space, SANG provision and associated infrastructure.

ii The Scheme development parcels, soft and hard landscaping and attenuation features would predominantly be located on existing arable cropland. Sectional removal would be required along hedgerows H7, H8, H9, H10, & H12 to facilitate construction of access roads, although most of the hedgerow lengths would be retained and incorporated into the Scheme (see submitted Arboricultural Impact Assessment). Limited hedgerow tree removal will be required, affecting only two oak trees in poor condition (T14 & G44 – see submitted Arboricultural Impact Assessment).

iii The submitted Development Framework Plan proposes an extensive area of open green space comprising Grovelands Country Park/SANG as well as other areas of connected open green space around Site boundaries and residential parcels. The following broad landscape typologies have been proposed within these areas of open green space:

- Wildflower meadows.
- Native scrub and tree planting.
- Native hedgerow planting.
- Community orchards.
- Amenity grassland and ornamental shrub planting.

iv A high-level Biodiversity Impact Assessment (BIA) has been undertaken to determine the biodiversity performance of the Scheme at this current outline design stage. The BIA is presented in Section 5.

4.4.2 Construction Impacts and Mitigation

v There is the potential for negative, indirect and temporary impacts to retained Site habitats during construction, arising from operations such as ground level changes, the movement of construction plant, the creation of dust, the storage of construction materials and chemical spillages. Retained habitats would be boundary hedgerows and associated trees and ditches.

vi To prevent negative impacts to retained habitats during construction, mitigation measures would include (but not be limited to):

- Requirements for 'toolbox talks' and dissemination of mitigation measures to site managers and construction workers;
- Incorporation of Heras fenced Biodiversity Protection Zones along and around retained habitats, informed by the Arboriculturist's report and Ecologist's advice for general tree and hedgerow protection;
- Control of construction artificial lighting to prevent disturbance and displacement of nocturnal species;
- Appropriate control of construction waste, noise and airborne particulates; and
- Appropriate storage and use of construction materials, fuels and machinery.

vii The detail of mitigation measures for retained habitats are expected to be captured in the CEMP, Arboricultural Method Statement and Tree Protection Plan for the Scheme, secured through condition pursuant to a reserved Matters Application.

4.4.3 Operation Impacts and Mitigation

viii There is the potential for negative impacts to retained habitats, such as hedgerows and hedgerow trees, because of urban edge effects arising from the Scheme, causing damage to these features such as vandalism.

ix To further mitigate these impacts, the following measures would be developed and incorporated into the detailed design stage of the Scheme:

- Where appropriate, specifications for the installation of post and wire barrier fencing around retained hedgerow trees of particular ecological value, such as trees with notable bat roosting potential;
- A detailed planting specification for barrier shrub planting within and around retained hedgerow trees of particular ecological value, detailing species mixes and planting zones; and
- The creation and maintenance of long grass margins along either side of retained hedgerows.

4.4.4 Residual Effects and Compensation Measures

x No significant negative residual effects are expected to occur to retained Site habitats and no compensation is proposed.

xi The extensive areas of open green space and habitat creation proposed within the Scheme is considered to provide a significant positive residual effect at the Site level.

4.5 Great Crested Newts (GCN)

4.5.1 Construction Impacts and Mitigation

i No suitable aquatic breeding habitat for GCN has been identified within the Site. However, a lack of access to offsite ponds proximal to the Site (<50m and <150m) has resulted in presence/absence of GCN not being determined. The Site is dominated by arable cropland and is therefore considered overall, to provide sub-optimal terrestrial habitat for GCN. Should populations of GCN be present within ponds proximal to the Site (records suggest GCN are present in

the wider locality), boundary habitats such as hedgerows and ditches would provide suitable terrestrial habitat for foraging and dispersal.

ii Given that the Site is dominated by sub-optimal terrestrial habitat for GCN, movement of potential GCN along boundary habitats from offsite ponds is likely to be small in number and transient/opportunistic in occurrence, within the Core (50m) and Intermediate (250m) terrestrial zones around proximal offsite ponds. It is widely accepted that 250m is the mean movement of GCN from breeding ponds (Jehle, 2000), which also forms the critical measurement basis for Natural England's DLL in relevant counties of England.

iii An impacts plan for potential GCN ponds proximal to the Site is presented in Figure 12. The Site falls within the 50m terrestrial zones for pond P6 and for P9 only slightly, affecting arable cropland. The Site falls within the 250m terrestrial zones for ponds P6, P9 & P11 affecting approximately 50% of the arable cropland across the Site, all of internal ditch D1 and associated hedgerow, and the eastern and western ends of internal ditch D2 and associated hedgerow. Boundary habitats to the north and west of the Site also fall within the 50m and 250m terrestrial zones, however, these features would not be directly impacted during construction.

iv The potential for killing and injuring of potential GCN is therefore likely to be limited in extent affecting mostly restricted and specific areas of boundary habitats directly impacted during construction (sectional removal for internal roads, footpaths etc), with a low likelihood for potential GCN to be present within arable cropland depending on the ground condition at the time of site clearances.

v Given that the Scheme proposes to convert extensive areas of the existing arable cropland to open green space with boundary habitats largely retained and improved, permanent local loss of terrestrial GCN habitat and segregation of dispersal corridors is not expected to occur.

vi To prevent potential killing or injuring of GCN and ensure legislative compliance during construction, it is recommended that a Mitigation Strategy is considered with consultation from the LPA to be secured through condition, which could explore and utilise the following mitigation measures to determine to most proportionate approach:

- The use of Precautionary Working Measures and a non-licensed method statement during construction, such as ecologist watching briefs and use of GCN detection dogs.
- Join Naturespace's District Level Licensing (DLL) Scheme within Berkshire.

vii The DLL certificate, which permits legislative compliance in respect of GCN and the development site, can be submitted prior to or after planning determination to discharge the relevant condition. The Applicant can submit an enquiry to Naturespace to determine DLL certificate fees before or after validation.

4.5.2 Operation Impacts and Mitigation

viii The Scheme proposes to convert the dominant arable cropland within the Site to a habitat pattern post-development comprising extensive areas of tall wildflower meadows, SuDS features and native tree, shrub and scrub planting, which would provide enhanced opportunities for potential GCN populations to colonise, breed, shelter and forage (should GCN populations be present within the locality).

4.5.3 Residual Effects and Compensation Measures

ix No significant negative residual effects are expected to occur to GCN and no compensation is proposed.

x The extensive areas of open green space and habitat creation proposed within the Scheme is considered to provide a significant positive effect at the Site level for GCN, should populations be present within the locality.

4.6 Reptiles

4.6.1 Construction Impacts and Mitigation

i The Scheme will predominantly impact arable cropland which is unsuitable for reptile species. Site hedgerows and ditches may be utilised as dispersal corridors for small numbers of reptiles and will be impacted by sectional permanent hedgerow removal.

ii Given the limited impact to potentially suitable reptile habitats, the following Precautionary Work Measures would be undertaken to protect potential reptiles from killing and injuring during construction:

- Requirements for 'toolbox talks' and dissemination of mitigation measures to site managers and construction workers;
- The installation and retention of Heras fenced Biodiversity Protection Zones along retained boundary habitats;
- Habitat manipulation of impacted hedgerows to disperse potential reptiles prior to full site clearances, such as a two-stage cut of vegetation;
- Ecologist oversight and direction of habitat manipulation works and finger-tip search of manipulated land if appropriate; and
- Installation of ramps within open trenches to allow reptiles to escape.

iii The detail of mitigation measures for reptiles are expected to be captured in a CEMP for the Scheme, secured through planning condition pursuant to a reserved Matters Application.

4.6.2 Operation Impacts and Mitigation

iv The Scheme proposes to convert the dominant arable cropland within the Site to a habitat pattern post-development comprising extensive areas of tall wildflower meadows, SuDS features and native tree, shrub and scrub planting, which would provide enhanced opportunities for potential reptile populations to colonise, breed, shelter and forage (should reptile populations be present within the locality).

4.6.3 Residual Effects and Compensation Measures

- v No significant negative residual effects are expected to occur to reptiles and no compensation is proposed.
- vi The extensive areas of open green space and habitat creation proposed within the Scheme is considered to provide a significant positive effect at the Site level for reptiles, should populations be present within the locality.

4.7 Bats

4.7.1 Construction Impacts and Mitigation

i All trees identified as supporting Potential Roosting Features (PRFs) will be retained and incorporated within the Scheme (Figure 5). In order to mitigate negative construction impacts to these trees, such as the potential for direct impacts strikes and disturbance, trees would be incorporated into Heras fenced Biodiversity Protection Zones informed by the Arboriculturist's report and Ecologist's advice.

ii Artificial lighting utilised during construction would have the potential to cause displacement impacts to foraging and commuting bats, where directed towards boundary hedgerows and trees, particularly those trees identified as supporting PRFs (Figure 5). Night working and artificial lighting during construction would in the first instance be avoided wherever possible. Where artificial lighting is required, lighting would strictly be focussed on the works area only and away from woodland, hedgerows, scrub and broadleaf trees. If necessary, luminaires would be utilised to assist in the directional focus of artificial light.

iii The detail of mitigation measures for bats are expected to be captured in a CEMP for the Scheme, secured through condition pursuant to a Reserved Matters application.

4.7.2 Operation Impacts and Mitigation

iv A 3G pitch with floodlighting is proposed within the southern half of the Scheme, between hedgerows H9 and H12 (Figure 2). A floodlighting specification and Lux projections are provided in Appendix 9, which plots part of hedgerow H12 to the north and hedgerow H9 to the south. The Lux projections indicate that surface illuminance at H9 & H12 would be 0 Lux and therefore not affected by floodlight spill.

v Artificial lighting built into the wider Scheme would have the potential to cause displacement impacts to foraging and commuting bats, where directed towards boundary hedgerows and trees, particularly those trees identified as supporting PRFs, as well as the more naturalistic new areas of soft landscaping /habitat creation.

vi The artificial lighting strategy for the Scheme would follow the recommendations set out within the best practice document: Institution of Lighting Professionals and Bat Conservation Trust (2023) - Bats and Artificial Lighting in the UK – Bats and the Built Environment Series Guidance Note 08/23. Measures to reduce the impact of artificial lighting on retained and created habitats would include (and not be limited to):

- Avoid lighting wherever possible;
- Install lamps and the lowest permissible density;
- Lamps 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.

vii The Artificial Lighting Strategy shall encompass the following habitat and landscape features (but would not be limited to), where the impacts of artificial lighting would be reduced/negated:

- The existing boundary hedgerow/tree lines along the northern-most site boundary;
- The enhanced hedgerow features along Spencers Greenway;
- Grovelands Country Park (SANG);
- Attenuation ponds, including the community orchard, Beech Green and Lodden Greenway along the eastern/southeastern Site boundary;
- Enhanced hedgerow features and associated marginal habitats along Spencers Common, Bodys Common and Elm Green, to the south of the Site.

viii It is expected that an Artificial Lighting Strategy to mitigate impacts to roosting and foraging bats would be secured by condition pursuant to a Reserved Matters application.

ix The Scheme proposes to convert the dominant arable cropland within the Site to a habitat pattern post-development comprising extensive areas of tall wildflower meadows, SuDS features and native tree, shrub and scrub planting, which would provide enhanced foraging opportunities for the local bat population.

x In combination with an Artificial Lighting Strategy, the Scheme will largely retain and likely strengthen existing boundary habitats as foraging/commuting resources for bats. Vegetation along the northern boundary comprising the relatively strong landscape feature of established hedgerows, trees and residential gardens (and location of Static Bat Detector 1, see baseline) would be retained within the Scheme and in locations buffered with additional planting margins along footpaths. In addition, the vegetated northern boundary would be connected to the retained hedgerow directly to the south along Spencers Greenway (H12, Figure 2) through footpaths with vegetated margins and a linear swale. Whilst the retained hedgerow along Spencers Greenway would be subject to some sectional removal for the internal spine road, it will be extended at its fragmented eastern end to connect through to the northern vegetated boundary. The vegetated northern boundary and the Spencers Greenway hedgerow would also connect directly through to Grovelands Country Park (SANG), comprising an extensive mosaic of wildflower grasslands, SuDS and native tree and shrub planting. In combination with an Artificial Lighting Strategy, the measures prescribed are likely to retain and likely strengthen the vegetated northern boundary, which was identified, following static bat detector surveys, as being utilised mainly by common species of bats and occasional/transient use by rarer/restricted distribution bat species (including barbastelle).

xi The hedgerow to the south of the Site along Spencers Common (H9, Figure 2 and location of Static Bat Detector 2) was identified, following the static surveys, as being utilised by common species of bats. This hedgerow (and nearby internal hedgerows – H8 & H10) would be subject to some sectional removal for the internal spine road and footpaths. However, green connective corridors in this southern area of the Scheme would be largely retained and likely strengthened by the incorporation of open green space and linear green planting around residential parcels, such as Loddon Greenway, Beatty Greenway, Body's Common and Elm Green.

4.7.3 Residual Effects and Compensation Measures

xii No significant negative residual effects are expected to occur to bats and no compensation is proposed.

xiii The extensive areas of open green space and habitat creation proposed within the Scheme is considered to provide a significant positive effect at the Site level for the local bat population.

4.8 Birds

4.8.1 Construction Impacts and Mitigation

- i Clearance of vegetation within the Site during the nesting bird season (taken to be March to August inclusive, though with some seasonal and species variations) would risk damaging or destroying active birds' nests. To mitigate this potential negative impact, clearance of vegetation would be undertaken outside of the nesting bird season. If this isn't possible, nesting bird surveys of vegetation to be cleared would be undertaken within 24 hrs of works taking place. If active birds' nests are discovered, they would be left in place with a buffer surrounding until such time as the young had fledged or the nest was no longer active.
- ii The identification and retention of Heras fenced Biodiversity Protection Zones during construction, as previously specified, would protect retained hedgerow and hedgerow tree habitats where birds also have the potential to nest during construction.
- iii The detail of mitigation measures for birds are expected to be captured in a CEMP for the Scheme, secured through planning condition pursuant to a Reserved Matters application.

4.8.2 Operation Impacts and Mitigation

Ground Nesting Birds (Skylark and Meadow Pipit)

- iv Six confirmed and three probable breeding territories of skylark and one probable breeding territory for meadow pipit were identified within the Site, with skylark breeding territories spread across the whole Site area. Skylark and meadow pipit are a ground nesting species and are red and amber listed respectively, and therefore of national and local conservation concern. The Scheme proposes to permanently remove the existing cropland nesting habitat within the Site. Whilst extensive areas of open wildflower meadow are proposed to be created within the Scheme, the total area of new habitat to be created is notably less than the existing cropland habitats and would not therefore support nine breeding territories of skylark and one breeding territory of meadow pipit. Anthropological disturbance during operation of the Scheme would, furthermore, be a significant limiting factor to skylarks and meadow pipits successfully ground nesting within the open areas of wildflower meadow.
- v In consideration of this assessment, it would not be possible to compensate for the loss of skylark and meadow pipit breeding territories within the Site, therefore, a significant negative impact is expected to occur to skylarks at the Site level, given the number of breeding territories identified across the Site (n=9). The impacts meadow pipit are not considered to be significant, given that only one (probable) breeding territory was identified within the Site with activity identified on one survey occasion only.

Non-Ground Nesting Birds

- vi The Scheme proposes to convert the dominant arable cropland within the Site to a habitat pattern post-development comprising extensive areas of tall wildflower meadows, SuDS features and native tree, shrub and scrub planting, which would provide enhanced foraging and nesting opportunities for the non-ground nesting local bird population.
- vii In respect to yellowhammer, which is also a bird of local conservation concern, suitable habitat for this species has the potential to be created within tall grassland strips along retained hedgerows and around newly planted tree and shrub planting.

4.8.3 Residual Effects and Compensation Measures

Ground Nesting Birds (Skylark and Meadow Pipit)

- viii A significant residual effect is expected to occur to skylarks because of the Scheme therefore compensation should be undertaken. It would not be possible to fully compensate for the loss of skylark breeding territories within the Scheme boundary.
- ix A potential offsite solution to compensate for the loss of skylark territories could therefore be discussed with the LPA in the first instance to determine whether an appropriate Developer Contribution Scheme exists and if this is the

case, subsequent contributions could be secured by condition pursuant to a Reserved Matters application. An offsite solution undertaken in other parts of the country such as Essex, is the creation and management of AB4 skylark plots within cropland near to the development site, through a legal agreement with the landowner. The skylark plots comprise undrilled patches within wheat crops which provide foraging (and potentially nesting) opportunities for the skylark population. Typically, a ratio of 2:1 plots are provided, therefore the loss of nine breeding territories for skylark would require 18 skylark plots to be created.

x Although impacts to ground nesting meadow pipit have not been determined to be significant, compensation for the loss of one meadow pipit breeding territory could be explored, should a DCS exist and should this DSC allow for compensation measures for meadow pipit.

Non-Ground Nesting Birds

xi The extensive areas of open green space and habitat creation proposed within the Scheme is considered to provide a significant positive effect at the Site level for the non-ground nesting local bird population.

4.9 Otters

4.9.1 Construction Impacts and Mitigation

i The ditch and associated hedgerow network within the Site have the potential to be utilised by otters for overland dispersal, although most likely transient in occurrence. In event that otters may pass through the Site during construction, the protection measures set out for habitats (Biodiversity Protection Zones) and badgers (prevention of trapping/poisoning) would mitigate residual impacts to otters.

4.9.2 Operation Impacts and Mitigation

ii No significant negative impacts to otters are expected to occur during the operation of the Scheme.

4.9.3 Residual Effects and Compensation Measures

iii No significant residual effects are expected to occur to otters and no compensation is proposed.

4.10 Badgers

4.10.1 Construction Impacts and Mitigation

i The current baseline for the Site has determined no badger setts to be present therefore no construction impacts to badger setts are currently expected. However, badgers are a highly mobile species and the status of the Site in respect to the presence of badger setts has the potential to change over time.

ii Pre-commencement badger surveys would therefore be undertaken prior to the start of construction to identify whether the status of the Site in respect to badger setts has changed. If badger setts are identified, appropriate avoidance and/or mitigation measures would be implemented, including a requirement for derogation licences as appropriate, to negate impacts to badgers and their setts.

iii The following Precautionary Work Measures would additionally be undertaken to prevent harm to badgers and disturbance impacts during construction:

- Incorporation of Heras fenced Biodiversity Protection Zones along and around retained habitats where badger setts have the potential to be present, informed by the Arboriculturist's report and Ecologist's advice for general tree and hedgerow protection;
- Ramps would be created (mammal ladders) by edge-profiling excavations or by using planks to allow mammal escape;
- Open pipework greater than 200mm external diameters would be capped off at the end of each working day;
- Artificial lighting used during construction would be directed away from boundary habitats and focussed on internal work areas only;
- Chemicals would be stored in secure compounds; and
- Spillages would immediately be treated with spill kits.

iv The detail of mitigation measures for badgers are expected to be captured in a CEMP for the Scheme, secured through planning condition pursuant to a Reserved Matters application.

4.10.2 Operation Impacts and Mitigation

v The Scheme proposes to convert the dominant cropland within the Site to a habitat pattern post-development comprising extensive areas of tall wildflower meadows, SuDS features and native tree, shrub and scrub planting, which would provide enhanced foraging and sett building opportunities for the local badger population.

4.10.3 Residual Effects and Compensation Measures

vi No significant residual effects are expected to occur to badgers and no compensation is proposed.

4.11 Other Notable Species

4.11.1 Construction Impacts and Mitigation

i Site habitats impacted during construction may have the potential to support common toads, hedgehogs, brown hares and harvest mice.

ii Potential construction impacts to common toads would be mitigated for as part of the Precautionary Works Measures provided for reptiles.

iii To reduce the potential for negative impacts to hedgehogs, harvest mice and brown hares during Site clearances, appropriate mitigation measures such as a two-stage cut of vegetation would be implemented, allowing animals to naturally disperse prior to full site clearances. Where such animals are found during works, they would be left to disperse of their own accord.

iv The detail of mitigation measures for the other identified notable species are expected to be captured in a CEMP for the Scheme, secured through condition pursuant to a Reserved Matters application.

4.11.2 Operation Impacts and Mitigation

v The Scheme proposes to convert the dominant cropland within the Site to a habitat pattern post-development comprising extensive areas of tall wildflower meadows, SuDS features and native tree, shrub and scrub planting, which would provide enhanced foraging, breeding and shelter opportunities common toads, hedgehogs, harvest mice and brown hares.

4.11.3 Residual Effects and Compensation Measures

vi No significant residual effects are expected to occur to other notable species and no compensation is proposed.

4.12 Proposed Enhancement Measures

i The following enhancement measures are proposed to comply with national and local planning policy, current legislation and good practice, the detail of which is expected to be secured through planning condition, pursuant to a Reserved Matters application.

- The installation of a variety of bat, bird and insect boxes on retained site trees;
- The creation of hedgehog highways within private gardens, to allow passage for these mammals and create foraging opportunities within the residential areas;
- The strategic installation of hedgehog domes/shelters under existing hedgerow features;
- The installation of swift, house sparrow, starling and house martin boxes and bat bricks on appropriate aspects of dwellings within the residential areas;
- The creation of bee banks and bee posts within the Country Park/SANG;
- The creation of herptile hibernacula within the Country Park/SANG and/or around attenuation areas;
- The creation of grass arising retention areas to provide egg laying sites for grass snake, such as permanent wooden structures, within the Country Park/SANG and/or around attenuation areas (consideration should be given to the potential for vandalism of such features, such as fires); and
- Measures to prevent amphibians becoming trapped within gully pots (i.e. dropped kerbs, Ecokerbs etc.).

5 Outline Biodiversity Impact Assessment

5.1 Overview

- i An Outline Biodiversity Impact Assessment (BIA), based on the submitted Development Framework Plan and Outline Landscape Strategy, has been undertaken. This involves making a comparison between the biodiversity value of habitats present within the Site prior to development (the 'baseline') and the predicted biodiversity value of habitats following the completion of the Scheme ('post development'). The comparison is undertaken in terms of 'biodiversity units', with a 'biodiversity metric' providing the mechanism to allow biodiversity values to be calculated and compared.
- ii The BIA Methodology is provided in Appendix 4 which utilised the DEFRA Statutory Metric.
- iii The Metric spreadsheet has been submitted separately to this EcIA report. An extract of the Metric Headline Results is provided in Appendix 6. Baseline and Post-Development Visualization Plans are provided in Figures 10 & 11.
- iv The Metric considered the Area Habitat, Hedgerow and Watercourse modules. Only hedgerow ditch D2 was included within the Watercourse module, as all other hedgerow ditches were found to be dry and/or damp during spring and summer site walkovers. Modular River Surveys (MoRPH) are not required for hedgerow ditches.
- v The submitted Arboricultural Assessment report has identified no veteran or ancient trees within the Site.
- vi The red line planning boundary for the Site was updated in February 2025, incorporating minor areas of highway to the east and south-east comprising Basingstoke Road and Back Lane. No field surveys of the additional red line boundary areas have been undertaken to date, however broad habitats contained therein have been assessed using Google Earth Street View and comprise native hedgerows with trees, developed land; sealed surface and a very minor area of modified grassland, all within the highway boundary (H17-H20). In respect of this BIA, a precautionary approach has been undertaken, and the additional hedgerow and grassland habitats have been condition assessed as moderate.

5.2 BIA Results

5.2.1 Baseline

- i The baseline biodiversity value of the Site is as follows:
 - 80.04 Habitats Units.
 - 27.02 Hedgerow Units.
 - 1.17 Watercourse Units.

5.2.2 Post-Development

- ii Post development, the Scheme would result in the following:
 - A net gain of 12.82 Habitat Units. This equates to a 16.02% biodiversity net gain.
 - A net gain of 4.53 Hedgerow Units. This equates to a 16.76% biodiversity net gain.
 - A net gain of 0.78 Watercourse Units. This equates to a 66.15% biodiversity net gain.
- iii The net gain in Habitat Units is because of the extensive area of open green space proposed within the Scheme (such as the Country Park/SANG), converted from low distinctiveness cropland to a habitat pattern of medium distinctiveness SuDS features, ponds, scrub and tree planting, neutral wildflower grassland and broadleaved woodland.
- iv The net gain in Hedgerow Units is because of low impacts to existing Site hedgerows and new native and ornamental hedgerows planted within the Scheme, as well as existing hedgerows enhanced.
- v The net gain in Watercourse Units can delivered by enhancing hedgerow ditch D2, largely through aquatic plantings.
- vi The mandatory requirement for 10% BNG has been achieved for the Scheme and the Trading Rules have been met.

5.2.1 SANG Provision

vii This Scheme is required to deliver SANG as part of its wider ecological mitigation. DEFRA guidance has identified that SANG provision cannot provide the entirety of BNG for any development scheme²⁵. This guidance states that SANG provision must only contribute 'in part' and can only serve to secure $\leq 100\%$ (100% represents the current site baseline) of the 110% BNG requirement.

viii To facilitate this, RammSanderson have undertaken a strategic review of the overarching Scheme and separately identified the biodiversity unit provision within the SANG in isolation via GIS mapping and a separate Metric. In doing so, it is confirmed that the SANG biodiversity unit delivery for Habitats, Hedgerows and Watercourses is below 100% and the total biodiversity unit contribution for the Scheme and is therefore policy compliant.

ix Table 11 below provides a summary breakdown of the Scheme to demonstrate the relative contribution of the SANG provision to the Scheme' total BNG provision.

Table 11: SANG BNG Provision to Total Scheme BNG Provision

	Baseline Units (100%)	Units Requirement to Achieve 110%	Actual Unit Delivery	Unit Contribution of SANG in Isolation	Comments
Habitats	80.04	88.05	92.86 (16.02%)	43.13	SANG delivers below the 100% position and is therefore policy compliant.
Hedgerows	27.03	29.73	31.56 (16.76%)	1.41	SANG delivers below the 100% position and is therefore policy compliant.
Watercourses	1.17	1.29	1.95 (66.15%)	0.00	SANG delivers below the 100% position and is therefore policy compliant.

5.2.2 Recommendations

x During the detailed design phase of the Scheme pursuant to a Reserved Matters application, opportunities to increase BNG scores should be explored, particularly in respect to the balance between amenity and biodiversity habitats, such as modified grassland and other neutral grassland.

xi Compliance with BNG requirements as enacted through the Environment Act 2021 should be determined through the standard pre-commencement biodiversity gain planning condition (the 'biodiversity gain condition'). This would require prior to the start of construction:

- The submission of a Biodiversity Gain Plan to the LPA;
- A planning mechanism to secure the on-site BNG for the minimum 30-year period required by the Environment Act 2021; and
- The submission of a Habitat Management and Monitoring Plan to the LPA, to secure the management of on-site habitats for the minimum 30-year period.

²⁵ <https://www.gov.uk/guidance/what-you-can-count-towards-a-developments-biodiversity-net-gain-bng>

6 Conclusion

i This EcIA is based on a desk study and ecological surveys undertaken between March to September 2024. The scope of the surveys was based on the Zol of the Scheme and included habitat surveys and condition assessments, as well as breeding bird, bat, otter, water vole and badger surveys. The ecological features present within the Survey Area are shown in Figures 1 to 12. Once all relevant available baseline information was obtained, the significance of effects (both positive and negative) on IEFs was assessed.

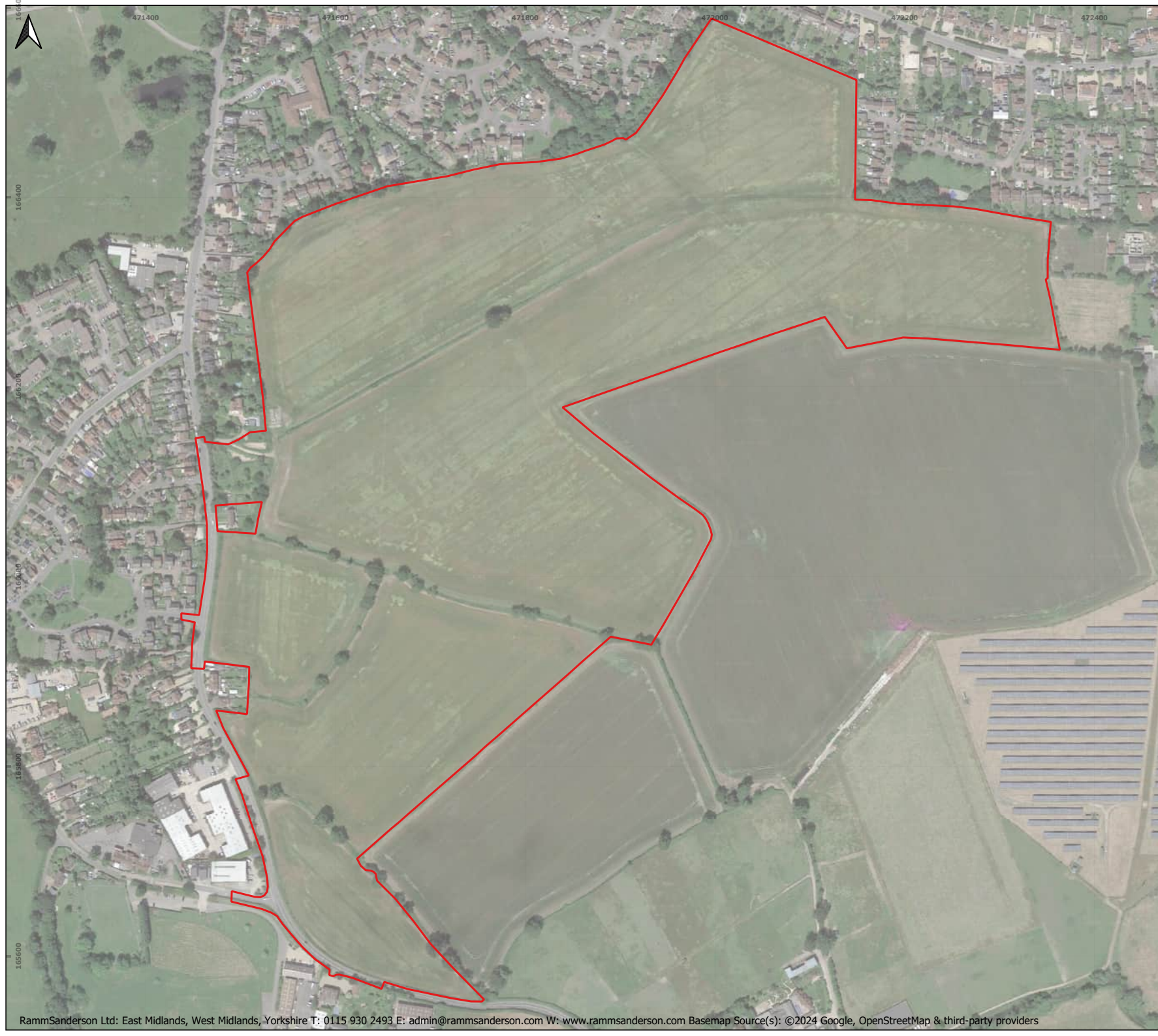
ii Avoidance, mitigation, and compensation measures identified in this EcIA will be incorporated into the detailed design proposals for the Scheme and implemented as part of the overall development of the Scheme. The Scheme has maximised opportunities to incorporate and enhance biodiversity within the proposals wherever possible.

iii The Scheme has the potential to result in a biodiversity net gain of 16.02% Habitat Units, 16.76% Hedgerow Units and 66.15% Watercourse Units, all of which can be delivered on Site. The potential to maximise net gain within the redline boundary of the Scheme has been explored, at this outline stage, based on the Scheme's design parameters and targeting realistic and deliverable habitats as part of the Scheme's soft landscaping. The mandatory requirement for 10% BNG has the potential to be achieved and the Trading Rules to be met.

iv Taking avoidance, mitigation and compensation measures into account, the Scheme conforms in respect of biodiversity to The Environment Act 2021 requirement for mandatory biodiversity net gain, the National Planning Policy Framework 2024 (NPPF) Section 15 (Conserving and enhancing the natural environment), Wokingham Borough Local Development Framework Adopted Core Strategy Development Plan Document January 2010 and where appropriate weight is carried, the DRAFT Wokingham Borough Local Plan Update 2023 – 2040 Proposed Submission Plan.

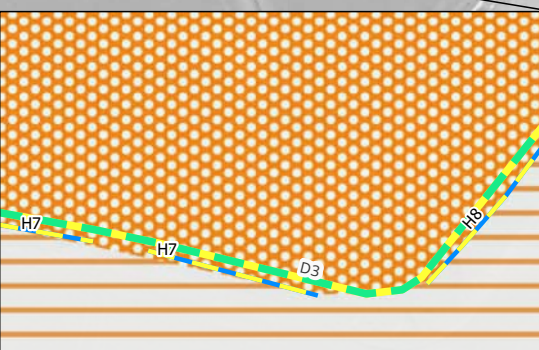
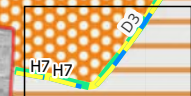
Appendix 1: Figures

Figure 1: Site Location and Context Plan



RammSanderson		
Title: Site Context Plan		
Project: Spencers Wood, Wokingham		
Client: Richborough Estates Limited		
Date: 07/03/2025	Fig:	Author: LG/AH
A4 Scale: 1:5200	ID: RSE_7728_STC_0325_V2R1	

Figure 2: UK Habitats Plan



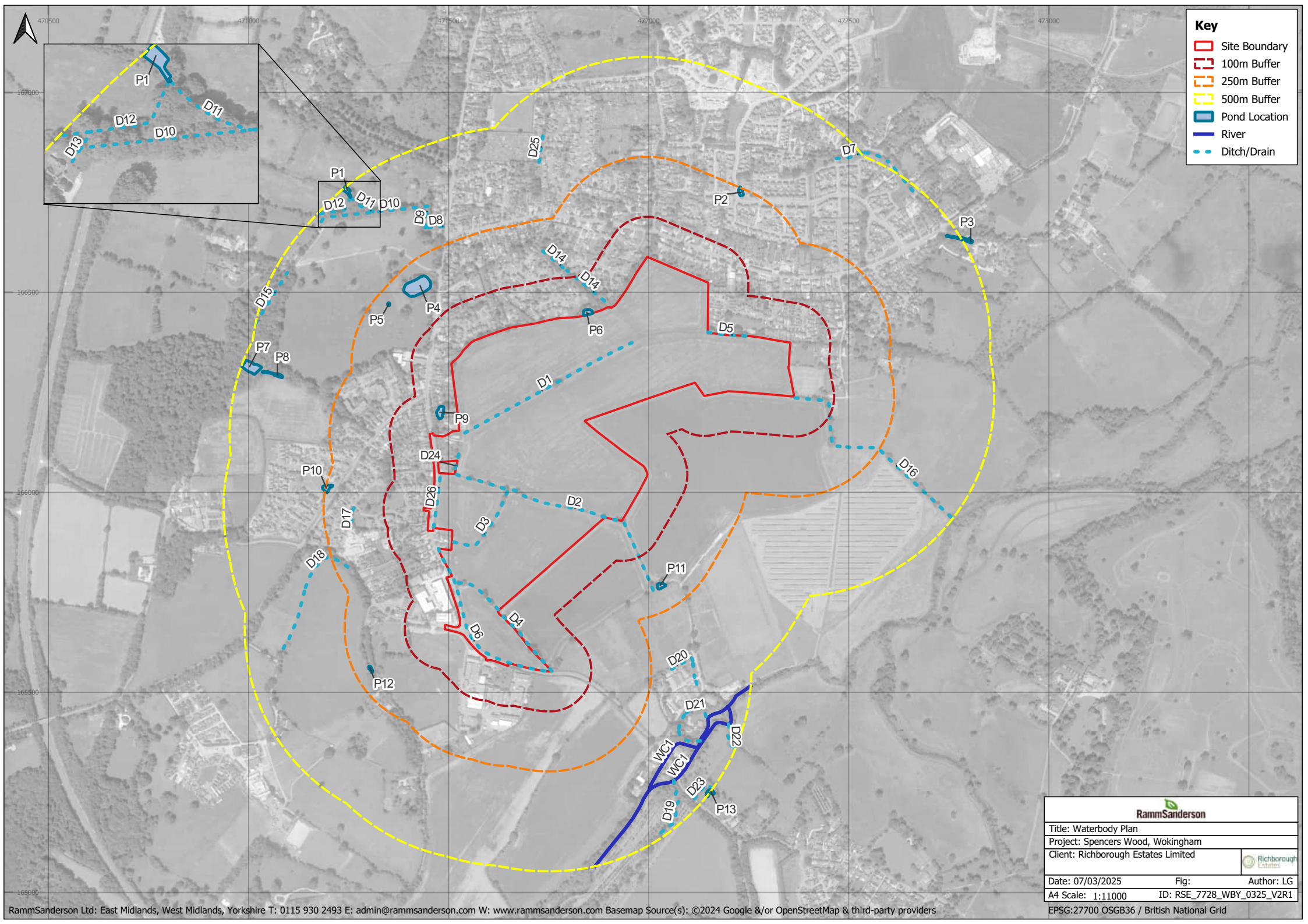
Key

- Site Boundary
- c1c: Cereal crops
- c1d: Non cereal crops
- g4: Modified grassland
- h3d: Bramble scrub
- u1b: Developed land; sealed surface
- u1f: Sparsely vegetated urban land
- Not surveyed/accessible
- h2a: Native hedgerow
- h2a6: Other native hedgerow
- h2b: Non-native and ornamental hedgerow
- h2a6 50: Ditches
- h2a6 200: Tree (Large rural tree)
- h3d 200: Tree (Medium rural tree)
- h3d 200: Tree (Small rural tree)

Title: UKHabs Habitat Plan		
Project: Spencers Wood, Wokingham		
Client: Richborough Estates Limited		
Date: 07/03/2025	Fig:	Author: AH
Habitat MMU: 25m ²	Linear MMU: 5m (length)	
A4 Scale: 1:5200	ID: RSE_7728_UKH_0325_V2R1	

EPSG:27700 OSGB36 / British National Grid

Figure 3: Waterbody Plan



Key

Site Boundary

100m Buffer

250m Buffer

500m Buffer

Pond Location

River

Ditch/Drain

**RammSanderson**

Title: Waterbody Plan

Project: Spencers Wood, Wokingham

Client: Richborough Estates Limited



Richborough
Estates

Date: 07/03/2025

Fig:

Author: LG

A4 Scale: 1:11000

ID: RSE_7728_WBY_0325_V2R1

EPSSG:27700 OSGB36 / British National Grid

Figure 4: Statutory Designated Sites Plan

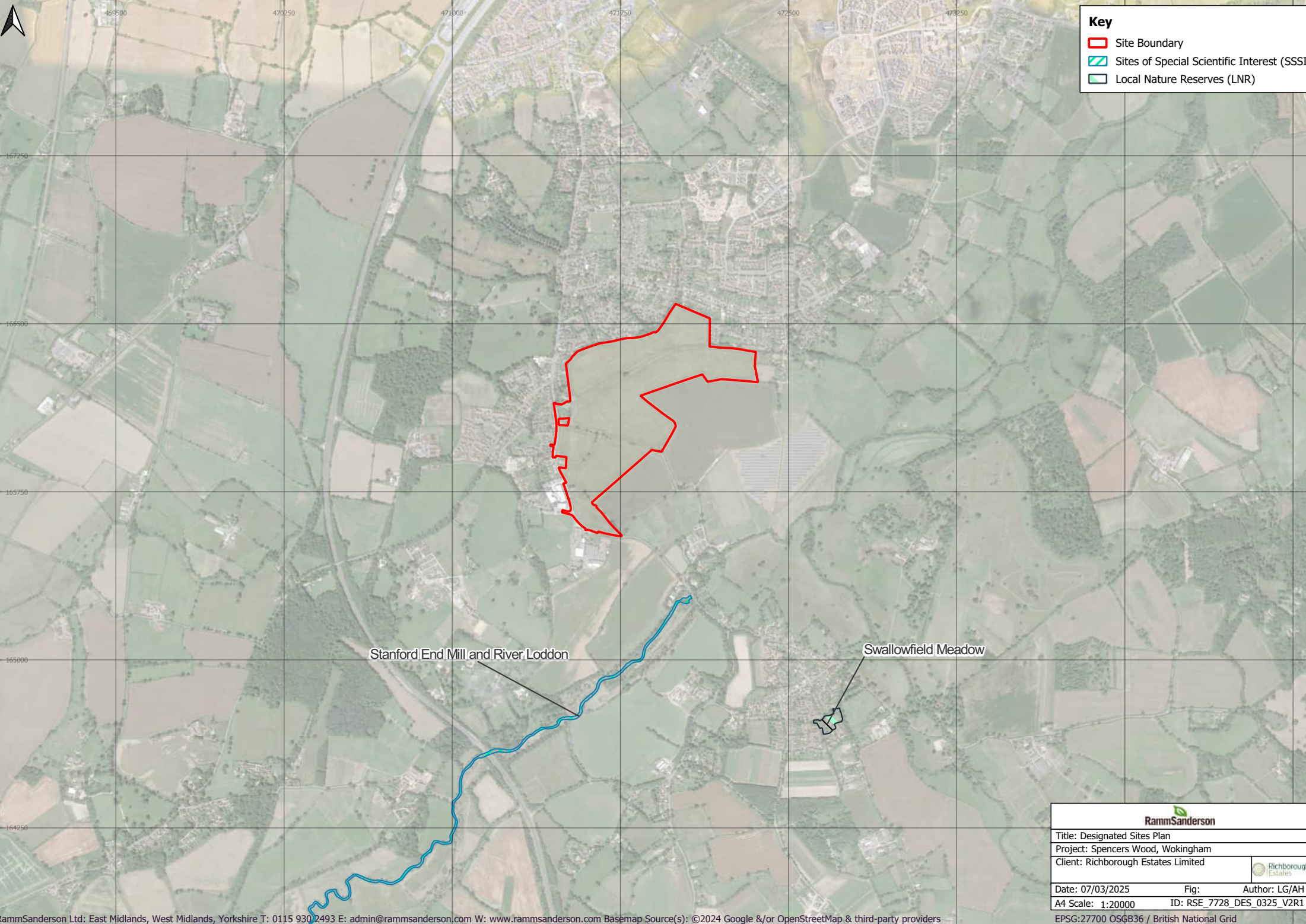


Key

Site Boundary

Sites of Special Scientific Interest (SSSI)

Local Nature Reserves (LNR)



Title: Designated Sites Plan

Project: Spencers Wood, Wokingham

Client: Richborough Estates Limited

Date: 07/03/2025

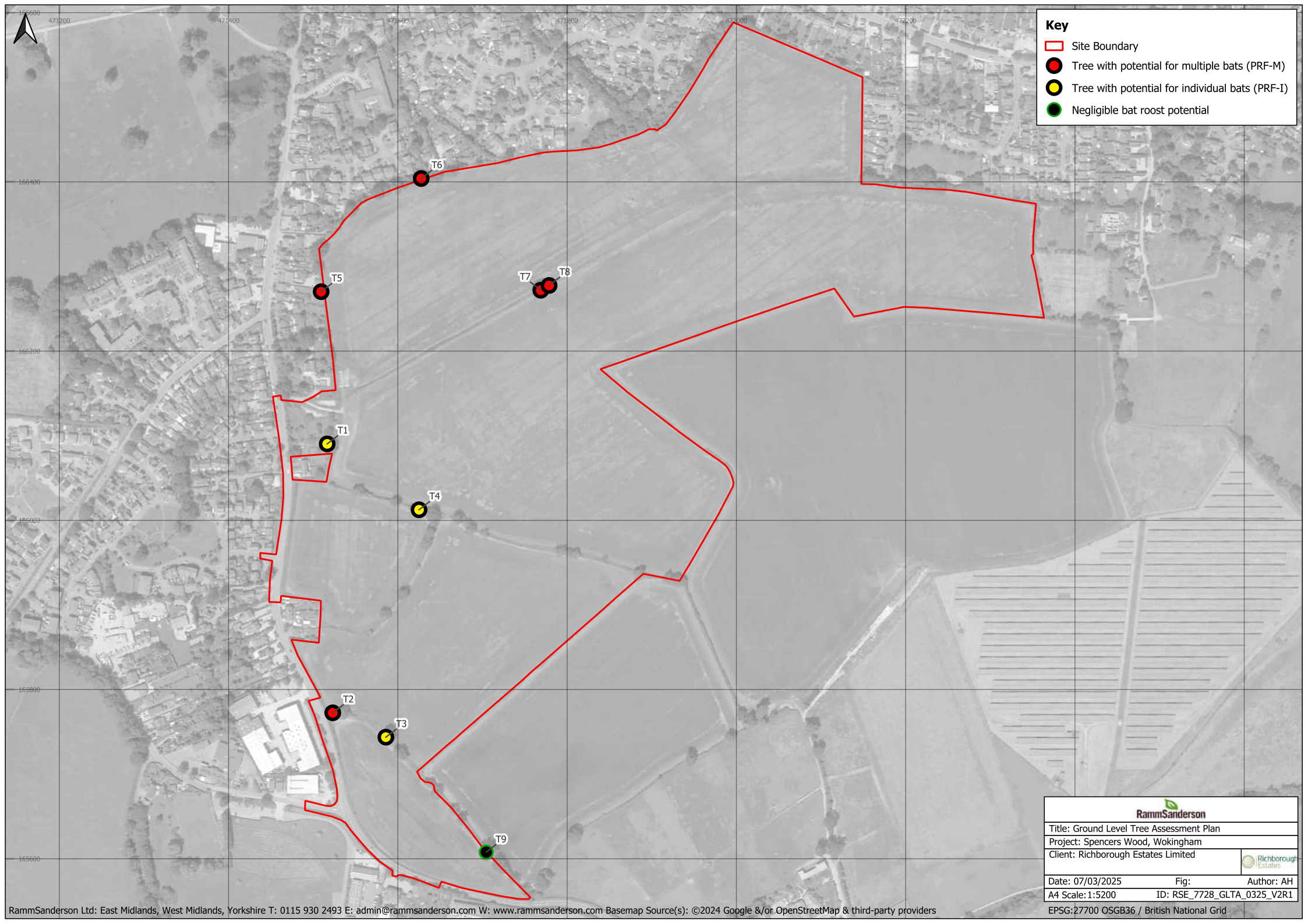
Fig:

Author: LG/AH

A4 Scale: 1:20000

ID: RSE_7728_DES_0325_V2R1

Figure 5: PRF Trees Plan (Roosting Bats)



Key

Site Boundary

Tree with potential for multiple bats (PRF-M)

Tree with potential for individual bats (PRF-I)

Negligible bat roost potential

RammSanderson

Title: Ground Level Tree Assessment Plan

Project: Spencers Wood, Wokingham

Client: Richborough Estates Limited

Date: 07/03/2025

Fig:

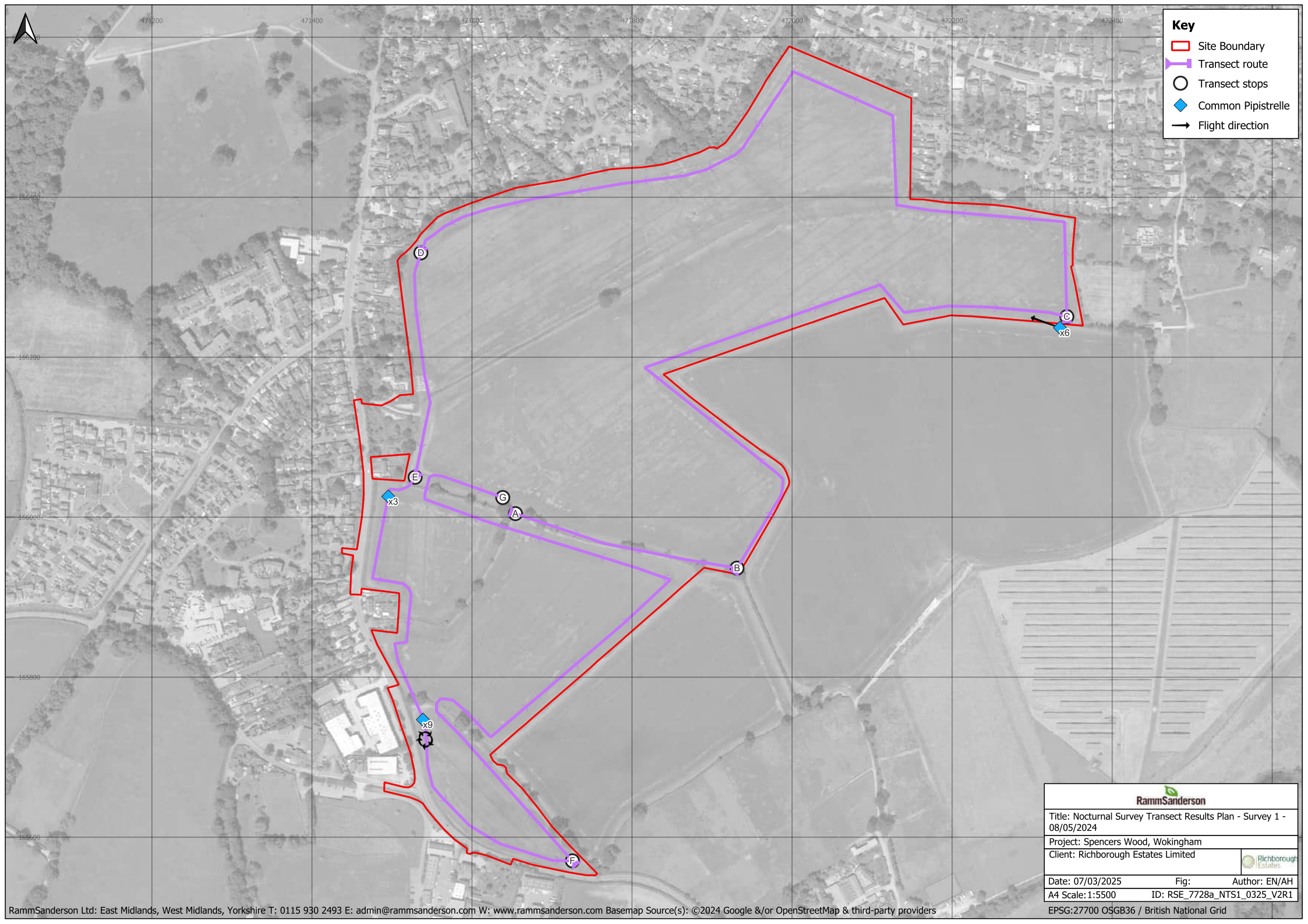
Author: AH

A4 Scale: 1:5200

ID: RSE_7728_GLTA_0325_V2R1

Richborough Estates

Figure 6: May 2024 Walked Bat Transect Survey



Key

- Site Boundary
- Transect route
- Transect stops
- Common Pipistrelle
- Flight direction



RammSanderson

Title: Nocturnal Survey Transect Results Plan - Survey 1 - 08/05/2024

Project: Spencers Wood, Wokingham

Client: Richborough Estates Limited

Date: 07/03/2025

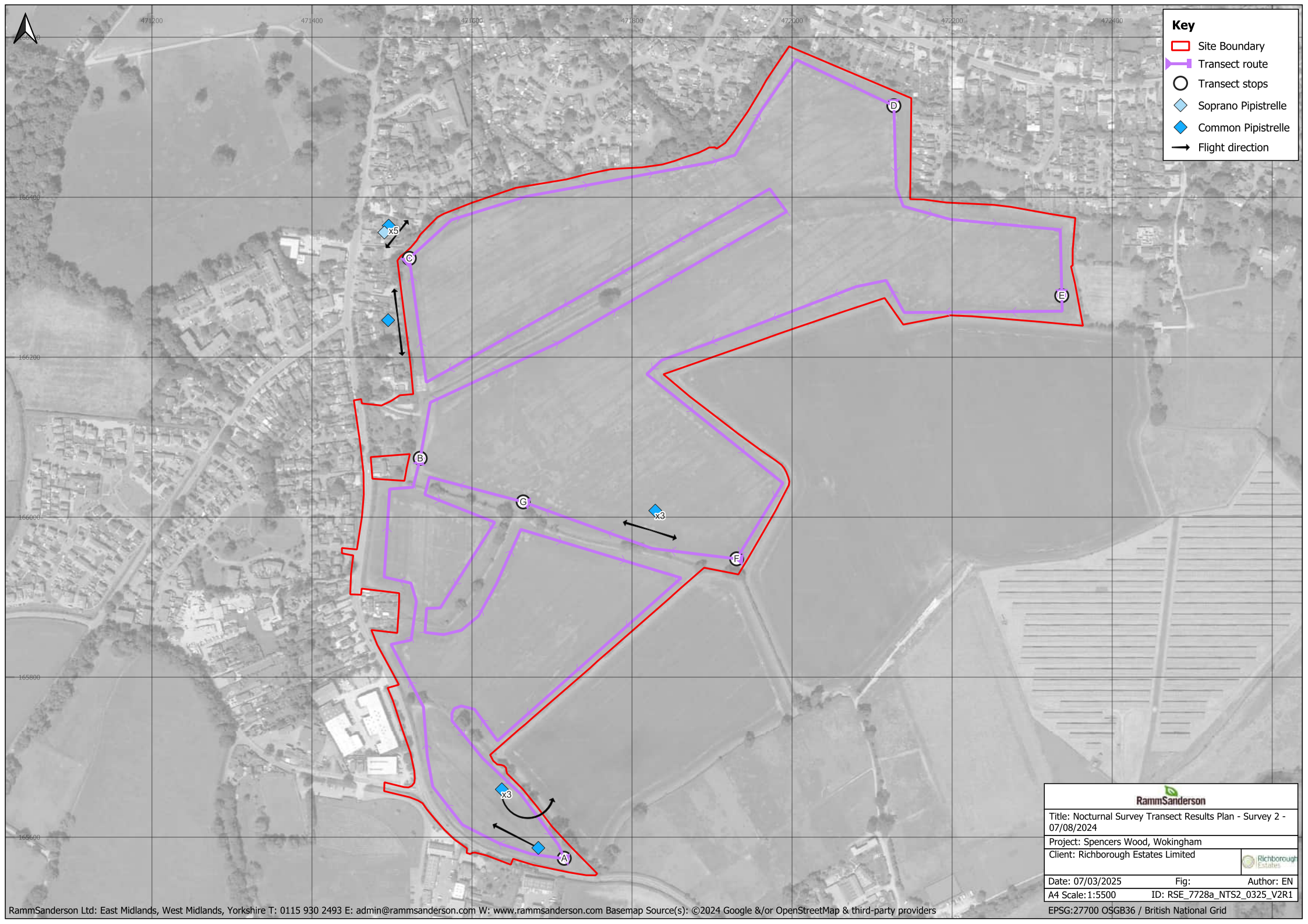
A4 Scale: 1:5500

Fig:

ID: RSE_7728a_NTS1_0325_V2R1

Author: EN/AH

Figure 7: August 2024 Walked Bat Transect Surveys



Key

Site Boundary

Transect route

Transect stops

Soprano Pipistrelle

Common Pipistrelle

Flight direction

RammSanderson

Title: Nocturnal Survey Transect Results Plan - Survey 2 - 07/08/2024

Project: Spencers Wood, Wokingham

Client: Richborough Estates Limited

Richborough Estates

Date: 07/03/2025

Fig:

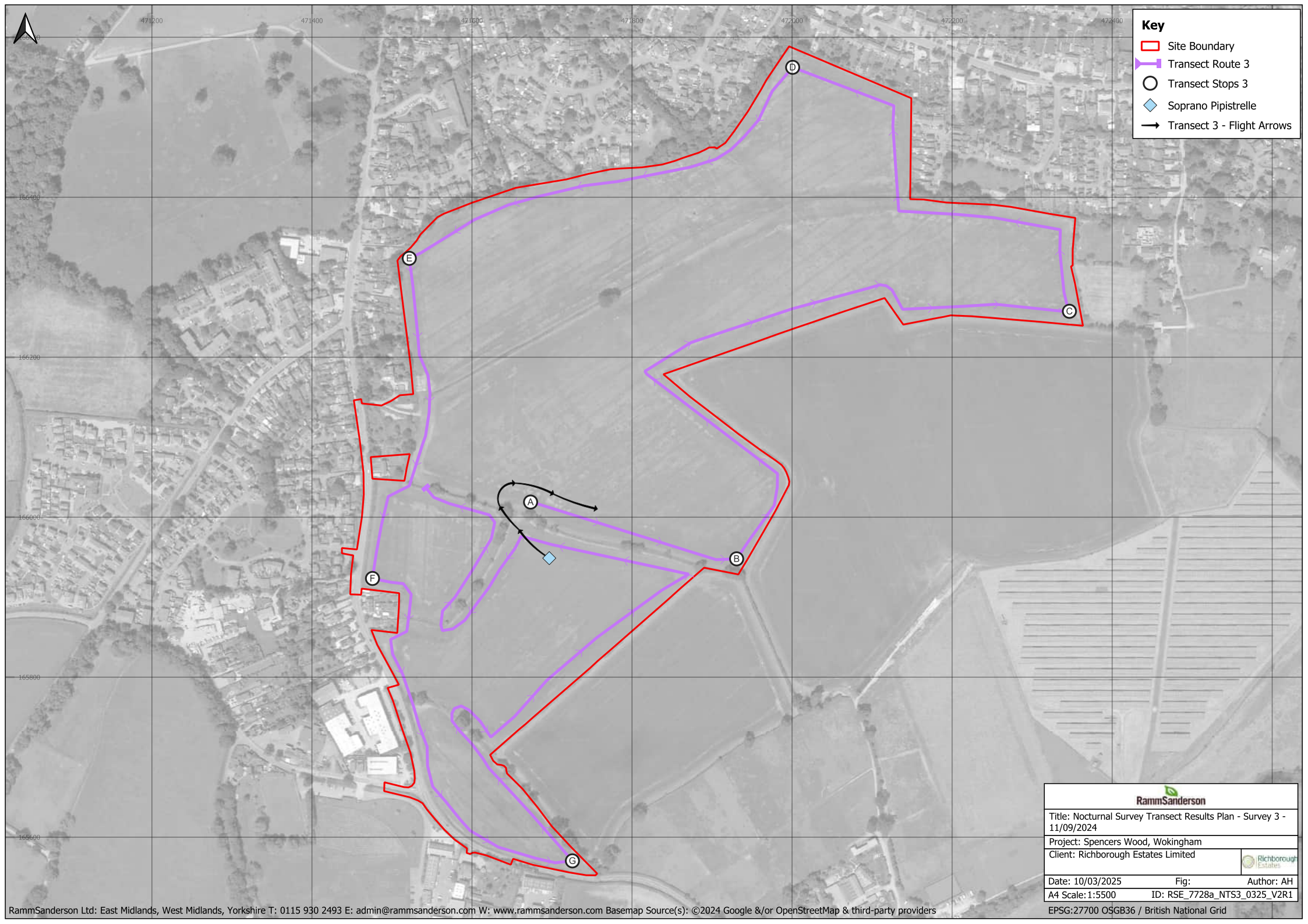
Author: EN

A4 Scale: 1:5500

ID: RSE_7728a_NTS2_0325_V2R1

EPSG:27700 OSGB36 / British National Grid

Figure 8: September 2024 Walked Bat Transect Surveys



Key

Site Boundary

Transect Route 3

Transect Stops 3

Soprano Pipistrelle

Transect 3 - Flight Arrows

RammSanderson

Title: Nocturnal Survey Transect Results Plan - Survey 3 - 11/09/2024

Project: Spencers Wood, Wokingham

Client: Richborough Estates Limited

Date: 10/03/2025

Fig:

Author: AH

A4 Scale: 1:5500

ID: RSE_7728a_NTS3_0325_V2R1

Richborough Estates

Figure 9: Breeding Bird Plans (x6 Surveys)



Key

Site Boundary

Flying in and landing

Flying in and landing

Flying away (from being perched)

Two separate birds singing

Probable registration of the same bird

Juvenile with parent(s)

Call

Alarm Call

Song

sp_abbrev	species
WR	Wren
R.	European Robin
C.	Carrion Crow
PH	Common Pheasant
WP	Common Woodpigeon
JD	Eurasian Jackdaw
GR	European Greenfinch
KT	Red Kite
RL	Red-legged Partridge
B.	Common Blackbird
MG	Magpie
RO	Rook
LI	Common Linnet
D.	Dunnock
BT	Blue Tit
S.	Skylark
Y.	Yellowhammer
GO	European Goldfinch
SC	Stonechat
SG	Common Starling
ST	Song Thrush
CG	Greater Canada Goose
CD	Eurasian Collared Dove
CC	Common Chiffchaff
GT	Great Tit
RE	Redwing
MP	Meadow Pipit
CH	Chaffinch
CA	Great Cormorant
J.	Eurasian Jay

Title: Breeding Bird Survey Plan - Survey 1 - 14/03/2024 - Sheet a

Project: Spencers Wood, Wokingham

Client: Richborough Estate Limited

Date: 07/03/2025

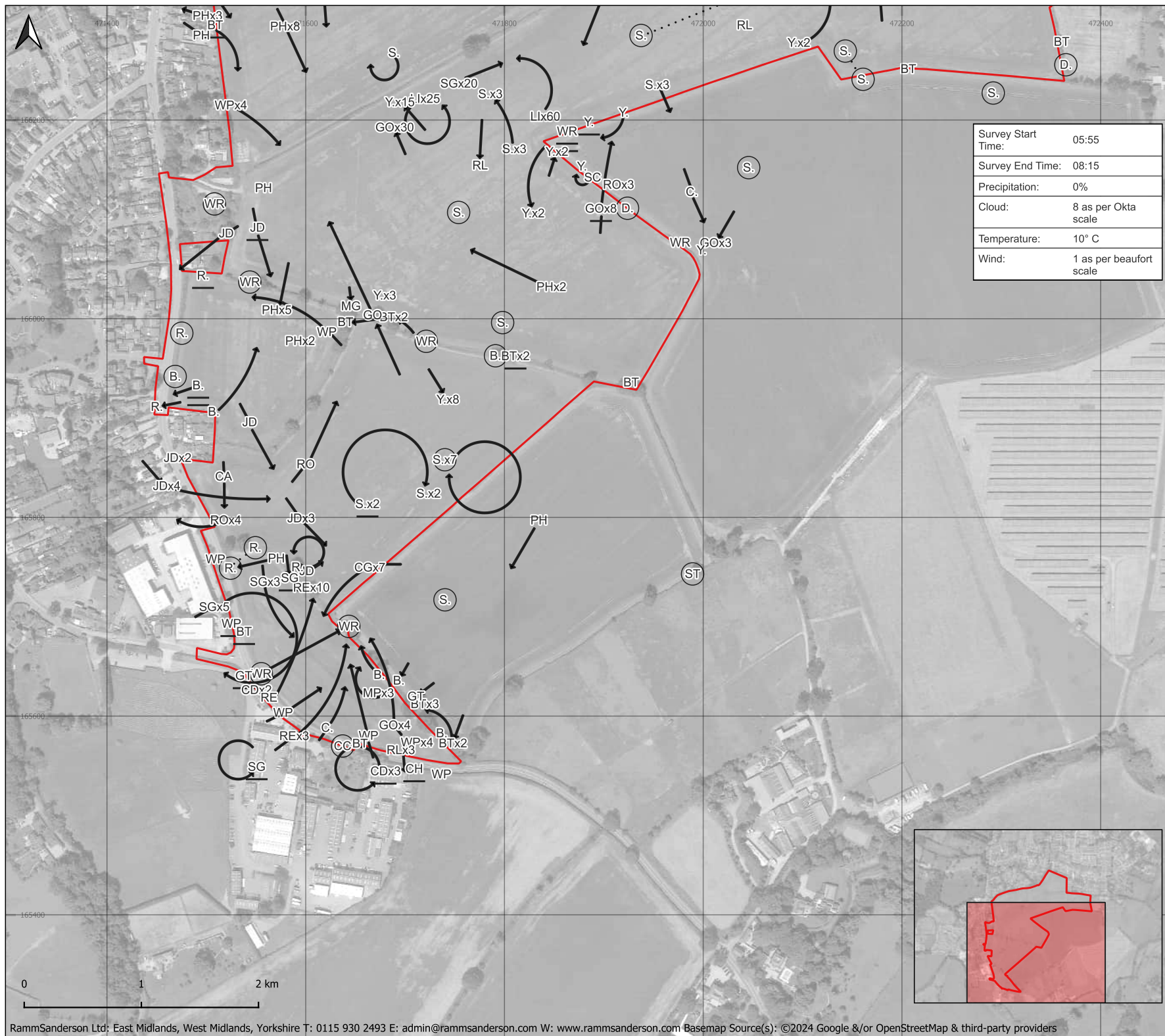
Fig:

Author: EN/AH

A4 Scale: 1:5000

ID: RSE_7728_BBS1_0325_V2R1

EPSG:27700 OSGB36 / British National Grid



Key

Flying in and landing

Flying in and landing

Flying away (from being perched)

Two separate birds singing

Probable registration of the same bird

Juvenile with parent(s)

Call

Alarm Call

Song

sp_abbrev	species
WR	Wren
R.	European Robin
C.	Carrion Crow
PH	Common Pheasant
WP	Common Woodpigeon
JD	Eurasian Jackdaw
GR	European Greenfinch
KT	Red Kite
RL	Red-legged Partridge
B.	Common Blackbird
MG	Magpie
RO	Rook
LI	Common Linnet
D.	Duncock
BT	Blue Tit
S.	Skylark
Y.	Yellowhammer
GO	European Goldfinch
SC	Stonechat
SG	Common Starling
ST	Song Thrush
CG	Greater Canada Goose
CD	Eurasian Collared Dove
CC	Common Chiffchaff
GT	Great Tit
RE	Redwing
MP	Meadow Pipit
CH	Chaffinch
CA	Great Cormorant
J.	Eurasian Jay

Title: Breeding Bird Survey Plan - Survey 1 - 14/03/2024 - Sheet b

Project: Spencers Wood, Wokingham

Client: Richborough Estate Limited

Date: 07/03/2025

Fig:

Author: EN/AH

A4 Scale: 1:5000

ID: RSE_7728_BBS1_0325_V2R1

EPSG:27700 OSGB36 / British National Grid

RammSanderson Ltd: East Midlands, West Midlands, Yorkshire T: 0115 930 2493 E: admin@rammsanderson.com W: www.rammsanderson.com Basemap Source(s): ©2024 Google &/or OpenStreetMap & third-party providers

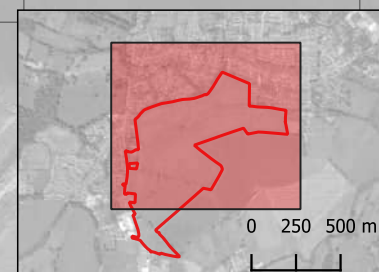


Survey Start Time:	06:46
Survey End Time:	10:30
Precipitation:	0%
Cloud:	8 as per Okta scale
Temperature:	12° C
Wind:	1 as per Beaufort scale

Key

- Site Boundary
- Flying in and landing
- Flying in and landing
- Flying away (from being perched)
- Two separate birds singing
- Probable registration of the same bird
- Call
- Alarm Call
- Song
- Aggressive encounter
- Male
- Female
- Male and Female

sp_abbrev	species
B.	Common Blackbird
BC	Blackcap
BT	Blue Tit
C.	Carrian Crow
CA	Great Cormorant
CC	Common Chiffchaff
CD	Eurasian Collared Dove
CT	Coal Tit
D.	Dunnock
GO	European Goldfinch
GR	European Greenfinch
GT	Great Tit
HS	House Sparrow
J.	Eurasian Jay
JD	Eurasian Jackdaw
KT	Red Kite
LI	Common Linnet
MA	Mallard
MG	Maggie
PH	Common Pheasant
PW	Pied Wagtail (Motacilla alba yarrellii)
R.	European Robin
RB	Reed Bunting
RL	Red-legged Partridge
RO	Rook
S.	Skylark
SC	Stonechat
SD	Stock Dove
SG	Common Starling
ST	Song Thrush
WH	Common Whitethroat
WP	Common Woodpigeon
WR	Wren
WW	Willow Warbler
Y.	Yellowhammer



Title: Breeding Bird Survey Plan - Survey 2 - 11/04/2024 - Sheet a		
Project: Spencers Wood, Wokingham		
Client: Richborough Estate Limited		
Date: 07/03/2025	Fig:	Author: EN/AH
A4 Scale: 1:4500	ID: RSE_7728_BBS2_0325_V2R1	
EPSG:27700 OSGB36 / British National Grid		



Key

- Site Boundary
- Flying in and landing
- Flying in and landing
- Flying away (from being perched)
- Two separate birds singing
- Probable registration of the same bird
- Call
- Alarm Call
- Song
- Aggressive encounter
- Male
- Female
- Male and Female

sp_abbrev	species
B.	Common Blackbird
BC	Blackcap
BT	Blue Tit
BZ	Common Buzzard
C.	Carrian Crow
CC	Common Chiffchaff
CD	Eurasian Collared Dove
CH	Chaffinch
GO	European Goldfinch
GR	European Greenfinch
GT	Great Tit
H.	Grey Heron
HS	House Sparrow
JD	Eurasian Jackdaw
LB	Lesser Black-backed Gull
LI	Common Linnet
LT	Long-tailed Tit
MG	Magpie
PH	Common Pheasant
PW	Pied Wagtail (Motacilla alba yarrellii)
R.	European Robin
RO	Rook
S.	Skylark
ST	Song Thrush
WH	Common Whitethroat
WP	Common Woodpigeon
WR	Wren
Y.	Yellowhammer

Title: Breeding Bird Survey Plan - Survey 3 - 09/05/2024 - Sheet a

Project: Spencers Wood, Wokingham

Client: Richborough Estate Limited

Date: 07/03/2025 Fig: Author: EN/AH

A4 Scale: 1:4500 ID: RSE_7728_BBS3_0325_V2R1

EPSSG:27700 OSGB36 / British National Grid



Survey Start Time:	04:17
Survey End Time:	07:56
Precipitation:	0%
Cloud:	3 as per Okta scale
Temperature:	9° C

Key

Site Boundary

Flying in and landing

Flying in and landing

Flying away (from being perched)

Two separate birds singing

Probable registration of the same bird

Call

Alarm Call

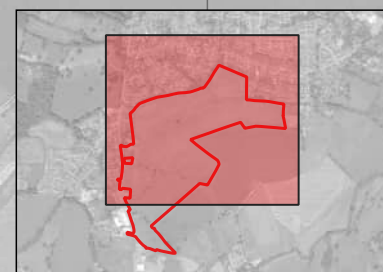
Song

Foraging/Circling Behaviour

Agressive encounter

Male

sp_abbrev	species
B.	Common Blackbird
BC	Blackcap
BH	Black-headed Gull
BT	Blue Tit
C.	Carrian Crow
CC	Common Chiffchaff
CD	Eurasian Collared Dove
CH	Chaffinch
D.	Dunnock
GO	European Goldfinch
GR	European Greenfinch
GS	Great Spotted Woodpecker
GT	Great Tit
HS	House Sparrow
J.	Eurasian Jay
JD	Eurasian Jackdaw
K.	Common Kestrel
KT	Red Kite
LI	Common Linnet
LO	Little Owl
M.	Mistle Thrush
MG	Magpie
PH	Common Pheasant
PW	Pied Wagtail (Motacilla alba yarrellii)
R.	European Robin
RL	Red-legged Partridge
RO	Rook
S.	Skylark
SC	Stonechat
SF	Spotted Flycatcher



sp_abbrev	species
B.	Common Blackbird
BC	Blackcap
BH	Black-headed Gull
BT	Blue Tit
C.	Carrian Crow
CC	Common Chiffchaff
CD	Eurasian Collared Dove
CH	Chaffinch
D.	Dunnock
GO	European Goldfinch
GR	European Greenfinch
GS	Great Spotted Woodpecker
GT	Great Tit
HS	House Sparrow
J.	Eurasian Jay
JD	Eurasian Jackdaw
K.	Common Kestrel
KT	Red Kite
LI	Common Linnet
LO	Little Owl
M.	Mistle Thrush
MG	Magpie
PH	Common Pheasant
PW	Pied Wagtail (Motacilla alba yarrellii)
R.	European Robin
RL	Red-legged Partridge
RO	Rook
S.	Skylark
SC	Stonechat
SF	Spotted Flycatcher

Title: Breeding Bird Survey Plan - Survey 4 - 13/06/2024 - Sheet a

Project: Spencers Wood

Client: Richborough Estates

Date: 07/03/2025

Fig:

Author: EN/AH

A4 Scale: 1:4500

ID: RSE_7728_BBS4_0325_V2R1

EPSG:27700 OSGB36 / British National Grid



Survey Start Time:	04:17
Survey End Time:	07:56
Precipitation:	0%
Cloud:	3 as per Okta scale
Temperature:	9° C

Key

Site Boundary

Flying in and landing

Flying in and landing

Flying away (from being perched)

Two separate birds singing

Probable registration of the same bird

Call

Alarm Call

Song

Foraging/Circling Behaviour

Aggressive encounter

Male

sp_abbrev	species
B.	Common Blackbird
BC	Blackcap
BH	Black-headed Gull
BT	Blue Tit
C.	Carrian Crow
CC	Common Chiffchaff
CD	Eurasian Collared Dove
CH	Chaffinch
D.	Dunnock
GO	European Goldfinch
GR	European Greenfinch
GS	Great Spotted Woodpecker
GT	Great Tit
HS	House Sparrow
J.	Eurasian Jay
JD	Eurasian Jackdaw
K.	Common Kestrel
KT	Red Kite
LI	Common Linnet
LO	Little Owl
M.	Mistle Thrush
MG	Magpie
PH	Common Pheasant
PW	Pied Wagtail (Motacilla alba yarrellii)
R.	European Robin
RL	Red-legged Partridge
RO	Rook
S.	Skylark
SC	Stonechat
SF	Spotted Flycatcher

sp_abbrev	species
B.	Common Blackbird
BC	Blackcap
BH	Black-headed Gull
BT	Blue Tit
C.	Carrian Crow
CC	Common Chiffchaff
CD	Eurasian Collared Dove
CH	Chaffinch
D.	Dunnock
GO	European Goldfinch
GR	European Greenfinch
GS	Great Spotted Woodpecker
GT	Great Tit
HS	House Sparrow
J.	Eurasian Jay
JD	Eurasian Jackdaw
K.	Common Kestrel
KT	Red Kite
LI	Common Linnet
LO	Little Owl
M.	Mistle Thrush
MG	Magpie
PH	Common Pheasant
PW	Pied Wagtail (Motacilla alba yarrellii)
R.	European Robin
RL	Red-legged Partridge
RO	Rook
S.	Skylark
SC	Stonechat
SF	Spotted Flycatcher

Title: Breeding Bird Survey Plan - Survey 4 - 13/06/2024 - Sheet b

Project: Spencers Wood

Client: Richborough Estates

Date: 07/03/2025

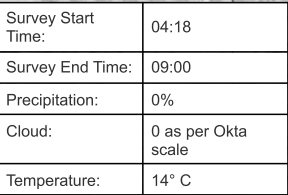
Fig:

Author: EN/AH

A4 Scale: 1:4500

ID: RSE_7728_BBS4_0325_V2R1

EPSG:27700 OSGB36 / British National Grid



RammSanderson Ltd: East Midlands, West Midlands, Yorkshire TD 0115 930 2493 E: admin@rammsanderson.com W: www.rammsanderson.com Basemap Source(s): ©2024 Google &/or OpenStreetMap & third-party providers



Survey Start Time:	04:18
Survey End Time:	09:00
Precipitation:	0%
Cloud:	0 as per Okta scale
Temperature:	14° C

Key

Site Boundary

Flying in and landing

Flying away (from being perched)

Flying over

Two separate birds singing

Same bird registration

Carrying food

Call

Alarm Call

Song

Foraging/Circling Behaviour

Male

Male and Female

Target Note

TN1 Fledged Young - Yellowhammer

TN2 Fledged Young - Great Tit

sp_abbrev	species
B.	Common Blackbird
BC	Blackcap
BH	Black-headed Gull
BT	Blue Tit
C.	Carriion Crow
CC	Common Chiffchaff
CD	Eurasian Collared Dove
CG	Greater Canada Goose
D.	Dunnock
GO	European Goldfinch
GR	European Greenfinch
GS	Great Spotted Woodpecker
GT	Great Tit
HG	Herring Gull
HS	House Sparrow
ID	Eurasian Jackdaw
KT	Red Kite
LB	Lesser Black-backed Gull
LI	Common Linnnet
LT	Long-tailed Tit
M.	Mistle Thrush
MG	Magpie
PH	Common Pheasant
R.	European Robin
RL	Red-legged Partridge
RO	Rook
S.	Skylark
SD	Stock Pigeon
SG	Common Starling
ST	Song Thrush
WH	Common Whitethroat
WP	Common Woodpigeon
WR	Wren
Y.	Yellowhammer

Title: Breeding Bird Survey Plan - Survey 5 - 25/06/2024 - Sheet b

Project: Spencers Wood, Wokingham

Client: Richborough Estates

Date: 07/03/2025

Fig:

Author: EN/AH

A4 Scale: 1:4500

ID: RSE_7728_BB55_0325_V2R1

EPSG:27700 OSGB36 / British National Grid



Key

Site Boundary

→(S)

Flying in and landing

(S)→

Flying in and landing

→(S)

Flying away (from being perched)

(S)⋯(S)

Two separate birds singing

(S)——(S)

Probable registration of the same bird

—

Call

==

Alarm Call

○

Song

(P)

Probable Breeding Pair

sp_abbrev	species
B.	Common Blackbird
BZ	Common Buzzard
D.	Dunnock
JD	Eurasian Jackdaw
MG	Magpie
R.	European Robin
SH	Eurasian Sparrowhawk
TO	Tawny Owl
WP	Common Woodpigeon
WR	Wren
Y.	Yellowhammer

Survey Start Time:	08:30 PM
Survey End Time:	10:30 PM
Precipitation:	0%
Cloud:	6 as per Okta scale
Temperature:	18° C
Wind:	0 as per Beaufort scale

Title: Breeding Bird Survey Plan - Survey 6 - 11/07/2024 - Sheet a

Project: Spencers Wood, Wokingham

Client: Richborough Estates

Date: 07/03/2025

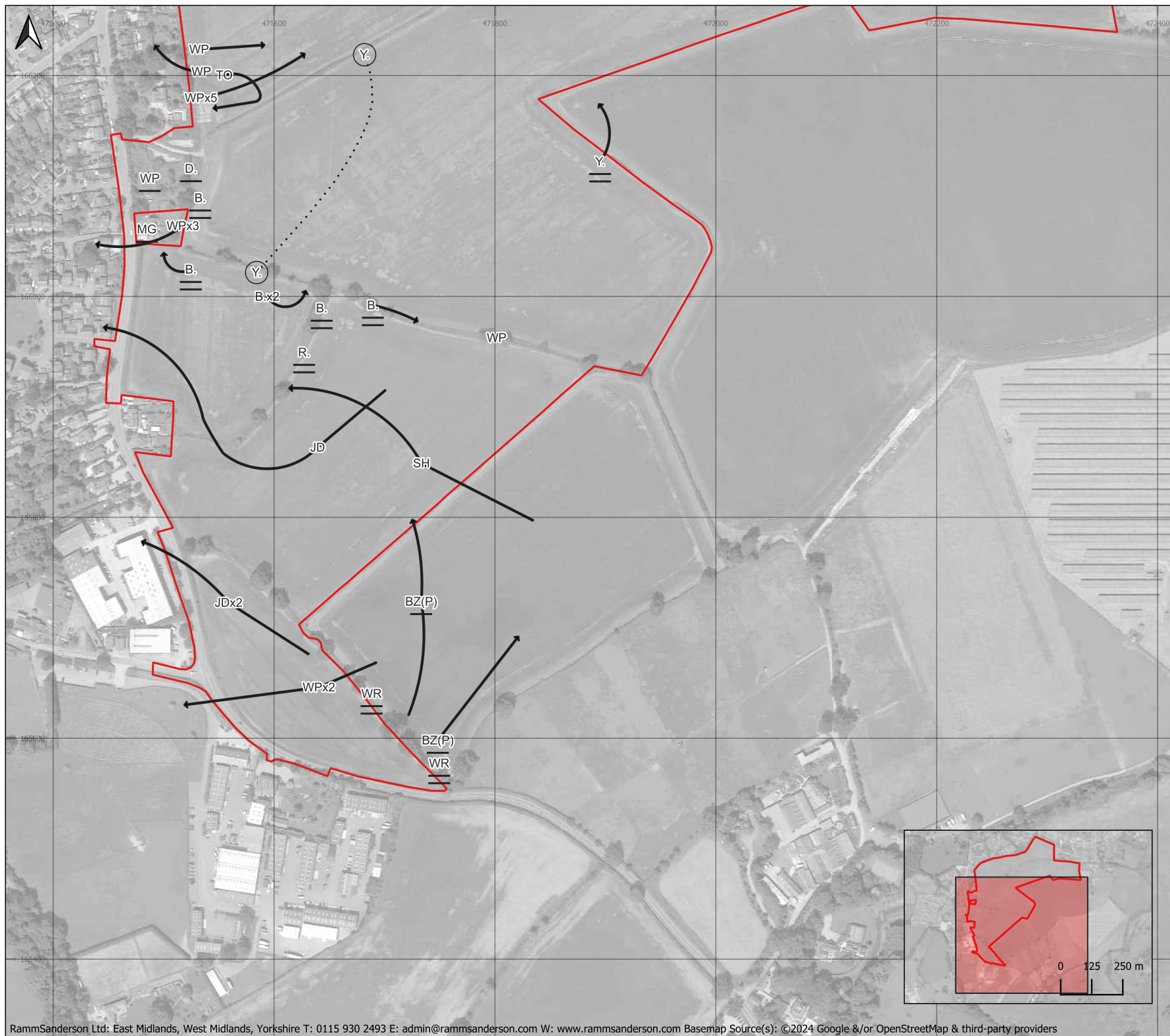
Fig:

Author: EN/AH

A4 Scale: 1:4500

ID: RSE_7728_BBS6_0325_V2R1

EPSG:27700 OSGB36 / British National Grid



Key

Site Boundary

Flying in and landing

Flying in and landing

Flying away (from being perched)

Two separate birds singing

Probable registration of the same bird

Call

Alarm Call

Song

(P) Probable Breeding Pair

sp_abbrev	species
B.	Common Blackbird
BZ	Common Buzzard
D.	Dunnock
JD	Eurasian Jackdaw
MG	Magpie
R.	European Robin
SH	Eurasian Sparrowhawk
TO	Tawny Owl
WP	Common Woodpigeon
WR	Wren
Y.	Yellowhammer

Survey Start Time:	08:30 PM
Survey End Time:	10:30 PM
Precipitation:	0%
Cloud:	6 as per Okta scale
Temperature:	18° C
Wind:	0 as per Beaufort scale

RammSanderson

Title: Breeding Bird Survey Plan - Survey 6 - 11/07/2024 - Sheet b

Project: Spencers Wood, Wokingham

Client: Richborough Estates

Richborough Estates

Date: 07/03/2025

Fig:

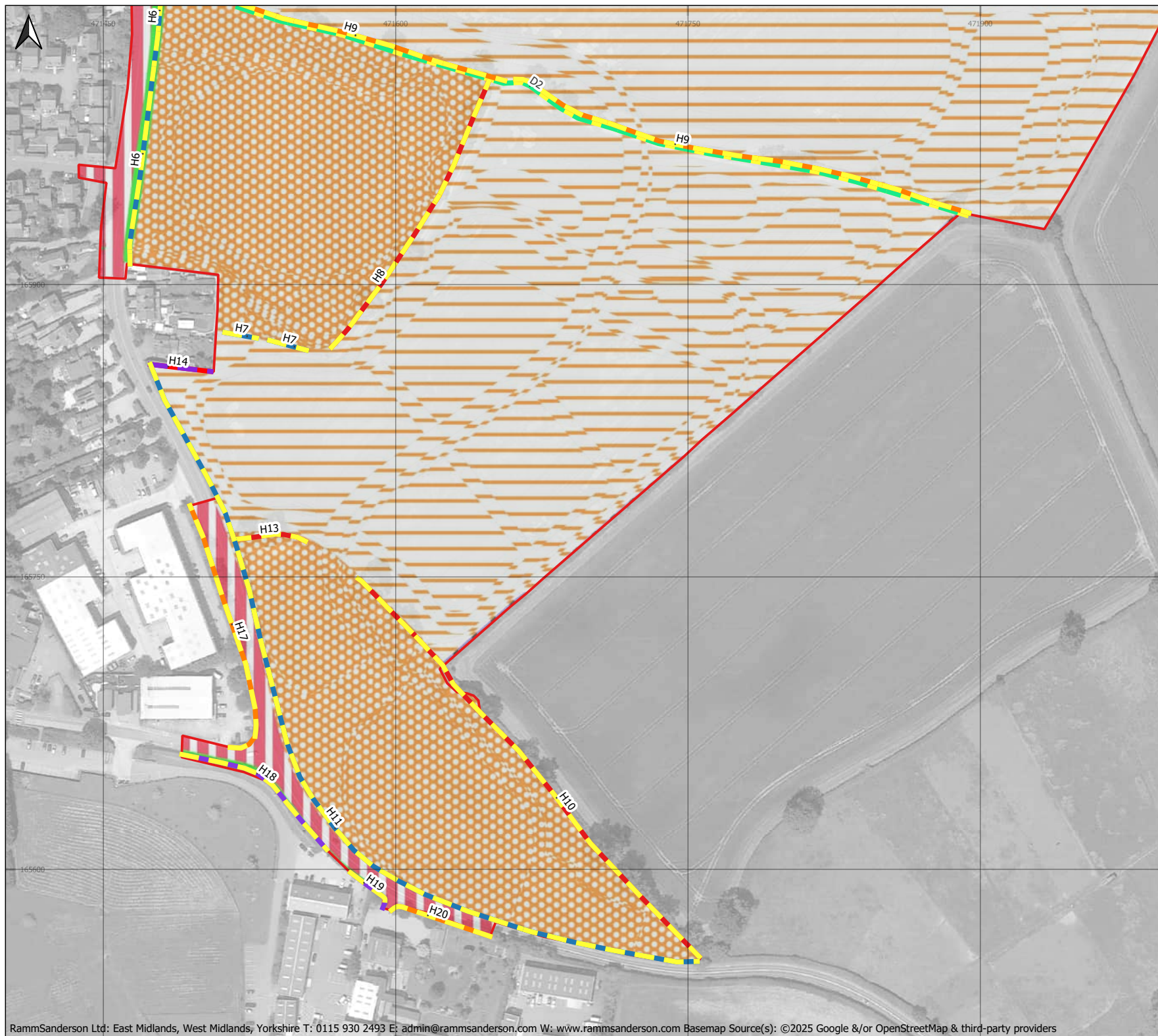
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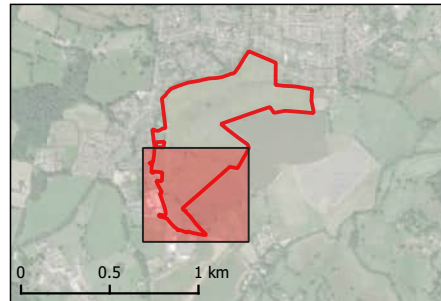
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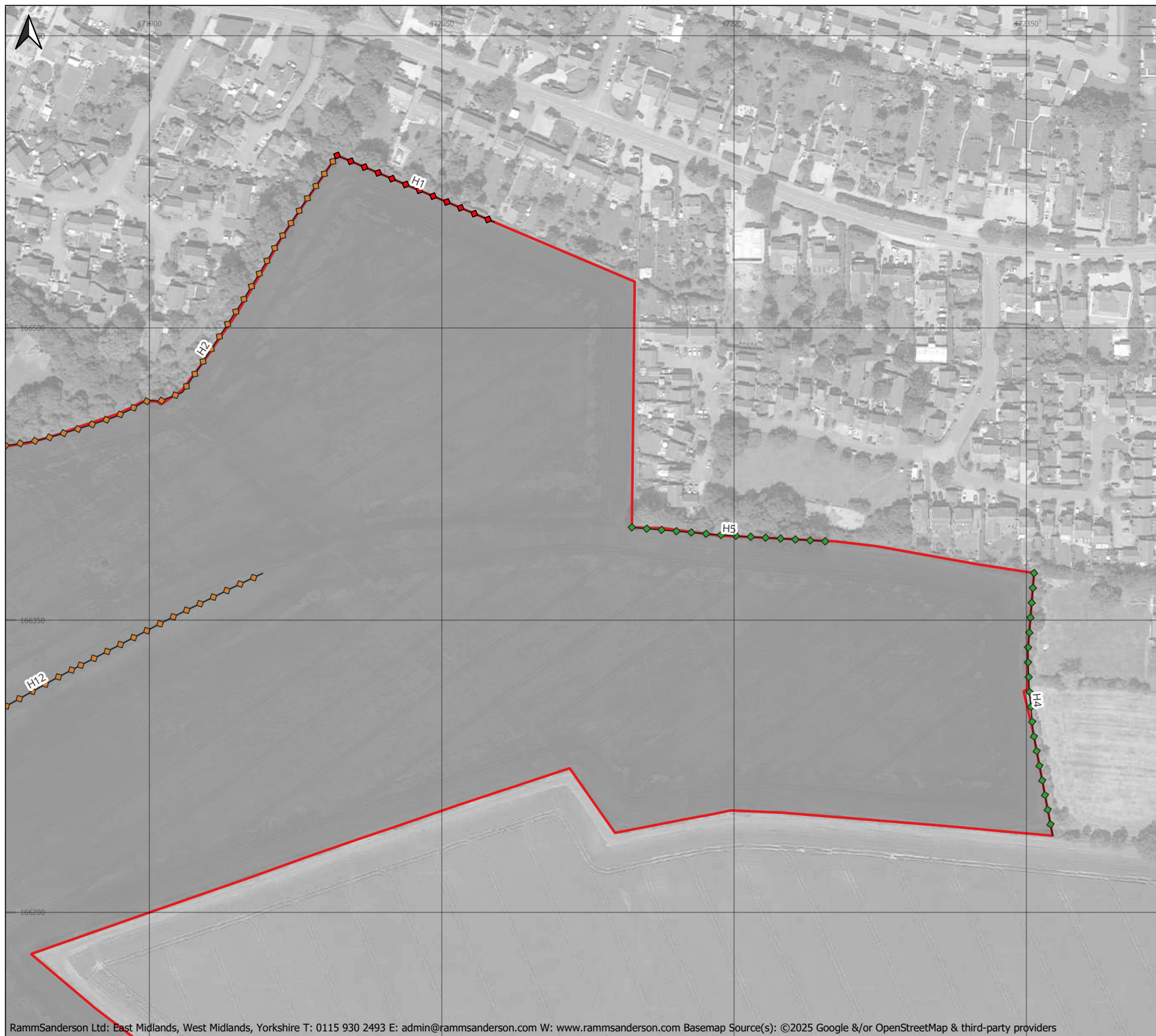
Figure 10: BIA Baseline Visualization Plans



- Key**
- Site Boundary
 - Bramble scrub
 - Cereal crops
 - Developed land; sealed surface
 - Modified grassland
 - Non-cereal crops
 - Vegetated garden
 - Ditches
 - Non-native and ornamental hedgerow
 - Native hedgerow with trees - associated with bank or ditch
 - Native hedgerow with trees
 - Native hedgerow - associated with bank or ditch
 - Native hedgerow

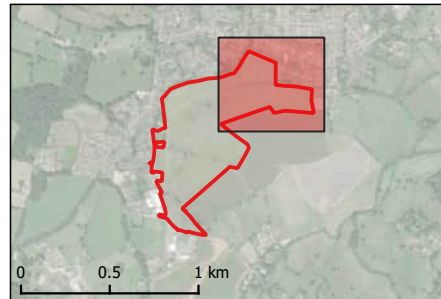


Title: BIA Baseline Habitat Plan - Sheet 3/3		
Project: Spencers Wood, Wokingham		
Client: Richborough Estates Limited		
Date: 11/03/2025	Fig:	Author: LG
A4 Scale: 1:2550	ID: RSE_7728_BIAB_0325_V3R2	
EPSG:27700 OSGB36 / British National Grid		



Key

- Site Boundary
- Baseline Habitat Condition
- Condition Assessment N/A
- Baseline Hedgerow Condition
- Good
- Moderate
- Poor



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Title: BIA Baseline Conditions Habitat Plan - Sheet 1/3
Project: Spencers Wood, Wokingham
Client: Richborough Estates Limited

Date: 11/03/2025 Fig: Author: LG
A4 Scale: 1:2550 ID: RSE_7728_BIAB_0325_V3R2

EPSG:27700 OSGB36 / British National Grid



Key

Site Boundary

Baseline Habitat Condition

- Moderate
- Poor
- N/A - Other
- Condition Assessment N/A

Baseline Watercourse Condition

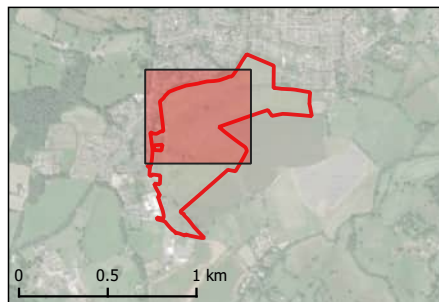
- ◆ Poor

Baseline Hedgerow Condition

- ◆ Moderate

Baseline Individual tree Condition

- Moderate
- Good





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Title: BIA Baseline Conditions Habitat Plan - Sheet 2/3

Project: Spencers Wood, Wokingham

Client: Richborough Estates Limited

Date: 11/03/2025

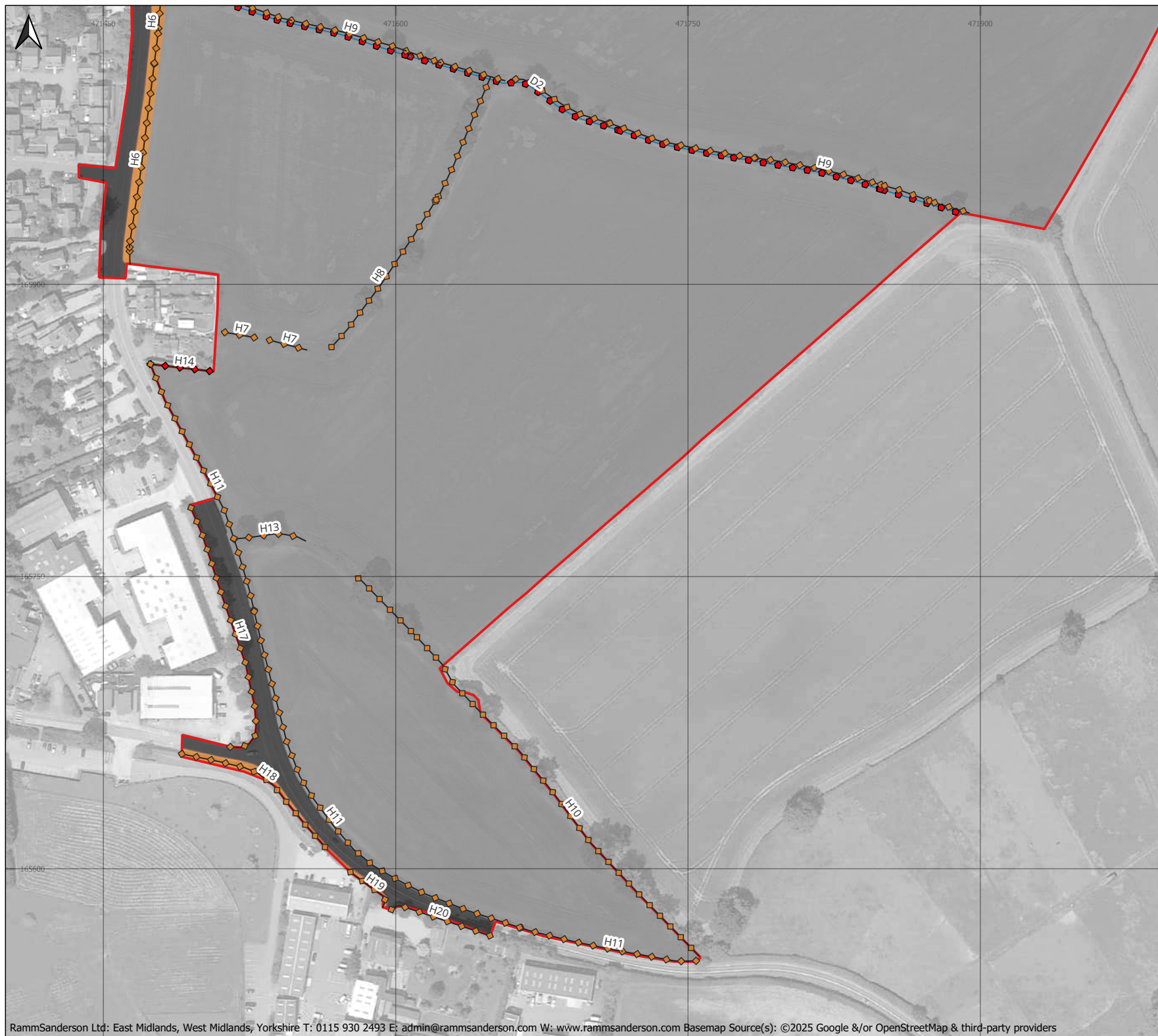
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Fig:

ID: RSE_7728_BIAB_0325_V3R2

Author: LG

EPSG:27700 OSGB36 / British National Grid



Key

Site Boundary

Baseline Habitat Condition

Moderate

N/A - Other

Condition Assessment N/A

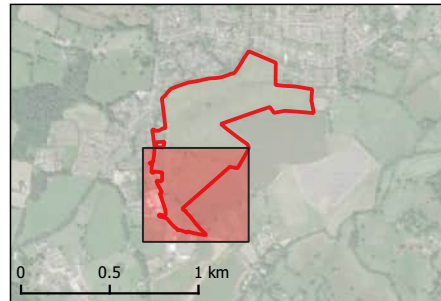
Baseline Watercourse Condition

Poor

Baseline Hedgerow Condition

Moderate

Poor



Title: BIA Baseline Conditions Habitat Plan - Sheet 3/3

Project: Spencers Wood, Wokingham

Client: Richborough Estates Limited

Date: 11/03/2025

Fig:

Author: LG

A4 Scale: 1:2550

ID: RSE_7728_BIAB_0325_V3R2

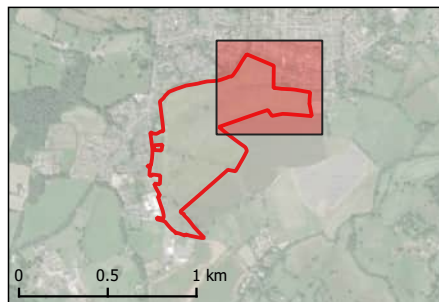
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Figure 11: BIA Proposed Visualization Plans



Key

- Site Boundary
- Proposed Country Park (SANG)
- Bramble scrub
- Developed land; sealed surface
- Mixed scrub
- Modified grassland
- Other neutral grassland
- Other woodland; broadleaved
- Ponds (non-priority habitat)
- Sustainable drainage system
- 70:30 split developed land to vegetated garden
- Bare ground
- Non-native and ornamental hedgerow
- Native hedgerow
- Native hedgerow with trees
- Native hedgerow with trees - associated with bank or ditch
- Species-rich native hedgerow with trees - associated with bank or ditch
- Proposed Small Urban Tree





RammSanderson

Title: BIA Proposed Habitat Plan - Sheet 1/3

Project: Spencers Wood, Wokingham

Client: Richborough Estates Limited

Date: 11/03/2025

Fig:

Author: LG

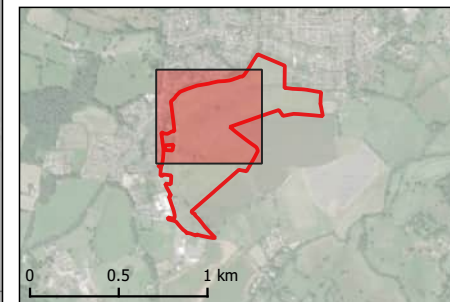
A4 Scale: 1:2550

ID: RSE_7728_BIAP_0325_V3R2

EPSG:27700 OSGB36 / British National Grid



- ### Key
- Site Boundary
 - Proposed Country Park (SANG)
 - Artificial unvegetated, unsealed surface
 - Bramble scrub
 - Developed land; sealed surface
 - Introduced shrub
 - Mixed scrub
 - Modified grassland
 - Other neutral grassland
 - Other woodland; broadleaved
 - Ponds (non-priority habitat)
 - Sustainable drainage system
 - 70:30 split developed land to vegetated garden
 - Bare ground
 - Ditches
 - Non-native and ornamental hedgerow
 - Native hedgerow
 - Native hedgerow - associated with bank or ditch
 - Native hedgerow with trees
 - Native hedgerow with trees - associated with bank or ditch
 - Species-rich native hedgerow with trees - associated with bank or ditch
 - Proposed Small Urban Tree
 - Retained Large Rural Tree
 - Retained Medium Rural Tree
 - Retained Small Rural Tree





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Title: BIA Proposed Habitat Plan - Sheet 2/3

Project: Spencers Wood, Wokingham

Client: Richborough Estates Limited

Date: 11/03/2025

Fig: 1

Author: LG

A4 Scale: 1:2550

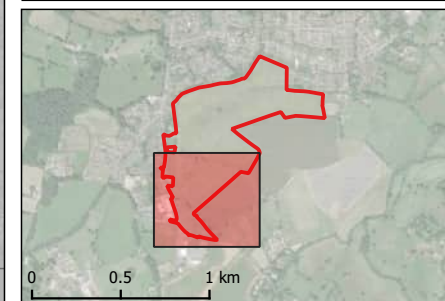
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EPSG:27700 OSGB36 / British National Grid



Key

- Site Boundary
- Bramble scrub
- Developed land; sealed surface
- Introduced shrub
- Mixed scrub
- Modified grassland
- Other neutral grassland
- Other woodland; broadleaved
- Sustainable drainage system
- 70:30 split developed land to vegetated garden
- Bare ground
- Ditches
- Non-native and ornamental hedgerow
- Native hedgerow
- Native hedgerow - associated with bank or ditch
- Native hedgerow with trees
- Native hedgerow with trees - associated with bank or ditch
- Proposed Small Urban Tree



Title: BIA Proposed Habitat Plan - Sheet 3/3

Project: Spencers Wood, Wokingham

Client: Richborough Estates Limited



Date: 11/03/2025

Fig:

Author: LG

A4 Scale: 1:2550

ID: RSE_7728_BIAP_0325_V3R2

EPSG:27700 OSGB36 / British National Grid



Key

Site Boundary

Formally identified within local strategy
(Proposed Country Park (SANG))

Location ecologically desirable

Bramble scrub

Developed land; sealed surface

Mixed scrub

Modified grassland

Other neutral grassland

Other woodland; broadleaved

Ponds (non-priority habitat)

Sustainable drainage system

70:30 split developed land to vegetated garden

Bare ground

Non-native and ornamental hedgerow

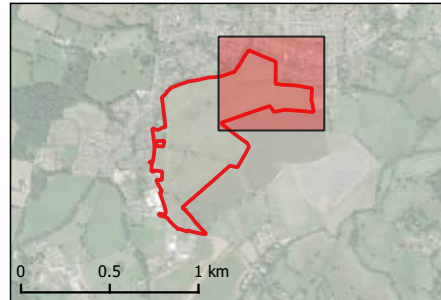
Native hedgerow

Native hedgerow with trees

Native hedgerow with trees - associated with bank or ditch

Species-rich native hedgerow with trees - associated with bank or ditch

Proposed Small Urban Tree



Title: BIA Proposed Habitat Plan - Sheet 1/3
Project: Spencers Wood, Wokingham
Client: Richborough Estates Limited

Date: 11/03/2025
A4 Scale: 1:2550

Fig:
ID: RSE_7728_BIAP_0325_V3R1

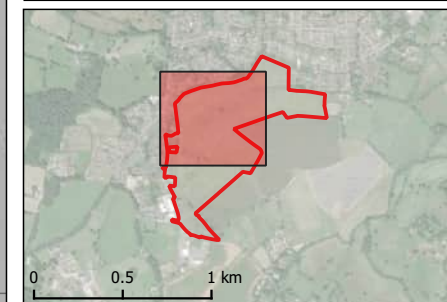
Author: LG

EPSG:27700 OSGB36 / British National Grid



Key

-  Site Boundary
-  Formally identified within local strategy (Proposed Country Park (SANG))
-  Location ecologically desirable
-  Artificial unvegetated, unsealed surface
-  Bramble scrub
-  Developed land; sealed surface
-  Introduced shrub
-  Mixed scrub
-  Modified grassland
-  Other neutral grassland
-  Other woodland; broadleaved
-  Ponds (non-priority habitat)
-  Sustainable drainage system
-  70:30 split developed land to vegetated garden
-  Bare ground
-  Ditches
-  Non-native and ornamental hedgerow
-  Native hedgerow
-  Native hedgerow - associated with bank or ditch
-  Native hedgerow with trees
-  Native hedgerow with trees - associated with bank or ditch
-  Species-rich native hedgerow with trees - associated with bank or ditch
-  Proposed Small Urban Tree
-  Retained Large Rural Tree
-  Retained Medium Rural Tree
-  Retained Small Rural Tree



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Title: BIA Proposed Habitat Plan - Sheet 2/3

Project: Spencers Wood, Wokingham

Client: Richborough Estates Limited

Date: 11/03/2025

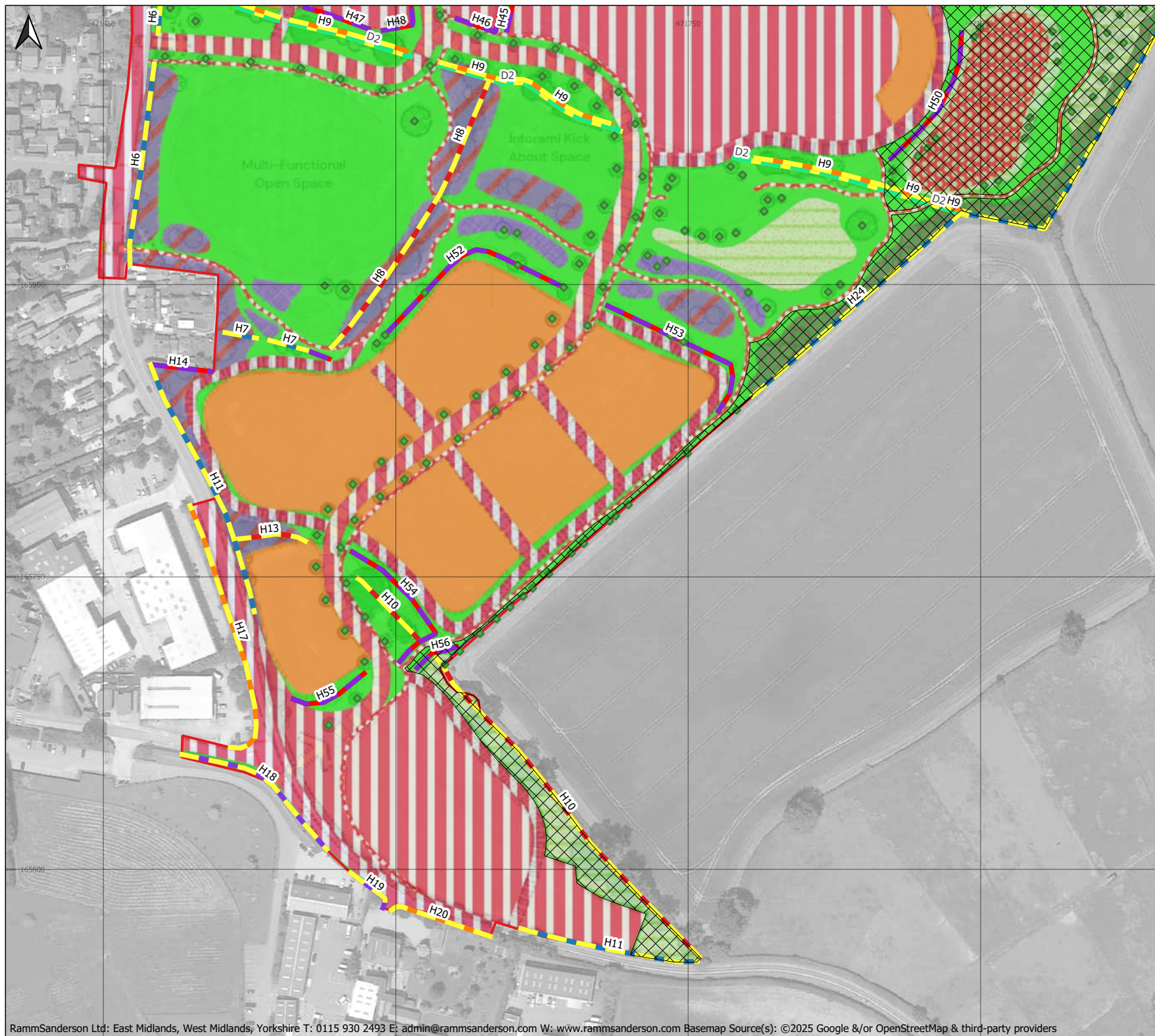
Fig:

Author: LG

A4 Scale:1:2550

ID: RSE 7728 BIAP 0325 V3R1

EPSG:27700 OSGB36 / British National Grid



Key

Site Boundary

Location ecologically desirable

Bramble scrub

Developed land; sealed surface

Introduced shrub

Mixed scrub

Modified grassland

Other neutral grassland

Other woodland; broadleaved

Sustainable drainage system

70:30 split developed land to vegetated garden

Bare ground

Ditches

Non-native and ornamental hedgerow

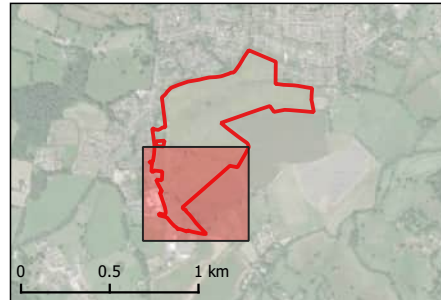
Native hedgerow

Native hedgerow - associated with bank or ditch

Native hedgerow with trees

Native hedgerow with trees - associated with bank or ditch

Proposed Small Urban Tree



Title: BIA Proposed Habitat Plan - Sheet 3/3

Project: Spencers Wood, Wokingham

Client: Richborough Estates Limited

Date: 11/03/2025

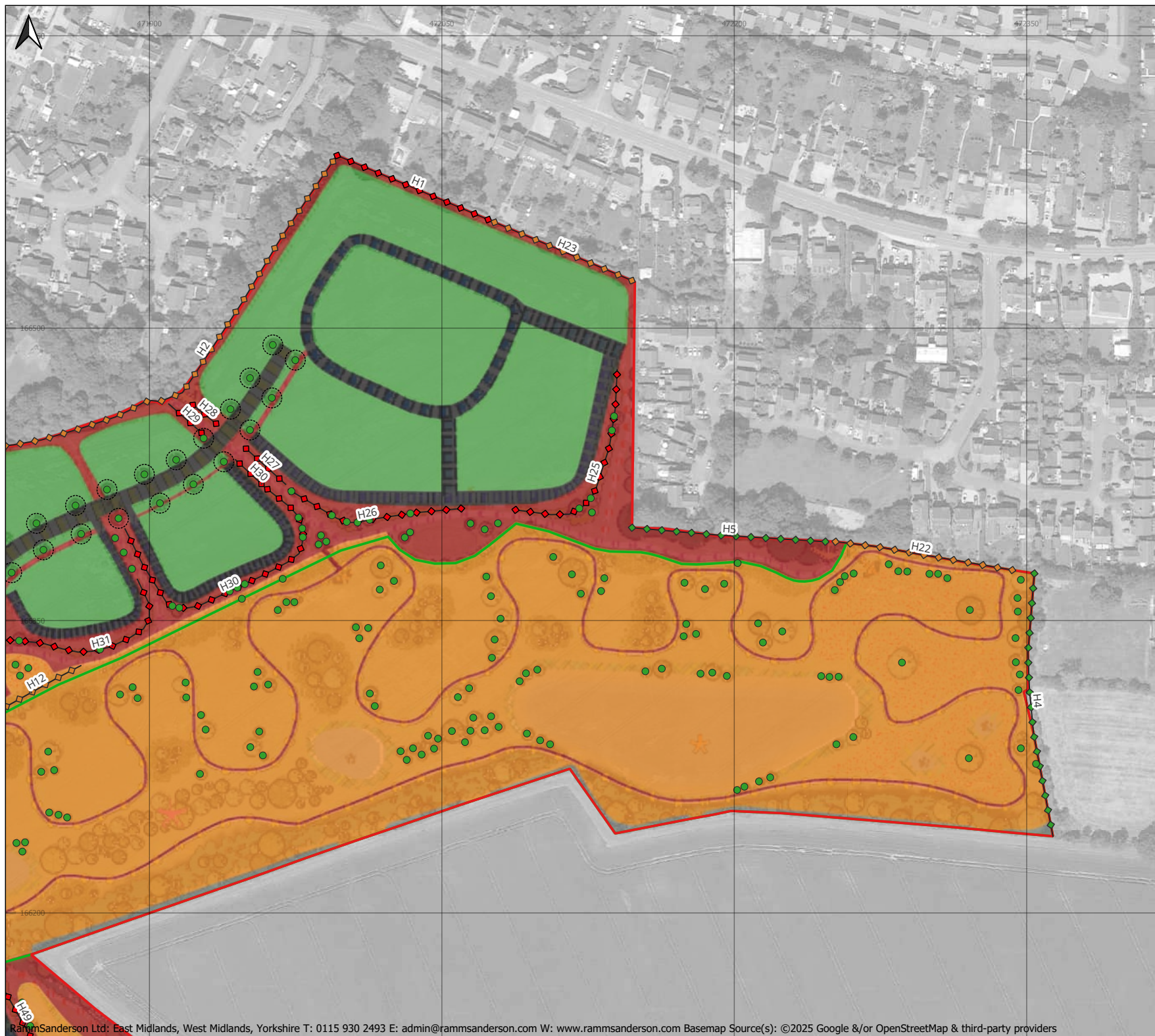
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Author: LG

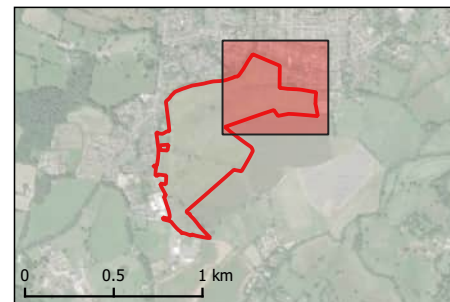
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ID: RSE_7728_BIAP_0325_V3R1

EPSG:27700 OSGB36 / British National Grid



- Key**
- Site Boundary
 - Proposed Country Park (SANG)
 - Proposed Habitats Condition
 - Moderate
 - Poor
 - N/A - Other
 - Condition Assessment N/A
 - 70:30 split between developed land and vegetated garden, is either condition assessment N/A or N/A other
 - Proposed Hedgerow Condition
 - Good
 - Moderate
 - Poor
 - Proposed Individual tree Condition
 - Poor
 - Moderate

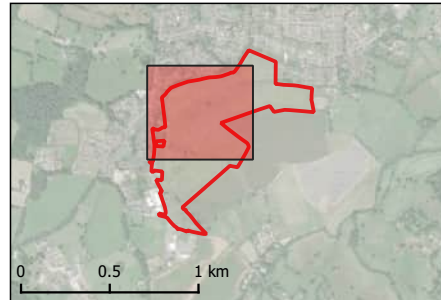


Title: BIA Proposed Conditions Habitat Plan - Sheet 1/3		
Project: Spencers Wood, Wokingham		
Client: Richborough Estates Limited		
Date: 11/03/2025	Fig:	Author: LG
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EPSG:27700 OSGB36 / British National Grid		



Key

- Site Boundary
- Proposed Country Park (SANG)
- Proposed Habitats Condition
 - Moderate
 - Poor
 - N/A - Other
 - Condition Assessment N/A
 - 70:30 split between developed land and vegetated garden, is either condition assessment N/A or N/A other
- Proposed Watercourse Condition
 - Moderate
- Proposed Hedgerow Condition
 - Moderate
 - Poor
- Proposed Individual tree Condition
 - Poor
 - Moderate
 - Good

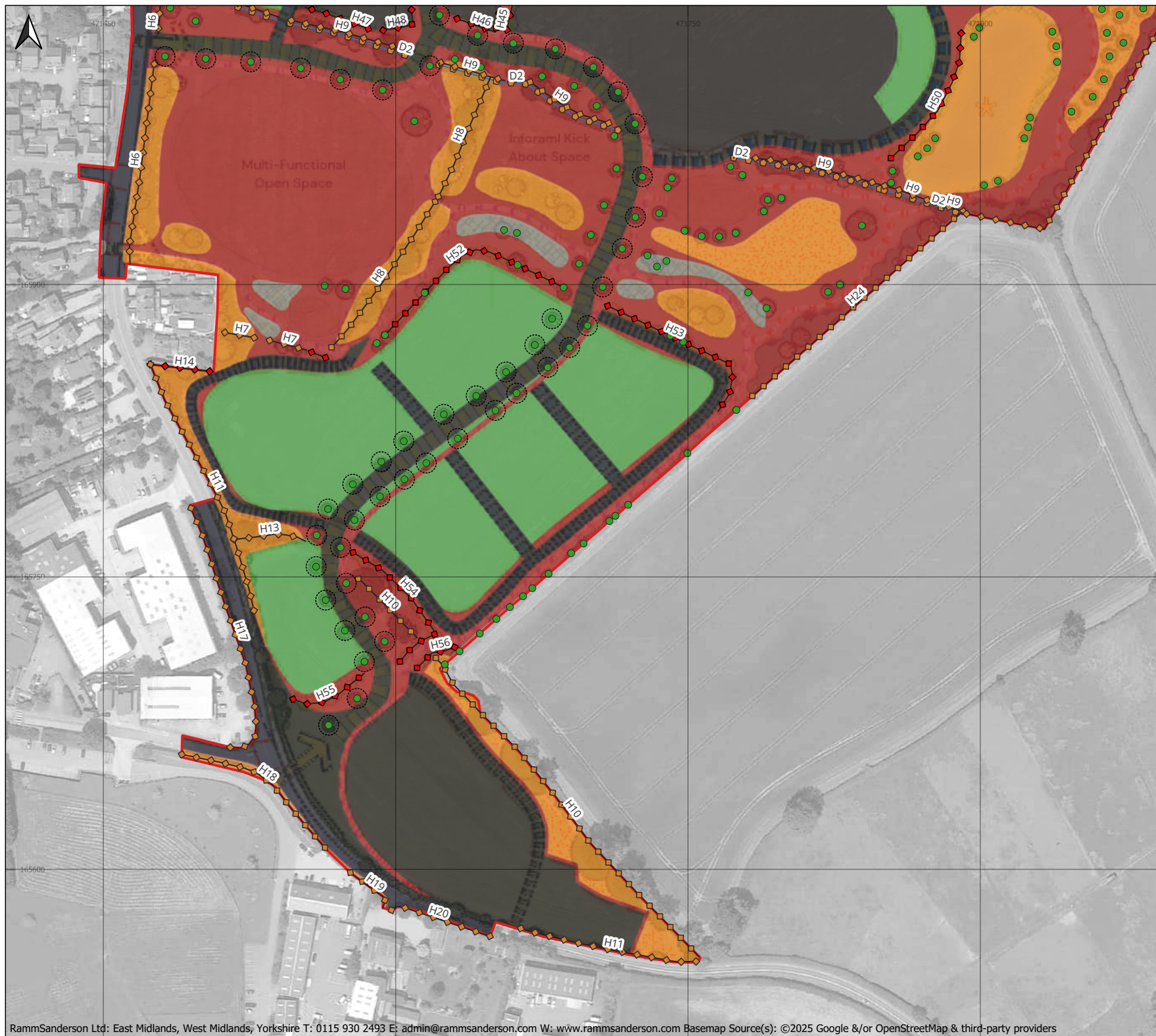


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Title: BIA Proposed Conditions Habitat Plan - Sheet 2/3
Project: Spencers Wood, Wokingham
Client: Richborough Estates Limited

Date: 11/03/2025 Fig: Author: LG
A4 Scale: 1:2550 ID: RSE_7728_BIAP_0325_V3R2

EPSG:27700 OSGB36 / British National Grid



Key

Site Boundary

Proposed Habitats Condition

Moderate

Poor

N/A - Other

Condition Assessment N/A

70:30 split between developed land and vegetated garden, is either condition assessment N/A or N/A other

Proposed Watercourse Condition

Moderate

Proposed Hedgerow Condition

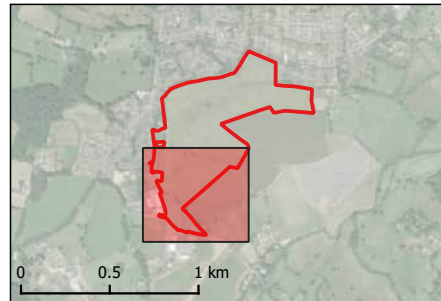
Moderate

Poor

Proposed Individual tree Condition

Poor

Moderate



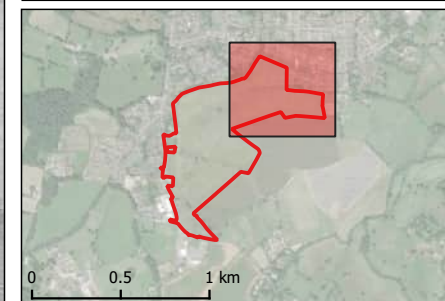
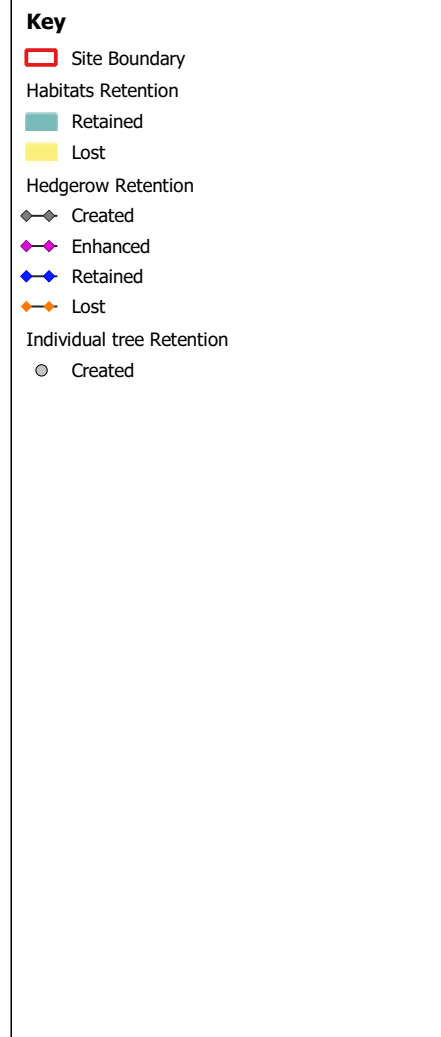
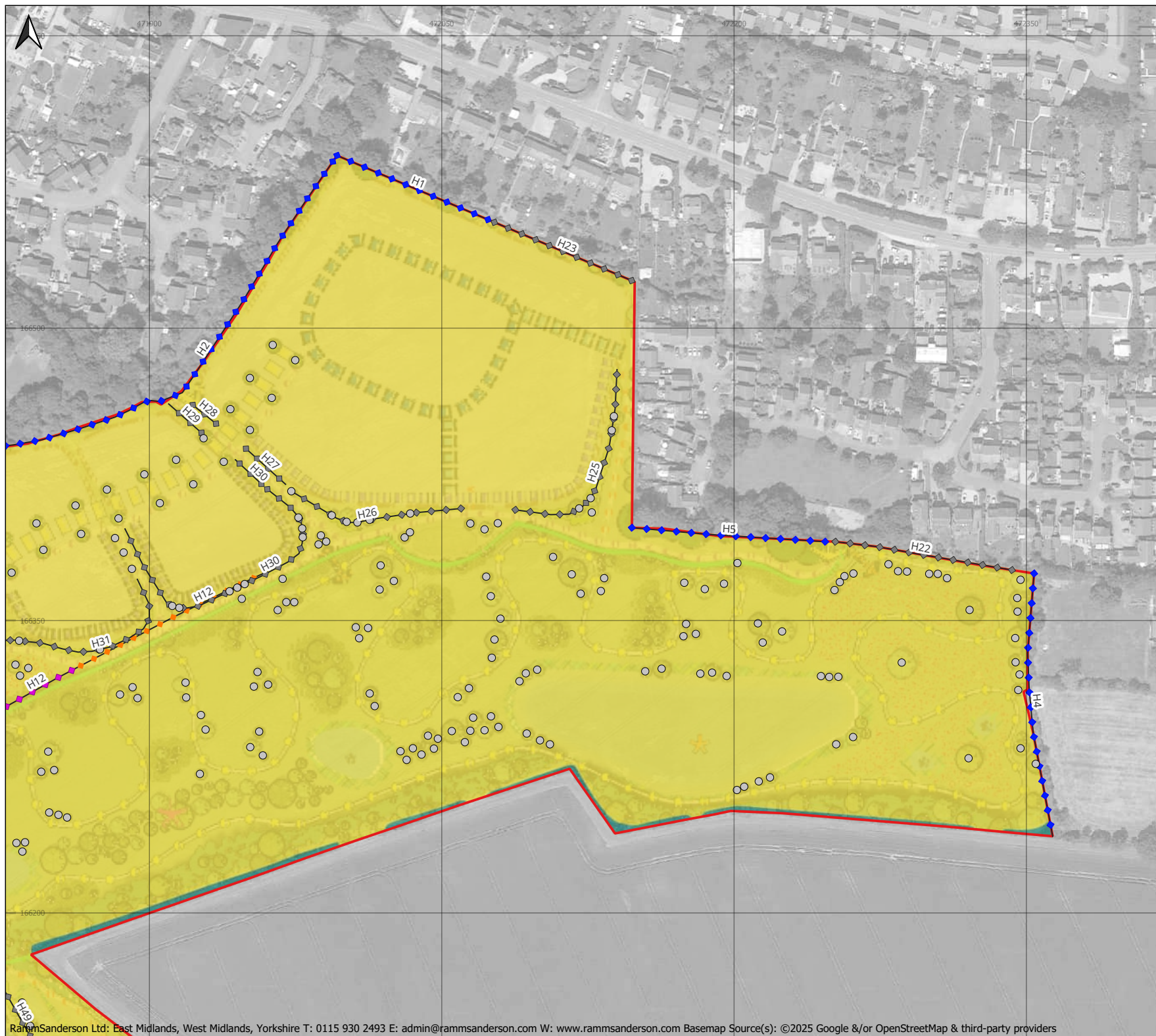
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Project: Spencers Wood, Wokingham
Client: Richborough Estates Limited

Date: 11/03/2025
A4 Scale: 1:2550

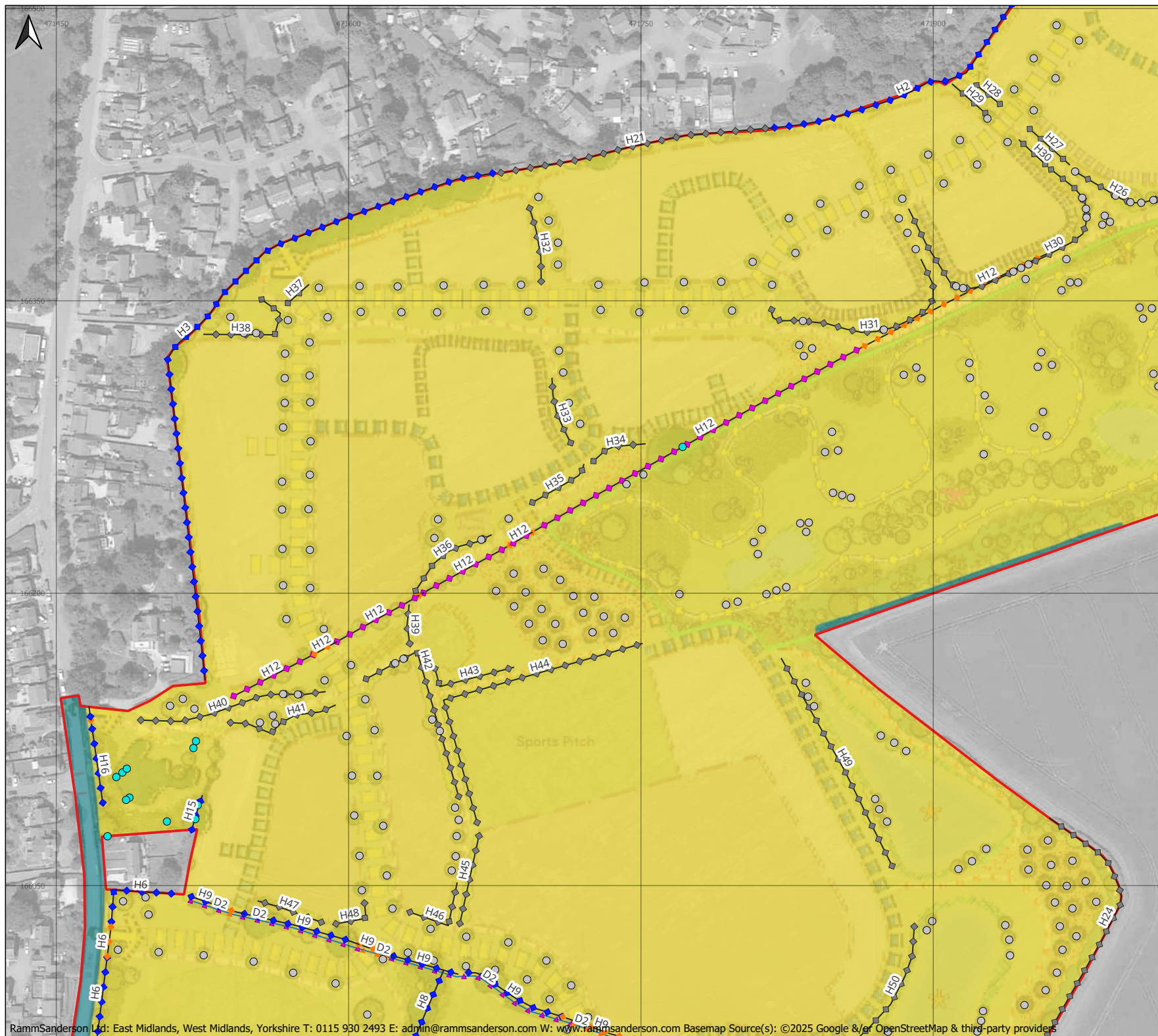
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ID: RSE_7728_BIAP_0325_V3R2

Author: LG

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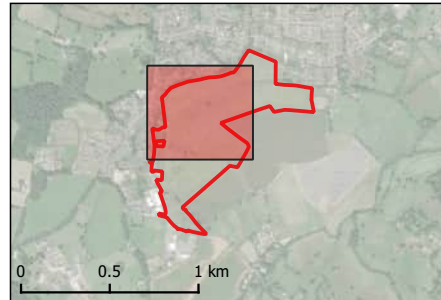


		
Title: BIA Retention Habitat Plan - Sheet 1/3		
Project: Spencers Wood, Wokingham		
Client: Richborough Estates Limited		
Date: 11/03/2025	Fig:	Author: LG
A4 Scale: 1:2550	ID: RSE_7728_BIAR_0325_V3R2	
EPSG:27700 OSGB36 / British National Grid		



Key

- Site Boundary
- Habitats Retention
 - Retained
 - Lost
- Watercourse Retention
 - Enhanced
 - Lost
- Hedgerow Retention
 - Created
 - Enhanced
 - Retained
 - Lost
- Individual tree Retention
 - Created
 - Retained

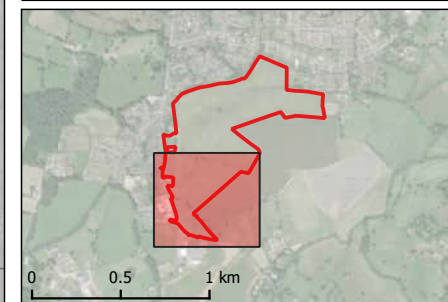
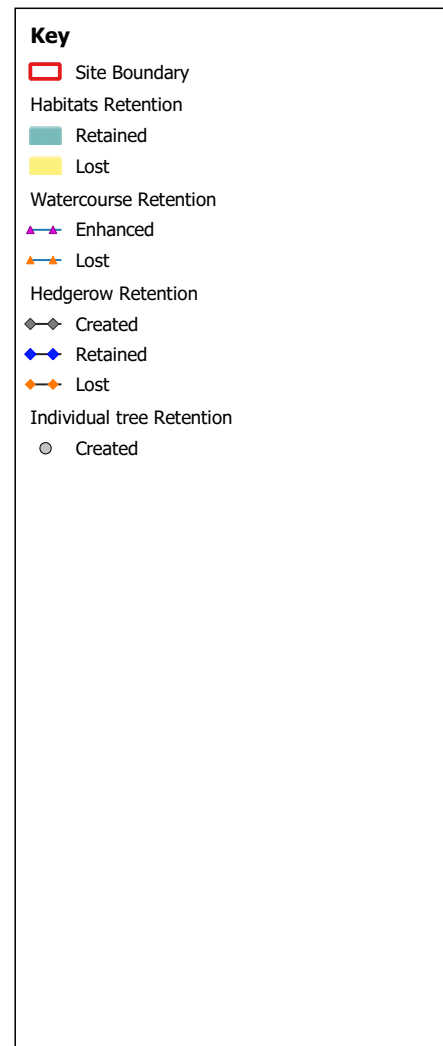
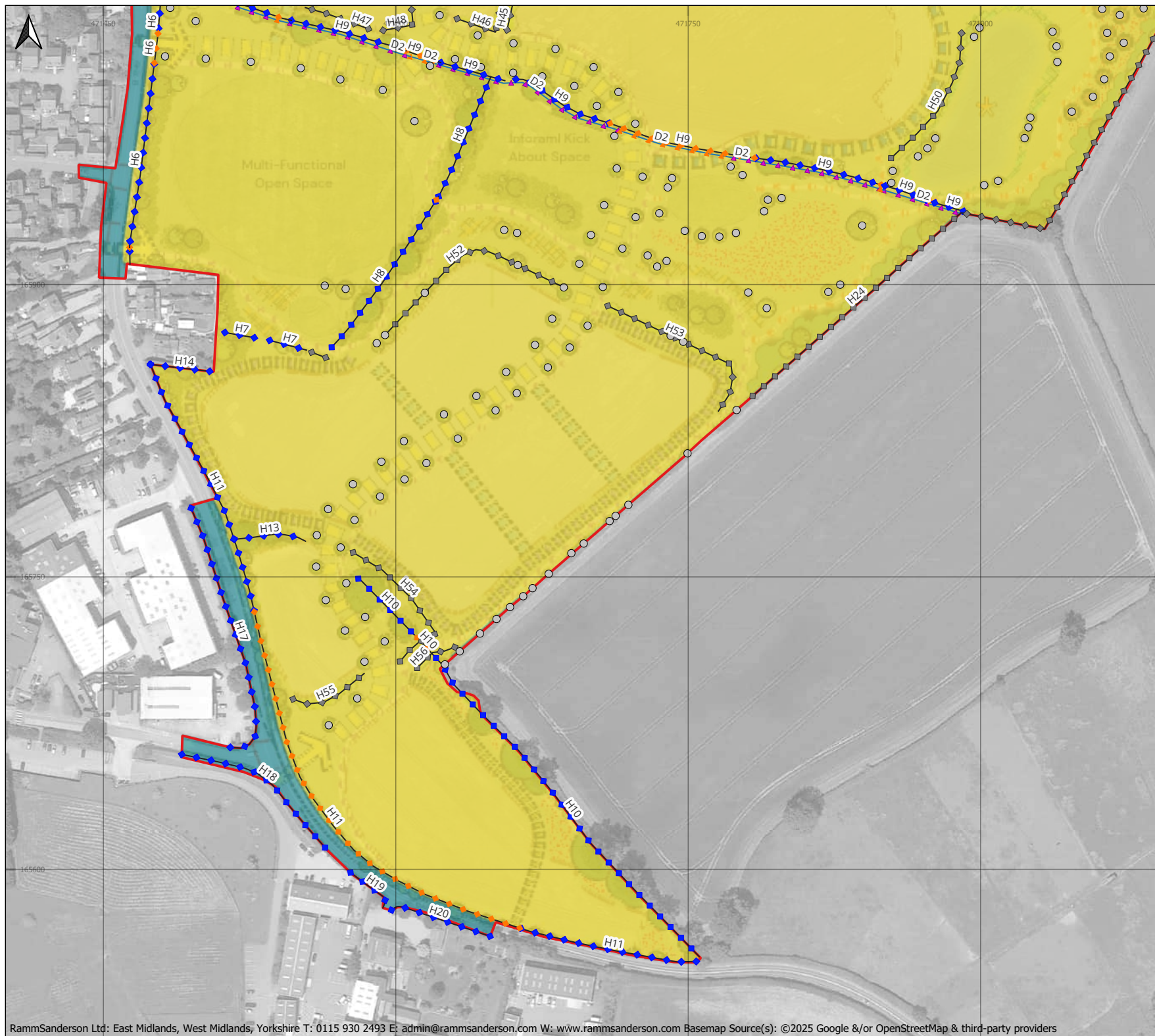


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Title: BIA Retention Habitat Plan - Sheet 2/3
Project: Spencers Wood, Wokingham
Client: Richborough Estates Limited

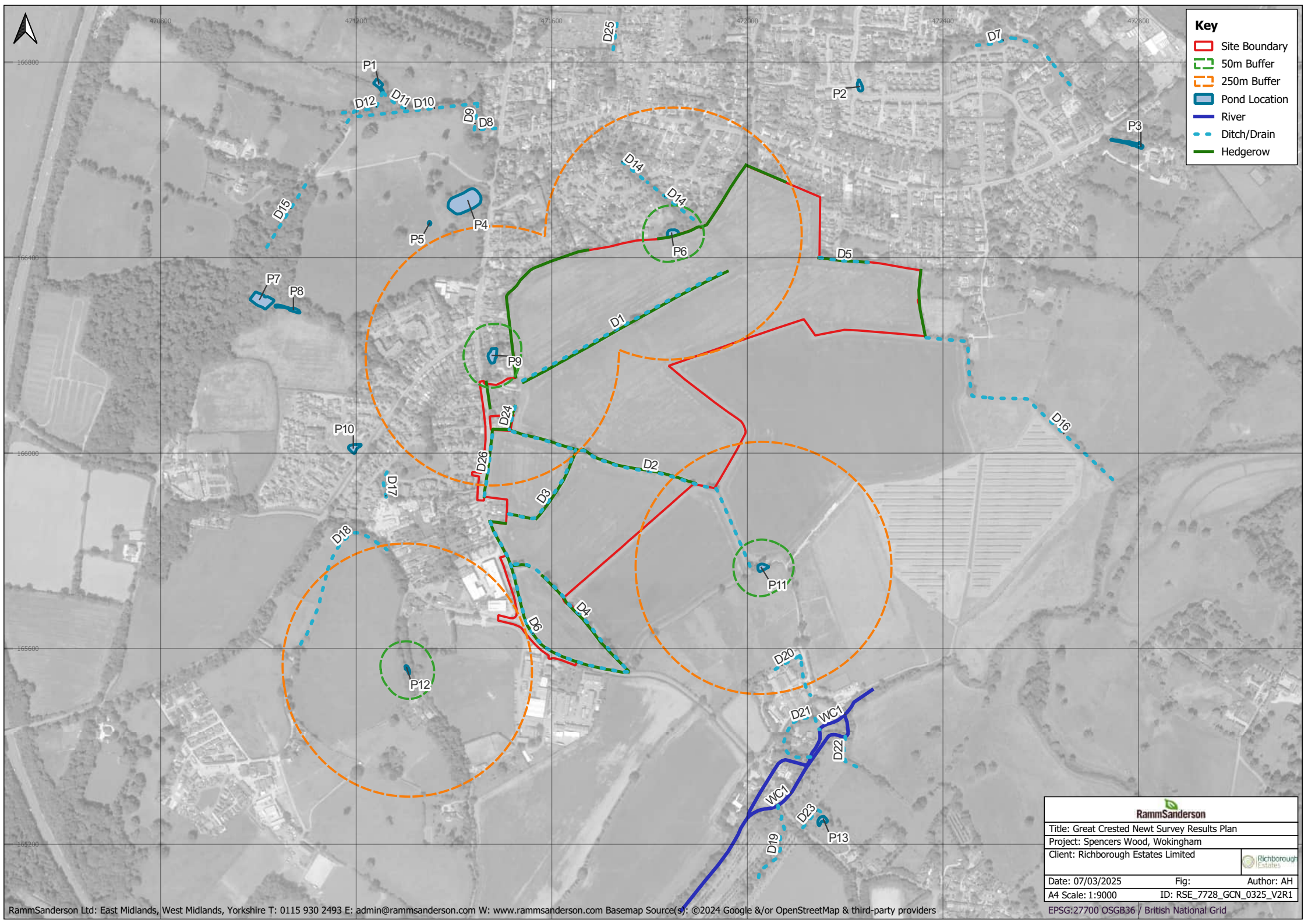
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EPSG:27700 OSGB36 / British National Grid



 RammSanderson	
Title: BIA Retention Habitat Plan - Sheet 3/3	
Project: Spencers Wood, Wokingham	
Client: Richborough Estates Limited	 Richborough Estates
Date: 11/03/2025	Fig: Author: LG
A4 Scale: 1:2550	ID: RSE_7728_BIAR_0325_V3R2
EPSG:27700 OSGB36 / British National Grid	

Figure 12: Potential GCN Pond Impacts Plan



Key

- Site Boundary
- 50m Buffer
- 250m Buffer
- Pond Location
- River
- Ditch/Drain
- Hedgerow



Title: Great Crested Newt Survey Results Plan

Project: Spencers Wood, Wokingham

Client: Richborough Estates Limited



Date: 07/03/2025

Fig:

Author: AH

A4 Scale: 1:9000

ID: RSE_7728_GCN_0325_V2R1

EPSG:27700 OSGB36 / British National Grid

Appendix 2: References

- i Wildlife and Countryside Act . (1981 (as amended)). *Schedule 9*.
- ii Chanin, P. (2003). *Monitoring the Otter Lutra lutra. Conserving Natura 2000 Rivers Monitoring Series No 10*. Peterborough: English Nature.
- iii Collins, J. (Eds.). (2023). *Bat Surveys for Professional Ecologists: Good Survey Guidelines (Collins, J. Eds. 2016)*, . London: Bat Conservation Trust.
- iv Dean, M. S. (2016). *The Water Vole Mitigation Handbook (The Mammal Society Guidance Series) Eds Mathews, F. and Chanin, P.* London: The Mammal Society.
- v Department of Communities & Local Government. (2024). *The National Planning Policy Framework (NPPF)* .
- vi English Nature. (2001). *The Great Crested Newt Mitigation Guidelines*. Peterborough.
- vii English Nature. (2004). *Reptiles: Guidelines for Developers*. Peterborough: English Nature.
- viii English Nature. (2006). *The Dormouse Conservation Handbook, 2nd edition*.
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Appendix 3: RELEVANT LEGISLATION AND PLANNING POLICY

i The UK is no longer a member of the European Union (EU). EU legislation as it applied to the UK on 31 December 2020 is now a part of UK domestic legislation. EU legislation which applied directly or indirectly to the UK before 11.00 p.m. on 31 December 2020 has been retained in UK law as a form of domestic legislation known as 'retained EU legislation'.

ii The Secretary of State for the Environment, Food and Rural Affairs and Welsh Ministers have made changes to parts of the Conservation of Habitats and Species Regulations 2017 (referred to as the 2017 Regulations) so that they operate effectively. Most of these changes involve transferring functions from the European Commission to the appropriate authorities in England. All other processes or terms in the 2017 Regulations remain unchanged and existing guidance is still relevant and are now referred to as The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 (the 2019 Regulations).

Designated Sites

Sites of Special Scientific Interest

iii Under the Wildlife and Countryside Act 1981 (as amended), it is an offence to carry out or permit to be carried out any operations likely to damage the Site of Special Scientific Interest (SSSI). These operations are listed in the SSSI notification.

iv Owners, occupiers, public bodies and statutory undertakers must give notice and obtain the appropriate consent under S.28 of the Wildlife and Countryside Act 1981 (as amended), before undertaking operations likely to damage a SSSI.

Local Nature Reserve

v A Local Nature Reserve (LNR) is a statutory designation made under the National Parks and Access to the Countryside Act, 1949, by principal local authorities (district, borough or unitary councils).

vi The local authority must control the LNR land - either through ownership, a lease or an agreement with the owner.

vii LNRs are given protection through policies in local development plans.

Locally Designated Sites

viii Local Wildlife Sites are sites with 'substantive nature conservation value'. They are defined areas, identified and selected for their nature conservation value, based on important, distinctive and threatened habitats and species within a region.

ix They are usually selected by the relevant Wildlife Trust, along with representatives of the local authority and other local wildlife conservation groups.

x The LWS selection panel, select all sites that meet the assigned criteria, unlike SSSIs, which for some habitats are a representative sample of sites that meet the national standard. Consequently, many sites of SSSI quality are not designated and instead are selected as LWSs. Consequently, LWSs can be amongst the best sites for biodiversity.

Protected Species

Bats / Hazel Dormouse / Otter / Great Crested Newt

xi These species, known as European Protected Species, are protected under Regulation 43 of the 2017 Regulations as amended by the 2019 Regulations. This makes it an offence to deliberately capture, injure or kill an animal; deliberately disturb an animal; or damage or destroy a breeding site or resting place used by an animal.

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

xiii Where development works are at risk of causing one or more of the offences listed above, a mitigation licence from Natural England can be obtained to facilitate the works that would otherwise be illegal.

xiv These species are also protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). This makes it an offence to intentionally or recklessly obstruct access to any structure or place used for shelter or protection or disturb an animal in such a place.

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

Water Vole

xvi Water voles are protected under the Wildlife and Countryside Act 1981 (as amended). There are no licensing purposes that explicitly cover development or other construction activities which could have an impact on water voles.

xvii When development work is proposed in or near an area which is either known to or likely to contain water voles, then the developer will need to implement suitable mitigation to prevent impacts to water voles. The preferred mitigation option is to leave water voles in situ, with the development works adopting avoidance measures through redesign of the proposals.

xviii Where impacts cannot be avoided, operations aimed at displacing water voles from a development site are now no longer covered by the “incidental result of an otherwise lawful action” defence in the Wildlife and Countryside Act 1981 (as amended). Displacement of water voles now needs to be undertaken under a licence.

xix In England, small scale (limited to continuous lengths of bank not exceeding 50 m) displacement of water voles can be carried out at certain times of the year (February to April) for the purposes of conservation under a Class Licence by a registered person. For larger scale displacements or displacements outside of this period, displacement can be undertaken under a site-specific conservation licence.

xx Where it is considered that the best outcome for water voles is capture and translocation to a different location then this action is considered by Natural England to be outside the scope of the defence as the intentional capture of water voles is unlikely to be considered ‘incidental’. In these circumstances there may be genuine grounds for issuing a conservation licence for the purpose of translocating the water vole population to suitable alternative habitat.

Nesting Birds

xxi All wild birds are protected under the Wildlife and Countryside Act 1981 (as amended), with some species afforded greater protection under Schedule 1 of the Wildlife and Countryside Act 1981 (as amended). In addition to the protection from killing or taking that all birds receive, Schedule 1 birds and their young must not be disturbed at the nest.

xxii There are no licensing purposes that explicitly cover development activities affecting wild birds.

White-clawed Crayfish

xxiii White-clawed crayfish are protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). It is illegal to take or to sell white-clawed crayfish.

xxiv White-clawed crayfish is a species under major threat of global extinction and is referred to in various biodiversity related policy²⁶. Several organisations involved in works on rivers or other water bodies have general legal obligations²⁷ to take the presence of white-clawed crayfish into account when issuing permissions to undertake works.

Common Species of Reptile (common lizard, slow worm, grass snake and adder)

xxv Common species of reptile are protected against intentional killing and injury under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). There is no requirement for a licence where development works affect common species of reptiles. Instead, Natural England (English Nature, 2004) advise that where reptiles are present, they should be protected from any harm that might arise during the development works through appropriate mitigation.

Badger

xxvi Badgers and their setts are protected under the Protection of Badgers Act 1992 (as amended). This makes it an offence to wilfully kill, injure or take a badger; or intentionally or recklessly damage, destroy or obstruct access to a badger sett or disturb a badger in its sett.

xxvii It is not illegal to carry out disturbance activities near setts that are not occupied, i.e. those that do not show signs of current use.

xxviii Where required, licences for development activities involving disturbance or sett interference or closure are issued by Natural England. Licences for activities involving watercourse maintenance, drainage works or flood defences are issued under a separate process.

xxix When assessing the requirement for a licence in respect of development, Natural England (Natural England, 2009) state that badgers are relatively tolerant of moderate levels of noise and activity around their setts, and that a low or moderate level of apparent disturbing activity at or near to badger setts does not necessarily disturb the badgers occupying those setts.

xxx Licences are normally not granted from December to June inclusive (the badger breeding season) because dependent cubs may be present within setts.

Species and Habitats of Principal Importance for the Conservation of Biodiversity

xxxi Section 40 of the Natural Environment & Rural Communities Act (NERC) 2006 sets out the duty for public authorities to conserve biodiversity in England.

xxxii 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 Section 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.

xxxiii 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. The habitats and species on the List, are material considerations of planning, where present on an application site.

²⁶White-clawed crayfish is listed under the following: as a "priority" species of conservation importance under Section 41 of the Natural Environment and Rural Communities Act (2000).

²⁷ Under the Water Resources Act 1991 and the Land Drainage Act 1991 there is a requirement to consider the presence of notable species such as white-clawed crayfish when the Environment Agency, Internal Drainage Board or other statutory agency is considering granting consent for proposed operations to a water course.

Hedgerows

xxxiv Under The Hedgerow Regulations, 1997, it is against the law to remove or destroy certain hedgerows without permission from the local planning authority. 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.

Non-native Invasive Plant Species

xxxv Under the Wildlife and Countryside Act, 1981 (as amended), it is an offence to plant or otherwise cause these species to grow in the wild.

xxxvi 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.

Planning Policy

National Planning Policy Framework, 2024

xxxvii The National Planning Policy Framework (NPPF) (Department of Communities & Local Government, 2024) sets out the Governments planning policies for England and how these are expected to be applied by Local Authorities within their Local Development Frameworks (LDF).

xxxviii Regarding the NPPF, the most pertinent paragraphs are:

8.c) “to protect and enhance our natural, built and historic environment, including making effective use of land, improving biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy”

174.d) “minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures”

179.b) “promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity.”

180.a) “if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused.”

180.c) “development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons⁶³ and a suitable compensation strategy exists.”

xxxix Wokingham Borough Local Development Framework Adopted Core Strategy Development Plan Document (January 2010)

- xi The Site lies within the jurisdiction of Wokingham Borough Council. Policy CP7 Biodiversity and CP8 Thames Basin Heaths Special Protection Area are relevant to biodiversity.

CP7 - Biodiversity

Sites designated as of importance for nature conservation at an international or national level will be conserved and enhanced and inappropriate development will be resisted. The degree of protection given will be appropriate to the status of the site in terms of its international or national importance.

Development:

A) Which may harm county designated sites (Local Wildlife Sites in Berkshire), whether directly or indirectly, or

B) Which may harm habitats or, species of principle importance in England for nature conservation, veteran trees or features of the landscape that are of major importance for wild flora and fauna (including wildlife and river corridors), whether directly or indirectly, or

C) That compromises the implementation of the national, regional, county and local biodiversity action plans will be only permitted if it has been clearly demonstrated that the need for the proposal outweighs the need to safeguard the nature conservation importance, that no alternative site that would result in less or no harm is available which will meet the need, and:

i) Mitigation measures can be put in place to prevent damaging impacts; or

ii) Appropriate compensation measures to offset the scale and kind of losses are provided.

CP8 - Thames Basin Heaths Special Protection Area

Development which alone or in combination is likely to have a significant effect on the Thames Basin Heaths Special Protection Area will be required to demonstrate that adequate measures to avoid and mitigate any potential adverse effects are delivered.

- xli Wokingham Borough Council have recently issued their Draft Local Plan, of which Policy NE1 Biodiversity and Geodiversity and Policy NE2 Biodiversity Net Gain are of relevance to biodiversity.

Policy NE1: Biodiversity and geodiversity

1. Development proposals should protect and enhance biodiversity and/or geodiversity features of conservation value and implement appropriate conservation management. The degree of protection will be proportionate to the status of the site or species in terms of its international, national and/or local importance.

2. Development proposals should demonstrate through a suitable level of ecological survey information and assessment how they conserve and enhance biodiversity and/or geodiversity including their long-term management.

3. Development will only be supported where it:

a) Avoids fragmentation of existing habitats and provides coherent ecological connectivity and permeability that is integrated and linked to the wider green and blue infrastructure network, through the restoration, enhancement and connection of: linear features such as wildlife corridors; stepping stones; and any nature recovery networks (including links to habitats outside the borough);

b) Incorporates beneficial biodiversity and/or geodiversity conservation features and enhances existing features through design, layout and landscaping;

c) Provides or retains appropriate buffer zones between development proposals and designated sites, protected species, priority species or priority habitats or main rivers, which are informed by detailed site-based assessment;

d) Seeks to eradicate or control any invasive non-native species present on site; and

e) Is compatible with any national, regional, county, and local biodiversity action plans, Local Nature Recovery Strategy and/or other strategic conservation management plans for species or habitats.

In addition to the above, where specific identified sites are likely to be affected, the following will be taken into account:

Internationally Designated Sites

4. Development proposals likely to result in a significant effect on internationally designated sites either alone or in combination with other plans or projects, will not be supported unless it can be demonstrated that the adverse effects on the integrity of the designated site can be fully avoided, mitigated and/or compensated.

Nationally Designated Sites

5. Development proposals that are likely to have an adverse effect on the notified features of a nationally designated site will only be supported in exceptional circumstances, and provided it has been clearly demonstrated that:

a) A suitable alternative site with a lesser impact than that proposed is not available;

b) The on-site biodiversity or geodiversity benefits of the proposal including, where applicable, the overall site or wider habitats network, clearly outweigh the impacts on the notified features of the site; and

c) All appropriate avoidance and mitigation measures have been proposed and secured.

Irreplaceable Habitats

6. Development proposals that are likely to result in the loss or deterioration of an irreplaceable habitat, (such as ancient woodland, ancient or veteran trees) will only be supported in exceptional circumstances, where:

a) A suitable alternative with a lesser impact than that proposed is not available;

b) It has been adequately demonstrated that the irreplaceable habitat cannot be retained within the proposed development scheme;

c) The need and benefits of the proposed development in that location and form clearly outweigh the loss or deterioration; and

d) Adequate compensation measures are provided on site wherever possible, and off-site where this is not feasible. The scale and quality of the compensation measures required will be commensurate to the loss or deterioration of the irreplaceable habitat and will be considered on a site-by-site basis, including their long-term management and maintenance.

Sites of Local Importance

7. Development proposals which are likely to have an adverse effect on a site of local importance (including priority species or priority habitats, and sites that meet the criteria for designation as a Local Wildlife Site or Local Geological Site) will only be supported where they accord with the following sequential approach:

- a) No alternative with a lesser impact is available;*
- b) The need and benefits of the proposed development in that location and form clearly outweigh the loss or deterioration;*
- c) All proportionate mitigation measures to minimise adverse effects are included within the development proposal; and*
- d) As a last resort, secure appropriate compensation measures on-site wherever possible, and off-site where this is not feasible, including their long-term management and maintenance.*

Policy NE2: Biodiversity net gain

1. All development proposals should demonstrate a minimum biodiversity net gain of 10% (unless specified in another site allocation policy) calculated via the most up-to-date national biodiversity accounting metric and provide details of the long-term maintenance and management of the net gain. This should be delivered on site in the first instance, or through biodiversity off-setting where appropriate.

Appendix 4: METHODOLOGY

Desk Study

Background Records Search

- i The preliminary ecological assessment includes a desk study to obtain background records relevant to a Site and the Scheme. The data obtained provides contextual information for the scope of field surveys, to aid the evaluation of field survey results, and to provide supplementary information where complete field survey coverage is not possible.
- ii The Study Area is dependent upon the nature, timing and scale of the Scheme, as well as the location of the Site and the surrounding landscape. These variables all contribute to what is referred to as the Zone of Influence (Zoi) of the Scheme, which is the area over which ecological features may be affected by biophysical changes because of the works and associated activities.
- iii Thames Valley Biological Records Centre was contacted to obtain the following ecological data:
 - Records of non-statutory designated sites within 2km of the Site boundary;
 - Records of legally protected and notable species (fauna and flora) within 2km of the 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 List²⁸.
- iv The Multi-Agency Geographic Information for the Countryside (MAGIC) (www.magic.gov.uk) website was reviewed for the following information:
 - Designated sites of nature conservation importance (statutory sites only) within 2km of the Site. This was extended to 2km for internationally designated sites: Special Protection Areas (SPAs), Wetlands of International Importance (Ramsar sites) and Special Areas of Conservation (SACs); and,
 - Notable habitats within 2km of the Site, these being areas of ancient woodland and 'Habitats of Principal Importance for the Conservation of Biodiversity' included in the England Biodiversity List.

Great Crested Newt Pond Search

- v Ordnance Survey maps and the Where's the Path website (<https://wtp2.appspot.com/wheresthepath.htm>) have been used to identify the presence of water bodies within 500 m of the Site boundary, in order to help establish if the land within and immediately surrounding the Site could be used by great crested newts. This species can use suitable terrestrial habitat up to 500 m from a breeding pond (English Nature, 2001), though there is a notable decrease in great crested newt abundance beyond 250 m from a breeding pond (Natural England, 2004).

UK Habitats Surveys

- vi The preliminary ecological assessment includes a walkover survey of the Survey Area (all land within the Site), broadly following the Phase 1 habitat survey methodology as set out in Joint Nature Conservation Committee guidance (Joint Nature Conservation Committee, 2010). This survey method records information on habitat types and is 'extended' to record any evidence of and potential for protected or notable species to be present. Plant names recorded during the survey follow (Stace, 2019).

During the walkover survey, the following protected or notable species are considered:

²⁸ Section 40 of the Natural Environment & Rural Communities Act 2006 requires that very 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 conservation of biodiversity in England that is known as the England Biodiversity List

- Badger: the survey involves searching for signs of badger activity including setts, tracks, snuffle holes and latrines, following the methodology detailed in (Scottish Natural Heritage, 2018) and (Harris, 1989).
- Bats: the survey involves searching for potential roosting sites for bats within trees and structures (such as buildings, bridges or underground features such as mines) and categorising the potential of those trees or structures to support roosting bats (negligible to high, or confirmed roost), in accordance with Bat Conservation Trust (BCT) (Collins, J. (Eds.), 2016) guidance.
- Otter: the survey involves assessing the potential of watercourses and water bodies, and adjacent terrestrial habitat within the Survey Area to support otter, following RSPB (Ward, 1994) and (Chanin, 2003) guidance;
- Water vole: the survey involves assessing the potential of watercourses and water bodies within the Survey Area to support water vole, following The Mammal Society (Dean, 2016) guidance;
- Birds: the survey involves assessing the potential of habitats within the Survey Area to support breeding, wintering or migrating birds, either individually notable species or assemblages of both common and rarer species;
- Great crested newt: the survey involves assessing the potential of habitats within the Survey Area to support great crested newt, following English Nature (English Nature, 2001) and Froglife (Froglife, 2001) guidance;
- Reptiles: the survey involves assessing the potential of habitats within the Survey Area to support reptiles (typically adder, grass snake, common lizard and slow worm only, though in some locations and habitat types (most notably heathland) may also include smooth snake and sand lizard), following Froglife (Froglife, 1999) and JNCC (Joint Nature Conservation Committee, 2003) guidance;
- Protected or Notable species of plants: the survey involves recording protected or notable plant species;
- Other notable species: the survey involves assessing the potential of habitat within the Survey Area to support other Notable Species, such as hedgehog, brown hare, polecat or common toad;
- Non-native invasive plant species: the survey involves recording evidence of the presence of invasive plants listed on (Wildlife and Countryside Act, 1981 (as amended)) and subject to strict legal control.

Badger Surveys

vii The badger survey involves a daytime assessment of the site and surrounding 30m (where accessible) for visible signs such as setts, latrines, prints & tracks, hairs and scratch marks. The survey followed nationally recognised methods, as set out by Harris et al (1990).

Bat Surveys – Ground Level Tree Assessment (GLTA)

viii The GLTA survey followed the industry standard methodology published in the Bat Conservation Trust Bat Surveys for Professional Ecologists Good Practice Guidelines (BCT 2023) and included an assessment individual tree for their suitability to support roosting bats, utilising the assessment criteria provided in the table below.

Table 12: Bat Survey Assessment Criteria for Trees

Roost Potential	Description	Surveys Required (Trees)
Confirmed roost	Evidence of roosting bats found during initial daytime inspection or known bat roost present.	3 – including 1 dawn as a minimum or all dusk surveys supplemented by night vision aids (May to September). Or: conduct Advanced Licence Bat Survey Techniques (ALBST) for larger schemes and / large numbers of trees and PRF-Ms. Winter: 2 surveys / Assume presence and mitigate – December to February.
PRF-M	PRF is suitable for multiple bats and therefore may be used by a maternity colony.	

Roost Potential	Description	Surveys Required (Trees)	
PRF-I	PRF is only suitable for individual bats or very small numbers of bats due to either size or lack of suitable surrounding habitat.	Compensate for all PRF-I's prior to impacts. Precautionary Mitigation of Works for works. In some instances, may require further survey depending on context.	
Negligible	No obvious features likely to be used by roosting bats; however, a small element of uncertainty remains as bats can use small and apparently unsuitable features on occasion. Risk considered insignificant.	None	None

Bat Surveys – Aerial Inspections of Trees

ix Visual tree inspections were undertaken to determine whether the trees were safe to climb, taking note of any potential structure weakness, deadwood or poor vigour and any adjacent hazards such as barbed wire, power lines and parked cars.

x Trees that were deemed safe to climb were then inspected at height following the industry standard methodology published in the Bat Conservation Trust Bat Surveys for Professional Ecologists Good Practice Guidelines (BCT 2023). Aerial inspections were completed by a team of two 0039-22 (formerly CS38) tree climbing and aerial rescue trained surveyors with the lead climber also being a Class 2 License holder for bats. Features identified from ground level as well as any additional features identified at height were inspected with the aid of an endoscope with motion capture abilities to assess and determine the suitability of the feature as well as identify evidence of use such as droppings or bats themselves.

xi Where applicable pictures or videos of bats within a roost or evidence of use such as droppings, staining or scratch marks were recorded.

Bat Surveys – Walked Transect

xii Transect surveys were undertaken following the industry standard methodology published in the Bat Conservation Trust Bat Surveys for Professional Ecologists Good Practice Guidelines (BCT 2023).

xiii Surveyors walked a pre-designed transect route, making 2-5-minute recording stops at predetermined intervals throughout the route to record bat activity. The starting point of the transect for each survey was altered to ensure coverage of different parts of the transect at different times of the night and included a 30-minute recording stop at the start of the transect route. Bat activity was also recorded between recording stops throughout the transect route.

xiv Each transect survey covered the period of peak bat activity, which is considered to be from sunset until around 2 hours after sunset (dusk transect). For all surveys, surveyors used an EM Touch bat detector and iPad, which logged GPS locations and recorded the calls of all bats encountered. This equipment allowed surveyors to listen to, identify and record calls during the survey. Notes were made by the surveyor during the survey on the time of bat observations, species heard and, where possible, direction of flight and behavioural notes regarding their activity (e.g. feeding, commuting, passing, social calling).

xv A qualitative assessment was made of bat activity highlighting areas where bats were seen to:

- Forage - Either occasionally or regularly: Occasional meaning one or two foraging episodes across the transect period, regular meaning foraging behaviour noted on three or more occasions during the transect survey.
- Commute - Commuting activity would be characterised by a number of bats entering the site and flying purposefully in a direct line: e.g. following a hedge or flying across open areas.
- Interact - These behaviours could include regular chasing, 'lekking' or bats recorded making regular social calls.

Breeding Bird Surveys

xvi The BBS was based on the Common Bird Census (CBC) methodology (Bibby et al. 2000). This methodology seeks to estimate and map the quantity and distribution of breeding bird territories encountered within the Site and 50 metres outside of the Site boundary.

xvii A series of four visits were undertaken, starting 30 minutes before sunrise, between May to June. A transect of the Site was walked ensuring all land within the Site was surveyed within 50m, with the direction being alternated between visits. Surveys were only conducted during suitable weather conditions.

xviii Birds observed during the survey, either visually or audibly, were recorded using the standardised British Trust for Ornithology (BTO) codes, including behavioural notes that may indicate breeding e.g. singing, courtship displays, nest building etc.

xix Field survey maps were transferred to a GIS mapped system. These maps were then used to identify territory boundaries within the Site, by analysing the pattern of activity between each visit. Birds were also categorized using the BTO bird atlas as:

Breeding Status Codes

Non-breeding	
F	Flying over
M	Species observed but suspected to be still on Migration
U	Species observed but suspected to be sUmmering non-breeder
Possible breeder	
H	Species observed in breeding season in suitable nesting Habitat
S	Singing male present (or breeding calls heard) in breeding season in suitable breeding habitat
Probable breeding	
P	Pair observed in suitable nesting habitat in breeding season
T	Permanent Territory presumed through registration of territorial behaviour (song etc) on at least two different days a week or more part at the same place or many individuals on one day
D	Courtship and Display (judged to be in or near potential breeding habitat; be cautious with wildfowl)
N	Visiting probable Nest site
A	Agitated behaviour or anxiety calls from adults, suggesting probable presence of nest or young nearby
I	Brood patch on adult examined in the hand, suggesting Incubation
B	Nest Building or excavating nest-hole
Confirmed breeding	
DD	Distraction-Display or injury feigning
UN	Used Nest or eggshells found (occupied or laid within period of survey)
FL	Recently FLedged young (nidicolous species) or downy young (nidifugous species). Careful consideration should be given to the likely provenance of any fledged juvenile capable of significant geographical movement. Evidence of dependency on adults (e.g. feeding) is helpful. Be cautious, even if the record comes from suitable habitat.
ON	Adults entering or leaving nest-site in circumstances indicating Occupied Nest (including high nests or nest holes, the contents of which can not be seen) or adults seen incubating
FF	Adult carrying Faecal sac or Food for young
NE	Nest containing Eggs
NY	Nest with Young seen or heard

Biodiversity Impact Assessment

xx The biodiversity net gains assessment involves making a comparison between the biodiversity value of habitats present within the Site prior to a development (i.e. the 'baseline') and the predicted biodiversity value of habitats following the completion of the Scheme (i.e. 'post development'). The comparison is undertaken in terms of 'biodiversity units', with a 'biodiversity metric' providing the mechanism to allow biodiversity values to be calculated and compared.

xxi The metric assesses and generates separate outputs for area-based habitats and linear based habitats (with rivers reported separately to other habitats like hedgerows). A development cannot claim to achieve net gain until biodiversity net gains are predicted across all area-based, linear based and river based habitats.

xxii The calculation for area-based and linear (non-river) habitats calculates biodiversity units as follows:

- Before Works = Distinctiveness Score x Condition Assessment x Area/Length x connectivity x strategic significance
- After Works = ((Distinctiveness Score x Condition Score x Area/ Length x connectivity x strategic significance) / Time to Target Condition) / Difficulty of Creation/Restoration

xxiii The five factors are determined as set out below:

- Distinctiveness Score – High, Medium or Low, based on UK habitat classifications.
- Condition Score – Good, Fairly good, Moderate, Fairly poor or Poor, based on habitat condition assessment.
- Area/Length – hectares (ha)/ length (km) of habitat type.
- Connectivity – High, Medium and Low.
- Strategic significance – High (Within area formally identified in local strategy), Medium (Location ecologically desirable but not in local strategy) and Low (Area/compensation not in local strategy/ no local strategy).
- Time until target condition – time period (in years) until the target condition will be achieved.
- Difficulty of creation/restoration – a score applied to account for risk associated with creating/restoring different types of habitat.

Limitations

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

xxv An ecological survey represents a 'snapshot' in time of the ecological condition of a Site. The ecological character of a Site can change substantially throughout both the course of a year, and from year to year impacting on the extent and quality of habitats potential to support protected species.

Appendix 5: GLTA/Aerial Tree Climbing Inspections (Bats)

Tree Reference	GLTA and/or Aerial Tree Climb Evidence	Photographs	Roost Classification
T1	Mature ash. 15m high. 0.5m Diameter at Breast Height (DBH). 5m high, SW aspect. Series of exploratory woodpecker holes, creating shallow cavities which are generally dirty and with cobwebs and invertebrates. Suitable for individual bats. PRF-I. 1.5-2m high, SW aspect. Minor area of deadwood, cavity too small for endoscope camera so unlikely to be suitable for bat ingress. Negligible.	 	T1 – PRF-I
T2	Mature oak. 20m high. 1m DBH. 6m high, NE aspect. Knot hole, entrance covered with ivy, damp inside, with leaf litter. Large enough for multiple bats. PRF-M.		T2 – PRF-M.

Tree Reference	GLTA and/or Aerial Tree Climb Evidence	Photographs	Roost Classification
	5.5m high, NW aspect. Branch cavity with multiple entrances, with cobwebs on some entrances. Large enough for multiple bats, 5+. PRF-M.		
	6m high, S aspect. Deadwood branch with a shallow dry cavity. Suitable for individual bats. PRF-I.		
	10-12m high, S aspect. Deadwood branch cavity with a narrow and open split. Suitable for a single bat at best. PRF-I.		

Tree Reference	GLTA and/or Aerial Tree Climb Evidence	Photographs	Roost Classification
T3	Mature oak. 18m high. 1m DBH. 6m high, S aspect. Branch cavity, collar around dead limb suitable for individual bats. PRF-I. 10m high, S aspect. Deadwood stub, open with no cavity. Negligible. 5m high, S aspect. Split in dead limb, 2-3cm wide, 15-20cm depth. Cavity somewhat open so subject to weather ingress, suitable for individual bats. PRF-I.	  	T3 – PRF-I

Tree Reference	GLTA and/or Aerial Tree Climb Evidence	Photographs	Roost Classification
T4	Dead tree now on ground. Small pockets under ivy but clustered by vegetation, PRF subject to potential predation due to being on ground. Suitable for individual bats. PFR-I.		T4 – PRF-I
T5	Mature pollarded oak. 6m high. 1.5m DBH. Pollarded oak in private garden but near to Site boundary. No access possible. Areas of lifted bark throughout. PRF-M (as a precaution).		T5 – PRF-M
T6	Mature oak. 18 high. 1.25m DBH. 4m high, N aspect. Branch cavity 7cm entrance, depth 50cm although narrowing to a dome apex, dry and dirty with woodlice present. Suitable for small numbers of bats. PRF-I.		T6- PRF-M

Tree Reference	GLTA and/or Aerial Tree Climb Evidence	Photographs	Roost Classification
	4m high, SW aspect. Branch cavity, 20cm entrance but cavity shallow and narrowing to a wedge apex. Dry and dirty inside, cavity open and exposed due to large entrance. Suitable for an individual bat at best, PRF-I.		
	6m high, NE aspect. Branch cavity, 5cm wide with a depth of 33cm, narrowing, extensive woodlice occupation at narrowest extent. Cavity is dry but narrow. Suitable for small numbers of bats. PRF-I.		
	8m high, W aspect. Branch cavity with upwards facing entrance gaps along branch, some are cluttered with ivy. Cavity 30cm in depth, although somewhat open due to various entrance gaps and therefore likely to be subject to weather ingress. Debris inside, potentially an old nest. Suitable for small numbers of bats. PFF-I.		

Tree Reference	GLTA and/or Aerial Tree Climb Evidence	Photographs	Roost Classification
	5m high, SW aspect. Branch cavity domed shaped 25cm in depth, entrance 3cm wide. Extends back towards trunk. Appears to be an old birds' nest inside, many woodlice present at dome apex. Suitable for small numbers of bats. PRF-I.		
	5m high, SW aspect. Callus around dead stub – no cavities present. Negligible.		
	6m high, S aspect. Narrow split in deadwood, open through to the other side of the branch. Dry with woodlice present. Suitable for individual bats. PFR-I.		

Tree Reference	GLTA and/or Aerial Tree Climb Evidence	Photographs	Roost Classification
	4m high, SW aspect. Large, chambered branch cavity with 18cm wide entrance, extends back and down 40cm, upwards 10cm and left-right 10cm. Ivy and debris present at base of cavity, slugs and woodlice at apex. Dry. Somewhat clustered by ivy although not around immediate entrance. Suitable for multiple bats. PRF-M.		
	3.5m high, SW aspect. Small branch cavity, upwards facing rot hole cluttered by ivy. Narrow cavity 8cm in depth, wet and sludgy throughout. At best suitable for an individual bat. PFR-I.		
	3.5m high, SW aspect. Dome shaped branch cavity with a very shallow depth, damp inside. Soil in base of cavity. Suitable for an individual bat. PRF-I.		

Tree Reference	GLTA and/or Aerial Tree Climb Evidence	Photographs	Roost Classification
	3.5m high, SE aspect. Domed shaped branch cavity, 20cm in depth with an entrance 5cm wide. Dry inside, slugs and woodlice present. Suitable for individual bats. PRF-I.		
T7	Mature oak. 18m high. 1.25m DBH. 5m high, SE aspect. Split/trunk cavity, 150cm high and 8cm wide, 10cm in depth, creating a narrow, wedged cavity which is tubular. Suitable for multiple bats. PRF-M.		T7- PRF-M
T8	Mature oak. 16m high. 1.25m DBH. Unsafe to climb as upper limbs are dead. 5m high, SW aspect. Large cavity from previously failed limb. May extend back. PRF-M as a precaution. Callus roll around dead stub just above, could create cavities but likely to be PFR-I. Deadwood in upper crown of tree, with some callus rolls around dead stubs. Could create cavities. PRF-M as a precaution.		T8- PRF-M

Tree Reference	GLTA and/or Aerial Tree Climb Evidence	Photographs	Roost Classification
T9	Mature oak. 22m high. 1.5m DBH. 7m high, SW aspect. Branch with deadwood split providing no cavities. Negligible. 9m high, SW aspect. Split in deadwood on underside of limb, too narrow for bat access. Negligible.	 	T9 – Negligible.

Appendix 6: BIA Headline Results

FINAL RESULTS		
Total net unit change (Including all on-site & off-site habitat retention, creation & enhancement)	Habitat units	12.82
	Hedgerow units	4.53
	Watercourse units	0.78
Total net % change (Including all on-site & off-site habitat retention, creation & enhancement)	Habitat units	16.02%
	Hedgerow units	16.76%
	Watercourse units	66.15%
Trading rules satisfied?	Yes ✓	

Unit Type	Target	Baseline Units	Units Required	Unit Deficit
Habitat units	10.00%	80.04	88.05	0.00
Hedgerow units	10.00%	27.03	29.73	0.00
Watercourse units	10.00%	1.17	1.29	0.00

No additional area habitat units required to meet target ✓
No additional hedgerow units required to meet target ✓
No additional watercourse units required to meet target ✓

Appendix 7: Static Bat Detectors – Raw Data

Static 1																							
Location description:		Northern end of Site																					
Do not adjust																							
			Species																				
Month	Static number	Dates	PIPI	PIPY	PIPSOC	NYNO	NYLE	NYCsp	MYsp	MYDA	WHBR	MYNA	MYAL	EPSE	BLE	PLAUS	RHFE	RHHI	BARBAR	Total number of passes	Total number of nights	Average bats per night (all species)	
April																				0	5	0	
May	STT11	09/05/2024-13/05/2024	164	82	3	3	5	3							5				32	297	5	59.4	
June	STT11	09/06/2024-13/06/2024	63	12	1														2	78	5	15.6	
July	STT25	18/07/2024-22/07/2024	266	30		46	25		8										1	376	5	75.2	
August	STT03	09/08/2024-13/08/2024	487	94	8	32	8		16					6					37	688	5	137.6	
September	STT18	11/09/2024-15/09/2024	81	25		111														217	5	43.4	
		Total passes / species	1061	243	12	192	38	3	24	0	0	0	0	6	5	0	0	0	72	1656	35	47.31429	
		Average passes / species	30.31429	6.942857	0.342857	5.485714	1.085714	0.085714	0.685714	0	0	0	0	0.171429	0.142857	0	0	0	2.057143				
		% of bat passess / species	64.07005	14.67391	0.724638	11.5942	2.294686	0.181159	1.449275	0	0	0	0	0.362319	0.301932	0	0	0	4.347826				

Static 2																						
Location description:		Southern end of Site																				
Do not adjust																						
		Species																				
Month	Static number	Dates	PIPI	PIPY	PIPSOC	NYNO	NYLE	NYCsp	MYsp	MYDA	WHBR	MYNA	MYAL	EPSE	PLAU	PLAUS	RHFE	RHHI	BARBAR	Total number of passes	Total number of nights	Average bats per night (all species)
April																				0	5	0
May	STT08	09/05/2024-13/05/2024	784	376					10											1170	5	234
June	STT25	09/06/2024-13/06/2024	212	100	15															327	5	65.4
July	STT11	18/07/2024-22/07/2024	18	142		53														213	5	42.6
August	STT20	09/08/2024-13/08/2024																		0	5	0
September	STT03	11/09/2024-15/09/2024	952	107	2	35			2										17	1115	5	223
		Total passes / species	1966	725	17	88	0	0	12	0	0	0	0	0	0	0	0	0	17	2825	35	80.71429
		Average passes / species	56.17143	20.71429	0.485714	2.514286	0	0	0.342857	0	0	0	0	0	0	0	0	0	0.485714			
		% of bat passess / species	69.59292	25.66372	0.60177	3.115044	0	0	0.424779	0	0	0	0	0	0	0	0	0	0.60177			

Code	Species name
PIPI	Common pipistrelle
PIPY	Soprano pipistrelle
PIPY	Soprano pipistrelle
PINA	Nathusius pipistrelle
PIPSOC	Pipistrelle social calls
NYNO	Noctule
NYLE	Leisler's
NYCsp	Nyctalus species
MYsp	Myotis species
MYDA	Daubentons
MYNA	Natterer's
MYAL	Alcathoe
EPSE	Serotine
PLAU	Brown Longeared
PLAUS	Grey Longeared
RHFE	Greater horse shoe
RHHI	Lesser horse shoe

Date	Temp Hi (°C)	Temp Low (°C)	Windspeed (mph)	Weather Conditions	Commentary
09/05/2024	10	8	2	Dry, clear skies	Suitable for bat survey
10/05/2024	11	8	2	Dry, clear skies	Suitable for bat survey
11/05/2024	13	7	4	Dry, clear skies	Suitable for bat survey
12/05/2024	13	10	4	Dry, overcast	Suitable for bat survey
13/05/2024	13	12	8	Dry, clear skies	Suitable for bat survey
09/06/2024	7	3	3	Dry, clear skies	Suitable for bat survey
10/06/2024	13	11	12	Dry, mostly cloudy	Suitable for bat survey
11/06/2024	9	6	5	Dry, clear skies	Suitable for bat survey
12/06/2024	9	6	3	Dry, clear skies	Suitable for bat survey
13/06/2024	8	5	1	Dry, clear skies	Suitable for bat survey
18/07/2024	13	12	2	Dry, clear skies	Suitable for bat survey
19/07/2024	16	12	2	Dry, clear skies	Suitable for bat survey
20/07/2024	18	15	5	Dry, clear skies	Suitable for bat survey
21/07/2024	18	17	6	Dry, clear skies	Suitable for bat survey
22/07/2024	15	12	5	Dry, clear skies	Suitable for bat survey
09/08/2024	19	18	14	Dry, overcast	Suitable for bat survey
10/08/2024	14	12	2	Dry, clear skies	Suitable for bat survey
11/08/2024	17	16	2	Dry, fog	Suitable for bat survey
12/08/2024	20	17	7	Dry, clear skies	Suitable for bat survey
13/08/2024	18	11	4	Dry, clear skies	Suitable for bat survey
11/09/2024	9	5	7	Dry, clear skies	Low overnight temps in September, although higher bat activity was recorded in this month than in June/July when overnight temps were notably higher.
12/09/2024	6	5	6	Dry, clear skies	Low overnight temps in September, although poor higher bat activity was recorded in this month than in June/July when overnight temps were notably higher.
13/09/2024	5	2	4	Dry, clear skies	Low overnight temps in September, although poor higher bat activity was recorded in this month than in June/July when overnight temps were notably higher.
14/09/2024	5	3	2	Dry, clear skies	Low overnight temps in September, although poor higher bat activity was recorded in this month than in June/July when overnight temps were notably higher.
15/09/2024	10	4	1	Dry, clear skies	Low overnight temps in September, although poor higher bat activity was recorded in this month than in June/July when overnight temps were notably higher.

Appendix 8: Otter and Water Vole Survey Results

Ditch Reference	Habitat Description	Water Vole and Otter Evidence/Suitability	Photographs
D1	Shallow arable ditch in part associated with a hedgerow. 1m wide, 0.5m deep with steep banks. Dry at the time of spring and autumn surveys, with some standing water to the east approximately 5-10cm deep. Banks and channel are dominated by ruderal herbs and grasses, such as nettles, cleavers and umbellifers.	No evidence of water vole or otter found during spring and autumn surveys. No obvious direct connections to other notable watercourses. Due to ephemeral nature of ditch, unsuitable for permanent habitation by water voles. Could be utilised for dispersal by otters, although no field evidence found to support this.	
D2	Shallow arable ditch following a hedgerow. 1m wide, 0.5m deep with steep banks. Shallow running water evident during spring and autumn surveys, patches of water starwort present. Banks and channel are dominated by ruderal herbs and grasses, such as nettles, cleavers and umbellifers.	No evidence of water vole or otter found during spring and autumn surveys. No obvious direct connections to other notable watercourses. Suitable banks for burrowing by water vole, although shallow nature of water channel and dominance of ruderal plants are limiting factors. Could be utilised for dispersal by otters, although no field evidence found to support this.	

Ditch Reference	Habitat Description	Water Vole and Otter Evidence/Suitability	Photographs
D3	Shallow arable ditch following a hedgerow. 1m wide, 0.5m deep with steep banks. Occasional shallow surface water pools evident during spring and autumn surveys, no aquatic vegetation identified. Banks and channel are dominated by ruderal herbs and grasses, such as nettles, cleavers and umbellifers.	No evidence of water vole or otter found during spring and autumn surveys. No obvious direct connections to other notable watercourses. Due to ephemeral nature of ditch, unsuitable for permanent habitation by water voles. Could be utilised for dispersal by otters, although no field evidence found to support this.	
D4	Shallow arable ditch following a hedgerow. 1m wide, 0.5m deep with steep banks. Damp substrate evident during spring and autumn surveys, no aquatic vegetation identified. Some shallow surface water to the southern end of the channel, less than 5cm deep, no aquatic vegetation identified. Banks and channel are dominated by ruderal herbs and grasses, such as nettles, cleavers and umbellifers.	No evidence of water vole or otter found during spring and autumn surveys. No obvious direct connections to other notable watercourses. Due to ephemeral nature of ditch, unsuitable for permanent habitation by water voles. Could be utilised for dispersal by otters, although no field evidence found to support this.	

Ditch Reference	Habitat Description	Water Vole and Otter Evidence/Suitability	Photographs
D5	Short section of shallow arable ditch following a hedgerow. 1m wide, 0.5m deep with steep banks. The channel was dry during spring and autumn surveys. Banks and channel are dominated by ruderal herbs and grasses, such as nettles, cleavers and bramble.	No evidence of water vole or otter found during spring and autumn surveys. No obvious direct connections to other notable watercourses. Due to ephemeral nature of ditch, unsuitable for permanent habitation by water voles. Could be utilised for dispersal by otters, although no field evidence found to support this.	
D6	Shallow arable ditch following a hedgerow. 1m wide, 0.5m deep with steep banks. The channel was dry during spring and autumn surveys. Banks and channel are dominated by ruderal herbs and grasses, such as nettles, cleavers and umbellifers.	No evidence of water vole or otter found during spring and autumn surveys. No obvious direct connections to other notable watercourses. Due to ephemeral nature of ditch, unsuitable for permanent habitation by water voles. Could be utilised for dispersal by otters, although no field evidence found to support this.	

Ditch Reference	Habitat Description	Water Vole and Otter Evidence/Suitability	Photographs
D24	Shallow arable ditch following a hedgerow. 2-5m wide, 0.5m deep with steep banks. Occasional shallow surface water pools evident under trees during spring and autumn surveys, no aquatic vegetation identified. Banks and channel are dominated by ruderal herbs and grasses, such as nettles, cleavers and bramble.	No evidence of water vole or otter found during spring and autumn surveys. No obvious direct connections to other notable watercourses. Due to ephemeral nature of ditch, unsuitable for permanent habitation by water voles. Could be utilised for dispersal by otters, although no field evidence found to support this.	
D26	Shallow arable ditch following a hedgerow. 1-2m wide, 0.5m deep with steep banks. Banks and channel are dominated by ruderal herbs and grasses, such as nettles, cleavers and umbellifers. Patches of aquatic vegetation where ruderal vegetation less dominant, but no evident reeds, sedges, rushes or reed-grasses. Sandbags present as ideal otter latrine sites but no droppings present. Channel is only wet adjacent to the residential section of the hedge and is dry or non-existent following the roadside hedge.	No evidence of water vole or otter found during spring and autumn surveys. No obvious direct connections to other notable watercourses. Due to ephemeral nature of ditch, unsuitable for permanent habitation by water voles. Could be utilised for dispersal by otters, although no field evidence found to support this.	

Appendix 9: 3G Sports Pitch Floodlighting Specification

Spencers Wood, Swallowfield

3G Pitch

Date: 27-09-2024

Designer: Andy Poplett

Description:

The nominal values shown in this report are the result of precision calculations, based upon precisely positioned luminaires in a fixed relationship to each other and to the area under examination. In practice the values may vary due to tolerances on luminaires, luminaire positioning, reflection properties and electrical supply.

Signify

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CalcuLuX Area 7.9.0.0

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1. Project Description

1.1 Description

Maintenance Factor:- 0.90

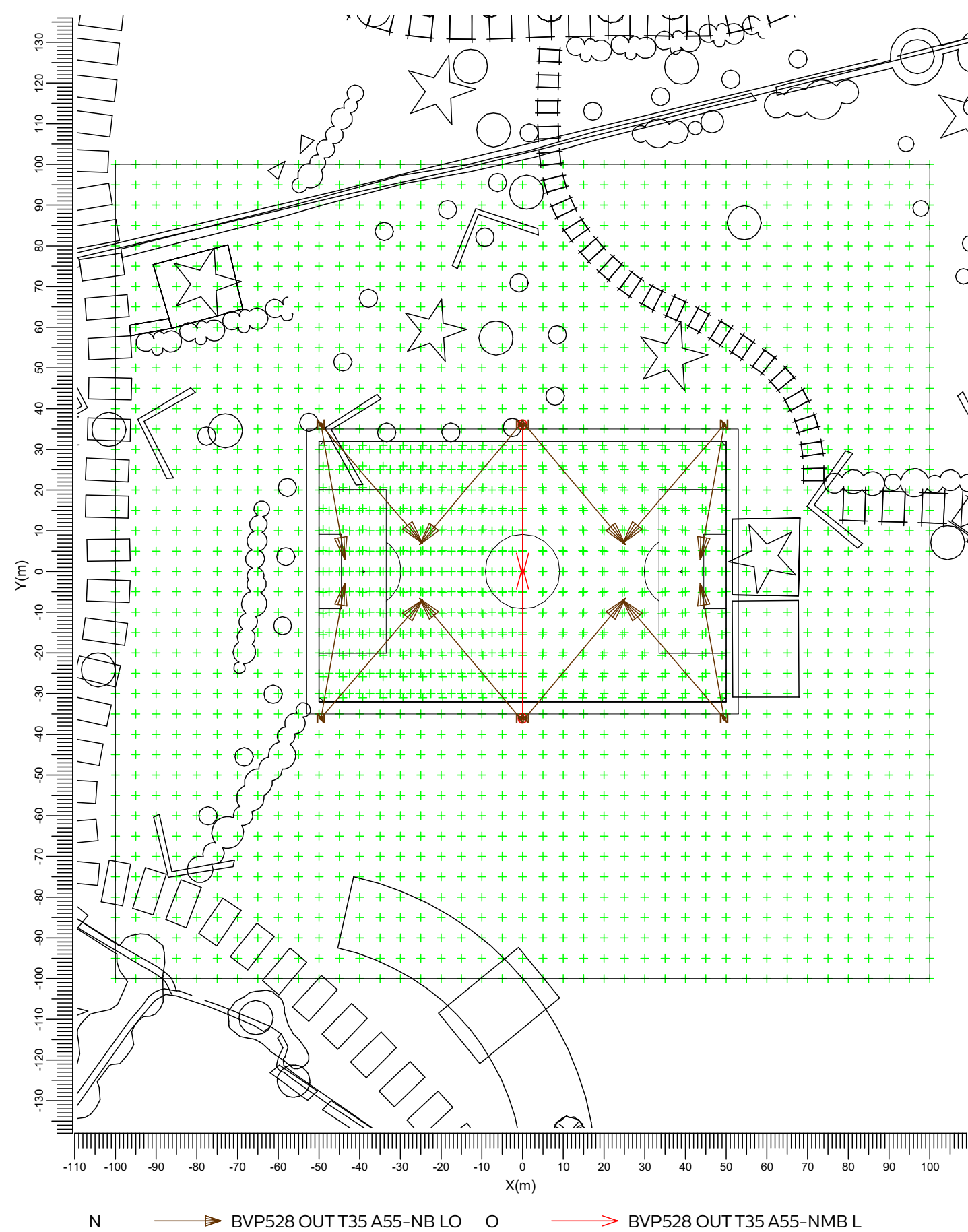
Pitch 100m x 64m (Fenced Area 106m x 70m)

The design has been completed using the Philips Asymmetric OptiVision LED GEN 3.5 3000k Floodlights. A total of 14 no have been used to achieve an average of 200lux.

Floodlights are mounted on 6 x 15 metre columns

All Floodlights fitted with integral LO (maximum cut off) louvres to reduce spill and glare.

1.2 Top Project Overview



Scale
1:1250

2. Summary

2.1 Project Luminaires

Code	Qty	Luminaire Type	Lamp Type	Power (W)	Flux (lm)
N	12	BVP528 OUT T35 A55-NB LO	1 * LED2470-4S/730	1498.6	1 * 247000
O	2	BVP528 OUT T35 A55-NMB LO	1 * LED2470-4S/730	1498.6	1 * 247000

The total installed power: 20.98 (kWatt)

Number of Luminaires Per Switching Mode:

Switching Mode	Luminaire Code		Power (kWatt)
	N	O	
Main Pitch	12	2	20.98
All ON	12	2	20.98

Number of Luminaires Per Arrangement:

Arrangement	Luminaire Code		Power (kWatt)
	N	O	
Centre 1	4	0	5.99
Centre 6	0	2	3.00
Corner 1	8	0	11.99

2.2 Calculation Results

Switching Modes:

Code	Switching Mode	Maintenance factor
1	Main Pitch	0.90
2	All ON	1.00

(II)luminance Calculations:

Calculation	Switching Mode	Type	Unit	Ave Min/AveMin/Max		
Football	1	Surface Illuminance	lux	208	0.68	0.35
Spillage	2	Surface Illuminance	lux	46.3	0.00	0.00

Obtrusive Light Calculations:

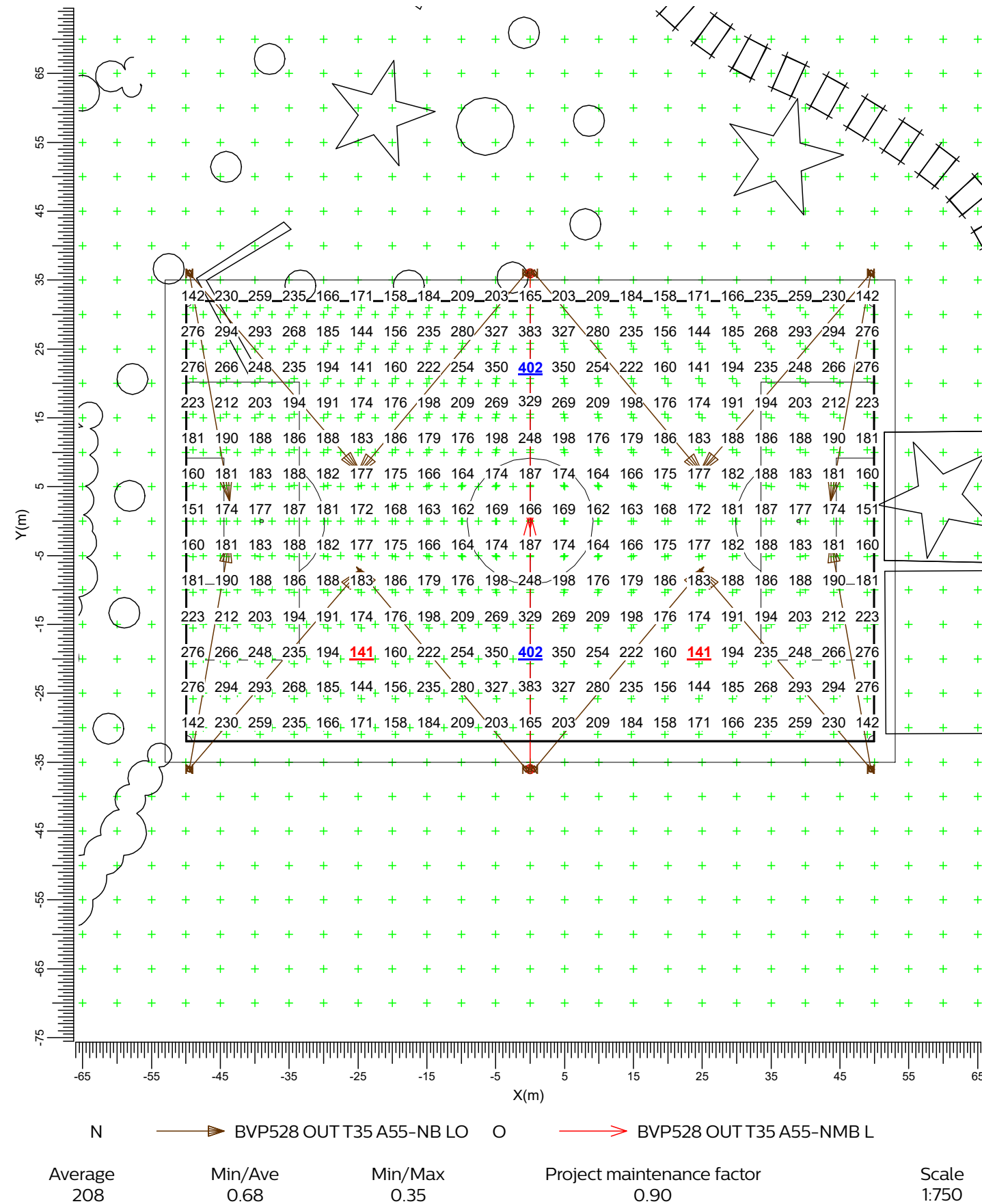
Switching Mode	ULR
1	0.00
2	0.00

3. Calculation Results

3.1 Football: Graphical Table

Main Pitch

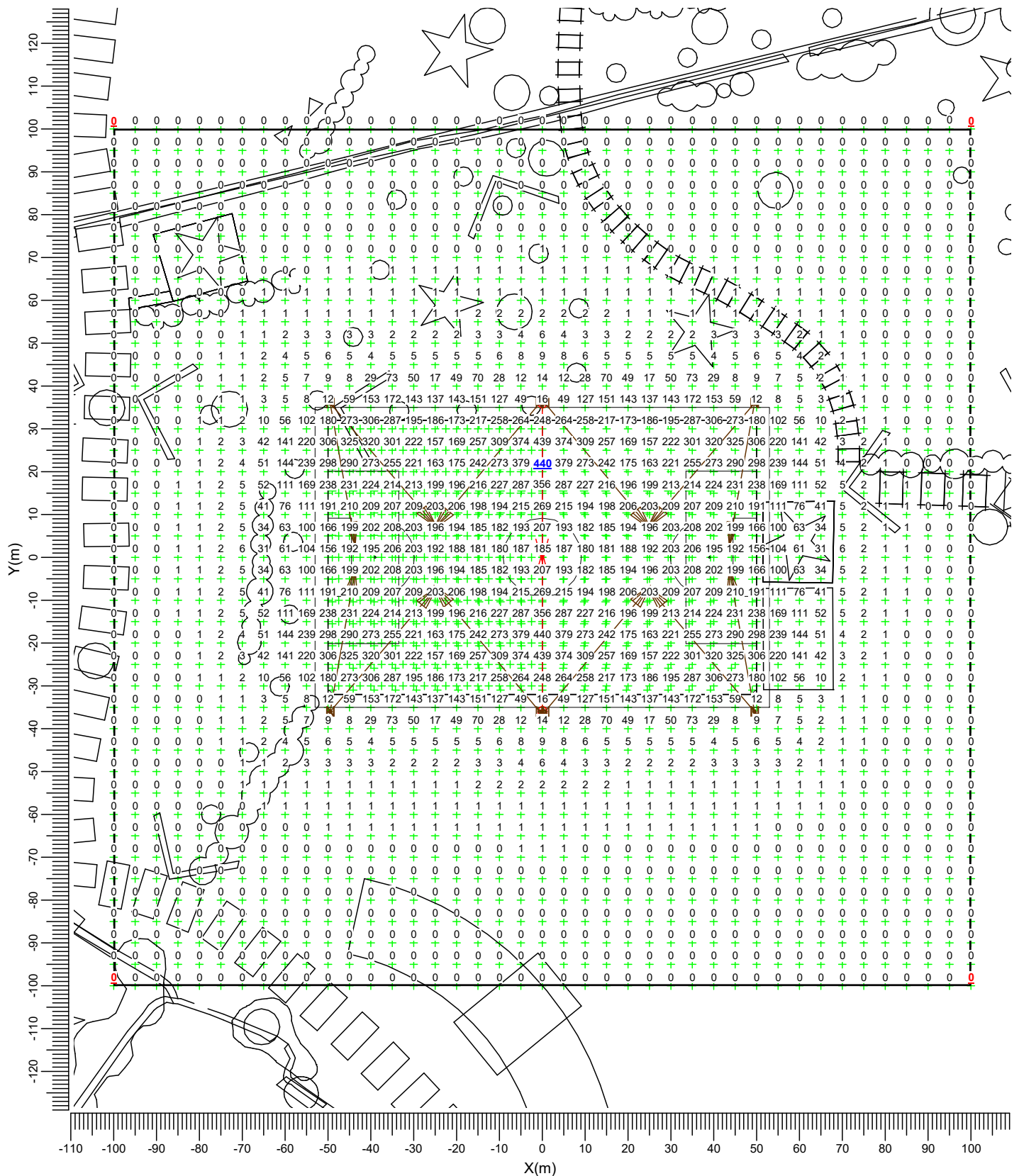
Grid : Football at Z = -0.00 m
Calculation : Surface Illuminance (lux)



3.2 Spillage: Graphical Table

All ON

Grid : Spillage at Z = -0.00 m
Calculation : Surface Illuminance (lux)



N



BVP528 OUT T35 A55-NB LO



BVP528 OUT T35 A55-NMB L

Average
46.3

Min/Ave
0.00

Min/Max
0.00

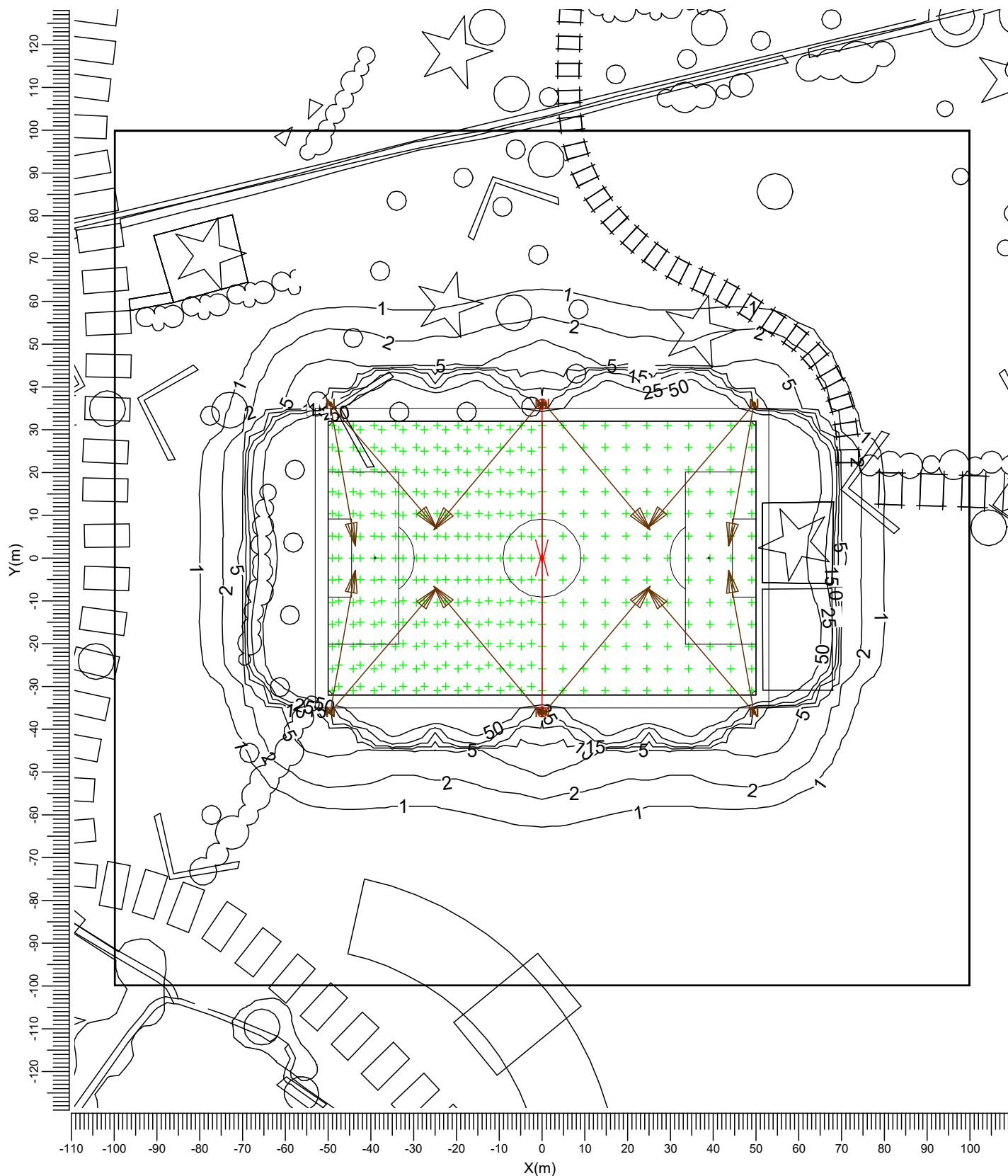
Project maintenance factor
1.00

Scale
1:1250

3.3 Spillage: Iso Contour

All ON

Grid : Spillage at Z = -0.00 m
 Calculation : Surface Illuminance (lux)



N



BVP528 OUT T35 A55-NB LO

O



BVP528 OUT T35 A55-NMB L

Average
46.3

Min/Ave
0.00

Min/Max
0.00

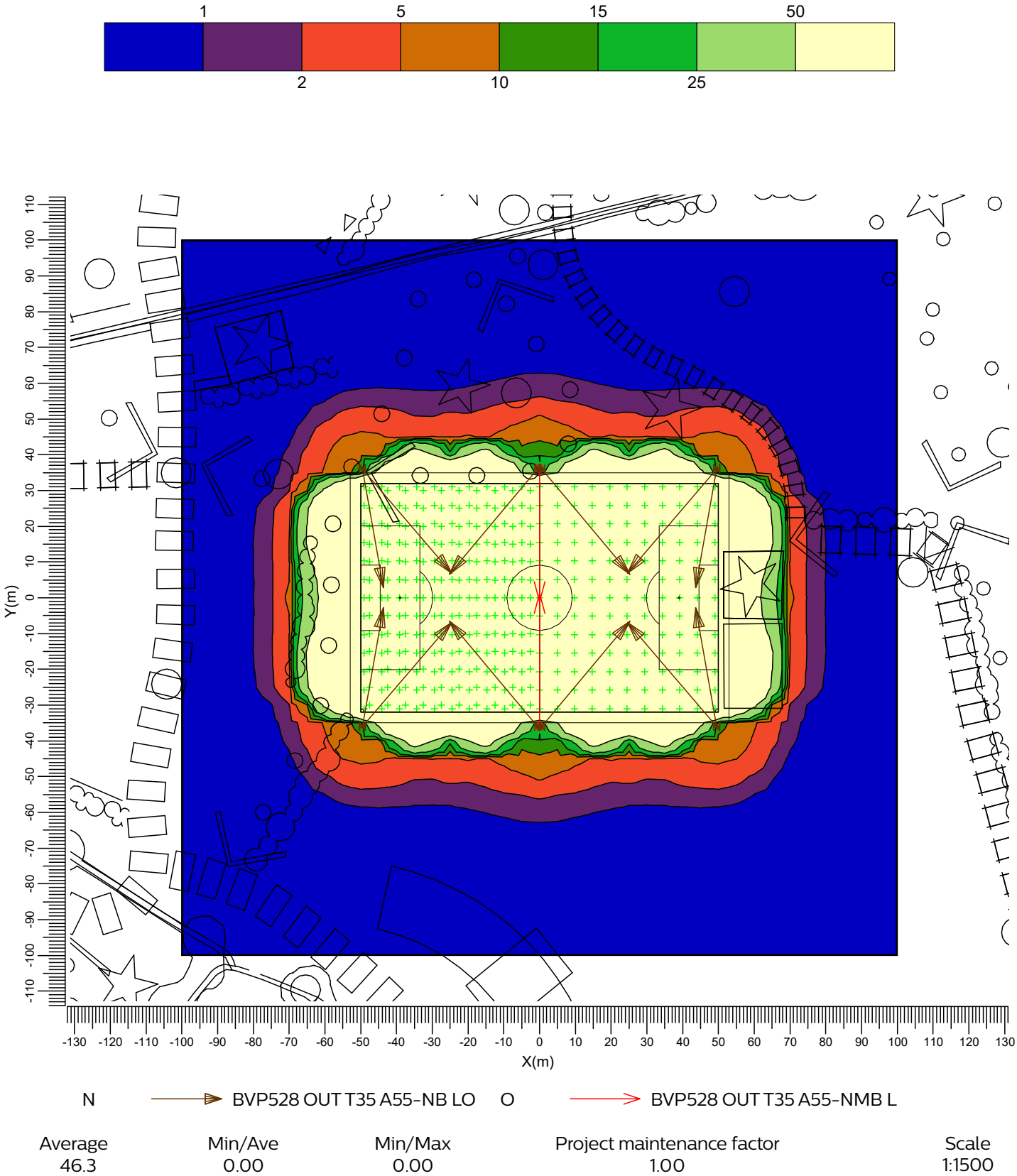
Project maintenance factor
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Scale
1:1250

3.4 Spillage: Filled Iso Contour

All ON

Grid : Spillage at Z = -0.00 m
Calculation : Surface Illuminance (lux)



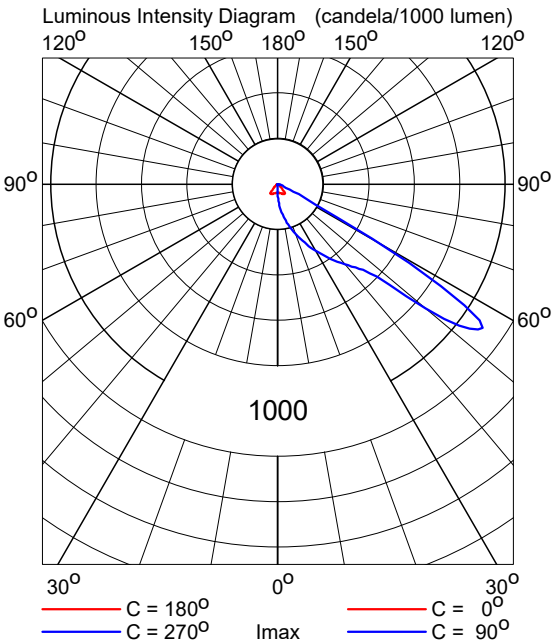
4. Luminaire Details

4.1 Project Luminaires

OptiVision LED gen3.5 2022
BVP528 OUT T35 1xLED2470-4S/730/730 E3/D4I A55-NB LO

Light output ratios	
DLOR	: 0.56
ULOR	: 0.00
TLOR	: 0.56
Ballast	: E3/D4I
Lamp flux	: 247000 lm
Luminaire wattage	: 1498.6 W
Measurement code	: LVM20482U1

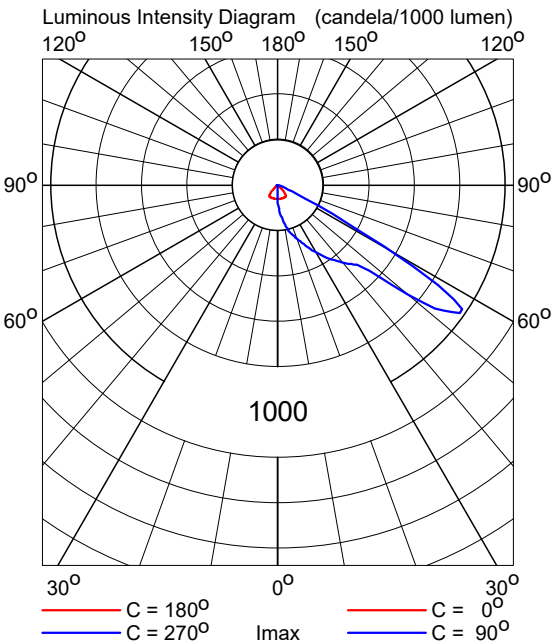
Note: Luminaire data not from database.



OptiVision LED gen3.5 2022
BVP528 OUT T35 1xLED2470-4S/730/730 E3/D4I A55-NMB LO

Light output ratios	
DLOR	: 0.56
ULOR	: 0.00
TLOR	: 0.56
Ballast	: E3/D4I
Lamp flux	: 247000 lm
Luminaire wattage	: 1498.6 W
Measurement code	: LVM2I482U1

Note: Luminaire data not from database.



Appendix 10: Breeding Bird Survey Results

BTO Code	English Name	Scientific Name	Breeding Status	WCA Sch1	BOCC Status
MA	Mallard	<i>Anas platyrhynchos</i>	Non-breeding		Amber
RL	Red-legged partridge	<i>Alectoris rufa</i>	Possible breeder		Not Assessed
Y.	Yellowhammer	<i>Emberiza citrinella</i>	Confirmed breeder		Red
SC	Stonechat	<i>Saxicola rubicola</i>	Possible breeder		Green
GC	Canada goose	<i>Branta canadensis</i>	Non-breeding		Introduced
CA	Cormorant	<i>Phalacrocorax carbo</i>	Non-breeding		Green
WP	Woodpigeon	<i>Columba palumbus</i>	Probable breeder		Amber
CD	Collared dove	<i>Streptopelia decaocto</i>	Possible breeder		Green
SD	Stock dove	<i>Columba oenas</i>	Possible breeder		Green
BH	Black-headed gull	<i>Chroicocephalus ridibundus</i>	Non-breeding		Amber
J.	Jay	<i>Garrulus glandarius</i>	Possible breeder		Green
HG	Herring gull	<i>Larus argentatus</i>	Non-breeding		Red
WW	Willow warbler	<i>Phylloscopus trochilus</i>	Possible breeder		Amber
H.	Grey Heron	<i>Ardea cinerea</i>	Non-breeding		Green
GS	Great-spotted woodpecker	<i>Dendrocopos major</i>	Possible breeder		Green
MG	Magpie	<i>Pica pica</i>	Probable breeder		Green
JD	Jackdaw	<i>Corvus monedula</i>	Non-breeding		Green
RO	Rook	<i>Corvus frugilegus</i>	Non-breeding		Amber
C.	Carrion Crow	<i>Corvus corone</i>	Possible breeder		Green
BT	Blue Tit	<i>Cyanistes Caeruleus</i>	Probable breeder		Green
GT	Great Tit	<i>Parus Major</i>	Probable breeder		Green
S.	Skylark	<i>Alauda arvensis</i>	Confirmed breeder		Red
LT	Long-tailed Tit	<i>Aegithalos caudatus</i>	Probable breeder		Green
CC	Chiffchaff	<i>Phylloscopus Collybita</i>	Probable breeder		Green
BC	Blackcap	<i>Sylvia atricapilla</i>	Probable breeder		Green
WH	Whitethroat	<i>Curruca communis</i>	Probable breeder		Amber

BTO Code	English Name	Scientific Name	Breeding Status	WCA Sch1	BOCC Status
BZ	Common buzzard	<i>Buteo buteo</i>	Probable breeder		Green
RE	Redwing	<i>Turdus iliacus</i>	Non-breeding	✓	Sch1
KT	Red kite	<i>Milvus milvus</i>	Non-breeding	✓	Sch1
WR	Wren	<i>Troglodytes troglodytes</i>	Probable breeder		Amber
SG	Starling	<i>Sturnus vulgaris</i>	Possible breeder		Red
B.	Blackbird	<i>Turdus merula</i>	Probable breeder		Green
ST	Song Thrush	<i>Turdus philomelos</i>	Probable breeder		Amber
M.	Mistle thrush	<i>Turdus viscivorus</i>	Possible breeder		Red
R.	Robin	<i>Erithacus rubecula</i>	Probable breeder		Green
HS	House Sparrow	<i>Passer domesticus</i>	Probable breeder		Red
D.	Dunnock	<i>Prunella modularis</i>	Probable breeder		Amber
CH	Chaffinch	<i>Fringilla coelebs</i>	Probable breeder		Green
GR	Greenfinch	<i>Chloris chloris</i>	Possible breeder		Red
GO	Goldfinch	<i>Carduelis carduelis</i>	Probable breeder		Green
LB	Lesser black-backed gull	<i>Larus fuscus</i>	Non-breeding		Amber
PW	Pied wagtail	<i>Motacilla alba</i>	Possible breeder		Green
TO	Tawny owl	<i>Strix aluco</i>	Possible breeder		Amber
LO	Little owl	<i>Athene noctua</i>	Non-breeding		Not assessed
LI	Linnet	<i>Linaria cannabina</i>	Probable breeder		Red
RB	Reed bunting	<i>Emberiza schoeniclus</i>	Possible breeder		Amber
MP	Meadow pipit	<i>Anthus pratensis</i>	Possible breeder		Amber
PH	Common pheasant	<i>Phasianus colchicus</i>	Probable breeder		Introduced
SH	Eurasian Sparrowhawk	<i>Accipiter nisus</i>	Non-breeding		Amber
K.	Common kestrel	<i>Falco tinnunculus</i>	Non-breeding		Amber
SF	Spotted flycatcher	<i>Muscicapa striata</i>	Non-breeding		Red