URBAN EDGE ENVIRONMENTAL CONSULTING

NATURAL PROGRESSION

Land off of Turner's Hill Road, Turner's Hill, West Sussex: Crematorium Proposal

Preliminary Ecological Appraisal Report

July 2020

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Land off of Turner's Hill Road, Including Crematorium, Turner's Hill, West Sussex: Crematorium Proposal

Preliminary Ecological Appraisal Report

Client:	Hartmires Investments Ltd	
Report No.:	UE0364_TurnersHillCrematorium_PEA_2_200723	
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CIEEM REGISTERED PRACTICE 2019-2020

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Abbreviations

AONB	Area of Outstanding Natural Beauty
CHS	Conservation of Habitats and Species Regulations 2017 (as amended)
EPS	European Protected Species
GCN	Great crested newt
HSI	Habitat Suitability Index
LGS	Local Geological Site
LWS	Local Wildlife Site
NERC	Natural Environment and Rural Communities Act 2006
PEA	Preliminary Ecological Assessment
PRF	Potential (bat) Roost Feature
SSSI	Site of Special Scientific Interest
SxBRC	Sussex Biodiversity Records Centre
TN	Target Note
WCA	Wildlife & Countryside Act 1981 (as amended)

0 Executive Summary

0.1 Introduction

0.1.1 A Preliminary Ecological Appraisal was undertaken for Land off of Turner's Hill Road, Turner's Hill, West Sussex (Grid Reference: 533460, 135571). Outline planning consent is being sought for a crematorium and natural burial development at the site. The report was prepared to record the ecological baseline and identify key ecological features within and around the proposal site.

0.2 Results

0.2.1 There are two statutory protected wildlife sites (a Site of Special Scientific Interest (SSSI) and an Area of Outstanding Natural Beauty (AONB)), and two non-statutory sites of local importance (a Local Wildlife Site and a Local Geological Site)) within the 1km desk study search area.

0.2.2 There are records of a range of protected or notable species in the locality, including amphibians, birds, invertebrates, terrestrial mammals, flowering plants and terrestrial reptiles, together with three priority and other habitats: Deciduous Woodland, Ghyll Woodland and Ancient Woodland. Ancient Woodland borders the site to the east.

0.2.3 The survey area lies to the west of Turner's Hill, a village in the Mid Sussex district of West Sussex. The site comprises c.7.2ha of non-agricultural and part developed land currently comprising hard-standing, grassland, scrub, and hedgerows within the site of a natural burial ground. The survey area is bounded to the north, east, and west by pasture and agricultural land and to the south by Turner's Hill Road and agricultural fields, the ancient woodland of Butcher's Wood also bounds the east of the site. The wider landscape is characterised by a patchwork of arable land and woodland with a network of drainage ditches, and the settlement of Turner's Hill. Ten ponds lie within 500m of the survey area.

0.3 Evaluation

0.3.1 Table 0.1 presents a summary of ecological constraints and opportunities identified within the survey area.

Table 0.1: Summary of ecological constraints and opportunities

Feature	Detail
Constraints:	
Designated sites	None of the wildlife sites within the desk-study search zone are likely to be affected by the proposed development, considering its distance from the designated sites.
Priority	All the hedgerows onsite are priority habitats and provide habitats suitable for a

Feature	Detail
habitats	range of protected species, including amphibians, nesting birds, invertebrates, bats, hazel dormouse and reptiles. Hedgerow habitat will be retained and protected during construction. Ancient Woodland at the eastern boundary is an irreplaceable habitat of high intrinsic ecological value and will also be protected.
Other habitats	The proposed development would result in losses of up to c.2.1ha of semi-improved grassland, scrub, plantation woodland and hard-standing. These areas are of relatively low ecological value but provide habitats suitable for a number of protected species (e.g. amphibians and reptiles).
Great crested newt	Loss of up c.2.1ha of terrestrial habitats (grassland). No impact on aquatic habitats. An eDNA survey carried out in 2020 confirmed that GCN was absent in accessible ponds holding water within 250m of the survey area.
Bats (roosting)	The trees T1 to T5 contain suitable features for roosting bats. It is currently anticipated that the trees will be retained as part of the proposed development.
Hazel dormouse	Areas of dense scrub, hedgerow and woodland habitat are suitable for hazel dormouse. It is currently anticipated that these will be retained.
Reptiles	Loss of up to c.2.1ha of suitable habitats (grassland). Grass snake was found to be present in 2014, and a repeat survey is currently being undertaken. At the time of writing two common lizards have been found present during the updated survey in 2020.
Opportunities:	
Habitat creation / enhancement	Habitat creation and enhancement opportunities include wildflower meadow planting, habitat piles and bird/bat boxes. Tree and shrub planting has already been undertaken on the site very recently, and further tree, hedge and shrub planting is proposed.

0.4 Recommendations

0.4.1 Recommendations are made for further botanical or protected species surveys, together with preliminary recommendations for the protection of important ecological features to avoid or mitigate ecological impacts, and to deliver biodiversity net gain on site post-construction; these are summarised in Table 0.2. It is intended that these preliminary recommendations should be considered during the development of the reserved matters application so that protection of important ecological features is secured and opportunities for ecological enhancement are realised. The recommendations should be reviewed following the completion of further ecological surveys.

Table 0.2: Summary of recommendations

#	Summary of recommendations
Botanical / protected species surveys	
R1	Presence / absence surveys for great crested newt in ponds within 250m of the site, undertaken using eDNA sampling techniques from mid-April to end June. The survey is now complete and has shown that GCN was absent in ponds P2 and P5.
R2	Presence / absence surveys for dormouse, undertaken between April and November, if any hedgerows, scrub or woodland are to be affected by proposals for the site. No hedgerows,

#	Summary of recommendations
	scrub or woodland are proposed to be removed as part of the outline application.
R3	Presence / absence surveys for reptiles, undertaken between April and September within suitable habitats on site. The survey is currently underway.
Precautionary measures	
R4	Removal of nesting bird habitats will be undertaken outside of the bird nesting season, which runs from 1 March to 31 August. It will therefore be carried out between September and February, but should be planned and implemented in accordance with the findings of the further ecological surveys recommended above.
Ecological protection measures	
R5	The ancient woodland bordering the east of survey area will be retained and will be buffered by an undeveloped zone of at least 15m from the construction footprint to protect it from noise, light and dust pollution, hydrological changes and impacts to tree root systems.
R6	All the hedgerows on site are species rich and priority habitats. Therefore these hedgerows should not be partially or wholly removed. No hedgerows are proposed to be removed as part of the outline application.
R7	Standard site procedures to prevent impacts on trees will be adhered to during construction.
R8	The use of external lighting will be avoided or minimised to prevent impacts to nocturnal species such as bats. Lighting will not be directed towards the boundary hedgerows or ancient woodland to the east.
R9	Small access gaps will be provisioned at the base of new fence boundaries to enable dispersal of small mammals across the site.
R10	At the end of each working day excavations will be covered over and open pipework capped to prevent entrapment of mammals, amphibians and other fauna.
R11	Where fox dens or rabbit warrens are to be damaged or destroyed as part of the proposed works, this will be done by a registered pest control company.
Biodiversity net gain	
R12	Habitat piles for amphibians, invertebrates and reptiles will be created within areas of retained rough grassland, scrub or woodland.
R13	The value of the site for birds will be enhanced by installing a range of artificial nest boxes onto retained trees.
R14	The value of the site for bats will be enhanced by installing a range of artificial roost boxes onto retained trees.

0.5 Biodiversity Net Gain

0.5.1 The Environment Bill was reintroduced to Parliament in January 2020 and will require a 10% net gain in biodiversity value to be delivered by all development projects. The recommendations above are proposals for additional ecological enhancement over and above the biodiversity net gain criteria. The baseline biodiversity value of the survey area is calculated as follows:

- Area habitats: 45.43 Biodiversity Units
- Linear habitats: 10.12 Biodiversity Units

0.5.2 The future biodiversity value of the survey area after development is calculated as follows:

- Area habitats: 48.32 Biodiversity Units or a net gain of +6.35%
- Linear habitats: 15.54 Biodiversity Units or a net gain of +53.65

0.6 Conclusions

0.6.1 The majority of land proposed for development is of low/moderate ecological value. Significant constraints to development were identified including adjacent ancient woodland, and the potential presence of reptiles. Presence/absence surveys for reptiles are currently being undertaken and the results will be assessed to formulate a suitable mitigation strategy. Precautionary and ecological protection measures are recommended on an interim basis to enable offences under the relevant legislation to be avoided.

1 Introduction

1.1 Purpose of this Report

1.1.1 This report presents a Preliminary Ecological Appraisal for Land off of Turner's Hill Road, Turner's Hill, West Sussex (Grid Reference: 533460, 135571). Outline planning consent is being sought for a crematorium and natural burial development at the site. The report has been prepared to record the ecological baseline and identify key ecological features within and around the proposal site.

1.2 Objectives and Approach of the Study

1.2.1 The objectives of the Preliminary Ecological Appraisal were to:

- Identify features present on the site or adjacent which are ecologically significant and which may act as constraints or opportunities to the proposed development;
- Establish the baseline biodiversity value of the site for use in net gain assessment;
- Consider the need for further ecological surveys which may be necessary; and
- Make preliminary recommendations for the protection of important ecological features, to avoid or mitigate ecological impacts, and to enhance the ecology of the site post-construction, with the aim of achieving an overall net gain for biodiversity.

1.2.2 The approach to establishing the ecological baseline found within this report has been achieved through:

- A desk study involving a review of statutory and non-statutory nature conservation sites, and records of habitats and species from the local area (1km radius from the centre of the proposed development site);
- An extended Phase 1 habitat survey identifying the main habitats on site and adjacent, and the presence of, or potential for, protected and/or notable species; and
- A Preliminary Ecological Appraisal of the effects of development proposals with respect to the nature conservation value of the site.

1.3 Survey Area

1.3.1 The survey area lies to the west of Turner's Hill, a village in the Mid Sussex district of West Sussex. The site comprises c.7.2ha of non-agricultural and part developed land currently comprising hard-standing, grassland, scrub, and hedgerows within the site of a natural burial ground.

1.3.2 The survey area is bounded to the north, east, and west by pasture and agricultural land and to the south by Turner's Hill Road and agricultural fields, the ancient woodland of Butcher's Wood also bounds the east of the site. The extent of the survey area is outlined in red on Figure 1.1.

1.3.3 The wider landscape is characterised by a patchwork of arable land and woodland with a network of drainage ditches, and the settlement of Turner's Hill. Ten ponds lie within 500m of the survey area.

1.4 Proposed Construction Activities

1.4.1 Outline planning consent is being sought for a single 'chapel' crematorium with a single abated cremator and natural burial site with associated access, car parking, landscaping and drainage with all matters reserved apart from access. The proposed site plan is shown at Figure 1.2.

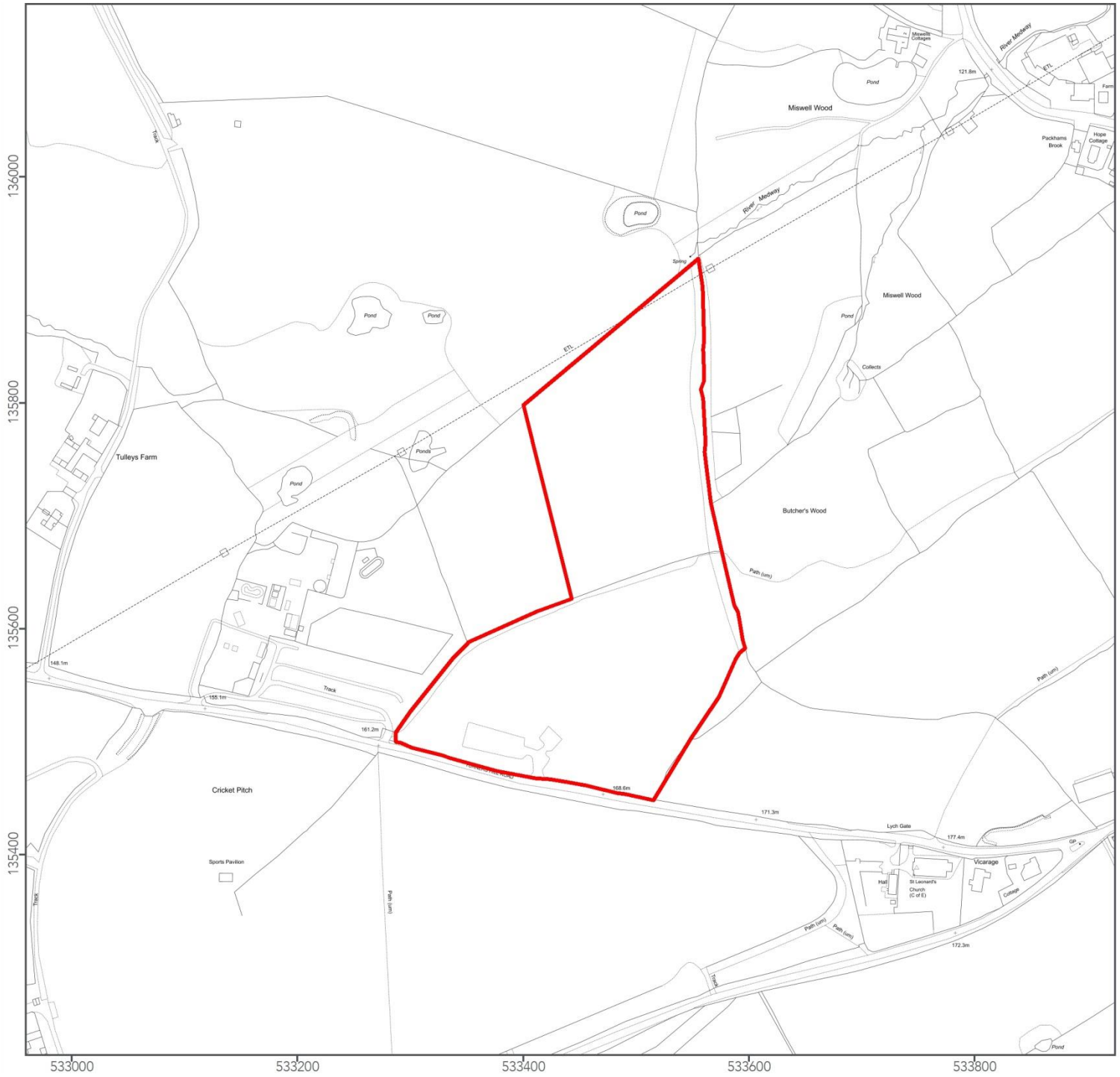
1.5 Project Background

1.5.1 In 2014 Urban Edge Environmental Consulting undertook an Extended Phase 1 Habitat Survey, Great Crested Newt Survey and Reptile Survey at the site. Great crested newt *Triturus cristatus* was found to be absent. One adult grass snake *Natrix natrix* was recorded but no other reptiles. In March 2020 Urban Edge Environmental Consulting undertook a Preliminary Ecological Appraisal to update the Extended Phase 1 Habitat Survey for the site. Environmental DNA (eDNA) surveys for great crested newt were carried out in June 2020 and the results are presented below. A repeat reptile survey is currently being carried out and is expected to complete in August 2020.

Turners Hill Road, Turners Hill, West Sussex

Survey area

Figure 1.1: Survey area



0 100 200 Meters

N

Scale: 1:5,000 **Created by:** AD

Date: March 2020 **Reviewed by:** NP

Drawing number:
UE0364ECO-Site_200325

URBAN EDGE ENVIRONMENTAL CONSULTING
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Figure 1.2: Proposed site plan

2 Survey Methodology

2.1 Desk Study

2.1.1 A desk-based study was undertaken to examine published information and biological records from within the search area (site centroid plus 1km). The desk study established the presence of designated sites of nature conservation interest, or records of protected/notable habitats/species within the site and its surrounding area. This information was collected from the following sources:

- The 'MAGIC' (Multi-agency Geographic Information for the Countryside) website: www.magic.gov.uk; and
- Sussex Biodiversity Records Centre (SxBRC).

2.2 Preliminary Ecological Appraisal

2.2.1 The Preliminary Ecological Appraisal (compliant to British Standard BS42020:2013) is based on a survey of the site undertaken on 28 March 2020 by an experienced ecologist. Weather conditions were cool (c.11°C), with a moderate south-westerly breeze (Beaufort Scale 3), dry, with 30% cloud cover.

2.2.2 Within the survey area every parcel of land was classified, recorded and mapped using standard colour codes, in accordance with a list of ninety habitat types specified within the methodology for Phase 1 habitat survey (Joint Nature Conservation Council, 2010). This allows rapid visual assessment of the extent and distribution of different habitat types. Target notes were used to provide supplementary information on features which were particularly interesting or significant to specific construction proposals, or too small to map, or to provide additional details, for example relating to species composition and structure.

2.2.3 This basic methodology was extended to provide more detail in relation to habitats with potential to support rare or protected fauna, as described by the Chartered Institute of Ecology and Environmental Management's *Guidelines for Preliminary Ecological Appraisal* (CIEEM, 2017b). The assessment of habitat suitability for protected, rare or priority species is based on current good practice guidance such as that presented in the *Herpetofauna Workers' Manual* (Gent and Gibson, 2003) and *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (Collin (ed.), 2016). Where a species/group is not specifically evaluated, this indicates that no habitat of potential value for the species was identified during the survey.

Scope of the survey

2.2.4 The buffer zone for the desk study was set at 1km from the centre of the site – a distance within which any notable ecological features likely to be affected by the proposed scheme would be identified.

2.2.5 All habitats within the survey area as indicated on Figure 1.1 were included in order to identify any ecological constraints that would be likely to apply to the scheme from within this zone. Adjacent habitats were also surveyed where appropriate in order to identify constraints falling outside of the proposed development site and to place the survey area in its ecological context.

Evaluation criteria

2.2.6 Important ecological features were evaluated to the extent possible under the survey methods used, and in relation to a geographical frame of reference, i.e. international/European value being most important, then national, regional, metropolitan/county/district/borough, and lastly local (based on CIEEM, 2018). Where a feature is of no more than site value, this is stated.

2.2.7 Value judgements are based on various characteristics that contribute to the importance of ecological features. These include site designations (such as Sites of Special Scientific Interest, or for undesignated features, the extent, naturalness, conservation status (local or national importance and so on), and quality of the ecological resource. Quality can refer to habitats (for instance if they are particularly diverse, are a good example of a specific habitat type, or provide for the requirements of important species or assemblages), other features (such as connectivity provided by wildlife corridors or mosaics of habitats) or the richness and abundance of species populations or assemblages.

2.3 Preliminary Roost Assessment

2.3.1 Trees within/adjacent to the survey area were subject to an external and where possible internal inspection for potential bat roost features (subject to safe access). All observable features potentially suitable for bats were noted and the overall suitability of the structure/tree for roosting bats was classified with reference to Box 1 (Collins (ed.), 2016). The objective was to establish whether each feature was of negligible, low, moderate or high roosting bat suitability, or a confirmed roost based on the presence of bats or their droppings.

2.3.2 Trees were assessed for PRFs such as woodpecker holes, cavities, cracks or splits in major limbs (e.g. hazard beams, rot holes, frost cracks, knot holes, occlusions, flush cuts, tear-outs, cankers or butt-rots), loose platey bark, aerial deadwood and dense ivy or epicormic growth. The tree inspection was carried out from ground level.

2.3.3 The experienced surveyor undertook the inspections with the aid of the following equipment: Wildlife Acoustics EchoMeter Touch full spectrum bat detector to record and identify the calls of any bats present; high-powered searchlight fitted with a red filter to search dark areas for signs of bats; telescopic mirror and/or 9mm digital endoscope camera to inspect hidden cavities; Hawke Sport Optics 10x42 close-focusing binoculars to view areas inaccessible on foot; and digital camera with flash to record any evidence of bats or features suitable for use by bats.

Box 1: Potential suitability of structures/trees for roosting bats (after Collins, 2016)	
Suitability	***Roosting habitats***
Negligible	Negligible habitat features on site likely to be used by roosting bats
Low	A structure with one or more potential roost features (PRF) that could be used by

Box 1: Potential suitability of structures/trees for roosting bats (after Collins, 2016)	
	individual bats opportunistically, but do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats A tree of sufficient size and age to contain PRFs but with none seen from the ground / using ladders or features seen with only very limited roosting potential
Moderate	A structure or tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status (for roost type only)
High	A structure or tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat
Confirmed roost	Bats or unequivocal evidence of bats found, i.e. bat droppings

2.4 Biodiversity Net Gain Assessment

2.4.1 In 2019 Defra published the Biodiversity Metric 2.0 ('the Metric') (Crosher et al., 2019). The Metric provides a means of evaluating biodiversity losses and gains through development in a robust and consistent manner. The Metric calculates the biodiversity value of a site before and after development to establish the change in biodiversity attributable to a particular development project, using habitats as a proxy for wider biodiversity with different habitat types scored according to their relative biodiversity value. This value is then adjusted depending on the condition and location of the habitat, to calculate 'Biodiversity Units' (BU) for the specific development site. Pre-intervention BU are subtracted from the post-intervention BU to determine the change in biodiversity value attributable to the development.

2.4.2 The Metric is accompanied by a Calculation Tool which uses a number of input fields in order to calculate pre and post-intervention biodiversity units, including:

- Habitat types.
- Area of habitats (length of linear habitats).
- Habitat condition: Parcels of habitat will be in different ecological conditions. In addition, interventions to improve habitats will not always involve taking a habitat in poor condition and improving it to good condition. The metric therefore takes account of variants in habitat condition.
- Habitat connectivity: The relationship of a particular habitat patch to other surrounding similar or related semi-natural habitats. These help facilitate flows of species and ecosystem services increasing habitat resilience. The 2.0 version of the Metric uses a default value of 'low' accept for high or very high distinctiveness habitats which are scored as 'Medium.
- Strategic significance: The idea of strategic significance works at a landscape scale. It gives additional unit value to habitats that are located in preferred locations for biodiversity and other environmental objectives as set out in published local plans.

2.4.3 Habitat type, area / length and condition were established via the walkover survey. Connectivity is scored as Low, Medium or High. Version 2.0 of the Metric calculation tool (used here) recommends assigning a default 'Low' connectivity score except for high or very high distinctiveness habitats which should be scored as 'Medium'[1].

2.4.4 The development site is not located within any designated ecological sites but lies within open countryside and is close to several areas of ancient woodland; therefore 'Location ecologically desirable but not in local strategy' has been applied for all habitat parcels. The Calculation Tool also includes a number of pre-assigned fields which are automatically populated based on habitat type inputs:

- Habitat distinctiveness: Based on an assessment of the distinguishing features of a habitat or linear feature, including the consideration of species richness, rarity (at local, regional, national and international scales), and the degree to which a habitat supports species rarely found in other habitats.
- Risk multipliers (Post-intervention only): Three different risks are recognised in the Metric: difficulty of habitat creation and restoration; temporal risk i.e. the time it takes for a newly created habitat to reach target condition; and off-site risk which accounts for decreasing ecosystem services provided to the local community with compensation provided further from the development site.

2.4.5 Within this report the BNG calculation has been based on the entire survey area which measures approximately 7.2ha. The BNG baseline was calculated based on the results of the walkover survey carried out by an experienced ecologist on 28 March 2020. Annotated field maps were digitised in ArcGIS 10.7. The area of each habitat polygon, and length of each linear feature, were then calculated in GIS and exported to MS Excel for use in BNG baseline calculations. The size of each habitat parcel was recorded in hectares (ha) or kilometres (km) for linear habitats, including hedgerows. Phase 1 habitats were translated to the UK Habitats Classification System[2] with reference to the translation table provided with The Biodiversity Metric 2.0 Calculation Tool. Each habitat parcel/length was assigned a condition score of Low, Medium or High, informed by the Condition Assessment Sheets within the Technical Supplement to the Metric[3].

2.4.6 The future biodiversity value after development has been calculated based on the illustrative landscape plan, planting areas and indicative species lists produced by Indigo Landscape Architects and presented at Appendix VIII.

2.5 Limitations

2.5.1 Biological records gathered during the desk study can provide an indication of the likely presence of a species on or adjacent to a site, however, the absence of records for protected species does not equate to evidence of their absence from the locality. Data search accuracy is variable and records are often georeferenced to the nearest 1km grid square.

[1] Defra has advised that a forthcoming update to the tool will enable a more sophisticated approach to connectivity to be used.

[2] UK Habitat Classification: http://ecountability.co.uk/ukhabworkinggroup-ukhab/ (Accessed 08/08/2020)

[3] http://publications.naturalengland.org.uk/publication/5850908674228224

2.5.2 Time of year when the survey was carried out and other variations will influence the results of the survey. Botanical species vary considerably in their flowering, seeding and fruiting periods, and surveys outside of these periods can confound accurate species identification. Where this is the case plants have been identified to lowest possible taxonomic group, normally genus. The possibility nonetheless exists for other species to be present on the site which were not recorded or otherwise indicated by the survey. Ornamental species are not included in botanical listings.

2.5.3 The survey reported herein was carried out in early spring, prior to flowering for many botanical species. However, diagnostic vegetative characteristics are often still discernible and the timing of the survey is not considered to be a significant limitation to meeting the report objectives.

2.5.4 There were no difficulties in gaining access to survey the site's habitats and assess protected species suitability. Adjacent habitats were surveyed where appropriate in order to identify constraints falling outside of the proposed development site and to place the survey area in its ecological context. However, ponds P6 to P10 could not be accessed.

2.5.5 See Appendix XI for general Legal and Technical Limitations which apply to this document.

2.6 Personnel

2.6.1 The site survey was carried out by Becci Bond BSc(Hons) MCIEEM, a Senior Ecologist with nine years' professional consultancy experience in ecological field survey for a wide range of sites and development projects. Becci holds Natural England Class Licences to survey for great crested newt (WML-CL08), dormouse (WML-CL10a) and bats (WML-CL17). The report was extensively reviewed by and approved by Nick Pincombe BA(Hons) MSc CEnv MIEMA MCIEEM, who has fifteen years' experience in leading survey and impact assessment teams for a wide range of ecology and environmental planning projects. Nick holds Natural England Class Licences to survey for bats (WML-CL18) and great crested newt (WML-CL08).

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3 Results

3.1 Desk Study

Statutory and non-statutory site designations

3.1.1 There are two statutory protected wildlife sites (a Site of Special Scientific Interest (SSSI) and an Area of Outstanding Natural Beauty (AONB)), and two non-statutory sites of local importance (a Local Wildlife Site and a Local Geological Site)) within the 1km desk study search area. The information provided by SxBRC regarding these sites is presented in Table 3.1, while Figure 3.1 and Figure 3.2 show their locations in relation to the survey area.

Priority habitats

3.1.2 Priority habitats include those listed on local Biodiversity Action Plans and habitats of principal importance listed under section 41 of the Natural Environment and Rural Communities Act 2006. SxBRC and a search of the MAGIC database returned the following data on priority and other habitats within the desk study search area: Deciduous Woodland, Ghyll Woodland and Ancient Woodland. Ancient Woodland also borders the site to the east, see Figure 3.3.

Records of protected, rare and notable species

3.1.3 Biological records were obtained from SxBRC for the desk study search area and are summarised in Table 3.2.

Table 3.1: Nature conservation sites within the desk study search area

Site name	Location*	Description
Turners Hill SSSI	c.270m south-east	At Turner's Hill a disused quarry exposes the Ardingly Sandstone Member of the upper Lower Tunbridge Wells Formation (upper Hastings Beds Group), Wealden Series. The near vertical plane-cut walls and floor of this site provide excellent three dimensional sections through the sandstone. These sections display trough cross-bedding (also known as festoon bedding) with cross-bedded units up to 1m across and 30cm deep as well as large scale ripples known as megaripples. Although this facies is common in the proximal (northern) area of the Ardingly Sandstone Member it is rarely seen to such advantage. The three dimensional display of these structures has provided detailed evidence of depositional parameters including flow direction and strength. This evidence has been important in constructing the overall palaeoenvironmental picture of the complex Ardingly Sandstone Member which has been interpreted as an alluvial braid plain with distributary channels.
High Weald AONB	c.10m	A medieval landscape of wooded, rolling hills studded with sandstone outcrops; small, irregular-shaped fields; scattered farmsteads; and

Site name	Location*	Description
	south	ancient routeways. The 1461km^2 area covers parts of Kent, Sussex and Surrey at the heart of South East England.
Grove, Threepoint & Green Woods LWS	c.460m south	These three woods are part of Paddockhurst Park woodland complex and lie adjacent to a 'Site of Special Scientific Interest'. They consist mainly of Oak and Birch woodland with some areas of Beech, and Alder along the streams. The wood supports a rich community of birds and there are good numbers of mosses and liverworts, often found on sandstone outcrops. The storm of October 1987 caused severe damage.
B2110 Road Cutting, Turner's Hil LGS	c.270m south-east	Linear cut face in Lower Tunbridge Wells Sand (Ardingly Sandstone), 100m long and 2.5 to 3m high. Characterised by medium-grained sandstones representing a different character to the classic sandrocks.

* Approximate distance and bearing from the survey area

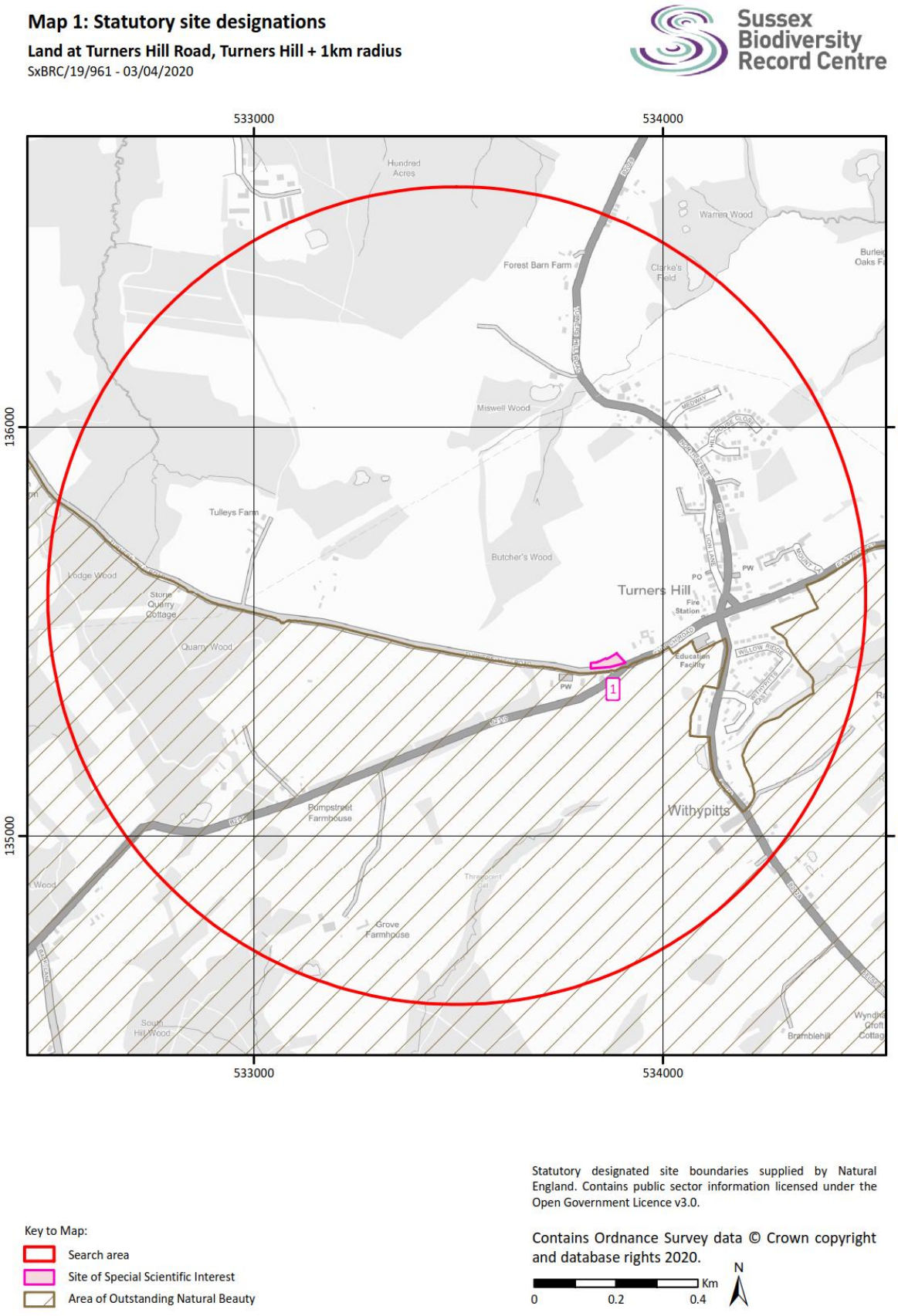

Figure 3.1: Statutory nature conservation sites within the desk study search area

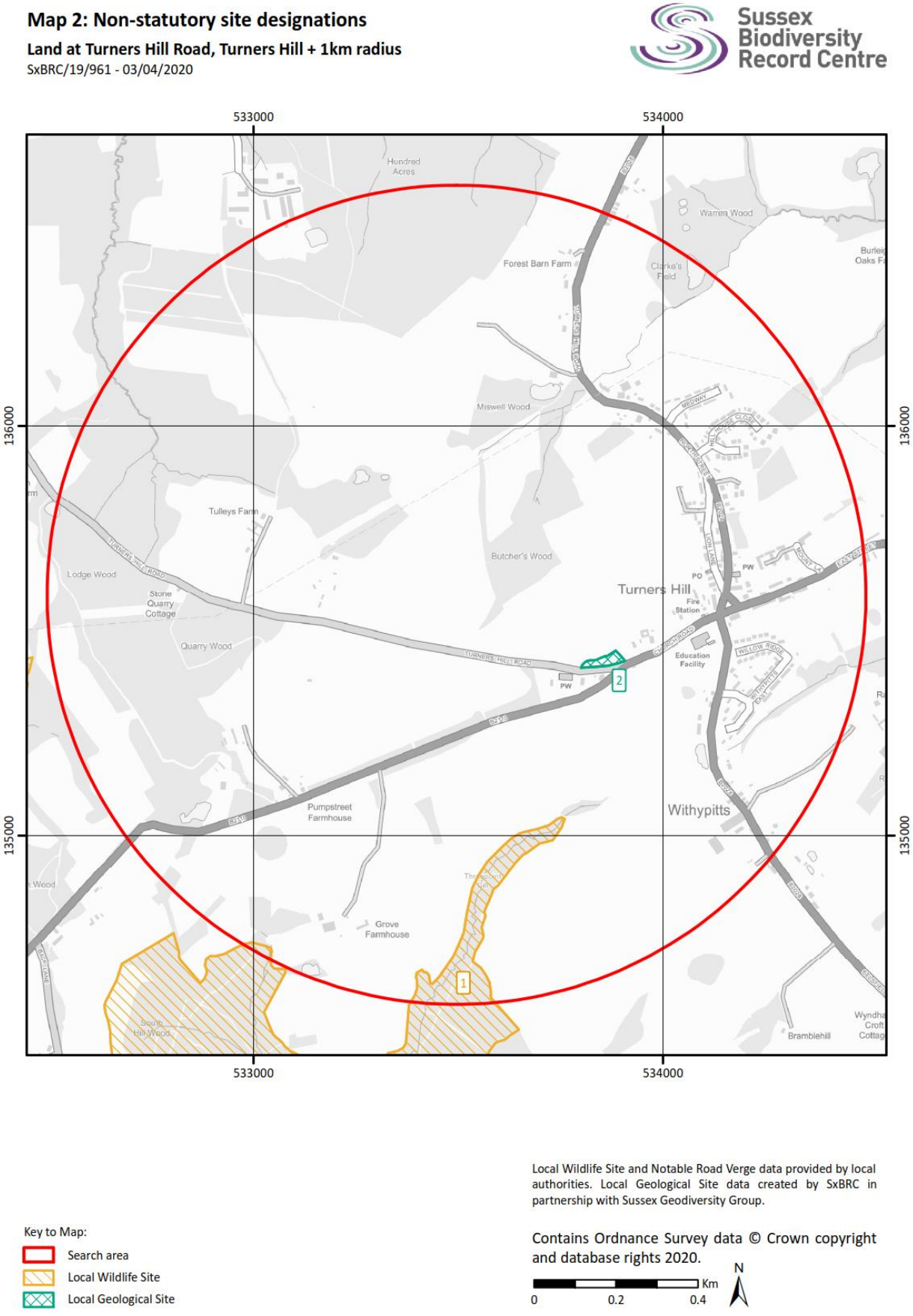

Figure 3.2: Non-statutory nature conservation sites within the desk study search area

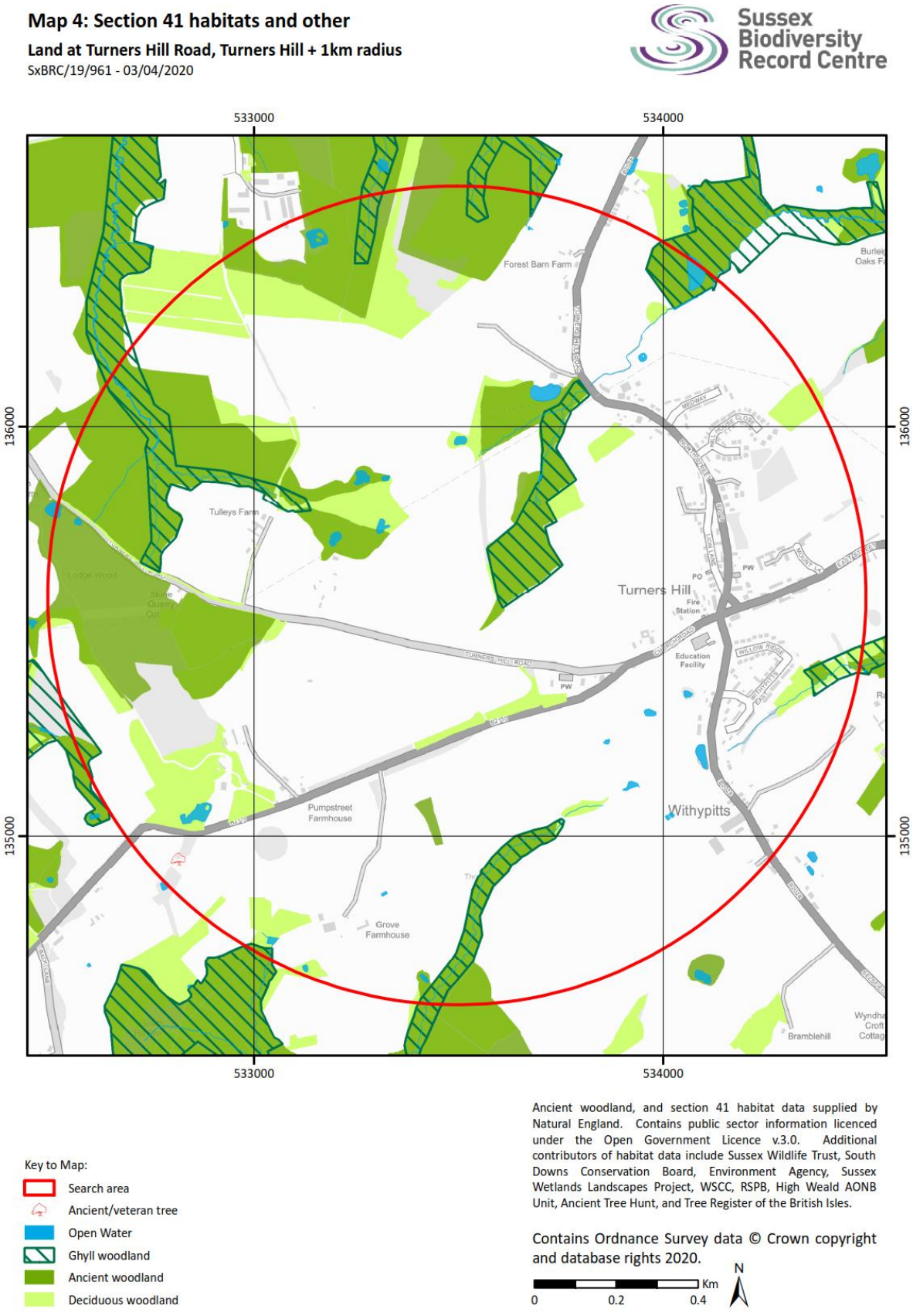

Figure 3.3: Priority habitats within the desk study search area

Table 3.2: Records of protected, rare & notable species within the desk study search area

Group	Species	Protection
Amphibians	Common Frog *Rana temporaria*	WCA Sch.5 partial
Birds (note: species may appear more than once)	Hen Harrier *Circus cyaneus*, *Red Kite Milvus milvus*, Osprey *Pandion haliaetus*, Honey Buzzard *Pernis apivorus*	Birds Dir.1
	Hen Harrier *Circus cyaneus*, *Red Kite Milvus milvus*, Osprey *Pandion haliaetus*, Honey Buzzard *Pernis apivorus*, Hobby *Falco subbuteo*, Common Crossbill *Loxia curvirostra*	WCA Sch.1
	Dunnock *Prunella modularis*, House Sparrow *Passer domesticus*, Lapwing *Vanellus vanellus*, Herring Gull *Larus argentatus*, Cuckoo *Cuculus canorus*, Hen Harrier *Circus cyaneus*, Bullfinch *Pyrrhula pyrrhula*, Tree Pipit *Anthus trivialis*, Starling *Sturnus vulgaris*, Song Thrush *Turdus philomelos*, Lesser Spotted Woodpecker *Dendrocopos minor*	NERC s41
	House Sparrow *Passer domesticus*, Lapwing *Vanellus vanellus*, Herring Gull *Larus argentatus*, Cuckoo *Cuculus canorus*, Hen Harrier *Circus cyaneus*, Tree Pipit *Anthus trivialis*, Grey Wagtail *Motacilla cinerea*, Marsh Tit *Poecile palustris*, Starling *Sturnus vulgaris*, Mistle Thrush *Turdus viscivorus*, Song Thrush *Turdus philomelos*, Lesser Spotted Woodpecker *Dendrocopos minor*	RL
	Mallard *Anas platyrhynchos*, Swift *Apus apus*, Osprey *Pandion haliaetus*, Honey Buzzard *Pernis apivorus*, Kestrel *Falco tinnunculus*, Bullfinch *Pyrrhula pyrrhula*, Dunnock *Prunella modularis*, Tawny Owl *Strix aluco*	AL
Invertebrates	Purple Emperor *Apatura iris*,	WCA Sch.5 partial
Mammals (terrestrial)	Brown Long-eared Bat *Plecotus auritus*	Habs.Dir.Ax.4, CHS Sch.2, WCA Sch.5 full, NERC s41
	Common Pipistrelle *Pipistrellus pipistrellus*	Habs.Dir.Ax.4, CHS Sch.2, WCA Sch.5 full
	West European Hedgehog *Erinaceus europaeus*	NERC s41
Plants	Bluebell *Hyacinthoides non-scripta*	WCA Sch.8
	Small-flowered Sticky Eyebright *Euphrasia officinalis subsp. anglica*	NERC s41
Reptiles (terrestrial)	Slow Worm *Anguis fragilis*, Grass Snake *Natrix natrix*	WCA Sch.5 part, NERC s41

Birds.Dir.1	Wild Birds Directive 2009/147/EC Annex 1
Habs.Dir.4	Habitats Directive 92/43/EEC Annex r 4
CHS Sch.2	Conservation of Habitats & Species Regulations 2017 Schedules 2 (EPS animals)
WCA s1/Sch.5/8	Wildlife and Countryside Act 1981 Section 1 / Schedules 5 (fully or partially protected) or 8
NERC s41	Natural Environment & Rural Communities Act 2006 Section 41 Species of Principal Importance
RL/AL	Red/Amber Listed (IUCN or Birds of Conservation Concern 4 (Eaton *et al.*, 2015))

3.2 Phase 1 Habitats

3.2.1 The following Phase 1 habitats were identified within or adjacent to the survey area and are shown on the Phase 1 habitats map at Appendix I. The habitats are described below broadly in the order of their extent.

- Semi-improved grassland;
- Hedgerows;
- Scattered trees;
- Scrub and bracken;
- Hardstanding;
- Brash piles;
- Ancient Woodland (adjacent to survey area); and,
- Ponds (adjacent to survey area).

Semi-improved grassland

3.2.2 Both fields within the survey area are dominated by semi-improved neutral grassland, with a sward height of between 10 and 20cm and a tussocky nature. Grasses present included cock's foot *Dactylis glomerata*, rough meadow grass *Poa trivialis* and creeping bent *Agrostis stolonifera*. Flora was dominated by creeping buttercup *Ranunculus repens* and white clover *Trifolium repens*, with broad leaved plantain *Plantago major*, ribwort plantain *Plantago lanceolata*, meadow buttercup *Ranunculus acris*, cow parsley *Anthriscus sylvestris*, tufted vetch *Viccia cracca*, bitter vetch *Lathyrus linifolius*, dandelion *Taraxacum officinale* and thistle *Cirsium vulgare* also present. The eastern, low-lying sections of these fields were wet and contained frequent areas of soft rush *Juncus effusus*. Tall ruderal was recorded within the grassland fields measuring up to 800mm in height and included mainly broadleaved dock *Rumex obtusifolius*. The structure and sward height of this field suggest that it has the potential to support a population of reptiles.


Semi-improved grassland within survey area looking north-west


Semi-improved grassland within survey area looking north

Hedgerows

3.2.3 Four hedgerows were recorded bounding the survey area; all are species-rich, priority hedgerows.

3.2.4 Hedgerow H1 was semi-managed, 1-2m in height, 1m in depth and 235m in length and contained hawthorn *Crataegus monogyna*, holly *Ilex aquifolium,* oak Quercus robur, beech *Fagus sylvatica*, rose *Rosa spp* and sycamore *Acer pseudoplatanus,* with ground flora is dominated by bracken *Pteridium aquilinum,* with frequent cleavers, broad-leaved dock and nettle. Selfheal *Prunella vulgaris*, cowslip *Primula veris,* creeping buttercup and ground ivy *Glechoma hederacea* were also occasionally present.

3.2.5 Hedgerow H2 was 10m in height, 2m in depth and 230m in length and contained hazel *Coryllus avellana*, hawthorn, holly, oak and bramble with ground flora including cleavers, ivy, nettle and occasional lords and ladies. This hedgerow has a connection with broad-leaved, ancient woodland at Butchers Wood.

3.2.6 Hedgerow H3 was 6m in height, 1.5m in depth and 80m in length and contained hazel, hawthorn, holly, oak and ash, with similar ground flora to H2. This hedgerow has a connection with broad-leaved, ancient woodland at The Gill.

3.2.7 Hedgerow H4 was 10m in height, 1.5m in depth and 65m in length and contained hazel, hawthorn holly, oak and ash, with similar ground flora to H2. This hedgerow has a connection with broad-leaved, ancient woodland at Butchers Wood.

3.2.8 Hedgerows H2 and H3 were associated with a bank and ditch. The ditches are likely to be dry throughout the year (the survey was undertaken following a period of heavy rainfall and no inundation was recorded). Flora included rough grasses such as cock's foot and couch, and ruderals such as nettle and cleavers.

3.2.9 There is one field boundary which is likely to have been a hedgerow that is now defunct, located at the northern survey area boundary. The old hedge line is marked by a bank and hazel, hawthorn and bramble scrub. Ground flora in these areas is dominated by bracken and rough grasses such as couch *Arrhenatherum elatius* or cock's foot.

3.2.10 The hedgerows within the survey area boundaries provide potential habitat for nesting or foraging birds, and hibernating or dispersing reptiles and amphibians, including great crested newts *Triturus cristatus*.


Hedgerow H1


Hedgerow H2


Hedgerow H3


Hedgerow H4

3.2.11 There are a number of mature, oak and ash trees within the hedgerows. The majority of these are in good condition with occasional features which could support roosting bats such as cracks or splits within major limbs, lifted, flaking bark or rot or woodpecker holes. Of particular note is a mature, ivy clad oak at the point where hedgerow H4 meets H1; This has numerous cracks and aerial dead wood and is considered to have high suitability for roosting bats (T1, previously referred to as TN5). A further mature oak (T2, previously referred to as TN4) within hedge H1 has light ivy growth and some dead wood present in the canopy, these features are of moderate suitability for roosting bats. Furthermore, another mature oak (T3) was recorded within hedgerow H1 at the western end, this tree has matted ivy with some aerial deadwood, these features are of moderate suitability for roosting bats.

3.2.12 A mature ash was recorded north of hedgerow H4 (T4), bordering the ancient Butchers Wood, this tree has a covering of ivy; this feature is of low suitability for roosting bats. A mature oak (T5), also bordering the Butchers Woodland to the east contained a covering of ivy; this feature is of low suitability for roosting bats. No trees are expected to be affected by the current proposals. Table 3.3 shows the suitability of the trees on site for roosting bats in more detail. Photos of these trees can be found in Appendix III.

Table 3.3: Preliminary Roost Assessment of trees within the survey area

Preliminary Roost Assessment of trees *
T1: Oak
Description
Mature oak, 11m high
Evidence of bats
No
Potential roost features (PRF)
Numerous cracks, aerial dead wood, ivy clad
Overall suitability for roosting bats
High
T2: Oak
Description
Mature oak, 11m high
Evidence of bats
No
Potential roost features (PRF)
Occasional deadwood and light ivy
Overall suitability for roosting bats
Low/ Moderate
T3: Oak
Description
Mature oak, 8m high
Evidence of bats
No
Potential roost features (PRF)
Matted ivy with some deadwood
Overall suitability for roosting bats
Moderate
T4: Ash
Description
Mature oak, 10 high
Evidence of bats
No
Potential roost features (PRF)
Ivy covering
Overall suitability for roosting bats

Preliminary Roost Assessment of trees *
Low
T5: Oak
Description
Mature oak, 10m high
Evidence of bats
No
Potential roost features (PRF)
Ivy covering
Overall suitability for roosting bats
Low

Scattered trees

3.2.13 Recently planted saplings of varying native species were recorded running along the southern boundary of the site adjacent to hedgerow H1, they were also recorded along the northern boundary of the lower field (running along hedge H2) and along the western boundary of the site (running along H3). Patches of young goat willow *Salix caprea* were recorded along the eastern boundary of the north field. Scattered saplings of native species were recorded throughout the fields.


Recently planted saplings along south border of site


Recently planted saplings along west and north border of lower site

Scrub and Bracken

3.2.14 Dense bramble scrub and bracken patches were recorded alongside many of the hedgerows, including hedge H1 and H2, and the northern field boundary which is likely to have been a hedgerow that is now defunct. This habitat was also present in the upper field along the eastern boundary where is joins Butcher's wood.


Scrub and bracken in south of site


Scrub and bracken in south of site

Hardstanding

3.2.15 A large gravel patch is present in the south of the southern field, covering an area of approximately 0.2ha. A boarded, fenced off rectangular area was present north of this gravel area, with tussocky grassland inside (TN1).


Gravel area in south of site where development will be built


Gravel area in south of site and boarded off fenced area north of gravel area.

Brash Piles

3.2.16 A brash pile was recorded within the south-east of the upper field measuring 12mx3mx800mm (TN2).


Brash pile north of hedge H2

Ancient Woodland (adjacent to survey area)

3.2.17 An area of ancient woodland was located adjacent to the eastern boundary of the site (Butcher's Wood). Butcher's Wood appears to have been coppiced in the past, however this management regime seems to have ceased. Species recorded include silver birch *Betula pendula,* ash, oak, hazel and field maple. The ground flora close to the site was sparse dominated by ivy and bramble and containing abundant leaf litter. Occasional hart's tongue fern *Asplenium scolopendrium* and bracken were present at the woodland edge. Woodlands of this sort provide potential habitat for numerous species, including badgers *Meles meles*, amphibians such as toads *Bufo bufo* or great crested newts, breeding or foraging birds including BAP or red listed species such as cuckoo *Cuculus canorus* and tree pipit *Anthus trivialis*. An extensive badger sett was observed within one of the woodlands, but no signs of badger were recorded within the site or within 30m of the site.

3.2.18 A mature ash (T4) and mature oak (T5), both bordering Butchers Woodland to the east of the survey area are of low suitability for roosting bats. Table 3.3 above shows the suitability of the trees on site for roosting bats in more detail. Photos of these trees can be found in Appendix III.


Butchers Wood, bordering the east of the site


Butchers Wood, bordering the east of the site

Standing water (adjacent to survey area)

3.2.19 Five ponds within 500m of the survey area were assessed as part of this survey. Four of these (P1, P2, P3 and P4) were within The Gill, and form part of a network of ponds scattered throughout this woodland. Pond P5 was within Miswell Wood. The ponds were all heavily shaded and contained significant leaf litter but no other emergent aquatic vegetation. The water was heavily tannin-stained by decomposing leaf litter. Ponds, particularly those located within good quality terrestrial habitat such as woodland, provide potential habitat for amphibians such as great crested newts. A Habitat Suitability Index was calculated for each pond, to assess their suitability as breeding ponds for great crested newts; these are shown below. These ponds were surveyed for great crested newt in 2014 and found to contain no great crested newts, however, a significant time has elapsed since these surveys and therefore they may now be in use by great crested newts.


Pond P1


Pond P2


Pond P3


Pond P4

Pond P5

4 Evaluation

4.1 Introduction

4.1.1 This section evaluates the survey area in terms of the habitats and species present or potentially present on site or its immediate vicinity, in the context of relevant legislation and planning policy. See Appendix X for a review of the legislation and planning context.

4.2 Designated Sites

4.2.1 None of the wildlife sites within the desk-study search zone are likely to be affected by the proposed development, considering the distance of the site from the designated sites.

4.3 Habitats

Evaluation

4.3.1 Table 4.1 presents a preliminary evaluation of the habitats recorded within or adjacent to the survey area, with reference to the criteria defined at section 2.2.6. It is important to note that these preliminary evaluations may be updated following completion of more detailed botanical or protected species surveys.

Table 4.1: Preliminary evaluation of habitats within the survey area

Habitat	Evaluation	Justification
Semi-improved grassland	Site	n/a
Hedgerow	Local	Priority habitat and/or important habitat. Potential bat roosts. Connecting habitat/ wildlife corridors
Scattered trees	Site	n/a
Dense scrub and Bracken	Site	n/a
Buildings hardstanding	Site	n/a
Brash Piles	Site	n/a
Ancient woodland	Local/ District	Irreplaceable habitat. Connecting habitat/ wildlife corridors. Potential bat roosts
Standing water	Site	n/a
Introduced shrub	Site	n/a
Bare ground	Site	n/a

Priority and irreplaceable habitats

4.3.2 Priority habitats present within the survey area or at its boundaries include:

- Ancient semi-natural woodland; and
- Hedgerow.

4.3.3 Butcher's Wood Ancient Woodland is located along the eastern boundary of the survey area. Ancient Woodland is both irreplaceable and of high intrinsic ecological value. The woodland provides habitats suitable for a range of protected species, including nesting birds, badger *Meles meles* (foraging and sett creation), foraging, commuting and roosting bats, and hazel dormouse *Muscardinus avellanarius*. Dead wood within these habitats also provides valuable habitat for fungi and saproxylic invertebrates (e.g. stag beetle *Lucanus cervus*) and refuge/hibernation habitats for widespread amphibians, great crested newt *Triturus cristatus* and reptile species.

4.3.4 Butcher's Wood Ancient Woodland may be vulnerable to negative effects from proposed development. Impacts may include noise, light and dust pollution, hydrological changes and impacts to tree root systems. The Ancient Woodland will be buffered by an undeveloped zone of at least 15m from the construction footprint, combined with ecological protection measures during construction (see section 5.4). Given the size and scale of the proposals, these measures are likely to be effective in maintaining the condition of the woodland.

4.3.5 Hedgerows H1 to H4 (all the hedgerows on site) are species-rich. Priority hedgerow habitats are defined "as any boundary line of trees or shrubs over 20m long and less than 5m wide, and where any gaps between the trees or shrub species are less that 20m wide…, consisting predominantly (i.e. 80% cover or more) of at least one woody UK native species" (any bank, wall, ditch or tree within 2m of the centre of the hedgerow is considered to be part of the hedgerow habitat, as is the herbaceous vegetation within 2m of the centre of the hedgerow) (Maddock, 2008). The survey area's hedgerows fall into this classification. Hedgerow priority habitats are of high intrinsic ecological value and provide habitats suitable for a range of protected species, including amphibians and reptiles (shelter and dispersal), nesting birds, invertebrates, foraging/commuting bats, and hazel dormouse *Muscardinus avellanarius*. Although detailed proposals for the site are not yet finalised, it is currently anticipated the hedgerows will be retained and protected during construction.

4.3.6 All the hedgerows within the site were assessed according to criteria set out in the Hedgerow Regulations 1997. A table showing full survey results is presented in Appendix VII. If a hedgerow is classified as important under the Regulations, local planning authorities are able to prevent its removal. To be classified as important, the hedgerow should be over 30 years old and should comprise one of the following:

- At least 7 woody species/30m;
- At least 6 woody species/30m and at least 3 features such as; an associated ditch, bank or wall, standard trees, parallel hedge, or connections to woodland or pond;
- At least 6 woody species/30m and including any one of *Populus nigra*, *Sorbus torminalis*, *Tilia cordata*, *Tilia platyphyllos*;

- At least 5 woody species and at least 4 associated features;
- If adjacent to a bridleway or footpath, at least 4 woody species and at least 2 features.

4.3.7 The Hedgerow Regulations do not apply to hedgerows which form the curtilage of residential properties or gardens. It should also be noted that hedgerows may qualify as important for historic or archaeological reasons and this report only assesses them according to the ecological criteria set out in the Hedgerow Regulations[4].

Table 4.2: Hedgerow assessment

Ref	Description of dominant species, width & height	Significance *
H1	Semi-managed, 1-2m in height, 1m in depth and 235m in length and contained hawthorn, holly, oak, beech, rose and sycamore.	Priority Habitat Not Important Species rich
H2	10m in height, 2m in depth and 230m in length and contained hazel, hawthorn, holly, oak and bramble.	Priority Habitat Not important Species rich
H3	6m in height, 1.5m in depth and 80m in length and contained hazel, hawthorn, holly, oak and ash. This hedgerow has a connection with broad leaved, ancient woodland at The Gill.	Priority Habitat Not Important Species rich
H4	10m in height, 1.5m in depth and 65m in length and contained hazel, hawthorn, holly, oak and ash. This hedgerow has a connection with broad-leaved, ancient woodland at Butchers Wood.	Priority Habitat Not Important Species rich

* Hedge sections are marked as: Priority Habitat (NERC Act 2006), Important (Hedgerow Regulations 1997), or species rich (5 or more native woody species per 30m section).

Other habitats

4.3.8 The proposed development would result in losses of up to c.2.1ha of semi-improved grassland, scrub, plantation woodland and hardstanding. These areas are of relatively low ecological value and of importance at the site level only but provide habitats potentially suitable for a number of protected species (e.g. amphibians and reptiles).

Change in biodiversity value

4.3.9 Habitats present within the survey area during the walkover survey are shown in Appendix I. Data collection records, including habitat type, area/length and condition score are provided in Table 4.3 and Table 4.4. No irreplaceable habitats[5] were identified within the development site. Using the Metric Calculation tool, it has been established that the area habitats within the site

[4] A full list of criteria can be found at: http://www.legislation.gov.uk/uksi/1997/1160/schedule/1/made

[5] Habitats that cannot be recreated within a specified time frame (typically, the timescale of the project)

prior to development are equivalent to **45.43 Biodiversity Units.** The linear habitats within the site prior to development are equivalent to **10.12 Biodiversity Units.**

Table 4.3: Baseline Area Habitat Data Table

Baseline habitat	Area (ha)	Condition
Grassland - modified grassland[6]	6.0764	Good
Urban - Suburban/ mosaic of developed/ natural surface	0.2075	Poor
Heathland and shrub - bramble scrub	0.3838	Poor
Woodland and forest - Other woodland; Young Trees planted[7]	0.1513	Poor
Grassland - modified grassland[8]	0.3810	Good

Table 4.4: Baseline Linear Habitat Data Table

Baseline habitat	Length (km)	Condition
H1 Native Species Rich Hedgerow with trees	0.220	Good
H2 Native Species Rich Hedgerow with trees - Associated with bank or ditch	0.233	Good
H3 Native Species Rich Hedgerow with trees - Associated with bank or ditch	0.090	Moderate
H4 Native Species Rich Hedgerow with trees	0.063	Good

4.3.10 Habitats present following development are shown on the landscaping plans at Appendix VIII. Habitat type, area/length and target condition score are provided in Table 4.5 and Table 4.6. It has been established that the area habitats within the site following development are equivalent to **48.32 Biodiversity Units.** The linear habitats within the site following development are equivalent to **15.54 Biodiversity Units.** All existing hedgerows will be retained.

4.3.11 A summary of the biodiversity net change assessment is presented in Appendix IX.

[6] Recently planted trees have not been included as an A1 onsite baseline habitat because this measure was undertaken by the client for enhancement of the site and will count towards the woodland creation element of the proposed scheme. Therefore 0.3810ha of land where trees were recently planted appears in the A1 onsite habitat baseline as grassland, but in the A2 onsite habitat creation as Mixed scrub.

[7] Conversely, the 0.1513ha of self-seeded scattered sapling goat willow in the northern field are listed in A1 onsite habitat baseline as Woodland and forest - Other woodland; Young Trees planted. This is because the BNG calculator would otherwise treat scattered broadleaved trees (regardless of age/condition) as wood pasture and parkland, which is a priority habitat of high distinctiveness; this would not represent an accurate assessment of this habitat on the ground.

[8] Recently planted trees have not been included as an A1 onsite baseline habitat because this measure was undertaken by the client for enhancement of the site and will count towards the woodland creation element of the proposed scheme. Therefore 0.3810ha of land where trees were recently planted appears in the A1 onsite habitat baseline as grassland, but in the A2 onsite habitat creation as Mixed scrub.

Table 4.5: Future Area Habitat Data Table

Future habitat	Area (ha)	Condition
Habitat creation		
Urban - Introduced shrub	0.0080	Moderate
Urban - Bioswale	0.0475	Good
Heathland and shrub - Mixed scrub	1.2360	Good
Woodland and forest - Other woodland; broadleaved	0.6610	Fairly Poor
Urban - Developed land; sealed surface	2.1145	N/A
Habitat enhancement		
FROM: Grassland - modified grassland TO: Grassland - Other neutral grassland	2.7742	Good
FROM: Grassland - modified grassland TO: Heathland and shrub - Mixed scrub	0.3810	Good

Table 4.6: Future Linear Habitat Data Table

Future habitat	Length (km)	Condition
Habitat creation		
Native Hedgerow	0.360	Moderate
Native Species Rich Hedgerow	0.685	Moderate
Native Species Rich Hedgerow with trees	0.175	Moderate

4.4 Species

Amphibians (excluding great crested newt)

4.4.1 The dominant semi-improved grassland within the survey area provides good quality terrestrial habitat for common and widespread amphibian species due to its varied sward height and tussocky structure. The areas of hedgerow, semi-improved grassland, scrub and woodland habitats also provide potentially suitable terrestrial habitats for common amphibian species. Within the development area these areas are very limited in extent and therefore common amphibians are not considered to present a constraint to the development proposals.

Great crested newt

4.4.2 SxBRC did not return any records of great crested newt (GCN) *Triturus cristatus* from within the desk-study search zone.

4.4.3 The survey area contains predominantly good quality terrestrial habitat for GCN, comprised mainly of semi-improved grassland with a varied sward height and tussocky structure. Other patches of habitat are also suitable including the areas of tall ruderal and scrub, and the

hedgerows, which together provide small sections of potential foraging, shelter and hibernation habitats.

4.4.4 There are no ponds within the survey area, however an analysis of Ordnance Survey maps and aerial photography indicated that ten ponds are present within 500m of the site; see Appendix IV for a pond map. There were no significant barriers to GCN dispersal between the ponds and the survey area. Ponds P6 and P8-P10 were recorded to be over c.400m from the proposed development site (i.e. the southernmost field). Pond P7 lies c.230m north-east of the survey area and was not accessible during the survey. Ponds P1 to P5 were accessible during the survey and were assessed for their suitability to support breeding great crested newts using field observations supported by a Habitat Suitability Index (HSI; Oldham et al, 2000); the full results are listed at Appendix V.

4.4.5 Four of the ponds (P1, P3, P4 and P5) were within The Gill, and form part of a network of ponds scattered throughout this woodland. Pond P2 was within Miswell Wood. The ponds were all heavily shaded and contained significant leaf litter but no other emergent aquatic vegetation. The water was heavily tannin-stained by decomposing leaf litter. Ponds, particularly those located within good quality terrestrial habitat such as woodland, provide potential habitat for amphibians such as great crested newts. These ponds were surveyed for great crested newt in 2014 and found to contain no great crested newts, however, a significant time has elapsed since these surveys and therefore they may now be in use by great crested newts.

4.4.6 Pond P1 lies c.155m north-west of the proposed development site (i.e. the southernmost field within the survey area). Pond P1 achieved an HSI value of 0.55, making it of below average suitability for breeding great crested newt.

4.4.7 Pond P2 lies c.300m north of the proposed development site. Pond P2 achieved an HSI value of 0.62, making it of average suitability for breeding great crested newt.

4.4.8 Pond P3 lies c.270m north-west of the proposed development site. Pond P3 achieved an HSI value of 0.53, making it of below average suitability for breeding great crested newt.

4.4.9 Pond P4 lies c.285m north-west of the proposed development site. Pond P4 achieved an HSI value of 0.66, making it of average suitability for breeding great crested newt.

4.4.10 Pond P5 lies c.195m north-west of the proposed development site. Pond P5 achieved an HSI value of 0.64, making it of average suitability for breeding great crested newt.

4.4.11 Research undertaken by Natural England (Cresswell & Whitworth, 2004) suggests GCN will rarely move further than 200-250m from a breeding pond, with much reduced distances recorded where adjacent habitats are of good quality. Jehle (2000) also determined a terrestrial zone of 63m, within which 95% of summer GCN refuges were located. In addition, following the breeding season, Jehle and Arntzen (2000) recorded 64% of newts within 20m of the pond edge.

4.4.12 A great crested newt Environmental DNA (eDNA) survey was recommended to establish whether the species is present in ponds within 250m of the site. If GCN are absent from these ponds then it is likely they are also absent from the application site. The survey was completed

in June 2020 and a summary of survey methods and results is presented in Appendix VI. The survey shows that GCN was absent from ponds P2 and P5 during the 2020 breeding season. P1, P3 and P4 were all dry during the survey; P6 and P7 could not be accessed. In conclusion, GCN is unlikely to be present within the suitable terrestrial habitats on site and is not considered to present a constraint to the development proposals.

Birds (nesting)

4.4.13 SxBRC returned 26 records of notable bird species from within the desk-study search zone during a date range of 1990 to 2011.

4.4.14 The survey area's boundary hedgerow, scrub and boundary woodland are suitable for nesting birds such as wren *Troglodytes troglodytes*, dunnock *Prunella modularis* (an Amber-listed bird of conservation concern (BoCC4); Eaton *et al.*, 2015), robin *Erithacus rubecula* and chaffinch *Fringilla coelebs*. Precautionary measures for nesting birds are recommended at section 5.3.

Invertebrates

4.4.15 SxBRC returned one record of one protected invertebrate (purple emperor *Apatura iris*) from within the desk-study search zone during a date range of 2010 to 2014.

4.4.16 Woodland habitats, tall semi-improved grassland, tall ruderal, and scattered scrub are likely to provide moderate value for a common and widespread range of invertebrates. However, due to the relatively small size of grassland to be affected, invertebrates are not considered to present a constraint to the development proposals and no further surveys for this group are required.

Mammals (terrestrial)

Badger

4.4.17 SxBRC do not disclose badger *Meles meles* records.

4.4.18 The survey area provides suitable foraging habitat for badger and some suitable areas for sett creation potential. A search for badger setts and signs of their presence was undertaken within a 30m radius of the site boundary. An extensive badger sett was observed within one of the woodlands >30m from the construction footprint but is not reported in detail here for conservation reasons. No signs of badgers were recorded in the surveyed fields but it is probable that badgers are using the survey area for foraging, if resident in the local area. There was no observable evidence of badger activity within or around the survey area, such as badger paths, footprints, latrines, dung pits, no badger hairs caught at fence lines or evidence of foraging (snuffle holes). Given the relatively small size of the construction footprint and the reinstatement of semi-natural habitats within the survey area following development it is not considered that this species would suffer an extensive reduction in its available foraging habitat. General ecological protection measures for badgers and other mammals are advised in section 5.4.***Bats***

4.4.19 SxBRC returned 54 records of at least two species of bat, during a date range of 1982 to 2011, including common pipistrelle *Pipistrellus pipistrellus* and brown long-eared *Plecotus auritus* bats.

4.4.20 The Preliminary Roost Assessment concluded that there are five trees within the boundaries of the site that contain potential roost features for bats or are of a size and age to become more suitable. These are located along the southern and eastern site boundaries. One tree was of high suitability for roosting bats (Trees T1), two trees were of moderate suitability for roosting bats (Trees T2 and T3), and two trees were of low suitability for roosting bats (Trees T4 and T5). Felling or arboricultural works to the high and moderate suitability trees, if required to facilitate the proposals, could result in destruction of a bat roost or present a risk of killing, injury or disturbance if bats are present during the works. Further surveys or recommendations are not required for any of these trees due to them not being affected by the development works. The survey area's grassland, scrub, hedgerows, tall ruderal, and woodland habitats are likely to provide abundant opportunities for foraging and commuting bats. Impacts to bats are considered unlikely as a result of the current relatively small scale proposals and no further surveys for this group are required prior to the works commencing. It is also considered that the proposed landscaping scheme may increase the value of the site for foraging (due to the inclusion of wildflower planting which should increase prey availability) and, eventually, roosting bats, within the commemorative tree planting areas which will provide roosting opportunities when they mature. The site plans should also include low-level, directional lighting with minimal spill and glare, and consideration should be given to reduced hours of operation and/or a movement responsive system of control. Ecological protection measures for bats are advised in section 5.4.

Hazel dormouse

4.4.22 SxBRC returned no records of hazel dormouse *Muscardinus avellanarius* within the desk study search area.

4.4.23 The hedgerows and scrub on site have the capability of supporting dormice due to their suitable food plants within the canopy and connectivity to further hedgerows and woodland offsite. It is currently understood that the hedgerows will be retained and protected, but if these features are to be affected by proposals for the site then further surveys for hazel dormouse are recommended in section 5.2.

Plants, native

4.4.24 SxBRC returned eight records of two protected botanical species from within the desk-study search zone during a date range of 1982 to 2016.

4.4.25 No rare or protected species of flora were recorded within the survey area and, based on the habitat types present (improved grassland, tall ruderal and scrub) and past and current management regimes, it is considered unlikely that these are present. Botanical species are not considered to present a constraint to the development proposals and no further surveys for this group are required.

Plants – invasive non-native species and injurious weeds

4.4.26 No invasive plant species (i.e. species listed on Schedule 9 of the Wildlife and Countryside Act) were located during this survey. No significant stands of injurious weed species were noted (ragwort *Senecio jacobea*, spear thistle *Cirsium vulgare*, creeping thistle *Cirsium arvense*, curled dock *Rumex crispus*, and broad-leaved dock *Rumex obtusifolius).* Invasive plant species and injurious weeds are not considered to present a constraint to the development proposals and no further action for this group is required.

Reptiles (terrestrial)

4.4.27 SxBRC returned two records of two terrestrial reptile species from within the desk-study search area. Two of the four widespread species have been recorded in the vicinity; slow worm *Anguis fragilis* and grass snake *Natrix natrix*.

4.4.28 The semi–improved grassland fields within the survey area provide good quality refuge and foraging habitat for reptiles due to the structure of the sward. The varied topography and undulating banks on the surveyed fields could also be used by basking reptiles. The hedgerows, both defunct and intact, provide habitat which could be used by sheltering, hibernating or dispersing reptiles. Construction works would involve site clearance, creation of access tracks and materials storage compounds, vehicle movements and groundworks, which together could present a risk of killing or injury for reptiles if present within the survey area. Further surveys for reptiles are recommended at section 5.2.

Other protected, rare or notable species

4.4.29 SxBRC returned three records of hedgehog *Erinaceous europaeus* from within the desk-study search zone, and the survey area contains habitats suitable for this species, including grassland, hedgerow and scrub. Hedgehog is listed as a species of principal importance under the NERC Act 2006 and is undergoing a significant population decline. Measures should be taken to continue accommodating this species on the site post-development (see section 5.4).

5 Recommendations

5.1 Introduction

5.1.1 With regard to the objectives of this Preliminary Ecological Appraisal, recommendations are made below for further botanical and/or protected species survey where necessary. Preliminary recommendations are also made for the protection of important ecological features, and/or to avoid or mitigate ecological impacts, and to enhance the ecology of the site post-construction with the aim of achieving an overall net gain for biodiversity. It is intended that these preliminary recommendations should be considered during the development of the reserved matters application so that protection of important ecological features is secured and opportunities for ecological enhancement are realised. The recommendations should be reviewed following the completion of further ecological surveys.

5.2 Botanical or Protected Species Surveys

5.2.1 The following species / groups (Table 5.1) will require additional surveys prior to refining development designs and formulating a suitable avoidance and mitigation strategy (if required).

Table 5.1: Recommendations for further ecological surveys

#	Recommendations for further ecological survey
R1	Presence / absence surveys for great crested newt in ponds within 250m of the site, undertaken using eDNA sampling techniques from mid-April to end June. The survey is now complete and has shown that GCN was absent in ponds P2 and P5.
R2	Presence / absence surveys for dormouse, undertaken between April and November, if any hedgerows, scrub or woodland are to be affected by proposals for the site.
R3	Presence / absence surveys for reptiles, undertaken between April and September within suitable habitats on site.

Great crested newt

5.2.2 A great crested newt Environmental DNA (eDNA) survey was recommended to establish whether the species is present in ponds within 250m of the site. If GCN are absent from these ponds then it is likely they are also absent from the application site.

5.2.3 An eDNA survey was carried out in June 2020 and confirmed that GCN was absent in accessible ponds holding water within 250m of the survey area. As such GCN is considered unlikely to be present within the survey area.

Hazel dormouse

5.2.4 The hedgerow, scrub and woodland habitats within the survey area are dense and largely intact, providing potential habitat for hazel dormouse. Woodland, hedgerow and scrub habitats are due to be retained and protected during construction. However, if this changes, there is a risk of habitat loss, killing, injury or disturbance to dormice surveys to establish the presence or likely absence of hazel dormouse would be recommended. These surveys should be undertaken by a suitably experienced and licensed ecologist following current guidelines (Bright *et al.*, 2006), comprising hazel nut searches and nest tube surveys, and can be carried out between April and November. The required survey effort will depend on the extent of suitable habitat / hedgerow removal proposed.

Reptiles

5.2.5 The construction area contains habitats suitable for reptiles including rough grassland, tall ruderals, and scrub. There is hence a risk of killing or injury to reptiles and further surveys by an experienced herpetologist are required to establish their presence or likely absence within the proposed construction footprint. The survey should involve a minimum of seven visits to the site in suitable weather conditions during the active season (broadly April to September), following current guidelines (Froglife, 1999; Gent & Gibson, 2003). Methods include visual encounter surveys (i.e. targeted transects) and searches of artificial and natural refuges. The survey is currently underway and, at the time of writing, two survey visits have been completed and two common lizards have been found present.

5.3 Precautionary Measures

5.3.1 The following species/groups (Table 5.2) require specific precautionary measures to be adhered to prior to and during construction to ensure that an offence under the relevant legislation is avoided. These measures may need to be added to or amended following completion of the protected species surveys described above.

Table 5.2: Recommended precautionary measures

#	Recommended precautionary measures
R4	Removal of nesting bird habitats will be undertaken outside of the bird nesting season, which runs from 1 March to 31 August. It will therefore be carried out between September and February, but should be planned and implemented in accordance with the findings of the further ecological surveys recommended above. Any construction works undertaken within the bird breeding season where suitable bird breeding habitat exists will require a site check for nesting birds by a suitably qualified ecologist. This will take place no more than two days prior to works commencing. This is to ensure that no disturbance to active bird nests occurs. If a nest is found it must be cordoned off and works adjacent to the nest must be delayed until such time that the chicks have fledged from the nest. This will be supervised by a suitably qualified ecologist.

5.4 Ecological Protection Measures

5.4.1 The following protection measures (Table 5.3) will be carried out as part of the proposed scheme, alongside any specific measures that are recommended following the protected species surveys described above.

Table 5.3: Recommended ecological protection measures

#	Recommended ecological protection measures
R5	Butcher's Wood Ancient Woodland bordering the east of survey area will be retained and will be buffered by an undeveloped zone of at least 15m from the construction footprint to protect it from noise, light and dust pollution, hydrological changes and impacts to tree root systems.
R6	All the hedgerows on site are species rich and priority habitats. Therefore these hedgerows will be retained and protected during development works.
R7	British Standard BS 5837:2012 and/or National Joint Utilities Group Guidelines (NJUG, 1995) will be followed at all times during construction when working in close proximity to trees or shrubs which are to be retained. According to NJUG Guidelines the root protection zone or precautionary area is 4x the circumference of the trunk (circumference is measured around the trunk at a height of 1.5m above ground level). The distance is measured from the centre of the trunk to the nearest part of any excavation or other work. If a separate tree survey is carried out for the proposed development, works will be undertaken in accordance with the recommendations therein.
R8	The use of external lighting will be avoided or reduced to the minimum required for its intended purpose, during both construction and operation. This will be of benefit to nocturnal species e.g. bats. Where external lighting is to be provided, it will be low-level, directional lighting with minimal spill and glare, and consideration will be given to reduced hours of operation and/or a movement responsive system of control. Use narrow-spectrum bulbs and light sources that emit minimal UV light, avoiding white and blue wavelengths of the spectrum. Use glass lantern covers instead of plastic to filter UV light. Lighting will not be directed towards the boundary hedgerows or ancient woodland to the east.
R9	To enable dispersal of hedgehogs (which require large territory sizes) and other small mammals across the site and within the local area following development, small access gaps to measure c.13x13cm are recommended to be provisioned at the base of all new fence boundaries. These will allow easy passage for small mammals to continue foraging in the area while still being small enough to contain pets.
R10	All excavations left overnight will either be covered over, or provided with a ramp to enable easy escape of badgers, hedgehogs, small mammals, amphibians and other fauna, and inspected each morning prior to recommencement. Open pipework greater than 150mm outside diameter will be blanked off at the end of each working day.
R11	Where fox dens or rabbit warrens are to be damaged or destroyed as part of the proposed works, this will be done in accordance with the Mammals Act 1996 by a registered pest control company.

5.5 Recommendations for Biodiversity Net Gain

5.5.1 The following ecological enhancements (Table 5.4) should be considered for the site over and above any requirement to achieve an overall net gain for biodiversity in line with local and national policy and guidance, but should be reviewed and specified further following the completion of recommended protected species surveys.

Table 5.4: Preliminary recommendations for biodiversity net gain

#	Preliminary recommendations for biodiversity net gain
R12	Habitat piles will be created within areas of retained grassland, at the edges of the site close to boundary hedgerows and woodland. These will provide additional hibernation and shelter resources for amphibians, invertebrates, reptiles, and a range of other wildlife, and egg-laying substrate for grass snakes. Hibernacula can be created by partially burying logs and stones in sheltered areas away from flood risk, and covering over with earth or turf. Breeding habitats can be created by collecting grass clippings and other prunings arising from landscape management of the site, and composting them in a secluded corner of the site. Deadwood piles can be created using arisings from site clearance to provide shelter and breeding opportunities for invertebrates, particularly saproxylic species which are dependent on deadwood.
R13	The value of the site for birds will be enhanced by installing a range of artificial nest boxes. A total of two bird boxes are recommended. These will be placed on retained mature trees within the development or at the site boundaries. For instance: ▪ Trees: nest boxes with entrance holes suitable for tit species, woodpeckers and nuthatches, and open-fronted boxes suitable for spotted flycatcher *Muscicapa striata* or song thrush *Turdus philomelos*, and treecreeper *Certhia familiaris* boxes.
R14	The value of the site for bats will be enhanced by installing a range of artificial roost boxes. A total of three bat boxes are recommended. These will be placed on retained mature trees within the development or at the site boundaries. Boxes suitable for a range of species should be used, for instance: ▪ Pipistrelles: bat boxes suitable to install on mature trees either within or at the edges of the development include the Schwegler 1FF Flat Bat Box, or other manufacturer's equivalent. ▪ Noctules *Nyctalus spp*. and brown long eared bats *Plecotus auritus*: bat boxes suitable to install on mature trees either within or at the edges of the development include the Schwegler 2F General Purpose Bat Box or the 2FN Woodland Bat Box, or other manufacturer's equivalent.Bat boxes should ideally be located south-facing (between south-east and south-west) and above 4m from ground level. They should be installed facing vegetation features such as mature hedgerows or trees, but with a clear line of flight for bats exiting the roost, and away from sources of artificial light.

6 Summary and Conclusions

6.1 Introduction

6.1.1 A Preliminary Ecological Appraisal was undertaken for Land off of Turner's Hill Road, Turner's Hill, West Sussex (Grid Reference: 533460, 135571). Outline planning consent is being sought for a crematorium and natural burial development at the site. The report was prepared to record the ecological baseline and identify key ecological features within and around the proposal site.

6.2 Results

6.2.1 There are two statutory protected wildlife sites (a Site of Special Scientific Interest (SSSI) and an Area of Outstanding Natural Beauty (AONB)), and two non-statutory sites of local importance (a Local Wildlife Site and a Local Geological Site)) within the 1km desk study search area.

6.2.2 There are records of a range of protected or notable species in the locality, including amphibians, birds, invertebrates, terrestrial mammals, flowering plants and terrestrial reptiles, together with three priority and other habitats: Deciduous Woodland, Ghyll Woodland and Ancient Woodland. Ancient Woodland borders the site to the east.

6.2.3 The survey area lies to the west of Turner's Hill, a village in the Mid Sussex district of West Sussex. The site comprises c.7.2ha of non-agricultural and part developed land currently comprising hard-standing, grassland, scrub, and hedgerows within the site of a natural burial ground. The survey area is bounded to the north, east, and west by pasture and agricultural land and to the south by Turner's Hill Road and agricultural fields, the ancient woodland of Butcher's Wood also bounds the east of the site. The wider landscape is characterised by a patchwork of arable land and woodland with a network of drainage ditches, and the settlement of Turner's Hill. Ten ponds lie within 500m of the survey area.

6.3 Evaluation

6.3.1 Table 6.1 presents a summary of ecological constraints and opportunities identified within the survey area.

Table 6.1: Summary of ecological constraints and opportunities

Feature	Detail
Constraints:	
Designated sites	None of the wildlife sites within the desk-study search zone are likely to be affected by the proposed development, considering its distance from the designated sites.
Priority	All the hedgerows onsite are priority habitats and provide habitats suitable for a

Feature	Detail
habitats	range of protected species, including amphibians, nesting birds, invertebrates, bats, hazel dormouse and reptiles. Hedgerow habitat will be retained and protected during construction. Ancient Woodland at the eastern boundary is an irreplaceable habitat of high intrinsic ecological value and will also be protected.
Other habitats	The proposed development would result in losses of up to c.2.1ha of semi-improved grassland, scrub, plantation woodland and hard-standing. These areas are of low ecological value but provide habitats suitable for a number of protected species (e.g. amphibians and reptiles).
Great crested newt	Loss of up to c.2.1ha of terrestrial habitats (grassland). No impact on aquatic habitats. An eDNA survey carried out in 2020 confirmed that GCN was absent in accessible ponds holding water within 250m of the survey area.
Bats (roosting)	The trees T1 to T5 contain suitable features for roosting bats. It is currently anticipated that the trees will be retained as part of the proposed development.
Hazel dormouse	Areas of dense scrub, hedgerow and woodland habitat are suitable for hazel dormouse. It is currently anticipated that these will be retained.
Reptiles	Loss of up to c.2.1ha of suitable habitats (grassland). Grass snake was found to be present in 2014, and a repeat survey is currently being undertaken. At the time of writing two common lizards have been found present during the updated survey in 2020.
Opportunities:	
Habitat creation / enhancement	Habitat creation and enhancement opportunities include wildflower meadow planting, habitat piles and bird/bat boxes. Tree and shrub planting has already been undertaken on the site very recently, and further tree, hedge and shrub planting is proposed.

6.4 Recommendations

6.4.1 Recommendations are made for further botanical or protected species surveys, together with preliminary recommendations for the protection of important ecological features to avoid or mitigate ecological impacts, and to deliver biodiversity net gain on site post-construction; these are summarised in Table 6.2. It is intended that these preliminary recommendations should be considered during the development of the reserved matters application so that protection of important ecological features is secured and opportunities for ecological enhancement are realised. The recommendations should be reviewed following the completion of further ecological surveys.

Table 6.2: Summary of recommendations

#	Summary of recommendations
Botanical / protected species surveys	
R1	Presence / absence surveys for great crested newt in ponds within 250m of the site, undertaken using eDNA sampling techniques from mid-April to end June. The survey is now complete and has shown that GCN was absent in ponds P2 and P5.
R2	Presence / absence surveys for dormouse, undertaken between April and November, if any hedgerows, scrub or woodland are to be affected by proposals for the site. No hedgerows,

#	Summary of recommendations
	scrub or woodland are proposed to be removed as part of the outline application.
R3	Presence / absence surveys for reptiles, undertaken between April and September within suitable habitats on site. The survey is currently underway.
Precautionary measures	
R4	Removal of nesting bird habitats will be undertaken outside of the bird nesting season, which runs from 1 March to 31 August. It will therefore be carried out between September and February, but should be planned and implemented in accordance with the findings of the further ecological surveys recommended above.
Ecological protection measures	
R5	The ancient woodland bordering the east of survey area will be retained and will be buffered by an undeveloped zone of at least 15m from the construction footprint to protect it from noise, light and dust pollution, hydrological changes and impacts to tree root systems.
R6	All the hedgerows on site are species rich and priority habitats. Therefore these hedgerows should not be partially or wholly removed. No hedgerows are proposed to be removed as part of the outline application.
R7	Standard site procedures to prevent impacts on trees will be adhered to during construction.
R8	The use of external lighting will be avoided or minimised to prevent impacts to nocturnal species such as bats. Lighting will not be directed towards the boundary hedgerows or ancient woodland to the east.
R9	Small access gaps will be provisioned at the base of new fence boundaries to enable dispersal of small mammals across the site.
R10	At the end of each working day excavations will be covered over and open pipework capped to prevent entrapment of mammals, amphibians and other fauna.
R11	Where fox dens or rabbit warrens are to be damaged or destroyed as part of the proposed works, this will be done by a registered pest control company.
Biodiversity net gain	
R12	Habitat piles for amphibians, invertebrates and reptiles will be created within areas of retained rough grassland, scrub or woodland.
R13	The value of the site for birds will be enhanced by installing a range of artificial nest boxes onto retained trees.
R14	The value of the site for bats will be enhanced by installing a range of artificial roost boxes onto retained trees.

6.5 Biodiversity Net Gain

6.5.1 The Environment Bill was reintroduced to Parliament in January 2020 and will require a 10% net gain in biodiversity value to be delivered by all development projects. The recommendations above are proposals for additional ecological enhancement over and above the biodiversity net gain criteria. The baseline biodiversity value of the survey area is calculated as follows:

- Area habitats: 45.43 Biodiversity Units
- Linear habitats: 10.12 Biodiversity Units

6.5.2 The future biodiversity value of the survey area after development is calculated as follows:

- Area habitats: 48.32 Biodiversity Units or a net gain of +6.35%
- Linear habitats: 15.54 Biodiversity Units or a net gain of +53.65

6.6 Conclusions

6.6.1 The majority of land proposed for development is of low/moderate ecological value. Significant constraints to development were identified including adjacent ancient woodland, and the potential presence of reptiles. Presence/absence surveys for reptiles are currently being undertaken and the results will be assessed to formulate a suitable mitigation strategy. Precautionary and ecological protection measures are recommended on an interim basis to enable offences under the relevant legislation to be avoided.

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Appendix I: Phase 1 Habitats Map

Please see insert.

Turners Hill Road, Turners Hill, West Sussex

- Survey area
- Hard standing
- Planted trees (young)
- Dense scrub
- Scattered saplings
- SI — Semi-improved grassland
- High potential tree
- Low potential tree
- Moderate potential tree
- Native spp.rich hedge with trees
- Target note
- Pond numbers
- Ancient semi-natural woodland
- Ancient woodland 15m buffer

0 50 100 Meters

N

Scale: 1:2,650 **Created by:** AD
Date: Jul 2020 **Reviewed by:** NP
Drawing number:
UE0364ECO-Phase1_2_200713

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Appendix II: Target Notes

Target Note	Photo
1. Boarded off area north of gravel patch in south of survey area.	
2. Brash pile with semi-improved grassland north of hedge H2.	

Appendix III: Trees with Bat Potential

Tree	Photo
T1.	
T2.	
T3.	

Tree	Photo
T4.	
T5.	

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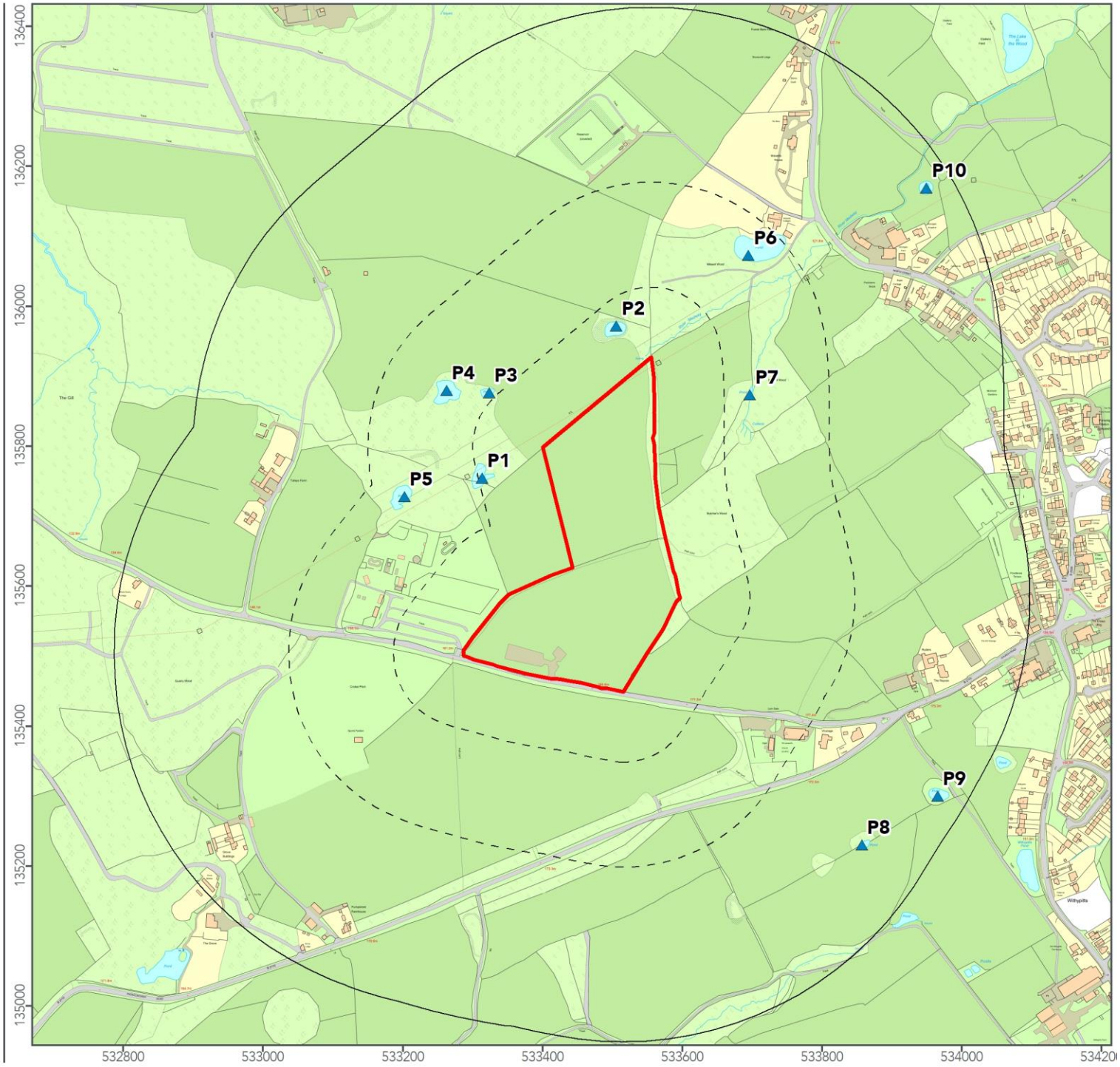
Appendix IV: Pond Map

Please see insert.

Turners Hill Road, Turners Hill, West Sussex

- Survey area
- 100m buffer
- 250m buffer
- 500m buffer
- ▲ Pond numbers



0 200 400
Meters

N

Scale: 1:8,000 **Created by:** AD
Date: Apr 2020 **Reviewed by:** NP
Drawing number:
UE0364ECO-Ponds_200421_10.6

URBAN EDGE ENVIRONMENTAL CONSULTING
Tel: 01273 686 766
Email: hello@ueec.co.uk
Web: www.ueec.co.uk

Appendix V: Habitat Suitability Indices

The Habitat Suitability Index (HSI; Oldham *et al*, 2000) is a tool used to assess ponds on the basis of their suitability to support breeding great crested newts (GCN). The HSI incorporates ten suitability indices which are considered to affect GCN distribution. These are:

- Location (in Britain);
- Pond area;
- Desiccation rate (years out of ten that pond dries);
- Water quality (subjective assessment);
- Percentage of pond shaded (% of pond margin shaded 1m from the bank);
- Number of waterfowl;
- Fish population (subjective assessment);
- Number of ponds within 1km;
- Terrestrial habitat quality; and
- Percentage macrophyte cover.

The results of the HSI calculation can then be compared to categorised HSI scores used by the National Amphibian and Reptile Recording Scheme (Oldham *et al*, 2000) to identify the probability of a pond supporting great crested newts, as follows:

Habitat Quality	HSI Score
Poor	Below 0.5
Below Average	0.5 – 0.59
Average	0.6 – 0.69
Good	0.7 – 0.79
Exceptional	Above 0.8

The HSI gives an indication of whether a pond is suitable for breeding great crested newts, however, it should be noted that a low score does not preclude the possibility that GCN are using the pond. A survey of ponds carried out to test the HSI (ARG UK, 2010) found that 20% of ponds which were scored as 'below average' still contained great crested newts, although this increased to an occupation rate of 93% for those ponds scored as 'excellent'. Another important consideration when using the HSI is that pond scores can vary at different times of year, for example, if emergent vegetation is not present (and therefore under recorded) at the time of the HSI assessment.

HSI results for all accessible waterbodies potentially suitable for GCN within 500m of the site are shown below.

Variable	Field score	SI value	Field score	SI value	Field score	SI value
	Pond 1		***Pond 2***		***Pond 3***	
Location	Optimal	1	Optimal	1	Optimal	1
Pond area (m^2)	400	0.8	48	0.05	375	0.6
Pond permanence	Rarely dries	1	Never dries	0.9	Rarely dries	1
Water quality	Poor	0.33	Moderate	0.67	Moderate	0.67
% shaded 1m from bank	100	0.2	100	0.2	100	0.2
Fowl	Absent	1	Absent	1	Minor	0.67
Fish	Absent	1	Absent	1	Possible	0.67
Pond density (per km^2)	31	1	31	1	31	1
Terrestrial habitat	Good	1	Good	1	Good	1
Macrophyte cover %	0	0.3	0	0.3	0	0.3
HSI value		**0.66**		**0.53**		**0.64**
Suitability		**Average**		**Below average**		**Average**

Variable	Field score	SI value	Field score	SI value
	Pond 4		***Pond 5***	
Location	Optimal	1	Optimal	1
Pond area (m2)	75	0.1	500	1
Pond permanence	Never dries	0.9	Rarely dries	1
Water quality	Moderate	0.67	Moderate	0.33
% shaded 1m from bank	100	0.2	100	0.2
Fowl	Minor	0.67	Minor	0.67
Fish	Absent	1	Absent	0.67
Pond density (per km^2)	31	1	31	1
Terrestrial habitat	Good	1	Good	1
Macrophyte cover %	0	0.3	0	0.3
HSI value		**0.55**		**0.62**
Suitability		**Below average**		**Average**

Appendix VI: Great Crested Newt eDNA Survey.

Methodology

Great crested newt (GCN) surveys were based on standard industry guidelines (Biggs et al., 2014; English Nature, 2001) and Natural England's standing advice[9] for GCN. The objective of the survey was to establish the presence or likely absence of GCN from potentially suitable breeding ponds within 250m of the survey area. The eDNA water sampling followed the methodology set out in Natural England's 'Technical advice note for field and laboratory sampling of great crested newt environmental DNA' (Biggs et al., 2014), which is provided as an appendix of the research report published by Defra into environmental DNA testing for great crested newts. This is the only methodology currently accepted by Natural England for this technique.

A single visit to each pond was made between 15 April and 30 June. At the time of the survey, the following information was collected for each pond:

- Site name;
- Nearest settlement;
- County;
- Time between receipt of sampling kit and date of sampling;
- Date of sampling;
- Personnel collecting sample;
- Ordnance Survey grid reference (12 figures);
- Percentage of pond perimeter that is accessible for survey;
- Data on inflows, and whether these were wet or dry at the time of survey;
- Data on presence and number of great crested newts recorded during the survey (if any);
- Information on any difficulties experienced during sample collection.

The following methodology for the sampling procedure for eDNA analysis was applied in the field in accordance with the survey protocol (Biggs et al., 2014):

- At each pond, 20 samples of 30ml each were taken from around the perimeter of the pond, as equally spaced as possible. The locations of the samples were chosen to sample the entire margin with specific effort made to target areas where there may be newt egg laying and/or displaying activities.
- The sample ladle was stirred gently in the pond before the sample was retrieved in order to mix the water column, with care being taken not to stir up the sediment.

[9] Natural England (2015): Great crested newts: surveys and mitigation for development projects. Accessed online at: https://www.gov.uk/guidance/great-crested-newts-surveys-and-mitigation-for-development-projects

- All 20 samples were emptied as they were collected into a Whirl-Pack bag, which was then sealed and shaken for 10 seconds to mix the samples.
- Upon mixing, and using a sterile pipette, exactly 15ml of the sample was transferred from the Whirl-Pack bag into each of the six sterile tubes, which contained 35ml of ethanol. The sample was stirred between filling each tube to homogenize the water.
- Once filled to 50ml, each tube was mixed for 10 seconds to mix the sample and preservative Date of sampling;
- Samples were returned to the office and either dispatched at ambient temperature immediately for analysis or stored at 2-4°C in a refrigerator dedicated for this purpose.

The following precautions were adhered to, which ensured that no cross-contamination of samples occurred:

- Sterile gloves were worn by all surveyors at all times during the sampling process;
- Gloves were replaced with a new pair of gloves between sample collection from the pond and pipetting into the sterile preservation tubes; and
- Samples were collected without the surveyor entering the water (i.e. the surveyors stood on the pond bank or edge).

The laboratory used for analysis of the samples was SureScreen Scientifics Ltd, Morley Retreat, Church Lane, Morley, Derbyshire, DE7 6DE, which is participating in Natural England's proficiency testing scheme.

Sampling kits were received from SureScreen on 24 June 2020. Water samples from each pond were collected using these kits on 26 June 2020. The samples were returned to the laboratory on 6 July 2020, via a 24hr courier service.

Evaluation criteria

A positive result means that great crested newts are present in the water or have been present in the water in the recent past (eDNA degrades over around 7-21 days).

A negative result means that great crested newt DNA was not detected and GCN are likely to be absent from the waterbody.

On rare occasions an inconclusive result is issued. This occurs where great crested newt DNA has not been detected but the controls have indicated that the sample has been degraded or the polymerase chain reaction (PCR) inhibited in some way. This may be due to undefined components in the water chemistry or may be due to the presence of high levels of sediment or algae in the sample. A re-test could be performed but a fresh sample would need to be obtained, and if water chemistry was the cause of the indeterminate then a re-test would most likely also return an inconclusive result.

Sediment content of each sample is visually recorded in the lab and reported on the results document. Inhibition and degradation results are also noted. If the result is recorded as evidence of decay (meaning that the degradation control was outside of accepted limits) or evidence of residual inhibition (meaning that the PCR reaction was inhibited) any negative result is recorded as indeterminate.

Limitations

Access permissions to survey ponds P6 and P7 could not be obtained and they were excluded from the eDNA survey. On the date of survey ponds P1, P3 and P4 were dry and no water samples could be collected. There were no other limitations of relevance to the methods applied.

Results

Ponds P2 and P5 tested negative for great crested newt during the eDNA survey. The full results are presented below.

SureScreen Scientifics

Folio No: E8440
Report No: 1
Purchase Order: UE0364
Client: UEEC
Contact: Anna Douglas

TECHNICAL REPORT

ANALYSIS OF ENVIRONMENTAL DNA IN POND WATER FOR THE DETECTION OF GREAT CRESTED NEWTS (TRITURUS CRISTATUS)

SUMMARY

When great crested newts (GCN), *Triturus cristatus*, inhabit a pond, they continuously release small amounts of their DNA into the environment. By collecting and analysing water samples, we can detect these small traces of environmental DNA (eDNA) to confirm GCN habitation or establish GCN absence.

RESULTS

Date sample received at Laboratory: 07/07/2020
Date Reported: 20/07/2020
Matters Affecting Results: None

Lab Sample No.	Site Name	O/S Reference	SIC	DC	IC	Result	Positive Replicates
5112	P2, Turners Hill	TQ 33524 35983	Pass	Pass	Pass	Negative	0
5116	P5, Turners Hill	TQ 33202 35731	Pass	Pass	Pass	Negative	0

If you have any questions regarding results, please contact us: ForensicEcology@surescreen.com

Reported by: Sarah Evans **Approved by:** Chris Troth

Forensic Scientists and Consultant Engineers
SureScreen Scientifics Ltd, Morley Retreat, Church Lane, Morley, Derbyshire, DE7 6DE
UK Tel: +44 (0)1332 292003 Email: scientifics@surescreen.com
Company Registration No. 08950940

SureScreen Scientifics

METHODOLOGY

The samples detailed above have been analysed for the presence of GCN eDNA following the protocol stated in DEFRA WC1067 'Analytical and methodological development for improved surveillance of the Great Crested Newt, Appendix 5.' (Biggs et al. 2014). Each of the 6 sub-sample tubes are first centrifuged and pooled together into a single sample which then undergoes DNA extraction. The extracted sample is then analysed using real time PCR (qPCR), which uses species-specific molecular markers to amplify GCN DNA within a sample. These markers are unique to GCN DNA, meaning that there should be no detection of closely related species.

If GCN DNA is present, the DNA is amplified up to a detectable level, resulting in positive species detection. If GCN DNA is not present then amplification does not occur, and a negative result is recorded.

Analysis of eDNA requires scrupulous attention to detail to prevent risk of contamination. True positive controls, negative controls and spiked synthetic DNA are included in every analysis and these have to be correct before any result is declared and reported. Stages of the DNA analysis are also conducted in different buildings at our premises for added security.

SureScreen Scientifics Ltd is ISO9001 accredited and participate in Natural England's proficiency testing scheme for GCN eDNA testing. We also carry out regular inter-laboratory checks on accuracy of results as part of our quality control procedures.

INTERPRETATION OF RESULTS

SIC: **Sample Integrity Check** [Pass/Fail]
When samples are received in the laboratory, they are inspected for any tube leakage, suitability of sample (not too much mud or weed etc.) and absence of any factors that could potentially lead to inconclusive results.

DC: **Degradation Check** [Pass/Fail]
Analysis of the spiked DNA marker to see if there has been degradation of the kit or sample between the date it was made to the date of analysis. Degradation of the spiked DNA marker may lead indicate a risk of false negative results.

IC: **Inhibition Check** [Pass/Fail]
The presence of inhibitors within a sample are assessed using a DNA marker. If inhibition is detected, samples are purified and re-analysed. Inhibitors cannot always be removed, if the inhibition check fails, the sample should be re-collected.

Result: **Presence of GCN eDNA** [Positive/Negative/Inconclusive]
Positive: GCN DNA was identified within the sample, indicative of GCN presence within the sampling location at the time the sample was taken or within the recent past at the sampling location.
Positive Replicates: Number of positive qPCR replicates out of a series of 12. If one or more of these are found to be positive the pond is declared positive for GCN presence. It may be assumed that small fractions of positive analyses suggest low level presence, but this cannot currently be used for population studies. In accordance with Natural England protocol, even a score of 1/12 is declared positive. 0/12 indicates negative GCN presence.
Negative: GCN eDNA was not detected or is below the threshold detection level and the test result should be considered as evidence of GCN absence, however, does not exclude the potential for GCN presence below the limit of detection.

Forensic Scientists and Consultant Engineers
SureScreen Scientifics Ltd, Morley Retreat, Church Lane, Morley, Derbyshire, DE7 6DE
UK Tel: +44 (0)1332 292003 Email: scientifics@surescreen.com
Company Registration No. 08950940

Appendix VII: Hedgerow Regulations Survey

	Hedgerow Number			
Feature	**H1**	**H2**	**H3**	**H4**
Adjacent to bridleway/path	No	No	No	No
***Populus nigra, Sorbus torminalis, Tilia cordata, Tilia platyphyllos* present**	No	No	No	No
Average number of woody species within 30m sections	6	4	5	5
Associated bank or wall	No	No	No	No
Intact hedgerow	Yes	Yes	Yes	Yes
Trees present within hedge	Yes	Yes	Yes	Yes
Ditch	No	Yes	Yes	No
Connection points	Three	Two	Three	Three
Parallel hedge	No	No	No	No
Residential curtilage	No	No	No	No
IMPORTANT	**No**	**No**	**No**	**No**

Appendix VIII: Landscape Plans

Please see inserts.

KEY

Crematorium Site

1. Tree planting
2. Single species hedgerow within car park - 148 ln m
3. Single species hedgerow around Garden of Remembrance - 212 ln m
4. Shrub / groundcover planting - 80m²
5. Attenuation feature planting - 475m²
6. Native hedgerow planting along Site frontage - 210 ln m
7. Native hedgerow planting along Footpath 68W - 475 ln m
8. Native woodland edge planting to Butcher's Wood - 3010m²
9. Native woodland planting - 4270m²
10. Native woodland edge planting - 6635m²
11. Management of existing wildflower meadow - 4230m²
12. Species rich amenity grass areas - 2435m²

Natural Burial Site

A. Tree planting
B. Native hedgerow planting along western side of natural burial ground - 175 ln m
C. Native woodland planting - 2340m²
D. Native woodland edge planting - 2715m²
E. Grass mix along hedgerow - 345m²
F. Management of existing grassland. Future natural burial area - Area to be managed for maximum biodiversity benefit in the short to medium term with a gradual transition to woodland - 22590m²

GENERAL NOTES:
Layout is for illustrative purposes only.

INDIGO

ILLUSTRATIVE PLAN ONLY

SCALE 1:1000@A1
0 10 20 40 60

NORTH

rev	description	date	by	chk
-	FIRST ISSUE	2020-07-07	MH	MG

project
TURNERS HILL CREMATORIUM

client
HARTMIRES INVESTMENTS LTD

drawing title
ILLUSTRATIVE PLANTING AREAS

drawing number	revision	status	scale
917-SW-01	-	INFORMATION	1:1000@A1

TEL. 01722 340140 ENQUIRIES@INDIGOLANDSCAPE.CO.UK WWW.INDIGOLANDSCAPE.CO.UK
INDIGO LANDSCAPE ARCHITECTS LIMITED

917 Indicative plant schedule

INDICATIVE PLANT SCHEDULE

Plants to be selected from the following list as a guide:

CREMATORIUM SITE

PLANTING AROUND THE CREMATORIUM AND WITHIN THE CAR PARK

SPECIMEN TREE PLANTING

Species	Height (m)	Girth (cm)	Form	Root form
Acer campestre	Min 4.5m	14-16, 16-18 and 18-20	EHS	Root ball
Betula pendula	Feathered Min 4.5m	14-16, 16-18 and 18-20	EHS	Container grown
Carpinus betulus	Min 4.5m	14-16, 16-18 and 18-20	EHS	Root ball
Malus sylvestris	Min 4.5m	14-16, 16-18 and 18-20	EHS	Root ball
Prunus avium	Min 4.5m	14-16, 16-18 and 18-20	EHS	Root ball
Prunus padus	Min 4.5m	14-16, 16-18 and 18-20	EHS	Root ball
Pyrus 'Chanticleer'	Min 4.5m	14-16, 16-18 and 18-20	EHS	Root ball
Quercus robur	Min 4.5m	14-16, 16-18 and 18-20	EHS	Container grown
Tilia cordata	Min 4.5m	14-16, 16-18 and 18-20	EHS	Root ball

NATIVE HEDGEROW PLANTING (SINGLE SPECIES) WITHIN CAR PARK

Double staggered row 4 plants/linear metre.

Species	Size – cm	Rootform	Mix percentage
Carpinus betulus	80 - 100	B/R :1+2	100

NATIVE HEDGEROW PLANTING (SINGLE SPECIES) AROUND GARDEN OF REMEMBRANCE

Single row 4 plants/linear metre.

Species	Size – cm	Rootform	Mix percentage
Taxus baccata	80 - 100	5L container	100

SHRUB / GROUND COVER PLANTING

Species	Size – cm	Pot size	Density – no/m2
Buxus sempervirens	30 – 40	3L Container	5
Rosa 'Kent'	30 – 40	3L Container	2

NATIVE BULBS IN GRASS AREAS

Latin name	Common name
Narcissus pseudonarcissus	Wild daffodil

ATTENUATION FEATURES

To be used in damp ground in the base of attenuation features.

Species	Density – no/m2
Eupatorium cannabinum	7
Filipendula ulmaria	7
Lychnis flos-cuculi	8
Lythrum salicaria	7
Phragmites australis	7
Valerian officinalis	7

WILDFLOWER GRASS MIX FOR RAIN GARDENS AND ATTENUATION AREA

EM8 – Meadow mixture for wetlands https://wildseed.co.uk/mixtures/view/9
Supplier: Emorsgate Seeds.
Sowing rate: 4g/m².

Wild Flowers

%	Latin name	Common name
0.5	Achillea millefolium	Yarrow
0.4	Achillea ptarmica	Sneezewort
1	Betonica officinalis - (Stachys officinalis)	Betony
3	Centaurea nigra	Common Knapweed
0.4	Filipendula ulmaria	Meadowsweet
3	Galium verum	Lady's Bedstraw
0.5	Geranium pratense	Meadow Crane's-bill
0.5	Leontodon hispidus	Rough Hawkbit
1.8	Leucanthemum vulgare	Oxeye Daisy - (Moon Daisy)
0.2	Lotus pedunculatus	Greater Birdsfoot Trefoil
1	Plantago lanceolata	Ribwort Plantain
0.5	Primula veris	Cowslip
0.4	Prunella vulgaris	Selfheal
0.8	Ranunculus acris	Meadow Buttercup
0.8	Rhinanthus minor	Yellow Rattle
1.4	Rumex acetosa	Common Sorrel
0.1	Sanguisorba officinalis	Great Burnet
0.3	Silaum silaus	Pepper Saxifrage
1.7	Silene flos-cuculi - (Lychnis flos-cuculi)	Ragged Robin
0.3	Succisa pratensis	Devil's-bit Scabious
0.6	Taraxacum officinale	Dandelion
0.8	Vicia cracca	Tufted Vetch
20		

Grasses

%	Latin name	Common name
10	Agrostis capillaris	Common Bent
3	Alopecurus pratensis	Meadow Foxtail (w)
3	Anthoxanthum odoratum	Sweet Vernal-grass (w)
3	Briza media	Quaking Grass (w)
24	Cynosurus cristatus	Crested Dogstail
2	Deschampsia cespitosa	Tufted Hair-grass (w)
32	Festuca rubra	Slender-creeping Red-fescue
3	Hordeum secalinum	Meadow Barley (w)
80		

Page 1

917 Indicative plant schedule

PLANTING AROUND THE EDGES OF THE CREMATORIUM SITE

NATIVE HEDGEROW PLANTING ALONG THE SITE FRONTAGE
Triple staggered row 6 plants/linear metre.

Species	Size – cm	Rootform	Mix percentage
Acer campestre	80 - 100	B/R :1+2	15
Cornus sanguinea	80 - 100	B/R :1+2	10
Corylus avellana	80 - 100	B/R :1+2	25
Crataegus monogyna	80 - 100	B/R :1+2	25
Euonymus europaeus	80 - 100	B/R :1+2	5
Ligustrum vulgare	80 - 100	B/R :1+2	5
Prunus spinosa	40 - 60	3L pot	10
Viburnum opulus	80 - 100	B/R :1+1	5

NATIVE HEDGEROW PLANTING ALONG FOOTPATH 68W
Triple staggered row 6 plants/linear metre (and used to beat up existing hedgerows as required).

Species	Size – cm	Rootform	Mix percentage
Acer campestre	80 - 100	B/R :1+2	15
Cornus sanguinea	80 - 100	B/R :1+2	10
Corylus avellana	80 - 100	B/R :1+2	25
Crataegus monogyna	80 - 100	B/R :1+2	25
Euonymus europaeus	80 - 100	B/R :1+2	5
Ilex aquifolium	40 - 60	3L pot	5
Ligustrum vulgare	80 - 100	B/R :1+2	5
Prunus spinosa	40 - 60	3L pot	5
Viburnum opulus	80 - 100	B/R :1+2	5

NATIVE WOODLAND EDGE PLANTING ALONG THE EDGE OF BUTCHER'S WOOD
10% feathered trees, overall density = 1/m²

Species	Size – cm	Rootform	Mix percentage
Cornus sanguinea	60 - 80	B/R :1+1	5
Corylus avellana	60 - 80	B/R :1+1	20
Crataegus monogyna	60 - 80	B/R :1+1	30
Euonymus europaeus	60 - 80	B/R :1+1	5
Ilex aquifolium	30 - 40	3L pot	5
Ligustrum vulgare	60 - 80	B/R :1+1	5
Malus sylvestris	Feathered 1.8 - 2.5m	B/R	3
Prunus avium	Feathered 1.8 - 2.5m	B/R	3
Prunus padus	Feathered 1.8 - 2.5m	B/R	4
Prunus spinosa	40 - 60	3L pot	10
Rosa arvensis	60 - 80	B/R :1+1	2.5
Rosa canina	60 - 80	B/R :1+1	2.5
Viburnum opulus	60 - 80	B/R :1+1	5

NATIVE WOODLAND PLANTING
30% feathered trees, overall density = 1/m²

Species	Size – cm	Rootform	Mix percentage
Acer campestre	60 - 80	B/R :1+1	5
Acer campestre	Feathered 1.8 – 2.5m	B/R	2
Carpinus betulus	60 - 80	B/R :1+1	5
Carpinus betulus	Feathered 1.8 – 2.5m	B/R	2
Cornus sanguinea	60 - 80	B/R :1+1	10
Corylus avellana	60 - 80	B/R :1+1	15
Crataegus monogyna	60 - 80	B/R :1+1	10
Ilex aquifolium	30 - 40	3L pot	10
Ligustrum vulgare	60 - 80	B/R :1+1	5
Malus sylvestris	Feathered 1.8 – 2.5m	B/R	3
Prunus avium	60 - 80	B/R :1+1	5
Prunus avium	Feathered 1.8 – 2.5m	B/R	2
Prunus padus	60 - 80	B/R :1+1	5
Prunus padus	Feathered 1.8 – 2.5m	B/R	2
Quercus robur	60 - 80	3L pot	5
Quercus robur	Feathered 1.8 – 2.5m	10L pot	2
Tilia cordata	60 - 80	B/R :1+1	5
Tilia cordata	Feathered 1.8 – 2.5m	B/R	2
Viburnum opulus	60 - 80	B/R :1+1	5

NATIVE WOODLAND EDGE PLANTING
10% feathered trees, overall density = 1/m²

Species	Size – cm	Rootform	Mix percentage
Cornus sanguinea	60 - 80	B/R :1+1	5
Corylus avellana	60 - 80	B/R :1+1	20
Crataegus monogyna	60 - 80	B/R :1+1	30
Euonymus europaeus	60 - 80	B/R :1+1	5
Ilex aquifolium	30 - 40	3L pot	5
Ligustrum vulgare	60 - 80	B/R :1+1	5
Malus sylvestris	Feathered 1.8 – 2.5m	B/R	3
Prunus avium	Feathered 1.8 – 2.5m	B/R	3
Prunus padus	Feathered 1.8 – 2.5m	B/R	4
Prunus spinosa	40 - 60	3L pot	10
Salix caprea	60 - 80	B/R :1+1	2.5
Sambucus nigra	60 - 80	B/R :1+1	2.5
Viburnum opulus	60 - 80	B/R :1+1	5

917 Indicative plant schedule

NATURAL BURIAL SITE

SPECIMEN TREE PLANTING

Species	Height (m)	Girth (cm)	Form	Root form
Acer campestre	Min 4.5m	14-16, 16-18 and 18-20	EHS	Root ball
Betula pendula	Feathered Min 4.5m	14-16, 16-18 and 18-20	EHS	Container grown
Carpinus betulus	Min 4.5m	14-16, 16-18 and 18-20	EHS	Root ball
Malus sylvestris	Min 4.5m	14-16, 16-18 and 18-20	EHS	Root ball
Prunus avium	Min 4.5m	14-16, 16-18 and 18-20	EHS	Root ball
Prunus padus	Min 4.5m	14-16, 16-18 and 18-20	EHS	Root ball
Quercus robur	Min 4.5m	14-16, 16-18 and 18-20	EHS	Container grown
Tilia cordata	Min 4.5m	14-16, 16-18 and 18-20	EHS	Root ball

NATIVE HEDGEROW PLANTING ALONG THE WEST SIDE OF THE NATURAL BURIAL AREA
Triple staggered row 6 plants/linear metre as appropriate.

Species	Size – cm	Rootform	Mix percentage
Acer campestre	80 - 100	B/R :1+2	15
Cornus sanguinea	80 - 100	B/R :1+2	10
Corylus avellana	80 - 100	B/R :1+2	25
Crataegus monogyna	80 - 100	B/R :1+2	25
Euonymus europaeus	80 - 100	B/R :1+2	5
Ilex aquifolium	40 - 60	3L pot	5
Ligustrum vulgare	80 - 100	B/R :1+2	5
Prunus spinosa	40 - 60	3L pot	5
Viburnum opulus	80 - 100	B/R :1+2	5

NATIVE WOODLAND PLANTING
30% feathered trees, overall density = 1/m²

Species	Size – cm	Rootform	Mix percentage
Acer campestre	60 - 80	B/R :1+1	5
Acer campestre	Feathered 1.8 – 2.5m	B/R	2
Carpinus betulus	60 - 80	B/R :1+1	5
Carpinus betulus	Feathered 1.8 – 2.5m	B/R	2
Cornus sanguinea	60 - 80	B/R :1+1	10
Corylus avellana	60 - 80	B/R :1+1	15
Crataegus monogyna	60 - 80	B/R :1+1	10
Ilex aquifolium	30 - 40	3L pot	10
Ligustrum vulgare	60 - 80	B/R :1+1	5
Malus sylvestris	Feathered 1.8 – 2.5m	B/R	3
Prunus avium	60 - 80	B/R :1+1	5
Prunus avium	Feathered 1.8 – 2.5m	B/R	2
Prunus padus	60 - 80	B/R :1+1	5
Prunus padus	Feathered 1.8 – 2.5m	B/R	2
Quercus robur	60 - 80	3L pot	5
Quercus robur	Feathered 1.8 – 2.5m	10L pot	2
Tilia cordata	60 - 80	B/R :1+1	5
Tilia cordata	Feathered 1.8 – 2.5m	B/R	2
Viburnum opulus	60 - 80	B/R :1+1	5

NATIVE WOODLAND EDGE PLANTING
10% feathered trees, overall density = 1/m²

Species	Size – cm	Rootform	Mix percentage
Cornus sanguinea	60 - 80	B/R :1+1	5
Corylus avellana	60 - 80	B/R :1+1	20
Crataegus monogyna	60 - 80	B/R :1+1	30
Euonymus europaeus	60 - 80	B/R :1+1	5
Ilex aquifolium	30 - 40	3L pot	5
Ligustrum vulgare	60 - 80	B/R :1+1	5
Malus sylvestris	Feathered 1.8 – 2.5m	B/R	3
Prunus avium	Feathered 1.8 – 2.5m	B/R	3
Prunus padus	Feathered 1.8 – 2.5m	B/R	4
Prunus spinosa	40 - 60	3L pot	10
Salix caprea	60 - 80	B/R :1+1	2.5
Sambucus nigra	60 - 80	B/R :1+1	2.5
Viburnum opulus	60 - 80	B/R :1+1	5

NATIVE WOODLAND MEMORIAL TREE PLANTING

Species	Size – cm	Girth	Form	Rootform
Acer campestre	Min 4.5m	12-14, 14-16, 16-18 and 18-20	SS / HS / EHS	Root ball,
Acer campestre	1.8 – 2.5m	-	Feathered	B/R
Betula pendula	Min 4.5m	12-14, 14-16, 16-18 and 18-20	SS / HS / EHS	Container grown
Carpinus betulus	Min 4.5m	12-14, 14-16, 16-18 and 18-20	SS / HS / EHS	Root ball
Carpinus betulus	1.8 – 2.5m	-	Feathered	B/R
Malus sylvestris	Min 4.5m	12-14, 14-16, 16-18 and 18-20	SS / HS / EHS	Root ball
Malus sylvestris	1.8 – 2.5m	-	Feathered	B/R
Prunus avium	Min 4.5m	12-14, 14-16, 16-18 and 18-20	SS / HS / EHS	Root ball
Prunus avium	1.8 – 2.5m	-	Feathered	B/R
Prunus padus	Min 4.5m	12-14, 14-16, 16-18 and 18-20	SS / HS / EHS	Root ball
Prunus padus	1.8 – 2.5m	-	Feathered	B/R
Quercus robur	Min 4.5m	12-14, 14-16, 16-18 and 18-20	SS / HS / EHS	Container grown
Quercus robur	1.8 – 2.5m	-	Feathered	10L pot
Tilia cordata	Min 4.5m	12-14, 14-16, 16-18 and 18-20	SS / HS / EHS	Root ball
Tilia cordata	1.8 – 2.5m	-	Feathered	B/R

917 Indicative plant schedule

NATIVE WOODLAND BULBS & RHIZOMES IN WOODLAND PLANTING AREAS

Latin name	Common name
Anemone nemerosa	Wood anemone
Hyacinthoides non-scripta	Bluebells
Fritillaria meleagris	Snakeshead Fritillary
Galanthus nivalis	Snowdrops
Ranunculas ficaria	Lesser Celandine

GRASS MIX IN WOODLAND GLADES

EW1 – Woodland mixture https://wildseed.co.uk/mixtures/view/11/woodland-mixture
Supplier: Emorsgate Seeds.
Sowing rate: 4g/m².

Wild Flowers

%	Latin name	Common name
2.5	Alliaria petiolata	Garlic Mustard
0.4	Allium ursinum	Ramsons
0.6	Angelica sylvestris	Wild Angelica
0.5	Betonica officinalis - (Stachys officinalis)	Betony
0.1	Campanula trachelium	Nettle-leaved Bellflower
0.3	Chaerophyllum temulum	Rough Chervil
2	Digitalis purpurea	Foxglove
2	Galium album - (Galium mollugo)	Hedge Bedstraw
0.5	Galium verum	Lady's Bedstraw
0.3	Geum rivale	Water Avens
0.2	Geum urbanum	Wood Avens
2.6	Hyacinthoides non-scripta	Bluebell
0.1	Hypericum hirsutum	Hairy St John's-wort
1	Hypericum perforatum	Perforate St John's Wort
1	Primula veris	Cowslip
0.4	Prunella vulgaris	Selfheal
3	Silene dioica	Red Campion
1	Silene flos-cuculi - (Lychnis flos-cuculi)	Ragged Robin
1.5	Teucrium scorodonia	Wood Sage
20		

Grasses

%	Latin name	Common name
10	Agrostis capillaris	Common Bent
2	Anthoxanthum odoratum	Sweet Vernal-grass (w)
7	Brachypodium sylvaticum	False Brome (w)
20	Cynosurus cristatus	Crested Dogstail
1	Deschampsia cespitosa	Tufted Hair-grass (w)
28	Festuca rubra	Slender-creeping Red-fescue
12	Poa nemoralis	Wood Meadow-grass
80		

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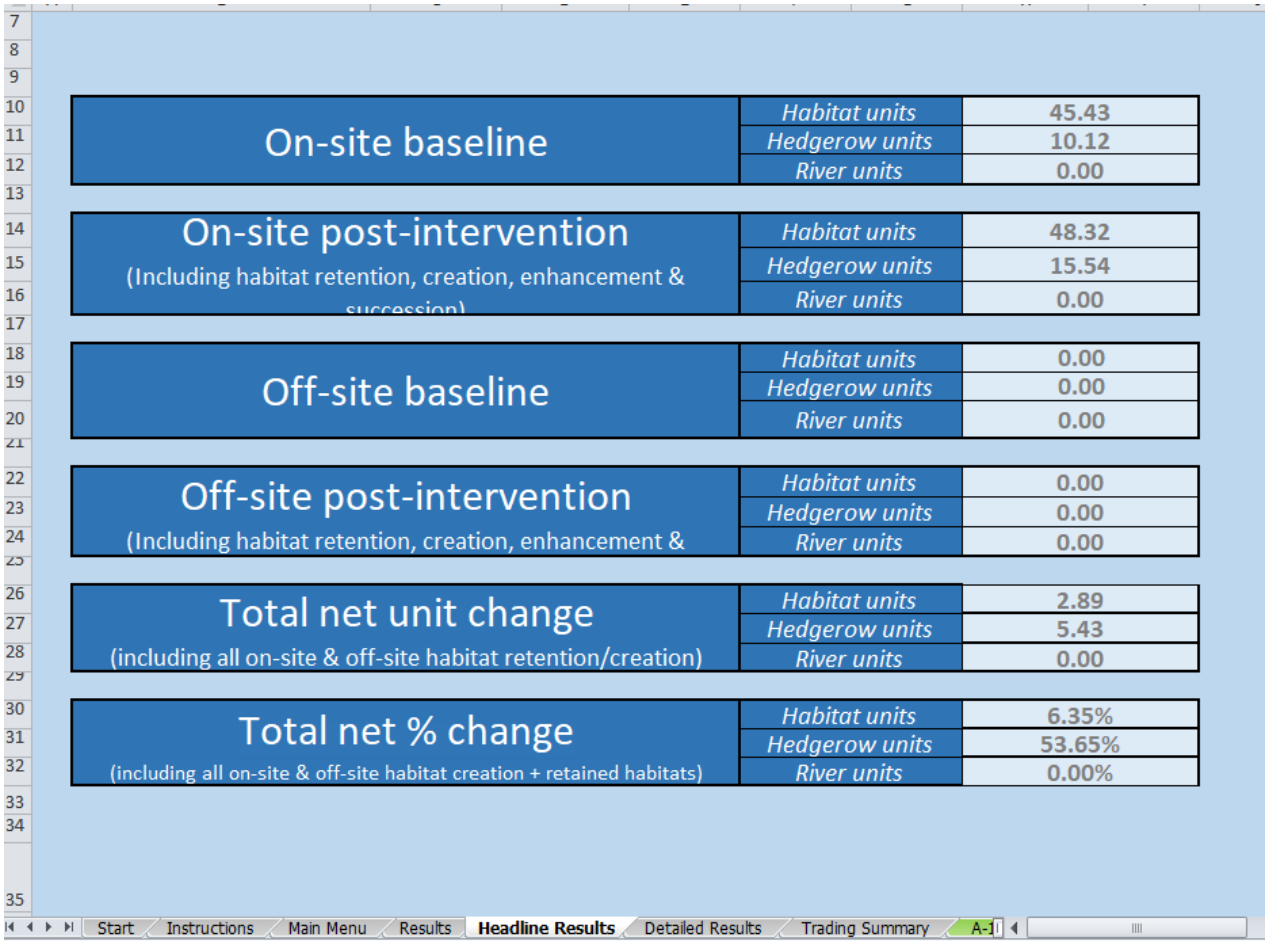
Appendix IX: Biodiversity Net Gain Results



On-site baseline	*Habitat units*	45.43
	Hedgerow units	10.12
	River units	0.00
On-site post-intervention (Including habitat retention, creation, enhancement & succession)	*Habitat units*	48.32
	Hedgerow units	15.54
	River units	0.00
Off-site baseline	*Habitat units*	0.00
	Hedgerow units	0.00
	River units	0.00
Off-site post-intervention (Including habitat retention, creation, enhancement &	*Habitat units*	0.00
	Hedgerow units	0.00
	River units	0.00
Total net unit change (including all on-site & off-site habitat retention/creation)	*Habitat units*	2.89
	Hedgerow units	5.43
	River units	0.00
Total net % change (including all on-site & off-site habitat creation + retained habitats)	*Habitat units*	6.35%
	Hedgerow units	53.65%
	River units	0.00%

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Appendix X: Legislation and Planning Context

Legislation

General

The main legislative instruments for ecological protection in England and Wales are the Wildlife and Countryside Act 1981 (WCA; as amended), Countryside and Rights of Way Act 2000 (CRoW; as amended), Natural Environment and Rural Communities Act 2006 (NERC) and the Conservation of Habitats and Species Regulations 2017 (the Habitats Regulations; as amended). The Environment Bill (reintroduced to parliament in 2020) is expected to make significant changes to the legislative provisions when enacted.

WCA 1981 consolidated and amended pre-existing national wildlife legislation in order to implement the Bern Convention and the Birds Directive. It complements the Habitats Regulations, offering protection to a wider range of species than the latter. The Act also provided for the designation and protection of nationally important conservation sites of value for their floral, faunal or geological features, termed Sites of Special Scientific Interest (SSSI). Schedules of the act list protected species of flora and fauna, as well as invasive species, and detail the possible offences that apply to these species.

The CROW Act 2000 amended and strengthened existing wildlife legislation detailed in the WCA. It placed a duty on government departments & the National Assembly for Wales to have regard for biodiversity, provided increased powers for the protection and maintenance of SSSI, and created a right of access to parts of the countryside. The Act contained lists of habitats and species (Section 74) for which conservation measures should be promoted, in accordance with the recommendations of the Convention on Biological Diversity (Rio Earth Summit) 1992.

The NERC Act 2006 consolidated and replaced aspects of earlier legislation. Section 40 of the Act places a duty upon all local authorities and public bodies in England and Wales to have regard to the purpose of conserving biodiversity in exercising all of their functions, including by restoring or enhancing habitats and species populations. Sections 41 (England) and 42 (Wales) list habitats and species of principal importance to the conservation of biodiversity (otherwise known as priority habitats/species as listed in the now superseded UK Biodiversity Action Plan). These lists supersede Section 74 of the CRoW Act 2000. These species and habitats are a material consideration in the planning process.

The Habitats Regulations 2017 consolidate and update the Conservation of Habitats and Species Regulations 2010 and all its various amendments. The Regulations are the principal means by which Council Directive 92/43/EEC (The Habitats Directive) is transposed into English and Welsh law, and place a duty upon the relevant authority of government to identify sites which are of importance to the habitats and species listed in Annexes I and II of the Habitats Directive. Those sites which meet the criteria are, in conjunction with the European Commission, designated as Sites of Community Importance, which are subsequently identified as Special Areas of Conservation (SAC) by the European Union member states.

The Habitats Regulations also place a duty upon the government to maintain a register of European protected sites designated as a result of Council Directive 2009/147/EC on the Conservation of Wild Birds (The Birds Directive). These sites are termed Special Protection Areas (SPA) and, in conjunction with SACs, form a network of sites known

as Natura 2000. The Habitats Directive introduces for the first time for protected areas, the precautionary principle; that is that projects can only be permitted having ascertained no adverse effect on the integrity of the site. Projects may still be permitted if there are no alternatives, and there are imperative reasons of overriding public interest.

The Habitats Regulations also provide for the protection of individual species of fauna and flora of European conservation concern listed in Schedules 2 and 5 respectively (European Protected Species (EPS)). Schedule 2 includes species such as otter and great crested newt for which the UK population represents a significant proportion of the total European population. It is an offence to deliberately kill, injure, disturb or trade in these species. Schedule 5 plant species are protected from unlawful destruction, uprooting or trade under the regulations. Under the Habitats Regulations disturbance includes any activity which is likely to: impair the ability of a EPS to survive, breed, reproduce, or rear/nurture its young; impair the ability of a EPS to migrate or hibernate; or significantly affect the local distribution or abundance of the species.

When enacted, the Environment Bill is expected, among other things, to: establish an Office for Environmental Protection; require all new development requiring planning permission to achieve a net gain for biodiversity (expected to be at least 10%); amend the NERC Act duty to conserve biodiversity by explicitly adding a duty to enhance; and require local authorities to produce local nature recovery strategies.

Badgers (Meles meles)

Badgers are listed under Schedule 6 of the Wildlife and Countryside Act which grants them partial protection. This protection is extended by the Protection of Badgers Act 1992 (Badger Act) which makes it an offence to take, injure or kill a badger, interfere with a sett, sell or possess a live badger, or mark or ring a badger without a licence. Under the Act disturbance is illegal without a licence. Natural England has published guidelines to be adopted when determining whether an activity is 'disturbing' i.e. a licence is required when, for example, using heavy machinery (generally tracked vehicles) within 30m of any entrance to an active sett. Licences are not normally issued during the badger breeding season (December – June inclusive).

Bats (Chiroptera)

Bats and their roosts are fully protected by protected by the WCA and the Habitats Regulations, and seven species of bats are species of principal importance. The legislation makes it an offence, *inter alia*, to:

- Intentionally kill, injure or take a bat.
- Possess or control a live or dead bat, any part of a bat, or anything derived from a bat.
- Intentionally or recklessly damage, destroy or obstruct access to any structure or place that a bat uses for shelter or protection. This is taken to mean all bat roosts whether bats are present or not.
- Intentionally or recklessly disturb a bat while it is occupying a structure or place that it uses for shelter or protection.
- Make a false statement in order to obtain a licence for bat work.

Birds

Birds are protected by the Wildlife and Countryside Act, 1981 (as amended). This legislation makes it an offence to intentionally kill, injure or take away any wild bird. It is also an offence to take, damage or destroy the nest of any wild bird while it is in use or being built or to take or destroy the egg of any wild bird. In addition, certain species are listed on Schedule 1 of the WCA (such as kingfisher *Alcedo atthis*). This makes it an additional offence to intentionally or recklessly disturb the adults while they are in and around their nest or intentionally or recklessly

disturb their dependent young. Such species are considered to be in greater need of legal protection or of high nature conservation priority.

Birds of Conservation Concern ("BoCC4) are included on Red and Amber lists (Eaton *et al.*, 2015). Birds on the Red list are those of highest conservation priority due significant and sustained population decreases and/or range contractions (e.g. house sparrow *Passer domesticus* and starling *Sturnus vulgaris)*. Birds on the Amber list are the next most critical group and include species whose population/range have shown moderate declines, or which have recovered to some extent from historical decline, such as dunnock *Prunella modularis*.

Dormouse (Muscardinus avellanarius)

Dormouse is fully protected by the WCA and the Habitats Regulations. The legislation makes it an offence, *inter alia*:

- Intentionally kill, injure or take a dormouse.
- Possess or control a live or dead dormouse, any part of, or anything derived from a dormouse.
- Intentionally or recklessly damage, destroy or obstruct access to any structure or place that a dormouse uses for shelter or protection.
- Intentionally or recklessly disturb a dormouse while it is occupying a structure or place that it uses for shelter or protection.

Great crested newt (Triturus cristatus; GCN) (and natterjack toad Bufo calamita)

GCN is fully protected by the WCA and the Habitats Regulations. The legislation makes it an offence, *inter alia*, to:

- Intentionally kill, injure or take a GCN (including its eggs).
- Possess or control a live or dead GCN, any part of, or anything derived from a GCN.
- Intentionally or recklessly damage, destroy or obstruct access to any structure or place that a GCN uses for shelter or protection.
- Intentionally or recklessly disturb a GCN while it is occupying a structure or place that it uses for shelter or protection.

Reptiles

The four common species (slow-worm *Anguis fragilis*, common lizard *Zootoca vivipara*, adder *Vipera berus* and grass snake *Natrix natrix*) are partially protected under the WCA. They are protected, *inter alia*, against intentional killing and injuring. The handling and translocation of these reptiles does not require a licence.

Smooth snake *Coronella austriaca* and sand lizard *Lacerta agilis* are fully protected by the WCA and the Habitats Regulations. The legislation makes it an offence, *inter alia*, to:

- Intentionally kill, injure or take a smooth snake or sand lizard.
- Possess or control a live or dead smooth snake or sand lizard, any part of, or anything derived from a smooth snake or sand lizard.
- Intentionally or recklessly damage, destroy or obstruct access to any structure or place that a smooth snake or sand lizard uses for shelter or protection.
- Intentionally or recklessly disturb a smooth snake or sand lizard while it is occupying a structure or place that it uses for shelter or protection.

Weeds Act 1959 / Ragwort Control Act 2003

This legislation provides for orders to be made for control where notifiable weed species such as ragwort are said to be a problem. The act does not make it illegal to have ragwort (or other weed species) on your land, make it illegal to allow ragwort to spread, or force landowners automatically to control it. However, if DEFRA is satisfied that there are injurious weeds to which this Act applies growing upon any land it may serve upon the occupier of the land a notice in writing requiring them, within the time specified in the notice, to take such action as may be necessary to prevent the weeds from spreading.

Planning context

National Planning Policy Framework (Section 15: Conserving and enhancing the natural environment)

The National Planning Policy Framework (NPPF), published in February 2019, outlines the Government's commitment to the conservation of wildlife and natural features. It is concerned with:

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

The NPPF requires that local plans should "distinguish between the hierarchy of international, national and locally designated sites; allocate land with the least environmental or amenity value…; take a strategic approach to maintaining and enhancing networks of habitats and green infrastructure; and plan for the enhancement of natural capital at a catchment or landscape scape across local authority boundaries".

To protect and enhance biodiversity and geodiversity, the NPPF states that planning policies should:

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

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

- if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;
- development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest;
- development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists; and
- development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to incorporate biodiversity improvements in and around developments should be encouraged, especially where this can secure measurable net gains for biodiversity.

The following wildlife sites should be given the same protection as habitats sites:

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

The presumption in favour of sustainable development does not apply where the plan or project is likely to have a significant effect on a habitats site (either alone or in combination with other plans or projects), unless an appropriate assessment has concluded that the plan or project will not adversely affect the integrity of the habitats site. The policies within the NPPF (and additional guidance contained within Circular 06/2005) are a material planning consideration.

UK/Local Biodiversity Action Plan Designations and Birds of Conservation Concern and Red Data Book Listings

Note that BAP designations and status as RSPB Birds of Conservation Concern or Red Data Book species does not offer any further legal protection, but planning authorities are required to prevent these species from being adversely affected by development in accordance with National Planning Policy and the CROW and NERC Acts. The United Kingdom Biodiversity Action Plan (UKBAP), first published in 1994 and updated in 2007, was a government initiative designed to implement the requirements of the Convention of Biological Diversity to conserve and enhance species and habitats. The UKBAP contained a list of priority habitats and species of conservation concern in the UK, and outlined biodiversity initiatives designed to enhance their conservation status.

However, as a result of devolution, and new country-level and international drivers and requirements, much of the work previously carried out by the UK BAP is now focussed at a country-level rather than a UK-level, and the UK BAP was succeeded by the 'UK Post-2010 Biodiversity Framework' in July 2012. The UK lists of priority habitats and species nonetheless remain an important reference source and were used to draw up statutory lists of priority

habitats and species in England, Northern Ireland, Scotland and Wales. The priority habitats and species correlate with those listed on Section 41 and 42 of the NERC Act.

The UKBAP required that conservation of biodiversity be addressed at a County level through the production of Local BAPs. These are targeted towards species of conservation concern characteristic of each area. In addition, a number of local authorities and large organisations have produced their own BAPs. Where they exist, Local BAP targets with regard to species and habitats are a material consideration in the planning process.

Local Planning Policy

The Mid Sussex District Plan 2014-2031 (adopted March 2018) contains the following policy on biodiversity.

DP38: Biodiversity

Biodiversity will be protected and enhanced by ensuring development:• Contributes and takes opportunities to improve, enhance, manage and restore biodiversity and green infrastructure, so that there is a net gain in biodiversity, including through creating new designated sites and locally relevant habitats, and incorporating biodiversity features within developments; and• Protects existing biodiversity, so that there is no net loss of biodiversity. Appropriate measures should be taken to avoid and reduce disturbance to sensitive habitats and species. Unavoidable damage to biodiversity must be offset through ecological enhancements and mitigation measures (or compensation measures in exceptional circumstances); and• Minimises habitat and species fragmentation and maximises opportunities to enhance and restore ecological corridors to connect natural habitats and increase coherence and resilience; and• Promotes the restoration, management and expansion of priority habitats in the District; and• Avoids damage to, protects and enhances the special characteristics of internationally designated Special Protection Areas, Special Areas of Conservation; nationally designated Sites of Special Scientific Interest, Areas of Outstanding Natural Beauty; and locally designated Sites of Nature Conservation Importance, Local Nature Reserves and Ancient Woodland or to other areas identified as being of nature conservation or geological interest, including wildlife corridors, aged or veteran trees, Biodiversity Opportunity Areas, and Nature Improvement Areas. Designated sites will be given protection and appropriate weight according to their importance and the contribution they make to wider ecological networks. Valued soils will be protected and enhanced, including the best and most versatile agricultural land, and development should not contribute to unacceptable levels of soil pollution. Geodiversity will be protected by ensuring development prevents harm to geological conservation interests, and where possible, enhances such interests. Geological conservation interests include Regionally Important Geological and Geomorphological Sites.

Appendix XI: Legal and Technical Limitations

- This report has been prepared by Urban Edge Environmental Consulting Ltd (UEEC Ltd) with all reasonable skill, care and diligence within the terms of the contract made with the Client to undertake this work, and taking into account the information made available by the Client. No other warranty, expressed or implied, is made as to the professional advice included in this report or any other services provided by us.
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- The advice provided in this report does not constitute legal advice. As such, the services of lawyers may also be considered to be warranted.
- Unless otherwise stated in this report, the assessments made assume that the sites and facilities that have been considered in this report will continue to be used for their current planned purpose without significant change.
- All work carried out in preparing this report has utilised and is based upon UEEC Ltd's current professional knowledge and understanding of current relevant UK standards and codes, technology and legislation. Changes in this legislation and guidance may occur at any time in the future and may cause any conclusions to become inappropriate or incorrect. UEEC Ltd does not accept responsibility for advising the Client or other interested parties of the facts or implications of any such changes;
- Where this report presents or relies upon the findings of ecological field surveys (including habitat, botanical or protected/notable species surveys), its conclusions should not be relied upon for longer than a maximum period of two years from the date of the original field surveys. Ecological change (e.g. colonisation of a site by a protected species) can occur rapidly and this limitation is not intended to imply that a likely absence of, for instance, a protected species will persist for any period of time;
- This report has been prepared using factual information contained in maps and documents prepared by others. No responsibility can be accepted by UEEC Ltd for the accuracy of such information;
- Every effort has been made to accurately represent the location of mapped features, however, the precise locations of features should not be relied upon;
- Populations of animals and plants are often transient in nature and a single survey visit can only provide a general indication of species present on site. Time of year when the survey was carried out, weather conditions and other variables will influence the results of an ecological survey (e.g. it is possible that some flowering plant species which flower at other times of the year were not observed). Every effort has been made to accurately note indicators of presence of protected, rare and notable species within and adjacent to the site but the possibility nonetheless exists for other species to be present which were not recorded or otherwise indicated by the survey;
- Any works undertaken as a consequence of the recommendations provided within this report should be subjected to the necessary health & safety checks and full risk assessments.

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