Waterfields, Seaton Road, Wickhambreaux

Preliminary Ecological Appraisal

A Report for Mrs Gina Fellendorf-Perkins and Mr Mark Perkins

August 2021

Greenspace Ecological Solutions

www.greenspace-ecology.co.uk

info@greenspace-ecology.co.uk

Waterfields, Seaton Road, Wickhambreaux,

Preliminary Ecological Appraisal

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01 of 02

01 Mrs Gina Fellendorf-Perkins and Mr Mark Perkins

02 Greenspace Ecological Solutions Ltd.

Report contributor: Alana Ball and Heather Clayson ACIEEM

Technical Review by: Charlotte Bell MCIEEM

The content of this report is the responsibility of Greenspace Ecological Solutions Ltd.
It should be noted that whilst every effort has been made to meet the client's requirements, no site survey can ensure complete assessment or prediction of the changeable onsite environment. Furthermore, should more than 12 months elapse between the date of this survey and any subsequent development, it may be necessary to consider the need for an update survey to be undertaken.

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Greenspace Ecological Solutions Ltd.
Suite H3, Blackham Court,
Withyham, East Sussex,
TN7 4DB

Tel: 01892 457062
www.greenspace-ecology.co.uk
info@greenspace-ecology.co.uk

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1 PROJECT OVERVIEW

Client: Mrs Gina Fellendorf-Perkins and Mr Mark Perkins

Site Address: Waterfields, Seaton Road, Wickhambreaux, Canterbury, Kent, CT3 1RW

Attending Ecologists: Heather Clayson ACIEEM and Alana Ball

Survey Dates: 11th August 2021

Site Proposals: Installation of solar panel array and ground-source heat pump and associated trenches

Associated Planning Reference Number: Not yet submitted.

Source of Relevant Documents:

Document:	Source:
Site Location Plan:	Google Earth Pro
Desk Study:	Kent and Medway Biological Records Centre (KMBRC) Magic.defra.gov.uk
Site Plans:	Hollaway Studio

2 NON-TECHNICAL SUMMARY

2.1 In response to the proposed development at Waterfields, Seaton Road, Wickhambreaux, the Site has been subject to a Preliminary Ecological Appraisal (PEA).

2.2 Due to the small and localised scale of the development it is considered unlikely that the proposals will have an impact on any statutory or non-statutory designated sites, areas of ancient woodland or Habitats of Principal Importance (HPI).

2.3 It is recommended that the trees and hedgerows within and directly adjacent to the Site should be protected in accordance with BS 5837:2012 'Trees in relation to design, demolition and construction' where possible.

2.4 A precautionary method of works must be implemented, including strict timing of the works during the hibernation period for great crested newts and reptiles, in order to ensure the welfare of these species.

2.5 The semi-improved grassland to be impacted by the trenching and installation of the solar panels and ground-source heat pump should be reinstated following the works, with a species rich turf.

2.6 Should at any point a protected or notable species be identified within the Site then all works should **stop,** and the appointed ecologist consulted on the appropriate manner in which to proceed.

2.7 In accordance with the requirement of the National Planning Policy Framework (NPPF) 2021, recommendations to enhance the Site's suitability for wildlife have been provided.

3 INTRODUCTION

3.1 Context

3.1.1 In response to the proposed installation of solar panel array and ground-source heat pump and associated trenches at Waterfields, Wickhambreaux (hereafter referred to as 'the Site'), a Preliminary Ecological Appraisal (PEA) has been undertaken of land within the redline boundary (Figure 1).

3.1.2 The habitats onsite and their potential to support protected species have been assessed and appropriate recommendations have been provided.

3.2 Site Location

3.2.1 The Site is located in the small rural village of Wickhambreaux, Kent at National Grid reference: TR 22293 58657. The geographical location of the Site is depicted in Image 1.

Image 1 – Geographical Location of Waterfields

3.3 Site Description

3.3.1 The Site occupies approximately 1.776ha (hectares) and comprises semi-improved grassland, a waterbody, wildflower areas and scattered trees.

3.3.2 The Site lies within the residential property of the client and is bound by the Little Stour river to the south, a ditch and residential properties to the west, and Seaton Road to the north.

3.3.3 The wider landscape is one of agricultural land, residential dwellings with associated gardens, and a network of interconnected hedgerows.

3.4 Legislation and Policies

Legislation

3.4.1 The main legislation that applies to ecological issues within England and Wales are:

- The Conservation of Habitats and Species Regulations 2017 (as amended) transposes European Union Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (EC Habitats Directive) into national law. These regulations provide for the designation and protection of 'European Sites', the protection of 'European Protected Species' and the adaptation of planning controls for the protection of such sites and species. Under the regulations, public bodies have a duty in exercising their functions to have regard to the EC Habitats Directive.
- The Wildlife and Countryside Act 1981 (as amended) provides detail on a range of protection and offences relating to wild birds, other animals, and plants. The level of protection depends on which Schedule of the Act the species is listed on. Licences are available for specific purposes to permit actions that would otherwise constitute an offence in relation to species.
- The Hedgerows Regulations Act 1997 serves to; enforce under the Environment Act 1995, restrict the removal of hedgerows, or parts of hedgerows which are over 20m in length. In this case, removal includes digging up and replanting elsewhere, as well as removing from the land completely or destroying in the course of other actions. This includes developments or activities which destroy the roots, causing the vegetation to die.
- The Natural Environment and Rural Communities (NERC) Act 2006 imposes an obligation on all public bodies, including local authorities, to consider whether their activities can contribute to the protection of wildlife. The duty is created by section 40(1) of the Act, which states that: “Every public authority must, in exercising its functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity.”
- The Protection of Badgers Act 1992 exists to protect badgers *Meles meles* from cruelty. Under the act it a criminal offense to wilfully kill, injure, take, possess, or cruelly ill-treat a badger, or to attempt to do so, or to intentionally or recklessly interfere with a sett.
- The Wild Mammal (Protection) Act 1996 protects wild mammal species from certain cruel acts, including kicking, beating, nailing, or otherwise impaling, stabbing, burning, stoning,

crushing, drowning, dragging or asphyxiation of any wild mammal with intent to inflict unnecessary suffering. Crushing and asphyxiation are most likely to occur as a result of development proposals, should these works collapse any mammal burrows, or encounter wild mammals on site.

UK Planning Policy

3.4.2 The recommendations of this report are in line with the key principles of the National Planning Policy Framework (NPPF) 2021 and Government Circular 06/05.

3.4.3 In line with Policy DBE2 Renewable Energy of the Canterbury District Local Plan 2017 (Adopted July 2017) which states "In determining applications for the development of renewable or micro-generation equipment (apart from wind energy development), the City Council will expect applicants to: […} Demonstrate that there is no significant impact on the landscape setting, habitats, biodiversity, wildlife or designations such as the AONB, AHLV, Ramsar, SACs or SPAs as outlined in Chapter 10" and Policy LB9 *Protection, Mitigation, Enhancement and Increased Connectivity for Species and Habitats of Principal Importance*, recommendations to ensure the conservation of species protected under the above legislation, as well as habitats of principal importance (HPI) listed under Section 41 (s41) of the NERC Act 2006; and the protection of designated sites and species have been included within this report. In addition, recommendations for opportunities to enhance biodiversity within the Site have also been provided in line with the national and local policies.

3.5 Objectives of the Survey

3.5.1 The objectives of the survey were to:

- Classify the main habitats present within the Site;
- Assess the trees on site for their potential to support roosting bats;
- Evaluate the potential for other protected species and any otherwise notable species to occur within the Site; and
- Provide appropriate recommendations for further surveys and mitigation where required, as well as opportunities for biodiversity enhancement.

3.6 Survey Constraints

3.6.1 All measurements and indications of area given within this report are approximate.

3.6.2 Access to off site waterbodies was not possible at the time of survey, however, this is not considered to be a significant limitation for this survey as the recommendations included in this report assume the presence of great crested newts within the site.

4 SURVEY METHODOLOGY

4.1 Desk Study

4.1.1 A desk study was undertaken to determine the presence of sites and habitats of conservation importance together with records of protected and notable species within a 2km radius of the Site. The following bodies were consulted for the desk study:

- Multi-Agency Geographic Information for the Countryside (MAGIC)
- Kent and Medway Biological Records Centre (KMBRC)

4.2 Preliminary Ecological Appraisal

Habitats

4.2.1 The Site was surveyed using the methodology outlined in 'The Handbook for Phase I Habitat Survey: A Technique for Environmental Audit' (JNCC, 2016). The techniques applied during the survey involve identifying the main plant communities present on the Site and classifying the habitat types following the JNCC methodology. This technique provides an inventory of the basic habitat types present and enables areas of greater botanical interest which may require further, more detailed, surveys to be identified.

4.2.2 Any occurrences of recognised invasive species as listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) were also noted.

4.2.3 A map of the habitats and areas of interest (using a variation of the JNCC (2016) protocol for Phase I habitat plans) is provided in Figure 1. Photographs of features of interest are presented in Appendix A.

Protected Species

4.2.1 The survey was extended to include an assessment of the Site's potential to support protected and notable species. This involved assessing the suitability of the habitats present within the Site for these species as well as connectivity to the Site from other areas of potentially suitable habitat nearby and any evidence of protected species was also recorded.

Badger

4.2.2 Evidence of badger activity on the Site (and, where possible, on land adjacent to the Site) was assessed by searching for signs such as:

- Presence of setts, indicated by suitably sized holes or burrows;
- Evidence of badger latrines, badger hair and/or footprints; and
- Evidence of well-used runs supported by secondary evidence such as foraging signs.

Bats

4.2.3 Where trees are present within the Site, specific survey work was undertaken to assess their suitability to support roosting bats.

4.2.4 Trees within the Site which were deemed likely to be affected by the proposed development were surveyed in accordance with current Bat Conservation Trust best practice guidance (Collins, 2016). Trees were inspected for features such as splits, fissures, delaminated bark, heavy ivy *Hedera* sp. cover and woodpecker holes. Evidence of roosting bats such as droppings, staining and bats themselves were searched for below (and in, if they could be reached) suitable features.

4.2.5 The results of a scoping survey enable the trees to be categorised as having 'Confirmed roosts', or 'High', 'Moderate', 'Low' or 'Negligible' suitability to support roosting bats. An outline of the categorisation procedure for classifying bat suitability is presented in Appendix B.

4.2.6 In accordance with current best practice guidance (Collins, 2016), the level of suitability determines the need or not for further emergence surveys. Although left to the discretion of the appointed ecologist, in most instances Confirmed and High suitability trees requires three further surveys (as deemed appropriate by the appointed ecologist – either aerial inspection surveys, dusk emergence/dawn re-entry surveys and/or use of infrared cameras) and Moderate suitability trees require two further surveys prior to works. In accordance with the guidelines, trees with Low suitability do not require further surveys, although it is often considered appropriate to implement a precautionary sensitive felling methodology at the time of works.

Breeding Birds

4.2.7 The Site was assessed for its potential to support nesting and breeding birds. Factors considered include suitable cover and feeding habitat, the presence of used and disused nests, and birds displaying nesting characteristics.

Hazel Dormouse

4.2.8 The Site was surveyed for suitable hazel dormouse *Muscardinus avellanarius* habitat, such as the presence of a well-connected understorey broadleaf habitat, hedgerows, and suitable food sources such as oak *Quercus* spp., hazel *Corylus avellana* and other nut-bearing trees, fruiting trees and shrubs, flowers and invertebrates.

Great Crested Newt

4.2.9 The Site was assessed for its potential to support great crested newt (GCN) *Triturus cristatus* populations. Suitable terrestrial habitat for the species includes areas of long grass, tall ruderal, woodland, scrub and hedgerow bases, as well as brash piles.

Habitat Suitability Index (HSI)

4.2.10 An assessment of the suitability of the waterbody on Site to support GCN was undertaken using a simplified version of the HSI assessment methodology developed by Oldham *et al.* (2000) (ARG, 2010). The HSI incorporates ten suitability indices, all of which are factors considered to affect GCN:

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

4.2.11 The results of the HSI provide a numerical index of between 0 and 1, whereby 0 indicates unsuitable habitat and 1 represents optimal habitat. A score of ≥0.6 is considered indicative of a pond that may support a population of GCN. The details of the HSI scoring criteria are provided in Table 1.

Table 1 – GCN HSI Scoring Criteria

HSI Score	Pond Suitability for GCN
<0.50	Poor
0.50 – 0.59	Below Average
0.60 – 0.69	Average
0.70 – 0.79	Good
>0.80	Excellent

Reptiles

4.2.12 The Site was assessed for its potential to support reptile populations. Suitable habitat for reptiles includes long grass, tall ruderals, scrub, woodland and hedgerow borders and wood and rubble piles that act as hibernacula.

Other species

4.2.13 Consideration was given to the Site's suitability to support other protected and notable species.

5 SURVEY RESULTS

5.1 Desk Study

Statutory designated sites

5.1.1 There are two statutory designated sites within 2km of the Site, Preston Marshes Site of Special Scientific Interest (SSSI) and Stodmarsh SSSI/Special Area of Conservation (SAC)/Special Protection Area (SPA)/National Nature Reserve (NNR)/Ramsar site.

5.1.2 Preston Marshes SSSI lies approximately 1.2km northeast of the Site and is designated for the following reasons:

"The last remaining area of fen vegetation in the Little Stour valley, most of the site consists of beds of common reed Phragmites australis and scattered willow scrub. The combination of peaty soils and calcareous water has produced a diverse plant community. Uncommon plants such as opposite-leaved pondweed Groenlandia densa*, arrowhead* Saggitaria saggitifolia *and slender-tufted sedge Carex acuta occur in these dykes and along their margins. The scarce whorled water-milfoil* Myriophyllum verticillatum *is also found here. The site attracts many breeding and wintering birds. Lapwing and occasionally redshank breed on the pasture, and large numbers of reed buntings and reed and sedge warblers in the reedbeds. In winter large flocks of waders, especially lapwing and snipe, and wildfowl such as teal and wigeon, use the fields which are often flooded. At this time bearded tits and Cetti's warblers usually roost in the reedbeds."*

5.1.3 Stodmarsh SSSI/SAC/SPA/NNR/Ramsar lies approximately 1.9km north of the Site and is designated for the following reasons:

"This wetland site located in the Stour valley contains a wide range of habitats including open water, extensive reedbeds, scrub and alder carr which together support a rich flora and fauna. The vegetation is a good example of a southern eutrophic flood plain and a number of rare plants are found here. The invertebrate fauna is varied and several scarce moths have been recorded in recent years. The site is also of ornithological interest with its diverse breeding and wintering bird community including. Two rare British birds cetti's warbler and bearded tit, regularly breed in nationally significant numbers. A sizeable population of Desmoulin's whorl snail Vertigo moulinsiana *lives beside ditches within pasture on the floodplain of the River Stour."*

Non-statutory designated sites

5.1.4 Five non-statutory designated sites were identified within 2km of the Site according to MAGIC and Kent and Medway Biological Records Centre (KMBRC) and are presented in Table 2.

Table 2 – Non-statutory Designated sites within 2km of the Site.

Non-statutory designated site	Distance from Site
Seaton Pits and Wenderton Manor Pits (LWS)	Directly adjacent to the Site along the southern boundary, and approximately 300m west and 410m northeast.
Chislet Marshes, Sarre Penn and Preston Marshes (LWS)	1.5km NE
Littlebourne Stream (LWS)	1.7km SW
Swanton Aerial Site, Littlebourne (LWS)	1.8km NW
Stodmarsh (LWS)	1.9km N

LWS – Local Wildlife Site, SPA – Special Protection Areas, SAC – Special Areas of Conservation, NNR – National Nature Reserves & Ramsar

Ancient woodland

5.1.5 There are nine parcels of ancient woodland present within 2km of the Site boundary according to MAGIC. The closest is Wenderton Hoath, an area of Ancient and Semi-Natural Woodland (ASNW) which lies approximately 1.3km northeast of the Site.

NERC s41 Habitats of Principle Importance (HPI)

5.1.6 Habitats listed under s41 of the NERC Act 2006 within 2km of the Site are presented in Table 3, with the closest iterations listed below.

Table 3 – NERC s41 HPI within 2km of the Site.

HPI	Distance from Site
Deciduous woodland	125m NE
Coastal and floodplain grazing marsh	550m SW
Reedbeds	1.5km NE
Lowland fens	1.6km NW
Traditional orchard	1.7km SW
Lowland meadows	1.8km NW

Protected or notable species

Bats

5.1.7 Bat species recorded within 5km of the Site are provided in Table 4.

Table 4 – Bat Species Recorded within 5km of the Site.

Common Name	Scientific Name	Legal Protection / Conservation Priority Status[1]
Serotine Bat	*Eptesicus serotinus*	HabDir: A4; Berne: A2; Bonn: A2; WCA5; KRDB3
Daubenton's Bat	*Myotis daubentonii*	HabDir: A4; Berne: A2; Bonn: A2; WCA5
Whiskered Bat	*Myotis mystacinus*	HabDir: A4; Berne: A2; Bonn: A2; WCA5; KRDB1
Natterer's Bat	*Myotis nattereri*	HabDir: A4; Berne: A2; Bonn: A2; WCA5; KRDB2
Leisler's bat	*Nyctalus leisleri*	HabDir: A4; Berne: A2; Bonn: A2; WCA5; KRDB1
Noctule bat	*Nyctalus noctula*	HabDir: A4; Berne: A2; Bonn: A2; BAP; S41; WCA5; KRDB2
Nathusius' pipistrelle bat	*Pipistrellus nathusii*	HabDir: A4; Berne: A2; Bonn: A2; WCA5
Common pipistrelle bat	*Pipistrellus pipistrellus*	HabDir: A4; Berne: A3; Bonn: A2; WCA5
Soprano pipistrelle bat	*Pipistrellus pygmaeus*	HabDir: A4; Berne: A2; Bonn: A2; S41; WCA5
Brown long-eared bat	*Plecotus auritus*	HabDir: A4; Berne: A2; Bonn: A2; S41; WCA5; KRDB2

5.1.8 Several bat roosts (serotine, whiskered, natterer's, noctule, common pipistrelle, soprano pipistrelle and brown long-eared bat species) were also recorded within 5km of the Site, including hibernation and maternity roosts. A search of granted European Protected Species Mitigation (EPSM) licence applications for bats within 2km of the Site was undertaken on MAGIC. The search returned no records of granted EPSM licence applications.

Other Mammals

5.1.9 Other mammals of conservation concern of potential relevance to the Site are presented in Table 5.

Table 5 – Other mammal species recorded within 2km of the Site.

Common Name	Scientific Name	Legal Protection / Conservation Priority Status[1]	Closest record	Date
Eurasian badger	*Meles meles*	Bern_III, Badger Act	1km NW	2016
Stoat	*Mustela erminea*	Bern_III	1.7km S	2015

[1] *HabDir:A4 = Habitats Directive Annex 4; Bern:A2 = Bern Convention Appendix II; Bern:A3 = Bern Convention Appendix III; Bonn:A2 = Bonn Convention Appendix II; WCA 5 = Wildlife and Countryside Act 1981 (as amended) Schedule 5; S41 = Schedule 41 of the NERC Act (2006) BOCC:Red = Birds of Conservation Concern 4 – Red Listed; BOCC:Amber = Birds of Conservation Concern 4 – Amber Listed.*

Weasel	*Mustela nivalis*	Bern_III	1.75km N	2016
Western European Hedgehog	*Erinaceus europaeus*	Bern_III	1.75km SW	2019
Eurasian common shrew	*Sorex araneus*	Bern_III	0.6km N	2010
Beaver	*Castor fiber*	ECH_II, Bern_III	0.5km NE	2019
European water vole	Arvicola amphibius	WCA5, CRoW	1.2km SW	2020

5.1.10 There were no records of granted EPSM licence applications for hazel dormouse within 2km of the Site.

Birds

5.1.11 A selection of records of bird species with potential relevance to the Site are presented in Table 6.

Table 6 – Relevant bird species of conservation interest recorded within 2km of the Site.

Common Name	Scientific Name	Legal Protection/Conservation Priority Status[1]
Kestrel	*Falco tinnunculus*	Berne: A2; BoCC4: Amber; Bonn: A2; ECCITES: A
Dunnock	*Prunella modularis*	BAP; Berne: A2; BoCC4: Amber; S41
Fieldfare	*Turdus pilaris*	Berne: A3; BoCC4: Red; BirdsDir: A2.2; WCA1
Song thrush	*Turdus philomelos*	Berne: A2; BoCC4: Red; Bonn: A2
Redwing	*Turdus iliacus*	Berne: A3; BoCC4: Red; BirdsDir: A2.2; WCA1
Starling	*Sturnus vulgaris*	BAP; BoCC4: Red; BirdsDir: A2.2; S41; KRDB2

Herpetofauna

5.1.12 Herpetofauna species of conservation concern of potential relevance to the Site are presented in Table 7.

Table 7 – Herpetofauna species recorded within 2km of the Site.

Species	Scientific Name	Legal Protection / Conservation Priority Status[1]	Closest Record	Date of Closest Record
Great crested newt	*Triturus cristatus*	ECH_II, Bern_II, WCA5, CRoW	0.7km N	2013
Adder	*Vipera berus*	Bern_III, WCA5(p)	1.7km NE	2011

Grass snake	*Natrix helvetica*	Bern_III, WCA5(p)	1.7km SW	2020
Common toad	*Bufo Bufo*	WCA5(p)	1.75km SW	2017
Common frog	*Rana temporaria*	ECH_V, Bern_III, WCA5(p)	1.75km SW	2018
Slow worm	*Anguis fragilis*	Bern_III, WCA5(p)	1.8km SW	2018
Common lizard	*Zootoca vivipara*	Bern_III, WCA5(p)	1.8km NW	2015

5.1.13 There were no records of granted EPSM licence applications for amphibian species within 2km of the Site.

5.2 Phase I Habitat Survey

5.2.1 The following habitat types were recorded within the Site:

- Scattered trees
- Semi-improved grassland
- Hedgerow
- Standing Water

Scattered trees

5.2.2 Immature scattered trees are planted throughout the boundaries of the Site. Species present include fruit trees *Prunus sp*, oak sp *Quercus sp*, scots pine *Pinus sylvestris*, beech sp *Fagus sp*, hawthorn *Crataegus monogyna*, silver birch *Betula pendula*, alder *Alnus glutinosa*, willow sp *Salix sp*, and lime sp *Tilia sp*.

Semi-improved grassland

5.2.3 A semi-improved managed grassland is the dominant habitat within the Site. There are varying sward heights across the Site, with large tussocky areas up to 50cm and mown pathways / grazed areas by three Valais Blacknose sheep of <5cm. Species present include dominant cocksfoot *Dactylis glomerata* and abundant red fescue *Festuca rubra.* Other species frequently occurring include Yorkshire fog *Holcus lanatus,* meadow barley *Hordeum brachyantherum*, couch grass *Elymus repens*, tufted hairgrass *Deschampsia cespitosa*, smaller cat's tail *Phleum bertolonii*, timothy grass *Phleum pratense* and wall barley *Hordeum murinum*. Occasional common mallow *Malva neglecta*, yarrow *Achillea millefolium*, dove's foot cranesbill *Geranium molle*, smooth sow-thistle *Sonchus oleraceus*, spear thistle *Cirsium*

vulgare, cut leaved cranesbill *Geranium dissectum*, buttercup sp *Ranunculus sp*, and dock sp *Rumex sp* were also present.

5.2.4 Within the semi-improved grassland were areas of seeded wildflowers, species present included cornflower *Centaurea cyanus*, common poppy *Papaver rhoeas*, wild chamomile *Matricaria chamomilla*, corn marigold *Glebionis segetum*, and common corncockle *Agrostemma githago*.

5.2.5 Within the area of semi-improved grassland on the boundary of the Site and adjacent to the Little Stour species also included common hogweed *Heracleum sphondylium*, common nettle *Urtica dioica*, teasel *Dipsacus fullonum* and prickly sow thistle *Sonchus asper*.

5.2.6 Located within the semi-improved grassland the client has placed a brash pile suitable for supporting reptiles, denoted as Target note TN1 on Figure 1.

Hedgerow

5.2.7 A single immature hedgerow has been planted along the northern boundary of the Site. Species present include hawthorn, hornbeam *Carpinus betulus*, oak sp, guelder rose *Viburnum opulus*, lime sp, scots pine and rowan *Sorbus aucuparia*.

Standing Water

5.2.8 A dew pond is located on Site. Species present include abundant bulrush *Typha latifolia*, hard rush *Juncus inflexus* and soft rush *Juncus effusus*. Species surrounding the waterbody included abundant oxeye daisy *Leucanthemum vulgare* and common knapweed Centaurea nigra. Frequently occurring species included ribwort plantain *Plantago lanceolata*, bedstraw sp *Galium sp*, yarrow, common sorrel *Rumex acetosa*, birds foot trefoil *Lotus corniculatus*, selfheal *Prunella vulgaris*, willowherb sp *Epilobium sp*, hedge woundwort *Stachys sylvatica* and sneezewort *Achillea Ptarmica*.

Target Notes

5.2.9 As mentioned above, TN1 is a brash pile providing suitable refugia habitat for reptiles, TN2 is an area previously used as a bonfire on site and TN3 denotes the location of a barn owl *Tyto alba* box.

5.3 Protected Species

Great Crested Newt (GCN)

Terrestrial Habitat

5.3.1 The semi-improved grassland present within the Site is considered to be suitable habitat for GCN. The desk study data report also returned records of GCN within the surrounding 2km.

Aquatic Habitats

5.3.2 A review of available online OS and aerial mapping identified an onsite waterbody, a further two waterbodies and numerous drains connected to the Little Stour located within 250m of the Site, as depicted on Figure 2.

5.3.3 Waterbody WB1 was subject to HSI assessment. A summary of the survey results is presented in Table 4. The full HSI calculation is presented in Appendix C. Access was not able to be obtained to the offsite waterbodies.

Table 4 – Habitat Suitability Index Assessment Results.

Reference	Description	Distance from Site	HSI Score	HSI Suitability
WB1	Newly created dew pond located within the client's property	On site	0.62	**Average**

Reptiles

5.3.4 The semi-improved grassland and brash piles within the Site are considered to be suitable for foraging and hibernating reptiles. A common lizard *Zootoca vivipara* was recorded on the brash pile (TN1) on site during the Phase 1 survey. Records of grass snakes *Natrix helvetica*, slow worm *Anguis fragilis*, common lizard and adders *Vipera berus* were also returned in the desk study data report from the surrounding 2km.

Breeding Birds

5.3.5 The scattered trees and hedges within the Site provide suitable habitat for nesting birds. No nesting birds were recorded during the survey.

5.3.6 During the survey, a nest box indicative of barn owl was observed within a large willow on the boundary of the Site, within the client's property, however this tree is not to be impacted by the proposed development. The location of the nest box is denoted as TN3 on Figure 1.

Bats

Roosting habitat – Trees

5.3.7 No potential roosting features (PRF) were recorded in any of the immature scattered trees on site, there were two mature willow trees on the southeast boundary of the Site with PRF for bats including splits and cracks within the trunk and branches. These trees were assessed as having "**High**" potential to support roosting bats.

Foraging and commuting habitat

5.3.8 The semi-improved grassland, scattered trees and hedgerow within the Site provide suitable foraging and commuting habitat for bats, along with the Little Stour adjacent to the Site. The well-connected wider landscape also provides suitable foraging and commuting habitat in the form of hedgerows, agricultural land and areas of open green space.

Badger

5.3.9 The Site offers suitable foraging opportunities for badger and the desk study data report recorded badgers within 2km of the Site boundary; however, no badger setts or evidence of badgers were recorded during the survey.

Hazel Dormouse

5.3.10 The habitats within the Site are considered sub-optimal to support hazel dormouse with scattered immature trees and an immature hedgerow present onsite with no understorey. However, this hedgerow is fairly well connected to suitable dormouse habitat located within the wider landscape. No evidence of dormouse was recorded during the survey.

Other

5.3.11 Beyond those noted above, the survey identified no other evidence or potential for protected or notable species within the Site or potential zone of influence.

6 CONCLUSIONS AND RECOMMENDATIONS

6.1 Designated Areas

6.1.1 The Site lies within 2km of Preston Marshes SSSI and Stodmarsh SSSI/SAC/SPA/NNR/Ramsar site. Five non-statutory designated sites were identified within 2km of the Site; Seaton Pits and Wenderton Manor Woods LWS with parcels lying directly adjacent to the Site along the southern boundary, and approximately 300m west and 410m northeast.

6.1.2 Best practice pollution prevention measures must be implemented throughout all works carried out on the Site, and fencing used to separate the works area from adjacent habitat, to avoid any potential impact on nearby designated sites. Due to the temporary nature of the works within the Site, and their small, localised scale, it is not considered that there will be any impact on nearby designated sites.

6.2 Ancient Woodland

6.2.1 The closest area of ancient woodland lies approximately 1.3km northeast of the Site.

6.2.2 This distance is well beyond the 15m buffer zone recommended by Natural England and the Forestry Commission when working in close proximity to ancient woodland sites, and no detrimental impact to this or any other ancient woodland will result from the proposed development.

6.3 Habitats and Botanical Species of Interest

6.3.1 The closest NERC s41 HPI is a parcel of deciduous woodland, located approximately 125m northeast of the Site boundary. The woodland is suitably distant from the Site to avoid deleterious effects. No detrimental impact to this or any other HPI will result from the proposed development.

6.3.2 To avoid impacts such as root compaction and collision damage, the hedgerows adjacent to the eastern and southern boundaries of the Site and trees to the north should be protected in accordance with the British Standard (BS) '5837:2012 Trees in Relation to Design, Demolition and Construction'. An example of such protection is presented in Figure 3.

6.3.3 Onsite habitats are common and widespread and no further botanical surveys are required.

6.4 Protected Species

Great Crested Newt

6.4.1 It is not known whether GCN are present within WB1 on site, due to the timing of the survey undertaken. The HSI assessment of the onsite waterbody WB1 produced an 'Average'

suitability score and additional offsite waterbodies were not able to be accessed. Therefore, assuming their presence on site, due to the temporary nature of the works, the impacts being limited to sub-optimal (short mown) terrestrial habitat, which is unsuitable for use hibernating animals, a non-licensed methods statement (NLMS) is considered appropriate in order to maintain the welfare of GCN, if present:

- The trenching works and installation of solar panel and ground-source heat pump must be undertaken and completed with the habitat restored following the works, during the hibernation period for GCN (October-February) as they should not be moving across terrestrial grassland habitat during this time.
- The habitat across the works area must continue to be regularly mown to ground level to ensure it remains sub-optimal for use by GCN.
- Prior to the start of any works, the contractors working on the project will be subject to a 'Toolbox Talk' by a suitably qualified and licensed GCN ecologist.
- The 'Toolbox Talk' will outline the current legislation related to GCN and also the appropriate manner in which to proceed with the work. As well as what to do in the unlikely event a GCN is found during the works.
- Any brash piles, or debris within the working area must be hand searched by a suitably experienced ecologist prior to the start of works to check for the presence newts and/or reptiles and moved out of the works area prior to the start of the hibernation period.
- Equipment and material associated with construction works may provide potential sheltering opportunities for GCN and therefore is recommended to be stored carefully on raised pallets where possible. Any equipment or materials that are removed from site should be carefully inspected underneath, and the presence of GCNs considered.
- Any trenches, bore holes or excavations should be filled in before nightfall or a ramp left in place if left open, and should be inspected during the morning for any animals that may have fallen in.

6.4.2 If at any stage of the works, a GCN is found, works must stop and a licensed GCN ecologist contacted immediately. In this unlikely event, it may be necessary to apply for an EPSM licence for works to proceed.

6.4.3 If the currently short, mown, grassland within the working area is allowed to establish a long, tussocky sward and therefore becomes suitable for use by GCN during the hibernation period, then an experienced/licensed ecologist must be consulted in advance of any works being

undertaken. In this scenario it may be necessary to apply for an EPSM licence in advance of any works commencing as this approach will no longer be appropriate.

6.4.4 Following the works to the terrestrial semi improved grassland habitat, the grassland onsite should be reinstated through the laying of 'Species-Rich Lawn Turf' such as that provided by Wildflower Turf Ltd or similar.

Reptiles

6.4.5 The habitats within the Site are considered suitable for reptiles and common lizard have already been confirmed to be present on site during the Phase 1 survey. The proposed works will result in a temporary loss of suitable reptile habitat within the Site and, without mitigation, these actions could result in the potential killing and / or injuring of reptiles.

6.4.6 It is recommended that the short areas of grassland on site are maintained at this length to avoid the working area becoming more suitable for reptiles during their hibernation period. The precautionary method outlined for GCN above should also ensure the safety of any reptiles on site.

Breeding Birds

6.4.7 Suitable bird nesting habitat exists in the form of scattered trees and hedgerows within the Site. However, the proposed plans are not considered likely to impact any of these habitats and no further consideration is required.

6.4.8 Should any works to the scattered trees/hedgerow be needed, as all nesting birds are protected under the Wildlife and Countryside Act 1981 (as amended), it is recommended that works to these areas (where necessary) are conducted outside the core breeding period for birds of late February – August inclusive.

6.4.9 Should this timeframe be unobtainable, a thorough search for the presence of breeding birds should be conducted by a suitably experienced ecologist prior to the start of works. Should evidence of breeding birds be recorded, works within 5m of the nest, or works that have potential to destroy the nest, should stop until the eggs have hatched, and the chicks fledged, or the nest is deemed by a suitably experienced ecologist to have been abandoned.

6.4.10 Should any works be required to or in close proximity to the willow tree supporting the barn owl nest box, this should be checked by a suitably licensed and experienced ecologist for the presence of barn owl, prior to any works taking place.

Bats

Roosting habitat – Trees

6.4.11 Two mature willow trees on the southeast boundary of the Site were assessed as having high potential to support roosting bats. These trees are to be retained and should be protected from the proposals in line with British Standard (BS) '5837:2012 Trees in Relation to Design, Demolition and Construction' as previously mentioned above. There should not be any external lighting installed as part of these works.

6.4.12 If these measures are implemented, then no further consideration to roosting bats is required.

6.4.13 The scattered immature trees within the Site displayed no visible PRFs and require no further consideration in relation to tree roosting bats.

Bats - foraging and commuting habitat

6.4.14 The scattered trees, hedgerow and semi-improved grassland within the Site, and the Little Stour and surrounding habitats provide suitable foraging and commuting habitat for bats. The commuting habitat provided by the trees, hedgerow and surrounding habitats will not be affected by the proposals and therefore activity surveys were considered disproportionate. Although the grassland on site will be impacted by trenching and installation of the solar panels and ground source heat pump, this will be a temporary impact and should not impact commuting or foraging bat species. As above, external lighting should not be installed as a part of these works.

Badger

6.4.15 No evidence of badgers or their setts was recorded within the Site. However, as the Site is suitable for foraging badger the following recommendations should be implemented throughout the development phase.

- To prevent a badger becoming trapped in excavations; any trenches or deep pits to be left open overnight should be provided with a means of escape. This could be achieved through the construction of a graded bank or the installation of a rough sawn timber board such as a scaffold board or similar, which will allow a badger to exit of their own accord.
- Any trenches or pits should be inspected each morning to ensure no badgers have become trapped overnight.
- Badgers should be prevented from creating setts in spoil heaps and mounds of topsoil, by conducting daily inspections of spoil piles; or by ring fencing with a badger proof fencing material.

6.4.16 Badgers are a highly mobile species and soft earth banks, and spoil are a favoured digging substrate for badger, and should new evidence of digging become apparent prior to, or during construction, all work should stop, and the appointed ecologist consulted on the appropriate way to proceed.

Hazel Dormouse

6.4.17 The habitats within the Site, and the hedgerows adjacent, offer suitable habitat to support dormice. However, the desk study returned no records of dormice within 2km of the Site and no evidence of dormouse in the form of gnawed nuts or nests was found during the survey. In combination, with the very limited extent of the works area and that no trees or hedgerows on site are to be affected, no further dormouse surveys or consideration is required in relation to hazel dormouse.

Other species

6.4.18 Beyond those noted above, there are no obvious and immediate issues regarding other protected species on the Site and no further surveys to determine the presence of other protected species is required in this instance.

6.4.19 Should at any point during the development a protected or notable species be identified within the Site, then all works should stop, and the appointed ecologist consulted on the appropriate manner in which to proceed.

7 ECOLOGICAL ENHANCEMENTS

7.1 Opportunities to include biodiversity enhancements within the Site exist and in accordance with the requirements of the NPPF 2021, the following recommendations are considered appropriate for the Site:

- The incorporation of a wildlife-friendly planting scheme on site, using native, wildlife-friendly species such as English lavender *Lavandula angustifolia*, corn marigold *Chrysanthemum segetum*, common bluebell, common poppy *Papaver rhoeas*, chicory *Cichorium intybus,* honeysuckle *Lonicera periclymenum* and field rose *Rosa arvensis* or similar would be of benefit to invertebrates and subsequently species such as birds and bats.
- The construction of a hibernacula (shown in Figure 4) within the Site following the works, in addition to the existing brash piles would provide places of refuge for wildlife increasing the Site's value to herpetofauna, small mammals and invertebrate species post-development.

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Figures

Legend

- Site Boundary
- Fence
- SI Semi improved grassland
- Waterbody
- Dry ditch
- Hedgerows
- Trees
- Sheep hut
- Target Note

Job Reference : J21077

Project Title: Waterfields

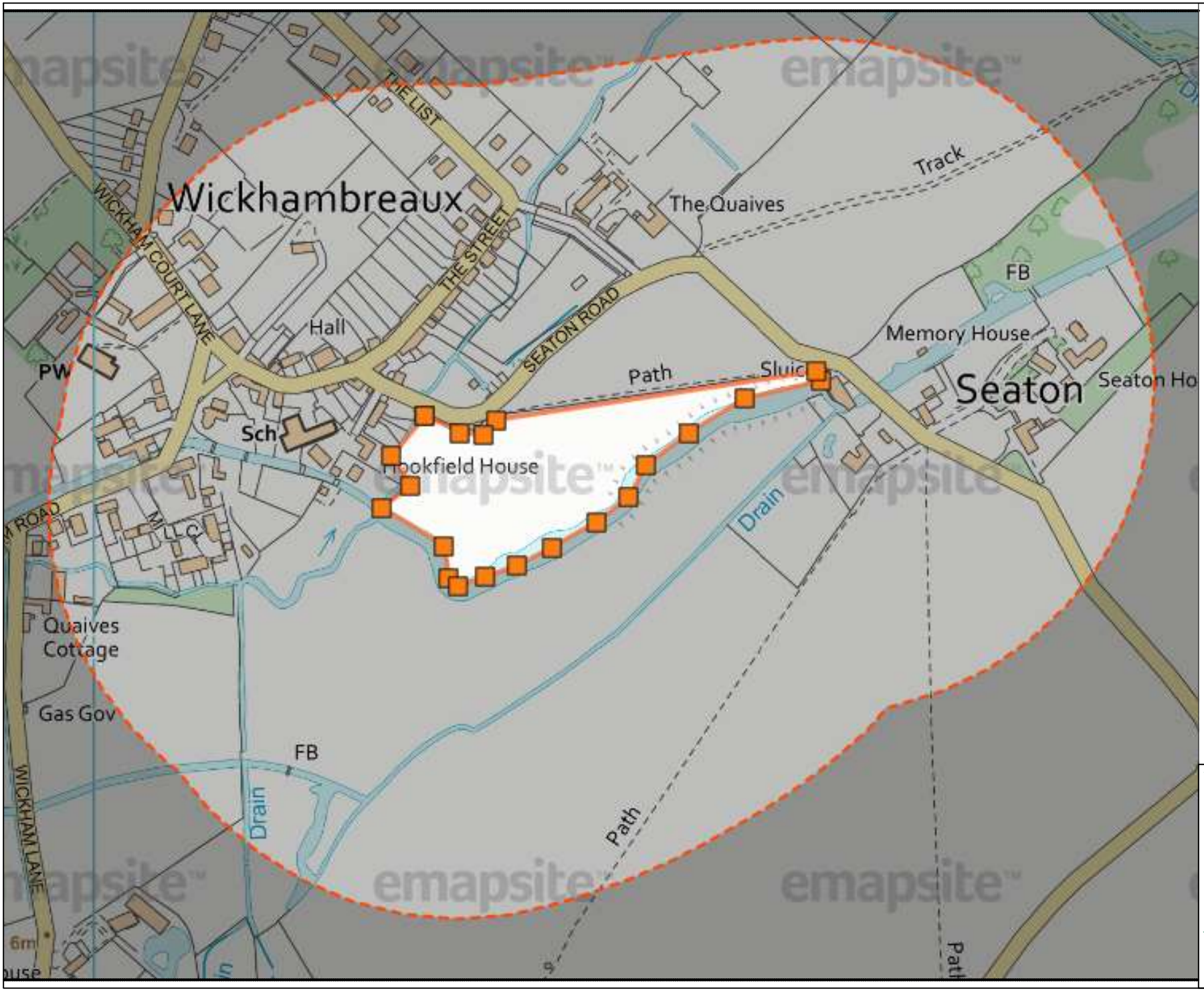
Figure 1: Phase 1 Habitat Plan

Date : 12-08-21 Checked :

Drawn : ALB Approved : N/A

Status : Final Scale : NTS

GES Greenspace Ecological Solutions



Legend

250m from Site boundary

Job Reference : J21107

Project Title: Waterfields

Figure 2: Waterbodies within 250m of the Site

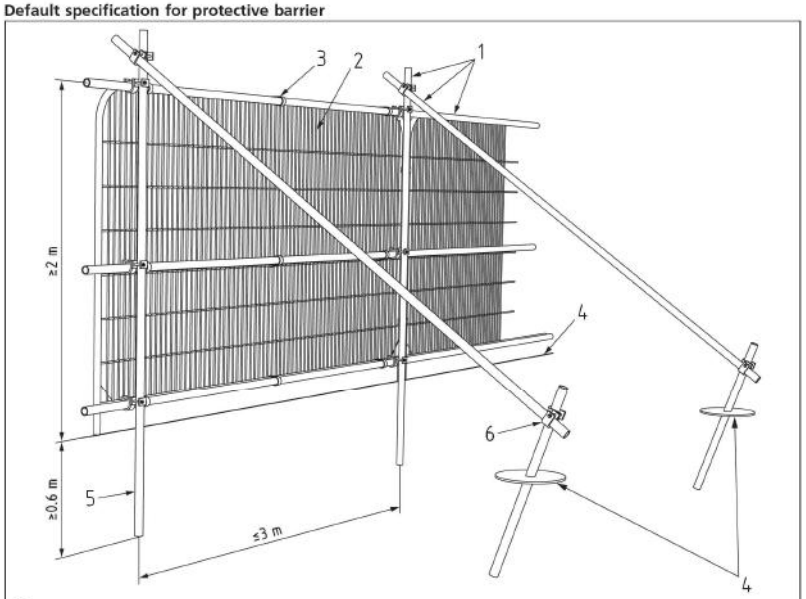
Date : 26-08-21 Checked :

Drawn : HC Approved : N/A

Status : Final Scale : NTS

Greenspace Ecological Solutions

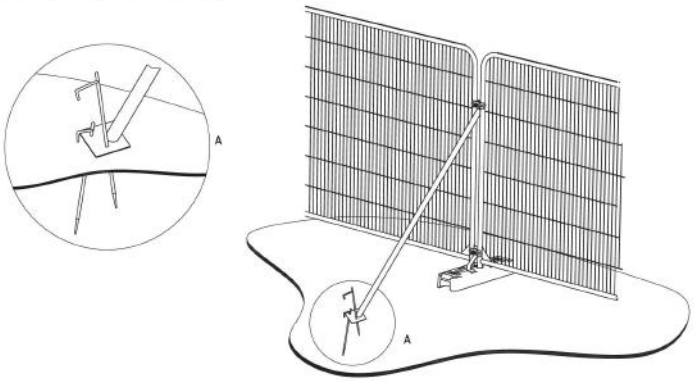
Default specification for protective barrier



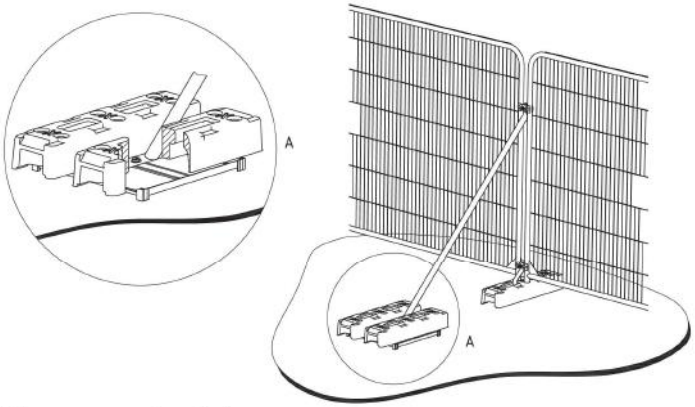
Key

1 Standard scaffold poles
2 Heavy gauge 2 m tall galvanized tube and welded mesh infill panels
3 Panels secured to uprights and cross-members with wire ties
4 Ground level
5 Uprights driven into the ground until secure (minimum depth 0.6 m)
6 Standard scaffold clamps

Examples of above-ground stabilizing systems



a) Stabilizer strut with base plate secured with ground pins



b) Stabilizer strut mounted on block tray

Job Reference : J21107

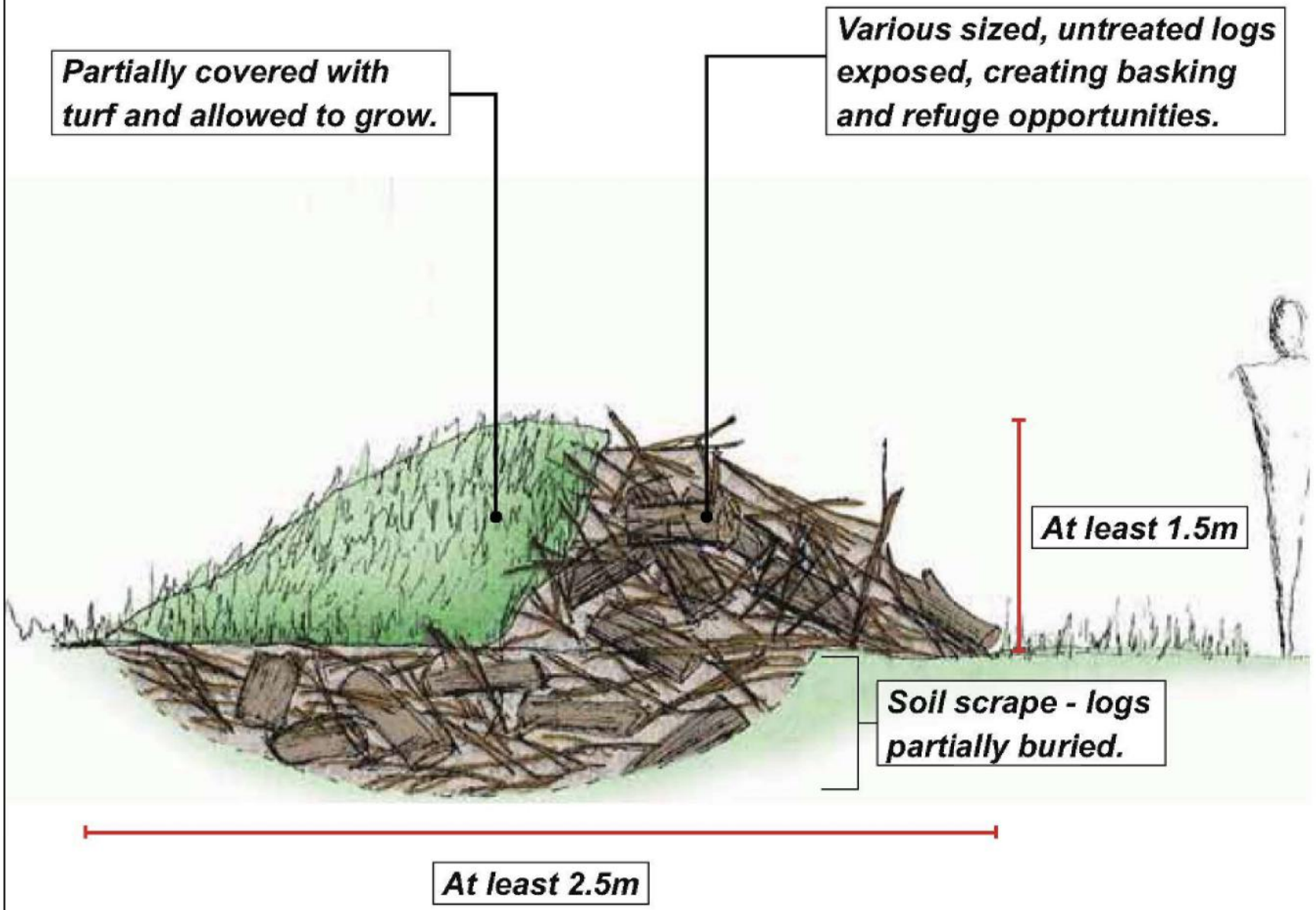
Project Title: Waterfields

Figure 3: Tree Root Protection Measures

Date : 26-08-21 Checked :

Drawn : HC Approved : N/A

Status : Final Scale : NTS



Job Reference : J21077

Project Title: Waterfields

Figure 4: Hibernacula Design

Date : 12-08-21 Checked :

Drawn : ALB Approved : N/A

Status : Final Scale : NTS

Greenspace Ecological Solutions

Appendices

APPENDIX A – PHOTOGRAPHS

Plate 1: Semi-improved grassland and newly planted scattered trees

Plate 2: Semi-improved grassland and scattered trees

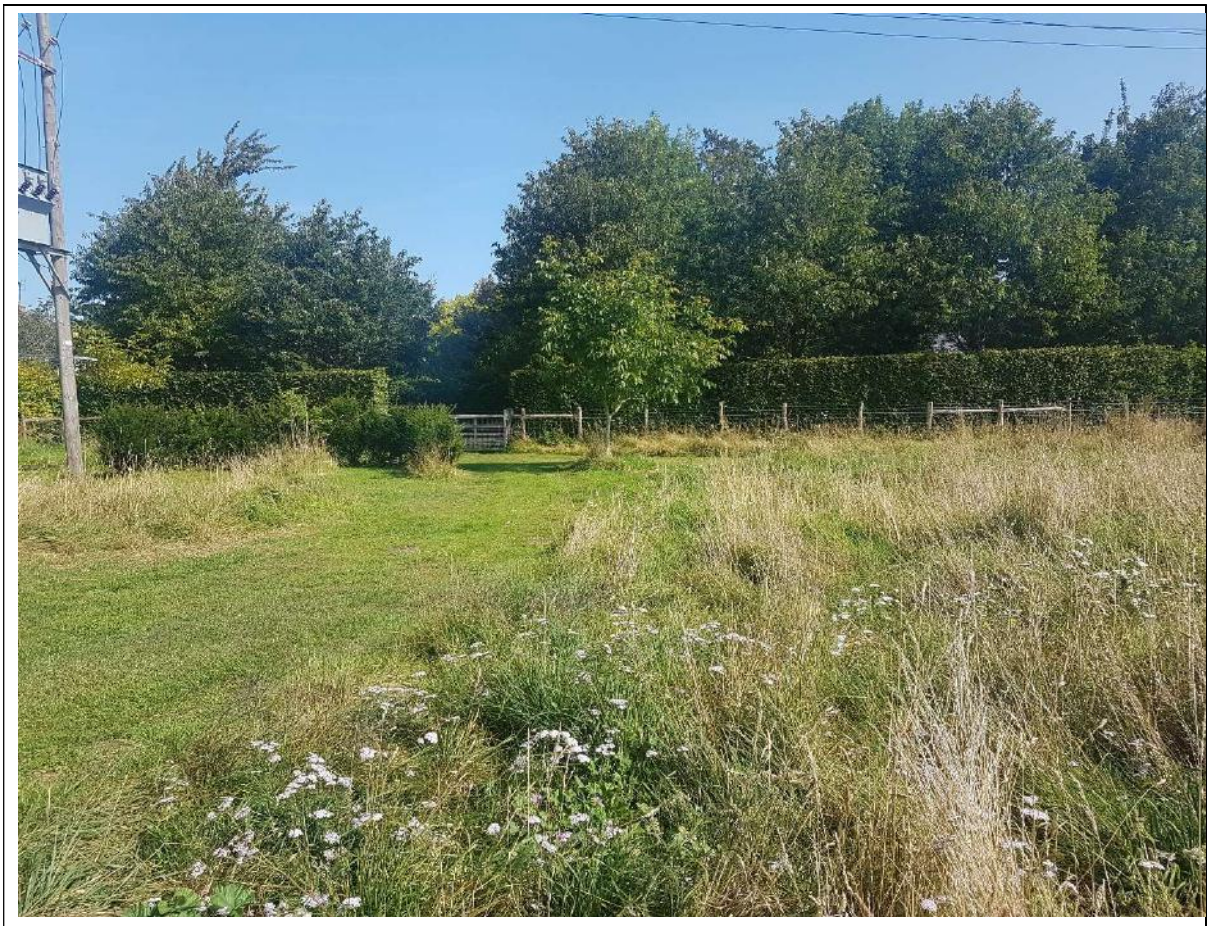


Plate 3: Semi-improved grassland and scattered trees

Plate 4: Waterbody

APPENDIX B - Categories of Bat Roost Suitability

Roost type / Level of suitability	Summer Roost used by Non- Breeding Bats	Maternity Roost	Hibernation Roost
Confirmed roost	Presence of bats or evidence of bats identified. Confirmation of a roost will likely require further surveys.		
High	Building/Structure or tree with multiple opportunities for one or more species of roosting bat and/or large numbers of bats. Optimal orientation. Good connectivity to optimal foraging habitats.	Building/Structure or tree with multiple roosting opportunities for pregnant female bats and young pups. Optimal orientation. Good connectivity to optimal foraging habitats.	Building/Structure or tree that has suitable thermal stability and levels of humidity to support torpid bats throughout the winter months.
Moderate	Building/Structure for tree with some opportunities for roosting bats. Preferable orientation. Connectivity to moderate to high quality foraging habitat available.	Building/Structure or tree with some roosting opportunities for pregnant female bats and young pups. Good orientation. Good connectivity to moderate to high quality foraging habitats.	Building/Structure or tree that has suitable thermal stability and levels of humidity to support torpid bats for some of the winter months. Moderate connectivity to suitable foraging areas.
Low	Building/Structure or tree with limited opportunities for roosting bats. Poor connectivity to foraging habitat.	Building/Structure or tree with limited opportunities for breeding bats. Poor connectivity to foraging habitat.	Building/Structure or tree with limited potential to support hibernating bats due to instable environmental conditions.
Negligible	Building/Structure or tree with no or very limited opportunities for roosting bats. Little to no connectivity to foraging habitat	Building/Structure or tree with no or very limited opportunities for breeding bats. Little to no connectivity to foraging habitat.	No suitable roosting opportunities for hibernating bats.

APPENDIX C – Full HSI Results

Pond Reference	Pond Location	SI_1	Pond Area	SI_2	Pond Drying	SI_3	Water Quality	SI_4	Shade	SI_5	Fowl	SI_6	Fish	SI_7	Pond Count	SI_8	Terrestrial Habitat	SI_9	Macrophytes	SI_{10}	HSI Score	Pond Suitability
WB1	Zone A	1.00	175 m2	0.35	Dries Annually	0.10	Moderate	0.67	0-60%	1.00	Absent	1.00	Absent	1.00	3	0.65	Moderate	0.67	51-55%	0.85	0.62	**Average**