

Preliminary Ecological Appraisal & Biodiversity Metric Assessment

Additional Parking Area
Chicklade Service Station
Chicklade
Wiltshire
SP3 5SS



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Report Author:	Julian Prow BSc (Hons)		
Approved By:	William Clovis-Corbett BSc (Hons), MRes		
Surveyor & License No.:	Julian Prow	Barn Owl: 2026-88067-SCI-CL29	

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1.1 Site Description and Proposal

It is proposed to create an additional parking area in association with development of Chicklade Service Station, Chicklade, Wiltshire, SP3 5SS.

1.2 Survey Results

The site consisted predominantly of gravel hardstanding in the form of access to the neighbouring development, temporary workspaces and vehicle parking, bordered by arable land on the western and northern extents. The site was formerly arable land that had been cleared in relation to the neighbouring development of Chicklade Service Station. The remaining habitats provide a limited extent of habitat for common amphibians, foraging & commuting bats, badger, foraging birds, hedgehog, invertebrates and reptiles.

1.2.1 Previous Survey

The survey site formed part of a larger Ecological Impact Assessment relating to the associated development of Chicklade Service Station undertaken by Ecosupport Ltd. between May 2021 and June 2024 and included a Preliminary Ecological Appraisal, Biodiversity Metric Assessment and Bat Activity Surveys.

1.3 Impacts

It is understood that the sparsely vegetated urban land and remaining arable land will be removed to facilitate the development and external lighting will be introduced. The proposals therefore have the potential to impact common amphibians, foraging & commuting bats, badger, foraging birds, hedgehog, invertebrates and reptiles. However, due to the low suitability of the on-site habitats for protected species, it is considered that any identified impacts will be minor.

1.4 Recommendations

Mitigation, compensation and enhancement measures are detailed in Section 6.

1.5 Biodiversity Net Gain Assessment

The Biodiversity Metric Assessment demonstrates that the proposal will result in an increase of 0.14 (11.26%) area habitat units through the creation of other neutral grassland along the steep bank to the north and west of the proposed carpark. The

proposal currently achieves the minimum legal requirement of +10% biodiversity net gain for area habitats.

1.6 Conclusion

As demonstrated through the Biodiversity Metric Assessment, the proposal currently represents a positive ecological impact through the creation of other neutral grassland. The impacts for protected species have been assessed, and mitigation, compensation and enhancement measures have been recommended to reduce any predicted negative impacts and ensure opportunities for these species are retained and/or increased following development. Habitat creation and enhancement, and compensation and enhancement measures for protected species, should be implemented through a Landscape Ecological Management Plan (LEMP) and/or Habitat Management and Monitoring Plan (HMMP), including for a minimum of 30 years.

2.1 Proposal

It is proposed to create an additional parking area in association with development of Chicklade Service Station, Chicklade, Wiltshire, SP3 5SS.

2.2 Site Location & Description

The site was located adjacent to the former Chicklade Service Station, within the western extent of the town of Chicklade, adjacent to the A303. The site consisted predominantly of gravel hardstanding in the form of access to the neighbouring development, temporary workspaces and vehicle parking, bordered by arable land on the western and northern extents (see Figure 2.1). An EV charging station was under construction immediately to the east of the site. The wider landscape consisted of further agricultural land, small pockets of woodland, dwellings and gardens.

2.3 Previous Surveys

It is understood that the survey site formed part of an Ecological Impact Assessment relating to the associated development of Chicklade Service Station. Previous surveys including a Preliminary Ecological Appraisal, Biodiversity Metric Assessment and Bat Activity Surveys were undertaken between May 2021 and June 2024 by Ecosupport Ltd. and are referenced throughout this report.

2.4 Survey Objectives

The Preliminary Ecological Appraisal (PEA) and Biodiversity Metric Assessment (BMA) were undertaken to consider and assess the perceived ecological impacts associated with the proposal, including any perceived impacts to:

- Legally protected species or species of conservation concern;
- Legally protected habitats or habitats of conservation concern;
- Any statutory or non-statutory sites of conservation interest; and,
- Opportunities to provide biodiversity enhancement(s).



Figure 2.1. The survey site at Chicklade Service Station

3.1 Preliminary Ecological Appraisal

3.1.1 Scope of the Assessment

The zone of influence covers the extent of the site, the site boundaries, and areas directly adjacent to the site. The assessment considers designated sites, habitats and species of importance for biodiversity conservation and protected species.

3.1.2 Desk Study

A desk study was undertaken for the site and its surroundings including:

- Review of the Government's (DEFRA) mapping website MAGIC (www.magic.gov.uk);
- Review of the Government's Natural England Open Data Geoportal website (<https://naturalengland-defra.opendata.arcgis.com/>); and,
- Data purchased from Wiltshire Biodiversity Records Centre (WBRC).

Review of the ecological data included a search of:

- International & European designated sites (Natura 2000 sites¹) within a 10 km radius of the site;
- Statutory designated sites (e.g. Sites of Special Scientific Interest (SSSIs)) within a 1 km radius of the site;
- Non-statutory designated sites (e.g. Local Wildlife Sites (LWS)) designated for wildlife conservation within a 1 km radius of the site;
- Priority habitats within a 1 km of the site;
- Protected species licence records issued by Natural England since 2009 within 4 km of the site;
- Great crested newt pond survey records within 1 km of the site; and,
- Location of the site within any consultation zones designated for protected species.

¹ Natura 2000 is a European Union-wide network of nature conservation sites established under the EC Habitats and Birds Directives comprising Special Areas of Conservation (SACs) and Special Protection Areas (SPAs).

WBRC

Data purchased from WBRC included statutory and non-statutory sites, priority habitats and records of protected and designated species within the survey area and within 1 km of the survey area boundaries. Species records are also largely obtained as incidental recordings and subsequently an absence of any specific species does not consequently indicate an absence of a species.

3.1.3 Field Survey

The field survey consisted of a walkover assessment of all areas of the site using the UK Habitat Classification System methodology (UKHab, 2023). This is a standard technique designed for classifying and mapping British habitats.

Each habitat was assigned the appropriate alphanumeric code followed by any relevant secondary codes in accordance with UKHab Category Definitions V2.0 (UKHab Ltd., 2023). These codes are shown on the UK Habitat Classification Map (Appendix 1). Apart from buildings, habitat areas below the minimum mappable unit of 25 m² will be denoted by target notes and secondary codes. Target notes are used to indicate specific features, important habitats and/or field signs. An indicative list of observed plant species was compiled with the common name used in the main body of the report, and both the common and scientific names provided within Appendix 2.

The site survey was undertaken on the 17th April 2026 by Julian Prow. All areas within the site were surveyed and assessed for indicators of ecological value, including the presence or signs of any protected or rare habitats and species.

3.2 Biodiversity Metric Assessment

For each site habitat feature identified within the Defra Statutory Biodiversity Metric (2024), the metric records:

- Habitat type;
- Area or length;
- Distinctiveness;
- Strategic significance; and,
- Connectivity.

From the recorded parameters, the metric calculates:

- 'Habitat units' for area habitats (e.g. grassland, woodland etc.);
- 'Hedgerow units' for hedges and lines of trees; and,
- 'Watercourse units' for rivers and streams.

The habitat values assigned to created and enhanced habitats include factors associated with 'risk' relating to the difficulty and/or time required to establish the new habitat type.

The following were used for the calculation of the parameters, pre and post, development (Statutory Metric, version 1.0.4 03/07/2025):

- The site visit undertaken on the 17th April 2026;
- Proposed plans; and,
- Desk study results.

4.1 Desk Study

4.1.1 Statutory Designated Sites

Statutory Sites of Nature Conservation Interest (International Importance)

The desk study identified two sites of international importance within 10 km of the site as described in Table 4.1.

Table 4.1. Internationally Designated Statutory Sites within 10 km of the site

Site	Designation	Location in relation to site	Summary
Chilmark Quarries	Special Area of Conservation (SAC)	4.1 km southeast	Designated for suitable hibernation conditions for numbers of greater horseshoe, lesser horseshoe, barbastelle and Bechstein's bats.
River Avon	SAC	6.9 km northeast	Designated for water courses of plain to montane levels with the <i>Ranunculus fluitantis</i> and <i>Callitriche-Batrachion</i> vegetation. As well as species such as Desmoulin's whorl snail, sea lamprey, brook lamprey, Atlantic salmon and bullhead.

Statutory Sites of Nature Conservation Interest (National Importance)

There were no statutory sites designated for nature conservation of national importance within 1 km of the site.

4.1.2 Non-statutory Designated Sites

The desk study identified one non-statutory designated site within 1 km of the site. Cratt Hill Down Local Wildlife Site (LWS) was located approximately 750 m north of the survey site and is designated as a gently undulating chalk site with unimproved calcareous grassland, improved grassland and mature scrub.

4.1.3 Priority Habitats

The desk study identified areas of deciduous woodland and lowland calcareous grassland within 1 km of the site. The closest priority habitat was a 0.76 ha area of deciduous woodland, located approximately 320 m west of the survey site.

4.1.4 European Protected Species Licences (EPSLs)

Bats

The desk study identified three EPSLs for common pipistrelle, soprano pipistrelle, brown long-eared bat, serotine, lesser horseshoe and greater horseshoe granted within 4 km of the site. The nearest of which was located approximately 2 km southeast of the site, granted for destruction of a resting place for brown long-eared bat, serotine, lesser horseshoe and greater horseshoe.

4.1.5 Consultation Zones

GCN Impact Zones

The desk study identified that the site is situated within a 'Green Zone' for great crested newts. The designation of this zone indicates that the area is less likely to contain important pathways of connecting habitat for this species.

Chilmark Quarries SAC Bat Consultation Zone

The desk study identified that the site lies within a bat consultation zone associated with Chilmark Quarries SAC. This SAC is designated for its importance to greater horseshoe, lesser horseshoe, barbastelle and Bechstein's bat populations.

4.2 Field Survey

The survey was undertaken in mild, dry weather as shown below in Table 4.2.

Table 4.2. Environmental conditions

Date	Temperature (°C)	Wind Speed (Beaufort Scale)	Cloud cover (%)	Precipitation
17 th April 2026	12	2	80	0

Constraints:

The PEA records the plant species present at the time of the survey; therefore, plants that appear during various times of the year may not be recorded. Botanical diversity was considered sufficient to classify and assess the habitats present.

4.2.1 Habitats

The survey site predominantly consisted of artificial unvegetated unsealed surface in the form of gravel access, temporary workspaces and vehicle parking (u1c), sparsely vegetated land (u1f), and non-cereal crops (c1d). An annotated UKHab classification map is provided in Appendix 1.

Artificial Unvegetated Unsealed Surface (u1c) – A1

Parcel A1 consisted of artificial unvegetated unsealed surface in the form of gravel access, temporary workspaces and vehicle parking currently used in association with the neighbouring development (Figures 4.1 & 4.2).



Figure 4.1. Gravel hardstanding within the central extent of the site



Figure 4.2. Gravel access within the southern extent of the site

Sparsely Vegetated Urban Land (u1f) – A2, A4

Parcels A2 and A4 consisted of sparsely vegetated urban land and bordered the southern, western and northern extents of gravel hardstanding within parcel A1 (Figures 4.3 & 4.4). Species identified within these parcels included Yorkshire-fog, rapeseed, common field speedwell, field pansy, spear thistle, common dandelion, annual meadow grass, cow parsley, cut-leaved crane's-bill, common nettle, black knapweed, creeping thistle, ox-eye daisy, bird's-foot trefoil, crested dog's-tail, groundsel, cock's-foot, perennial ryegrass, yarrow, sainfoin and alfalfa.



Figure 4.3. Sparsely vegetated urban land within the southern extent of the site



Figure 4.4. Sparsely vegetated urban land within the northern extent of the site

Non-cereal Crops (c1d) – A3

Parcel A3 was located within the western extent of the site and consisted of arable land with non-cereal crops (Figure 4.5). At the time of survey, the arable land consisted entirely of rapeseed with the edges sharing species similar to those identified within parcels A2 and A4.



Figure 4.5. Non-cereal crops within the northwestern extent of the site

4.3 Habitat Suitability for Protected & Priority Species

4.3.1 Amphibians

The sparsely vegetated land provides a limited extent of terrestrial habitat for amphibians.

4.3.2 Badger

There were no signs of badger noted during the field survey. However, it is considered possible that badger/s may frequent the site when dispersing and/or foraging.

4.3.3 Bats

Foraging & Commuting Bats

In association with the wider landscape, the arable and sparsely vegetated land provide a limited extent of foraging and dispersal habitat for bats.

Roosting Bats

There were no potential bat roosting features identified within the site.

4.3.4 Birds

The arable and sparsely vegetated land provide a limited extent of foraging opportunities for bird species.

4.3.5 Dormouse

There was no suitable habitat identified on site for dormouse.

4.3.6 Hedgehog

The arable and sparsely vegetated land provide a limited extent of foraging and dispersal habitat for hedgehog.

4.3.7 Invertebrates

The arable and sparsely vegetated land provide a limited extent of habitat for invertebrate species.

4.3.8 Reptiles

The sparsely vegetated land provides a limited extent of habitat for reptiles.

4.4 Biodiversity Metric Assessment

The Biodiversity Metric Assessment demonstrates that the proposal will result in an increase of 0.14 (11.26%) area habitat units through the creation of other neutral grassland.

4.4.1 Habitat Degradation

The current guidance states that, “where unauthorised degradation of the onsite habitat has taken place on the land between 30 January 2020 and the date of survey, the biodiversity pre-development value of the onsite habitat should be calculated as the biodiversity value of the habitat on the date immediately before the carrying out of these degradation activities. Unauthorised degradation of onsite habitat is any degradation which is not in accordance with a previous planning permission.” (DEFRA 2024).

Accordingly, the baseline habitats have been assigned according to historical aerial imagery and data provided by Ecosupport Ltd. within their Biodiversity Net Gain Assessment report (2024).

4.4.2 Strategic Significance

The strategic significance of each habitat present on site has been assigned through consideration of the Local Nature Recovery Strategy (LNRS) for Wiltshire and Swindon. The guidance states that creation of specific habitat types within areas designated for nature improvement within the LNRS are considered as 'high' strategic significance. In this instance, the site is not located within the Strategic Significant Habitat Network. Accordingly, all baseline and created habitats have been recorded as having a 'low' strategic significance.

4.4.3 Statutory Biodiversity Metric Calculation Results

The baseline and proposed habitats including habitat distinctiveness, condition, strategic significance, and biodiversity units are presented in Table 4.3 and biodiversity unit change is summarised in Table 4.4. The baseline and proposed maps are presented in Appendix 3.

Table 4.3. Number of biodiversity units onsite at baseline

Map ref	Habitat type	Area (ha)	Habitat Distinctiveness	Habitat Condition	Strategic significance	Baseline biodiversity units
A1a, A2a, A3, A4a	Non-cereal crops	0.5284	Low	N/A	Low	1.057
A1b, A2b, A4b	Temporary grass and clover leys	0.1125	Low	N/A	Low	0.225
Total area of habitat biodiversity units						1.282

Table 4.4. Area Habitat Biodiversity Unit Change Summary

Biodiversity Unit Type	Description		Biodiversity Units
Area Habitat	On-site baseline area habitat biodiversity units		1.282
	On-site area habitat retention, creation, and enhancement of biodiversity units:		
	Retained	N/A	0.00
	Created	0.2658 ha modified grassland in poor condition 0.1364 ha other neutral grassland in moderate condition 0.2387 ha developed land; sealed surface	1.426
	Enhanced	N/A	0.00
Overall net unit change			0.144
Overall on-site net % change			11.26%
Trading rules satisfied			Yes

5.1 Proposed Development

It is proposed to create an additional parking area in association with development of Chicklade Service Station, Chicklade, Wiltshire, SP3 5SS.

5.2 Designated Sites

5.2.1 Statutory Designated Sites

Statutory Sites of Nature Conservation Interest (International Importance)

The desk study identified two sites of international importance within 10 km of the site. The nearest of these was Chilmark Quarries SAC designated for importance roosting sites of greater horseshoe, lesser horseshoe, barbastelle and Bechstein's bats.

Statutory Sites of Nature Conservation Interest (National Importance)

There were no statutory sites designated for nature conservation of national importance within 1 km of the site.

Due to the intervening distances between the survey site and identified designated sites, it is considered that there are no perceived impacts to these sites. See Section 5.5 regarding impacts upon the bat consultation zone associated with Chilmark Quarries SAC.

5.2.2 Non-statutory Designated Sites

The desk study identified one non-statutory designated site within 1 km of the site. Cratt Hill Down Local Wildlife Site (LWS) was located approximately 750 m north of the survey site and is designated as a gently undulating chalk site with unimproved calcareous grassland, improved grassland and mature scrub.

Due to the intervening distances between the survey site and identified non-statutory designated site, it is considered that there are no perceived impacts to this, or any other non-statutory designated site.

5.2.3 Priority Habitats

The desk study identified areas of deciduous woodland and lowland calcareous grassland within 1 km of the site. The closest priority habitat was a 0.76 ha area of deciduous woodland, located approximately 320 m west of the survey site.

Due to the intervening distances between the survey site and priority habitats, it is considered that there are no perceived impacts to the identified priority habitats.

5.3 Protected & Priority Species

5.3.1 Amphibians

The sparsely vegetated land provides a limited extent of terrestrial habitat for amphibians. The desk study identified one pond located approximately 290 m southwest of the survey site.

Great Crested Newt

The desk-based review did not identify any EPSLs or survey licence returns for great crested newt within 4 km of the site. However, the desk study identified that the site is situated within a 'Green Zone' for great crested newt. The designation of this zone indicates that the area is less likely to contain important pathways of connecting habitat for this species.

The presence of great crested newt is typically associated with the presence of ponds, which form aquatic breeding habitat, and therefore tend to have relatively 'localised' distributions.

Due to lack of nearby records, the limited potential breeding habitat and lack of suitable habitat on site, it is considered unlikely that great crested newt are present and will not be negatively impacted by the development.

Common Amphibians

Common amphibians, such as common frog, common toad and smooth newt are less dependent on established ponds and have a widespread distribution.

Common toad is listed within Section 41 of the Natural Environment and Rural Communities Act (NERC, 2006) and must be considered through the planning process. Public bodies, including LPAs, are minded to ensure due regard to the conservation of

biodiversity of such species. Such considerations may seek to protect, re-establish or create habitat suitable for amphibian's post development.

It is understood that the sparsely vegetated urban land will be removed to facilitate the development which has the potential to negatively impact amphibian species. Accordingly, precautionary mitigation measures will be required and are outlined within Section 6.

5.3.2 Badger

The data search from WBRC identified one record for badger within 1 km of the site. There were no signs of badger noted during the field survey. However, it is considered possible that badger/s may frequent the site when dispersing and/or foraging.

Badgers are protected by the Protection of Badgers Act 1992 and the Wildlife and Countryside Act 1981 (as amended), Schedule 6. Under the Wildlife and Countryside Act, it is illegal to intentionally kill, capture, injure or ill-treat any badger.

It is understood that the sparsely vegetated urban land and arable land will be removed to facilitate the development. Accordingly, precautionary measures should be employed to ensure no badgers are harmed or injured during the construction period of the development. These measures are detailed within Section 6.

5.3.3 Bats

The data search from WBRC identified 96 records of 12 species of bat within 2 km of the survey site, including: common pipistrelle, soprano pipistrelle, brown long-eared, greater horseshoe, lesser horseshoe, noctule, serotine, barbastelle, Daubenton's, whiskered, Natterer's and Leisler's bat. The desk study further identified that the site is located within the bat consultation zone associated with Chilmark Quarries SAC.

Roosting Bats

There were no potential bat roosting features identified within the site.

Foraging & Commuting Bats

In association with the wider landscape, the arable and sparsely vegetated land provide a limited extent of foraging and dispersal habitat for bats. Data recorded from Ecosupport Ltd. (2023), identified activity of at least seven species of bat directly within,

or in close proximity to the site. These species included: common pipistrelle, soprano pipistrelle, serotine, noctule, *Myotis* spp., long-eared species and barbastelle.

As a signatory to the Bonn Convention (Agreement on the Conservation of Bats in Europe) the UK has committed to protecting bat habitats, which necessitates the identification and protection from damage or disturbance of feeding areas and commuting routes.

It is understood that the sparsely vegetated urban land and arable land will be removed to facilitate the development and additional external lighting will be introduced. The proposal will create an extent of modified grassland and native hedgerow which will provide enhanced habitat for foraging bats. Implementation of the compensation measures including habitat creation and mitigation measures in the form of a sensitive lighting plan will be required and are outlined within Section 6.

5.3.4 Birds

The data search from WBRC identified 564 records of 45 species of birds, including but not limited to: house martin, corn bunting, yellowhammer, linnet, spotted flycatcher, wheatear, house sparrow, marsh tit, whinchat, starling, fieldfare and mistle thrush. The arable and sparsely vegetated land provide a limited extent of foraging opportunities for bird species.

All birds, their nests and eggs are protected under the Wildlife and Countryside Act 1981 (as amended).

It is understood that the sparsely vegetated urban land and arable land will be removed to facilitate the development. Accordingly, mitigation, compensation and enhancement measures for birds will be required and are detailed in Section 6.

5.3.5 Dormouse

The desk study did not identify any EPSLs granted within 4 km, nor any records within 1 km for dormouse. In addition, there was no suitable habitat identified on site for dormouse.

Due to the absence of nearby records and lack of suitable habitat on site (or immediately off-site) for dormouse, it is considered that this species is absent and is not further considered within this report.

5.3.6 Hedgehog

The arable and sparsely vegetated land provide a limited extent of foraging and dispersal habitat for hedgehog.

Hedgehog are listed as rare and most threatened species under Section 41 of the Natural Environment and Rural Communities Act (2006) with public bodies, including LPAs, minded to ensure due regard to the conservation of biodiversity of such species. Such considerations may seek to protect, re-establish or create habitat suitable for hedgehog post development.

It is understood that the sparsely vegetated urban land and arable land will be removed to facilitate the development. Accordingly, mitigation measures will be required and are detailed within Section 6.

5.3.7 Invertebrates

The arable and sparsely vegetated land provide a limited extent of habitat for invertebrate species. The data search from WBRC identified a single record of the red-tailed mason bee within 1 km of the survey site.

It is understood that the sparsely vegetated urban land and arable land will be removed to facilitate the development. Enhancement measures will be required to ensure that opportunities for invertebrate species are provided following the completion of the development.

5.3.8 Reptiles

The sparsely vegetated land provides a limited extent of habitat for reptiles.

Reptiles are protected against intentional killing and injury under the Wildlife and Countryside Act 1981 (as amended). Natural England states that activities such as site investigations and movements of machinery may breach this legislation by causing death or injury to reptiles (English Nature, 2004).

It is understood that the sparsely vegetated urban land will be removed to facilitate the development. Accordingly, mitigation measures will be required and are detailed within Section 6.

5.4 Biodiversity Metric Assessment

The Biodiversity Metric Assessment demonstrates that the proposal will result in an increase of 0.14 (11.26%) area habitat units through the creation of other neutral grassland along the steep bank to the north and west of the proposed carpark. The proposal currently achieves the minimum legal requirement of +10% biodiversity net gain for area habitats.

6.1 Ecological Impacts

It is proposed to create an additional parking area in association with development of Chicklade Service Station, Chicklade, Wiltshire, SP3 5SS.

It is understood that the sparsely vegetated urban land and arable land will be removed to facilitate the development and that additional external lighting will be introduced. It is therefore considered that the development has the potential to negatively impact common amphibians, foraging & commuting bats, badger, birds, hedgehog, invertebrates and reptiles.

6.2 Avoidance/Mitigation Measures

To ensure the identified protected species are not harmed or injured during the development, the following measures should be undertaken for protected species (Appendix 4):

- **Vegetation Management:** The sparsely vegetated urban land should be maintained with a short sward height prior to and during the works to discourage amphibian and reptile colonisation.
- **Timing of Construction Works:** All works are to be undertaken within daylight hours to ensure there is no disturbance to protected species from lighting or machinery.
- **Excavations:** Any excavations, which are to remain open overnight, should be fenced or covered to prevent any potential entrapment and/or injury of species such as badger or hedgehog.
- **Lighting Plan:** A wildlife sensitive lighting plan will be required ensuring that the created on-site habitats and retained off-site habitats are not impacted by light spill from the proposed development. Specifications are detailed within Section 6.2.1.

6.2.1 Lighting Specification

A wildlife sensitive lighting plan should be designed by a professional lighting engineer and submitted alongside the planning application, to ensure that nocturnal species such as bats, dormouse and hedgehog are not negatively impacted by the proposal.

The sensitive lighting plan should follow the specifications below, ensuring that there is no light spill above 0.5 lux upon retained, created and surrounding habitats. Further information can be found within Guidance Note 08/23: Bats and Artificial Lighting at Night.

External Lighting

External lighting should be minimised. Where lighting is required, it will be installed adjacent to access, doorways, steps, etc., only, directed below a 70-degree plane. Any external lighting associated with the development is to be adapted to be based on a Passive Infrared Sensor (PIR) system (being motion-sensitive only to large objects) and on a short timer (no longer than 1 minute). Lighting is specifically not to be positioned where it could illuminate surrounding vegetation (tree planting/woodland, trees, hedgerows, hedge banks, etc.) or any areas beyond the development area.

LED luminaires that lack UV elements and have glass glazing should be used instead of mercury or metal-halide lamps. This type of lighting can be used more directionally and will reduce the range of emitted light wavelengths, thus significantly reducing the levels of light that may attract increased numbers of invertebrate bat prey items. Such light should be positioned to illuminate only the required areas, limiting light spill horizontally and vertically beyond the site.

A warm white spectrum (ideally <2700 Kelvin) should be adopted to reduce the blue light component. Luminaires should feature peak wavelengths higher than 550 nm to avoid the component of light most disturbing to bats (Institution of Lighting Professionals & the Bat Conservation Trust 2023). Additionally, hoods, cowls, louvres, and/or shields should be used to further direct any lighting.

6.3 Compensation and Enhancement Measures

The National Planning Policy Framework outlines the Government's commitment to minimise impacts on biodiversity and provide increases in biodiversity where possible, contributing to the Government's commitment to halt the overall decline in biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures.

The following compensation and enhancement measures are to be included within the proposal to account for the loss of habitat for protected species and to provide additional opportunities for protected species following the completion of the

development (see Appendix 5). These are considered in addition to any compensation and enhancement measures provided by Ecosupport Ltd. (2023).

- **Habitat Creation:** The proposals include the creation of approximately 0.27 ha of modified grassland, 0.14 ha of other neutral grassland and 60 m of native hedgerow along the southern extent of the site. A planting specification for the hedgerow is provided within Section 6.3.1.
- **Wildlife Provisions:** At least two bat roosting provisions (Appendix 6), two bird nesting provisions (Appendix 7) and two invertebrate provisions (Appendix 8) are to be installed upon suitable trees and/or buildings within close proximity to the site.
- **Habitat Piles:** Creation of at least one habitat pile, consisting of hardwood logs and/or brash within undisturbed areas adjacent to the western site boundary. Habitat piles should be approximately 1 m³ in size and preferably located within relatively undisturbed locations (Appendix 9).

6.3.1 Native Hedgerow Creation

All hedgerow planting should be carried out in accordance with BS4428:1989, Code of practice for general landscape operations (excluding hard surfaces).

The planting area to consist of topsoil, free from undesirable plant species. All hedgerow shrubs will be bare rooted, or container grown in rigid pots, minimum size 2 L, and where planting shall be backfilled with clean topsoil and/or supplemented with woodchip mulch to depth of 75 mm. Hedgerow shrubs must not be pot-bound or waterlogged prior to planting out. Hedgerow shrubs will be planted in double line spacing 500 mm apart, with plants planted alternately, with 4 plants per metre. Hedgerow shrubs will be protected by 600 mm high tree guards supported by 900 mm high bamboo canes to prevent rabbit/deer damage. Water as necessary to secure healthy establishment and to avoid the need for replacement due to dry periods (less than 30 mm rainfall at the end of a four-week period).

Ground Flora Seeding

The ground vegetation of the hedgerows will be over-seeded with Emorsgate Seeds EH1F (wildflowers for hedgerows mixture) 270 g (1.5 g per m²) scattered evenly along the length of the hedgerow where the ground has been disturbed. Lightly harrow or rake immediately following the scattering of seed.

Management

During the first 3 years, during winter, the hedgerow will be trimmed lightly, in order to establish and encourage dense vegetation growth. After three years, the boundary hedgerows will be managed through traditional hedge laying/steeping once every 10 to 15 years. Hedgerow laying/steeping is to only be undertaken between 31st December and 28th February.

Target hedgerow growth to be dense and continuous to grow to a minimum height and width of 3 m. At least two trees per length of existing hedgerow to be allowed to mature as standard tree. Wooded hedgerow vegetation to be allowed to overhang into gardens/field; no removal of ivy; standing or fallen deadwood to be retained (where H&S allows).

6.4 Biodiversity Net Gain Assessment

The Biodiversity Metric Assessment demonstrates that the proposal will result in an increase of 0.14 (11.26%) area habitat units through the creation of other neutral grassland along the steep bank to the north and west of the proposed carpark. The proposal currently achieves the minimum legal requirement of +10% biodiversity net gain for area habitats.

6.5 Management Plans

Habitat creation, including creation of other neutral grassland, and compensation and enhancement measures for protected species, should be implemented through a Landscape Ecological Management Plan (LEMP) and/or Habitat Management and Monitoring Plan (HMMP), including for a minimum of 30 years.

6.6 Conclusion

As demonstrated through the Biodiversity Metric Assessment, the proposal currently represents a positive ecological impact through the creation of other neutral grassland. The impacts for protected species have been assessed, and mitigation, compensation and enhancement measures have been recommended to reduce any predicted negative impacts and ensure opportunities for these species are retained and/or increased following development. Habitat creation and enhancement, and compensation and enhancement measures for protected species, should be implemented through a Landscape Ecological Management Plan (LEMP) and/or Habitat Management and Monitoring Plan (HMMP), including for a minimum of 30 years.

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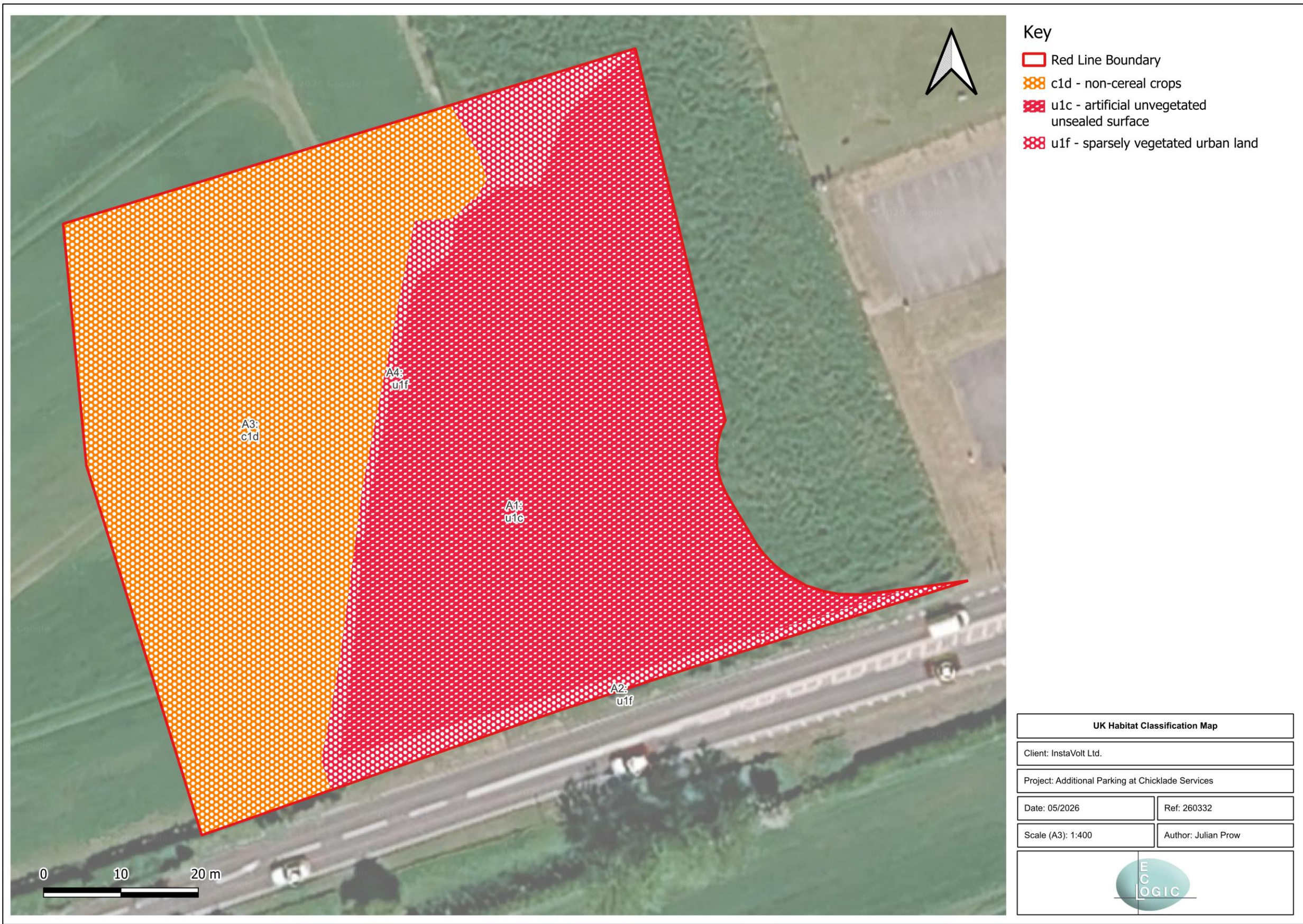
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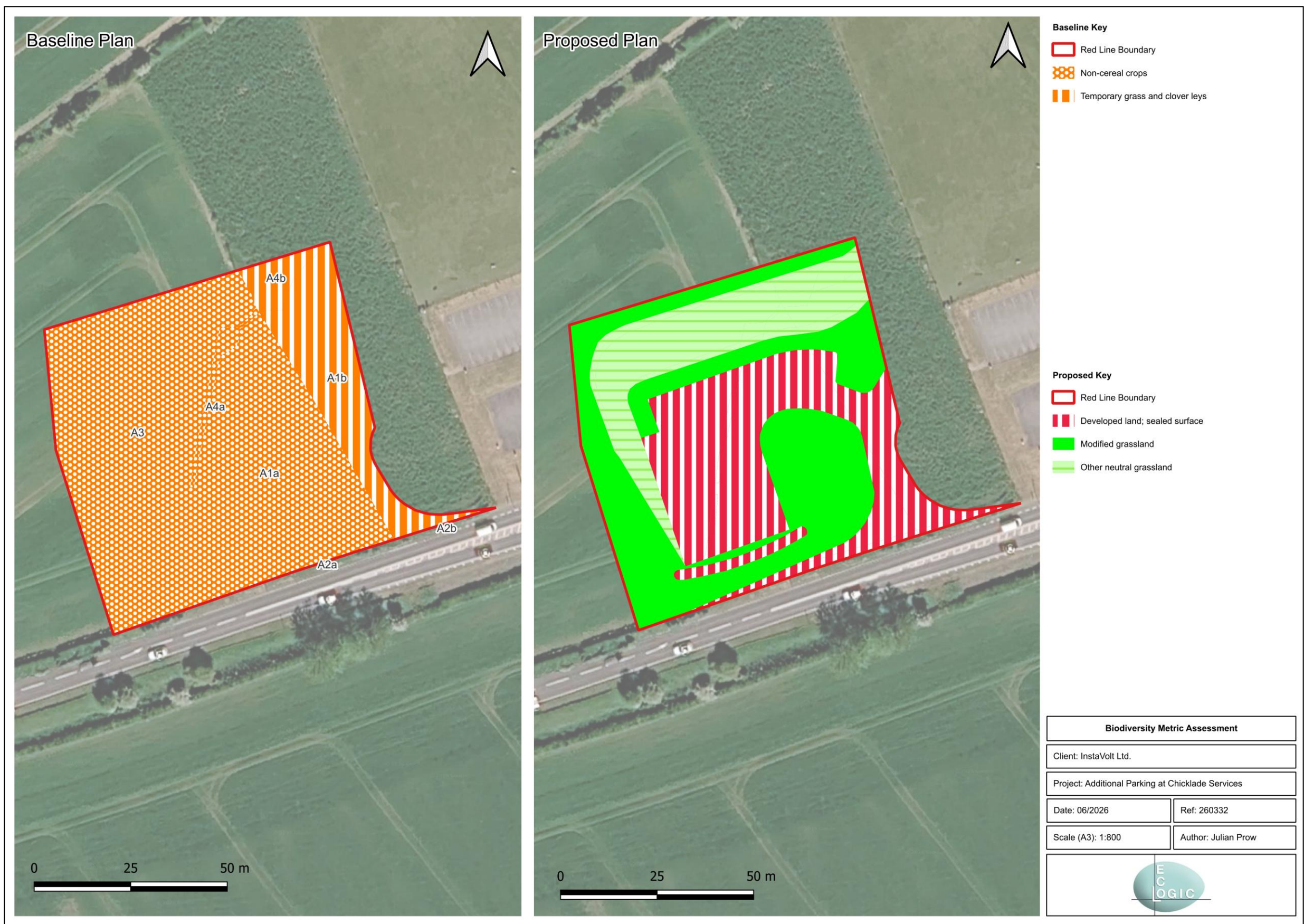
APPENDICES

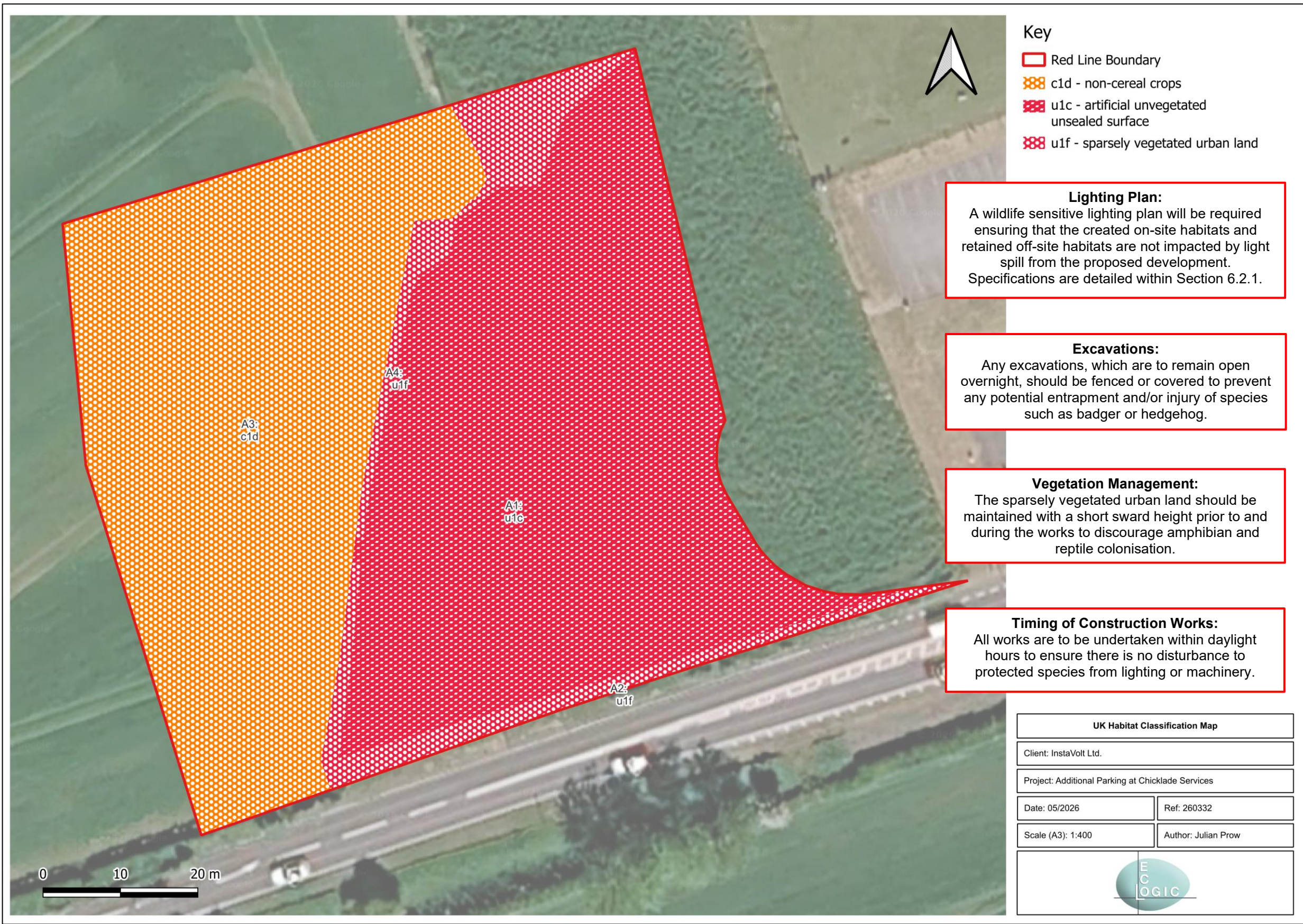
- Appendix 1: UK Habitat Classification Map
- Appendix 2: Species List
- Appendix 3: Biodiversity Net Gain Plan
- Appendix 4: Mitigation and Constraints Plan
- Appendix 5: Compensation & Enhancement Plan
- Appendix 6: Examples of Bat Roosting Provisions
- Appendix 7: Examples of Bird Nesting Provisions
- Appendix 8: Example of an Invertebrate Provision
- Appendix 9: Habitat Piles

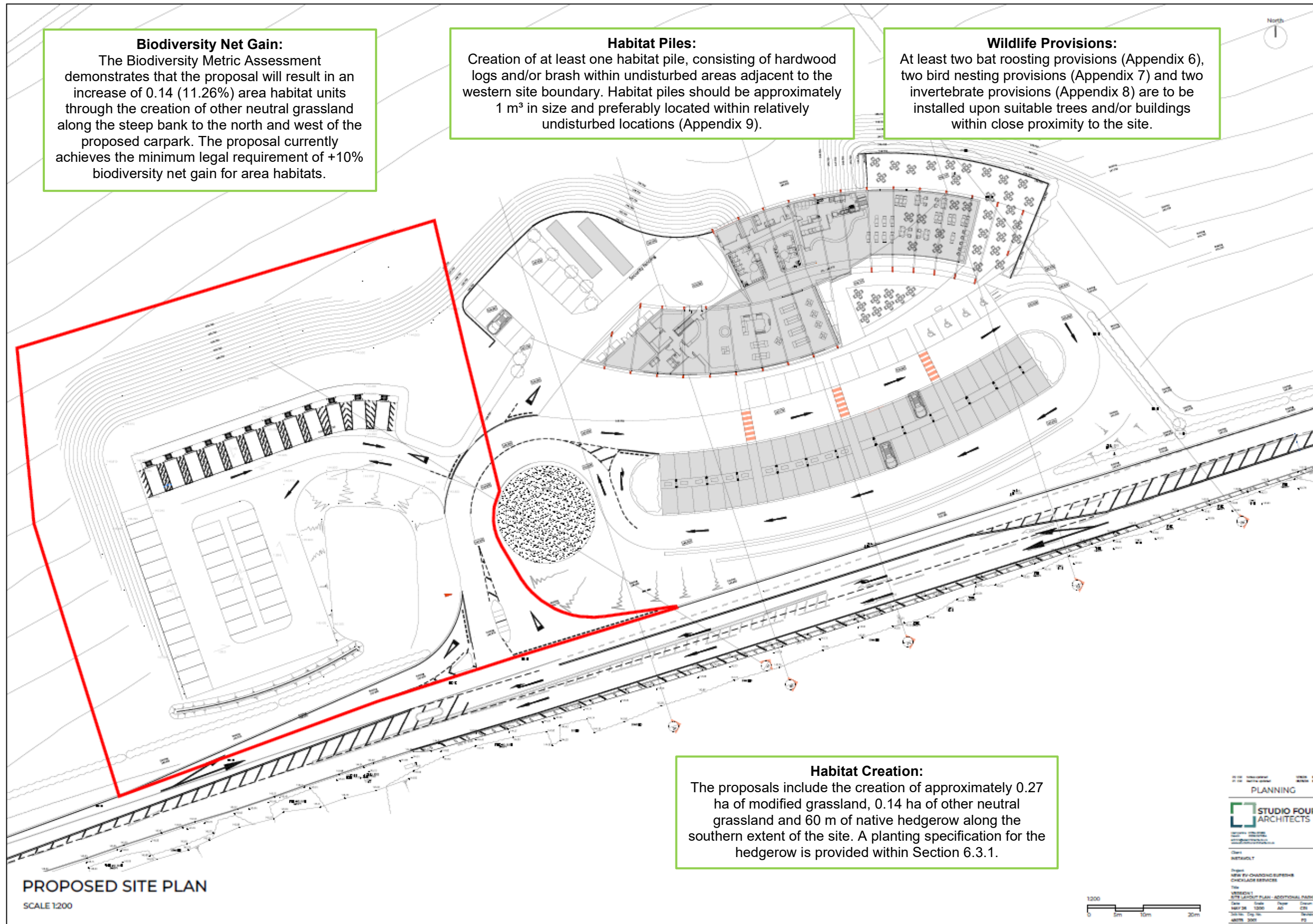


Common Name	Scientific Name
Flora	
Annual meadow grass	<i>Poa annua</i>
Bird's-foot trefoil	<i>Lotus corniculatus</i>
Black knapweed	<i>Centaurea nigra</i>
Cock's-foot	<i>Dactylis glomerata</i>
Common dandelion	<i>Taraxacum officinale</i>
Common field speedwell	<i>Veronica persica</i>
Common nettle	<i>Urtica dioica</i>
Cow parsley	<i>Anthriscus sylvestris</i>
Creeping thistle	<i>Cirsium arvense</i>
Crested dog's-tail	<i>Cynosurus cristatus</i>
Cut-leaved crane's-bill	<i>Geranium dissectum</i>
Field pansy	<i>Viola arvensis</i>
Groundsel	<i>Senecio vulgaris</i>
Lucerne	<i>Medicago sativa</i>
Ox-eye daisy	<i>Leucanthemum vulgare</i>
Perennial ryegrass	<i>Lolium perenne</i>
Rapeseed	<i>Brassica napus</i>
Sainfoin	<i>Onobrychis viciifolia</i>
Spear thistle	<i>Cirsium vulgare</i>
Yarrow	<i>Achillea millefolium</i>
Yorkshire-fog	<i>Holcus lanatus</i>
Fauna	
Atlantic salmon	<i>Salmo salar</i>
Badger	<i>Meles meles</i>
Barbastelle bat	<i>Barbastella barbastellus</i>
Bechstein's bat	<i>Myotis bechsteinii</i>
Brook lamprey	<i>Lampetra planeri</i>
Brown long-eared bat	<i>Plecotus auritus</i>
Bullhead	<i>Cottus gobio</i>
Common frog	<i>Rana temporaria</i>
Common pipistrelle	<i>Pipistrellus pipistrellus</i>
Common toad	<i>Bufo bufo</i>
Corn bunting	<i>Emberiza calandra</i>
Daubenton's bat	<i>Myotis daubentonii</i>
Desmoulin's whorl snail	<i>Vertigo moulinsiana</i>
Fieldfare	<i>Turdus pilaris</i>
Great crested newt	<i>Triturus cristatus</i>
Greater horseshoe bat	<i>Rhinolophus ferrumequinum</i>
Hedgehog	<i>Erinaceus europaeus</i>
House martin	<i>Delichon urbicum</i>
House sparrow	<i>Passer domesticus</i>
Leisler's bat	<i>Nyctalus leisleri</i>

Common Name	Scientific Name
Lesser horseshoe bat	<i>Rhinolophus hipposideros</i>
Linnet	<i>Linaria cannabina</i>
Marsh tit	<i>Poecile palustris</i>
Mistle thrush	<i>Turdus viscivorus</i>
Natterer's bat	<i>Myotis nattereri</i>
Noctule	<i>Nyctalus noctula</i>
Red-tailed mason bee	<i>Osmia bicolor</i>
Sea lamprey	<i>Petromyzon marinus</i>
Serotine	<i>Eptesicus serotinus</i>
Smooth newt	<i>Lissotriton vulgaris</i>
Soprano pipistrelle	<i>Pipistrellus pygmaeus</i>
Spotted flycatcher	<i>Muscicapa striata</i>
Starling	<i>Sturnus vulgaris</i>
Wheatear	<i>Oenanthe oenanthe</i>
Whinchat	<i>Saxicola rubetra</i>
Whiskered bat	<i>Myotis mystacinus</i>
Yellowhammer	<i>Emberiza citrinella</i>







Vincent Pro Bat Box

Material: Wood

Width: 180 mm

Height: 720 mm

Depth: 235 mm

Weight: 4.1 kg

Position: In a south facing location, minimum of 4 m above ground level.

**Schwegler 2F Double Front Panel**

Material: Woodcrete

Diameter: 160 mm

Height: 330 mm

Weight: 4.1 kg

Position: In a south facing location, minimum of 4 m above ground level.

**Schwegler 2FN**

Material: Woodcrete

Diameter: 160 mm

Height: 360 mm

Weight: 4.3 kg

Position: In a south facing location, minimum of 4 m above ground level.



Vivara Pro Barcelona Woodstone Open Nest Box

Suitable for wren, robin, pied wagtail and blackbird

Material: Woodstone

Height: 240 mm

Width: 190 mm

Depth: 175 mm

Position: Externally, at a minimum height of 3 m

**Vivara Pro Seville 32mm Woodstone Nest Box**

Suitable for: House sparrow, blue & great tit, nuthatch

Material: Woodstone

Height: 310 mm

Width: 200 mm

Depth: 200 mm

Weight: 6.9 kg

Position: Externally, at a minimum height of 3 m

**Eco Sparrow Tower**

Suitable for: House sparrow and individual blue & great tits

Material: Recycled LDPE plastic & FSC certified OSB

Height: 650 mm

Width: 170 mm

Depth: 170 mm

Weight: 2.8 kg

Position: Externally, at a minimum height of 3 m



Woodstone Insect Block

Suitable for bees, lacewings and ladybirds.

Material: Woodstone

Height: 270 mm

Width: 185 mm

Depth: 90 mm

Position: Site in a southerly facing location, adjacent to garden or boundary habitats at a minimum height of 1 m.



Habitat Pile

Size: 2-8 m long x 1-1.5 m high

Materials: Logs, brash, bramble cuttings, grass cuttings

Location: Create in marginal habitats adjacent to both low, open vegetation and dense vegetation

Creation:

- A mixture of materials, shapes and sizes should be used to increase complexity of the structure
- The central core of the structure should be compacted and the outer layers laid loosely on top

Management:

- Add additional material to the habitat pile as it decomposes
- Consider partially burying, anchoring or securing with wire if located on a site with high public access

