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Preliminary Ecological Appraisal Including a Protected Species Assessment at Buxhall Vale, Buxhall, IP14 3DH.

On behalf of:

Mr. Robert Stewart

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Skilled Ecology Consultancy Ltd.

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0 SUMMARY

- 0.1 Skilled Ecology Consultancy Ltd. was commissioned by Mr. Robert Stewart to undertake a Preliminary Ecological Appraisal including a Protected Species Assessment of land at Buxhall Vale, Buxhall, IP14 3DH. The report is required to accompany a planning application for a proposed new driveway to the property from the existing access point. The new driveway crosses Rattlesden River over a new, small bridge, before re-joining the existing driveway.
- 0.2 The survey was conducted on the 11th November 2019, by experienced ecologist James Pickerin BSc (Hons) GCIEEM (licensed to survey for bats (level 2) and great crested newts *Triturus cristatus*). The survey consisted of an inspection for preferred habitat types and signs and evidence of protected and priority species, such as for bats, great crested newts, reptiles, badgers *Meles meles* and nesting birds following Natural England (English Nature) Guidelines. A local biological record search was undertaken.
- 0.3 The proposed new driveway is approximately 150m in length, with minor changes to other sections of driveway totalling up to an additional 100m. The driveway is proposed to be largely single track, approximately 5m wide. The proposed site was found to be the grounds of a 16th century estate; with areas of the grounds included in the scheme comprising existing hardstanding, UK Priority Habitat Lowland Deciduous Woodland, UK Priority Habitat Woodpasture and Parkland, and crossing Rattlesden River.
- 0.4 The proposed site formed a very small section of the larger estate, with the remainder of grounds including areas of woodland, and arable agriculture surrounding the site in general. Ordnance survey maps indicates the presence of several ponds within 500m of the site. However, all of these ponds were found to be filled in.
- 0.5 It is understood that all trees are proposed for retention, therefore impact to the UK priority habitat Lowland Deciduous Woodland would not be impacted by the development. A small reduction in UK Priority Habitat Woodpasture and Parkland habitat would be required.
- 0.6 No signs or evidence of protected, priority or rare species were discovered and the risk of significant impact to such species from the development was considered low. Further ecological surveys were considered unnecessary. However, to minimise any residual risk of impact, precautionary measures and habitat compensation are recommended later in the report and should be followed.
- 0.7 With the recommendations followed as described, the proposed development could proceed with a minimal risk of harm or impact to protected, priority or rare species or valuable habitats. Biodiversity enhancement net-gain recommendations are also included in the report in accordance with national planning policy.

1 INTRODUCTION

1.1 Background

- 1.1.1 Skilled Ecology Consultancy Ltd. was commissioned by Mr. Robert Stewart to undertake a Preliminary Ecological Appraisal including a Protected Species Assessment of land at Buxhall Vale, Buxhall, IP14 3DH. The report is required to accompany a planning application for a proposed new driveway to the property from the existing access point. The new driveway crosses Rattlesden River over a new, small bridge, before re-joining the existing driveway.
- 1.1.2 Wildlife such as nesting birds, bats, reptiles and great crested newts *Triturus cristatus* are protected by law. Protected and priority species and habitats, are also a material consideration for individual planning decisions under the National Planning Policy Framework, 2019 (NPPF) (MHCLG, 2019).
- 1.1.3 This study and report complies with the Chartered Institute for Ecology and Environmental Management (CIEEM) Guidelines for Preliminary Ecological Appraisals (Second Edition, 2017).

2 METHODOLOGY

2.1 Desk Study

- 2.1.1 A local biological data search was obtained through Suffolk Biodiversity Information Service (SBIS) to search for records of protected, priority and rare species and local wildlife sites.
- 2.1.2 A search of the Multi-Agency Geographical Information for the Countryside (MAGIC) was also conducted, to check for statutory nature conservation sites.
- 2.1.3 These results were then combined with the findings of the site survey, in order to assess the risk of ecology issues, relevant to planning, occurring on the site.

2.2 Study Limitations

- 2.2.1 No major study limitations were found. The survey was undertaken at a time of year suitable for botanical assessment, though so early flowering species may not be visible or identifiable to species level.

2.3 Initial Site Surveys

Habitats and Surroundings

- 2.3.1 The site was visited on the 11th November 2019 to survey for ecology issues. This included the following:
- Noting the suitability of habitats present on the site, regarding protected, priority and rare species; including plants, amphibians,

reptiles, mammals, nesting birds, invertebrates and protected, priority or red-listed Birds of Conservation Concern (BoCC);

- Assessing the habitats surrounding the site and in the local area;
- Direct survey for evidence of protected species as far as possible, e.g. for bats, reptiles, great crested newts, badgers *Meles meles*, and nesting birds;
- Checking for invasive species such as Japanese knotweed *Fallopia japonica* and giant hogweed *Heracleum mantegazzianum*.

Bat Inspection

2.3.2 The assessment for bats was conducted by an experienced and licensed ecologist. The trees were inspected for bat activity, suitability and potential for roosting following English Nature Bat Mitigation Guidelines (English Nature, 2004) and Bat Conservation Trust Best Practice Guidelines, therefore considerations were:

- the availability of access to roosts for bats;
- the presence and suitability of cracks, crevices, gaps around tiles, ivy growth and other places as roosts;
- signs of bat activity or presence, such as; the bats themselves, droppings, grease marks, scratch marks, urine spatter and prey remains.

2.3.3 Equipment available for use during the surveys included a ladder, digital camera, high-powered torch, and binoculars.

2.3.4 The availability of access to roosts was assessed based upon the presence of holes large enough to allow entry to bats and lack of cobwebs and dirt.

2.3.5 The outside of trees were inspected for gaps, cavities, access points and crevices, and any signs of bats (droppings, staining, urine spatter), in accordance with Natural England (English Nature) guidelines (English Nature, 2004).

Reptiles & Amphibians

2.3.6 The site was inspected for potentially suitable terrestrial habitats for foraging, sheltering or dispersing amphibians and foraging, sheltering, breeding and basking habitat for reptiles. High quality terrestrial refuges searched for, included:

- Log piles & rockeries,
- Thick leaf litter,

- Compost & manure heaps,
- Mammal burrows,
- Deep ground cracks;
- Refuse suitable for shelter;
- Tussock grassland;
- Hedgerows and any other potential habitats.

2.3.7 The assessment also included a Habitat Suitability Index assessment, as developed by Oldham *et al.* (2000), of available ponds with connectivity or within 500m of the proposed development site.

Badgers, Water Voles & Other Mammals

2.3.8 Signs and evidence of badgers, water voles and other protected, priority and rare mammal activity searched for included the following:

- Setts, holes and burrows;
- Foraging holes and other diggings;
- Latrines, droppings, spraints and scats;
- Mammal hairs;
- Paw prints and other tracks;
- Feeding remains;
- Scratch marks, bedding material and other signs.

3 RESULTS AND RISK

3.1 Site Description & Location

3.1.1 The proposed new driveway is approximately 150m in length, with minor changes to other sections of driveway totalling up to an additional 100m. The driveway is proposed to be largely single track, approximately 5m wide. The proposed site was found to be the grounds of a 16th century estate; with areas of the grounds included in the scheme comprising existing hardstanding, UK Priority Habitat Lowland Deciduous Woodland, UK Priority Habitat Woodpasture and Parkland, and crossing Rattlesden River.

3.1.2 The proposed site formed a very small section of the larger estate, with the remainder of the grounds, areas of woodland, and arable agriculture surrounding the site in general. Ordnance survey map indicates the presence

of several ponds within 500m of the site. However, all of these ponds were found to be filled in.

3.2 Nature Conservation Sites

- 3.2.1 No statutorily designated nature conservation sites were located within 2km of the site (MAGIC, 2019; SBIS, 2019); the nearest was found to be Church Meadow Local Nature Reserve, located 4.75km east of the proposed site.
- 3.2.2 Ancient Woodland and veteran trees are regarded as irreplaceable habitats (NPPF, 2019). Many Ancient Woodlands were present within 2km of the proposed site; four were located approximately 2km away from north-west to north east (MAGIC, 2019; SBIS, 2019). Veteran trees were located within 1.5km of the proposed site (SBIS, 2019), however it should be noted an English oak approaching veteran in age was adjacent to the proposed project.
- 3.2.3 Additionally, four non-statutory designations are located within 2km of the site (SBIS, 2018), these include: Buxhall Fen County Wildlife Site (CWS), located 10m east, and designated due to a mosaic of wetland habitats and associated flora and fauna; Great Wood/ Birds Wood CWS, located 2km north-west, and designated due to two small ancient woodland; Northfield Wood CWS, located 2km north-east, and designated due to ancient woodland and diverse plant structure; and Shelland/ Woolpit Woods CWS, located 2km north and designated due to an extensive area of ancient woodland.

3.3 Data Search

- 3.3.1 The following information is a summary of modern, local biological records collated from SBIS (2019).

Table 1 - Summary of local records.

| Species | Approximate Location | Year |
|------------------------------------------|------------------------------------|------------|
| Mammals | | |
| Common pipistrelle (UK & EU protected) | 600m east | 2014 |
| Soprano pipistrelle (UK & EU protected) | 1.2km south-east | 2015 |
| Natterer's bat (UK & EU protected) | 900m west | 2014 |
| Brown long-eared bat (UK & EU protected) | 600m east | 2014 |
| Harvest mouse (UK priority) | 400m north | 2009 |
| Brown hare (UK priority) | 1.5km north | 2014 |
| European otter (UK & EU protected) | On proposed site/ Rattlesden River | 2003/ 2013 |
| Eurasian badger (UK protected) | 1.3km north | 2016 |
| European water vole (UK priority) | On proposed site/ Rattlesden River | 2000/ 2009 |
| West European hedgehog (UK priority) | Onehouse | 2018 |
| Birds | | |

| | | |
|-------------------------------------------|-----------------|------|
| Lapwing (red-listed and UK priority) | Haughley | 2011 |
| Woodcock (red-listed and UK priority) | Woolpit | 2014 |
| Turtle dove (red-listed and UK priority) | Woolpit | 2014 |
| Cuckoo (red-listed and UK priority) | Haughley | 2011 |
| Skylark (red-listed and UK priority) | Haughley | 2011 |
| Yellowhammer (red-listed and UK priority) | Haughley | 2011 |
| Reed bunting (red-listed and UK priority) | Haughley | 2011 |
| Herpetofauna | | |
| Smooth Newt (UK protected) | 1.2km south | 2018 |
| Great Crested newt (UK & EU protected) | 1.2km south | 2018 |
| Common frog (UK protected) | 1km east | 2000 |
| Grass snake (UK priority) | 600m south | 2002 |
| Plants | | |
| Wild strawberry | Onehouse | 2004 |
| Hoary plantain | Onehouse | 2004 |
| Corn mint | Onehouse | 2004 |
| Early-purple orchid | Northfield Wood | 2011 |

3.4 Protected, Priority & Rare Species

Vegetation & Habitats

- 3.4.1 Habitats on the proposed site included: UK Priority Habitat Lowland Deciduous Woodland, UK Priority Habitat Woodpasture and Parkland, and Rattlesden River.
- 3.4.2 Grasses and ruderal herbaceous plants observed in the area of Deciduous Woodland included the following: Yorkshire fog *Holcus lanatus*, false oat grass *Arrhenatherum elatius*, dandelion *Taraxacum agg.*, cleavers *Galium aparine*, herb Robert *Geranium robertianum*, common mallow *Malva sylvestris*, bramble *Rubus fruticosus agg.*, creeping thistle *Cirsium arvense*, curled dock *Rumex crispus*, ribwort plantain *Plantago lanceolata*, common sorrel *Rumex acetosa*, marsh thistle *Cirsium palustre*, horseradish *Armoracia rusticana*, creeping buttercup *Ranunculus repens*, stinging nettle *Urtica dioica*, cow parsley *Anthriscus sylvestris*, and ground ivy *Glechoma hederacea*.
- 3.4.3 The area of improved grassland within the area of Woodpasture and Parkland contained grasses and ruderal herbaceous plants including: annual meadow grass *Poa annua*, perennial rye grass *Lolium perenne*, Yorkshire fog, false-oat grass, fine fescue *Festuca sp.*, common bent *Agrostis capillaris*, dandelion *Taraxacum agg.*, cleavers *Galium aparine*, herb Robert *Geranium robertianum*, creeping thistle *Cirsium arvense*, curled dock *Rumex crispus*, ribwort plantain *Plantago lanceolata*, common sorrel *Rumex acetosa*, marsh

thistle *Cirsium palustre*, horseradish *Armoracia rusticana*, creeping buttercup *Ranunculus repens*, stinging nettle *Urtica dioica*, cow parsley *Anthriscus sylvestris*, and ground ivy *Glechoma hederacea*.

- 3.4.4 Plants observed growing in or adjacent to Rattlesden River included the following: great willowherb *Epilobium hirstum*, meadowsweet *Filipendula ulmaria*, alder *Alnus glutinosa*, pendulous sedge *Carex pendula*, starwort *Callitriche stagnalis*, water mint *Mentha aquatica*, and soft rush *Juncus effusus*.
- 3.4.5 Trees in all areas on the proposed site included the following: English oak *Quercus robur*, yew *Taxus baccata*, sycamore *Acer psuedoplatanus*, cherry laurel *Prunus laurocerasus*, field maple *Acer campestre*, alder *Alnus glutinosa*, elm *Ulmus sp.*, dogwood *Cornus sanguinea*, Norway maple *Acer platanoides*, common lime *Tilia x europaea*, ash *Fraxinus excelsior*, guelder rose *Viburnum opulus*, rowan *Sorbus aucuparia*, horse chestnut *Aesculus hippocastanum*, crab apple *Malus sylvestris*, wild cherry *Prunus avium*, and willow *Salix sp.*.
- 3.4.6 No protected, priority or rare plants were observed.
- 3.4.7 No Schedule 9 invasive plants were observed.
- 3.4.8 UK Priority Habitats observed in the desk study (Lowland Deciduous Woodland, River, and Woodpasture and Parkland), were observed on the site.
- 3.4.9 An English oak observed in the area of woodland was observed to have been approaching veteran in age and was estimated to be over 250 years old.

Bats

- 3.4.10 Trees on the proposed site were inspected with a ladder and binoculars; several trees supported up to high bat roosting potential. These trees supported various features including large fissures, cracks in bark, and various cavities. The approaching-veteran oak tree adjacent to the proposed new driveway supported an overhanging limb with a large fissure and pruning cut. Part of the limb was hanging over the proposed driveway, and the feature supported high bat potential. No signs or evidence of bat activity, such as urine stains or droppings were found externally on trees.
- 3.4.11 The adjacent habitats generally were considered suitable for high numbers of foraging and commuting bats with all features in the surrounding area deemed very ecologically valuable for foraging/commuting by bats.
- 3.4.12 It is understood that trees are proposed for retention within the development.

Other Protected or Priority Mammals

- 3.4.13 Garden environments on the proposed site supported habitat moderate in suitability for commuting mammals, such as hedgehog *Erinaceus europaeus* and badger *Meles meles*. Additionally, the river and marginal habitats were deemed suitable for commuting water voles *Arvicola amphibious* and otter *Lutra lutra*. However, the banks of the river where the bridge is proposed were extremely shallow and offered negligible cover, foraging or shelter habitat.
- 3.4.14 The river and nearby weir were searched for evidence of the two species and no evidence, such as spraints, runs, or holts, were observed. However, it should be noted that the survey was following a period of high rainfall and potential sprinting sites on the weir may have been washed away or temporarily covered with increased river discharge.
- 3.4.15 No evidence of protected and priority mammals such as hedgehog *Erinaceus europaeus*, badger *Meles meles*, harvest mouse *Micromys minutus*, water voles *Arvicola amphibious*, otter *Lutra lutra* and brown hare *Lepus europaeus*, was found on, or adjacent to, the site.
- 3.4.16 However, a 'slipway' and adjacent territorial dropping of American mink *Neovison vison*, a Schedule 9 invasive species, was observed approximately 15m away from the position of the proposed bridge.

Birds

- 3.4.17 Birds observed or heard on or close to the site during the surveys included; wood pigeon *Columba palumbus*, blackbird *Turdus merula*, robin *Erithacus rubecula*, blue tit *Cyanistes caeruleus*, great tit *Parus major*, wren *Troglodytes troglodytes*, and carrion crow *Corvus corone*.
- 3.4.18 All birds recorded are common, widespread birds and green-listed Bird of Conservation Concern (BoCC) species.
- 3.4.19 No current nesting was observed in habitats adjacent to the proposed driveway, however, it is likely moderate numbers of common and widespread species may nest in scattered trees on the site. The grassland area on the proposed site was very low in suitability for ground-nesting birds.
- 3.4.20 Excluding trees, the proposed site was very low in ecological value or potential to support nesting birds. With the other grassland and hardstanding offering little of ecological value to birds.
- 3.4.21 The BoCC ratings are summarised as follows:
- Red-listed - highest conservation concern;
 - Amber-listed - moderate conservation concern;
 - Green-listed - least conservation concern.

Reptiles

- 3.4.22 Small quantities of short, sheep-grazed grassland were present on the site. Consequently, grasses were not tussocky or dense, and lacked suitable refugia for reptiles such as common lizard *Zootoca vivipara* or slow worm *Anguis fragilis*. However, the river was deemed suitable for foraging and commuting grass snake *Natrix natrix*.
- 3.4.23 The survey was undertaken at a time of year unsuitable for active reptiles. No reptiles were observed during the survey visit.

Great Crested Newts & Other Amphibians

- 3.4.24 Terrestrial habitat on the site was theoretically suitable for great crested newts or other amphibians. With grassland and woodland habitats offering potential refugia and lack of intense management.
- 3.4.25 However, ponds located within 500m of the site indicated on Ordnance Survey map are understood to have been filled in before the new residents had taken occupation of the site.

Invertebrates

- 3.4.26 The majority of the site area (short grassland) supported low ecological value for invertebrates. The woodland, river and marginal habitats supported higher quality habitat suitable for invertebrates, with mature, and older, trees, the features of highest value. These habitats are proposed for retention.
- 3.4.27 Protected, priority or rare invertebrates were not observed during the survey visits.

Other Protected, Priority or Rare Species

- 3.4.28 No signs or evidence of any other protected or priority species were observed on the site, nor were there any particularly suitable habitats present for such species.

4 DISCUSSION OF RISK AND LEGISLATION

4.1 Protected & Priority Species

Bats

- 4.1.1 Bats are protected under the Wildlife and Countryside Act 1981 as amended by the Countryside Rights of Way Act 2000 and under the Conservation of Habitats and Species Regulations 2017. Some bats are also UK priority species. A summary of the offences likely to be relevant to development are:

- Intentionally or deliberately kill, injure or take a bat;

- Intentionally or recklessly damage, destroy or obstruct access to any place that a bat uses for shelter or protection, whether bats are present or not;
- Damage or destroy a breeding site or resting place of any bat;
- Intentionally or recklessly disturb a bat while it is occupying a structure or place that it uses for shelter or protection;
- Deliberately disturb a bat anywhere.

4.1.2 Records of bats were present locally (SBIS, 2019), and the surrounding landscape was high in ecological value for foraging and commuting, indicating the likely presence of large sized local bat populations. However, the construction area is small and all trees are understood to be proposed for retention within the development. No additional external lighting is proposed.

4.1.3 Therefore, the potential risk of significant impact to bats was very low. In which case, it was considered unnecessary to undertake further bat surveys or provide mitigation for bats.

4.1.4 However, to minimise any residual risk of impact or harm to bats, precautionary measures, detailed later in the report, should be followed.

Protected, Priority or Rare Mammals

4.1.5 Records of protected mammals were present locally (SBIS, 2019); with records of otter and water vole present on the proposed site. Additionally, it is possible that hedgehogs and badgers may use habitats on the site. However, it was thought that local water vole and otter would be unaffected by the development due to the small size of construction area, with all ecological features being retained and disturbed temporarily. It was also thought that the use of habitats would not be impacted upon even during development. With the small section of river proposed for the new bridge low in ecology value for otter or water vole sheltering or foraging. Furthermore, the overall human activity levels on the proposed site would not change following the short development stage. Additionally, signs or evidence of protected or priority mammals were not observed on the site.

4.1.6 Further surveys or mitigation were considered unnecessary. However, recommendations detailed later in the report are proposed to minimise any residual risk of impact.

Reptiles

4.1.7 Widespread reptile species including, grass snake, adder, slow worm and common lizard, are protected from intentional killing and injuring under the Wildlife and Countryside Act 1981. They are also UK priority species.

4.1.8 Reptiles have been recorded locally (SBIS, 2019). However, habitats on the proposed construction zone were largely poor for reptiles, and future development is very unlikely to impact upon commuting or foraging grass snakes using the river. Consequently, the risk of presence or impact to reptiles was considered very low.

4.1.9 Therefore, further reptile surveys or mitigation were considered unnecessary. However, to minimise any residual risk of harm or impact, recommendations detailed later in the report should be followed.

Amphibians

4.1.10 Great crested newts are protected under the Wildlife and Countryside Act 1981 as amended by the Countryside Rights of Way Act 2000, and the Conservation of Habitats and Species Regulations 2017. Great crested newts are also UK priority species. A summary of the offences likely to be relevant to development are:

- Intentionally or deliberately capture or kill;
- Intentionally injure;
- Deliberately disturb, or intentionally or recklessly disturb in a place of shelter or protection;
- Damage or destroy a breeding site or resting place;
- Intentionally or recklessly damage, destroy or obstruct access to a place used for shelter or protection.

4.1.11 Great crested newts and other amphibians have been recorded locally (SBIS, 2019). However, records were a significant distance away, and all local ponds were found to have been infilled. Additionally, the project will cause only a short-term disturbance.

4.1.12 Therefore, it was considered that the risk of significant harm or impact to great crested newts or a significant population of any other amphibian species was considered unlikely. Further amphibian surveys or mitigation were considered unnecessary for the project to proceed.

4.1.13 However, to minimise any residual risk of impact to great crested newts and other amphibians, precautionary measures, detailed later in the report, should be followed.

Birds

4.1.14 Wild birds are protected under the Wildlife and Countryside Act 1981 and, with certain exceptions (e.g. pest species) in certain situations, it is an offence to intentionally:

- Kill or injure any wild bird;

- Take, damage or destroy the nest of any wild bird while it is in use or being built;
 - Take or destroy the egg of any wild bird.
- 4.1.15 Some bird species (such as barn owls) are also specially protected under Schedule 1 of the Wildlife and Countryside Act 1981 and others are UK priority species.
- 4.1.16 Red-listed and priority birds have been recorded locally (SBIS, 2019), additionally trees on the site are likely to provide nesting habitat suitable for moderate numbers of common and widespread species. However, it is noted trees are unlikely to be unaffected by the development protecting this habitat into the future.
- 4.1.17 Therefore, further bird surveys or mitigation were considered unnecessary. However, to minimise any residual risk of impact to birds generally, precautionary measures, detailed later in the report, should be followed.

Plants & Habitats

- 4.1.18 Priority plants were recorded locally (SBIS, 2019). However, no protected, priority, or rare plants were observed at the time of survey. The proposed development was highly unlikely to impact negatively on botanically important habitats or rare plant species.
- 4.1.19 It was noted that foundations for the driveway are proposed to be hand-dug to a shallow depth. Consequently, it was thought unlikely that the small development would impact upon adjacent trees including the large oak tree within the woodland.
- 4.1.20 No net loss of UK priority habitat Lowland Deciduous Woodland is proposed.
- 4.1.21 However, without compensation the reduction in grassland would reduce the overall area of UK priority habitat Woodpasture and Parkland habitat. Consequently, habitat compensation to prevent net loss is recommended later in the report and should be followed.
- 4.1.22 No Schedule 9 Invasive plant species were observed.
- 4.1.23 It is noted that a landscaping project including installation of increased native tree planting is planned, likely to cause a net-gain to local plants and habitat.
- 4.1.24 Further botanical surveys or mitigation were considered unnecessary.

Invertebrates

- 4.1.25 Priority invertebrates were recorded locally (SBIS, 2019). However, the proposed construction zone was very small and would cause only a temporary disturbance. With the features of highest ecological value, mature trees and

river habitats, retained within the development.

- 4.1.26 Consequently, the risk of significant impact rare or priority invertebrates was very low. Further invertebrate surveys or mitigation were considered unnecessary.

Other Protected & Priority species

- 4.1.27 No signs or evidence of other protected, priority or rare species were observed on the site. The risk of presence or impact to such species was very low. Further ecological surveys or mitigation for any other protected, priority or rare species was unnecessary.

4.2 Other Issues

Sensitive Habitats

- 4.2.1 The site was not within 2km of statutory designated nature conservation sites. Additionally, the risk of impact to such sites or wildlife within such sites was considered negligible due to the nature of the designations, and the incompatibility of ecology between the proposed development site and the designated area. Furthermore, the temporary nature of the development, with no additional residential units, meant that risk of impact to the adjacent Buxhall Fen CWS was also deemed negligible.
- 4.2.2 It was considered unnecessary to provide further recommendations for the protection and conservation of designated sites.

5 RECOMMENDATIONS

5.1 Impact Avoidance Precautionary Measures & Habitat Compensation

Bats

- 5.1.1 Risk of significant impact to foraging or commuting bats was very low, to further minimise impact, the below recommendations, should be followed:
- It is understood that tree loss will not be required. However, if reduction in limbs of the mature (near veteran) oak tree with high bat potential is required, this should first be inspected with endoscope by a bat licensed ecologist. A mobile hoist may be required for this. Should bats or evidence of bats be discovered works would need to be delayed until a bat licence had been granted by Natural England;
 - It is understood that additional external lighting is not proposed. However, if future lighting is added to the driveway, external lighting it should be warm white LED lamps with glass glazing, rather than plastic, as these produce the least amount of heat and UV light possible, minimising the attraction effects on insects and minimising disturbance to local bats;

- Any external lighting should be aimed carefully, to minimise illumination of boundary habitats and avoid light spillage into the sky, or horizontally out from the driveway by using hoods or directional lighting;
- External lighting should be set on PIR sensors with short timers and be sensitive to large moving objects only, to prevent any passing bats switching them on;
- Where possible, low-level bollard lighting should be used ahead of tower lighting;
- Extra care should be taken to limit lighting as much as possible within the woodland and riverine habitats;
- No construction work at night when bats are mostly active;
- Trees should be protected by following BS 5837:2012;
- Any tree removal should be compensated for by one-for-one replacement, prioritising native, broad-leaved tree species.

Otters & Water Voles

5.1.2 The risk of significant impact to otters and water voles was very low, to further minimise impact, the following should be undertaken:

- Footings of the new bridge should be at least 2m away from edge of the river;
- No work at night;
- Works near the river should take care to not pollute or degrade the river habitats, though impact to the riverbanks or accidental release of chemicals or rubbish into the river.

Birds

5.1.3 It is recommended that to prevent harm to nesting birds any reduction of trees or shrubs should be undertaken outside of the main bird nesting season (March until the end of August). If this timescale is not possible then an ecologist should survey the site for active bird nests just prior to the commencement of works within the nesting season.

5.1.4 If an active bird nest was found, it would be necessary to protect the nest from harm or disturbance until the bird had finished nesting.

5.1.5 Recommendations detailed later regarding replacement planting of trees will serve to compensate for any potential loss in habitat.

Amphibians & Reptiles

5.1.6 The risk of reptiles or amphibians being significantly impacted by the development was very low, to minimise any residual risk of impact or harm or impact, the below recommendations should be followed:

- Before construction commences, vegetation should be kept low to avoid the habitat improving in quality for amphibians or reptiles;
- Construction materials should be stored on hardstanding or on pallets to prevent amphibians or reptiles from sheltering in the materials and being harmed by movement of the materials;
- No construction work at night when amphibians are mostly active;
- Any excavations for the development, should be covered at night or should have a roughly sawn plank placed in them to facilitate escape, the plank should not be placed at more than 30° and must be at least 30cm in width;
- If at any stage amphibians or reptiles are observed, works should stop immediately, and the animal should be allowed to disperse of its own accord, or an ecologist should be contacted for advice;

Habitats

5.1.7 To compensate for loss to Woodpasture and Parkland Priority Habitat, it is recommended that for all habitat removed (estimated to be 200m of driveway at 5m wide – 1000m²), an equivalent area of scrub encroachment from woodland or hedgerows around the estate grounds should be cleared and allowed to revert naturally to grassland. Specifically, bramble scrub along the riverbank and bramble and blackthorn scrub from an area approximately 250m south of the proposed driveway should be cleared (see Appendix 8.2; Figure 3).

5.1.8 Any trees removed should be replaced on a one-to-one basis, prioritising the use of native, broadleaf species.

5.2 Enhancements

5.2.1 It should be noted that tree planting is planned within the development. The undertaking of this activities, in addition to the following biodiversity enhancements, would improve the site for local wildlife and provide a net-gain in accordance with national planning policy (NPPF, 2019).

5.2.2 It was noted that a significant bird box scheme across the estate had been undertaken recently, consequently only bat boxes and hedgehog domes are recommended, including:

- 3 x Schwegler 1F Bat Box within woodland;

- 3 x Schwegler 2FF Bat Box within woodland; and
 - 2 x Hedgehog Domes within woodland
- 5.2.3 Bat boxes should be Schwegler types as these have been found to attract bats and to be durable.
- 5.2.4 The boxes should be installed high on trees (above 4m) and should be free from obstruction and light sources. Bat boxes should ideally be positioned facing a southerly aspect.
- 5.2.5 Bat boxes and hedgehog domes can be purchased on-line through suppliers such as The Wildlife Shop and NHBS.

6 CONCLUSION

- 6.1 High value habitat in the form of woodland, pasture and a river were observed on the site. However, disturbance to these habitats is very small scale, temporary and unlikely to impact upon any protected or priority species. Consequently, further surveys are deemed unnecessary.
- 6.2 No signs or evidence of protected, priority or rare species were observed during the survey visit. However, evidence of Schedule 9 Invasive Species American Mink was observed.
- 6.3 However, to minimise any residual risk of harm or impact to protected, priority or rare species, precautionary measures to avoid or minimise impact for bats, other mammals, birds, amphibians, reptiles and habitats (including UK priority habitats) are provided and should be implemented accordingly.
- 6.4 By implementing the biodiversity enhancements, the proposed development would be enhanced further for the benefit of local wildlife to create a net-gain in accordance with national planning policy.

7 REFERENCES

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8 APPENDICES

8.1 Appendix 1: Maps

Figure 1 – Map of proposed site. 11th November 2019.

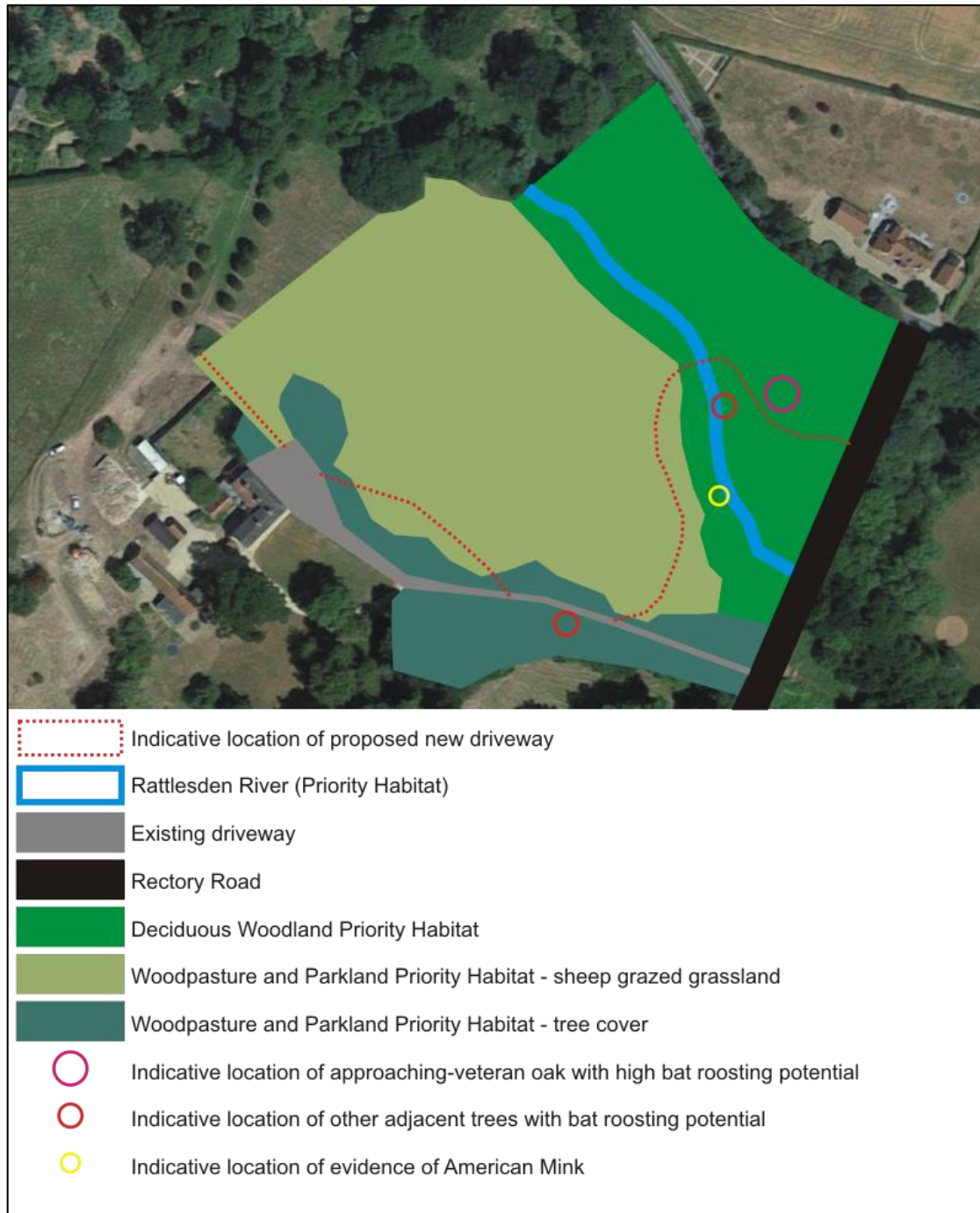


Figure 2 – Proposed plan



Figure 3 – Map showing potential areas where scrub clearance could be carried out to compensate for loss of UK priority habitat grassland.



8.2 Appendix 2: Photographs

Photograph 1 – View of proposed new main access, utilising existing but unused access. 11th November 2019.



Photograph by James Pickerin 2019

Photograph 2 – View of driveway route in woodland area. 11th November 2019.



Photograph by James Pickerin 2019

Photograph 3 – View of proposed position of bridge over river. 11th November 2019.



Photograph by James Pickerin 2019

Photograph 4 – View of proposed route of drive over sheep-grazed land. 11th November 2019.



Photograph by James Pickerin 2019

Photograph 5 – View of proposed route of sheep-grazed land, view from existing driveway. 11th November 2019. Note bramble scrub on edge of woodland that could be reduced to increase grassland habitat.



Photograph by James Pickerin 2019

Photograph 6 – View of existing main driveway. 11th November 2019.



Photograph by James Pickerin 2019

Photograph 7 – View of existing driveway and route of addition new driveway. 11th November 2019.



Photograph by James Pickerin 2019

Photograph 8 – View of existing hardstanding and route of addition new driveway. 11th November 2019.



Photograph by James Pickerin 2019

Photograph 9 – View of route of additional proposed driveway. 11th November 2019.



Photograph by James Pickerin 2019

Photograph 10 – View of oak tree approaching veteran in age. 11th November 2019.



Photograph by James Pickerin 2019

Photograph 11 – View of fissure and pruning cut in oak tree. 11th November 2019.



Photograph by James Pickerin 2019

Photograph 12 – View of willow tree with bat roosting potential. 11th November 2019.



Photograph by James Pickerin 2019

Photograph 13 – View of lime tree with bat roosting potential. 11th November 2019.



Photograph by James Pickerin 2019

Photograph 14 – View of ‘slipway’ and area with evidence of American Mink. 11th November 2019.



Photograph by James Pickerin 2019

8.3 Appendix 3: Recommended plant species

Table 2 - Selected UK native trees and shrubs.

| Common Name | Scientific Name |
|--------------------|---------------------------|
| Beech (H) | <i>Fagus sylvatica</i> |
| Bird Cherry | <i>Prunus padus</i> |
| Box (H) | <i>Buxus sempervirens</i> |
| Dogwood (H) | <i>Cornus sanguinea</i> |
| Elder (H) | <i>Sambucus nigra</i> |
| Field Maple (H) | <i>Acer campestre</i> |
| Goat Willow | <i>Salix caprea</i> |
| Guelder Rose (H) | <i>Viburnum opulus</i> |
| Hawthorn (H) | <i>Crataegus monogyna</i> |
| Hazel (H) | <i>Corylus avellana</i> |
| Holly (H) | <i>Ilex aquifolium</i> |
| Hornbeam (H) | <i>Carpinus betulus</i> |
| Juniper | <i>Juniperus communis</i> |
| Large-leaved Lime | <i>Tilia platyphyllos</i> |
| Oak | <i>Quercus robur</i> |
| Privet (H) | <i>Ligustrum vulgare</i> |
| Silver Birch | <i>Betula pendula</i> |
| Small-leaved Lime | <i>Tilia cordata</i> |
| Spindle (H) | <i>Euonymus europaeus</i> |
| Spurge Laurel | <i>Daphne laureola</i> |
| Wayfaring Tree | <i>Viburnum lantana</i> |
| White willow | <i>Salix alba</i> |
| Whitebeam | <i>Sorbus aria</i> |
| Wild Apple | <i>Malus sylvestris</i> |
| Wild Cherry (H) | <i>Prunus avium</i> |
| Wild Service-tree | <i>Sorbus torminalis</i> |
| Yew (H) | <i>Taxus baccata</i> |

(H) Common native hedging plants.