



ECOLOGICAL IMPACT ASSESSMENT

Land at Broadway Farm, Broad Oak, Botley

On Behalf of: Lucken Beck MDP Ltd

Client:	Lucken Beck MDP Ltd			
Project:	Land at Broadway Farm, Broad Oak, Botley			
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00	16/09/22	Catherine O'Reilly MCIEEM	George Sayer MCIEEM	George Sayer MCIEEM

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Validity:

This report is valid for 18 months from the date of the site visit. If works have not commenced by this date, an updated site visit should be carried out by a suitably qualified ecologist to assess any changes in the habitats present on site, and to inform a review of the conclusions and recommendations made.

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SUMMARY

Lizard Landscape Design and Ecology has been commissioned by Lucken Beck MDP Ltd to undertake an Ecological Impact Assessment of the proposed development of Land at Broadway Farm, Broad Oak, Botley (*Central Grid Reference: SU 50424 13310—hereafter referred to as ‘the site’*). A Preliminary Ecological Appraisal of the site was undertaken on 26th August 2022. An assessment of the ecological impact of the proposals was then undertaken using this baseline data.

The main body of the site is dominated by hard ground and modified grassland; habitats of low ecological value. Priority habitat of Lowland Mixed Deciduous Woodland (which is also designated as a SINC) lies adjacent to the site.

The adjacent locally designated site and priority habitat shall be protected through the incorporation of a 20m buffer between the site and adjacent habitat. This area shall be planted with native scrub with existing grassland enhanced to form a rough grassland.

The vegetation on site offers some limited suitable habitat for reptiles, amphibians, bats and invertebrates. Mitigation and compensation measures have been built into the design of the scheme in accordance with the mitigation hierarchy and BS42020: 2013.

Once avoidance, mitigation and compensation measures have been taken into account, the impacts of the planned development upon biodiversity will be **negligible and non-significant**.

1.0 INTRODUCTION

- 1.1 Lizard Landscape Design and Ecology has been commissioned by Lucken Beck MDP Ltd to undertake an Ecological Impact Assessment of the proposed development of Land at Broadway Farm, Broad Oak, Botley (*Central Grid Reference: SU 50424 13310– hereafter referred to as ‘the site’*).
- 1.2 The scope of this assessment has been determined with consideration of best-practice guidance provided by the Chartered Institute of Ecology and Environmental Management (CIEEM, 2018) and the Biodiversity: Code of practice for planning and development published by the British Standards Institute (BS 42020:2013).
- 1.3 A Preliminary Ecological Appraisal of the site was undertaken on the 26th August 2022. No further surveys were deemed necessary, and a full Ecological Impact Assessment was undertaken using this baseline data.
- 1.4 A summary of the results of these surveys, potential impacts of the proposals, and details of avoidance, mitigation and compensation measures have been detailed within this report. Residual impacts are then discussed once all mitigation and compensation measures have been taken into account.

Site Information

- 1.5 The survey area covers c. 1.6 hectares (ha) of tarmac hardstanding, grassland, short ephemeral vegetation, tall ruderal and a single existing building, located towards the north-western edge of Botley. The eastern section of the site is enclosed to the north and east by an area of woodland, classified on the priority habitats inventory as deciduous woodland. CCW Services Ltd; a warehouse and storage facility; is located to the central section of the site.

Surrounding Landscape

- 1.6 The surrounding landscape is a mix of agricultural land and built-up towns and villages, with the built mass of Hedge End extending for over 2.5 kilometres (km) to the west, while the properties of Botley extend c. 1.1 kilometres (km) to the east. To the north and south the landscape becomes more rural in character made up of agricultural fields, hedgerows, parcels of woodland and villages. Land directly to the west is composed of woodland - designated as *Priority Habitat Inventory - Deciduous Woodland* and recorded on the *National Forest Inventory as Broadleaved Woodland*.

Development Proposals

- 1.7 It is understood that the development proposals include the extension of the existing commercial area at Broadway Farm, to include areas of additional hardstanding and a new warehouse unit.

Report Aims

- 1.8 The aim of the baseline surveys and Ecological Impact Assessment has been:
- *Describe baseline conditions at the site;*
 - *Determine the importance of features which may be impacted by the scheme;*
 - *Identify impacts of the proposed development and set out appropriate avoidance, mitigation and compensation measures;*
 - *To identify any residual impacts;*
 - *To provide details of enhancements to be incorporated into the scheme;*
 - *Provide sufficient information to determine whether the project accords with relevant nature conservation policies and legislation, and where appropriate, to allow conditions or obligations to be proposed by the relevant authority.*

2.0 PLANNING POLICY AND LEGISLATION

Legislation

2.1 Legislation relating to wildlife and biodiversity of particular relevance to this EclA includes:

- *The Conservation of Habitats and Species Regulations 2017;*
- *The Wildlife and Countryside Act 1981 (as amended);*
- *The Natural Environment and Rural Communities (NERC) Act 2006.*

2.2 This above legislation has been addressed, as appropriate, in the production of this report.

National Planning Policy

2.3 The National Planning Policy Framework (NPPF) 2021 sets out the government planning policies for England and how they should be applied. 'Chapter 15: *Conserving and Enhancing the Natural Environment*' states that development should be '*minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures.*'

2.4 The Government Circular 06/2005, which is referred to by the NPPF, provides further guidance in respect of statutory obligations for biodiversity and geological conservation and their impact within the planning system.

3.0 METHODOLOGY

3.1 Desk Study

- 3.1.1 The Multi-Agency Geographic Information for the Countryside (*MAGIC*) was consulted for all designated sites, priority habitats and protected species licence records within a practicable zone of influence of the site. Due to the poor quality of the habitats present on the site, a full protected species records search was not considered proportionate to the predicted impact of the scheme. This approach is in accordance with current best practise guidance (CIEEM, 2020).

3.2 Preliminary Ecological Appraisal

- 3.2.1 The field survey was undertaken on 26th August 2022 by a Suitably Qualified Ecologist (Catherine O'Reilly, MCIEEM, 9 years professional experience). Weather conditions were warm (c.21°C), with a light south-westerly wind (Beaufort Scale 2), dry with 40% cloud cover.
- 3.2.2 The field survey comprised a walkover inspection of the land and covered all accessible parts of the site, including boundary features. Habitats were recorded according to the UK-Habs Classification System as described within the UK Habitats Manual (Butcher *et al*, 2020).
- 3.2.3 A list of plant species was compiled, together with an estimate of abundance made according to the DAFOR scale (*Table 05*). In addition, Target notes were used where necessary to provide supplementary information on features which were particularly interesting or significant to specific construction proposals, or too small to map.

- 3.2.4 The survey methodology was extended to provide more detail in relation to the sites potential to support rare or protected fauna, as described by the *Chartered Institute of Ecology and Environmental Management's Guidelines for Preliminary Ecological Appraisal (CIEEM, 2017b)*. The assessment of habitat suitability for protected, rare or priority species is based on current good practice guidance such as that presented in the *Herpetofauna Workers' Manual (Gent and Gibson, 2003)* and *Bat Surveys for Professional Ecologists: Good Practice Guidelines (Collin (ed.), 2016)*.

3.3 Preliminary Bat Roost Assessment

- 3.3.1 A Preliminary Bat Roost Assessment was undertaken on 26th August 2022 by Catherine O'Reilly (2016-20460-CLS-CLS) who undertook a ground level assessment of the existing trees within and adjacent to the site. The bat surveyor assessed the trees for direct evidence of bats evidence, such as;
- *Grease Marks;*
 - *Urine Stains;*
 - *Bat Droppings;*
 - *Feeding Remains;*
 - *Dead or Live Bats.*
- 3.3.2 Trees were visually identified from the ground, using binoculars where necessary, for any features that could be used by bats such as:
- *Woodpecker Holes;*
 - *Knot Holes;*
 - *Tear-outs;*
 - *Flush Cuts;*
 - *Double Leaders.*
- 3.3.3 Once features had been assessed the trees were then categorised in accordance with *Table 4.1 of the Bat Conservation Trust's Good Survey Guidelines (2016) (shown below)*:

Table No. 01 – Bat Roost Suitability Guidelines (BCT, 2016)

Category	Trees
`Negligible`	No suitable features identified.
`Low`	Tree of sufficient size / age to support bat roost features; but with none identified from the ground.
`Moderate`	Tree with features which, may support a bat roost of low conservation status.
`High`	A tree with several potential bat roost sites that are suitable for use by a large number of bats.

3.4 Badger Survey

3.4.1 The initial field survey was undertaken on 26th August 2022 in conjunction with the updated PEA. The survey area covered the red line boundary of the site, and all land within a 30m radius (where access was available).

3.4.2 The survey area was systematically searched for any evidence of badger such as:

- Setts.
- Latrines.
- Snuffle Holes.
- 'Push-unders' through boundary fencing.
- Hair caught on fencing or sett entrances.
- Prints left in mud or sand.
- Mammal tracks.

3.4.3 Any evidence was then mapped to allow the status and distribution of badger activity to be assessed.

3.5 Ecological Impact Assessment

3.5.1 The methodology for Ecological Impact Assessment (EclA) follows best practice guidelines set by the Chartered Institute of Ecology & Environmental Management (CIEEM): 'Guidelines for Ecological Impact Assessment' (CIEEM, 2018). This includes identifying the baseline conditions on the site and subsequently rating the potential effects of the development based on the sensitivity and value of the resource affected, combined with the magnitude, duration and scale of the impact (or change). This is initially assessed without mitigation measures, and then assessed again after allowing for the proposed mitigation measures; this provides the residual effects. The assessment is divided into construction effects and longer-term operational effects.

3.5.2 The CIEEM guidelines (2018) state that ecological features should be considered within a 'defined geographical context'. The geographical frame of reference used to determine ecological importance in this assessment is detailed below:

- *International and European;*
- *National;*
- *Regional;*
- *County;*
- *District;*
- *Local;*
- *Site Level;*
- *Negligible.*

3.5.3 Based upon CIEEM guidance, value was determined with reference to the following factors:

- *Its inclusion as a Designated Site or other protected area;*
- *The presence of habitat types of conservation significance, e.g. Habitats of Principal Importance (NERC 2006);*
- *The presence (or potential presence) of species of conservation significance e.g. Species of Principal Importance (NERC 2006);*

- *The presence of other protected species e.g. those protected under The Wildlife and Countryside Act 1981;*
- *The sites social and economic value.*

3.5.4 The ecological impacts resulting from the proposals were then described according to a defined set of characteristics as defined within '*Guidelines for Ecological Impact Assessment in the UK and Ireland*' (CIEEM, 2018). When describing impacts the assessment refers to characteristics such as the extent; magnitude; duration; frequency; and, reversibility of the impact in order to provide justification for any conclusions about the nature and likelihood of the impact described.

3.5.5 Where initial impacts have been identified as significant, avoidance, mitigation and compensation measures have been proposed to avoid, prevent or offset such effects. This assessment then considers residual impacts (*once all mitigation has been taken into account*), with any significant effects highlighted. A significant effect is defined as "*an effect which either supports or undermines biodiversity conservation objectives for 'important ecological features' or for biodiversity in general*". Enhancement has been proposed to ensure that the development represents a net gain in biodiversity in accordance with National Policy.

3.6 Constraints and Limitations

3.6.1 Due to the field survey consisting of only one site visit, certain species, particularly some of the flowering plants, may not have been visible and hence overlooked. These are accepted constraints associated with the standard *UKHabs Survey Methodology*.

3.6.2 No other limitations were encountered, or assumptions made during either the desk study or the field survey and it is considered that with the access gained and recording undertaken an accurate assessment of the site's ecological value has been made.

4.0 BASELINE ECOLOGICAL CONDITIONS

4.1 Designated Sites

Statutory Protected Sites

- 4.1.1 The desk study identified national statutory designated sites including Local Nature Reserves (LNRs), National Nature reserves (NNR) and Sites of Special Scientific Interest (SSSIs) within a 2.0km radius of the site, and international statutory designated sites including Special Areas of Conservation (SACs), Special Protection Areas (SPAs) and Ramsars (Wetlands of International Importance) within a 10.0km radius of the site. Where SAC's designated for their bat interest are present this ZoI has been extended to 12km in accordance with recent guidance (SDNP, 2020).
- 4.1.2 The following statutory protected sites are noted within the zone of influence of the proposed site:

Table No. 02 – Statutory Protected Sites

Site	Description	Location
<i>Solent and Southampton Water RAMSAR, SPA</i>	<i>The area is an important resort for surface-feeding duck, with winter populations of 2,000 wigeon; Anas penelope, 1,500 teal Anas crecca, and smaller numbers of other surface feeding ducks.</i>	<i>1.08 km S</i>
<i>Manor Farm LNR</i>	<i>144 (ha) of fields and woodland running along the River Hamble. The site overlaps the north-western extent of Solent and Southampton Water RAMSAR, SPA and is owned and run by Hampshire County Council.</i>	<i>1.08 km S</i>
<i>Upper Hamble Estuary and Woods SSSI</i>	<i>151 (ha) of salt marsh, reed-swamp, grassland, scrub, and ancient semi-natural woodland. A narrow zone of mudflats here supports a wide range of littoral species including marine worms, crustaceans, and molluscs.</i>	<i>1.22 km SE</i>

Wildern LNR	9.66 (ha) of Wetland Habitat – containing a mosaic of flooded meadows, ponds, woodland, and mire. Supports a rich assemblage of birds and invertebrates including lesser redpoll, brambling, and large skipper butterfly.	1.34 km W
River Itchen SAC	303 (ha) of wetland habitats, grassland, and broadleaved woodland. The river itself is a classic sub-type 1 chalk river and supports strong populations of Bullhead (<i>Cottus gobio</i>) and southern damselfly (<i>Coenagrion mercuriale</i>); the banks are dominated by <i>Ranunculus</i> species.	5.33 km NW

- 4.1.3 The site is located within the *Impact Risk Zone* of Solent and Southampton Water RAMSAR, SPA, SAC, and the River Itchen SAC. The proposed development does not meet the criteria however which would require the LPA to consult with Natural England regarding potential impacts upon nearby protected sites.

Non-Statutory Protected Areas

- 4.1.4 *Sites Importance for Nature Conservation (SINCs)* are designations applied to the most important non-statutory nature conservation sites. They are recognised by the *National Planning Policy Framework (2021)* and as such are material considerations when assessing planning applications. The following SINCs were identified within 2.0 km of the site:

Table No. 03 – Non-Statutory Protected Sites

Site	Location
Woodhouse Gully Wood	Adjacent E
Bottom Copse / Bushy Copse	0.4km NW
Church Lane Meadows	1.02km SE
Newhouse Farm Woodland and Swamp	1.0km NE
Gould Copse	1.0km SE
Botley Mill Woodland	1.1km E
Marshy Grassland, Botley	1.3km NE
Tanhouse Meadow	1.3km SW

Wangfield Copse	1.4km NE
Holly Tree Farm, Wood	1.6km NE
Holly Tree Farm Meadow	1.6km NE
Botley Park Wood	1.6km NE
Maddox Farm Meadows	1.7km NE
Turnmill & Pinkmead Copses	1.8km SE
Golf Course Meadow & Swamp	1.9km NE
Brigit Mary Garden	1.9km SW
Hogsty Corner	2.0km W

4.2 Habitats

4.2.1 Within 2.0 km of the site there are *Priority Habitats* of *Ancient and Semi-Natural Woodland, Deciduous Woodland, Coastal and Floodplain Grazing Marsh, Wood-Pasture and Parkland, Purple Moor Grass and Rush, Mudflats and Lowland Fens*. The site lies adjacent to deciduous woodland to the north and east.

4.2.2 Habitats within and adjacent to the site include:

- *u1b – Developed Land, Sealed Surface*
- *u1b5 – Existing Buildings*
- *g4 17 – Modified Grassland with Ruderal / Ephemeral*
- *h2b – Other Hedgerows*
- *h2a – Hedgerow (priority habitat)*
- *w1f – Lowland Mixed Deciduous Woodland*
- *w1g6 191 - Line of Trees with Ditch*

Developed Land, Sealed Surface

4.2.3 The central section of the site is dominated by buildings and hardstanding, comprising tarmac which runs between buildings as well as providing parking and storage space. This habitat is of **negligible** ecological value.

Buildings

- 4.2.4 A number of recently constructed metal-clad warehouses are present to the centre of the site. These buildings are in active commercial use and are of **negligible** ecological value.

Modified Grassland with Ruderal / Ephemeral

- 4.2.5 The south-eastern and north-western sections of the site are dominated by frequently mown modified grassland with a sward height of <5cm at the time of the survey. Grass species such as perennial rye grass *Lolium perenne*, cocks foot *Dactylis glomerata* and creeping bent *Agrostis stolonifera* dominate with frequent dandelion *Taraxacum officinale* agg., white clover *Trifolium repens* and black medic *Medicago lupulina*.
- 4.2.6 Discrete sections of the grassland, particularly the northern section of the western grassland, and south-eastern corner of western grassland, are dominated by tall ruderal species including bristly ox-tongue *Helminthotheca echinoides*, field mustard *Brassica rapa* and Canadian fleabane *Erigeron canadensis*. The grassland is considered to be of no more than **low site** value.

Other Hedgerows

- 4.2.7 A single row cherry laurel hedge *Prunus laurocerasus* runs along the western boundary of the western grassland. The hedge grows on a bank c. 1m in height which is colonised by species such as dock *Rumex* sp, false oat *Arrhenatherum elatius*, ragwort *Senecio jacobea*, nettle *Urtica dioica* and thistle *Cirsium arvense*. This habitat is of **negligible** value.

Hedgerow (Priority Habitat)

- 4.2.8 The western boundary of the site comprises a mixed species native hedgerow with trees. Oak *Quercus robur* and blackthorn *Prunus spinosa* dominate with areas of locally dominant hazel *Corylus avellana*. This hedgerow provides some connectivity between the site and the wider landscape, and is of **low local** value.

Lowland Mixed Deciduous Woodland

- 4.2.9 Adjacent to the northern and eastern boundaries of the eastern section of the site there is a c. 1.6-hectare (ha) parcel of Lowland Mixed Deciduous Woodland Priority Habitat. Species composition here was dominated by pedunculate oak and ash *Fraxinus excelsior* with frequent hawthorn *Crataegus monogyna*. Occasionally, there was silver birch *Betula pendula*, field maple *Acer campestre*, cherry *Prunus avium* and blackthorn. The understory here was dominated by ivy *Hedera helix* and bramble *Rubus fruticosus*. This habitat is of **local value**.

Line of Trees with Ditch

- 4.2.10 A line of mature oak trees form the northern boundary of the western grassland, with the eastern boundary of this area formed of a line of semi-mature Leyland cypress. A dry ditch runs beneath the oak trees. The cypress trees are of **negligible / low site value**, with the oak trees of **low local value**

4.3 Protected Species Assessment

Amphibians

Desk Study

- 4.3.1 A single record of GCN exists within 2.0 km of the site, located c. 1.9 km south-west of the proposed development.

Site Assessment

- 4.3.2 A single waterbody (P1) was identified within 500 m of the proposed development site. The pond covers an area of c. 650 sq metres (m²) and is in a fenced off area within private grounds, approximately 240 metres (m) to the east. It was not possible to access this pond at the time of survey. No records of GCN have been reported at this location and it is separated from the site by a tributary of the River Hamble, located c. 138.0 metres (m) to the east. The pond is located c. 2.8 km from the nearest confirmed breeding pond and all confirmed breeding sites within a 500m radius lay beyond either the River Hamble to the south and west, or beyond the northern extent of Southampton to the north.

- 4.3.3 Although GCN are known to disperse across large fields, there are no ponds located beyond the western boundary of the site until you reach the built mass of Hedge End and as such, it is considered that any GCN present within P1 are more likely to disperse north or south. Although it is not possible to entirely rule out the potential of GCN presence within the site boundaries, based on the above factors it is considered they are highly likely to be absent within the proposed construction zone. Given the absence of suitable waterbodies on site, and the relative isolation of the only other waterbody within 500 metres (m), as well as the poor terrestrial habitat on site, the site is considered to be of **negligible** value to GCN and no more than site value to amphibians such as common toad.

Reptiles

Desk Study

- 4.3.4 The data search returned numerous records of slow worm and common lizard, as well as a limited number of records for grass snake and adder, within 2.0 km of the site.

Site Assessment

- 4.3.5 The patchy areas of tall ruderal toward the north-west of the site provide some very limited optimal habitat for common, widespread reptiles species such as slow worm and common lizard. During the survey, various areas of debris were lifted with no reptiles found beneath. Due to the small extent of the suitable areas with the site, and the lack of evidence of reptiles during the site visit, the area is considered to be of **negligible / low value** to reptiles.

Bats

Desk Study

- 4.3.6 Common Pipistrelle (*Pipistrellus pipistrellus*), Soprano Pipistrelle (*Pipistrellus pygmaeus*), Noctule (*Nyctalus noctula*), Daubenton's (*Myotis daubentonii*) and Long-eared (*Plecotus* sp) bats have been recorded within 2.0 km of the site area.

Preliminary Roost Assessment

- 4.3.7 A full preliminary roost assessment of the trees within / adjacent to the site was undertaken, the results of which are shown below:

Table No. 04 –Assessment of Trees

Ref.	Description	Category
T01	Mature oak to the woodland edge with woodpecker hole to the western aspect at c. 5m height.	Moderate
TG02	Mature Oak trees of a size and age suitable for supporting a bat roost.	Low / Moderate

Foraging Suitability

- 4.3.8 The hard ground and buildings offer no suitable habitat. The modified grassland is homogenous and species-poor, therefore unlikely to harbour invertebrates to provide a food resource for the local bat population – this habitat is of **negligible** value. The treelines and woodland are likely to support foraging by small numbers of bats.

Badger

Desk Study

- 4.3.9 Badger records are confidential and were therefore not included in the data search, however they are likely to be present in suitable habitats locally.

Site Assessment

- 4.3.10 No evidence of badgers such as tracks, prints, latrines or snuffle holes were recorded on site during surveys. Given the absence of evidence of badgers within or adjacent to the site, the area is considered to be of **negligible value** to this species.

Birds

Desk Study

- 4.3.11 Breeding birds of conservation concern with 2.0 km of the site include skylark, song thrush, redwing, yellowhammer, and house sparrow.

Site Assessment

- 4.3.12 Optimal nesting habitat is limited to the adjacent western woodland. The area overall is likely to be of **low value** to breeding / foraging birds.

Invertebrates*Desk Study*

- 4.3.13 The data search returned records of numerous species of invertebrates within 2.0 km of the site including holly blue butterflies and stag beetle.

Site Assessment

- 4.3.14 Suitable habitat for invertebrates is limited to the eastern boundary woodland. The site in general lacks the floral diversity to support a good range of invertebrates and is likely to be of **negligible / low value** only.

Invasive Species*Desk Study*

- 4.3.15 Within 2.0km of the site, records of Schedule 9 species such as cotoneaster *Cotoneaster horizontalis*, montbretia *Crocsmia x crocosmiiflora*, giant hogweed *Heracleum mantegazzianum* exist. None of these records originate from within or directly adjacent to the site.

Site Assessment

- 4.3.16 The site was thoroughly searched for any invasive plant species, with none noted on site.

Dormouse*Desk Study*

- 4.3.17 The data search returned a single record of dormouse within 2.0 km of the site, with the closest located 1.5km to the north-east.

Site Assessment

- 4.3.18 The habitats within the proposed construction zone contain no favoured food plants such as hazel, and the lack of mature trees or scrub on site means there is little suitable cover for hibernation. The woodland and hedgerows to the boundaries do offer some optimal habitat. Due to the paucity of records of dormice in the locality, and the absence of suitable habitat, the proposed construction zone itself is considered to be of **negligible value** to dormice.

5.0 ASSESSMENT OF EFFECTS

- 5.0.1 Using the Guidelines for Ecological Impact Assessment (IEEM, 2006 & updated by CIEEM, 2018), the assessment set out below considers the potential impacts of the scheme prior to mitigation. Detailed avoidance, mitigation and compensation measures are then discussed, with residual impact identified once these measures have been taken into account. Wherever possible mitigation measures have been designed into the scheme as this gives greater certainty over deliverability and ensures the correct application of the 'Mitigation Hierarchy' (as advocated by BS42020:2013, Defra 2019 and CIEEM, CIRIA & IEMA 2016).
- 5.0.2 Protected species for which the site offers negligible suitability have been scoped out of further assessment.

5.1 Designated Sites

Potential Impacts

- 5.1.1 Indirect impacts upon Woodhouse Gully Wood SINC during the construction phase could include degradation of habitats through root compaction, airborne and waterborne pollution, as well as pollution caused by incidental release of dust, chemicals, fuels or waste materials. Impacts during the operational phase could include habitat degradation through inappropriate lighting or localised pollution events.

Mitigation and Compensation

- 5.1.2 A 20m semi-natural buffer shall be maintained between the new development and the adjacent SINC. The buffer shall be planted with native scrub and grassland to provide a gradual ecotone between the woodland and development.
- 5.1.3 All construction shall comply with best practice methods to minimise the effects of air and dust pollution, and water pollution events during construction. Measures shall include sheeting of lorries carrying loose loads to and from site, water suppression, reduced height of load tipping and the use of attenuation basins within the SuDS scheme to minimise surface water run-off from site. All re-fuelling and chemical storage shall take place in a designated area with appropriate containment measures in place and spill kits available.
- 5.1.4 All artificial lighting shall be kept to the minimum required level, with all light spill upon the woodland avoided.

Residual Impacts

- 5.1.5 Once mitigation measures have been considered, impacts shall be negligible.

5.2 Habitats*Potential Impacts*

- 5.2.1 Development proposals will result in the loss of areas of modified grassland, ornamental hedge and sealed surface. These habitats are of low ecological value, the loss of which would be of minor impact magnitude.
- 5.2.2 In the absence of mitigation, works could result in the damage to retained mature trees and woodland via root compaction, vehicle strike, dust smothering and pollution events.

Mitigation and Compensation

- 5.2.3 All construction shall comply with best practice methods to minimise the effects of air and dust pollution, and water pollution events during construction. Measures shall include sheeting of lorries carrying loose loads to and from site, water suppression, reduced height of load tipping and the use of attenuation basins within the SuDS scheme to minimise surface water run-off from site
- 5.2.4 All mature trees are to be retained and protected during construction and operation in accordance with BS5837.
- 5.2.5 The proposed landscape scheme includes areas of tree and shrub planting of species with a known wildlife value, and enhancement of the existing grassland within the buffer area. This planting shall adequately compensate for the loss of modified grassland and ornamental hedgerow resulting from the scheme.

Residual Impacts

- 5.2.6 Provided mitigation and protection measures are followed, there shall be no likely significant effect upon habitats arising as a result of this scheme.

5.3 Reptiles and Amphibians*Potential Impacts*

- 5.3.1 In the absence of mitigation, works could result in the killing or injuring of common, widespread reptiles and amphibians and removal of small areas of suitable habitat. Given the very low suitability of the majority of the site, impacts would be minor and unlikely to occur.

Mitigation and Compensation

- 5.3.2 As a precautionary approach, the tall ruderal / longer grassland along the bank shall be cut in two stages. The first stage shall reduce the height of vegetation to 150 mm. After a 24hr delay, the second cut shall reduce vegetation height to less than 50 mm. The work shall begin at the north-eastern corner of the eastern section of the site and proceed toward the east and south to encourage any reptiles present toward other areas of suitable habitat outside the construction zone.

Residual Impacts

- 5.3.3 Once mitigation measures are taken into account, the impact of the scheme shall be **negligible**.

5.4 Bats*Potential Impacts*

- 5.4.1 In the absence of avoidance / mitigation, the development could result in the damage / destruction of a bat roost within adjacent trees and the degradation of foraging habitat.

Mitigation and Compensation

- 5.4.2 All trees which have been identified as offering bat roost suitability shall be retained and protected within the scheme.
- 5.4.3 Lighting proposals shall comply with best practice guidance in relation to bats (BCT & ILP, 2018) where possible and incorporate features such as PIR and downward facing lights. All light spill upon the northern and eastern boundary shall be avoided.
- 5.4.4 The proposed landscape scheme includes areas of tree and shrub planting of species with a known wildlife value, and enhancement of the existing grassland within the buffer area. This planting shall adequately compensate for the loss of modified grassland and ornamental hedgerow resulting from the scheme.

Residual Impacts

- 5.4.5 The overall impact of the scheme will be **negligible**, with the proposed scheme resulting in a minor beneficial effect upon foraging bats.

5.5 Invertebrates

Potential Impacts

- 5.5.1 The development shall cause the loss of small areas of grassland suitable for small numbers of common, widespread invertebrates. In the absence of mitigation, construction may also cause the degradation of retained adjacent woodland habitat.

Mitigation and Compensation

- 5.5.2 Mitigation for the potential adverse effects upon suitable invertebrate habitat during the construction phase will be secured through the provision of a CEMP in advance of the works.
- 5.5.3 The proposed landscape scheme shall include areas native tree and shrub planting to compensate for the loss of grassland habitat. The majority of plant species used within the scheme shall have a recognised wildlife value such as plants listed on RHS Plants for Pollinators. Appropriate management of these areas shall be detailed within a LEMP which shall ensure that biodiversity value of the site is maximised.

Residual Impacts

- 5.5.4 The overall impact of the scheme will be **negligible**, with a minor beneficial impact in the long-term once vegetation has established.

6.0 ECOLOGICAL ENHANCEMENTS

6.1 The design of the proposed development includes ecological enhancements for the benefit of wildlife to ensure compliance with *Local Planning Policy* and the emerging *Environment Act 2021* which mandates a minimum 10% net gain in biodiversity across all development sites. Ecological enhancements which will be included as part of development proposals include.

- The use of flowering plants as listed within the RHS 'Plants for Pollinators' plant list within the soft landscape scheme to provide year-round interest for invertebrates;
- The provision of nest boxes for a variety of bird species within the northern aspects of trees within the adjacent woodland;
- Plant new species-rich hedging to the southern boundary of the site. Species should include hazel, blackthorn, crab apple, dogwood, spindle, and guelder rose;
- The semi-natural buffer between the development and adjacent SINC is to be planted with native shrubs including hawthorn, hazel, holly, field maple and wild cherry. The retained grassland should be left to form rough grassland managed by an annual cut.
- Bat boxes installed to the southern aspect of the building and the adjacent mature trees.
- Invertebrate boxes installed in a sunny position suitable for solitary bees.
- Areas of grassland to the south of the site which are damaged during construction shall be seeded with a native wildflower mix to increase the invertebrate foraging resource across the site.
- Log and compost piles should be installed in the buffer zone to provide refugia for reptiles and amphibians.

7.0 CONCLUSIONS

- 7.1 The main body of the site is dominated by hard ground and modified grassland; habitats of low ecological value. Mature trees and woodland found to the margins of the site are of higher value and shall be retained and protected within the scheme.
- 7.2 The proposed construction zone is located adjacent to priority habitat of Lowland Mixed Deciduous Woodland (which is also designated as a SINCC). A series of mitigation measures have been proposed which shall ensure the retained priority habitat and species which utilise it are protected throughout construction and operation.
- 7.3 The vegetation on site offers some limited suitable habitat for reptiles, common amphibians, bats and invertebrates. Mitigation and compensation measures have been built into the design of the scheme in accordance with the mitigation hierarchy and BS42020: 2013.
- 7.4 Once avoidance, mitigation and compensation measures have been taken into account, the impacts of the planned development upon biodiversity will be **negligible and non-significant.**

8.0 REFERENCES

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Table No. 05 – Species List for Habitat Parcels

Modified Grassland with Ruderal / Ephemeral

Common Name	Scientific Name	DAFOR
Bent	<i>Agrostis sp.</i>	F
Bristly Ox Tongue	<i>Helminthotheca echioides</i>	LD
Canadian Fleabane	<i>Erigeron canadensis</i>	F
Cocks-foot	<i>Dactylis glomerata</i>	O
Common Daisy	<i>Bellis perennis</i>	O
Common Nettle	<i>Urtica dioica</i>	F
Creeping Buttercup	<i>Ranunculus repens</i>	LF
Creeping Thistle	<i>Cirsium arvense</i>	O
Curled Dock	<i>Rumex crispus</i>	O
Curled Dock	<i>Rumex crispus</i>	O
Dandelion	<i>Taraxacum officinale</i>	O
Fescue	<i>Festuca sp.</i>	F
Field Mustard	<i>Brassica rapa</i>	LD
Ivy-leaved Speedwell	<i>Veronica polita</i>	R
Nettle	<i>Urtica dioica</i>	R
Perennial Ryegrass	<i>Lolium perenne</i>	D
Ragwort	<i>Jacobaea vulgaris</i>	F
Red Deadnettle	<i>Lamium purpureum</i>	R
Smooth Meadow-Grass	<i>Poa pratensis</i>	O
Thistle	<i>Cirsium sp.</i>	O
White Clover	<i>Trifolium repens</i>	R
Yorkshire fog	<i>Holcus lanatus</i>	F

Other Hedgerow

Common Name	Scientific Name	DAFOR
Cherry Laurel	<i>Prunus laurocerasus</i>	D

Hedgerow (Priority Habitat)

Common Name	Scientific Name	DAFOR
Ash	<i>Fraxinus excelsior</i>	O
Blackthorn	<i>Prunus spinosa</i>	D
Bramble	<i>Rubus fruticosus</i>	A
Dog Rose	<i>Rosa canina</i>	R
Field Maple	<i>Acer campestre</i>	O
Hawthorn	<i>Crataegus monogyna</i>	O
Hazel	<i>Corylus avellana</i>	LD
Pedunculate Oak	<i>Quercus robur</i>	D
Sycamore	<i>Acer pseudoplatanus</i>	R

Appendix A – Site Photographs



Image 01 – View across the eastern site area, looking north.



Image 02 – Existing hardstanding to the north-eastern corner of the site.



Image 03 – Site adjoint Woodhouse Gully Wood, which is located adjacent to the eastern boundary of the site.



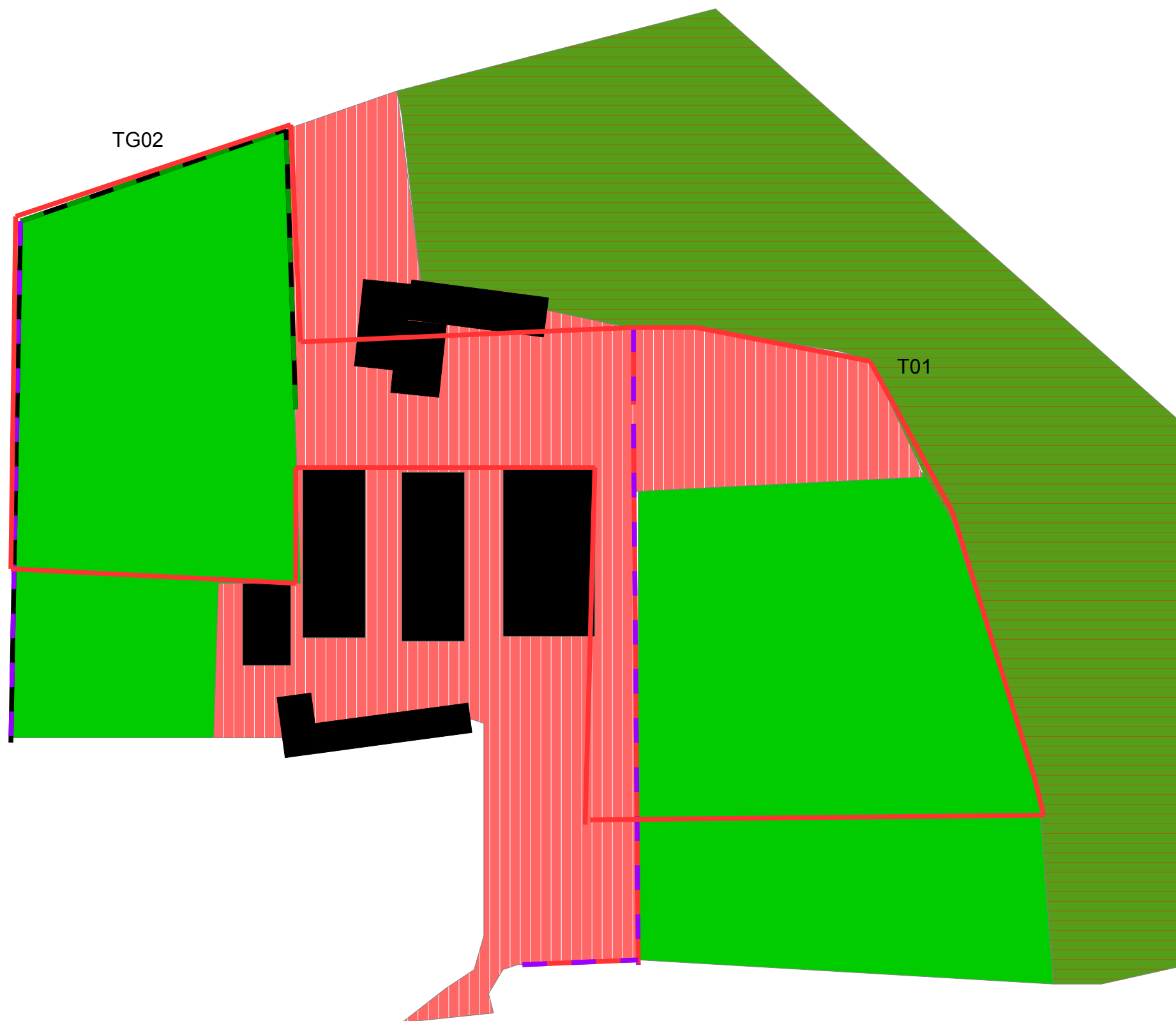
Image 04 – Western site area looking north.



Image 05 – View across the western site area looking south.



Image 06 – Access route around the site, via existing hard standing areas.



- Key:
-  = Sealed Surface
 -  = Modified Grassland
 -  = Building
 -  = Lowland Woodland
 -  = Line of Trees
 -  = Hedgerow (Priority Habitat)
 -  = Other Hedgerow
 -  = Survey Boundary



20m

**Figure No. 01 – Site Habitat Plan
Broadway Farm, Broad Oak**