



PRELIMINARY ECOLOGICAL APPRAISAL

FOR

LOMER FARM, MEOPHAM

Date of report	16 th September 2021
Date of survey	28 th April 2021
Author	
Reviewer	
Client Name	Hawkspare Ltd
Corylus reference	

SUMMARY

- A Preliminary Ecological Appraisal has been undertaken at Lomer Farm in April 2021.
- No rare or invasive botanical species were found.
- Twelve buildings have been assessed for bat roost potential. B4, B5 and B6 are excluded from the proposals and no further surveys are required. B3, B9, B11 and B12 support low roost potential and a single emergence survey during May-August is required. B1, B2, B7 and B8 support moderate roost potential and two emergence surveys during May-September are recommended. If bat roosts are identified, an EPS licence application will be required to permit the work.
- A habitat suitability assessment (HSI) and eDNA survey of one pond has been undertaken and the result was negative. There are no predicted impacts on great crested newts although the measures outlined for reptiles will help to avoid harm to other amphibian species such as common toad that may be present.
- No further surveys for protected species such as reptiles, dormice or badger have been recommended.
- Regarding breeding birds, recommendations have been made in relation to the timing of the demolition of buildings; this should be undertaken outside of the breeding bird season, limiting this work to 1st September – 1st March.
- Recommendations have been made for enhancing the Site for biodiversity in accordance with the National Planning Policy Framework. These include provision of nesting boxes for birds and native planting.

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1.0 INTRODUCTION

- 1.1 Corylus Ecology has undertaken a Preliminary Ecological Appraisal (PEA) at Lomer Farm, Meopham hereinafter referred to as the 'Site'. This updates a previous survey undertaken in June 2017. The Site is located to the west of the A227 and is approximately 0.6km to the south-west of Meopham village, centred at grid reference TQ 6416 6562.
- 1.2 The Site is a business farm in a rural setting with the local landscape dominated by arable fields and hedgerows. The survey area is approximately 0.7ha in size and consists of a series of buildings including industrial units, former stables and a house. The proposals involve the redevelopment of the business park on the same footprint.
- 1.3 The PEA survey involves a Phase 1 Habitat Survey, which provides information relating to the habitats within the Site and a Protected Species Survey which identifies potential for and, if apparent, evidence of use by protected species. In addition, it provides recommendations for further surveys if required. The Bat Building Survey is part of the Protected Species Survey and looks for evidence of and potential for roosting bats during daylight hours.
- 1.4 The objectives of the surveys were to:
- Classify and map the habitats within the Site according to those within the Phase 1 manual;
 - Determine the potential for protected species to occur within the Site, including an assessment of the building for potential to support bats;
 - Identify key ecological constraints to allow early avoidance or minimisation of ecological effects through appropriate design;
 - Suggest appropriate further surveys where necessary; and
 - Suggest measures to maintain and enhance biodiversity.

2.0 METHODOLOGY

2.1 Preliminary Desk Study

- 2.1.1 A preliminary search within 3km of the Site was undertaken for designated areas, priority habitats, and European Protected Species Mitigation licences using the MAGIC interactive mapping service (DEFRA, 2021).

2.2 Phase 1 Habitat Survey

- 2.2.1 The Site was subject to a Phase 1 Habitat Survey on 28th April 2021. The habitats present on the Site were mapped in accordance with the '*Handbook for Phase 1 Habitat Survey*' (JNCC, 2003). Habitat areas and features of topographical and/or ecological interest were described in the form of target notes. These were later used to create botanical species lists by target note area and also to create a colour coded Phase 1 Habitat map. All nomenclature follows Stace (2019). Non-native or invasive species were also identified and mapped where appropriate.

Survey Constraints

- 2.2.2 The survey also includes the mapping of invasive botanical species listed under Schedule 9 of the Wildlife and Countryside Act 1981, as well as those classed as rare or declining. However, some species are seasonally constrained, and therefore may not be visible on a single visit. The presence of densely vegetated habitats may restrict access.

2.3 Protected Species Assessment

- 2.3.1 The protected species assessment aims to assess the potential for protected species to occur due to the habitats present and does not include any species-specific survey methods designed to demonstrate whether the Site is in fact used by such species. The exception is badgers *Meles meles* as field signs associated with this species can be identified, including latrines, holes, pushes, paths and hairs.

Bat Building Survey

- 2.3.2 A bat building survey was undertaken by Jenny Passmore (licence number 2016-23195-CLS-CLS) and Becky Clover (2017-28806-CLS-CLS) of Corylus Ecology. The external survey consisted of an assessment of areas with potential for bats to roost; these include timber soffits, barge boards, holes in the walls and the roof. A search for evidence, such as droppings and staining immediately below potential roost areas and for droppings around the base of the building, such as on windowsills, was also undertaken. The suitability of any cavities was assessed and access points were looked for. There was no internal access for the update building survey in 2021.

- 2.3.3 Structures were placed into four categories of potential according to the Bat Conservation Trust guidelines: Negligible, Low, Moderate and High as detailed in Appendix 1 (Collins, 2016). Potential and evidence of breeding birds was noted.

Bat Habitat Assessment

- 2.3.4 The on-site habitats were assessed for their suitability to support foraging and commuting bats. Buildings and habitats were placed into one of four categories as in Appendix 1 (Collins, 2016):

2.4 Great Crested Newt

Habitat Suitability Index (HSI)

- 2.4.1 One pond within the Site was assessed in terms of its suitability for great crested newts *Triturus cristatus* (GCN) using the Habitat Suitability Index (HSI) Assessment. The HSI is a simple field and desk based assessment of waterbodies for their potential to support great crested newts. It involves examining ten "Factors" which are subsequently calculated and given a Suitability Index (SI). These ten factors are thought to affect the distribution of great crested newts (ARG, 2010) and include:

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

- 2.4.2 Once each factor and the accompanying suitability indices are ascertained, a simple geometric mean is calculated. The resulting figure, the HSI, is a value between 0.00 and 1 and is used against a categorical scale to establish the potential of encountering great crested newts. In general, waterbodies/ponds with high HSI scores are more likely to support great crested newts than those with low scores. However, the system is not sufficiently precise to allow the conclusion that any particular pond with a high score will support newts, or that any pond with a low score will not. Therefore, professional judgement, consideration of the surrounding habitat and location of the pond are all factors in deciding the suitability of the pond to support GCN.

Environmental DNA Presence/likely Absence Surveys

- 2.4.3 Environmental DNA (eDNA) testing works by detecting great crested newt DNA within ponds which has been deposited through shed skin cells, urine, faeces and saliva. The DNA can persist in water for several weeks, indicating recent occupation. The method can be carried out between 15th April and 30th June. It should be noted that eDNA surveys cannot determine population size; therefore if newts are confirmed as present and an EPS licence is required, full population surveys would need to be undertaken in a subsequent season.
- 2.4.4 The sampling procedure involves taking 20 water samples from around the pond, sampling as much of the waterbody as possible. The water samples are mixed, decanted and preserved in ethanol and are then sent off to a Natural England recognised laboratory for testing, following guidance issued by DEFRA. The water samples must be taken by a licenced ecologist and for health and safety two surveyors need to be present.
- 2.4.5 The eDNA survey was undertaken of one pond, P1, on 28th April 2021 and the licenced surveyors were [REDACTED] of Corylus Ecology. An egg search of the vegetation in the pond was undertaken at the same time.

3.0 RESULTS

3.1 Preliminary Desk Study

3.1.1 There are no designated areas within 3km of the Site. The nearest designated area is the North Downs Woodlands Special Area of Conservation (SAC) which is 3.3km to the east. This covers 287ha and supports the following Annex 1 habitat types:

- 9130 Asperulo-Fagetum beech forests
- 91J0 *Taxus baccata* woods of the British Isles
- 6210 Semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco-Brometalia*) (* important orchid sites)

Ancient Woodland

3.1.2 There are numerous fragments of Ancient Woodland within a 3km radius of the Site. The closest is Elbow wood which is 1.2km to the west of the Site.

Priority Habitats

3.1.3 The following priority habitats occur within 3km; deciduous woodland, traditional orchard, woodpasture and parkland and lowland calcareous grassland. The nearest area of calcareous grassland lies 0.7km to the south-east of the Site.

EPS Licences

3.1.4 One European Protected Species Mitigation (EPSM) licence has been granted by Natural England within 3km of the Site: this is a great crested newt (GCN) licence which is located 2.6km to the south-west of the Site and this permitted the damage and destruction of GCN habitat in 2013.

3.2 Phase 1 Habitat Survey

3.2.1 The Site consists of a number of interconnected buildings which are surrounded by hardstanding. To the south-east of the Site is a large pond. There are arable fields to the north, west and south and to the east are residential houses of Meopham village and the A227. The habitats present on Site are shown within Figure 1 and photographs of selected target notes are provided in Figure 2.

Scattered Trees

3.2.2 There is a group of trees to the west of the house B4 including a mature pear *Pyrus communis* T1, three mature apple trees *Malus sylvestris* T2-T4 and a mature ash *Fraxinus excelsior* T5. There are four planted semi-mature silver birch trees *Betula pendula* (G6) adjacent to B11.

Scrub

- 3.2.3 To the north of the buildings is an area of scrub (TN5) which includes spoil piles, consisting of rubble and cement fibre sheets. The vegetation includes a mature ash tree T5, maple *Acer* sp., elder *Sambucus nigra*, hawthorn *Crataegus monogyna* and blackthorn *Prunus spinosa*. Common nettle *Urtica dioica* and hogweed *Heracleum sphondylium* dominate the ground flora.
- 3.2.4 The front garden of the house supports tall shrubs and scrub TN4 including holly *Ilex aquifolium*, hawthorn, elder, rose *Rosa* sp., ivy *Hedera helix*, lilac *Syringa vulgaris*, firethorn *Pyracantha* sp. and traveller's joy *Clematis vitalba*.

Ephemeral

- 3.2.5 There is a track along the western edge of the Site which is rubble with ephemeral species TN1. The vegetation includes lords-and-ladies *Arum maculatum*, field forget-me-not *Myosotis arvensis*, common field-speedwell *Veronica persica*, thyme-leaved speedwell *V. serpyllifolia*, English stonecrop *Sedum anglicum*, rosebay willowherb *Chamaenerion angustifolium* and white dead-nettle *Lamium album*.

Grassland

- 3.2.6 There is a short garden lawn TN3a to the west of the house. It is managed to 400mm and consists of perennial rye-grass *Lolium perenne*, cock's foot *Dactylis glomerata*, red fescue *Festuca rubra*, white clover *Trifolium repens*, creeping buttercup *Ranunculus repens*, creeping thistle *Cirsium arvense*, cut-leaved cranesbill *Geranium dissectum*, common mallow, yarrow *Achillea millefolium*, fat hen *Chenopodium album*, self-heal *Prunella vulgaris*, creeping cinquefoil *Potentilla repens*, field bindweed, thyme-leaved speedwell *Veronica serpyllifolia* and daisy *Bellis perennis*.
- 3.2.7 In the section of lawn to the east of the house, TN3b, there is Spanish bluebell *Hyacinthoides hispanica*, early dog-violet *Viola reichenbach*, primrose *Primula vulgaris*, wood anemone *Anemone nemorosa*, red dead-nettle *Lamium purpureum* and ground ivy *Glechoma hederaceae*.

Species-Poor Hedgerow

- 3.2.8 The hedge TN2a along the western boundary consists of hazel *Corylus avellana* and hawthorn with occasional elder. This is approximately 3m high and not regularly managed. Parallel to this is a section of hedge TN2b composed of similar species and a short section (10m) of leylandii *Leylandii x cupressus* hedge which is 3m high.

Spoil

- 3.2.9 S1 is a pile of flint rubble at the base of a partially collapsed flint wall, S2 is a low mound of flint, ceramic, concrete and earth and S3 is a pile of concrete paving slabs and elder brash.

3.3 Bat Building Survey

- 3.3.1 The Site consists of light industrial units (B1, B2, B3, B11, B12), a residential dwelling (B4), associated garages and sheds (B5, B6), former farm buildings used as storage units (B7, B8, B9) and an open sided lean-to (B10).
- 3.3.2 Building B1 is constructed of brick with a pitched asbestos roof and sliding metal doors and is used as a workshop. The windows are blocked and there are skylights throughout. Internally, insulation is visible on parts of the roof pitches. B1 has 'Moderate' potential for roosting bats and the following features are suitable for bats:
- Two holes in the brick work on the western elevation leading into a possible cavity wall
 - A gap at the eaves on the southern side
 - A gap between the corrugated roof overlap and the gable wall.
- 3.3.3 B2 is an L-shaped brick building with a pitched asbestos roof and sliding metal doors. In B2a, insulation is visible on parts of the roof pitches. The windows are blocked and there are skylights throughout. The northern part of B2b is used for business storage and is open to the roof. There is an archway through the ground and first floor section of B2b. In the archway, there are some 50 raptor pellets and splashing from perches at the top of the blockwork pillars; the size, composition and shape of the pellets suggest that this is a kestrel *Falco tinnunculus* perch. B2 has 'Moderate' potential for roosting bats and the following features were noted:
- Holes in the brick work on the western elevation
 - Gap between the corrugated roof overlap and the gable wall.
 - Access gap at the eaves
 - Access into the building at the top of the blockwork, in the archway
- 3.3.4 B3 is a small brick building with a pitched asbestos sheet roof that overlaps the brick at the eaves by 2cm. There is potential for a bat roost beneath the overlap of the roof material on the south gable. B3 has 'Low' potential for roosting bats.
- 3.3.5 B4 is a two-storey brick house with a pitched slate roof on a north-south axis and concrete ridge tiles and a wooden barge board at the eaves. There is a single storey lean-to on the western elevation and a loft conversion with two dormer windows on the east roof pitch. The bay windows have small roofs with clay tiles that are moss covered and unsuitable for roosting bats. The eaves at the gables are mortared with

no potential for bats noted on the south or north elevations. B4 has 'Moderate' potential for roosting bats and the following features were noted:

- On the east and west elevations, a gap between the brick and the soffit with a maximum width of 200mm
- Lifted lead flashing where the dormers meet the roof pitch.
- Gaps in the roof tiles on the western pitch and where the roof pitch meets the dormer windows.

3.3.6 Building B5 is a dilapidated brick garage with flint stone footings. There is a flat corrugated metal roof which is open at the eaves on the western elevation. The garage is open-sided to the east. The walls are crumbling with ivy growth on the northern wall. A birds nest was present. B5 has 'Negligible' potential for roosting bats.

3.3.7 Building B6 is a brick building with a metal sliding door on the northern elevation and a simple pitched asbestos corrugated roof. The windows are boarded and there is a wooden barge board which is missing on the southern elevation, creating access at the eaves. The roof is lined with timber sarking. B6 has 'Moderate' potential for roosting bats.

3.3.8 B7 is a stable building with flint walls and half-pitched roof with slate tiles and concrete ridge tiles. The stable building adjoins a brick wall. The eaves are open and the windows have been boarded. There is a large hole in the roof where the slates are missing and birds' nests were noted, including three barn swallow *Hirundo rustica* nests. The concrete ridge tiles are suitable crevice features and the inside is suitable for void-dwelling species. B7 has 'Moderate' potential for void-dwelling bats.

3.3.9 Building B8 is of similar construction to B7 however there are windows on the western elevation making it light inside and no access points were noted. Birds' nests were noted. The concrete ridge tiles are suitable crevice features and the inside is suitable for void-dwelling species. B8 has 'Moderate' potential for void-dwelling bats.

3.3.10 Building B9 is a brick building with a simple pitched roof covered with slate tiles and concrete ridge tiles. Light enters the building through partially boarded windows, the eaves and a hole in the roof on the east pitch which is covered in clear plastic. There is a small boarded section where this building joins B8 and a mezzanine section to the north which is dark and 0.5m high. There is evidence of water ingress throughout. Birds' nests were noted. There is access in at the eaves on the western elevation. B9 has 'Low' potential for void-dwelling bats.

3.3.11 Building B10 is an open-sided timber framed shelter with a brick and flint wall and a mono-pitched, corrugated asbestos sheet roof. B10 has 'Negligible' potential for void-dwelling bats.

- 3.3.12 Building B11 is a brick building, used as a business unit with false ceilings installed. There is a modern pitched corrugated roof and a gap under the soffit on the eastern elevation. B11 has 'Low' potential for bats.
- 3.3.13 Building B12 is a small business unit constructed of a brick with a shallow pitched corrugated asbestos roof. There is a gap at the eaves on the western elevation. B12 has 'Low' potential for bats.
- 3.3.14 In addition, there are two timber garden sheds, Sh1 and Sh2 which did not support any potential bat roost features or evidence of bat use.

3.5 Protected Species Assessment

Bats

- 3.5.1 The apple tree T2 in the residential garden has two holes at 1m and 2m which has 'Low' potential to support roosting bats. No other mature trees within or adjacent to the Site support potential bat roost features.

Amphibians

- 3.5.2 In terms of terrestrial habitat, the Site is largely unsuitable for great crested newts and amphibians as it is dominated by hardstanding and buildings. However there is suitable habitat in the areas of spoil (S1-S3) and an area of scrub TN5. There is only a single pond within a 500m radius of the Site and this is located adjacent to the Site. An HSI assessment and an eDNA survey of the pond was undertaken in 2021 and the pond is discussed further in section 3.6 below.

Reptiles

- 3.5.3 There are limited areas of vegetated habitat for reptiles. The base of the hedgerow (TN2) may offer opportunities for reptiles if left unmanaged however it is currently managed.

Dormice

- 3.5.4 The hedgerow TN2 could be suitable dormouse habitat if there were habitat connections to areas of woodland in the local area however it is fairly isolated from any large block of woodland (550m to the west).

Badger

- 3.5.5 There were no field signs of badger found within the Site.

Breeding Birds

- 3.5.6 The scattered trees, scrub vegetation (TN4 and TN5) and buildings have the potential to support breeding birds during the main breeding season 1st March to 1st September.

3.6 Great Crested Newt Survey

HSI Assessment

- 3.6.1 Pond P1 was subject to an HSI assessment on 28th April 2021. P1 is a large circular waterbody, measuring 20m by 40m and the perimeter is vegetated with mature trees including mature ash, goat willow *Salix caprea* and hawthorn. Small fish were noted and there is a reasonable coverage of aquatic plants including bogbean *Menyanthes trifoliata*. The HSI score was 0.49 'poor' and the score for each factor is shown below. Although the score was 'poor', an eDNA survey was undertaken due to the proximity of the pond to the Site.

Factor	Result	Score
Location	1	1
Pond area	800m ²	0.98
Pond drying	Never	0.9
Water quality	Good	1
Shade	80%	0.6
Fowl	Minor	0.67
Fish	Major	0.01
Ponds	4	0.7
Terr'l habitat	Moderate	0.67
Macrophytes	20%	0.5
HSI	Poor	0.49

Table 1 - HSI Assessment for Pond 1

eDNA Results

- 3.6.2 P1 was sampled for GCN environmental DNA on the 28th April 2021. Only the western half of the pond was accessible for sampling and no GCN eggs or small newt eggs were found. The eDNA result was negative and is provided in Appendix 2.

4.0 EVALUATION

4.1 Overview

4.1.1 A Preliminary Ecological Appraisal has been undertaken at Lomer Farm, Meopham. The Site consists of an area of hardstanding with multiple buildings and a small areas of vegetated habitat including scrub and grassland habitats. The proposals include the redevelopment of the business park on the same footprint. It is understood that there will be no proposals for the residential area which includes B4, B5 and B6.

4.1.2 No rare or nationally scarce botanical species or habitats were identified on Site. The areas of greatest ecological interest are the mature fruit trees (T1-T3) and hedgerow (TN2a). Spanish bluebell was noted in the garden. This is an invasive species listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended). It should be removed, treated and disposed of carefully to prevent spreading.

4.2 Bat Building Survey

4.2.1 Aside from B5 and B10, the buildings support potential for roosting bats. Based on the features identified the following buildings support 'Low' potential; B3, B9, B11 and B12. The following buildings support 'Moderate' potential; B1, B2, B4, B6, B7, B8. Buildings B5 and B10 are open-sided without any cavity features and have 'Negligible' potential.

4.2.2 The proposals involve reconfiguration of the business park. The residential area and buildings B4, B5 and B6 are excluded from these proposals and no further surveys are recommended for these buildings.

4.2.3 A single bat emergence survey is recommended for B3, B9, B11 and B12. Two bat emergence surveys are recommended for B1, B2, B7 and B8. The surveys will determine whether bat roosts are present in the buildings. Under BCT guidelines, the survey should be undertaken between May and August. If a bat roost is detected a European Protected Species (EPS) licence will be required to permit the proposed work.

4.3 Protected Species

Amphibians

4.3.1 The adjacent pond has been subject to an HSI assessment for its suitability to support GCN and resulted in a score of 0.49 'poor'. A presence/likely absence eDNA survey has been carried out within the breeding period (28th April 2021) which resulted in a negative result. An egg search of vegetation was also undertaken and no GCN eggs were found. The pond network in the landscape is poor and the terrestrial habitat on Site is poor therefore there are no further recommendations in relation to great crested newts.

4.3.2 In terms of good practice measures for other amphibian species such as common toad *Bufo bufo*, it is recommended that vegetation is kept managed up until works start. It is also recommended that storage of any building materials or rubble is kept to hardstanding to avoid creating refugia.

Reptiles

- 4.3.3 There is no suitable reptile habitat identified within the development boundary. No further surveys are recommended. It is recommended that vegetation is kept managed and storage of any building materials or rubble is kept to hardstanding.

Dormice

- 4.3.4 There is no potential for dormouse habitat to be impacted as part of the proposals and no further surveys are required.

Badgers

- 4.3.5 There is no evidence of badgers and no potential for this species to be impacted by any of the proposed work.

Breeding Birds

- 4.3.6 All the buildings within the Site have potential to support breeding birds and the scrub (TN5 and TN4) and hedgerows (TN2) are also suitable. A regularly used kestrel perch was identified in B2.
- 4.3.7 All wild birds, including eggs and chicks, are protected against injury or killing and their nests are protected against damage or destruction when in use the Wildlife and Countryside Act (1981). It is therefore recommended that the destructive elements of the redevelopment are undertaken outside of the core breeding bird season limiting this work to the period 1st September to 1st March. If these dates do not coincide with clearance work then it is recommended that the buildings are checked by a suitably experienced ecologist before the works commence. If any breeding birds are noted, works in the vicinity of the nest would have to cease until fledging had occurred.

4.4 National Planning Policy Framework (NPPF)

- 4.4.1 The National Planning Policy Framework (NPPF, February 2019) sets out planning policies on the protection of biodiversity and geological conservation through the planning system. Section 15 of the National Planning Policy Framework (NPPF) states that planning policies and decisions should contribute to and enhance the natural and local environment by:
- safeguarding local wildlife-rich habitats and wider ecological networks including designated sites, wildlife corridors and stepping stones and areas identified by national and local partnership for enhancement;
 - promoting the conservation, restoration and enhancement of priority habitats and ecological networks;
 - promoting the protection and recovery of protected species; and

- identifying and pursuing opportunities for measurable net gains for biodiversity.

4.4.2 Regarding NPPF and the enhancement of the Site to benefit local wildlife, the measures detailed below can be included in the scheme to maintain and enhance biodiversity.

Bird boxes – house sparrow

4.4.3 It is recommended that terrace boxes for house sparrows *Passer domesticus* are incorporated into the soffits when the new buildings are being constructed. They can be installed during construction in groups at the eaves and they should be located out of direct sunlight, preferably on the eastern elevations and at least 3m above ground level. They should not be placed directly above any windows or doors.

4.4.4 The nesting spaces for sparrows can be incorporated into the soffits when the building is being renovated, by creating three entrance holes (32mm) in the back of the soffit board against the external wall. Two sparrow terraces should be created, with a total of six access holes. Alternatively, ready-made wooden or woodcrete (*Schwegler*) sparrow terraces are also widely available and two of these should be installed.

Bird boxes – kestrel

4.4.5 It is recommended that two nest boxes for kestrel are installed on nearby trees. Little owl and tawny owl may also use these types of boxes. Schwegler 2TF nest box or similar should be used. The box should be mounted at least 5m high, preferably with a clear flight path to the box. The box should face east, north-east or south-east.

Planting – trees and hedgerows

4.4.6 It is recommended that standard native trees and hedgerows are planted, particularly around the boundaries. This will enhance the local area and further improve connectivity for wildlife. The following native and fruit-bearing species should be selected for landscape planting:

- Pedunculate oak *Quercus robur*
- Field maple *Acer campestre*
- Whitebeam *Sorbus aria*
- Hawthorn *Crataegus monogyna*
- Hazel *Corylus avellana*
- Silver birch *Betula pendula*
- Plum *Prunus* sp.
- Crab apple *Malus sylvestris*
- Cherry *Prunus avium*

Planting – climbing plants and ornamental

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- 4.4.7 Generous native and nectar-rich planting should also be incorporated into the new development including climbing plants which can attract invertebrates such as moths and providing bird nesting opportunities. Suitable species include honeysuckle *Lonicera periclymenum*, ivy *Hedera helix*, clematis *Clematis* spp, jasmine *Jasminum* spp., and single-flowered roses *Rosa* spp.
- 4.4.8 It is recommended that a range of nectar rich plants are used for any landscape planting and flowering plants should be made available for as long as possible through the year by planting a combination of plants which flower during spring, summer and late summer.

5.0 CONCLUSION

- 5.1 A Preliminary Ecological Appraisal at Lomer Farm, Meopham has been undertaken. No rare or invasive botanical species were found.
- 5.2 Twelve buildings were assessed for bat roosting potential and the results were as follows:
- Negligible potential: B5 and B10
 - Low potential: B3, B9, B11 and B12
 - Moderate potential; B1, B2, B4, B6, B7, B8
- 5.3 The proposals involve reconfiguration of the business park. The residential area including buildings B4, B5 and B6 are excluded from these proposals and no further surveys are recommended for these buildings. Therefore a single emergence survey during May-August is recommended for B3, B9, B11 and B12. Two emergence surveys during May-September are recommended for B1, B2, B7 and B8. If a bat roost is detected and the works will impact the roost area, a European Protected Species (EPS) licence will be required to permit the proposed work.
- 5.4 The eDNA result for P1 was negative for great crested newt. There are no predicted impacts or further recommendations. Good practice measures have been outlined to avoid harm to other amphibian species such as common toad that may be present.
- 5.5 No other surveys for protected species such as reptiles, dormice or badger are recommended.
- 5.6 Regarding breeding birds, recommendations have been made in relation to the timing of the demolition of buildings; this should be undertaken outside of the breeding bird season, limiting this work to between 1st September to 1st March.
- 5.7 Recommendations for enhancing the ecological value of the proposed Site under the National Planning Policy Framework have been suggested and include installing two colonial house sparrow boxes, two kestrel boxes and planting of native trees, hedgerows and ornamental plants.

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- Key
- Survey Area
 - Tree
 - Species-poor Hedge
 - Dense Scrub
 - SI Semi-improved Grassland
 - Ephemeral
 - Waterbody
 - Hard Standing
 - Fence
 - TN1 Target Note 1
 - Spoil

Revision		Description	Date	Drawn by
Corple Ecology Ltd, Unit A3, Speyforth Road, Speyforth, near T100 Road, Grimsby, Lincolnshire, NG16 4JH. Contact: 01472 810000, info@corpleecology.co.uk				
Project: Lomer Farm, Meopham				
Title: Phase 1 and Bat Building Plan				
Drawing No: Figure 1		Scale: 1:1000		
NTS	A3	15.09.2021	JP	HL
Figure 1 Map				

Figure 2 - Annotated Photographs



The western end of B1 and B2a



Northern elevation of B2a



Building B2b, from the east



The archway of B2b showing gap at the top



Kestrel pellets and droppings



The western side of B3



House B4



Garage B6



Stables B7 and B8



B9



B11



B12

Gravesham Boro Council

Figure 2 -Annotated Photographs continued



Pond P1 adjacent to the site



Garden lawn TN3a and flint wall S1



Ephemeral TN1



Spoil S2



Hedge TN2a and ephemeral TN1



Spoil S3

Appendix 1 - Bat Assessment Criteria for Buildings, Trees and Habitats

Negligible	Habitat, building or tree with negligible features likely to be used by roosting, foraging or commuting bats.
Low	A building or tree with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space for shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity or hibernation). A habitat that could be used by small numbers of commuting bats such as a gappy hedgerow or unvegetated stream, but isolated i.e. not very well connected to the surrounding landscape by other habitat.
Moderate	A building or tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat, but which are unlikely to support a roost with high conservation status. Continuous habitat connected to the wider landscape that could be used by bats for commuting and foraging, such as lines of trees and scrub or linked back gardens.
High	A building or tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis, and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat. Continuous, high quality habitat that is well connected to the wider landscape that is likely to be used regularly by commuting bats, such as river valleys, hedgerows, lines of trees and woodland edge.

GREAT CRESTED NEWT **DETECTION RESULTS**

Company: Corylus Ecology
Order number: 102099
Project code: Lomer Farm, Meopham
Date of Report: 13 May 2021
Number of samples: 1

Thank you for sending your sample for analysis by NatureMetrics. Your sample has been processed in accordance with the protocol set out in Appendix 5 of Biggs et al. (2014).

Summary of the results

Results indicate GCN absence in 'P1'.

The negative controls were blank, the extraction blank control was negative, and the positive controls and their replicates were standard.

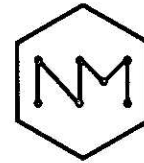
Results are based on the samples as supplied by the client to the laboratory. Incorrect sampling methodology may affect the results. Note that a negative result does not preclude the presence of Great Crested Newts at a level below the limits of detection.

Methods

eDNA was precipitated via centrifugation at 14,000 x g and then extracted using Qiagen Blood and Tissue extraction kits. qPCR amplification was carried out in 12 replicates per sample, using GCN specific primers and probes described in Biggs et al. (2014), in the presence of positive controls, extraction controls, and template negative controls. A score is given for the number of positive replicates out of 12.

The qPCR method follows the recommendations set out by NatureMetrics for Natural England in the qPCR validation project and helps improve the reliability of the interpretation of the data. Results from the assay are considered to have a high rating of confidence according to our Validation Scale (Harper et al. 2021).

The quality control methods exceed the requirements outlined in Biggs et al. (2014) Appendix 5. These consist of the use of kit blanks, additional extraction blanks and template negative controls, and positive controls standards of known concentration in triplicate to generate limits of detection and give confidence to the low and late amplifications.



**NATURE
METRICS**
DNA-BASED MONITORING

Kit ID	Pond ID	Arrived	Inhibition	Degradation	Score	Status
219	'P1'	30-Apr	No	No	0	Negative

END OF REPORT

Report issued by:

Contact:

