



Preliminary Ecological Appraisal and Preliminary Roost Assessment

Wellington Estate, known as Stanford End Farm, Barge Lane, Swallowfield, Reading, Berkshire, RG7 1SY

Stuart Mackay

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Draft	1	Beth Ellison-Perrett BSc (Hons) MSc, Consultant	03/08/2022
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Arbtech Consultant's Contact Details:

Beth Ellison-Perrett BSc (Hons) MSc
Consultant

Tel: 07874871277 **Email:** beth@arbtech.co.uk

Arbtech Consulting Ltd
<https://arbtech.co.uk>

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Industry Guidelines and Standards

This report has been written with due consideration to:

- Chartered Institute of Ecology and Environmental Management (2017). Guidelines for Preliminary Ecological Appraisal. 2nd edition. Chartered Institute of Ecology and Environmental Management, Winchester.
- Chartered Institute of Ecology and Environmental Management (2018). Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine. Version 1.1. Chartered Institute of Ecology and Environmental Management, Winchester.
- Chartered Institute of Ecology and Environmental Management (2017). Guidelines on Ecological Report Writing. Chartered Institute of Ecology and Environmental Management, Winchester.
- Chartered Institute of Ecology and Environmental Management (2020). Guidelines for Accessing, Using and Sharing Biodiversity Data in the UK. 2nd Edition. Chartered Institute of Ecology and Environmental Management, Winchester.
- British Standard 42020 (2013). Biodiversity – Code of Practice for Planning and Development.
- British Standard 8683:2021 (2021). Process for Designing and Implementing Biodiversity Net Gain.

Proportionality

The work involved in preparing and implementing all ecological surveys, impact assessments and measures for avoidance, mitigation, compensation and enhancement should be proportionate to the predicted degree of risk to biodiversity and to the nature and scale of the proposed development. Consequently, the decision-maker should only request supporting information and conservation measures that are relevant, necessary and material to the application in question. Similarly, the decision-maker and their consultees should ensure that any comments and advice made over an application are also proportionate.

This approach is enshrined in Government planning guidance, for example, paragraph 174 of the National Planning Policy Framework for England.

The desk studies and field surveys undertaken to provide a Preliminary Ecological Appraisal (PEA) might in some cases be all that is necessary.

(BS 42020, 2013)

Executive Summary

Arbtech Consulting Limited was instructed by Stuart Mackay to undertake a Preliminary Ecological Appraisal (PEA) and Preliminary Roost Assessment (PRA) at Wellington Estate, known as Stanford End Farm, Barge Lane, Swallowfield, Reading, Berkshire, Wokingham, RG7 1SY (hereafter referred to as “the site”). The survey was required to inform a planning application for the alteration and refurbishment of four buildings (B1-B4), including the demolition of B2, B3 and B4 (hereafter referred to as “the proposed development”).

The following is work you will need to commission to obtain planning permission and to comply with legislation. Further information, along with opportunities for biodiversity enhancement, are outlined in Table 7 of this report.

Ref	Summary of Survey Findings	Foreseen Impacts	Recommendations <i>Measures required to adhere to guidance, legislation and planning policies.</i>
Designated sites	The site lies within the impact risk zone for Stanford End Mill and River Loddon SSSI and the alteration and refurbishment of four buildings is not listed as a possible high risk for this designation.	No impacts to designated sites are anticipated due to the small scale and distance of the proposed development from such sites (where known).	The Local Planning Authority (LPA) may be required to consult with Natural England regarding potential impacts to Stanford End Mill and River Loddon SSSI.
Roosting bats (B1)	The building is a confirmed maternity roost for brown long-eared bats and has high habitat value. This is due to the many raised roof tiles on all elevations of the building, as well as the gaps around the chimneys. Furthermore, a maternity roost of brown long eared bats was observed within the loft space during the survey.	The proposed development will result in the renovation (the demolition of the single storey extension and the erection of a new extension). This will result in damage and modification of any bat roosts present and could cause disturbance, death or injury to bats.	Three bat emergence and re-entry surveys are required during the active bat season (May – September) to characterise the roosts present. At least two of the surveys should be completed during the optimal survey period mid-May to August inclusive. One of these surveys should be a dawn re-entry survey or infra-red cameras should be used as an aid. Surveys should be a minimum of two weeks apart. Four surveyors are required to provide full coverage of the building.

			Surveys are likely to be required before planning permission can be granted. An EPSL application to Natural England will be required. The EPSL application requires that surveys have been undertaken within the most recent active bat season and planning permission must have been granted and all relevant wildlife-related conditions have been discharged prior to submission. A Material Changes Check will be required within three months of the EPSL submission, if no survey work has been undertaken within that period. If bat droppings were found during the PRA, a sample will need to be sent off for DNA analysis to confirm the bat species present, to inform the EPSL application.
Roosting bats (B2-B6)	Buildings B2-B6 have negligible value for roosting bats due to a lack of potential roost features.	Bats are very unlikely to be roosting within these buildings and as such, there are not anticipated to be any impacts on bats in this location as a result of the proposed development.	Owing to the nature of the proposed development and the low potential for impacts to bat roosts, further bat surveys are considered to be disproportionate. It is anticipated that any risk to bats can be reduced to an acceptably low level through the implementation of a precautionary working method during and post-development.
Foraging and commuting bats	Species poor hedgerows could be used by local bat populations for foraging and commuting. These could also be used by bats dispersing from nearby roosts outside of the site.	The proposed development will not result in the removal of any habitats which could be used by foraging or commuting bats. The proposed development will include the use of lighting which could spill on to bat roosting, foraging or commuting habitat and deter bats from using these areas.	A low impact lighting strategy will be adopted for the site during and post-development.

Birds	Three of the six buildings onsite (B2, B3 and B6) contain birds' nests and swallow fledglings were observed within B2 during the survey. Furthermore, the species poor hedgerow, along the western boundary could provide suitable nesting for birds. Although, this hedge will not be removed during the proposed development.	Buildings B2 and B3 will be removed during construction. The loss of such habitats is likely to be inconsequential to local bird populations owing to their low value and the presence of more extensive habitat locally. However, the proposed development could result in the destruction or the disturbance and subsequent abandonment of active bird nests.	Works should be undertaken outside the period 1st March to 31st August. If this timeframe cannot be avoided, a close inspection of the buildings should be undertaken immediately, by qualified ecologist, prior to the commencement of work. All active nests will need to be retained until the young have fledged.
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Contents

1.0 Introduction and Context 8

 1.1 Background 8

 1.2 Site Context 8

 1.3 Scope of the Report 8

2.0 Methodology 10

 2.1 Desk Study 10

 2.2 Field Survey 10

 2.3 Limitations 11

3.0 Results and Evaluation 13

 3.1 Designated Sites 13

 3.2 Field Survey Results 13

4.0 Conclusions, Impacts and Recommendations 34

 4.1 Informative Guidelines 34

 4.2 Evaluation 34

5.0 Bibliography 44

 Appendix 1: Proposed Development Plan 46

 Appendix 2: Site Location Plan 47

 Appendix 3a: Habitat Survey Plan 48

 Appendix 3b: PRA Survey Plan 49

 Appendix 4: Legislation and Planning Policy 50

1.0 Introduction and Context

1.1 Background

Arbtech Consulting Limited was instructed by Stuart Mackay to undertake a Preliminary Ecological Appraisal (PEA) and Preliminary Roost Assessment (PRA) at Wellington Estate, known as Stanford End Farm, Barge Lane, Swallowfield, Reading, Berkshire, Wokingham, RG7 1SY (hereafter referred to as “the site”). The survey was required to inform a planning application for the alteration and refurbishment of four buildings (B1-B4), including the demolition of B2, B3 and B4 (hereafter referred to as “the proposed development”). A plan showing the proposed development is provided in Appendix 1.

The aim of the PEA was to obtain data on existing ecological conditions, and to conduct a preliminary assessment of the likely significance of ecological impacts on the proposed development. The aim of the PRA was to determine the presence or evaluate the likelihood of the presence of roosting bats, and to gain an understanding of how bats could use the site for roosting, foraging or commuting.

No previous ecology reports have been produced for this site by Arbtech Consulting Ltd or, to the author’s knowledge, by any other consultancy.

1.2 Site Context

The site is located at National Grid Reference SU 70627 63396 and has an area of approximately 0.6ha comprising modified grassland, scattered trees, species poor hedgerows and hard standing. It is surrounded by large arable plots with A33 to the east and the town of Reading to the north.

A site location plan is provided in Appendix 2.

1.3 Scope of the Report

The PEA element of this report describes the baseline ecological conditions at the site, evaluates habitats within the survey area in the context of the wider environment and describes the suitability of those habitats for notable or protected species. It identifies possible ecological constraints as a result of the proposed development and summarises the requirements for further surveys and mitigation measures to inform subsequent mitigation proposals, achieve planning or other statutory consent and to comply with wildlife legislation.

The PRA element of this report provides a description of all features suitable for roosting, foraging and commuting bats and evaluates those features in the context of the site and wider environment. It further documents any physical evidence collected or recorded during the site survey that establishes the presence of roosting bats. It provides information on possible constraints to the proposed development as a result of bats and summarises the requirements for any further surveys to inform subsequent mitigation proposals, achieve planning or other statutory consent and to comply with wildlife legislation.

To achieve this, the following steps have been taken:

- A desk study has been carried out.

- A field survey has been undertaken to record baseline information on the site and surrounding area including habitat types and their suitability for notable or protected species, including roosting bats.
- Invasive plant and animal species (such as those listed on Schedule 9 of the Wildlife & Countryside Act) have been identified.
- Potential impacts on features of value, as a result of the proposed development, have been identified.
- Recommendations for further surveys and mitigation have been made.
- Opportunities for the enhancement of the site for biodiversity have been set out.

2.0 Methodology

2.1 Desk Study

The desk study included a review of the magic.gov.uk database for statutory designated sites within a 2km radius of the site. Landscape value and the presence of notable habitats as well as granted European Protected Species Licence (EPSL) and notable species records held on magic.gov.uk database has also been considered where these are within influencing distance of the site.

2.2 Field Survey

The survey was undertaken by Beth Ellison-Perrett BSc (Hons) MSc, Consultant (Accredited Agent to Natural England Bat Licence Number: 2018-33540-CLS-CLS) on 13th July 2022.

Preliminary Ecological Appraisal

An extended habitat survey was undertaken, following the methodology set out in UK Habitat Classification User Manual (UK Habitat Classification Working Group, 2018). All land parcels are described and mapped and, where appropriate, target notes provide supplementary information on habitat conditions, features too small to map to scale, species composition, structure and management. Botanical species lists were compiled with reference to the DAFOR scale (D = Dominant; A = Abundant, F = Frequent, O = Occasional, R = Rare).

During the survey, habitats were assessed for their suitability to support protected species, and field signs indicating their presence recorded. The assessment takes into consideration the findings of the desk study, the habitat conditions on site and in the context of the surrounding landscape, and the ecology of the protected species.

Preliminary Roost Assessment

The PRA focussed on four built structures which will be affected by the proposed development as well as providing an overview of the wider site and the surrounding landscape for bat roosting, foraging and commuting habitat.

For any surveyed buildings:

A non-intrusive visual appraisal was undertaken from the ground, using binoculars to inspect the external features of the buildings for features which bats could use for roosting, including access or egress points and for signs of bat use including droppings, scratch marks, insect remains and urine smear marks. An internal inspection of the buildings was also made, including the living areas and any accessible roof spaces, using a torch and ladders. The surveyor paid particular attention to the floor and flat surfaces, window shutters and frames, lintels above doors and windows, and carried out a detailed search of numerous features within the roof space. An endoscope was used to complete a close-up inspection of any accessible features, where appropriate.

Suitability Assessment

Built structures were categorised according to the likelihood of bats being present and the types of roost that the identified features could support. This is summarised in Table 1 below. Roost suitability is classified as high, moderate, low and negligible and dictates any further surveys required before works can proceed.

Table 1: Features of a building that are correlated with use by bats

Classification	Feature of building and its context
Moderate to high	Buildings or structures with features of particular significance for larger numbers of roosting bats e.g. mines, caves, tunnels, icehouses and cellars. Habitat on site and surrounding landscape of high quality for foraging bats e.g. broadleaved woodland, tree-lined watercourses and grazed parkland. Site is connected with the wider landscape by strong linear features that would be used by commuting bats e.g. river and or stream valleys and hedgerows. Site is proximate to known or likely roosts (based on historical data). Buildings with high suitability could support roosts of high conservation value such as maternity or hibernation roosts.
Low	A small number of possible roost sites or features, used sporadically by individual or small numbers of bats. Potential roost features may be suboptimal for reasons such as shallow depth, poor thermal qualities or upwards orientation with exposure to inclement weather or predators. Habitat suitable for foraging in close proximity, but isolated in the landscape. Or an isolated site not connected by prominent linear features. Few features suitable for roosting, minor foraging or commuting.
Negligible	Unsuitable for use by bats.

2.3 Limitations

It should be noted that whilst every effort has been made to describe the baseline conditions within the survey area, and evaluate these features, this report does not provide a complete characterisation of the site. This assessment provides a preliminary view of the likelihood of protected species being present. This is based on suitability of the

habitats on the site and in the wider landscape, the ecology and biology of species as currently understood, and the known distribution of species as recovered during the searches of historical biological records.

A biological records data search has not been undertaken. However, given the location of the site, the nature of the habitats present and the assessed suitability of the site for protected or notable species, it is not anticipated that the purchase of biological records data will add any significant weight or alter the conclusions and recommendations outlined in this report.

These limitations have been taken into account during the evaluation of the site and requirement for further surveys and mitigation.

3.0 Results and Evaluation

3.1 Designated Sites

Details of any statutory designated sites within a 2km radius of the site, including their reasons for notification, are provided in Table 2 below.

The site lies within the impact risk zone for Stanford End Mill and River Loddon SSSI. The alteration and refurbishment of four buildings is not listed as a possible high risk with regard to this designation.

Table 2: Statutory designated sites within 2km radius of the site

Designated site name	Distance from site (approx.)	Reasons for notification from Natural England
Stanford End Mill and River Loddon Site of Special Scientific Interest (SSSI)	~110m southwest	The site comprises Stanford End Mill meadows, a series of traditionally-managed seasonally waterlogged hay meadows, and a 4 km stretch of the River Loddon, a tributary of the River Thames. The site is of interest particularly for nationally important populations of two rare plants: the fritillary <i>Fritillaria meleagris</i> , a native bulb of unimproved damp meadows now mainly confined to scattered localities in southern Britain, and the Loddon pondweed <i>Potamogeton nodosus</i> , a very rare aquatic species for which this length of the River Loddon is the national stronghold. The river supports a variety of coarse fish species, water voles and nesting birds, including little grebe, moorhen, coot, mute swan and kingfisher.

3.2 Field Survey Results

The results of the field survey are illustrated in Appendix 3. The weather conditions recorded at the time of the survey are shown in Table 3.

Table 3: Weather conditions during the survey

Date: 13/07/2022	
Temperature	25°C
Humidity	50%
Cloud Cover	60%
Wind	6mph
Rain	None

Habitats and Flora

The following habitats are present within and adjacent to the site:

- g4 230 66 modified grassland, frequently mown garden
- w1g 11 scattered trees
- u1e 69 fence
- h2b species poor hedgerow
- u1b5 buildings
- u1b 1160 developed land - hard standing and introduced shrubs

A description and photographs of each habitat are provided in Table 4.

Table 4: Description and photographs of habitats within and adjacent to the site

Habitat Type	Habitat description	Photograph
g4 230 66 modified grassland, frequently mown	To the south and west of B1 is a field of modified grassland which is subject to mowing, resulting in a sward of approximately 5cm in length. Species composition of the grass is comprised of cocks foot (D), perennial ryegrass (D), clover (D), plantain (A), common bent (F), creeping buttercup (F), dandelion (F), wild morning glory (O), creeping cinquefoil (O), selfheal (O), yarrow (O), cow parsley (O), thistle (O), teasel (O) and common brome (R). The section of modified grassland to the west of B1 will be impacted by the proposed plans but is of low ecological value.	

w1g 11 scattered trees	Throughout the modified grassland are scattered trees. These trees are comprised of silver birch, weeping willow, apple, Scandinavia beam tree and yew tree. They were assessed for habitat value for roosting bats, and none had any woodpecker holes or damaged limbs or other such features in which bats could roost. These trees will not be impacted by the proposed development.	
h2b species poor hedgerow	Along the western boundary of the site, is an intact but species poor hedge. The hedge is comprised of brambles (D), garden privet (O), dogwood (F), wisteria (O), grape (O) and beech (O). This hedge will remain in-situ and will not be affected by the proposed development.	

u1e 69 fence	Along the southern and western boundaries of the site, is a metal pole and wire mesh fencing. This is used to prevent the cows from accessing the gardens of B1. The fencing will not be removed during the proposed development.	
u1b5 buildings	There are six buildings onsite that were subject to a preliminary roost assessment. The main building (B1) is a confirmed maternity roost for brown long eared bats. More information on all six buildings is outlined within the preliminary roost assessment section below (table 5).	

u1b 1160 developed land - hard standing and introduced shrubs	To the north of the site and surrounding buildings B2-B6 are areas of hard standing. The hard standing is comprised of tarmac and stones and is used as a car park for the businesses onsite. Furthermore, adjacent to the southern elevation of B4 is an area of introduced shrubs which is comprised of rose bushes and is of negligible ecological value.	
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Fauna

Bats

A search of the MAGIC database returned three EPSLs within 2km of the site, the closest being ~890m to the southwest (EPSM2012-4757), which allowed impact on a breeding site as well as the destruction of a breeding site and resting place for common pipistrelles (*Pipistrellus pipistrellus*), brown long-eared bats (*Plecotus auritus*), and serotines (*Eptesicus serotinus*). The other EPSLs are >1500m away and concerned species such as common pipistrelles, soprano pipistrelles (*Pipistrellus pygmaeus*), and brown long-eared bats and allowed impact on a breeding site as well as the destruction of a breeding site and resting place. The site is located in a rural area of southern Berkshire. The landscape is dominated by large arable fields with A33 to the east and the town of Reading to the north. There are scattered woodland copses around the area which could be used by bats for shelter, foraging, and commuting. The results of the PRA are provided in Table 5. The main building (B1) supports a maternity roost for brown long eared bats, as observed within the loft during the PRA. Buildings B2-B6 have no evidence of roosting bats internally.

*Table 5: Assessment of the suitability of the site for bats***B1a Exterior****B1a – eastern elevation (pictured opposite).**

B1 is split into two sections, the main building (B1a) and a single storey building (B1b).

B1a is a semi-detached two-storey brick-built building with a multi-pitched roof clad in clay roof tiles. The roof tiles are in poor condition with many raised tiles under which bats could roost.

The doors and windows are wooden framed and appear in excellent condition with no suitable bat roosting sites.

The brickwork around the building appears in excellent condition with no gaps or cracks within which crevice-dwelling bats could roost.



B1a – southern and western elevations (pictured opposite).

The building has no soffits or fascia, as the brickwork extends up to the roof. There are no gaps in the brickwork in which bats could use to gain access internally.

The three hipped roofs on the western elevation are in poor condition with many raised tiles in which both crevice dwelling and void dwelling bats could utilise to roost and gain access into the loft void.



B1a – northern elevation (pictured opposite).

There are two chimneys located on the roof of the building. The brickwork on the chimneys is in good condition. There is no lead flashing around the bases of the chimneys and there are gaps in the tiles at the bases which allow access internally into the loft void.

The roof tiles on the northern elevation are also in poor condition, providing suitable habitat in which bats could roost under and gain access internally.



B1a Interior**B1a – loft space (pictured opposite).**

There is one loft space within the main roof void of B1a.

The roof structure is built from old timber beams including the ridge beam, which have sagged away from the roof lining, creating gaps in which bats could roost.

The roof is lined with bitumen felt which is in relatively good condition with no tears but there are gaps towards the ridge.

The floor of the loft space is lined with mineral wool insulation and there are timber boards in places.

Daylight enters the loft space through, gaps in the bitumen felt, around the chimneys and between the tops of the brick walls and beginning of the roof.

Approximate internal dimensions: 12m long x 9m wide x 2m high (floor to ridge height).



B1a Evidence of bats

A maternity roost of brown long eared bats was observed within the loft space of B1a.

Approximately 150-200 droppings were observed on the floor of the loft, directly below the ridge and extended throughout the loft space.

A sample of the bat droppings was retained for DNA analysis.

B1a Breeding birds and other incidental observations

There was no evidence of nesting birds located internally or externally on the survey building.



B1b Exterior

B1b is an attached single-storey brick-built building with a pitched and gabled roof clad in clay roof tiles. The roof tiles are in poor condition with many raised tiles under which bats could roost, however, there are no missing tiles.

The doors and windows are wooden framed and appear in excellent condition with no suitable bat roosting sites.

The brickwork around the building appears in excellent condition with no gaps or cracks within which crevice-dwelling bats could roost.

**B1b Evidence of bats**

There was no evidence of bat activity located internally in B1b. There was no evidence of bat use (e.g. bat droppings) found on external features. However, this kind of evidence is easily weathered away on the exterior of buildings and is rarely visible.

B1b Breeding birds and other incidental observations

There was no evidence of nesting birds located internally or externally on the survey building.

B2 Exterior**B2 – eastern and southern elevations (pictured opposite).**

B2 is a single-storey brick-built semi-detached outbuilding with a gabled roof clad asbestos roofing. The roof sheeting is in good condition with no raised sections under which crevice dwelling bats could roost.

The windows and doors are timber framed and are in good condition with no gaps around them in which bats could roost.

**B2 – northern elevation (pictured opposite).**

There are two brick gable ends which are in good condition. There are timber bargeboards on this gable end which are raised. The gaps are shallow and are likely to be too exposed to the elements to be suitable for bat roosting. However, bats could use the gaps to enter the building. There are double doors located on the northern elevation of the building. The double-doors are tight-fitting with no gaps around them that bats could use to enter the building.



B2 Interior (pictured opposite).

The roof structure is built from metal beams including the ridge beam. The roof is not lined, and the back of the asbestos roofing is exposed. Daylight enters through the windows on the northern and southern elevation.

The building has a vaulted ceiling with no loft space.

There are two brick gable ends to the east and west of the building. Daylight enters the building through gaps around the eastern gable end, between the roof and brick wall. Void dwelling bats, such as brown long-eared bats, could access the interior of the building via the gaps around the gable ends, however, the interior of the building is extremely light and prone to temperature fluctuations, reducing the suitability for roosting bats.

**B2 Evidence of bats**

There was no evidence of bat activity located internally in B2. There was no evidence of bat use (e.g. bat droppings) found on external features. However, this kind of evidence is easily weathered away on the exterior of buildings and is rarely visible.

B2 Breeding birds and other incidental observations

Multiple swallows' nests and swallow fledgling were observed nesting within B2. The nest is circled in red opposite.



B3 Exterior**B3 – northern and eastern elevations (pictured opposite).**

B3 is a single-storey metal framed outbuilding with a gabled roof comprising asbestos sheeting. The roof sheeting is in relatively good condition with no raised sections under which crevice dwelling bats could roost.

The eastern elevation is almost entirely open, with no doors or windows, allowing bats and birds to enter freely. However, this also means the building is prone to temperature fluctuations, adverse weather and is very light internally.

The walls are metal framed and clad in corrugated asbestos sheeting, which is in good condition, with the exception of where the walls meet the floor.

**B3 Interior (pictured opposite).**

The roof structure is built from metal beams but has no ridge beam. The roof is not lined, and the back of the asbestos roofing is exposed.

Daylight enters through the large open side of the eastern elevation.

The building has a vaulted ceiling with no loft space.

There are two gable ends to the east and west of the building.

Void dwelling bats, such as brown long-eared bats, and birds could access the interior of the building via the eastern elevation, however, the interior of the building is extremely light and prone to temperature fluctuations, reducing the suitability for roosting bats.

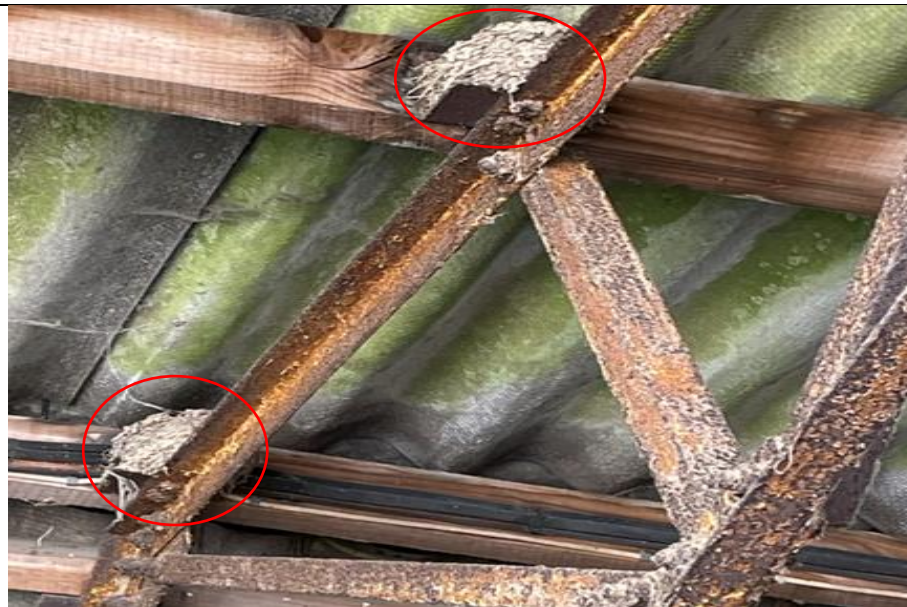


B3 Evidence of bats

There was no evidence of bat activity located internally in B3. There was no evidence of bat use (e.g. bat droppings) found on external features. However, this kind of evidence is easily weathered away on the exterior of buildings and is rarely visible.

B3 Breeding birds and other incidental observations

Multiple swallows' nests and swallow fledgling were observed nesting within B3. The nest is circled in red opposite.

**B4 Exterior****B4 – eastern and southern elevations (pictured opposite).**

B4 is a single-storey brick-built semi-detached outbuilding with a gabled roof clad in concrete roof tiles and asbestos roofing. The roof tiles and roof sheeting are in good condition with no raised sections under which crevice dwelling bats could roost.

The windows and doors are timber framed and are in good condition with no gaps around them in which bats could roost.

The gable ends are clad in wooden boarding which is in good condition with no warped boards.

The building has no soffits or fascia, as the brickwork extends up to the roof. There are no obvious gaps in which bats could use to gain access internally.



**B4 Interior (pictured opposite).**

The roof structure is built from metal beams but has no ridge beam. The roof is not lined, and the back of the asbestos roofing and roof tiles are exposed.

Daylight enters through the many windows on the northern and southern elevation of B4.

The building has a vaulted ceiling with no loft space.

There are three gable ends to the north, east and west of the building.

The building is single skinned and is extremely light and prone to temperature fluctuations, reducing the suitability for roosting bats.

Although, a wisteria plant has managed to grow internally there are no obvious gaps within the brickwork or roof which would allow access for bats or birds internally.



B4 Evidence of bats

There was no evidence of bat activity located internally in B4. There was no evidence of bat use (e.g. bat droppings) found on external features. However, this kind of evidence is easily weathered away on the exterior of buildings and is rarely visible.

B4 Breeding birds and other incidental observations

There was no evidence of nesting birds located internally or externally on the survey building.

B5 Exterior**B5 – eastern and southern elevations (pictured opposite).**

B5 is a single-storey wooden-built semi-detached outbuilding with a hipped roof clad in asbestos sheeting. The roof sheeting is in good condition with no raised sections under which crevice dwelling bats could roost.

The windows and doors are timber framed and are in good condition with no gaps around them in which bats could roost.

The wooden cladding walls are in relatively good condition, with the exception of the eastern most side of the southern elevation (highlighted in red), where there are missing boards towards the apex of the wall. These gaps would allow access internally into the building. Although, they will also let in high levels of light and adverse weather.



B5 Interior (pictured opposite).

There is one very small loft space located above the office on the southern elevation of B5. Approximate internal dimensions: 8m long x 2m wide x 1m high (floor to ridge height).

The loft structure is built from modern timber beams but has no ridge beam. The roof is not lined, and the back of the asbestos roofing and roof tiles are exposed.

Daylight enters where the roof meets the wall, but these gaps are too small for bats or birds to gain access internally.

The building is single skinned and is prone to temperature fluctuations, reducing the suitability for roosting bats.

**B5 Interior (pictured opposite).**

The remaining section of B5 has a vaulted ceiling with no loft space.

Daylight enters through the many windows on the eastern and southern elevation of B5.

The building is single skinned and is extremely light and prone to temperature fluctuations, reducing the suitability for roosting bats.



B5 Evidence of bats

There was no evidence of bat activity located internally in B5. There was no evidence of bat use (e.g. bat droppings) found on external features. However, this kind of evidence is easily weathered away on the exterior of buildings and is rarely visible.

B5 Breeding birds and other incidental observations

There was no evidence of nesting birds located internally or externally on the survey building.

B6 Exterior**B6 – southern and eastern elevations (pictured opposite).**

B6 is a single-storey metal framed outbuilding with a gabled roof asbestos sheeting. The roof sheeting is in relatively good condition with no raised sections under which crevice dwelling bats could roost.

The eastern, southern and northern elevations are almost entirely open, with no doors or windows, allowing bats and birds to enter freely. However, this also means the building is prone to temperature fluctuations, adverse weather and is very light internally.

The walls are metal framed and clad in corrugated asbestos sheeting, which is in good condition.



B6 Interior (pictured opposite).

The roof structure is built from metal beams but has no ridge beam. The roof is not lined, and the back of the asbestos roofing and roof tiles are exposed.

Daylight enters through the open sides on the norther, eastern and southern elevations.

The building has a vaulted ceiling with no loft space.

There are two gable ends to the north and south of the building.

The building is single skinned and is extremely light and prone to temperature fluctuations, reducing the suitability for roosting bats.

**B6 Evidence of bats**

There was no evidence of bat activity located internally in B6. There was no evidence of bat use (e.g. bat droppings) found on external features. However, this kind of evidence is easily weathered away on the exterior of buildings and is rarely visible.

B6 Breeding birds and other incidental observations

An old bird's nest was observed at the ridge of B6.



Other Species

MAGIC database returned one EPSL for hazel dormouse (2018-34337-EPS-MIT) approximately 1580m to the southeast which allowed the damage and destruction of a resting place. An assessment of the suitability of the site for protected or notable species is provided in Table 6.

Table 6: Assessment of the suitability of the site for protected or notable species

Species	Assessment of suitability
Amphibians	No suitable habitat is present on site for amphibians, and there are no ponds within 500m of the development area. Additionally, there are no GCN licenced sites within 2km of the site on the magic.gov.uk database, reducing the likelihood of them being present on site.
Reptiles	The habitats recorded on site are suboptimal as the site is predominately hard standing and modified grassland, which has a short sward height and retains a homogenous structure which may provide foraging opportunities but is open and exposed which increases the risk of predation. In addition, the site does not have any habitats which reptiles could seek shelter or bask within.
Badgers	The site itself is flat with minimal vegetation and therefore has little to offer in the way of foraging or sett excavation habitat. Also, no evidence of badgers was observed onsite. The works are impacting the buildings and a small section of modified grassland.
Hazel Dormouse	The short section of hedgerow along the western boundary is isolated and does not connect to any other hedgerows. The site contains exposed areas of hard standing and grassland which is suboptimal habitat for dormice. The site lacks vegetative structural diversity and wider connectivity to support dormice. Furthermore, for isolated habitats in the UK, research indicates that dormice require 20ha of woodland habitat to support a viable population (Bright <i>et al.</i> 1994). There was no evidence of dormice onsite when the survey was undertaken and there were no areas of woodland, over 20ha on or adjacent to site.
Hedgehog	The habitats recorded on site are suboptimal as the site is mainly hard standing and modified grassland which is constantly at a short sward length and retains a homogenous structure which limits foraging opportunities and is very exposed. No evidence of hedgehogs was observed onsite.
Otter	The river Loddon is located 100m south-west but is separated from the site by multiple fields, all of which are fenced. The site itself does not offer anything in the way of foraging opportunities or habitat for holt creation.
Water Vole	The river Loddon is located 100m south-west. There is no evidence of water voles onsite and there are no suitable habitats onsite for water voles to forage or seek shelter.
Birds	Three of the six buildings onsite (B2, B3 and B6) contain birds' nests and swallow fledglings were observed within B2 during the survey. Furthermore, the species poor hedgerow, along the western boundary could provide suitable nesting for birds. Although, this hedge will not be removed during the proposed development.

4.0 Conclusions, Impacts and Recommendations

4.1 Informative Guidelines

A summary of the relevant legislation and planning policies is provided in Appendix 4.

Likelihood of the Presence of Protected Species

Where physical evidence of the presence of protected species is indeterminate during the survey, the habitats on site are evaluated as to their likelihood to provide sheltering, roosting, foraging, basking or nesting habitat.

Where this report supports a planning application, the ecological interest of the study area (i.e. the area covered by the desk study and field survey) and the proposed development has also been evaluated in terms of the planning policies relating to biodiversity.

4.2 Evaluation

Taking the desk study and field survey results into account, Table 7 presents an evaluation of the ecological value of the site and also details any ecological constraints identified in relation to the proposed development which will comprise the alteration and refurbishment of four buildings (B1-B4), including the demolition of B2, B3 and B4.

Table 7: Evaluation of the site and any ecological constraints

Ref	Summary of Survey Findings	Foreseen Impacts	Recommendations <i>Measures required to adhere to guidance, legislation and planning policies.</i>	Biodiversity Enhancements <i>The Local Planning Authority has a duty to ask for enhancements under the NPPF (2021)</i>
Designated sites	The site lies within the impact risk zone for Stanford End Mill and River Loddon SSSI and the alteration and refurbishment of four buildings is not listed as a possible high risk for this designation. There is one non-statutory sites within 2km of the site, the closest being Stanford End Mill and River Loddon SSSI located 110m southwest from the site. The presence of non-statutory designated sites within 2km of the	No impacts to designated sites are anticipated due to the small scale and distance of the proposed development from such sites (where known).	The Local Planning Authority (LPA) may be required to consult with Natural England regarding potential impacts to Stanford End Mill and River Loddon SSSI.	None.

	site cannot be established without data from the Thames Valley Environmental Records Centre.			
Habitats and flora	There are no notable habitats within the site but five habitats are present within 2km of the site, the closest being lowland meadows located 100m south-west from the site.	No impacts to any notable habitats are anticipated due to the small scale and distance of the proposed development from such habitats.	None.	The following habitat creation and enhancement opportunities could be incorporated into the proposed development: • Native tree, hedgerow and shrub planting. • Creation of wildflower grassland. Species-specific enhancement opportunities are detailed later in this table.
Amphibians	No suitable habitat on site for amphibians, and there are no ponds within 500m of the development area.	No impacts are anticipated on amphibians, including great crested newt, as a result of the proposed development.	None.	None.
Reptiles	No suitable habitat on site for reptiles.	No impacts are anticipated on reptiles as a result of the proposed development.	None.	None.
Roosting bats (B1a)	The building is a confirmed maternity roost for brown long-	The proposed development will result in the renovation. This will result in damage and modification of any bat roosts present	Three bat emergence and re-entry surveys are required during the active bat season (May – September) to characterise the roosts present. At	To be confirmed upon completion of the surveys.

	eared bats and has high habitat value. This is due to the many raised roof tiles on all elevations of the building, as well as the gaps around the chimneys. Furthermore, a maternity roost of brown long eared bats was observed within the loft space during the survey.	and could cause disturbance, death or injury to bats.	least two of the surveys should be completed during the optimal survey period mid-May to August inclusive. One of these surveys should be a dawn re-entry survey or infra-red cameras should be used as an aid. Surveys should be a minimum of two weeks apart. Four surveyors are required to provide full coverage of the building. Surveys are likely to be required before planning permission can be granted. An EPSL application to Natural England will be required. The EPSL application requires that surveys have been undertaken within the most recent active bat season and planning permission must have been granted and all relevant wildlife-related conditions have been discharged prior to submission. A Material Changes Check will be required within three months of the EPSL submission, if no survey work has been undertaken within that period. If bat droppings were found during the PRA, a sample will need to be sent off for DNA analysis to confirm the bat species present, to inform the EPSL application.	
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Roosting bats (B1b)	B1b, the single storey building attached to B1a has high habitat value due to the many raised roof tiles on all elevations of the building.	The proposed development will result in the demolition of this single storey building. This will result in damage and modification of any bat roosts present and could cause disturbance, death or injury to bats.	Three bat emergence and re-entry surveys are required during the active bat season (May – September) to assess the presence or absence of bats. At least two of the surveys should be completed during the optimal survey period mid-May to August inclusive. One of these surveys should be a dawn re-entry survey or infra-red cameras should be used as an aid. Surveys should be a minimum of two weeks apart. Two of the surveyors surveying B1a can be used to provide full coverage of the building.	
Roosting bats (B2-B6)	Buildings B2-B6 have negligible value for roosting bats due to a lack of potential roost features.	Bats are very unlikely to be roosting within these buildings and as such, there are not anticipated to be any impacts on bats in this location as a result of the proposed development.	Owing to the nature of the proposed development and the low potential for impacts to bat roosts, further bat surveys are considered to be disproportionate. It is anticipated that any risk to bats can be reduced to an acceptably low level through the implementation of a precautionary working method during and post-development. This will include the following measures: • Works will be scheduled during the winter months (November to March) when bats are least likely to be present, insofar as is possible. • A toolbox talk will be given to contractors to make them aware of the possible presence of bats on the site.	To be confirmed upon completion of the surveys.

			- An inspection of the potential roost features identified in this report will be undertaken prior to works commencing. - In the unlikely event that a bat or evidence of bats is discovered during the development all work must stop and a bat licensed ecologist contacted for further advice.	
Foraging and commuting bats	Species poor hedgerows could be used by local bat populations for foraging and commuting. These could also be used by bats dispersing from nearby roosts outside of the site.	The proposed development will not result in the removal of any habitats which could be used by foraging or commuting bats. The proposed development will include the use of lighting which could spill on to bat roosting, foraging or commuting habitat and deter bats from using these areas.	A low impact lighting strategy will be adopted for the site during and post-development, which will include the following measures: - Use narrow spectrum light sources to lower the range of species affected by lighting. - Use light sources that emit minimal ultra-violet light. - Avoid white and blue wavelengths of the light spectrum to reduce insect attraction and where white light sources are required in order to manage the blue shortwave length content they should be of a warm / neutral colour temperature <4,200 kelvin. - Not use bare bulbs and any light pointing upwards. The spread of light will be kept in line with or below the horizontal. Light spill will be reduced via the use of low-level lighting used in conjunction with hoods, cowls, louvers and shields. Lights will also be directional	The following habitat creation and enhancement opportunities could be incorporated into the proposed development which would be beneficial for foraging bats: Planting of native tree, shrub and hedgerows to increase foraging opportunities.

			to ensure that light is directed to the intended areas only. External lighting will be on PIR sensors that are sensitive to large objects only (so that they are not triggered by passing bats) and will be set to the shortest time duration to reduce the amount of time the lights are on. Wall lights and security lights will be 'dimmable' and set to the lowest light intensity settings. There are several products on the market that allow the control of the light intensity and the duration that the lights are on. All lighting on the developed site will make use of the most up to date technology available.	
Badger	Badgers anticipated to be absent due to lack of suitable habitat and inaccessibility due to surrounding fencing.	No impacts are anticipated on badgers as a result of the proposed development.	None.	None.
Hazel dormouse	No evidence of dormice was found within the site. It is not anticipated that dormice are present on the site due to the lack of suitable of the habitats present. Furthermore, the	No impacts are anticipated on hazel dormice as a result of the proposed development.	None.	None.

	proposed development will only affect the buildings and a small section of improved grassland.			
Hedgehog	No evidence of hedgehogs was found within the site. It is not anticipated that hedgehogs are present on the site due to the lack of suitable of the habitats present.	No impacts are anticipated on hedgehogs as a result of the proposed development.	None.	None.
Otter	The river Loddon is located approximately 100m south-west of the site, however, there is no evidence of otters onsite and no suitable habitat for otters to forage or create holts onsite.	No impacts are anticipated on otters as a result of the proposed development.	None.	None.
Water vole	The river Loddon is located approximately 100m south-west of the site, however,	No impacts are anticipated on water vole as a result of the proposed development.	None.	None.

	there is no evidence of water voles onsite and no suitable habitat for water voles to forage or seek shelter onsite.			
Birds	Three of the six buildings onsite (B2, B3 and B6) contain birds' nests and swallow fledglings were observed within B2 during the survey. Furthermore, the species poor hedgerow, along the western boundary could provide suitable nesting for birds. Although, this hedge will not be removed during the proposed development.	Buildings B2 and B3 will be removed during construction. The loss of such habitats is likely to be inconsequential to local bird populations owing to their low value and the presence of more extensive habitat locally. However, the proposed development could result in the destruction or the disturbance and subsequent abandonment of active bird nests.	Works should be undertaken outside the period 1st March to 31st August. If this timeframe cannot be avoided, a close inspection of the buildings should be undertaken immediately, by qualified ecologist, prior to the commencement of work. All active nests will need to be retained until the young have fledged.	The installation of a minimum of two bird boxes on mature trees around the site boundaries or on retained buildings will provide additional nesting habitat for birds e.g. Schwegler No 17 Swift Nest Box (buildings) Schwegler 1SP Sparrow Terrace (buildings) Schwegler 1B Nest Boxes (trees) Schwegler 2H Robin Boxes (trees) Woodstone Nest Box (buildings or trees) Or a similar alternative brand. Tree boxes should be positioned approximately 3m above ground level where they will be sheltered from prevailing wind, rain and strong sunlight. Small-hole boxes are best placed

				approximately 1-3m above ground on an area of the tree trunk where foliage will not obscure the entrance hole. Swift and sparrow boxes should be positioned at the eaves of a building and can be incorporated into the fabric of the building during construction.
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5.0 Bibliography

- Biggs, J., Ewald, N., Valentini, A., Gaboriaud, C., Dejean, T., Griffiths, R., Foster, J., Wilkinson, J., Arnell, A., Brotherton, P., Williams, P. and Dunn, F. (2014). Using eDNA to Develop a National Citizen Science-based Monitoring Programme for the Great Crested Newt (*Triturus cristatus*). Biological Conservation. 183. 10.1016/j.biocon.2014.11.029.
- Bright, P., Morris, P., Mitchell-Jones, T. and Wroot, S. (2006). The Dormouse Conservation Handbook Second Edition.
- British Standard 42020 (2013). Biodiversity – Code of Practice for Planning and Development.
- British Standard 8683:2021 (2021). Process for Designing and Implementing Biodiversity Net Gain.
- Chanin, P. (2003). Ecology of the European Otter. Conserving Natura 2000 Rivers Ecology Series No. 10. Natural England, Peterborough.
- Chartered Institute of Ecology and Environmental Management (2017). Guidelines for Preliminary Ecological Appraisal. 2nd edition. Chartered Institute of Ecology and Environmental Management, Winchester.
- Chartered Institute of Ecology and Environmental Management (2018). Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine. Version 1.1. Chartered Institute of Ecology and Environmental Management, Winchester.
- Chartered Institute of Ecology and Environmental Management (2020). Guidelines for Accessing, Using and Sharing Biodiversity Data in the UK. 2nd Edition. Chartered Institute of Ecology and Environmental Management, Winchester.
- Collins, J. (2016). Bat Surveys for Professional Ecologists —Good Practice Guidelines, 3rd edition, Bat Conservation Trust, London.
- Defra (2007). Hedgerow Survey Handbook. A Standard Procedure for Local Surveys in the UK. Defra, London.
- Eaton, M.A., Aebischer, N.J., Brown, A.F., Hearn R.D., Lock, L., Musgrove, A.J., Noble, D.G., Stroud, D.A. and Gregory, R.D. (2015). Birds of Conservation Concern 4: the population status of birds in the United Kingdom, Channel Islands and Isle of Man. British Birds 108, 708–746
- Edgar, P., Foster, J. and Baker, J (2010). Reptile Habitat Management Handbook. Amphibian and Reptile Conservation, Bournemouth
<http://downloads.gigil.org.uk/website/Reptile%20Habitat%20Management%20Handbook.pdf>
- Garland, L. & Markham, S. (2008) Is Important Bat Foraging and Commuting Habitat Legally Protected?
<http://biodiversitybydesign.co.uk/cmsAdmin/uploads/protection-for-bat-habitat-sep-2007.pdf>
- Gent, T. and Gibson, S. (2003). Herpetofauna Workers' Manual. JNCC, Peterborough.
- Gilbert, G., Gibbons, D.W., and Evans, J. (1998) Bird Monitoring Methods: A Manual of Techniques for UK Key Species. The Royal Society for the protection of Birds, Sandy, Bedfordshire, England.
- Google Earth. Accessed on 10/08/2022.

- Harris, S., Cresswell, P. and Jefferies, D.J. (1989). Surveying badgers. Mammal Society, London.
- HMSO: Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 <https://www.legislation.gov.uk/ukxi/2019/579/contents/made>
- HMSO: Countryside & Rights of Way Act (2000) <http://jncc.defra.gov.uk/page-1378>
- HMSO: Natural Environmental and Rural Communities Act (2006) <http://www.legislation.gov.uk/ukpga/2006/16/contents>
- HMSO: The Protection of Badgers Act 1992 (as amended) <http://www.legislation.gov.uk/ukpga/1992/51/contents>
- HMSO: Wildlife and Countryside Act 1981 (as amended 01.04.1996) <http://jncc.defra.gov.uk/page-1377>
- Institution of Lighting Professionals (2018). Guidance Note 08/18 Bats and Artificial Lighting in the UK. Bats and the Built Environment Series Publication: http://www.bats.org.uk/news.php/406/new_guidance_on_bats_and_lighting.
- JNCC (2004). Bat Workers Manual, 3rd Edition. <http://jncc.defra.gov.uk/page-2861>
- Joint Nature Conservation Committee (2010). Handbook for Phase 1 habitat survey a technique for environmental audit. http://jncc.defra.gov.uk/PDF/pub10_handbookforphase1habitatsurvey.pdf
- Langton, T., Beckett, C. and Foster, J (2001). Great Crested Newt Conservation Handbook. Froglife. Suffolk. http://www.froglife.org/wp-content/uploads/2013/06/GCN-Conservation-Handbook_compressed.pdf
- Magic Database. <http://www.magic.gov.uk/MagicMap.aspx> Accessed on 10/08/2022.
- Mitchell-Jones, A.J. (2004). Bat Mitigation Guidelines. English Nature, Peterborough.
- National Planning Policy Framework (2021). <https://www.gov.uk/government/publications/national-planning-policy-framework--2>
- Natural England Designated Sites View. <https://designatedsites.naturalengland.org.uk/SiteSearch.aspx> Accessed on 10/08/2022.
- Natural England (2005). Organising Surveys to Determine Site Quality for Invertebrates: A Framework Guide for Ecologists. Natural England, Peterborough.
- Natural England (2007). Badgers and Development a Guide to Best Practice and Licensing. Natural England. Bristol. <http://www.wildlifeco.co.uk/wp-content/uploads/2014/03/badgers-and-development.pdf>
- Oldham R.S., Keeble J., Swan M.J.S. and Jeffcote M. (2000). Evaluating the Suitability of Habitat for the Great Crested Newt (*Triturus cristatus*). Herpetological Journal 10(4), 143-155. <https://www.thebhs.org/publications/the-herpetological-journal/volume-10-number-4-october-2000/1617-03-evaluating-the-suitability-of-habitat-for-the-great-crested-newt-triturus-cristatus/file>
- Panks, S., White., N., Newsome, A., Potter, J., Heydon, M., Mayhew, E., Alvarez, M., Russell, T., Scott, S.J., Heaver, M., Scott, S.H., Treweek, J., Butcher, B. and Stone, D. (2021). Biodiversity Metric 3.0: Auditing and Accounting for Biodiversity – Technical Supplement. Natural England.
- Strachan, R., Moorhouse, T. and Gelling, M. (2011). Water Vole Conservation Handbook. Third Edition. Wildlife Conservation Research Unit, Oxford.
- UK Habitat Classification Working Group (2018). UK Habitat Classification User Manual at <http://ecountability.co.uk/ukhabworkinggroup-ukhab>

Appendix 1: Proposed Development Plan



Appendix 2: Site Location Plan



Appendix 3a: Habitat Survey Plan



Appendix 3b: PRA Survey Plan



Appendix 4: Legislation and Planning Policy

LEGAL PROTECTION

National and European Legislation Afforded to Habitats

International Statutory Designations

Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) are sites of European importance and are designated under the EC Habitats Directive 92/43/EEC on the Conservation of natural habitats and of wild fauna and flora (the Habitats Directive) and the EC Birds Directive 2009/147/EC on the conservation of wild birds (the Wild Birds Directive) respectively. Both form part of the wider Natura 2000 network across Europe.

Under the Habitats Directive Article 3 requires the establishment of a network of important conservation sites (SACs) across Europe. Over 1000 animal and plant species, as well as 200 habitat types, listed in the directive's annexes are protected in various ways:

Annex II species (about 900): core areas of their habitat are designated as Sites of Community importance (SCIs) and included in the Natura 2000 network. These sites must be managed in accordance with the ecological needs of the species.

Annex IV species (over 400, including many Annex II species): a strict protection regime must be applied across their entire natural range, both within and outside Natura 2000 sites.

Annex V species (over 90): their exploitation and taking in the wild is compatible with maintaining them in a favourable conservation status.

SPAs are classified under Article 2 of the Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds both for rare bird species (as listed on Annex I) and for important migratory species.

The Conservation of Habitats and Species Regulations 2017 (as amended) form the legal basis for the implementation of the Habitats and Birds Directives in terrestrial areas and territorial waters out to 12 nautical miles in England and Wales (including the inshore marine area) and to a limited extent in Scotland and Northern Ireland.

Ramsar sites are designated under the Convention on Wetlands of International Importance, agreed in Ramsar, Iran, in 1971. The Convention covers all aspects of wetland conservation and recognises the importance of wetland ecosystems in relation to global biodiversity conservation. The Convention refers to wetlands as “*areas of marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six metres*”. However, they may also include riparian and coastal zones. Ramsar sites are statutorily protected under the Wildlife & Countryside Act 1981 (as amended 01.04.1996) with further protection provided by the Countryside and Rights of Way (CROW) Act 2000. Policy statements have been issued by the Government in England and Wales highlighting the special status of Ramsar sites. The Government in England and Wales has issued policy statements which ensure that Ramsar sites are afforded the same protection as areas designated under the EC Birds and Habitats Directives as part of the Natura 2000 network (e.g. SACs & SPAs). Further provisions for the protection and management of SSSIs have been introduced by the Nature Conservation (Scotland) Act 2004.

National Statutory Designations

Sites of Special Scientific Interest (SSSI) are designated by nature conservation agencies in order to conserve key flora, fauna, geological or physio-geographical features within the UK. The original designations were under the National Parks and Access to the Countryside Act 1949 but SSSIs were then re-designated under the Wildlife & Countryside Act 1981 (as amended). As well as reinforcing other national designations (including National Nature Reserves), the system also provides statutory protection for terrestrial and coastal sites which are important within the European Natura 2000 network and globally.

Local Statutory Designations

Local authorities in consultation with the relevant nature conservation agency can declare Local Nature Reserves (LNRs) under the National Parks and Access to the Countryside Act 1949. LNRs are designated for flora, fauna or geological interest and are managed locally to retain these features and provide research, education and recreational opportunities.

Non- Statutory Designations

All non-statutorily designated sites are referred to as Local Wildlife Sites (LWS) and can be designated by the local authority for supporting local conservation interest. Combined with statutory designation, these sites are considered within Local Development Frameworks under the Town and Country Planning system and are a material consideration during the determination of planning applications. The protection afforded to these sites varies depending on the local authority involved.

Regionally Important Geological Sites (RIGs) are the most important geological and geomorphological areas outside of statutory designations. These sites are also a material consideration during the determination of planning applications.

The Hedgerow Regulations 1997

The Hedgerow Regulations 1997 are designed to protect 'important' countryside hedgerows. Importance is defined by whether the hedgerow (a) has existed for 30 years or more; or (b) satisfies at least one of the criteria listed in Part II of Schedule 1 of the Regulations.

Under the Regulations, it is against the law to remove or destroy hedgerows on or adjacent to common land, village greens, SSSIs (including all terrestrial SACs, NNRs and SPAs), LNRs, land used for agriculture or forestry and land used for the keeping or breeding of horses, ponies or donkeys without the permission of the local authority. Hedgerows 'within or marking the boundary of the curtilage of a dwelling-house' are excluded.

National and European Legislation Afforded to Species

The Conservation of Habitats and Species Regulations 2017 (as amended)

The Conservation of Habitats and Species Regulations 2017 (as amended) aims to promote the maintenance of biodiversity by requiring the Secretary of State to take measures to maintain or restore wild species listed within the Regulations at a favourable conservation status.

The Regulations make it an offence (subject to exceptions) to deliberately capture, kill, disturb, or trade in the animals listed in Schedule 2, or pick, collect, cut, uproot, destroy, or trade in the plants listed in Schedule 4. However, these actions can be made lawful through the granting of licenses by the appropriate authorities. Licenses may be granted for a number of purposes (such as science and education, conservation, preserving public health and safety), but only after the appropriate authority is satisfied that there are no satisfactory alternatives and that such actions will have no detrimental effect on wild population of the species concerned.

The Wildlife and Countryside Act (WCA) 1981 (as amended)

The Wildlife and Countryside Act (WCA) 1981 (as amended) implements the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention 1979, implemented 1982) and implements the species protection requirements of EC Birds Directive 2009/147/EC on the conservation of wild birds in Great Britain (the birds Directive). The WCA 1981 has been subject to a number of amendments, the most important of which are through the Countryside and Rights of Way (CROW) Act (2000).

Other legislative Acts affording protection to wildlife and their habitats include:

- Deer Act 1991
- Natural Environment & Rural Communities (NERC) Act 2006
- Protection of Badgers Act 1992
- Wild Mammals (Protection) Act 1996

Badgers

Badgers *Meles meles* are protected under The Protection of Badgers Act 1992 which makes it an offence to:

- Wilfully kill, injure, take, or attempt to kill, injure or take a badger
- Cruelly ill-treat a badger, including use of tongs and digging
- Possess or control a dead badger or any part thereof
- Intentionally or recklessly damage, destroy or obstruct access to a badger sett or any part thereof
- Intentionally or recklessly disturb a badger when it is occupying a badger sett
- Intentionally or recklessly cause a dog to enter a badger sett
- Sell or offers for sale, possesses or has under his control, a live badger

Effects on development works:

A development licence will be required from the relevant countryside agency (i.e. Natural England, Natural Resources Wales, Scottish Natural Heritage) for any development works likely to affect an active badger sett, or to disturb badgers whilst they occupy a sett. Guidance has been issued by the countryside agencies to define what would constitute a licensable activity. It is not possible to obtain a licence to translocate badgers.

Birds

With certain exceptions, all birds, their nests and eggs are protected under Sections 1-8 of the WCA. Among other things, this makes it an offence to:

- Intentionally (or recklessly in Scotland) kill, injure or take any wild bird
- Intentionally (or recklessly in Scotland) take, damage or destroy (or, in Scotland, otherwise interfere with) the nest of any wild bird while it is in use or being built
- Intentionally take or destroy an egg of any wild bird
- Sell, offer or expose for sale, have in his possession or transport for the purpose of sale any wild bird (dead or alive) or bird egg or part thereof.
- Intentionally or recklessly obstruct or prevent any wild bird from using its nest (Scotland only)

Certain species of bird, for example the barn owl, bittern and kingfisher receive additional protection under Schedule 1 of the WCA and are commonly referred to as “Schedule 1” birds.

This affords them protection against:

- Intentional or reckless disturbance while it is building a nest or is in, on or near a nest containing eggs or young
- Intentional or reckless disturbance of dependent young of such a bird
- In Scotland only, intentional or reckless disturbance whilst lekking
- In Scotland only, intentional or reckless harassment

Effects on development works:

Works should be planned to avoid the possibility of killing or injuring any wild bird or damaging or destroying their nests. The most effective way to reduce the likelihood of nest destruction in particular is to undertake work outside the main bird nesting season which typically runs from March to August. Where this is not feasible, it will be necessary to have any areas of suitable habitat thoroughly checked for nests prior to vegetation clearance.

Schedule 1 birds are additionally protected against disturbance during the nesting season. Thus, it will be necessary to ensure that no potentially disturbing works are undertaken in the vicinity of the nest. The most effective way to avoid disturbance is to postpone works until the young have fledged. If this is not feasible, it may be possible to maintain an appropriate buffer zone or standoff around the nest.

Amphibians and Reptiles

The sand lizard *Lacerta agilis*, smooth snake *Coronella austriaca*, natterjack toad *Epidalea calamita*, pool frog *Pelophylax lessonae* and great crested newt *Triturus cristatus* receive full protection under Habitats Regulations through their inclusion on Schedule 2. Regulation 41 prohibits:

- Deliberate killing, injuring or capturing of Schedule 2 species
- Deliberate disturbance of species in such a way as:
 - To impair their ability to survive, breed, or reproduce, or to rear or nurture young;
 - To impair their ability to hibernate or migrate
 - To affect significantly the local distribution or abundance of the species
- Damage or destruction of a breeding site or resting place

With the exception of the pool frog, these species are also listed on Schedule 5 of the WCA and they are additionally protected from:

- Intentional or reckless disturbance (at any level)
- Intentional or reckless obstruction of access to any place of shelter or protection
- Selling, offering or exposing for sale, possession or transporting for purpose of sale.

Other native species of reptiles are protected solely under Schedule 5, Section 9(1) & (5) of the WCA, i.e. the adder *Vipera berus*, grass snake *Natrix natrix*, common lizard *Zootoca vivipara* and slow-worm *Anguis fragilis*. It is prohibited to:

- Intentionally or recklessly kill or injure these species.

Effects on development works:

A European Protected Species Licence (EPSL) issued by the relevant countryside agency (i.e. Natural England, Natural Resources Wales, Scottish Natural Heritage) will be required for works likely to affect the breeding sites or resting places amphibian and reptile species protected under Habitats Regulations. A licence will also be required for operations liable to result in a level of disturbance which might impair their ability to undertake those activities mentioned above (e.g. survive, breed, rear young and hibernate). The licences are to allow derogation from the relevant legislation, but also to enable appropriate mitigation measures to be put in place and their efficacy to be monitored.

Although not licensable, appropriate mitigation measures may also be required to prevent the intentional killing or injury of adder, grass snake, common lizard and slow worm, thus avoiding contravention of the WCA.

Water Voles

The water vole *Arvicola terrestris* is fully protected under Schedule 5 of the WCA. This makes it an offence to:

- Intentionally kill, injure or take (capture) water voles
- Intentionally or recklessly damage, destroy or obstruct access to any structure or place used for shelter or protection

- Intentionally or recklessly disturb water voles while they are occupying a structure or place used for shelter or protection

Effects on development works:

If development works are likely to affect habitats known to support water voles, the relevant countryside agency (i.e. Natural England, Natural Resources Wales, Scottish Natural Heritage) must be consulted. It must be shown that means by which the proposal can be re-designed to avoid contravening the legislation have been fully explored e.g. the use of alternative sites, appropriate timing of works to avoid times of the year in which water voles are most vulnerable, and measures to ensure minimal habitat loss. Conservation licences for the capture and translocation of water voles may be issued by the relevant countryside agency for the purpose of development activities if it can be shown that the activity has been properly planned and executed and thereby contributes to the conservation of the population. The licence will then only be granted to a suitably experienced person if it can be shown that adequate surveys have been undertaken to inform appropriate mitigation measures. Identification and preparation of a suitable receptor site will be necessary prior to the commencement of works.

Otters

Otters *Lutra lutra* are fully protected under the Conservation Regulations through their inclusion on Schedule 2. Regulation 41 prohibits:

- Deliberate killing, injuring or capturing of Schedule 2 species
- Deliberate disturbance of species in such a way as:
 - To impair their ability to survive, breed, or reproduce, or to rear or nurture young;
 - To impair their ability to hibernate or migrate
 - To affect significantly the local distribution or abundance of the species
- Damage or destruction of a breeding site or resting place

Otters are also currently protected under the WCA through their inclusion on Schedule 5. Under this Act, they are additionally protected from:

- Intentional or reckless disturbance (at any level)
- Intentional or reckless obstruction of access to any place of shelter or protection

Effects on development works:

A European Protected Species Licence (EPSL) issued by the relevant countryside agency (i.e. Natural England, Natural Resources Wales, Scottish Natural Heritage) will be required for works likely to affect otter breeding or resting places (often referred to as holts, couches or dens) or for operations likely to result in a level of disturbance which might impair their ability to undertake those activities mentioned above (e.g. survive, breed, and rear young). The licence is to allow derogation from the relevant legislation but also to enable appropriate mitigation measures to be put in place and their efficacy to be monitored

Bats

All species are fully protected by Habitats Regulations 2010 as they are listed on Schedule 2. Regulation 41 prohibits:

- Deliberate killing, injuring or capturing of Schedule 2 species (e.g. All bats)
- Deliberate disturbance of bat species in such a way as:
 - To impair their ability to survive, breed, or reproduce, or to rear or nurture young;
 - To impair their ability to hibernate or migrate
 - To affect significantly the local distribution or abundance of the species
- Damage or destruction of a breeding site or resting place

Bats are afforded the following additional protection through the WCA as they are included on Schedule 5:

- Intentional or reckless disturbance (at any level)
- Intentional or reckless obstruction of access to any place of shelter or protection

Effects on development works:

A European Protected Species Licence (EPSL) issued by the relevant countryside agency (i.e. Natural England, Natural Resources Wales, Scottish Natural Heritage) will be required for works are likely to affect a bat roost or an operation which are likely to result in an illegal level of disturbance to the species will require an EPSM licence. The licence is to allow derogation from the legislation through the application of appropriate mitigation measures and monitoring.

Hazel Dormice

Hazel dormice *Muscardinus avellanarius* are fully protected under Habitats Regulations through their inclusion on Schedule 2. Regulation 41 prohibits:

- Deliberate killing, injuring or capturing of Schedule 2 species
- Deliberate disturbance of species in such a way as:
 - To impair their ability to survive, breed, or reproduce, or to rear or nurture young;
 - To impair their ability to hibernate or migrate
 - To affect significantly the local distribution or abundance of the species
- Damage or destruction of a breeding site or resting place

Dormice are also protected under the WCA through their inclusion on Schedule 5. Under this Act, they are additionally protected from:

- Intentional or reckless disturbance (at any level)
- Intentional or reckless obstruction of access to any place of shelter or protection

Effects on development works:

Works which are liable to affect a dormice habitat or an operation which are likely to result in an illegal level of disturbance to the species will require a European Protected Species Licence (EPSL) issued by the relevant countryside agency (i.e. Natural England, Natural Resources Wales (NB: Hazel Dormouse are entirely absent from Scotland)). The licence is to allow derogation from the legislation through the application of appropriate mitigation measures and monitoring.

White Clawed Crayfish

There is a considerable amount of legislation in place in an attempt to protect the White-clawed crayfish *Austropotamobius pallipes*. This species is listed under the European Union's (EU) Habitat and Species Directive and is listed under Schedule 5 of the Wildlife and Countryside Act (1981). This makes it an offence to:

- Protected against intentional or reckless taking
- Protected against selling, offering or advertising for sale, possessing or transporting for the purpose of sale

It is also classified as Endangered in the IUCN Red List of Endangered Species. As a result of this and other relevant crayfish legislation such as the Prohibition of Keeping of Live Fish (Crayfish) Order 1996, a series of licences are needed for working with White-clawed and non-native crayfish. These are:

- A licence to handle crayfish (therefore survey work) in England
- A licence for the keeping of crayfish in England and Wales with an exemption for Signal crayfish (England).
- People in the post-code areas listed with crayfish present prior to 1996 do not need to apply for consent for crayfish already established. It does not, however, allow any new stocking of non-native crayfish into waterbodies. Consent for trapping of non-native crayfish for control or consumption is most likely to be granted in Thames and Anglian regions in the areas with "go area" postcodes.
- Harvesting of crayfish is prohibited in much of England and in any part of Scotland and Wales.

Effects on development works:

The relevant countryside agency (i.e. Natural England, Natural Resources Wales, Scottish Natural Heritage) will need to be consulted about development which could impact on a watercourse or wetland known to support white clawed crayfish. Conservation licences for the capture and translocation of crayfish can be issued if it can be shown that the activity has been properly planned and executed and thereby contributes to the conservation of the population. The licence will only be granted to a suitably experienced person if it can be shown that adequate surveys have been undertaken to inform appropriate mitigation measures. Identification and preparation of a suitable receptor site will be necessary prior to the commencement of the works.

Wild Mammals (Protection Act) 1996

All wild mammals are protected against intentional acts of cruelty under the above legislation. This makes it an offence to mutilate, kick, beat, nail or otherwise impale, stab, burn, stone, crush, drown, drag or asphyxiate any wild mammal with intent to inflict unnecessary suffering.

To avoid possible contravention, due care and attention should be taken when carrying out works (for example operations near burrows or nests) with the potential to affect any wild mammal in this way, regardless of whether they are legally protected through other conservation legislation or not.

Legislation Afforded to Plants

With certain exceptions, all wild plants are protected under the WCA. This makes it an offence for an 'unauthorised' person to intentionally (or recklessly in Scotland) uproot wild plants. An authorised person can be the owner of the land on which the action is taken, or anybody authorised by them.

Certain rare species of plant, for example some species of orchid, are also fully protected under Schedule 8 of the Wildlife and Countryside Act 1981 (as amended). This prohibits any person from:

- Intentionally (or recklessly in Scotland) picking, uprooting or destruction of any wild Schedule 8 species (or seed or spore attached to any such wild plant in Scotland only)
- Selling, offering or exposing for sale, or possessing or transporting for the purpose of sale, any wild live or dead Schedule 8 plant species or part thereof
- In addition to the UK legislation outlined above, several plant species are fully protected under Schedule 5 of The Conservation of Habitats and Species Regulations 2010. These are species of European importance. Regulation 45 makes it an offence to:
 - Deliberately pick, collect, cut, uproot or destroy a wild Schedule 5 species
 - Be in possession of, or control, transport, sell or exchange, or offer for sale or exchange any wild live or dead Schedule 5 species or anything derived from such a plant.

Effects on development works:

A European Protected Species Licence (EPSL) will be required from the relevant countryside agency (i.e. Natural England, Natural Resources Wales, Scottish Natural Heritage) for works which are likely to affect species of planted listed on Schedule 5 of the Conservation or Habitats and Species Regulations 2010. The licence is to allow derogation from the legislation through the application of appropriate mitigation measures and monitoring.

Invasive Species

Part II of Schedule 9 of the WCA lists non-native invasive plant species for which it is a criminal offence in England and Wales to plant or cause to grow in the wild due to their impact on native wildlife. Species included (but not limited to):

- Japanese knotweed *Fallopia japonica*
- Giant hogweed *Heracleum mantegazzianum*
- Himalayan balsam *Impatiens glandulifera*

Effects on development works:

It is not an offence for plants listed in Part II of Schedule 9 of the WCA 1981 to be present on the development site, however, it is an offence to cause them to spread. Therefore, if any of the species are present on site and construction activities may result in further spread (e.g. earthworks, vehicle movements) then it will be necessary to design and implement appropriate mitigation prior to construction commencing.

Injurious weeds

Under the Weeds Act 1959 any landowner or occupier may be required prevent the spread of certain 'injurious weeds' including (but not limited to):

- Spear thistle *Cirsium vulgare*
- Creeping thistle *Cirsium arvense*
- Curled dock *Rumex crispus*
- Broad-leaved dock *Rumex obtusifolius*
- Common ragwort *Senecio jacobaea*

Effects on development works:

It is a criminal offence to fail to comply with a notice requiring such action to be taken. The Ragwort Control Act 2003 establishes a ragwort control code of practice as common ragwort is poisonous to horses and other livestock. This code provides best practice guidelines and is not legally binding.

NATIONAL PLANNING POLICY (ENGLAND)***Environment Act 2021***

The Environment Act 2021 (EA 2021) received Royal Assent on 9 November 2021 and is expected to become fully mandated within the next couple of years. The Act principally creates a post Brexit framework to protect and enhance the natural environment. Through amendments to the Town and Country Planning Act 1990, the Act will require all planning permissions in England (subject to exemptions which is likely to include householder applications) to be granted subject to a new general pre-commencement condition that requires approval of a biodiversity net gain plan. This will ensure the delivery of a minimum of 10% measurable biodiversity net gain. The principal tool to calculate this will be the Defra Biodiversity 3.0 Metric. Works to enhance habitats can be carried out either onsite or offsite or through the purchase of 'biodiversity credits' from the Secretary of State. However, this flexibility may be removed (subject to regulations) if the onsite habitat is 'irreplaceable'. Both onsite and offsite enhancements must be maintained for at least 30 years after completion of a development (which period may be amended).

National Planning Policy Framework 2021

The National Planning Policy Framework promotes sustainable development. The Framework specifies the need for protection of designated sites and priority habitats and species. An emphasis is also made on the need for ecological infrastructure through protection, restoration and re-creation. The protection and recovery of priority species (considered likely to be those listed as species of principal importance under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006) is also listed as a requirement of planning policy.

In determining a planning application, planning authorities should aim to conserve and enhance biodiversity by ensuring that: designated sites are protected from harm; there is appropriate mitigation or compensation where significant harm cannot be avoided; measurable gains in biodiversity in and around developments are incorporated; and planning permission is refused for development resulting in the loss or deterioration of irreplaceable habitats including aged or veteran trees and also ancient woodland.

The Natural Environment and Rural Communities Act 2006 and the Biodiversity Duty

Section 40 of the Natural Environment and Rural Communities (NERC) Act 2006, requires all public bodies to have regard to biodiversity conservation when carrying out their functions. This is commonly referred to as the ‘biodiversity duty’.

Section 41 of the Act requires the Secretary of State to publish a list of habitats and species which are of ‘principal importance for the conservation of biodiversity’. This list is intended to assist decision makers such as public bodies in implementing their duty under Section 40 of the Act. Under the Act these habitats and species are regarded as a material consideration in determining planning applications. A developer must show that their protection has been adequately addressed within a development proposal.

LOCAL PLANNING POLICY

Wokingham Borough Local Development Framework: Adopted Core Strategy Development Plan (Adopted January 2010)

The Wokingham Borough Local Development Framework can be viewed here: <https://www.wokingham.gov.uk/EasySiteWeb/GatewayLink.aspx?allId=268860>.

The following planning policies have implications for developers in relation to bats:

- CP7 – Biodiversity: Development which may harm habitats or species of principle importance in England for nature conservation, whether directly or indirectly, will only be permitted if it has been clearly demonstrated that the need for the proposal outweighs the need to safeguard the nature conservation importance, that no alternative site that would result in less or no harm is available. It will need mitigation measures which can be put in place to prevent damaging impacts or appropriate compensation measures to offset the scale and kind of losses in place.

Wokingham Borough Council Biodiversity Action Plan 2012 – 2024 (Adopted June 2014)

The Wokingham Borough Council Biodiversity Action Plan 2012 – 2024 can be viewed here: https://www.wokingham.gov.uk/_resources/assets/attachment/full/0/414550.pdf.

EUROPEAN PROTECTED SPECIES POLICIES

In December 2016 Natural England officially introduced the four licensing policies throughout England. The four policies seek to achieve better outcomes for European Protected Species (EPS) and reduce unnecessary costs, delays and uncertainty that can be inherent in the current standard EPS licensing system. The policies are summarised as follows:

- Policy 1; provides greater flexibility in exclusion and relocation activities, where there is investment in habitat provision;

- Policy 2; provides greater flexibility in the location of compensatory habitat;
- Policy 3; provides greater flexibility on exclusion measures where this will allow EPS to use temporary habitat; and,
- Policy 4; provides a reduced survey effort in circumstances where the impacts of development can be confidently predicted.

The four policies have been designed to have a net benefit for EPS by improving populations overall and not just protecting individuals within development sites. Most notably Natural England now recognises that the Habitats Regulations legal framework now applies to 'local populations' of EPS and not individuals/site populations.