

**ADDITIONAL CAR PARKING,
PROLOGIS PARK BIRMINGHAM INTERCHANGE,
BLACKFIRS LANE, SOLIHULL**

ECOLOGICAL MITIGATION STRATEGY

A Report to: IAC Group Ltd.
c/o CBRE

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REPORT VERIFICATION AND DECLARATION OF COMPLIANCE

This study has been undertaken in accordance with British Standard 42020:2013 “Biodiversity, Code of practice for planning and development”.

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The information which we have prepared is true and has been prepared and provided in accordance with the Chartered Institute of Ecology and Environmental Management’s Code of Professional Conduct. We confirm that the opinions expressed are our true and professional bona fide opinions.

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1. INTRODUCTION

1.1 PROJECT BACKGROUND

This Ecological Mitigation Strategy (EMS) should be read in combination with the Ecological Impact Assessment (EclA), Report RT-MME-153311-04 and the Biodiversity Impact Assessment (BIA), Report RT-MME-153311-05, for the proposed development.

Middlemarch Environmental Ltd was commissioned by IAC Group Ltd. c/o CBRE to prepare an Ecological Mitigation Strategy (EMS) associated with a proposed development at Prologis Park Birmingham Interchange in Solihull.

Middlemarch Environmental Ltd previously completed a suite of ecological and arboricultural assessments in 2016 to support a planning application (PL/2016/02001/PPOL) associated with the construction of Units A and B, comprising:

- Preliminary Ecological Appraisal (Report RT-MME-121758);
- Great Crested Newt Habitat Suitability Index Assessment (Report RT-MME-122297-01);
- Reptile Survey (Report RT-MME-122297-02);
- Breeding Bird Survey (Report RT-MME-122297-03);
- Bat Surveys (Report RT-MME-122297-04);
- Arboricultural Survey (Report RT-MME-122442-01); and,
- Arboricultural Impact Assessment (Report RT-MME-122442-02).

To inform this EMS, Middlemarch Environmental Ltd has completed an updated ecological desk study, a walkover survey and a Habitat Suitability Index (HSI) Assessment of ponds in proximity to the site.

Middlemarch Environmental Ltd completed an EclA (RT-MME-153311-04) and a BIA (RT-MME-153311-05) in October 2020 to inform a planning application for the creation of additional car parking spaces for existing Units A and B.

Implementation of the control measures and mitigation proposals outlined in the EMS will ensure that the works proceed without breaching wildlife legislation; that the favourable conservation status of ecological features will be maintained; and the development will deliver a net gain for biodiversity. The content of this document is guided by wildlife legislation and relevant planning policy and biodiversity targets.

During development of this EMS the ecological mitigation hierarchy has been applied in accordance with the principles set out in the British Standard for Biodiversity (BS42020):

- Avoid;
- Mitigate;
- Compensate; and,
- Enhance.

1.2 SITE DESCRIPTION AND CONTEXT

The site under consideration is located at Prologis Park Birmingham Interchange in Solihull, centred at Ordnance Survey Grid Reference SP 18570 85126.

The site is located on the south-eastern fringes of Birmingham and forms part of the Birmingham Business Park, which is situated immediately north of Birmingham Airport and the National Exhibition Centre.

The site comprises an irregularly shaped parcel surrounding existing Units A and B. The western boundary of the site is delineated by Coleshill Heath Rd and the southern boundary is formed by Blackfirs Lane.

The habitat within the site consist of the existing car parking area and other areas of hardstanding which include small areas of amenity grassland and decorative borders of introduced shrub. The remainder of the site comprises the landscaping scheme for the 2016 development (2109-PL001-1L & 2109-PL001-Q2). The south and west of the site consist of formal landscaping comprising mixed plantation woodland and species poor semi-improved grassland. A large proportion of the 2016 landscaping scheme has been overtaken by tall ruderal growth. In the south west corner of the site two large depressions form a Sustainable Urban

Drainage (SUD) scheme. The SUDs comprise of bare earth and lack aquatic vegetation. The SUDs were dry at the time of inspection. Hedgerows run along the southern and western boundaries of the study area.

The habitat surrounding the site is a mixture of low density residential areas, intensively managed grassland, arable land, large industrial units, employment complexes (offices) and small areas of scrubland and mature semi-natural woodland. To the south east of the site Bickenhill Parkway (B4438) and a large area of hardstanding (car-parking areas associated with the National Exhibition Centre) act as a significant barrier to the movement of terrestrial animals.

Around the site hedgerows and vegetated domestic curtilage boundaries are common, with some also including mature standard trees. The majority of hedgerows are defunct with large gaps where the woody vegetation has failed.

1.3 DESCRIPTION OF PROPOSALS

This EMS supports the planning application associated with the construction of additional car parking spaces for Units A and B.

The additional Car parking spaces would be located to south of Units A and B and to the west of Unit A. The creation of additional areas of hardstanding and soft landscaping is proposed within the development area.

1.4 DOCUMENTATION PROVIDED

The conclusions and recommendations made in this report are based on information provided by the client regarding the scope of the project. Documentation made available by the client is listed in Table 1.1.

Document Name / Drawing Number	Author
6632-11 Rev C	Aja architects
6632-01, Rev F	Aja architects
Landscape and Environment Management Operations report	JB Landscape Associates

Table 1.1: Documentation Provided by Client

1.5 MITIGATION STRATEGY STRUCTURE

Chapters 2 to 5 of this report focus on each of the ecological features that have been identified as potential constraints to the development of the site, as follows:

- Chapter 2: Notable habitats
- Chapter 3: Bats
- Chapter 4: Terrestrial mammals (badger and fox)
- Chapter 5: Invertebrates

Each chapter provides a summary of the potential impacts of the proposed development on the ecological feature in the absence of mitigation, and then outlines avoidance, mitigation, compensation and enhancement proposals that will be implemented to address each of these impacts and ensure no loss of favourable conservation status. Detail regarding post-development safeguarding and monitoring is also provided, where known.

Chapter 7 of this report provides a summary of the mitigation strategy.

1.6 FEATURES SCOPED OUT OF INCLUSION WITHIN THE EMS

1.6.1 Nature Conservation Sites

The desk study completed as part of the EclA (Report RT-MME-153311-04) in 2020 included a search for European statutory nature conservation sites within a 5 km radius of the site (extended to 10 km for any statutory site designated for bats) and a search for UK statutory nature conservation sites and ancient woodland sites within a 2 km radius, using the Multi-Agency Geographic Information for the Countryside website. Desk study data provided by Warwickshire Biological Records Centre included records for UK non-statutory nature conservation sites within a 1 km radius of the site.

The desk study search, undertaken as part of the EclA, identified no European statutory nature conservation sites within a 5 km radius of the site.

Five UK statutory sites are located within a 2 km radius and 14 non-statutory sites are located within a 2 km radius. It was concluded in the EclA that due to spatial separation between the development site and these nature conservation sites, as well as the nature of the intervening habitats, it was unlikely that they would be adversely impacted as a result of the proposed works. Nature conservation sites are therefore not a notable consideration in relation to the proposed development and are not discussed further.

1.6.2 Great Crested Newt and Amphibians

There is no aquatic habitat suitable for breeding within the site or the surrounding area. As part of the 2020 EclA Habitat Suitability Index assessments were conducted on all waterbodies within 250m of the site boundary which were both ecologically connected to the site and where assessment could be undertaken from publicly accessible land.

HSI assessments were conducted on five ponds and one ditch with all determined to have a HSI score of <0.5 and being of poor quality for usage by great crested newts for breeding. It is considered unlikely that any amphibians, particularly great crested newts, will be encountered during the development works.

1.6.2 Birds

The site offers limited feeding potential for birds with the only nesting opportunities of site being provided by the 'Species-Poor Hedgerows with Trees' along the site's southern and western boundaries. The majority of foraging habitats will be maintained, and their value improved by the proposed development. All hedgerows will be retained as part of the development.

There is potential for both bird foraging habitats and nest opportunities (hedgerows) to be impacted upon accidentally during the construction phase of the scheme or to decline in their quality during the operational phase though a lapse in appropriate management. Measures to avoid and mitigate the likelihood of these habitats degrading are detailed in Chapter 2.

1.6.4 Other Species / Species Groups

The following species / species groups have been scoped out of further assessment due to a lack of desk study records and/or the absence of suitable habitats within the site and its surroundings include: reptiles, protected and priority plant species, dormouse *Muscardinus avellanarius*, harvest mouse *Micromys minutus*, pine martin *Martes martes*, polecat *Mustela putorius*, red squirrel *Sciurus vulgaris*, otter *Lutra lutra*, water vole *Arvicola terrestris*, brown hare *Lepus europaeus*, stag beetle *Lucanus cervus* and white-clawed crayfish *Austropotamobius pallipes*.

2. HABITATS

2.1 BASELINE DATA

2.1.1 Field Survey

As part of the EclA (Report RT-MME-153311-04) an Extended Phase 1 Habitat Survey of the site was undertaken in September 2020, the following habitats were recorded:

- Amenity grassland
- Tall ruderal
- Bare ground
- Hard standing
- Introduced shrub
- Mixed plantation woodland
- Species poor hedgerow with trees
- Species poor semi-improved grassland
- Standing water (pond)

Table 2.1 provides a list of the habitats recorded during this survey and their conservation status.

Habitat	Description	Habitat of Principal Importance?
Amenity grassland	These habitats have negligible intrinsic ecological value.	-
Tall ruderal	These habitats have negligible intrinsic ecological value.	-
Bare ground	These habitats have negligible intrinsic ecological value.	-
Hard standing	These habitats have negligible intrinsic ecological value.	-
Introduced shrub borders	These habitats have negligible intrinsic ecological value.	-
Planation forest	Although not national or local priority habitats, the plantation forest does contribute to the structural and species diversity of the site.	-
Species poor hedgerow with trees	Hedgerows' are a Habitat of Principal Importance for Nature Conservation in England (Section 41 of the NERC Act) and are considered both a UK and Local Biodiversity Action Plan (BAP) habitats.	✓
Species poor semi-improved grassland	Although not national or local priority habitats, the plantation forest does contribute to the structural and species diversity of the site.	-
Standing water (pond)	Standing water (ponds) are identified as Habitats of Principal Importance to Nature Conservation in England (Section 41 of the NERC Act) and are considered both a UK and Local BAP habitats.	✓

Table 2.1: Summary of Habitats within Site

Section 2.2 summarizes the extent of habitat loss that will be required to allow the proposed development to proceed. Section 2.3 details those key habitat types that will be retained and protected and will form part of the landscaped areas, and Section 2.4 and 2.5 provides a summary of new habitats that will be created and the measurable net gain to biodiversity which will be delivered.

2.2 IMPACT ASSESSMENT

2.2.1 Habitat loss and Potential Construction Phase Impacts

The majority of habitat loss is limited to common and widespread habitats of low or negligible ecological value, predominantly the species poor semi-improved grassland, plantation woodland and tall ruderal. The exception is the small area of standing water which will be destroyed to accommodate the development. The destruction of this habitat is unavoidable and cannot be mitigated against. Compensation for its loss is discussed in Section 2.4.

The proposed development will allow the full retention of the other Habitat of Principal Importance, the species poor hedgerow with trees.

During construction, there is the potential for retained hedgerow to be subject to root compaction and damage from construction vehicles and machinery.

2.2.2 Long-Term Impacts

The created habitats (discussed in more detail in section 2.4), once established, will enhance the biodiversity value of the site in the medium to long-term. Limited or inappropriate management of created or enhanced habitats could lead to a decline in their conservation status over time and their ability to support populations of protected and priority species. For example, inappropriate management of the hedgerows could result in vegetation becoming too dense, which could reduce its value to support nesting birds and other fauna and inappropriate management of created semi-improved neutral grassland areas could result in a loss of botanical diversity and succession to coarser vegetation types.

2.3 AVOIDANCE AND MITIGATION MEASURES

2.3.1 Habitat Retention

The site is 5.78ha in size. The proposed development will result in the destruction of 0.72ha of low importance habitat and 0.01ha of habitat of high importance habitat for the preservation of conservation (i.e. the area of standing water). Most of the habitat on the site (5.06ha) will be retained as part of the proposed development, this includes 0.69 linear km of hedgerow.

2.3.2 Construction Phase Measures

To prevent accidental harm occurring to hedgerow during the construction phase via vegetation or root damage or soil compaction a 5 meter buffer zone around the hedgerows should be established within which no vehicular movements, digging operations, storage of spoil or storage of construction material should occur. To prevent accidental contamination of soil a 10 meter buffer zone around the hedgerows should be established within which no chemical or materials considered harmful to the environment should be used or stored, inclusive of any oils, fuels and materials used for running and maintenance of the construction phase machinery.

2.3.3 Operational Phase Measures

Retained and created habitats should be brought under active management in line with the December 2020 Landscape and Environment Management Operations report (LEMO).

2.4 COMPENSATION AND ENHANCEMENT MEASURES

The following habitat enhancement and creation measures are proposed as part of the LEMO:

- The enhancement of the existing areas of species poor semi-improved grassland and tall ruderal areas in semi improved neutral grassland.
- The creation of new areas of mixed native species plantation woodland and the enhancement of all retained areas of woodland to moderate condition.
- The creation of a new area of standing water and surrounding wetland planting to be managed in good condition.

The enhancement of existing habitats and the creation of new high-quality habitats will deliver a significant net gain to biodiversity on the site (see section 2.5). The creation of a new area of standing water, planted with aquatic vegetation and surrounded by large areas of semi-improved neutral grassland will provide new habitats on site to support for breeding populations of amphibians and invertebrates, and increase foraging opportunities for bats and birds. The habitat enhancement and creation proposals will result in the development, over time, of habitats on site which could support a range of local notable species and is sympathetic to other habitats within the wider landscape.

2.5 BIODIVERSITY NET GAIN

The biodiversity impact of the development on the site was calculated using the Warwickshire, Coventry & Solihull - Habitat Impact Assessment Calculator. All habitats were determined to be in poor condition when considered against the relevant FEP condition assessment criteria.

The total value of the site pre-development is calculated as being 11.6 Biodiversity Units. The recommended habitat creation and enhancement (detailed in the LEMO) would result in the total value of the site post-development being 22.28BU. A measurable gain biodiversity gain of 11.65BU or a 100% over the site's existing biodiversity value.

Further information of all calculation undertaken are detailed in the BIA, Report RT-MME-153311-05.

2.6 POST-DEVELOPMENT MANAGEMENT AND MONITORING

All management will be carried out in accordance with the LEMO

Aside from the management measures detailed in Section 2.3 and 2.4, no further management or monitoring measures are proposed.

3. BATS

3.1 BASELINE DATA

3.1.1 Desk Study

There are numerous records of bats being present within 1km of the study area (see Annex 1). The records are predominantly of common and soprano pipistrelle as well as noctule, but an individual Nathusius' pipistrelle and a serotine were recently recorded (2018) in the area.

3.1.2 Field Surveys

2016 Surveys

Bat surveys conducted in 2016 as part of the previous development (Report RT-MME-122297-04) highlight that the site was utilized by noctules for foraging and that two trees in the hedgerow along the site's western boundary had moderate potential to support roosting bats.

3.2 IMPACT ASSESSMENT

3.2.1 Development Impacts (construction phase)

Roosting Bats

There are no known bat roost onsite.

The only areas shown to have moderate potential to support roosting bats (two mature trees within the boundary hedgerows) will not be impacted upon directly by the proposed development, with the trees being retained as part of the scheme. No works are proposed near to either trees as part of the development scheme. The construction phase of the development is not considered likely to result in harmful impacts to local bat populations by impacting on roosting bats.

Further avoidance and mitigation measures to ensure the protection of these trees throughout the construction phase is provided in the Arboricultural Impact Assessment (RT-MME-153311-02).

Foraging and Commuting Bats

The majority of the site only provides limited feeding opportunity for bats with the exception of the 'Species-Poor Hedgerows with Trees' which provides feeding and limited roosting potential as well as a strong linear feature to allow for the commuting of bats within the wider landscape surrounding the site. The existing hedgerows will not be impacted upon directly by the proposed development, with their entire lengths being retained as part of the scheme. In the mid-long term, the development should result in an onsite improvement in bat foraging potential via the creation of areas of high quality standing water and semi-improved neutral grassland. The development is not considered likely to result in long-term harmful impacts to the ability of local bat populations forage and commute around the local landscape.

However, construction phase lighting has the potential to cause short term adverse impacts to bat foraging associated with accidental illumination of suitable foraging habitat. Additionally, significant increases in noise or vibration may alter how bats utilise the site during the construction phase. Without mitigation this could have a negative impact on the populations of foraging and commuting bats using the site.

3.2.2 Development Impacts (operational phase)

There is potential for disturbance to bats from operational phase lighting associated with the new car parking areas which could deter bats from utilising habitats directly adjacent for foraging. However, given the built-up nature of the site and the existing levels of illumination associated with the operational units A and B, any additional lighting is considered unlikely to have any impact on the favourable conservation status of bats in the local area.

However, the small scale of likely impacts to bat foraging due to additional operational lighting could be further mitigated by an appropriately designed lighting scheme (see 3.3.3)

3.3 AVOIDANCE AND MITIGATION MEASURES

The avoidance and mitigation measures proposed will:

- Prevent killing or injury of bats, or destruction or disturbance of bat roosts;

- Ensure the favourable conservation status of bat populations at the site is maintained; and
- Minimise disturbance to bat foraging and commuting habitat.

3.3.1 Avoidance of Impacts on Roosting Bats

Trees with Moderate Potential to Support Roosting Bats

In the event that either of the trees identified in 2016 as having moderate potential to support roosting bats are to be impacted by the proposed works, further surveys will need to be completed.

There are two possible survey options: the trees can be subject to a Preliminary Roost Feature Inspection Survey using tree climbing equipment to access features that inaccessible from ground level, or they can be subject to dusk emergence and dawn re-entry surveys.

Option 1: Preliminary Roost Feature Inspection Survey

Where safe to do so, trees will be climbed utilising tree climbing equipment. Any potential roost features will be internally searched using a torch and endoscope. If the feature on further inspection is found to be unsuitable for bats, then the status of the tree will be downgraded to low or negligible bat potential. If a roost is identified, if potential roost features extend beyond the reach of an endoscope, or if potential roost features show any signs of use by fauna, dusk emergence and dawn re-entry surveys will be required, as detailed in Option 2. Dusk emergence and dawn re-entry surveys will also be required for any trees considered unsafe to climb, or those that cannot be fully inspected for safety reasons.

Option 2: Dusk Emergence and Dawn Re-Entry Surveys

Bat Survey: Good Practice Guidelines published by the Bat Conservation Trust (Collins, 2016) recommends that for trees with high bat roosting potential at least three dusk emergence and / or dawn re-entry surveys be undertaken during the bat activity season to determine the presence / absence of roosting bats within the trees. At least one of the surveys should be a dawn re-entry survey, and at least two of the surveys should be undertaken between mid-May and August. For trees with moderate bat roosting potential, one dusk emergence survey and a separate dawn re-entry survey should be undertaken.

If any bat roosts are identified during the surveys, a Natural England Development Licence will be obtained to ensure works commence without breaching the Conservation of Habitats and Species Regulations 2017 or the Wildlife and Countryside Act 1981 (as amended). The licence application process will include the submission of a method statement detailing the current status of bats on site and how the favourable conservation status of the bat populations will be maintained.

3.3.2 General Construction Phase Measures

To minimise construction impacts on bats, the following measures are proposed:

- Appropriate timing of works – no night working will be carried out, thus minimising any temporary noise, vibration or light disturbance effects on foraging bats or bats using roosts within trees which surround the proposed development area; and,
- Protection of retained habitat – trees and woodland which are to be retained will be protected in line with the measure in Section 2.3.2 with respect to root protection areas. The installation of protective fencing will ensure that construction works are not carried out immediately beneath retained trees which may have bat roost potential.

3.3.3 Operational Lighting Strategy

Bats are particularly vulnerable to increases or changes in illumination. The operational lighting scheme or schemes will need to be designed to ensure that lighting installed within the site as part of the development will not illuminate potentially important roosting, foraging or commuting areas for bats.

The lighting designs should incorporated the following best practice principles, as outlined in the Bat Conservation Trust's publication 'Landscape and Urban Design for Bats and Biodiversity' (Gunnell *et al.*, 2012) and the Institution of Lighting Professionals and the Bat Conservation Trust's publication '*Bats and artificial lighting in the UK*' (Miles *et al.*, 2018):

- Do not provide excessive lighting. Use only the minimum amount of light needed for safety.
- Minimise light spill. Eliminate any bare bulbs and any upward pointing light. The spread of light should be kept near to or below the horizontal. Flat cut-off lanterns are best.
- Use narrow spectrum bulbs to lower the range of species affected by lighting. Use light sources that emit minimal ultraviolet light and avoid the white and blue wavelengths of the light spectrum to avoid

attracting lots of insects. Lighting regimes that attract lots of insects result in a reduction of insects in other areas like parks and gardens that bats maybe using for foraging.

- Lights should peak higher than 550nm and use glass lantern covers to filter UV lights. White LED lights do not emit UV but have still been shown to disturb slow flying bat species.
- Reduce the height of lighting columns. Light at a lower level reduces impact. However, higher a mounting heights allow lower main beam angles, which can assist in reducing glare.
- For pedestrian lighting, use low-level lighting that is as directional as possible and below 3lux at ground level but preferably below 1lux.
- Increase the spacing of lanterns.
- Limit the times that lights are on to provide some dark periods.
- Avoid using reflective surfaces under lights.
- Use temporary close-boarded fencing until vegetation matures to shield sensitive areas from lighting.

The final lighting strategy should be developed with ecological input.

3.4 COMPENSATION AND ENHANCEMENT MEASURES

The compensation and enhancement measures proposed will:

- Improve retained habitat features to benefit foraging bats.

3.4.1 Habitat Creation and Enhancement

The LEMO has been designed to ensure that the existing high value commuting and foraging habitat for bats (the species poor hedgerow with trees) are maintained across the site. Additionally, 1.54 ha of semi-improved neutral grassland will be created and maintained to good condition providing additional high quality foraging habitat for a range of bat species. Further details are provided in Section 2.4.

3.5 POST-DEVELOPMENT MANAGEMENT

Ongoing management of the habitats created and improved as part of the scheme should be carried out in accordance to the prescriptions detailed in the LEMO.

4. TERRESTRIAL MAMMALS: BADGER AND FOX

4.1 BASELINE DATA

4.1.1 Desk Study

Several badger setts were identified within 1km of the site boundary (see, EclA, Rt-MME-153311-04, confidential badgers map which is provided as a separate appendix).

4.1.2 Field Survey

No evidence of an active badger setts was found onsite during the walkover survey or within 30m of the site boundary. Badger feeding signs (snuffle holes) and an associated animal track were noted as being present along the western boundary of the study area.

Fox footprints and remains of feeding were noted onsite in the bankside of the bare ground area along the northern boundary of the site. In the same area two active fox earths, or two entrances to a single substantive earth, were located.

4.2 IMPACT ASSESSMENT

4.2.1 Development Impacts (construction phase)

During the construction phase of the proposed development, there is the potential for individual foraging terrestrial mammals to become trapped and harmed in open excavations, leading to a reduction in foraging success. In addition, vegetation clearance could disturb or damage habitats which may be used by terrestrial mammals. Without mitigation this could have a minor adverse effect on any populations within the local area.

The active fox earths are within the area that will be impacted directly (destroyed) by the proposed increase in car parking resource. Foxes are not priority species but as UK mammals are protected from unnecessary harm and suffering under the Animal Welfare Act 2006 (as amended). Without mitigation the construction works could result in a harm to foxes in a manner that could be considered a criminal offence under existing legislation.

4.2.2 Development Impacts (operational phase)

Suitable habitat for terrestrial mammals will be retained, created and enhanced as part of the LEMO. No long-term effects on populations of terrestrial mammals due to habitat loss or fragmentation are anticipated.

4.3 AVOIDANCE AND MITIGATION MEASURES

The avoidance and mitigation measures proposed will:

- Ensure no killing or injury of terrestrial mammals as a result of construction works.

4.3.1 Construction Phase Measures

To minimise construction impacts on terrestrial mammals, the following measures are proposed:

- Any excavations that need to be left overnight should be covered or fitted with mammal ramps to ensure that any animals that enter can safely escape. Any open pipework with an outside diameter of greater than 120 mm must be covered at the end of each work day to prevent animals entering / becoming trapped.
- Clearance of vegetation should be undertaken in a sensitive manner, to ensure any terrestrial mammals that may be present can disperse into suitable habitats off site.
- Prior to commencement of construction the fox earths should be checked to see if they are still active. If still active measures should be taken to exclude the foxes from the earths prior to the commencement to works. The checking of the earths and any necessary exclusion of animals should be undertaken and supervised by a suitably qualified ecologist.

4.4 COMPENSATION AND ENHANCEMENT MEASURES

The enhancement measure proposed will:

- Improved foraging habitat for badgers

4.4.1 Habitat Creation and Enhancement

The LEMO has been designed to ensure that the existing foraging habitat for badgers (along the species poor hedgerow with trees) is maintained across the site. Additionally, 1.54ha of semi-improved neutral grassland will be created and maintained to good condition providing additional high quality foraging habitat for badgers. Further details are provided in Section 2.4.

4.5 POST-DEVELOPMENT MANAGEMENT AND MONITORING

Given the minimal impact of the proposed development on terrestrial mammals, no post-development monitoring is considered necessary.

5. INVERTEBRATES

5.1 BASELINE DATA

5.1.1 Desk Study

There are several notable invertebrate species known to be present within 1km of the study area (see EclA RT-MME-153311-04, species record map).

5.1.2 Field Surveys

The species poor semi-improved grassland habitat present could support populations of small heath (*Coenonympha pamphilus*) as it contains both a number of fine grass species which form the small heath's larval food-plant and flower species which could support adults. The habitat within the study area also has the potential to support populations of several of the notable Coleopteran and Dipteran species likely to be present within the surrounding area.

No notable invertebrate species were recorded on site during the field survey.

5.2 IMPACT ASSESSMENT

5.2.1 Development Impacts (construction phase)

No notable invertebrate species in known to be present onsite but the habitats present could support local populations of a number of BAP invertebrate species. The majority of the habitat on site will be retained as part of the scheme and will not be impacted upon during the construction phase. Any dispersal to existing notable invertebrate populations that may occur during the construction phase is considered likely to be only within the site and temporary for only the duration of works.

The construction phase on the proposed development is not likely to result in harmful impacts to notable invertebrate species.

5.2.2 Long-Term Impacts

Suitable habitat to support populations of notable invertebrates will be retained, created and enhanced as part of the LEMO. No long-term effects on populations of notable invertebrates due to habitat loss or fragmentation are anticipated.

5.3 COMPENSATION AND ENHANCEMENT MEASURES

The compensation and enhancement measures proposed aim to:

- Support a greater diversity of invertebrate species.

5.3.1 Habitat Creation and Enhancement

The LEMO has been designed to ensure that 1.54ha of semi-improved neutral grassland and a new area of standing water with associated wetland planting will be created and maintained to good condition providing a new area of high quality habitat for local invertebrate populations. Further details are provided in Section 2.4.

5.4 POST-DEVELOPMENT MANAGEMENT AND MONITORING

Given the minimal impact of the proposed development on invertebrates, no post-development monitoring is considered necessary.

6. SUMMARY

This document details avoidance, mitigation, compensation and enhancement proposals that will be implemented to ensure that the favourable conservation status of key ecological features will be maintained at the site during and after development. Much of the mitigation has been designed to ensure the long-term retention of existing key habitats and to create linking wildlife corridors through and around the site, allowing species movement into the wider landscape. In addition, existing habitats will be enhanced and new habitats, including standing water and semi-improved neutral grassland, will be created.

The document has identified mitigation proposals to ensure the long-term protection of protected and notable species or species groups which have either been recorded at or near to the site, or for which suitable habitats are present within the site. These species and species groups comprise bats, terrestrial mammals, and invertebrates.

It is proposed that the implementation of ecological mitigation including exclusion of mammals protected under animal welfare legislation, will be overseen by a suitably qualified Ecological Clerk of Works who will provide advice to construction and landscaping contractors and manage the interaction between mitigation requirements for each species throughout the development process.

Subject to the avoidance, mitigation, compensation and enhancement measures detailed in this EMS being secured by condition, it is anticipated that potentially adverse construction impacts can be avoided and that the biodiversity value of retained and created habitats (and the favourable conservation status of the species populations these habitats support) will be maintained for the operational life of the proposed development.

7.

REFERENCES AND BIBLIOGRAPHY

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APPENDICES

APPENDIX 1 Species Legislation

APPENDIX 1

SPECIES LEGISLATION

Bats

Bats and the places they use for shelter or protection (i.e. roosts) receive European protection under The Conservation of Habitats and Species Regulations 2017 (Habitats Regulations 2017). They receive further legal protection under the Wildlife and Countryside Act (WCA) 1981, as amended. This protection means that bats, and the places they use for shelter or protection, are capable of being a material consideration in the planning process.

Regulation 41 of the Habitats Regulations 2017, states that a person commits an offence if they:

- deliberately capture, injure or kill a bat;
- deliberately disturb bats; or
- damage or destroy a bat roost (breeding site or resting place).

Disturbance of animals includes in particular any disturbance which is likely to impair their ability to survive, to breed or reproduce, or to rear or nurture their young, or in the case of animals of a hibernating or migratory species, to hibernate or migrate; or to affect significantly the local distribution or abundance of the species to which they belong.

It is an offence under the Habitats Regulations 2017 for any person to have in his possession or control, to transport, to sell or exchange or to offer for sale, any live or dead bats, part of a bat or anything derived from bats, which has been unlawfully taken from the wild.

Whilst broadly similar to the above legislation, the WCA 1981 (as amended) differs in the following ways:

- Section 9(1) of the WCA makes it an offence to *intentionally* kill, injure or take any protected species.
- Section 9(4)(a) of the WCA makes it an offence to *intentionally or recklessly** damage or destroy, or *obstruct access to*, any structure or place which a protected species uses for shelter or protection.
- Section 9(4)(b) of the WCA makes it an offence to *intentionally or recklessly** disturb any protected species *while it is occupying a structure or place which it uses for shelter or protection*.

*Reckless offences were added by the Countryside and Rights of Way (CRoW) Act 2000.

As bats re-use the same roosts (breeding site or resting place) after periods of vacancy, legal opinion is that roosts are protected whether or not bats are present.

The following bat species are Species of Principal Importance for Nature Conservation in England: barbastelle bat *Barbastella barbastellus*, Bechstein's bat *Myotis bechsteinii*, noctule *Nyctalus noctula*, soprano pipistrelle *Pipistrellus pygmaeus*, brown long-eared bat *Plecotus auritus*, greater horseshoe bat *Rhinolophus ferrumequinum* and lesser horseshoe bat *Rhinolophus hipposideros*.

The reader should refer to the original legislation for the definitive interpretation.

Nesting Birds

Nesting and nest building birds are protected under the Wildlife and Countryside Act WCA 1981 (as amended). Some species (listed in Schedule 1 of the WCA) are protected by special penalties.

Subject to the provisions of the act, if any person intentionally: kills, injures or takes any wild bird; takes, damages or destroys the nest of any wild bird while that nest is in use or being built; or takes or destroys an egg of any wild bird, he shall be guilty of an offence.

'Reckless' offences with regard to the disturbance of nesting wild birds included in Schedule 1 of the Wildlife and Countryside Act were added by the Countryside and Rights of Way Act 2000.

The Natural Environment and Rural Communities (NERC) Act 2006 places a duty on Government Departments to have regard for the conservation of biodiversity and maintains lists of species and habitats which are of principal importance for the purposes of conserving biodiversity in England and Wales. These lists include a number of bird species.

Reptiles

All of the UK's native reptiles are protected by law. The two rarest species – sand lizard *Lacerta agilis* and smooth snake *Coronella austriaca* – benefit from the greatest protection.

Common lizard *Zootoca vivipara*, slow-worm *Anguis fragilis*, adder *Vipera berus* and grass snake *Natrix natrix* are protected under the Wildlife and Countryside Act 1981 (as amended) from intentional killing or injuring.

Sand lizard and smooth snake are protected under The Conservation of Habitats and Species Regulations 2010 (as amended) and the Wildlife and Countryside Act 1981 (as amended) which together make it illegal to kill, injure, capture, handle or disturb these animals. Places they use for breeding, resting, shelter and protection are protected from being damaged or destroyed. It is also illegal to obstruct these animals from using such areas.

All native reptile species are listed as Species of Principal Importance on the UK Post-2010 Biodiversity Framework (2012), and as such are material considerations in the planning process.

This is a simplified description of the legislation. In particular, the offences mentioned here may be absolute, intentional, deliberate or reckless. Note that where it is predictable that reptiles are likely to be killed or injured by activities such as site clearance, this could legally constitute intentional killing or injuring.

The reader should refer to the original legislation for the definitive interpretation.