Beth Ellison-Perrett BSc (Hons) MSc MRSB
Senior Ecologist
**Email:** bethep@arbtech.co.uk
Arbtech Consulting Ltd
arbtech.co.uk

# Ecological Enhancement Plan

**Survey site**:
15 The Avenue, Ickenham, Uxbridge, UB10 8NR

**Client**:
Afrooz LTD

**Survey date**:
28th July 2025

**Project:**
This report is prepared to inform a planning application with the London Borough of Hillingdon. The proposal is described as:
Erection of part single, part two storey side/rear extensions. Alterations to roof form including dormers. Amendments to fenestrations. Demolition of the existing porch and garage.

**Limitations and Copyright**

Arbtech Consulting Limited has prepared this report for the sole use of the above-named client or their agents in accordance with our General Terms and Conditions, under which our services are performed. It is expressly stated that no other warranty, expressed or implied, is made as to the professional advice included in this report or any other services provided by us. This report may not be relied upon by any other party without the prior and express written agreement of Arbtech Consulting Limited. The conclusions and recommendations contained in this report are based upon information provided by third parties. Information obtained from third parties has not been independently verified by Arbtech Consulting Limited.

**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.
>
> 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)

## Contents

**1.0 Introduction** ..... **5**

**2.0 Site Context and Survey Information** ..... **6**

2.1 Site Location and Landscape Context ..... 6

2.2 Ecological Information ..... 6

**3.0 Construction Ecological Management Plan (CEMP)** ..... **11**

**4.0 Provision of New Landscaping and Species-Specific Enhancements** ..... **21**

Appendix 1: Proposed Development Plan ..... 27

Appendix 2: Site Location Plan ..... 29

Appendix 3: Species-Specific Enhancements Plan ..... 30

## 1.0 Introduction

Arbtech Consulting Limited was instructed by Afrooz LTD to produce an Ecological Enhancement Plan for 15 The Avenue, Ickenham, Uxbridge, UB10 8NR (hereafter referred to as "the site").

A planning application for Erection of part single, part two storey side/rear extensions. Alterations to roof form including dormers. Amendments to fenestrations. Demolition of the existing porch and garage (hereafter referred to as "the proposed development") was granted approval, with conditions, by London Borough of Hillingdon in April 2025 (10272/APP/2025/362). This plan has been produced to inform the discharge of 5d, which states:
*Details of ecological mitigation and habitat enhancements (such as bird boxes and hedgehog highways) and a site plan showing their location.*

A plan showing the proposed development is provided in Appendix 1.
The aim of this plan is to outline mitigation measures required to minimise impacts on biodiversity as well as to outline habitat creation and enhancement opportunities and long-term management which will ensure that a net gain in biodiversity is achieved and maintained on the site, in accordance with the National Planning Policy Framework (NPPF).
This plan has been informed by a Preliminary Ecological Appraisal and Roost Assessment which was completed by Arbtech Consulting Ltd in January 2025 (Arbtech, 2025).

## 2.0 Site Context and Survey Information

### *2.1 Site Location and Landscape Context*

The survey site is centred on National Grid Reference TQ 07595 86172 and has an area of approximately 0.18ha. The site comprises one dwelling (B1), a garage (B2), associated outbuildings (B3, B4 and B5) and a vegetated garden with scattered trees and shrubs. It is situated within a private road within Ickenham, the northern area of the town of Uxbridge. The site is surrounded by residential dwellings with the river Pinn located ~175m west and pockets of woodland located to the east and south. Further afield is the M25 motorway to the west, arable fields to the north, further residential dwellings to the east and the A40 to the south. A site location plan is provided in Appendix 2.

### *2.2 Ecological Information*

Table 1 summarises the survey findings for the site and outlines any potential impacts as a result of the proposed development along with recommendations and biodiversity enhancement opportunities, as detailed in Preliminary Ecological Appraisal and Roost Assessment (Arbtech, 2025).

*Table 1: Summary of baseline survey information, potential impacts, recommendations and biodiversity enhancement opportunities for the site (Preliminary Ecological Appraisal and Roost Assessment, Arbtech, 2025)*

| **Bats** | |
|---|---|
| *Summary of PRA Survey Findings* | **EPSL data**<br>There is one EPSL within a 2km radius of site, located 1935m north-east for the destruction of a resting place for common pipistrelle.<br><br>**Foraging and commuting habitat**<br>Habitats recorded on site are assessed to provide foraging and commuting opportunities for bats in the form of scattered scrub, a hedgerow and scattered trees. However, the hedgerow does not extend beyond the site. In the wider landscape there is woodland located 110m west of the site as well as the river Pinn which is located ~175m west which could be utilised by foraging, commuting and roosting bats. Additionally, there is open grassland to the south of the site which could be used by foraging bats.<br><br>**Roosting habitat**<br>Buildings to be impacted by the proposed development are assessed for their suitability to support roosting bats below. There are a total of five buildings on site; the main dwelling (B1), the garage (B2) and three outbuildings (B3, B4 & B5). B1 has moderate habitats value for roosting bats, |

| | |
|---|---|
| | B3 has low habitat value for roosting bats and B2, B4 and B5 have negligible habitat value for roosting bats. Only B1, B2 and B3 will be affected by the proposed plans. No evidence of roosting bats was identified on or within any of the surveyed buildings on-site. |
| *Summary of BERS Survey Findings* | **B1:**<br>1x Soprano pipistrelle Day roost, located under a raised roof tile on the southern elevation of B1 (adjacent to the eastern gable). The roost will be destroyed as part of the proposed plans.<br><br>**B3:**<br>No bats were observed roosting within B3. Therefore, works to B3 only can proceed without any further survey or licence requirements. |
| *Recommendations* | **Roosting habitat [Buildings]**<br>A Bat Licence from Natural England is required to legally permit the works.<br><br>**Artificial lighting**<br>A low impact lighting strategy will be adopted for the site during post-development which outlines the areas of the site that will be retained as dark corridors. Parameters can be found on the Bat Conservation Trust website: https://www.bats.org.uk/our-work/buildings-planning-and-development/lighting-2<br><br>**Suggested biodiversity enhancements**<br>The installation of one bat box at the site will provide additional roosting habitat for bats. The bat box will be integrated within the new build extension. |
| **Birds** | |
| *Summary of Survey Findings* | **Buildings**<br>No evidence of nesting birds was identified on or within any of the surveyed buildings. They are deemed to provide negligible habitat value for nesting birds due to a lack of suitable nesting sites or access points.<br><br>**Trees and vegetation**<br>No bird nests were identified within the vegetation on-site, however they all offer nesting opportunities and nest-building resources for birds. |
| *Recommendations* | **Buildings/trees** |

| | |
|---|---|
| | Precautions should be taken with machinery and noise levels when working close to any retained nests so as not to disturb any nearby nesting birds during construction works. At least a 3-5m buffer should be created between any machinery and active nests until the young have fledged.<br><br>**Suggested biodiversity enhancements**<br>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. |
| **Amphibians** | |
| *Summary of Survey Findings* | **EPSL and survey data**<br>A review of the MAGIC database returned one granted EPSL record for great crested newts within 2km of the site, located 1085m north for the destruction of a resting place. No positive class survey licence return or DLL historic survey data (2017 – 2019) were present within 500m of the site.<br><br>**Aquatic habitat suitability (including ponds within 500m)**<br>There are no ponds on the site, but a review of aerial imagery (MAGIC and OS Maps) indicates the presence of a singular pond within 500m; the pond (P1) is located ~360m northeast of the site and is situated on the far side of the B466 and B467. This landscape feature is likely to represent a significant barrier to dispersal due to heavy traffic flow and high kerbs along the road, eliminating connectivity to the site for great crested newts. Furthermore, the pond is separated from the site by urban infrastructure including tarmac roads, buildings, and intensively managed grassland, which is regularly mown resulting in a short sward length.<br><br>**Terrestrial habitat suitability**<br>The site provides limited suitable terrestrial habitat for amphibians given the lack of optimal habitat (i.e. scrub, rank grassland). The areas of hard standing and vegetated garden offer sub-optimal habitat for terrestrial amphibians. The hedgerow may offer refuge for these species, however given the urban nature of the surrounding landscape (i.e. dominated by roads and hard standing which are sub-optimal for amphibians) it is unlikely that amphibians will migrate on to site. Further, there is limited suitable terrestrial habitat across the wider landscape reducing the likelihood of amphibians being present on site and across the surrounding areas. |

| | |
|---|---|
| *Foreseen Impacts* | When georeferencing the proposed development plans over scaled mapping of the site, it is noted that the development area is likely to result in the loss or significant disturbance of 0.007106ha hard standing. If great crested newts are present within the pond 360m to the north-east of the site, when completing the rapid risk assessment published by Natural England (Natural England 2015), the proposed development produces a **Green risk score**, which states: **Offence Highly Unlikely**. |
| *Recommendations* | A precautionary working method will be implemented for common amphibians during construction. |
| **Badger** | |
| *Summary of Survey Findings* | No badger setts were noted on site or within a 30m radius of the development site. The site is considered unsuitable for badgers given the lack of suitable sett excavation areas/ground. Further, there is limited suitable badger foraging habitat on site given the lack of scrub. The site is also surrounding by urban development (i.e. roads and buildings), which is sub-optimal habitat therefore reducing the likelihood of badgers being present within the surrounding area of the site. |
| *Foreseen Impacts* | Hard standing will be removed during construction. The loss of such habitats is likely to be inconsequential to local badger populations owing to their low value and the presence of more extensive habitat locally. However, construction activities could result in the death or injury of badgers, if present. |
| *Recommendations* | A precautionary working method will be implemented during construction. |
| **Other e.g. hedgehog** | |
| *Summary of Survey Findings* | Habitats recorded on site are assessed to provide foraging, and refuge opportunities for hedgehogs, in the form of vegetated garden and hedgerows. However, given the limited extent of habitats present on site and the presence of more extensive habitat coverage locally, the site is unlikely to represent a significant resource for hedgehogs in the context of the wider landscape. No evidence indicating the presence of hedgehogs was recorded. Although no evidence indicating the presence of hedgehogs was recorded during the site survey, the future presence of hedgehogs foraging and commuting on site cannot be discounted. |
| *Foreseen Impacts* | Hard standing will be removed during construction. The loss of such habitats is likely to be inconsequential to local hedgehog populations owing to their low value and the presence of more extensive habitat locally. However, construction activities could result in the death or injury of hedgehogs, if present. |
| *Recommendations* | A precautionary working method will be implemented during construction.<br><br>**Suggested biodiversity enhancements** |

| | |
|---|---|
| | The following habitat creation and enhancement opportunities could be incorporated into the proposed development which would be beneficial for hedgehogs:<br>• Planting fruit bearing trees and species-rich grassland to increase foraging opportunities.<br>• Creation of brash piles or installation of hedgehog houses in shady areas.<br>• Installation of gaps under boundary fencing to enable hedgehogs to move freely through the site. |

## 3.0 Construction Ecological Management Plan (CEMP)

*Table 2: Mitigation Measures*

| Works | Specification |
|---|---|
| **Persons Responsible and Lines of Communication** | It is recommended that a Development Biodiversity Champion is selected for the construction phase of the development. The Biodiversity Champion should be someone with significant influence during construction, such as the contract or project manager. The Development Biodiversity Champion is responsible for ensuring all actions outlined in this CEMP are implemented including the provision of a toolbox talk prior to works commencing. Any queries with regards to the mitigation prescriptions should be addressed to the project ecologist and communication should be retained between the Development Biodiversity Champion and project ecologist or a suitably qualified Ecological Clerk of Works (ECoW) throughout the construction phase of the development where necessary to ensure the mitigation is applied and impacts to adjacent ecological receptors are effectively minimised. The project ecologist's contact details are located on the title page of this report. It is recommended that the Biodiversity Champion informs the project ecologist or ECoW of the commencement of construction works and provides updates where necessary. |
| **Timing of Works** | Construction activities will be restricted to the normal working day (7am-7pm). |
| **General Construction Activities** | Heras fencing (or similar) will be installed around the perimeter of the construction zone to prevent any vehicle or construction encroachment onto habitats / species of ecological value.<br><br>Any machinery used should be made safe or temporarily fenced off when not in use.<br><br>Storage of construction materials will be kept to a minimum. Where materials must be stored, they will be restricted to inert objects and located on hardstanding away from hedgerows, ponds, badger sett. Materials will be stored on pallets to discourage animals from using them as shelter. Skip or similar containers may also be used in place of piles on the ground.<br><br>Trenches or open excavations will be covered at the end of each working day, or include a means of escape such as a sloping ramp for any animals that may fall in. Any temporarily exposed open pipe systems or ducts will be capped at the end of each working day in such a way as to prevent animals from gaining access. |

| | |
|---|---|
| **Tree Protection** | No trenches or ground works will be completed within 5m of any trees on site. Trees will be appropriately protected in accordance with BS 5837:2012 - "Trees in relation to design, demolition and construction – Recommendations". As such, it is recommended that the trees are separated from construction works by protective fencing throughout the duration of the construction phase of the development. A fencing specification is included within **Figure 1** below. |
| **Pollution Prevention** | To limit impacts of pollution resulting from the construction phase of the development, construction works must be completed in accordance with current statutory guidelines relating to pollution prevention (Environmental Agency 2016). Furthermore, although withdrawn in 2015, pollution prevention guidelines detailed within guidance document: *PPG6: Working at Construction and Demolition Sites* (Environment Agency 2010) remain applicable to the site. Considering both the relevant statutory requirements and best practice measures detailed within guidance |

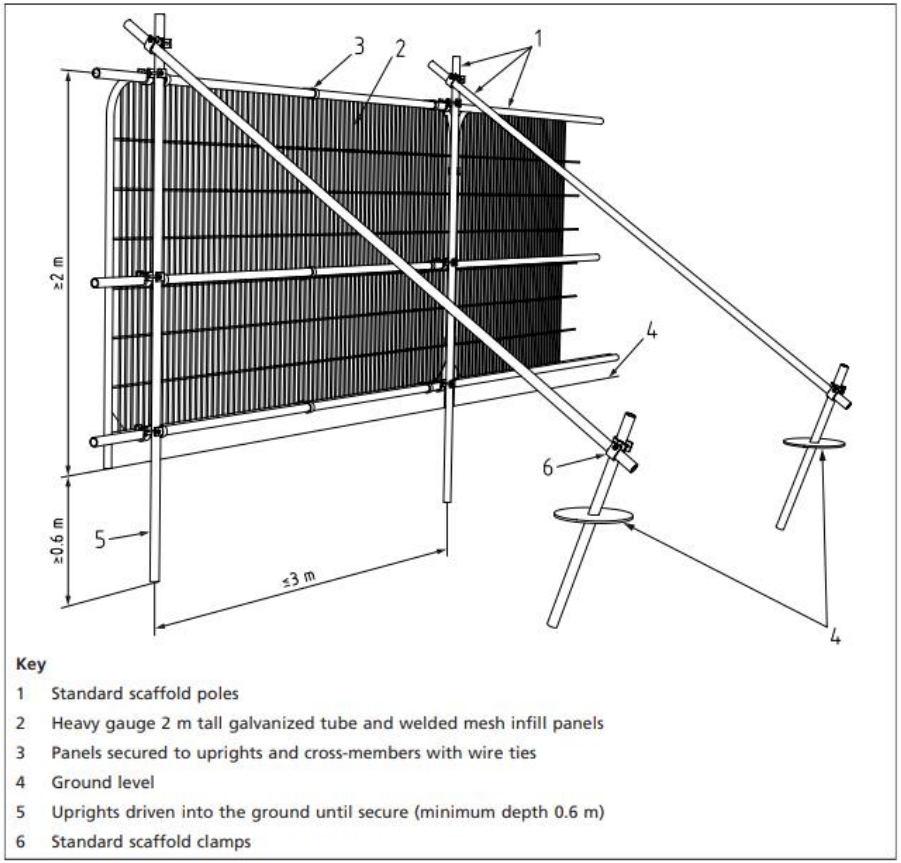



*Figure 1: Default protective barrier specification (British Standards Institute 2012).*

| | |
|---|---|
| | document PPG6, the below mitigation prescriptions are considered suitable to mitigate impacts of pollution during the construction phase of the development. The allocated Biodiversity Champion will be responsible for ensuring the below mitigation recommendations are undertaken successfully during the works.<br><br>***Site drainage:***<br>It is recommended that the Biodiversity Champion ensures that:<br>• Pollution risks are identified pre-construction.<br>• Pollutants are prevented from entering drains where possible.<br>• If any pollutant enters a drain, immediately stop the pollution with a physical block, stop the activity causing the pollution, then notify the Environment Agency for surface water drains or the local sewerage provider for foul water drains. If there's a spill, accident, or emergency, try and prevent pollutants entering the drains.<br>• Report all pollution incidents to site management and the Environment Agency.<br>• Inspect drains and protection measures frequently and maintain them during the construction activity. Well maintained drains will also reduce risks of flooding and subsequent surface water run-off.<br>• As a last resort, should any pollutants be required to enter the drainage system on site, permission from Environment Agency or the local sewerage provider must be sought before discharging anything other than clean uncontaminated surface water to a drain and other surface waters or groundwater. Apply for permission early, as authorisation can take up to four months.<br><br>***Airborne particle suppression:***<br>It is recommended that the Biodiversity Champion ensures that:<br>• Effective water suppression is used during demolition operations. Handheld sprays are more effective than hoses attached to equipment as the water can be directed to where it is needed. In addition, high volume water suppression systems, manually controlled, can produce fine water droplets that effectively bring the dust particles to the ground.<br>• Avoid explosive blasting, using appropriate manual or mechanical alternatives.<br>• Bag and remove any biological debris or damp down such material before demolition.<br>• Carry out regular site inspections to monitor compliance. |

| | |
|---|---|
| | • Ensure all vehicles switch off engines when stationary.<br>• Avoid the use of petrol- or diesel-powered generators and use mains electricity or battery power where possible.<br>• Only use cutting, grinding, or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction.<br>• Ensure an adequate water supply on the site for effective dust/ particulate matter suppression/ mitigation, using non-potable water where possible and appropriate.<br>• Use enclosed shuts and conveyors and covered skips.<br><br>***Materials storage and water run-off:***<br>It is recommended that the Biodiversity Champion ensures that:<br>• No stockpiles are created on exposed ground areas and ensure that all materials and chemicals are stored securely and safely on site in accordance with current Control of Substances Hazardous to Health (COSHH) regulations (HSE 2002).<br>• Contaminated materials, chemicals, and other hazardous substances must be stored on an impermeable surface, in a bunded area, within any area of the site.<br>• All chemicals and hazardous substances are stored away from areas where there is heightened risk of damage from impact or collision such as site traffic.<br>• All chemicals and hazardous substances are labelled, containers are sealed when not in use and inspected regularly and fit for purpose.<br>• Any damaged or old containers are replaced in line with the duty of care requirements. Note such containers may be considered hazardous waste.<br>• Staff are trained in use of spill kits and emergency procedures.<br>• Ensure there is a designated 'responsible person' on site at all times.<br>• Lock storage facilities when not in use.<br><br>***Implementation of the Waste Hierarchy:*** |

| | |
|---|---|
| | The Biodiversity Champion must ensure that all construction activity is completed in accordance with the Waste Hierarchy (Defra 2011) in an attempt to reduce the amount of waster produced during the construction phase of the development. As such, the construction phase must be completed in accordance with the below core principles:<br>*In the first instance:*<br>• Re-use products and materials where possible.<br>• Recycle and compost material resources where possible.<br>• Attempt to recover energy from waste.<br><br>*Where none of the above options offer an appropriate solution, waste disposal is the final option:*<br>• Only transfer controlled waste to an "authorised person" (Waste Collection Authority, the holder of an Environmental Permit, Registered Water Carrier or Waste Disposal Authority).<br>• Ensure that non-hazardous waste is transferred under a Waste Transfer Note which must be retained for two years.<br>• Hazardous waste is moved under a waste consignment note that provides a clear description of the waste material. The consignment note must be retained for three years.<br>• The waste is the responsibility of the company until it has been fully recovered or finally disposed of.<br><br>***Noise:***<br>The Biodiversity Champion must ensure that noise levels are kept to a minimum in accordance with best practice as defined in the Control of Pollution Act 1974 to avoid unacceptable levels of noise and vibrations. Further guidance can be found in British Standard 5228-1:2009. Such measures applicable to the proposed development primarily include agreed working hours limiting night work, using the quietest equipment and plant available, shutting down equipment when not in use, and completing deliveries during working hours only. Most notably, prescriptions as to limit noise of plant machinery as detailed within **Table B.1** within the code of practice for noise control (British Standards Institution, 2014) is likely to have the most significant impact during construction activity. Table B.1 is shown below. |

Table B.1 **Methods of reducing noise levels from construction plant**

| Plant | Noise reduction of plant | | | Alternative plant |
|---|---|---|---|---|
| | **Source of noise** | **Possible remedies** (to be discussed with machine manufacturers) | **A-weighted sound reduction** dB | |
| Hammer drive piling equipment | Pneumatic/diesel hammer or steam winch vibrator driver | Enclose hammer head and top of pile in acoustic screen | 5 to 10 | Bored piling<br>Vibratory system<br>Drop hammer completely enclosed in box with opening at top for crane access<br>Steel jacket completely enclosing drop hammer with dolly and polystyrene chips fed to impact surface to dissipate energy<br>Pressed-in piling which generates its driving force from the frictional restraint of other piles |
| | Sheet pile | Acoustically dampen sheet steel piles to reduce levels of resonant vibration | | |
| | Impact on pile | Use resilient pad (dolly) between pile and hammer head. Packing needs to be kept in good condition | | |
| | Cranes cables, pile guides and attachments | Careful alignment of pile and rig | | |
| | Power units or base machine | Fix more efficient sound reduction equipment or exhaust. Acoustically dampen panels and covers. When intended by the manufacturer, engine panels need to be kept closed. Use acoustic screens when possible | | |
| Earth-moving plant:<br>• bulldozer<br>• compactor<br>• crane<br>• dump truck<br>• dumper<br>• excavator<br>• grader<br>• loader<br>• scraper | Engine | Fit more efficient exhaust sound reduction equipment<br>Manufacturers' enclosure panels need to be kept closed | 5 to 10 | Alternative super silenced plant might be available. Consult manufacturers for details |

Table B.1 **Methods of reducing noise levels from construction plant** *(continued)*

| Plant | Noise reduction of plant | | | Alternative plant |
|---|---|---|---|---|
| | **Source of noise** | **Possible remedies** (to be discussed with machine manufacturers) | **A-weighted sound reduction** dB | |
| Compressors and generators | Engine<br>Compressor or generator body shell | Fit more efficient sound reduction equipment<br>Acoustically dampen metal casing<br>Manufacturers' enclosure panels need to be kept closed | Up to 10 | Super silenced plant is available. Consult manufacturers for details<br>Electric-powered compressors are available as opposed to diesel or petrol<br>Sound-reduced compressor or generator can be used to supply several pieces of plant. Use centralized generator system |
| | Total machine | Erect acoustic screen between compressor or generator and noise-sensitive area. When possible, line of sight between top of machine and reception point needs to be obscured | Up to 10 | |
| | | Enclose compressor or generator in ventilated acoustic enclosure | Up to 20 | |
| Pneumatic concrete breaker, rock drills and tools | Tool | Fit suitably designed muffler or sound reduction equipment to reduce noise without impairing machine efficiency | Up to 15 | Hydraulic and electric tools are available<br>For large areas of concrete, machine designed to break concrete in bending can be used<br>Thermic lance |
| | | Ensure all leaks in air line are sealed | | |
| | Bit | Use dampened bit to eliminate ringing | | |
| | Total machine | Erect acoustic screen between compressor or generator and noise-sensitive area. When possible, line of sight between top of machine and reception point needs to be obscured | Up to 10 | |
| | | Enclose breaker or rock drill in portable or fixed acoustic enclosure with suitable ventilation | Up to 20 | |
| Rotary drills, diamond drilling and boring | Drive motor and bit | Use machine inside acoustic shed with adequate ventilation | Up to 15 | Thermic lance |

Table B.1 **Methods of reducing noise levels from construction plant**

| Plant | Noise reduction of plant | | | Alternative plant |
|---|---|---|---|---|
| | **Source of noise** | **Possible remedies** (to be discussed with machine manufacturers) | **A-weighted sound reduction** dB | |
| Hammer drive piling equipment | Pneumatic/diesel hammer or steam winch vibrator driver | Enclose hammer head and top of pile in acoustic screen | 5 to 10 | Bored piling<br>Vibratory system<br>Drop hammer completely enclosed in box with opening at top for crane access<br>Steel jacket completely enclosing drop hammer with dolly and polystyrene chips fed to impact surface to dissipate energy<br>Pressed-in piling which generates its driving force from the frictional restraint of other piles |
| | Sheet pile | Acoustically dampen sheet steel piles to reduce levels of resonant vibration | | |
| | Impact on pile | Use resilient pad (dolly) between pile and hammer head. Packing needs to be kept in good condition | | |
| | Cranes cables, pile guides and attachments | Careful alignment of pile and rig | | |
| | Power units or base machine | Fix more efficient sound reduction equipment or exhaust. Acoustically dampen panels and covers. When intended by the manufacturer, engine panels need to be kept closed. Use acoustic screens when possible | | |
| Earth-moving plant:<br>• bulldozer<br>• compactor<br>• crane<br>• dump truck<br>• dumper<br>• excavator<br>• grader<br>• loader<br>• scraper | Engine | Fit more efficient exhaust sound reduction equipment<br>Manufacturers' enclosure panels need to be kept closed | 5 to 10 | Alternative super silenced plant might be available. Consult manufacturers for details |

**Lighting**

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 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.<br>• 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. |
| **Herpetofauna** | Vegetation clearance works are best undertaken between April and June. During this timeframe, amphibians and reptiles are active and able to escape to adjacent areas when disturbed. If this timeframe cannot be achieved, vegetation clearance works can be undertaken between June and September. During this timeframe, all refugia present will need to be subject to detailed finger-tip searches prior to removal. Clearance works must not take place between October and March when reptiles are mostly torpid and thus highly vulnerable to injury or death.<br><br>Vegetation removal will comprise a phased cutting method in addition to cutting in systematic patterns. The phased cutting method will be undertaken in two stages; the first cut will remove all vegetation to approximately 150mm from ground level and the second cut will be to ground level/ bare ground. Amphibians and reptiles are most likely to be present at or just below ground level; the phased technique allows any individuals present to disperse prior to reducing vegetation to ground level. The systematic vegetation cutting must be applied to both cutting phases and comprises cutting systematically towards areas of retained habitat to the south in an attempt to encourage any individual amphibians or reptiles to retreat to retained habitat unharmed. This method also prevents the creation of habitat islands during the second cutting phase which has potential to trap amphibians and reptiles in isolated pockets of habitat and thus increase the potential for injury or death during works. Two suitable systematic cutting techniques are schematically represented on **Figure 2**. Once the sensitive vegetation clearance has been completed, these areas will then be maintained at a short sward (sward length<50mm) which is unsuitable to support amphibians and reptiles and is likely to prevent individuals from recolonising these areas of the site prior to construction works. |

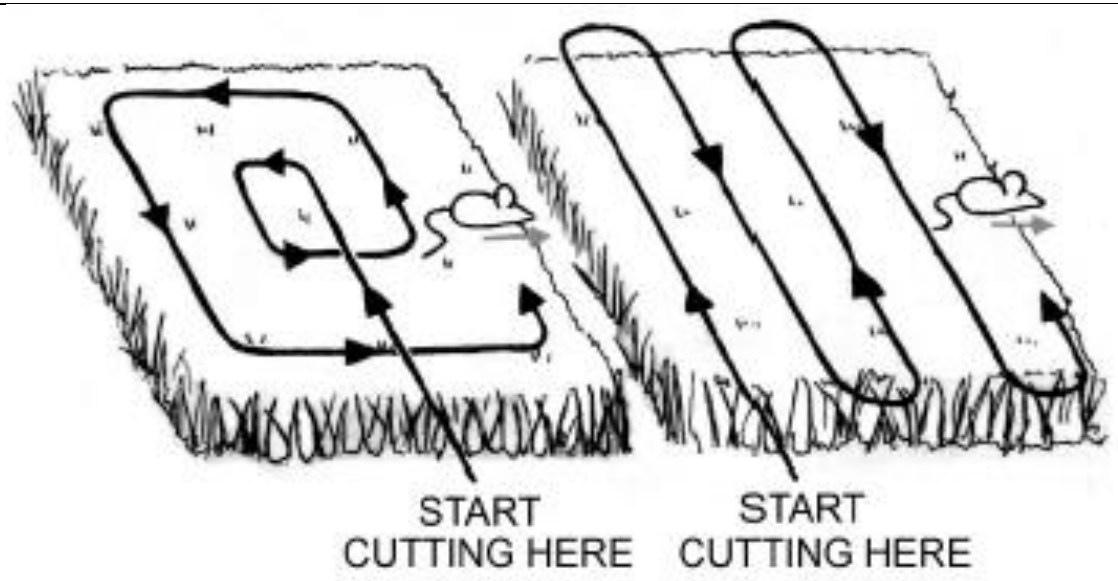



*Figure 2: A schematic representation of vegetation cutting patterns as best to eliminate terrestrial opportunities for reptiles and amphibians within the construction zone.*

If a common amphibian or reptile is found then this should be allowed to move away into adjacent habitats unharmed, of their own accord or, if at immediate risk, moved by gloved hand to an undisturbed and sheltered area of the site or adjacent land.

In the unlikely event that a great crested newt is identified, works must cease and advise must be sought from a suitably qualified ecologist.

| | |
|---|---|
| **Birds** | Precautions should be taken with machinery and noise levels when working close to any retained nests so as not to disturb any nearby nesting birds during construction works. At least a 3-5m buffer should be created between any machinery and active nests until the young have fledged. |

## 4.0 Provision of New Landscaping and Species-Specific Enhancements

*Table 3: Provision of New Landscaping and Species-Specific Enhancements*

| Works | Specification |
|---|---|
| **Persons Responsible** | The Biodiversity Champion will be responsible for the provision of the new landscaping and species-specific enhancements. The occupier of the proposed development (i.e. the landowner or managing agent) will be responsible for the management of these features post development. |
| **Management Term** | The management prescriptions outlined within this table must be implemented over a period of at least 30 years. |
| **Site Visit and Reporting** | The ECoW will make a final site check and sign off once the landscaping and installation of species-specific enhancements are complete. |
| **Bat Boxes** | One bat box is recommended to be erected on a retained tree within the garden of the site. Additionally, one bat access tile is recommended to be installed within the roof of the new extension.<br><br>***Bat boxes specification:***<br>• The recommended bat boxes will be constructed of woodcrete/ woodstone. Boxes of this construction are designed to require no maintenance and have a lifespan of 25 years plus.<br>• 1x General Purpose Bat Box (or similar alternative brand) are recommended on the trees, as shown in **Figure 3**.<br>• 1x bat access tile is recommended to be integrated into the roof of the new extension, as shown in **Figure 4**.<br>• Bat boxes should be positioned 3-5m above ground level facing in a south, southeast, or southwest aspect with a clear flight path to and from the entrance, away from artificial light. |

*Figure 3: General Purpose Bat Box (image credit https://www.nhbs.com/convex-wood-concrete-bat-box)*

*Figure 4: Bat access tile (image credit: [https://www.nhbs.com/heritage-clay-bat-access-tiles](https://www.nhbs.com/heritage-clay-bat-access-tiles))*

***Recommended Management:***

The proposed bat boxes are designed to require no management or maintenance. Furthermore, preventing physical disturbance of bat boxes will increase the chances of occupation by roosting bats. However, it is recommended that the bat boxes are inspected annually for the first five years outside of the typical active season for bats (May to September inclusive) following installation. Bat boxes must be replaced if they are damaged, removed, or have fallen from their recommended location.

| | |
|---|---|
| **Bird Boxes** | Two bird boxes are recommended to be installed on site, one upon mature trees to the west of the site and the other onto the façade of the building.<br><br>***Bird box specification:***<br>• The recommended bird boxes will be constructed of woodcrete/ woodstone. Boxes of this construction are designed to require no maintenance and a lifespan of 25 years plus.<br>• 1x Woodstone Nest Box (or a similar alternative brand) with 28mm entrance holes are proposed on the trees, as shown in **Figure 5**.<br>• 1x Vivara Pro WoodStone Swift Nest Box (or a similar alternative brand) is proposed on the building, as shown in **Figure 6**.<br>• Woodstone Nest Boxes should be positioned approximately 3m above ground level where they will be sheltered from prevailing wind, rain and strong sunlight.<br>• Vivara Pro WoodStone Swift Nest Boxes should be positioned at the eaves of the building.<br>  <br>*Figure 5: Woodstone Nest Box (image credit arkwildlife.co.uk)* |

| | |
|---|---|
| |  <br>*Figure 6: Vivara Pro WoodStone Swift Nest Box (image credit https://www.nhbs.com/woodstone-swift-nest-box)*<br><br>***Recommended Management:***<br>The proposed bird boxes are designed to require no management or maintenance. Furthermore, preventing physical disturbance of bird boxes will increase the chances of occupation by nesting birds. However, it is recommended that the bird boxes are inspected annually for the first five years outside of the typical nesting bird season (March to September inclusive) following installation. Bird boxes must be replaced if they are damaged, removed, or have fallen from their recommended location. |
| **Hedgehog House** | A hedgehog house will be installed adjacent to the retained tree line on the eastern site boundary (**Figure 7**). A hedgehog house suitable for the site (or a similar alternative brand) can be found here: https://www.nhbs.com/hedgehog-house |

*Figure 7: Hedgehog house (image credit https://www.nhbs.com/hedgehog-house)*

Hedgehog holes (13x13cm) will be added to the external boundaries to allow for hedgehogs to commute across the site (**Figure 8**).

*Figure 8: hedgehog hole within boundary fencing (image credit: https://www.nhbs.com/eco-hedgehog-hole-fence-plate)*

***Recommended Installation:***

| | |
|---|---|
| | The hedgehog holes at the boundaries and hedgehog house will be created/ installed onsite once construction has been finalised, to reduce the likelihood of hedgehogs gaining access to the site during development and being injured.<br><br>***Recommended Management:***<br>The proposed hedgehog holes are designed to require no management or maintenance. However, it is recommended that the holes are inspected annually for the first five years during the hibernation period (November to March/April). The holes must be restored if they are damaged or removed. |

# Appendix 1: Proposed Development Plan

Proposed Front Elevation
Scale 1:100

All work to comply with current building regulations and codes of practice.

Do not scale from drawings all dimensions to be checked on site before the start of any work.

Proposed External Finish Materials to Match Existing External Finish Materials.

Proposed Side Elevation
Scale 1:100

1:100
0 1 2 5 10 Meter

| | | | |
|---|---|---|---|
| Multi Creation | Project: 15 The Avenue, Ickenham, Uxbridge, UB10 8NR | Title: Proposed Elevations | Scale: 1:100 @ A3<br>Date: 09 2024<br>Drawing No.: 3788/10/JG<br>Revision |

239 Western Road, Southall, Middx, UB2 5HS Tel: 020 8571 1369 info@multicreation.co.uk

## Proposed Rear Elevation

Scale 1:100

## Proposed Side Elevation

Scale 1:100

All work to comply with current building regulations and codes of practice.

Do not scale from drawings all dimensions to be checked on site before the start of any work.

Proposed External Finish Materials to Match Existing External Finish Materials.

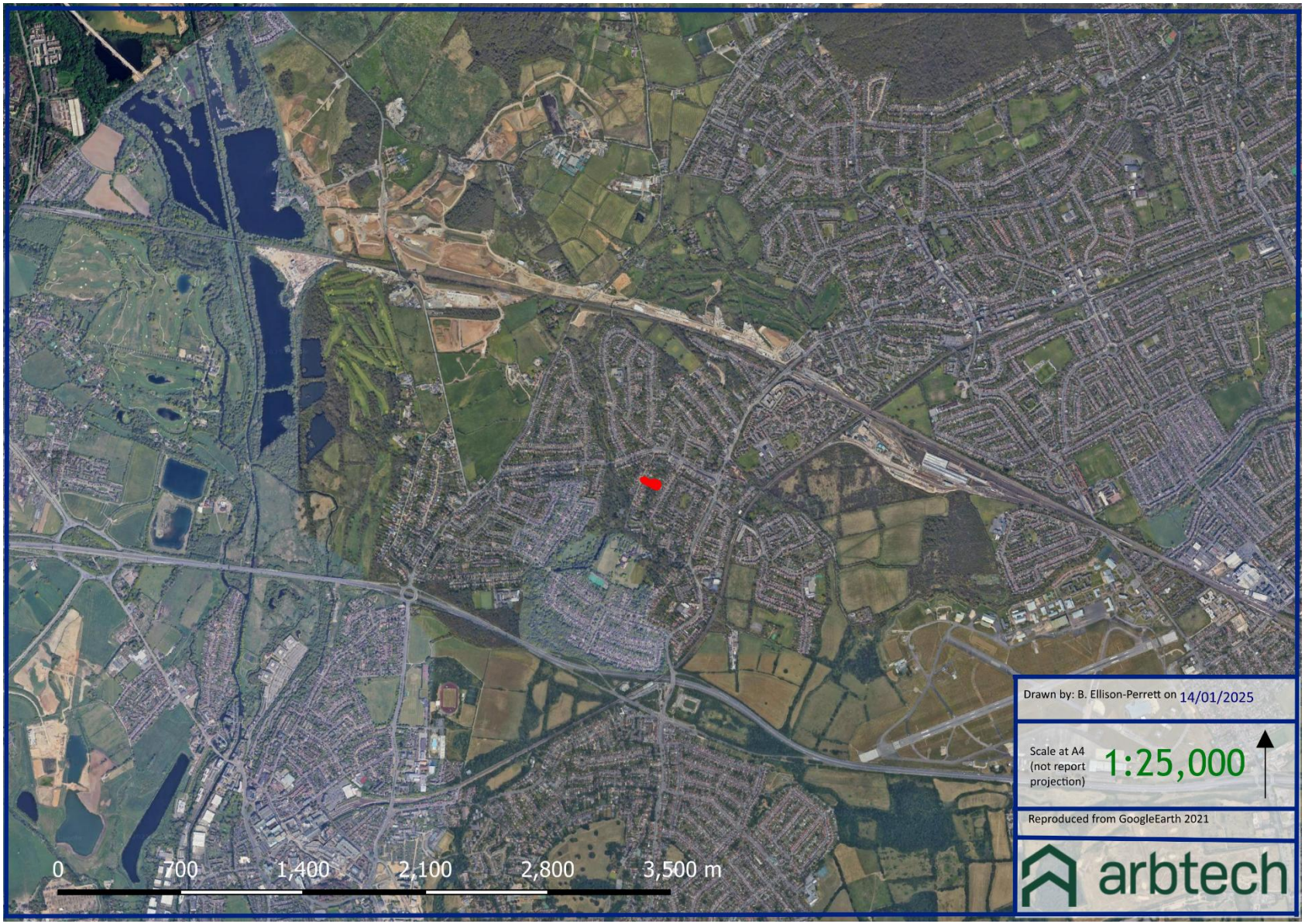
1:100

0 1 2 5 10 Meter

| | | | |
|---|---|---|---|
| ulti reation | Project: 15 The Avenue, Ickenham, Uxbridge, UB10 8NR | Title: Proposed Elevations | Scale: 1:100 @ A3<br>Date: 09 2024<br>Drawing No.: 3788/11/JG<br>Revision |

239 Western Road, Southall, Middx, UB2 5HS Tel: 020 8571 1369 info@multicreation.co.uk

## Appendix 2: Site Location Plan



## Appendix 3: Species-Specific Enhancements Plan