Adonis Ecology Ltd.

Ecological Impact Assessment and Ecological Mitigation and Management Plan for Development at 63 Hillfield Road, London

Project Ref: 1042

Prepared on behalf of:

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Quality Assurance

The findings outlined within this report and the data we have provided are to our knowledge true, and express our bona fide professional opinions. This report has been prepared and provided in accordance with the Chartered Institute for Ecology and Environmental Management (CIEEM) Code of Professional Conduct and the British Standard BS 42020:2013 which provides a code of practice for biodiversity in planning and development (BSI, 2013). This standard also recommends compliance with CIEEM Guidelines for Preliminary Ecological Appraisals (CIEEM, 2013) and Guidelines for Ecological Report Writing (CIEEM, 2015) which includes model formats for Preliminary Ecological Appraisal and Ecological Impact Assessment.

As far as the author and report checker are aware, the only differences that occur in this report from the recommended layouts are:

- to enable greater clarity and reduce repetition (e.g. the report author is listed once on the quality assurance page in this report rather than on the front page, quality assurance page and introduction as in the CIEEM model formats);
- where there are inconsistencies in the guideline documents (e.g. the list of what should be included in the summary of an ecological report highlighted in the CIEEM Guidelines for Ecological Report Writing is different to that shown in the model formats in the same document); and
- to retain a proportionate approach in accordance with BS 42020:2013.

No method of assessment can completely remove the possibility of obtaining partially imprecise or incomplete information. Therefore, we cannot guarantee that this assessment completely defines the degree or extent of the occurrence of various species or habitats on the site, or the effectiveness of recommended actions as described in the report. In addition, as the ecological situation of a site is dynamic, this assessment pertains only to the conditions noted during the site visit. Therefore, to achieve the objectives of assessment as stated in this report, the conclusions are based on the information that was available during the time of the assessment and within the limits prescribed by our client in the agreement.

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0 SUMMARY

0.1 Adonis Ecology Ltd. was commissioned by Vorbild Architecture Ltd. to undertake a preliminary ecological appraisal (PEA) and produce an Ecological Mitigation and Management Plan for a site at 63 Hillfield Road, West Hampstead, London, NW6 1QB, grid reference TQ 250 852. It was understood that the draft planning consent for the site included three conditions that required ecological input, and that the Local Planning Authority would require a report to address these conditions. It was further understood that it is proposed to construct a new dwelling within the garden of 63 Hillfield Road, with the existing dwelling to be modified to create three apartments.

0.2 A desk study was undertaken, in addition to an extended Phase 1 Habitat survey which was conducted on the 31st of July 2018. The site was checked for preferred habitat types, and signs or evidence, of protected species and NERC Act 2006 Section 41 species and habitats.

0.3 There was considered to be a potentially significant risk of impact on the following protected species/species groups:

- very low risk of harm to likely low numbers of common nesting birds;
- very low risk of harm to likely very low numbers of hedgehogs *Erinaceous europaeus*.

0.4 To prevent any very low risk of harm to common nesting birds and hedgehogs, removal of vegetation and existing sheds (and any other potential refuge features) will be undertaken between late September and end October, as this is outside of the bird nesting season, but before the winter period when hedgehogs may be more vulnerable to disturbance.

0.5 The above impact avoidance measures are included in the ecological mitigation and management plan. In addition, enhancement measures are proposed on the site to increase the number of native plant species, to provide maximum benefit from the proposed biodiverse roof, and to enhance the site to the benefit of local wildlife, including for hedgehogs and nesting birds. A prescription for management of the habitats on site, including the biodiverse roof is also provided.

0.6 Overall, the site was considered to be of very low ecological value at a local level, and with the impact avoidance measures outlined in the Ecological Mitigation Plan outlined in this report undertaken, it was considered the proposed development could proceed with negligible risk of harm to protected species or significant negative impact upon Section 41 species or habitats. Further, with the enhancements and management prescriptions of the Ecological Management Plan undertaken as outlined in this report, it was considered there could be a minor net gain for local biodiversity as encouraged by the National Planning Policy Framework (NPPF).

1 INTRODUCTION

1.1 Background

1.1.1 Adonis Ecology Ltd. was commissioned by Vorbild Architecture Ltd. to undertake a preliminary ecological appraisal (PEA) and produce an Ecological Mitigation and Management Plan for a site at 63 Hillfield Road, West Hampstead, London, NW6 1QB, grid reference TQ 250 852.

Development Description

1.1.2 The site plans used to determine the boundaries of the site and the likely impacts from the proposed development as outlined in this report were provided in the Planning Presentation – Rev A produced by Vorbild Architecture Ltd. (2018).

1.1.3 The proposed site was approximately 0.03ha and consisted predominantly of a garden area dominated by grassland, garden beds, a large coniferous tree and some overgrown scrub as well as the existing dwelling of 63 Hillfield Road. It was understood that the existing dwelling will be modified to create three apartments, and that this may require some works to the roof of the dwelling. In addition, a new dwelling is proposed for construction in the garden which would result in the loss of the majority of existing habitats in the garden, with the exception of the coniferous tree and its immediate surroundings.

Planning Consent and Conditions

1.1.4 It was understood that a draft planning consent has been received from the Local Planning Authority (LPA) for the proposed development, and that the following conditions are likely to be imposed:

- Condition 5: No development shall take place until full details of hard and soft landscaping and means of enclosure of all un-built, open areas have been submitted to and approved by the local planning authority in writing. Such details shall demonstrate how the landscaping shall protect and enhance the biodiversity of the site. The relevant part of the works shall not be carried out otherwise than in accordance with the details thus approved.

- Condition 11: Prior to commencement of development, full details in respect of the biodiverse living roof in the area indicated on the approved roof plan shall be submitted to and approved by the local planning authority. The details shall include:

    i. a detailed scheme of maintenance;

    ii. sections at a scale of 1:20 with manufacturers details demonstrating the construction and materials used;

    iii. full details of planting species and density.

The living roofs shall be fully provided in accordance with the approved details prior to first occupation and thereafter retained and maintained in accordance with the approved scheme.

- Condition 14: Prior to implementation a method statement for a precautionary working approach to demolition and construction should be submitted to the Local Authority and approved in writing. This shall include:

    i. detailed proposals for vegetation clearance demonstrating that all removal of trees, hedgerows, shrubs, scrub or tall herbaceous vegetation shall be undertaken between September and February inclusive. If this is not possible then a suitably qualified ecologist shall check the areas concerned immediately prior to the clearance works to ensure that no nesting or nest-building birds are present. If any nesting birds are present then the vegetation shall not be removed until the fledglings have left the nest;

    ii. precautionary approaches to mitigate the impact on hedgehogs unless it can be demonstrated that no hedgehogs are present on site.

    All site operatives must be made aware of the possible presence of protected species during works. If any protected species or signs of protected species are found, works should stop immediately and an ecologist should be contacted. The applicant may need to apply for a protected species licence from Natural England, evidence of which should be submitted to the Local Authority.

Aim and Objectives

1.1.5 The aim of this report is to determine the potential impacts of the proposed development of the site on significant local biodiversity, taking into account the species and habitats that may be affected, positively or negatively, and the potential for impact avoidance, mitigation and enhancement. The report will then address the conditions outlined above, to provide sufficient information to aid in the discharge of these conditions, prior to works commencing on site.

1.1.6 To achieve this aim, the report has the following objectives:

- to identify and describe potentially significant ecological impact risks relevant to planning associated with the proposed development;
- to identify ways in which, wherever reasonably possible;
- to produce an Ecological Mitigation Plan for the site to show how any significant risk of deleterious impacts could be avoided
- to produce an Ecological Management Plan for the site, identifying and describing ways in which the proposed development could

enhance local biodiversity and how such features will be managed to ensure their maintenance on the site.

1.2 Planning Policy and Legislation

1.2.1 Planning policy and guidance considered for this report included:

- National Planning Policy Framework (NPPF);
- National Planning Practice Guidance (NPPG) – Natural Environment.

1.2.2 Legislation considered for this report included:

- Protection of Badgers Act 1992;
- Wildlife and Countryside Act 1981, as amended;
- Countryside and Rights of Way Act 2000;
- Natural Environment and Rural Communities (NERC) Act 2006;
- Conservation of Habitat and Species Regulations 2017 (as amended).

1.2.3 Key considerations from the NPPF and NPPG related to ecology and development include that impacts on legally protected species and habitats, as well as NERC Act (2006) Section 41 species and habitats are a material consideration for individual planning consents (MHCLG, 2018).

1.2.4 The NPPF also promotes the enhancement of natural and local environments through planning, and encourages a move towards securing measurable net gains for biodiversity (MHCLG, 2018).

2 METHODOLOGY

2.1 Desk Study

2.1.1 On behalf of Adonis Ecology Ltd., Greenspace Information for Greater London (GiGL) undertook a search for records of protected, Section 41 and rare species, as well as statutory and non-statutory wildlife sites within 2km of the proposed development site.

2.1.2 Promap, Google Earth and the Multi-agency Geographic Information for the Countryside (MAGIC) interactive map were also used to locate ponds within a 500m radius of the site, as well as to assess the general surroundings of the site. The MAGIC map was also used to determine whether the site falls within any impact risk zones of nearby Sites of Special Scientific Interest (SSSIs).

2.1.3 These results were then combined with the findings of the site survey in order to assess the risk of ecology issues relevant to planning occurring on site.

2.2 Site Survey

Habitats, Plants and Surroundings

2.2.1 The site was visited on the 31st of July 2018 to survey for ecology issues. This included the following:

- a Phase 1 Habitat Assessment recording dominant and higher plant species present on site, and a survey for Japanese knotweed *Fallopia japonica*, giant hogweed *Heracleum mantegazzianum* and other non-native, invasive plant species as listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended);
- an assessment of the suitability of habitats present on site for widespread reptiles, bats, great crested newts *Triturus cristatus* and other protected or Section 41 species;
- an assessment of the habitats surrounding the site and in the local area;
- a direct survey for evidence of protected species as far as possible within seasonal constraints, e.g. for bats and badgers *Meles meles*.

Survey Constraints

2.2.2 The survey was undertaken during the peak time of year to survey the ecological value of a site, taken to be between April and the end of September, and it was considered that sufficient plant species would be visible and could be identified at this time of year to determine habitat types on site, and to assess the likely value of these habitats for local wildlife. However, some early spring flowering and annual species in particular may not have been visible above ground or identifiable to species level.

2.3 Protected Species

Bats – Survey Methodology

2.3.1 A bat check was undertaken during the site visit on the 31st of July 2018, and was conducted by an ecologist who holds a Natural England Level 2 Class licence for bats (2015-15636-CLS-CLS). The survey was undertaken in daylight to survey the outside of the building and trees on site.

2.3.2 The bat survey methods followed Natural England Bat Mitigation Guidelines (Natural England, 2004) and Bat Conservation Trust (BCT) Good Practice Guidelines (Collins, 2016) and therefore considerations were:

- the availability of access points of a size large enough to allow entry of bats to roosts;
- the presence and suitability as roosts of cracks, crevices, holes, dense ivy *Hedera helix* covering and other places;
- signs of bat activity or presence.

2.3.3 Definite signs of bat activity were taken to be:

- the bats themselves;
- droppings;
- dead bats;
- audible bat squeaks;
- scratch marks;
- urine splatter.

2.3.4 Signs of possible bat presence were taken to be:

- grease marks;
- moth and butterfly wings.

2.3.5 The outside of the main dwelling and sheds on site were checked for gaps, cavities, access points and crevices, and any signs of bats, in accordance with Natural England guidelines (Natural England, 2004). The inside of the sheds was then also checked for any potential roost sites and signs and evidence of bats, again in accordance with Natural England guidelines.

2.3.6 Trees were then checked externally for any gaps, holes, cracks or crevices suitable for roosting bats, as well as any signs or evidence of bats, in accordance with Natural England (2004) and BCT (Collins, 2016) guidelines.

2.3.7 The suitability of places to roost was assessed based upon potential for access and lack of cobwebs and dirt.

2.3.8 Inspection survey is a suitable method at any time of year for determining presence or absence of bats, according to Natural England guidelines (Natural England, 2004). Some parts of the roof could not be seen from the garden areas of the site and thus could not be checked for potential for roosting bats.

Bats - Evaluation and Risk Assessment

2.3.9 Where roosting bats themselves were not found, to determine whether bat roosts were likely to be present within the buildings, a calculation of the risk level has been undertaken. This calculation uses information on features known from published research to influence bat roost occurrence, to calculate the probability of major/maternity roosts or minor roosts of both crevice and void dwelling species occurring on site. Features used in the calculation include within site variables, such as potential roosting opportunities and the presence or absence of bat signs, as well as off-site variables such as the abundance and availability of foraging habitat, habitat connections, the level of urbanisation around the site and the distance of the site to water.

2.3.10 The probability level at which each feature may influence the likelihood of a bat roost occurring has been determined using past bat emergence/re-entry surveys of buildings carried out in England and Wales by Adonis Ecology in accordance with BCT guidelines (Hundt, 2012), where the presence or absence of a bat roost has been proven beyond reasonable doubt.

2.3.11 It should be noted that because the survey data used to derive the probability levels for each feature were all from buildings considered to present at least a low risk of supporting a bat roost, the calculated probability for bats to occur on any proposed development site is likely to overstate, rather than understate, the probability of a bat roost occurring.

2.3.12 It should be noted that Adonis Ecology currently has insufficient data from past surveys to produce an equivalent probability calculation for bat roosts in trees, or bat hibernation roosts in buildings. For these situations, ecologist judgement has been used to determine the likelihood of such roosts occurring on site.

Nesting Bird Assessment

2.3.13 A nesting bird assessment was also undertaken during the site visit. Considerations were:

- the presence and suitability of places as nest/roost sites;
- signs of nesting bird activity or presence.

2.3.14 Definite signs of nesting bird activity were taken to be:

- the nesting birds themselves;
- “nests”, old or new;
- Eggshells.

2.3.15 The trees and shrubs on site were assessed for suitability as nesting sites, and signs and evidence of active or old nests were searched for.

3 RESULTS AND EVALUATION

3.1 Site Location and Description

Site Location and Description

3.1.1 The site was located between Hillfield Road and Achilles Road, approximately 750m to the northwest of West Hampstead railway station and approximately 7.5km to the northwest of the centre of London (Google Earth, 2018). The site consisted predominantly of a garden area dominated by grassland, garden beds, a large coniferous tree and some overgrown scrub as well as the existing dwelling of 63 Hillfield Road.

3.2 The Surroundings

Description of Site Surroundings

3.2.1 The site was surrounded on all sides by residential properties and associated small gardens, with Hillfield Road immediately to the south and a small section of a neighbouring driveway and then Achilles Road immediately to the north.

3.2.2 Approximately 60m to the northwest of the site was the Gondar Gardens Covered Reservoir, a Borough Grade II Site of Importance for Nature Conservation (SINC). This SINC is an area of neutral grassland and secondary woodland known to support slow-worms *Anguis fragilis* and common nesting birds, and where foraging pipistrelle *Pipistrellus* sp. bats have been observed (GiGL, 2018).

3.2.3 Approximately 210m to the north of the site was the Borough Grade 1 Hampstead Cemetery SINC, an area containing scattered trees, secondary woodland, semi-improved neutral grassland and tall herbs (GiGL, 2018).

3.2.4 There were no other substantial areas of vegetated habitat within 1km of the site, other than playing fields and residential gardens, and little within 3km of the site. However, the substantial area of Hampstead Heath began approximately 1.25km to the northeast of the site, this being a SINC of Metropolitan Importance which supports ancient woodland, bog and acid grassland habitats (GiGL, 2018).

Waterbodies within 500m

3.2.5 The 1:10000 ordnance survey map provided by Promap showed no ponds or other waterbodies within 500m of the site, the closest being a pond within Hampstead Heath approximately 1.5km to the northeast of the site (Promap, 2018).

Woodlands within 500m

3.2.6 The only woodland within 500m of the site was the very small Westbere Copse Local Nature Reserve (LNR) approximately 480m to the west of the site, which linked to some further tree and scrub habitat adjacent to a railway line. The closest larger area of woodland was within Hampstead Heath approximately 1.25km to the northeast of the site (Promap, 2018 and Google Earth, 2018).

Table 1: Key Habitat Features Surrounding Proposed Development Site at 63 Hillfield Road, London

Feature	Value
Percentage deciduous tree cover within 500m of site	5%
Percentage non-illuminated tree/tall shrub cover (over 4m) within 50m of the site	<1%
Number of non-illuminated tree/tall shrub lines within 50m of the site	0
Distance to nearest medium-large pond, lake, river or open stream	1.5km

Percentage of rough grassland within 500m of the site	10%
Degree to which surrounding 500m is built up (rural, suburban, urban)	Suburban

Statutory Designated Sites

3.2.7 The only statutory wildlife site within 2km of the site was the Westbere Copse LNR as outlined above. The closest nationally designated statutory wildlife site was Hampstead Heath Woods Site of Special Scientific Interest (SSSI) approximately 2.5km to the northeast of the proposed development site (GiGL, 2018).

3.2.8 The site falls within an Impact Risk Zone of this and other more distant SSSIs, however, there was no requirement for the LPA to consult Natural England on the type of development proposed on this site (MAGIC, 2018).

Non-Statutory Designated Sites

3.2.9 There was a substantial number of other SINCs in the local area, in addition to those outlined above, however, there were none closer than those outlined above. Those present were mostly scrub and grassland areas adjacent to railway lines, and parkland habitats (GiGL, 2018).

3.3 Habitats and Significant Species Signs on Site

3.3.1 A Phase 1 Habitat plan showing the habitats on site and highlighting the key features found on the site is provided in Figure 1 in Appendix 1.

Habitats on Site and Significant Species Signs

3.3.2 Approximately one quarter of the site consisted of overgrown, species-poor amenity grassland, which had been fairly recently cut to a height of approximately 5cm, and which formed the rear garden of 63 Hillfield Road. The western edge of the grassland was bordered with a small tree/tall shrub hedgerow dominated by native and introduced species, whilst the eastern side had occasional taller trees and shrubs. Species present included ash *Fraxinus excelsior*, barberry *Berberis* sp., blackthorn *Prunus spinosa*, clematis *Clematis* sp., holly *Ilex aquifolium*, privet *privet* sp., rose-of-Sharon *Hypericum calycinum*, spireae *Spireae* sp., stag's horn sumach *Rhus typhina* and yew *Taxus baccatta*. (see Photograph 1 in Appendix 2). There was also some of the Schedule 9, non-native, invasive species wall cotoneaster *Cotoneaster horizontalis*.

3.3.3 The northern end of the rear garden was dominated by a relatively small coniferous tree which had a substantial amount of Russian ivy *Bukhara fleeceflower* growing over it, and which was within an area of dense, overgrown scrub and shrubs (see Photograph 2 in Appendix 2).

3.3.4 Also within the rear garden was a dilapidated wooden shed with a sloping felt roof attached to wooden boards (see Photograph 3 in Appendix 2), another small shed with some glass sides (see Photograph 4 in Appendix 2) and a small patio area (see Photograph 5 in Appendix 2).

3.3.5 The front garden to the property consisted predominantly of a driveway with occasional small trees and shrubs (see Photograph 6 in Appendix 2).

3.3.6 Access to the new dwelling will be created through the end of the garden of the adjacent 61 Hillfield Road. This area consisted predominantly of hardstanding (paving) and some ornamental shrubs.

3.3.7 No signs or evidence of nesting birds were found within the trees/shrubs on site and no signs of any other protected and/or Section 41 species were found within the garden areas, including in either of the sheds on site.

3.4 Dwelling on Site and Significant Species Signs

3.4.1 The dwelling of 63 Hillfield Road was a two-storey, brick-built dwelling with a pitched, slate-tiled roof (see Photograph 7 in Appendix 2). A small, single-storey conservatory was attached to the rear of the property with clear plastic roofing and wooden upper gable ends (see Photograph 8 in Appendix 2).

3.4.2 There were no obvious access points beneath tiles for bats and/or birds and no signs or evidence of bats or birds were observed on the outside of the building. The evaluation and risk assessment calculation for roosting bats using the dwelling on site highlighted that there was a negligible risk of impact to bats and/or bat roosts from the proposed works to the existing dwelling (see Table 6 in Appendix 3).

Schedule 9 Invasive Species

3.4.3 The wall cotoneaster as outlined above was the only Schedule 9 invasive plant species found on the site (see Figure 1 in Appendix 1 for location).

3.5 Evaluation – Species and Habitats

3.5.1 Tables 2 and 3 below summarise the site evaluation for protected and Section 41 species. The following explains each column:

- **Species or Species Group:** the protected species or group of protected species being assessed. Some species and species groups in Table 2 are also Section 41 species. Only those species where the relevant legislation is limited to Section 41 are included in Table 3.
- **Species present in data search:** summarises relevant findings for that species or species group from the data search.
- **Signs found:** indicates whether signs of that protected species or species group were found in the zone of influence during the survey visit or visits.
- **Connectivity of site to other suitable habitat:** indicates, for that species or species group, the relative degree to which the site is considered to be connected to suitable habitat, taking into account the quantity, suitability and distance of nearby suitable habitat.

Habitat out to 500m from the site is taken into account when considering this connectivity.

- **Estimated zone of influence carrying capacity:** indicates the estimated size of population the zone of influence could potentially support (i.e. the size of population that could be affected), given the suitability of habitat and the quantity of suitable habitat found during the survey visit and desk study. A high level would indicate the zone of influence could support a relatively large population for the local area.

- **Likelihood of presence in zone of influence:** how likely individuals of the species are to occur with the zone of influence (area of potential impact), taking into account the findings of the data search, signs found on site (where there would be a reasonable likelihood of finding of finding signs, if the species was present, in the survey visits undertaken), connectivity to other suitable habitat, and site carrying capacity (as smaller populations due to a lower site carrying capacity would be more likely to have gone extinct or failed to establish). The zone of influence may include only parts of the site and/or may extend off site, depending upon the scale and form of development and the ecology of the species concerned.

3.5.2 Where the likelihood of presence of any species or species group is considered to be greater than negligible (highlighted in red), the legislation surrounding such species and the risk are detailed in the following section.

Table 2: Evaluation of Protected Species Likelihood on Site at 63 Hillfield Road, London

Species or species group	Species present in data search	Signs found	Connectivity of site to other suitable habitat	Estimated zone of influence carrying capacity	Likelihood of presence in zone of influence
Roosting bats – buildings	Common pipistrelle, soprano pipistrelle, Nathusius' pipistrelle, brown long-eared, Daubenton's, Natterer's, noctule, Leisler's, serotine and unidentified myotis	None	Very Low	Very Low	Negligible
Roosting bats – trees		None*	Very Low	Negligible	Negligible
Foraging/ commuting bats		N/A	Very Low	Negligible	Negligible
Badger setts	No	None	None	None	None
Badger foraging		None	None	None	None
Dormouse	No	None*	None	None	None
Otter	No	None	None	None	None
Water vole	No	None	None	None	None
White-clawed crayfish	No	None*	None	None	None

Species or species group	Species present in data search	Signs found	Connectivity of site to other suitable habitat	Estimated zone of influence carrying capacity	Likelihood of presence in zone of influence
Great crested newts – breeding	Yes Closest record approximately 1130m to the southeast of the site	None*	Very Low	None	None
Great crested newt – dispersing		None*		Negligible	Negligible
Great crested newt – refuges		None*		Negligible	Negligible
Reptiles	Slow-worm	None*	Very Low	Very Low	Negligible
Schedule 1 nesting birds	Bittern, brambling, fieldfare, firecrest, kingfisher, red kite and redwing	None	Very Low	Negligible (suitability for nesting)	Negligible (for nesting)
Common nesting birds	Numerous	None	Very Low	Very Low	**Very Low**
Protected plants and fungi	Meadow clary, pennyroyal	None	Negligible	Negligible	Negligible
Protected invertebrates	No	None*	Negligible	Negligible	Negligible
Other protected species relevant to development	No	None*	None	None	None

* Denotes where signs and evidence will not necessarily be found in a single survey visit, even if species present.

Table 3: Evaluation of Section 41 Species Likelihood on Site at 63 Hillfield Road, London

Species or species group	Species present in data search	Signs found	Connectivity of site to other suitable habitat	Estimated zone of influence carrying capacity	Likelihood of presence in zone of influence
Hedgehog	Yes	None*	Low	Very Low	**Very Low**
Brown hare	No	None	None	None	None
Polecat	No	None*	None	None	None
Harvest mouse	No	None*	None	None	None
Common toad	Yes	None*	Negligible	Very Low	Negligible
Section 41 plants	Annual knawel, chamomile, common juniper, corn cleavers, Deptford pink, marsh clubmoss, marsh stitchwort, pheasant's-eye, spreading bellflower	None	Negligible	Negligible	Negligible
Section 41 breeding birds	House sparrow, lapwing, lesser redpoll, skylark,	None*	Very Low	Very Low	Negligible

Species or species group	Species present in data search	Signs found	Connectivity of site to other suitable habitat	Estimated zone of influence carrying capacity	Likelihood of presence in zone of influence
	spotted flycatcher, wood warbler and yellowhammer				
Section 41 invertebrates	Stag beetle; wall, white admiral and white-letter hairstreak butterflies; brindled beauty, buff ermine, cinnabar, double dart, ear moth, garden tiger, grey dagger, ghost moth, knot grass, sallow, spinach and white ermine moths	None*	Negligible	Negligible	Negligible
Section 41 fish	No	None*	None	None	None
Other Section 41 species	No	None	None	None	None

*Denotes where signs and evidence will not necessarily be found in a single survey visit, even if species present.

3.5.3 Table 4 below lists the Section 41 habitats that are most likely to be encountered inland in lowland England, their occurrence on site and the amount of each habitat considered likely to be impacted by the proposed development. Habitats on site were assessed against JNCC criteria for UK BAP habitats (JNCC, 2016), which are those habitats listed for Section 41.

Table 4: Section 41 Habitats and Amounts Expected to be Impacted by Proposed Development on Site at 63 Hillfield Road, London

Section 41 Habitats	Approximate Amount on site (ha unless otherwise stated)	Comments	Likely amount of impact (ha/m)
Rivers	0	No similar habitat on site	0
Ponds	0	No similar habitat on site	0
Eutrophic Standing Waters	0	No similar habitat on site	0
Arable Field Margins	0	No similar habitat on site	0
Hedgerows	0	No similar habitat on site	0
Traditional Orchards	0	No similar habitat on site	0
Wood Pasture & Parkland	0	No similar habitat on site	0
Lowland Beech & Yew Woodland	0	No similar habitat on site	0
Wet Woodland	0	No similar habitat on site	0
Lowland Mixed Deciduous Woodland	0	No similar habitat on site	0
Lowland Dry Acid Grassland	0	No similar habitat on site	0

Section 41 Habitats	Approximate Amount on site (ha unless otherwise stated)	Comments	Likely amount of impact (ha/m)
Lowland Calcareous Grassland	0	No similar habitat on site	0
Lowland Meadows	0	No similar habitat on site	0
Coastal and Flood Plain Grazing Marsh	0	No similar habitat on site	0
Lowland Heathland	0	No similar habitat on site	0
Purple Moor-grass and Rush Pastures	0	No similar habitat on site	0
Lowland Fens	0	No similar habitat on site	0
Reedbeds	0	No similar habitat on site	0
Lowland Raised Bog	0	No similar habitat on site	0
Open Mosaic Habitats on Previously Developed Land	0	No similar habitat on site.	0

3.6 Overall Ecological Value of the Site

3.6.1 Overall, the site was considered to be of likely very low value for wildlife at a local level. This can also be seen from evaluation of the site using the criteria as set out in Table 7 in Appendix 3.

4 LEGISLATION AND IMPACT RISK ASSESSMENT

4.1 Nesting Birds

Summary of Relevant Legislation

4.1.1 Wild birds are protected under the Wildlife and Countryside Act 1981 and, with certain exceptions (where certain species are causing a public health risk), it is an offence to intentionally:

- kill or injure any wild bird;
- take, damage or destroy the nest of any wild bird while it is in use or being built;
- take or destroy the egg of any wild bird.

Impact Assessment

4.1.2 The trees and shrubs on the site were considered to provide a small amount of low quality potential nesting habitat for common bird species, though no occupied or old nests were observed on site during the survey visit. Although it was understood the larger coniferous tree will be retained, and there was considered to be a very low risk of nesting birds being present, any works required on the tree or removal of other trees, shrubs and dense scrub would

pose a high risk of harm (if present) to at least very low numbers of nesting birds if undertaken during the nesting bird season, taken to be March to end August.

4.1.3 It was therefore considered that the risk to nesting birds from the clearance of any part of the site during the bird nesting season (taken to be March to end August) would be low and the impact avoidance measures outlined in Section 5 of this report will be undertaken to reduce this risk to negligible.

4.2 Section 41 Species

Summary of Relevant Legislation

4.2.1 The hedgehog *Erinaceous europaeus* is a NERC Act 2006 Section 41 species and therefore conservation of this species is a material consideration for any planning application. Several plant and invertebrate species are also NERC Act 2006 Section 41 species.

Impact Assessment – Hedgehog

4.2.2 The vegetated habitats on site and that will be impacted by the proposed development were considered to provide a small amount of likely moderate quality potential shelter and foraging grounds for hedgehogs. Given the generally low quality of the majority of surrounding habitats, and the small quantity of suitable habitats on the site, it was considered the site was unlikely to support any significant number of hedgehogs, and the risk of the proposed development impacting significantly upon any local hedgehog population was considered to be negligible.

4.2.3 However, there was considered to be a very low risk of harm to likely very low numbers of hedgehogs associated with the clearance of any vegetated habitats on the site. Therefore, impact avoidance measures outlined in Section 5 of this report will be undertaken to reduce risk to this species to negligible.

4.3 Designated Sites

Statutory Designated Sites

4.3.1 Although the site falls within the Impact Risk Zones of some nearby SSSIs, there was no requirement to consult Natural England on the type of development planned for the site and the risk of impact to any statutory wildlife site was therefore considered to be negligible.

Non-Statutory Designated Sites

4.3.2 Although there were some non-statutory wildlife sites in relatively close proximity to the proposed development site, given the small quantity of very low value habitat on the proposed development site, the likelihood of the works impacting the interest features of any nearby non-statutory wildlife sites was considered to be negligible.

5 RECOMMENDATIONS

5.1 Further Surveys

All Species

5.1.1 It was considered that, provided the impact avoidance measures outlined below are adhered to, no further ecological surveys would be necessary as no other species are likely to either occur on site, or be significantly impacted by the proposed development of the site.

Validity of PEA

5.1.2 If site works do not commence for more than two years from the date of the survey undertaken for this report, the ecology of the site should be re-assessed as the ecological situation may have changed in the intervening time.

6 ECOLOGICAL MITIGATION AND MANAGEMENT PLAN

6.1 Site Briefings

6.1.1 As required by Condition 14 of the draft planning consent, before any works commence on site, all site workers will be informed of ecology issues on the site, and the impact avoidance measures that should be followed to prevent impact on protected and Section 41 species. This would be in the form of a Toolbox Talk and provision of a subsequent information sheet to cover the following topics:

- areas to remain undisturbed with fencing for protection of key habitats and species;
- species impact avoidance measures;
- habitats and features to be provided post-construction.

6.2 Impact Avoidance Measures

6.2.1 The following impact avoidance measures are recommended to prevent risk of impact to species that were considered to be at low risk of impact from the proposed works.

Nesting Birds and Hedgehogs

6.2.2 To prevent risk of harm to occupied bird nests, any works to the tree to be retained, including removal of the existing Russian ivy, will be undertaken (where possible) outside of the bird nesting season (taken to be March to the end of August). Where this is not possible, the tree will be checked by an ecologist for active bird nests no more than seven days before works begin. If an active bird nest is found, then the nest will remain undisturbed until an ecologist confirms the birds have finished nesting.

6.2.3 In order to reduce the risk of harm to individual hedgehogs to negligible and prevent risk of harm to occupied bird nests, removal of trees and shrubs (as necessary), as well as the removal of the sheds will be done carefully, by hand or using hand tools where possible. Where this is not feasible, small mechanical machinery will be used. All clearance works will be undertaken with an ecologist present, and under the strict direction of the ecologist to minimise potential risk of harm to any hedgehogs that may occur on site.

6.2.4 The clearance works will be undertaken between late September and end October, as this is outside of the bird nesting season, and will avoid both the period when hedgehogs have young (June to mid-August) and when they would be more likely to be overwintering (from November).

6.2.5 In the unlikely event that any hedgehogs are found during the works, they will be picked up by the ecologist using sturdy gloves and be moved to the northern section of the site that is being maintained as vegetated habitat.

6.2.6 To allow continued movement of hedgehogs to the neighbouring property, three small holes (approximately 30cm wide and 10cm high) will be provided in the base of the eastern boundary fencing at the northeast corner (where the site vegetation will match the height of the adjacent garden vegetation) to allow free movement of hedgehogs to adjacent garden habitats.

General Precautions to Protect Small Animals

6.2.7 The following precautions will be undertaken during the construction stage of the development to prevent risk of harm to hedgehogs and any other small animals which may pass through the site. If any animals are found during the works the works will cease immediately and if possible, they will be allowed to disperse of their own accord. If the animals would be at risk of harm if they are not moved, they will be picked up using sturdy gloves and be moved to a nearby vegetated area, out of harm's way:

- materials brought to the site for the construction works will be kept off the ground on pallets so as to prevent small animals seeking refuge within them and coming into harm's way;
- any steep-sided trenches or holes dug between March and October inclusive will be either covered overnight or have a rough plank placed in them to provide a ramp for hedgehogs or other animals that fall in to be able to escape;
- rubbish and waste created by the works (other than that being used to create hedgehog habitat) will be removed off site immediately or placed in a skip, to prevent small animals using the waste as a refuge, and thus coming into harm's way.

6.3 Site Landscape Plan

6.3.1 The site landscape plan was provided by Vorbild, Drawing Numbers A-(23)-001 – A-(23)-006 dated 12th August 2018.

6.3.2 A small rear garden will be provided for the rear refurbished flat at 63 Hillfield Road, with this area consisting predominantly of lawn, with some climbing plants to be provided on the northern and eastern sides of the site.

6.3.3 Garden areas will also be provided for the new dwelling. To the south of the dwelling, an area of lawn, shrubs and a small tree will be provided. To the north, another area of lawn and shrubs will be created around the existing coniferous tree that will be retained.

6.3.4 All lawned areas will be seeded with the Emorsgate 'EL1 – Flowering Lawn Mixture' seed mix to provide more species-rich grassland on site than standard turf. The mixture includes nine species of native, wildflowers and four species of native grassland and was considered to provide more diverse grassland than that on the existing site.

6.3.5 A total of 16 species are proposed for the shrub planting (see Table 8 in Appendix 3). Although only three of the species are native, with one other being a cultivar of a native species, all 16 were considered to be wildlife attracting. In combination with the green roof, this would likely create a greater diversity of wildlife attracting species on the site than that currently present, with the planned species also having a range of flowering times. The shrubs on maturity are likely to provide some potential for foraging birds, and will give rise to a number of invertebrate species which could provide foraging potential for bats and birds.

6.4 Green Roof

6.4.1 It was understood that a biodiverse (extensive) roof system will be provided on the new building and flat roof extensions to the existing dwelling, and that the Bauder Wildlife Blanket XF118 will be installed over all areas.

6.4.2 The Bauder Wildlife Blanket contains 24 wildflower and herb species (see Table 9 in Appendix 3), all of which are native and wildlife attracting species.

6.4.3 The green roof will likely provide suitable habitat for a variety of invertebrate species, and would therefore also provide potential foraging grounds for bats, birds and other species.

6.5 Additional Biodiversity Enhancements

6.5.1 It was considered that there was scope within the site to provide further biodiversity enhancements. The following will be undertaken to enhance aspects of the biodiversity of the site, and are being undertaken in addition to requirements for mitigation of impacts as outlined above.

Hedgehog Habitat

6.5.2 To provide some potential shelter habitat for hedgehogs post-development, a 'hedgehog house' (manufactured by Coopers of Stortford) will be provided on site in the northeast corner, amongst shrubbery proposed for this location (see Figure 2 in Appendix 1). Some of the smaller vegetation waste and leaf litter created during site clearance will be used to cover the hedgehog home

and create additional shelter and foraging habitat for hedgehogs in this corner. This corner is also adjacent to the holes that will be made in the fencing to the neighbouring property.

Bird Nesting Habitat

6.5.3 The addition of four bird boxes on site will benefit nesting birds. The boxes will be installed above 2m on the adjacent wall or on the retained tree, out of the reach of predatory cats (see Figure 2 in Appendix 2 for locations). The boxes will consist of the following:

- 1 x Schwegler 1SP Sparrow Terrace – for the red-listed BoCC and Section 41 species *Passer domesticus*;
- 1 x Habibat Starling Nest Box suitable for the red-listed BoCC and Section 41 species common starling *Sturnus vulgaris*;
- 1 x Schwegler 2H open-fronted box suitable for robins *Erithacus rubecula* and wrens *Troglodytes troglodytes*;
- 1 x Schwegler 1B Hole Nest Box (26mm) suitable for blue tits *Cyanistes caeruleus*;

6.5.4 The Schwegler products are made of woodcrete and are guaranteed to last 25 years. It should be noted that two of the boxes will be attached to the wall of the neighbouring property, which is under the same ownership as the planned development site.

Bat Roosting Habitat

6.5.5 The addition of three bat boxes on the existing dwelling will greatly increase the roosting potential for these European protected species which may use the surrounding habitats. Three Schwegler 1FF boxes will be installed on the building (see Figure 2 in Appendix 2 for locations) as they are suitable for most common bat species, require no maintenance and there are no diseases known to be associated with bat droppings. Each bat box will be positioned at a height of more than 3m above ground level, away from external lighting, and where there is a clear path of flight to the boxes. The three bat boxes will each face a different aspect, with one facing north, one facing south and the other facing west. This allows the bats to choose the box which provides the most suitable conditions each day.

6.5.6 As bat roosts are protected by law, should any internal checks of the bat box be required, for example in the event the box is damaged and requires replacement, this will only be carried out following inspection by a suitably licensed ecologist.

Insect Nest Boxes

6.5.7 The addition of two Schwegler Clay and Reed Insect Nests will benefit native bees. The nesting aids will be installed securely (i.e. not allowed to swing) on the existing dwelling and retained tree, in sheltered, sunny positions, at a

height of approximately 1.5-2m (see Figure 2 in Appendix 2 for locations). These nests are designed to attract solitary bees which are not aggressive and are useful pollinators.

6.6 Ongoing Management Plan

6.6.1 The following management principles will be observed for a minimum of five years from completion of the planned development.

Hedgerows, Trees and Shrubs

6.6.2 Newly planted trees and shrubs will be watered regularly as required during the first two summers after planting (between May and the end of August). Any trees or shrubs found to be dead will be replaced the following winter with specimens of the same species.

6.6.3 Following this, for the next three years, trees and shrubs would be checked annually, in summer. Any trees or shrubs found to be dead will be replaced the following winter with specimens of the same species.

6.6.4 Any pruning of trees or shrubs in the future will be undertaken in late February to ensure berries are retained on trees for birds over winter, while avoiding risk to nesting birds.

Biodiverse Roof

6.6.5 Suitable irrigation will be provided for the new biodiverse roof, as advised by Bauder, and will be suitable to retain the wildflower blanket to be installed in optimum condition. The roof should be weeded twice annually, in late spring (May) and late summer (August) to ensure no injurious species colonise the green roof.

6.7 Summary Table

6.7.1 Table 5 below provides a summary of all impact avoidance, enhancement, habitat creation and management prescriptions that will be undertaken on site, with proposed timescales and any subsequent requirements:

Table 5: Summary and Timings of Ecological Enhancement, Creation and Management Procedures for Planned Development at 63 Hillfield Road, London

Month	Years	Task	Notes
Impact Avoidance Measures			
Any	1	Undertake toolbox talk to site workers	Prior to any site clearance works commencing
Preferably Sept to end Oct	1	Clearance of site vegetation to avoid nesting bird season and overwintering or breeding hedgehogs	Works to be overseen by an ecologist
March to end May	1	If site clearance could not be completed in Sept/Oct, vegetation to be cleared following check by an ecologist for occupied bird nests	Works to be overseen by an ecologist

Month	Years	Task	Notes
March to end Oct	1	Cover trenches overnight throughout development works	
All	1	Keep materials and waste of ground using skips and/or pallets	
Habitat Creation/Provision			
Any	1	Hedgehog house, bird boxes, bat boxes and insect nest boxes to be provided on site	As soon as appropriate after completion of development works
March, April or September	1	Sow new lawn areas	As soon as appropriate after completion of development works
October to end March	1	Planting of shrubs and small trees	As soon as appropriate after completion of development works
Any	1	Installation of green roof	Timings and methods to follow manufacturer's instructions
Habitat Management			
May – August	1 and 2	Check and water newly planted trees and shrubs as necessary	Replace any dead trees/shrubs in winter
May – August	1-5	Check biodiverse roof for injurious weeds and remove by hand or spot treatment if necessary	
August	1-5	Check hedgehog house, bird boxes, bat boxes and insect nests for presence and suitability	Replace any broken or removed features as soon as possible
August	3-5	Check of planted trees and shrubs	Replace any dead trees/shrubs in winter

7 CONCLUSION

7.1 Overall, the site was considered to be of very low ecological value at a local level. With the impact avoidance measures outlined in this report undertaken, it was considered the proposed development could proceed with negligible risk of harm to protected species or significant negative impact upon Section 41 species or habitats.

7.2 With the landscape plan and further enhancements undertaken as outlined, and with the ongoing management of the site to maintain the ecological features created, it was considered there would be a minor net gain for local biodiversity as encouraged by the National Planning Policy Framework (NPPF).

8 REFERENCES

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9 APPENDICES

9.1 Appendix 1: Figures

Figure 1: Phase 1 Habitats and Features of Site at 63 Hillfield Road, London. 31st July 2018

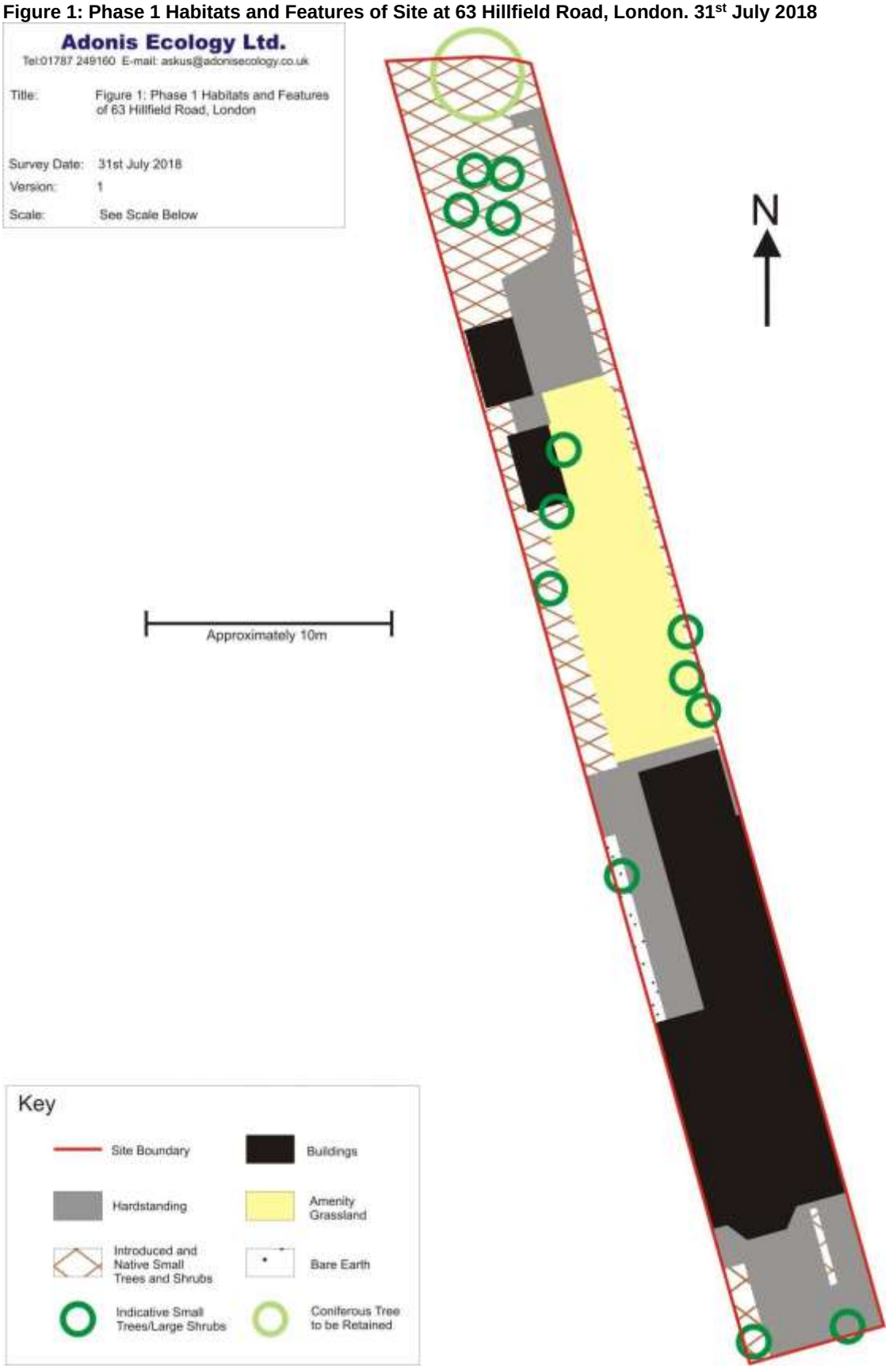
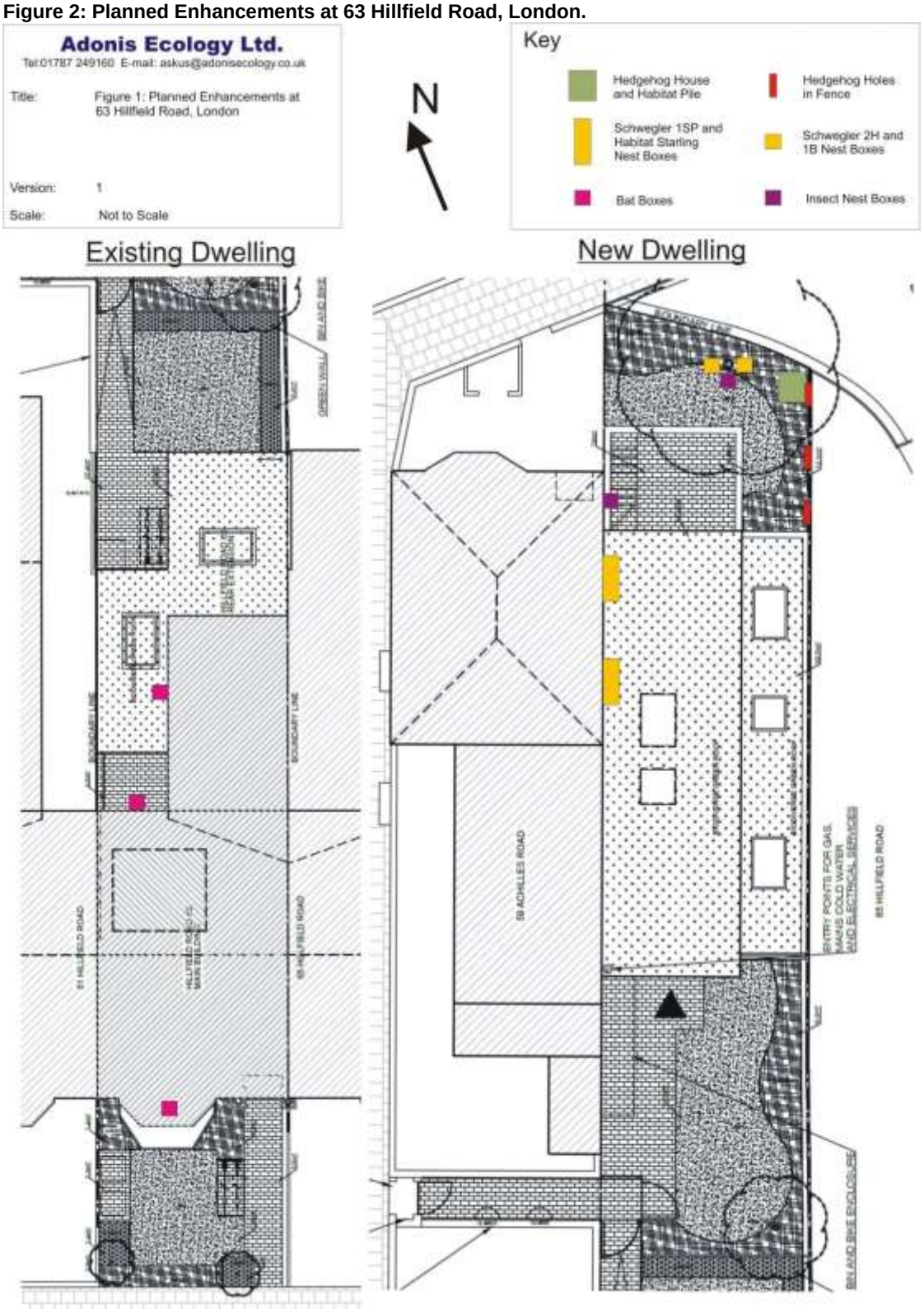


Figure 2: Planned Enhancements at 63 Hillfield Road, London.



9.2 Appendix 2: Photographs

All photographs taken by Stewart Wesley (surveyor) on 31st July 2018

Photograph 1: Grassland, Trees and Shrubs of Northern Garden at 63 Hillfield Road, London

Photograph 2: Dense Vegetation at Northern End of Northern Garden at 63 Hillfield Road, London

Photograph 3: Wooden Shed at 63 Hillfield Road, London

Photograph 4: Glass Fronted Shed at 63 Hillfield Road, London

Photograph 5: Patio in Northern Garden at 63 Hillfield Road, London

Photograph 6: Southern Garden at 63 Hillfield Road, London

Photograph 7: Front (Southern Side) of 63 Hillfield Road, London

Photograph 8: Side of Conservatory on 63 Hillfield Road, London

9.3 Appendix 3: Tables

Table 6: Likelihood of Bat Roosts Occurring in Buildings at 63 Hillfield Road, London. 31st July 2018

Building	Roost Type	Roost size	Calculated Probability of Roost Occurring	Comments and Potential Modifying Factors	Likelihood of Roost Occurring
All buildings	Crevice dwelling	Major	0.006	Very few roosting opportunities within buildings. No signs or evidence of bats found. Surrounding habitats of low value to foraging and commuting bats.	Negligible
		Minor	0.13		Negligible
	Void dwelling	Major	0.003	Very few roosting opportunities within buildings. No signs or evidence of bats found. Surrounding habitats of low value to foraging and commuting bats.	Negligible
		Minor	0.078		Negligible
	Hibernating	Major	N/A	No deep cracks or crevices within structure. No cellar or similar cool, humid structure.	Negligible
		Minor	N/A		Negligible

Table 7: Site Evaluation Score for Site at 63 Hillfield Road, London. 31st July 2018

Criteria	Rating/ Value	Example Levels	Score	Site Score
Size/Extent	Very High	>50 hectares	5	
	High	>10 but <50 hectares	4	
	Medium	>3 but <10 hectares	3	
	Low	>1 but <3 hectares	2	
	Very Low	<1 hectare	1	X
Diversity – Species	Very High	150 or more native plant species found/expected on site.	15	
	High	Between 100 – 149 native plant species found/expected on site.	10	
	Medium	Between 60 – 99 native plant species found/expected on site.	6	
	Low	Between 30 – 59 native plant species found/expected on site.	3	
	Very Low	Less than 30 native plant species found/expected on site.	1	X
Diversity – Habitats	Very High	More than 10 habitat types present on site with a mix of terrestrial and aquatic habitats present.	15	
	High	Between 5 – 10 different habitat types on site with a mix of terrestrial and aquatic habitat types.	10	
	Medium	>3 terrestrial habitats on site but either none or very limited aquatic habitat present.	6	
	Low	>2 habitat types present on site but with a predominance of one terrestrial habitat type covering over 60% of the total area and no aquatic habitats.	3	X
	Very Low	Only 1 or 2 habitat types present on site with a predominance of one terrestrial habitat type which covers over 90% of the total area.	1	
Naturalness	Very High	Predominant habitats unmanaged, slow developing and difficult to recreate, such as ancient woodland, species rich hedgerows. If known, land that has been unmanaged for more than 25 years.	10	
	High	Habitats largely unmanaged or traditionally managed in line with historic management of the site, if known, this may include derelict land that has been unmanaged for between 10 and 25 years.	8	
	Medium	Over 40% of the site consisting of natural features as opposed to hardstanding/buildings. Some degree of management may occur on a rotational or at a significantly low level. If known, land that has been derelict and unmanaged for no more than 10 years.	5	
	Low	Limited area of natural habitats on site and/or these are predominantly well managed/maintained e.g. garden beds, intensively grazed pasture. If known, this may include derelict land that has been unmanaged for no more than 3 years.	3	X
	Very Low	Few natural habitats found on site (hardstanding, intensive one crop agricultural land, short cut amenity grassland. If land is derelict/unmanaged, this must have been for no more than one year.	1	
Rare or Exceptional Features	Very High	Species or habitat present in quantity that is considered very rare and important at national and local levels.	20	
	High	Species or habitat present in quantity that is considered rare and of high importance at a local level, e.g. large population of a Section 41 species.	16	
	Medium	Species or habitat present that is considered moderately important at a local level.	10	
	Low	Species or habitats present in quantity not considered to be particularly rare or important at a local level.	4	
	Very Low	Species or habitats present considered to be widespread and common at both a local and national level or very common at a local level	1	X
Fragility	Very High	Habitat unable to be recreated within a reasonable timescale (<50 years) if lost such as ancient woodland/trees, unimproved grassland etc.	10	
	High	Habitat difficult to recreate to the same standard within a reasonable timescale (<50 years) such as species-rich	8	

Criteria	Rating/ Value	Example Levels	Score	Site Score
		hedgerows		
	Medium	Habitats likely to be recreated to the same or close degree of similarity within 25 years such as semi-improved grasslands	5	
	Low	Habitats relatively easy to recreate within 2-10 years such as improved grassland, non species-rich hedgerows	3	X
	Very Low	Habitats easy to recreate and likely to establish within 1-2 years such as amenity grassland.	1	
Typicalness	Very High	Habitats on site rare at a national and/or regional level and/or considered to be very rare within the local context.	5	
	High	Habitats largely different to those nearby but with some similar areas known within the region.	4	
	Medium	Some habitats on site both similar and differing from those within a local context.	3	
	Low	Habitats on site largely the same as surrounding and regional habitats but some minor areas of different or significant habitat at a local level.	2	
	Very Low	Habitats on site largely the same as surrounding and regional habitats.	1	X
Connectivity	Very High	More than 10 hedgerows, waterways and/or tree lines linking site to other potential habitat. Linking habitat generally of high quality (hedgerows with no gaps, woodland, mature gardens) and linking to many and/or large areas of similar and/or diverse habitats.	15	
	High	6 – 9 hedgerows, tree lines or waterways linking site to other potential habitat. Connective habitat medium-high quality linking to areas of similar and/or diverse habitats.	10	
	Medium	Between 3 – 5 hedgerows, treelines and/or waterways connecting site to other potential habitat. Site usually linked to small areas of high quality habitat or large areas of poorer quality habitat.	6	
	Low	1 – 2 linking features such as hedgerows, waterways and/or tree lines to other potential habitat. Linking habitat generally of poor quality and linking to only small areas of similar habitat.	3	X
	Very Low	Site surrounded by hardstanding, roads and/or other significant barriers to wildlife dispersal. No hedgerows, waterways or tree lines to link site to potential habitat.	1	
Value for Appreciation of Nature	Very High	Public Rights of Access on site and habitats providing screening of industrial/commercial areas from residential.	5	
	High	Public Rights of Access to the site and a reasonable number of local residents that may appreciate the visual appearance of the site.	4	
	Medium	Site occasionally used by local public and provides some positive visual impact for local residents.	3	
	Low	No public rights of access to the site although site provides some positive visual impact for low numbers of local residents	2	X
	Very Low	No public rights of access to the site, site not visible from any residential or commercial properties and/or site not considered to provide positive visual impact.	1	
Site Score and Rating	**18 (Very Low)**			

Site Value Scores: 9-19 = Very Low; 20-39 = Low; 40-59 = Moderate; 60-79 = High; 80-100 = Very High

Table 8: Small Trees and Shrubs Planned for Soft Landscaping at 63 Hillfield Road, London

Common Name	Scientific Name	Native	Wildlife Attracting
Boston Ivy	*Parthenocissus tricuspidata*	N	Y
Bugle	*Ajuga reptans*	Y	Y
Coral Bells 'Crème Brulee'	*Heuchera*	N	Y
Coral Berry	*Symphoricarpos orbiculatus*	N	Y
Dogwood	*Cornus sanguinea*	Y	Y
Firethorn 'Orange Glow'	*Pyracantha*	N	Y
Honeysuckle	*Lonicera periclymenum*	Y	Y
Japanese Pachysandra 'Green Carpet'	*Pachysandra terminalis*	N	Y
Large-flowered Tickweed 'Sunray'	*Coreopsis grandiflora*	N	Y
Lungwort 'David Ward'	*Pulmonaria rubra*	N	Y
Mahonia 'Apollo'	*Mahonia aquifolium*	N	Y
Mountain Currant 'Aureum'	*Ribes alpinum*	N	Y
Shrubby cinquefoil 'Daydawn'	*Potentilla fruticose*	N	Y
Spiraea 'Golden Princess'	*Spiraea japonica*	N	Y
Variegated Field Maple 'Carnival'	*Acer campestre*	Cultivar	Y
Winter Jasmine	*Jasminum nudiflorum*	N	Y

Table 9: Plants Included in Wildflower Blanket Planned for Biodiverse Roof at 63 Hillfield Road, London

Common Name	Scientific Name	Native	Wildlife Attracting
Biting Stonecrop	*Sedum acre*	Y	Y
Bladder Campion	*Silene vulgaris*	Y	Y
Clustered Bellflower	*Campanula glomerata*	Y	Y
Common Bird's-foot-trefoil	*Lotus corniculatus*	Y	Y
Common Centaury	*Centaurium erythrea*	Y	Y
Common poppy	*Papaver rhoeas*	Y	Y
Common Toadflax	*Linaria vulgaris*	Y	Y
Cornflower	*Centaurea cyanus*	Y	Y
Daisy	*Bellis perennis*	Y	Y
Fox-and-cubs	*Pilosella aurantiaca*	Y	Y
Harebell	*Campanula rotundifolia*	Y	Y
Lady's Bedstraw	*Galium verum*	Y	Y
Maiden Pink	*Dianthus deltoids*	Y	Y
Ragged Robin	*Lychnis flos-cuculi*	Y	Y
Sea Campion	*Silene uniflora*	Y	Y
Selfheal	*Prunella vulgaris*	Y	Y
Small scabious	*Scabiosa columbaria*	Y	Y
Soapwort	*Saponaria officinalis*	Y	Y

Common Name	Scientific Name	Native	Wildlife Attracting
Thrift	*Armeria maritima*	Y	Y
Viper's-bugloss	*Echium vulgare*	Y	Y
Water avens	*Geum rivale*	Y	Y
Wild Thyme	*Thymus polytrichus*	Y	Y
Yarrow	*Achillea millefolium*	Y	Y
Yellow Rattle	*Rhinanthus minor*	Y	Y