

Preliminary Ecological Appraisal and Roost Assessment

Survey site:

53 Villa Road, Rochester, Kent, ME3 7BU

Client:

Arif Rana

Survey date:

8th January, 2025 - The survey results and recommendations contained within this report are valid for 18 months. An updated site visit may be required if the report is to be used any longer than 18 months after completion.

Project:

This report is prepared to inform a planning application with Gravesham Borough Council. The proposal is described as: Demolition of existing bungalow and erection of three bungalows.

PEA survey methodology and legislation can be found in the Arbtech Supplement: [PEA Methodology and Legislation - 2024.](#)

PRA survey methodology and legislation can be found in the Arbtech Supplement: [PRA Methodology and Legislation - 2024.](#)

Site Location and Context					
The site is centred on National Grid Reference TQ7087771206 and is on freely draining, slightly acid and loamy soils as classified by LandIS. The site is approximately 0.08ha and is located within the town of Higham situated in-between Rochester and Gravesend. The site comprises a residential dwelling, detached garage and outbuilding, with patio, decking and artificial grass covering the land to the rear of the property. A line of conifer trees surround the most southern section. To the front of the property is an area of concrete with a small section of vegetated garden and 8 conifers situated along the western boundary. All buildings and to be demolished, in addition to the conifer trees within the northern section of the survey site. The site is located within a built-up residential area, with woodland, cropland approximately 200m to the south west but situated across Gravesend Road.					
Survey Details					
The site survey was undertaken by Vicki Breakell BSc (Hons), Graduate Ecologist, an ecologist with 10 years' experience with specialist knowledge of water voles and hazel dormice. Accredited on Natural England survey licences for bats (class 1) [2018-33540-CLS-CLS] and dormice (class 1) [2019-39308-CLS-CLS].					
Date of survey	Temperature (°C)	Humidity (%)	Cloud Cover (%)	Wind (mph)	Rain
08/01/2025	1	88	100	2	None
Executive Summary					
The following has been recommended for your proposed development: - Three bat emergence or re-entry surveys (BERS) are required for B1 during the active bat season (optimal May to August, suboptimal September). Two surveyors with infrared cameras will provide coverage of B1. DNA analysis of the droppings collected from B1 and Biological Records Data will be required. - Two bat emergence or re-entry surveys are required for B2 during the active bat season (optimal May to August, suboptimal September) to confirm presence or likely-absence of a bat roost in the building. Two surveyors with infrared cameras will provide coverage of B2. Please see the relevant sections for further details on the above recommendations.					
Survey limitations					
It should be noted that whilst every effort has been made to describe the baseline conditions within the survey area, and evaluate these features, this report does not provide a complete characterisation of the site. This assessment provides a preliminary view of the likelihood of protected species being present. This is based on suitability of the habitats on the site and in the wider landscape, the ecology and biology of species as currently understood, and the known distribution of species as recovered during the searches of historical biological records. A biological records data search has not been undertaken for this survey. However, given the assessed suitability of the site for protected or notable species, it is assessed that the purchase of biological records data will be required to inform an EPSL licence if needed. The survey was completed outside of the optimal survey period (April to September) for ground flora, and as such the accuracy of botanical assessment and condition assessment data may be limited in terms of species visible and ground conditions at the time of survey. However, given that the site was almost entirely sealed surface, it is not deemed that the timing of the survey poses a limitation to the findings. It was not possible to access the trunks of the line of conifer trees within the southern section of the site due to a 2m high fence.					

Ecological Survey Factor Conclusion, Impact or Recommendations	Detailed using desk study and site survey (carried out under good weather conditions). Any specific limitations noted within relevant section. This table may include further work you will need to commission (if any) to obtain planning permission or comply with legislation for other consent. All clients are expected to read and understand this section, or to contact the lead surveyor for advice.
Habitats and plants (see habitat map in appendix 1, location plan in appendix 2, proposal plan in appendix 3 and photos in appendix 4). Botanical species are described with reference to the DAFOR scale (D = Dominant; A = Abundant, F = Frequent, O = Occasional, R = Rare).	
<i>Summary of Survey Findings</i> (UKHab codes used) <u>u1b5</u> – Buildings <u>u1b 845</u> – Developed land/sealed surface with planters <u>u828</u> – Vegetated Garden <u>w33</u>– Line of trees	The site does not contain any habitats listed as a habitat of principal importance under Section 41 of the Natural Environment and Rural Communities (NERC) Act (2006). The habitats within the site are common and widespread and have low ecological value. Notable habitats are present within 2km. On-site habitat descriptions <u>u1b5</u> – Buildings Two buildings (B1 & B2) are on site. More details about these buildings can be found in the bat section. <u>u1b 845</u> – Developed land/sealed surface with planters A section of patio, decking, concrete and artificial grass surrounds B1 and B2. A number of planters were based on top of the surface and comprised ornamental shrubs and plants, including rhododendron. <u>u828</u> – Vegetated Garden A small section to the north of the surveys site, ~0.001ha (10m²) is a vegetated garden consisting of ornamental shrubs and plants including hydrangea and roses. <u>w33</u>– Line of trees Surrounding the southern section of the garden is a line of trees consisting of <i>Leylandii</i> conifer. It was not possible to access the trunks of these trees to take accurate measurements as they are positioned behind a 2m high wooden fence. It is estimated that ~48 trees are within the line, with ~18 appearing to be of a large size (>30cm DBH). The tree canopy appeared continuous, natural ecological features were observed within multi-stemmed trees, there is an absence of a 6m margin of undisturbed ground on each side and at least 95% of the trees appear in good condition. Condition assessment: Moderate. Along the western boundary within the northern section of the site was a row of 8 multi-stemmed, <i>Leylandii</i> conifers. These are ~5m high, mature with an average DBH of ~20cm. The trees are non-native, with a predominantly continuous canopy, natural ecological features were observed within multi-stemmed trees, there is an absence of a 6m margin of undisturbed ground on each side and at least 95% of the trees appear in good condition. Condition assessment: Moderate.

	Local notable habitats A review of Magic Maps (Defra) identified the following habitat types within a 2km radius of the survey site. The nearest for each habitat type is detailed below. <table><tr><th>Habitat type</th><th>Nearest parcel</th><th>Connectivity to the site</th></tr><tr><td>Traditional orchard</td><td>125m north west</td><td>Situated across Villa Road and separated by residential properties and gardens.</td></tr><tr><td>Deciduous and ancient woodland.</td><td>185m south west</td><td>Separated by Gravesend Road and urban settlement.</td></tr><tr><td>Open mosaic habitat on previously developed land</td><td>1.2km northwest</td><td>Separated by urban settlement and numerous roads.</td></tr><tr><td>Wood pasture and parkland</td><td>1.8km southwest</td><td>Separated by multiple roads, including the M2.</td></tr></table>	Habitat type	Nearest parcel	Connectivity to the site	Traditional orchard	125m north west	Situated across Villa Road and separated by residential properties and gardens.	Deciduous and ancient woodland.	185m south west	Separated by Gravesend Road and urban settlement.	Open mosaic habitat on previously developed land	1.2km northwest	Separated by urban settlement and numerous roads.	Wood pasture and parkland	1.8km southwest	Separated by multiple roads, including the M2.
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Foreseen Impacts	On-site habitats The habitats on-site are widespread and not notable. However, the proposed development will impact ~10m² of vegetated garden, and trees. This is likely to have an insignificant impact on biodiversity considering the small area of commonplace habitat being impacted. Notable habitats No direct or indirect impacts to any notable habitats are expected to occur as a result of the proposed development.															
Recommendations	On-site habitats Retained trees should be protected in line with the measures outlined in the British Standard "Trees in Relation to Design, Demolition and Construction to Construction - Recommendations" (BS 5837) (2012). Notable habitats No recommendations. Biodiversity net gain The proposed development will need to demonstrate a 10% biodiversity net gain through the use of the DEFRA Statutory Biodiversity Metric, unless exempt under the Self Build classification. The LPA are able to confirm if this exemption applies.															
Locality and Designated Sites																
Summary of Survey Findings	On-site designations The site is not subject to any on-site designations. Statutory designated sites (within 2km) - <u>Great Crabbles Wood (SSSI)</u> exists 650m southwest of the site and is designated for “This site is representative of woods on North West Kent Tertiary sediments; these comprise a succession of strata over Upper Chalk ranging from Blackheath gravels to Woolwich loams and Thanet sands, which give rise to a range of soil types. Most of the woodland is mixed coppice under															

	<i>oak standards, with sweet chestnut as the dominant species. A number of scarce plants occur, including lady orchid <i>Orchis purpurea</i> and man orchid <i>Aceras anthropophorum</i>. Acidic Blackheath gravels form a ridge in the northern part of the wood; this slopes away gradually to the south east, with neutral Woolwich loams on the upper slope and calcareous Thanet sands underlying the southern half of the wood. Chalk outcrops in the south-east corner. The succession of soils is reflected in the species composition of the tree canopy, shrub layer and ground flora. Dry, open oak-birch woodland with a ground flora of bracken and bramble on the Blackheath gravels merges with sweet chestnut coppice under oak standards on the damper Woolwich loams. The oak standards are chiefly pedunculate oak, although sessile oak also occurs, especially on the ridge. Other coppice species present include hornbeam, ash, field maple and hazel, and the ground flora is dominated by dog's mercury <i>Mercurialis perennis</i> and bramble. The woodland on the calcareous Thanet sands is similar to that on the loams, but the scarce plant bird's foot <i>Ornithopus perpusillus</i> has also been recorded. A strip of woodland along the southern boundary is dominated by hazel and ash coppice, with some field maple, sweet chestnut and hornbeam coppice under pedunculate oak standards. The shrub layer is varied and includes spindle, wayfaring tree and traveller's joy, which are all characteristic of the calcareous soils. The diverse ground flora is dominated by dog's mercury with ivy <i>Hedera helix</i> and several scarce species are present. These include lady orchid, man orchid, white helleborine <i>Cephalanthera damasonium</i>, bird's nest orchid <i>Neottia nidus-avis</i>, wild liquorice <i>Astragalus glycyphyllos</i> and spurge laurel <i>Daphne laureola</i>." Natural England.</i> - <u>South Thames Estuary and Marshes (SSSI)</u> exists 1.8km north of the site and is designated for "The South Thames Estuary and Marshes SSSI from Gravesend to the eastern end of the Isle of Grain forms a major component of the Greater Thames Estuary. The site consists of an extensive mosaic of grazing marsh, saltmarsh, mudflats and shingle characteristic of the estuarine habitats of the north Kent marshes. Freshwater pools and some areas of woodland provide additional variety and complement the estuarine habitats. The site supports outstanding numbers of waterfowl with total counts regularly exceeding 20,000. Many species regularly occur in nationally important¹ numbers and some species regularly use the site in internationally important² numbers. The breeding bird community is also of particular interest. The diverse habitats within the site support a number of nationally rare³ and scarce⁴ invertebrate species and an assemblage of nationally scarce plants." Natural England. - <u>Rede Common (LNR)</u> exists 1.9km southeast of the site and is designated for "The common is known locally as Sandy Banks. This is due to the underlying Thanet Beds. Rede Common Nature Reserve totals eleven hectares of open space on the doorstep of many Strood residents. Grazing, arable and market gardening took place on this former farmland. The common is now an area of open grasslands surrounded by scrub and trees." Redecommon.org. Statutory designated sites (within 10km) - <u>Thames Estuary and Marshes (Ramsar, SPA)</u> exists ~5.3km west of the site and is designated for "A complex of brackish, floodplain grazing marsh ditches, saline lagoons and intertidal saltmarsh and mudflat. These habitats together support internationally important numbers of wintering waterfowl. The saltmarsh and grazing marsh are of international importance for their diverse assemblages of wetland plants and invertebrates." (Ramsar.org) - <u>Medway Estuary and Marshes (Ramsar, SPA)</u> exists ~2.1km west of the site and is designated for "The site is a complex of rain-fed, brackish, floodplain grazing marsh with ditches and intertidal marsh and mudflat. It is of international importance for its diverse assemblage of wetland plants and invertebrates (12 British Red Data Book species). Over the winter it provides
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	<i>habitat for Tringa totanus (2.1% of the population), Pluvialis squatarola (2% of the population), and Calidris alpina alpina (1.9% of the population)."</i> (Ramsar.org) - <u>North Downs Woodlands (SAC)</u> exist ~6.4km south of the site and is designated for: - 9130 Asperulo-Fagetum beech forests This site consists of mature Asperulo-Fagetum beech forests and also yew 91J0 Yew Taxus baccata woods on steep slopes. The stands lie within a mosaic of scrub and other woodland types and are the most easterly of the beech woodland sites selected. Parts of the woods were affected by the Great Storm of 1987. - 91J0 Taxus baccata woods of the British Isles * Priority feature Yew Taxus baccata woodland at this site is associated with 9130 Asperulo-Fagetum beech forests, scrub and small areas of unimproved grassland on thin chalk soils. Where the shade is not too dense dog's mercury Mercurialis perennis predominates in the ground flora. The site is the most easterly of those selected. - 6210 Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites) (JNCC.gov.uk) - <u>Peters Pit (SAC)</u> exist ~8.1km south of the site and is designated for: - 1166 Great crested newt Triturus cristatus - Peter's Pit is an old chalk quarry situated in the North Downs in north Kent, with large ponds situated amongst grassland, scrub and woodland. The ponds have widely fluctuating water levels and large great crested newt Triturus cristatus populations have been recorded breeding here. (JNCC.gov.uk) Non-statutory designated sites within 2km A review of Magic map (DEFRA) identified the London Area Greenbelt surrounds the site, but the site does not lie within it. Five RSPB nature reserves exist within 2km, with the nearest being Cliffe Pools. A more detailed analysis of the presence of non-statutory designated sites within 2km of the site cannot be established without data from Kent and Medway Biological Records Centre.
Foreseen Impacts	On-site designations None foreseen Statutory and non-statutory designated sites No impacts to designated sites are anticipated due to the small scale and distance of the proposed development from such sites (where known) as well as the location of the site with surrounding physical barriers. The site lies within the impact risk zone for multiple SSSI's with the nearest being The Great Crabbles Wood (SSSI). The proposed development type is not listed as a possible high risk for these sites.
Recommendations	On-site designations None required

	Statutory and non-statutory designated sites None required
Invasive / Non-native species	
<i>Summary of Survey Findings</i>	A small pot plant of rhododendron was observed which is listed as an invasive, non-native species under Schedule 9 of the Wildlife and Countryside Act 1981.
<i>Foreseen Impacts</i>	The rhododendron was contained within a planter, located on sealed surface. The risk of this spreading is significantly reduced.
<i>Recommendations</i>	It is recommended that the rhododendron is disposed of in line with appropriate controlled waste measures, or controlled during construction works to prevent the spread off-site.
Invertebrates	
<i>Summary of Survey Findings</i>	The habitats present on-site, including trees and vegetated garden, likely provide common invertebrates with opportunities to forage and shelter. The site contains no further notable habitats which may provide niches for specialised or protected invertebrates.
<i>Foreseen Impacts</i>	The habitats on-site are widespread and not notable. However, the proposed development will impact ~10m ² of vegetated garden and trees. The loss of such habitats is likely to be inconsequential to local invertebrate populations owing to their low value and the presence of more extensive habitat locally.
<i>Recommendations</i>	No further surveys. Suggested biodiversity enhancements The incorporation of bee bricks (e.g. Ibstock BeeHabitat or similar alternative brand) into the fabric of the new buildings would provide sheltering opportunities for pollinators. These should be installed 0.5m above ground level on a south-facing elevation with no obscuring vegetation. The site could be further enhanced via the provision of native wildflowers or wildflower turf, which would provide foraging opportunities for invertebrates.
Bats	
<i>Summary of Survey Findings</i>	EPSL data A search of the magic.gov.uk database for granted EPSLs within a 2km radius of the site has been completed. Displaced bats from licensed sites <2km away from the survey site will find alternative habitat either within the mitigation measures implemented as part of the licence or will relocate to other known roosts sites in close proximity to the licensed site. There are no EPSL's within a 2km radius of site. There are no Special Areas of Conservation designated for bats within 10km of the site. Foraging and commuting habitat

Habitats recorded on site are assessed to provide foraging and commuting opportunities for bats in the form of vegetated garden and trees. These habitats are likely to provide micro-climatic conditions that support invertebrates that will in turn provide foraging opportunities for local bat populations. Bats are well known to utilise linear features, like the line of trees within the southern section of the site, to aid navigation whilst travelling between foraging resources and roost sites. Roosting habitat Buildings due to be impacted by the proposed development are assessed for their suitability to support roosting bats below. There are 2 buildings on site; a residential property (B1) and a garage and workshop (B2). Both buildings onsite will be demolished for the proposed development. Evidence of roosting bats was identified within the loft space of B1. No evidence of roosting bats was observed within the surveyed trees on-site. The lines of trees within the southern section could not be inspected fully due to their location behind a 2m high fence. The trees were multi-stemmed <i>Leylandii</i> conifers and it is unlikely that these trees will be used by bats, due to the density of the conifer branches and a lack of suitable flight path. The line of trees within the northern section of the site and approximately 20m of the line of trees within the southern section of the site are due to be removed for the proposed development. These are assessed below for their suitability to support roosting bats.			
B1 Building description			Photographs
<i>Summary</i> B1 is a residential bungalow and will be demolished for the proposed development. B1 consists of brick and block build and rendered finish, with a hipped, pitched roof with clay tiles. The loft was converted into a bedroom with a small loft section surrounding the bedroom. A gap around a ventilation pipe within the loft that provided internal access, and was where a small number of droppings were observed. To the exterior, there was a gap within the soffit, raised tiles and gaps surrounding the Velux window. The building has a moderate habitat value.			
Feature	Materials	Condition/description/suitability	Photograph(s)
Walls	Brick and block with a	Condition/description In good condition, no gaps observed	N/A

	rendered finish	Suitability/access/evidence of bats N/A	
Roof	Clay tiles	Condition/description Approximately 12 gaps were identified within the roof tiles. These were located around the Velux window, and within missing mortar on the end ridge tiles of the southwestern and northeastern corner. Suitability/access/evidence of bats The gaps were large enough to provide suitable roosting opportunity for crevice dwelling bats.	

			
Eaves	Plastic soffit box	Condition/description Most of the soffit appeared well fitted, except a section along the southern elevation where two sections had split. This is immediately below where possible bat droppings were observed. Also, a cable entering the soffit provided a small gap. Suitability/access/evidence of bats These gaps could provide entry into the soffit box and loft space for crevice dwelling bats.	

			
Barge boards/fascia boards	Plastic	Condition/description Well fitted, no gaps identified. Suitability/access/evidence of bats N/A	N/A
Window/doors frames and lintels	uPVC	Condition/description Well fitted, no gaps identified. Suitability/access/evidence of bats N/A	N/A
Internal voids	Converted loft space	Condition/description The loft void surrounds a converted bedroom space. This area is currently used for storage and is approximately 8m long and 2 m wide along the northern and southern elevation and 6m long and 2.5m wide within the eastern and western elevation. The conditions were recorded as 56% humidity and 11.5c. Suitability/access/evidence of bats	

The rafters were lined with plastic lining imbedded with small gauge mesh. The only daylight observed was surrounding a plastic vent that enter the loft from the outside. Daylight was observed around this and ~10 potential bat droppings were observed.



			
B2 Building description			Photographs
<i>Summary</i> B2 is a detached garage made from brick and block that extends into a wooden outbuilding and shed. The entirety of B2 consists of a flat roof covered with roofing felt and will be demolished for the proposed development. The roof and walls appeared in good condition; however, gaps were observed within the plastic fascia plate surrounding B2 and via broken glass pane. No signs of bats were identified however the gaps identified could provide roosting potential for crevice dwelling bats. The building has a moderate habitat value.			
Feature	Materials	Condition/description/suitability	Photograph(s)
Walls	Timber cladding	Condition/description Good condition, no gaps observed. Suitability/access/evidence of bats N/A	N/A

Roof	Timber with felt	Condition/description The flat roof appeared well covered with roofing felt, no gaps observed. Suitability/access/evidence of bats N/A	
Barge boards/fascia boards	Plastic	Condition/description A plastic fascia plate surrounding the western and southern elevation of B2. Gaps were identified within this area, via a raised board, cracked end piece and ill-fitting joins between the felt and the plastic. Suitability/access/evidence of bats These gaps are large enough to provide roosting potential for crevice dwelling bats.	

			
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Window/doors frames and lintels	Timber	Condition/description There was a broken glass pane within the shed section of B2. This was partially covered by a wooden board, but not entirely. Suitability/access/evidence of bats A gap was identified between the wooden board and the broken glass pane and may provide access into the shed for crevice and/or void dwelling bats. However, no signs were identified within the interior.	 
Tree description			Photographs

Summary

The line of trees within the northern section of the site are multi-stemmed *Leylandii* conifers, with ivy observed growing with the canopy. These trees are due to be felled for the proposed development. Although gaps were observed between the multi-stemmed trunks, it is unlikely that bats will be utilising these features due to the absence of clear flight path on the eastern side and the pruning management on the western side. This allows for a high level of light ingress and sub-optimal roosting conditions due to exposure to the elements. These trees **are assessed as PRF -None.**

**Line of Tree description****Photographs**

Summary

Surrounding the rear garden within the southern section of the site is a line of *Leylandii* conifer. It was not possible to access the trunks of the trees due to their location behind a 2m high fence. However, ground level observations showed the trees to multi-stemmed, with ivy observed growing within the canopy. Approximately 20-30m of the line is due to be felled for the proposed development. Although gaps were observed between the multi-stemmed trunks, it is unlikely that bats will be utilising these features due to exposure to weather conditions, light ingress and absence of clear flight path due to the density of the canopy. These trees **are assessed as PRF -None.**



	
<i>Foreseen Impacts</i>	Roosting habitat [Buildings] B1 is assessed to be of moderate value in supporting roosting bats due to the potential presence of droppings and/or gaps which provide access for bats to the interior, as well as gaps in external features which bats could exploit for roosting. The surrounding habitats include gardens and woodlands in addition to a linear line of trees on site. These provide good quality habitat for foraging and commuting bats, increasing the likelihood that bats are present locally and could find and use the building for roosting. The proposed development will result in the demolition. This could result in damage/modification/destruction of any bat roosts present and could cause disturbance, death or injury to bats. B2 is assessed to be of moderate value in supporting roosting bats due to the presence of gaps in external features which bats could exploit for roosting. The surrounding habitats include gardens and woodlands in addition to a linear line of trees on site. These provide good quality habitat for foraging and commuting bats, increasing the likelihood that bats are present locally and could find and use the building for roosting. The proposed development will result in the demolition of B2. This could result in damage/modification/destruction of any bat roosts present and could cause disturbance, death or injury to bats. Roosting habitat [Trees] The line of trees within the northern section of the site and approximately 20-30m of the line of trees within the southern section are due to be felled for the proposed development. Although gaps are noted within the intertwining trunks, these are deemed unsuitable for roosting bats due to the exposure to light and weather conditions and the density of the canopy preventing a clear flight path. Foraging and commuting habitat

	The proposed development will result in the loss of a small area of vegetated garden, but given the small scale of removal and the presence of more extensive areas of foraging and commuting habitat in the locality, this is likely to be inconsequential for bats. The removal of the trees may reduce the foraging and commuting habitat for bats. Artificial lighting The proposed development may lead to an increase in the amount of current lighting of surrounding habitats or the retained building without mitigation. This may disturb commuting bats.
<i>Recommendations</i>	Roosting habitat [Buildings] Three bat emergence or re-entry surveys (BERS) are required for B1 during the active bat season (optimal May to August, suboptimal September) to confirm presence and categorise the roost observed to be present within the building. Two surveyors with infrared cameras will provide coverage of B1. DNA analysis of the droppings collected from B1 and Biological Records Data will be required in addition to the roost information provided by the BERS and will be used to inform an EPSL application to Natural England. Surveys should be a minimum of three weeks apart. The EPSL application requires that surveys have been undertaken within the most recent active bat season and planning permission must have been granted and all relevant wildlife-related conditions have been discharged prior to submission. Two bat emergence or re-entry surveys are required for B2 during the active bat season (optimal May to August, suboptimal September) to confirm presence or likely-absence of a bat roost in the building. Two surveyors with infrared cameras will provide coverage of B2. If bat roosts are confirmed in the building an additional survey may be required to characterise the roost and to inform an EPSL application to Natural England. Surveys should be a minimum of three weeks apart. The EPSL application requires that surveys have been undertaken within the most recent active bat season and planning permission must have been granted and all relevant wildlife-related conditions have been discharged prior to submission. Roosting habitat [Trees] Tree removal required to facilitate the proposed development includes the felling of the trees within the northern line of trees and removal of approximately 20-30m of the line of trees. No further survey or mitigation is required for the felling of these trees, however in the unlikely event that a bat or evidence of bats is discovered during works, work must stop and a bat licensed ecologist contacted for further advice. Foraging and commuting habitat No further surveys are required. However, due to the removal of the trees on site this will lead to a reduction of foraging and commuting habitat and should be mitigated by the inclusion of planting a native hedgerow or native tree species within the proposed landscape plan. Artificial lighting

	A low impact lighting strategy will be adopted for the site during construction and 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
Birds	
<i>Summary of Survey Findings</i>	Buildings No evidence of nesting birds was identified on or within B1 or B2. B1 and B2 are deemed to provide negligible habitat value for nesting birds due to a lack of suitable nesting sites or access points. Trees and vegetation No bird nests were identified within the trees on-site, however they all offer nesting opportunities and nest-building resources for birds. Barn owls The site does not appear to provide any suitable nesting sites for barn owls. Overwintering birds Due to the small size of the site and the extent and type of the habitats recorded, the site not considered suitable to support a significant assemblage of protected and/or notable birds.
<i>Foreseen Impacts</i>	Buildings/trees Tree removal as part of the development could result in the destruction or the disturbance and subsequent abandonment of active bird nests. Barn owls None foreseen. Overwintering birds None foreseen.
<i>Recommendations</i>	Buildings/Trees The line of trees within the northern section of the site and approximately 20-30m of the line of trees will be felled for the proposed development. Any tree work should be undertaken outside the period 1st March to 31st August. If this timeframe cannot be avoided, a close inspection of the trees should be undertaken immediately, by a qualified ecologist, prior to the commencement of work. Any active nests will need to be retained until the young have fledged or an ecologist has confirmed that the nest has been abandoned or an ecologist has confirmed that the nests are no longer active

	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 or an ecologist has confirmed that the nests are no longer active Barn owls None required. Overwintering birds None required. Suggested biodiversity enhancements The installation of a minimum of two bird boxes on mature trees around the site boundaries or on the new buildings will compensate for the loss of suitable habitat for nesting birds and provide additional nesting habitat e.g. - Schwegler 1SP Sparrow Terrace (buildings) - Schwegler 1B Nest Boxes (trees) - Schwegler 2H Robin Boxes (trees) - Woodstone Nest Box (buildings or trees) - Or a similar alternative brand.
Reptiles	
<i>Summary of Survey Findings</i>	EPSL data A review of the MAGIC database returned no granted EPSL records for protected reptiles within 2km of the site. Habitat suitability There is no suitable habitat present on site for reptiles due to a lack of habitats such as scrub and rank grassland which would offer refuge for these species. Further, the site is surrounded by urban development (i.e. roads and buildings) which is considered sub-optimal for reptile migration and therefore reptiles are considered unlikely to migrate from any nearby suitable habitats to the development site. As such it is likely that reptiles are absent from the development site. Wider landscape The presence of woodland, cropland margins and hedgerows within the locality of the site are of elevated ecological value within the wider landscape and may represent important resources for local reptile populations. These adjacent habitats provide optimal foraging, commuting, and refuge opportunities for reptiles and are well connected to further suitable habitat in the wider landscape. The presence of reptiles utilising these adjacent habitats cannot be discounted.

<i>Foreseen Impacts</i>	The proposed development will result in the loss of 10m ² of vegetated garden and <i>Leylandii</i> trees. However, the site is deemed sub-optimal for reptiles due to the lack of suitable habitats, therefore no impacts are anticipated on reptiles as a result of the proposed development.
<i>Recommendations</i>	None required
Amphibians	
<i>Summary of Survey Findings</i>	EPSL and survey data A review of the MAGIC database returned no granted EPSL records and no positive class survey licence returns or positive pond surveys within 2km of the site. Aquatic habitat suitability (including ponds within 500m) Great crested newts (GCN) exist in metapopulations and are known to utilise ponds and their connecting terrestrial habitat during their life cycle; great crested newts are typically found within terrestrial habitats up to 500m from breeding ponds (Langton et al. 2001). No ponds are present on site or within 500m of the site. Habitat suitability Habitats recorded on site consist of hard, sealed surface and artificial grass. The area of vegetated garden is very small ~10m² are is assessed to provide limited foraging, commuting, and refuge/ hibernation opportunities for amphibians. In addition, given the urban nature of the immediate 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. Wider landscape The woodland, cropland margins and hedgerows within the locality are of elevated ecological value within the wider landscape and may represent important resources for local amphibian populations. These adjacent habitats provide optimal foraging, commuting, breeding and refuge opportunities for amphibians and are well connected to further suitable habitat in the wider landscape. The presence of amphibians utilising these adjacent habitats cannot be discounted, however these areas are not connected to the survey site due to the presence of roads.
<i>Foreseen Impacts</i>	Given the lack of suitably connected breeding ponds within 500m of the site, the presence of GCN on-site is considered unlikely, there are also barriers to amphibian dispersal present between the site and wider landscape and therefore impacts to amphibians as a result of the proposed development are deemed to be acceptably low.
<i>Recommendations</i>	None required.

Badger		
Summary of Survey Findings	No badger setts were noted on site or within a 30m radius of the site. Habitat suitability 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 limited fruiting trees and absence of scrub. The site is situated within an urban development with limited connectivity to suitable habitat.	
Foreseen Impacts	No impacts are anticipated on badgers as a result of the proposed development.	
Recommendations	None required	
Riparian animals		
Summary of Survey Findings	EPSL data A review of the MAGIC database returned no granted EPSL records for otters or water voles within 2km of the site. Habitat suitability There are no water courses on or connected to the site. There are also no suitable riparian habitats present on site or within an influencing distance.	
Foreseen Impacts	No impacts are anticipated on riparian animals as a result of the proposed development.	
Recommendations	None required.	
Hazel dormouse		
Summary of Survey Findings	EPSL data A review of the MAGIC database returned no granted EPSL records for hazel dormice within 2km of the site. Habitat suitability Dormice typically utilise a three-dimensional habitat structure as to commute between feeding and breeding sites whilst avoiding predation. As such habitats on site are considered unsuitable for hazel dormice and therefore the likelihood of this species being present on site is considered acceptably low.	
Foreseen Impacts	No impacts are anticipated on hazel dormice as a result of the proposed development.	
Recommendations	None foreseen.	
Other e.g. hedgehog		

<i>Summary of Survey Findings</i>	Habitat suitability The vegetated garden may provide foraging and commuting opportunities for hedgehogs. In addition, the garden habitat may encourage an elevated presence of food types that hedgehogs may feed upon.
<i>Foreseen Impacts</i>	A small section of vegetated garden and trees will be removed during construction. The loss of such habitats is likely to be inconsequential to local hedgehog populations owing to the presence of more extensive garden habitat locally. However, construction activities could result in the death or injury of hedgehogs, if present.
<i>Recommendations</i>	A precautionary working method will be implemented during construction, including the following measures: • Any excavations will be covered overnight, or a ramp will be installed to enable any trapped animals to escape. • The use of night-time lighting will be avoided, or sensitive lighting design will be implemented to avoid light spill on to retained habitats which hedgehogs could use. • Any chemicals or pollutants used or created by the development should be stored and disposed of correctly according to COSHH regulations. If any hedgehogs are found in the working area these should be allowed to disperse of their own accord or, if at immediate risk, should be moved by hand to a sheltered, vegetated area away from disturbance. Suggested biodiversity enhancements The following habitat creation and enhancement opportunities could be incorporated into the proposed development which would be beneficial for hedgehogs: • Creation of brash piles or installation of hedgehog houses in shady areas. • Installation of gaps under boundary fencing to enable hedgehogs to move freely through the site.

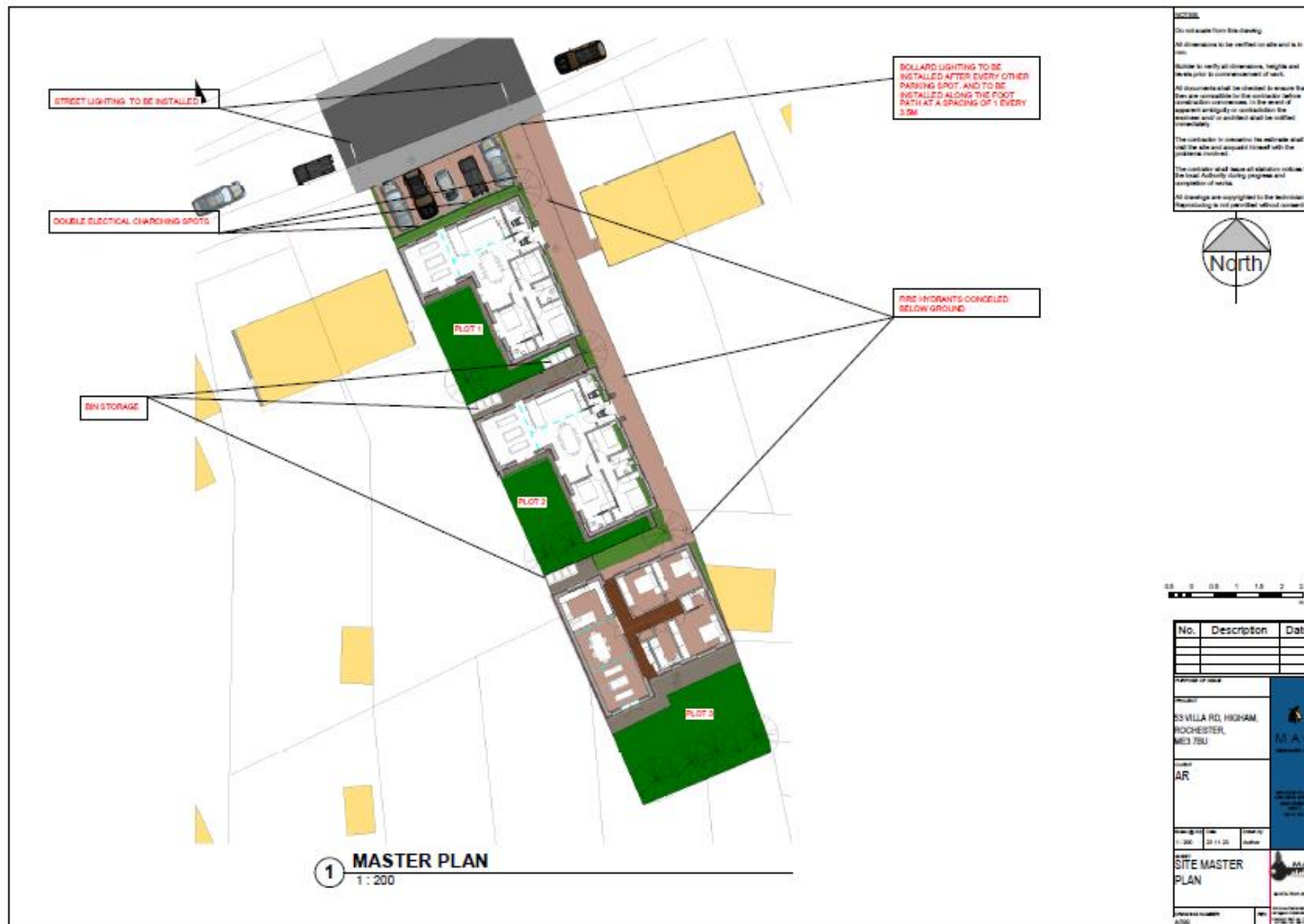
Appendix 1: Survey/Habitat map



Appendix 2: Location map



Appendix 3: Proposed plan



Appendix 4: BERS map



Appendix 5: Habitat Photos

Vegetated garden	
Photograph	Description
	Figure 1: The vegetated garden within the northern section of the site.
Line of trees	
Photograph	Description
	Figure 2: The line of <i>Leylandii</i> conifers surrounding the boundary within the southern section of the site.

Decking		
Photograph	Description	
		Figure 3: The decking adjoining B1.
Patio		
Photograph	Description	
		Figure 4: The patio adjoining B2

Artificial grass	
Photograph	Description
	Figure 5: The artificial grass within the southern section of the site.
Line of trees within the northern section	
Photograph	Description
	Figure 6: The <i>Leylandii</i> trees within the northern section of the site. These are due to be felled for the proposed development.

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