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& environmental services

Land at Aurea Norma and Woollhead's Builder's Yard, The Dene, Ropley, Ropley Dean, Alresford SO24 0BH

Preliminary Ecological Assessment

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1.0 Summary

The proposals are to construct 5 new houses on the site. Due to the medium-high potential for roosting bats in several buildings, three phase 2 bat emergence/re-entry surveys took place in 2021 and although no bat roosts were recorded on site, well used flight lines for commuting and foraging bats were recorded along both the western and eastern boundary – these will need to be protected from light and enhanced with new tree and hedgerow planting. An updated bat emergence survey took place in 2023 and this recorded no significant changes to the bat activity on site.

Much of the woodier vegetation had been cut down on site in 2020 in order to gain access to the buildings. When the site was surveyed originally in 2021 there was a layer of woodchip on top of the vegetation. By the spring and summer 2021 ruderals had started to become established over the vegetated area of the site and by 2023 this was more established. Phase 2 presence/absence reptile survey took place in 2021. A low population of slow worms was recorded on site and it is recommended that these are maintained on site – a suitable mitigation plan has been set out including temporarily translocating reptiles to an area of the site outside the construction zone and then landscaping the site post construction to enable them to recolonise it in future. It is unlikely that the population has changed significantly since 2021 however a drainage area will also be managed for reptiles in addition to the boundary habitat available to them.

Removal of any ivy, bushes, trees or similar vegetation able to support breeding bird species and building demolition are required to take place outside of the bird nesting season, which runs from 1st March – 1st August inclusive, to ensure nesting birds are not harmed. Alternatively, this can be carried out under ecological supervision by a suitably qualified ecologist. New features for nesting birds will eb incorporated into the new buildings on site.

Any new fencing on site should allow passage of hedgehogs into and out of the garden areas and into and out of the site by avoiding gravel boards or creating gaps at suitable locations in each new garden. New hedgehog shelters at suitable locations would benefit this rapidly declining species locally.

Additional measures have been set out to provide net gain for wildlife.

2.0 Introduction

Background

2.1 Peach Ecology was commissioned in January 2021 to carry out a Preliminary Ecological Appraisal (PEA) of the Site at Aurea Norma and Woollhead's Builder's Yard, The Dene, Ropley, Ropley Dean, Alresford SO24 0BH (Grid Reference: SU 63169 32176), located as shown in **Appendix A** and laid out as shown in **Appendix B.** This report will support the application to East Hampshire District Council for permission to construct new dwellings on the site as shown in **Appendix C**. This report describes the existing ecology on site based on the findings of a Preliminary Ecological Appraisal and a desk-top review of other ecology issues.

Description of site and surrounding area

2.2 The site is an approximately 0.3 hectares area of land featuring an old builder's yard to the south with various buildings and outbuildings present in varying stages of dilapidation, the site also includes an area of garden from the adjacent property to the west of the yard, this is separated by some Cypress trees. Around the centre of the builders yard there is a disused, dilapidated one-storey dwelling with more surrounding outbuildings. The north of the site was composed of dense scrub and vegetation that was cleared in 2020, leaving bare earth and piles of woodchip, so that the buildings on site could be exposed and surveyed. This has left piles of material that has become colonised with ruderals and nettle beds. The garden included as part of the development site to the west is composed of lawn with a hedge to the west. Bordering the development site to the north is an area of arable land, while to the west, east and south there are houses with gardens. South of the site, the A31 runs east-to-west. There are some trees scattered throughout the local area. The wider landscape features more arable land with some grazing land to the west and some areas of woodland to the north and the nearby railway.

Brief

2.3 To carry out a Preliminary Ecological Assessment of the site and inform the client of any ecological implications associated with the proposals. This included a bat survey of the building and a reptile survey of the site. A walkover survey was undertaken in 2023.

3.0 Methodology

Desk Study

3.1 Ecological data was gathered relating to statutory nature conservation sites from within 2km, as shown in **Appendix D**. Multi-Agency Geographic Information for the Countryside (MAGIC), a DEFRA-run website was used along with Ordnance Survey maps and aerial images to check for relevant data on notable habitats and species nearby, including European Protected Species license data and wildlife corridors where the site connects into the surrounding area. Planning applications for nearby sites were also reviewed to look at the impacts of other proposals and schemes nearby.

Site Assessment

3.2 The initial site survey was undertaken on the 15th February 2021 although data was collected on subsequent visits undertaking phase 2 surveys and the site was revisited again on the 11th July 2023. The assessment employed techniques based on standard Phase I Habitat Survey methodology (CIEEM, 2016). Habitat types on and adjacent to the site were identified according to standard habitat definitions. The collection of botanical information focused on the dominant and key indicator species for each habitat type. The site survey included an assessment of the habitats immediately adjacent to the site, where possible, to look at its value within the local landscape. Indicative methodologies for the most likely protected and notable species that could occur on site and be impacted by the proposals are set out below.

Badgers

3.3 Any areas that could be used for foraging or could potentially contain a badger sett were surveyed and any signs noted. Signs include active or disused setts, digging, latrines and dung pits, foraging signs (‘snuffle holes’), footprints, hairs and mammal tracks.

Bats

3.4 Buildings and trees within the footprint of the site and any areas potentially impacted by the proposals were inspected in accordance with 2016 survey guidance (Bat Conservation Trust) for potential access points and roosting features that could support bats. Trees were checked for ivy cover, crevices and rotten sections from ground level and from a ladder and with binoculars where necessary. Buildings were checked internally and externally for any signs of roosting bats or bat activity including droppings, insect feeding remains, worn entrances and staining.

3.5 Four bat emergence surveys took place, three dusk surveys and a dawn survey. The dusk surveys started at least 15 minutes before sunset and continued until 1.5 hours after sunset, the dawn survey started approximately 1.5 hours before sunrise and finished just after. 3-5 surveyors were present during each survey positioned at locations giving good coverage of all access points on building with bat roosting potential. Equipment used included Elekon Bat Logger M bat detector/recorders and sounds were analysed on Elekon Software. Three Canon Infra-red cameras and Infra-red lights were used during the survey in 2023. Details on the environmental conditions were taken at the time of survey. Davog McCloskey (Licence number 2015-11951-CLS-CLS) was present at the surveys along with experienced bat

surveyors Rob Neal, Ciara Askin, Nick Cowen, Jack Horn, Gus Layton, Chloe Dalglish and assistant surveyors.

Birds

3.6 Any habitat features, for example, scrub, trees, hedgerows and buildings which could potentially be used by nesting birds, were surveyed and any nesting activity was noted.

Dormice

3.7 The suitability of the habitat was assessed for dormice in terms of trees and hedgerows and the connectivity of the site to other areas of suitable habitat locally. Any small mammal feeding signs were checked and assessed, these include teeth marks on hazel nuts and other nuts and any evidence of nest building.

Great Crested Newts

3.8 Any ponds on site and within the vicinity of the site were noted and the potential of the land to act as a commuting route, shelter or foraging resource for great crested newts (GCN) was assessed.

Hedgehogs

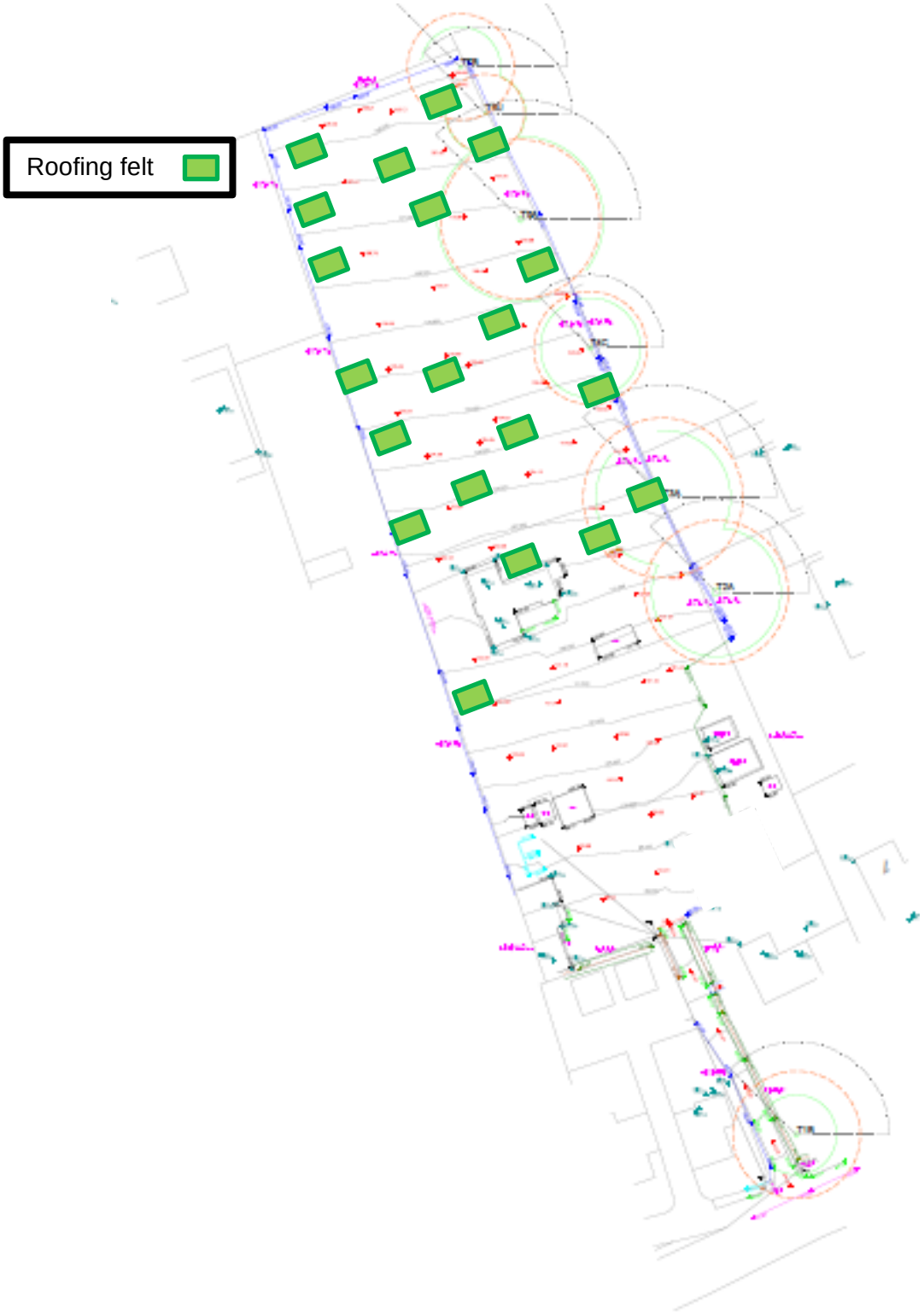
3.9 The site was searched for signs of hedgehogs, including looking for areas of suitable habitat, searching for mammal tracks and droppings.

Reptiles

3.10 Habitat features suitable as hibernacula, foraging or basking areas were noted. Extant refugia were all carefully examined to look for reptiles or for evidence of reptiles, including shed skins. A series of presence/absence surveys were conducted within the site boundaries, targeting areas of habitat highlighted by the initial ecological survey as having potential to support reptiles. 20 Artificial refugia were laid out on the 8th March 2021 within the site boundaries and left for at least two weeks to settle and bed in before any surveys were carried out. A total of seven separate survey visits were then conducted under good weather conditions. All field surveys were undertaken by an experienced reptile surveyor Jack Horn.

3.11 The surveys consisted of the following three methods, in accordance with current guidance (Griffiths and Inns, 1998; Froglife, 1999):

- Visual Search – The site was searched visually during each visit. Details of reptiles encountered basking in the open were recorded. Recorded data included; species, sex, age and location.
- Extant Refugia – Any existing potential refugia present within the site boundaries were carefully searched by hand for reptiles, these included log and compost piles and the large stones and paving on site.
- Artificial Refugia – 20 artificial refugia, consisting of thirty 500mmX500mm squares of bitumen roofing felt were sited in areas of reptile habitat as shown in **Plan 1** below. All refugia were lifted during each survey visit and all reptiles present on, under or next to each refugia were recorded.



***Plan 1**: Layout of artificial refugia*

Stag beetles

3.12 Any stag beetles found during the survey were noted or any habitat suitable for this species.

4.0 Results and Analysis

Desk study

Protected sites

4.1 There are no statutory designated sites within 2km.

Site Assessment

Buildings

4.2 Two buildings on site have bat roosting potential due to their being covered in much dense ivy or due to the gaps and crevices (see **figure 1**), these include buildings 1 and 5. The other buildings have negligible ecological bat roosting potential and could be thoroughly searched for signs and evidence of bats. The buildings are constructed from a range of materials including brick, wood and metal and have a variety of roof types.

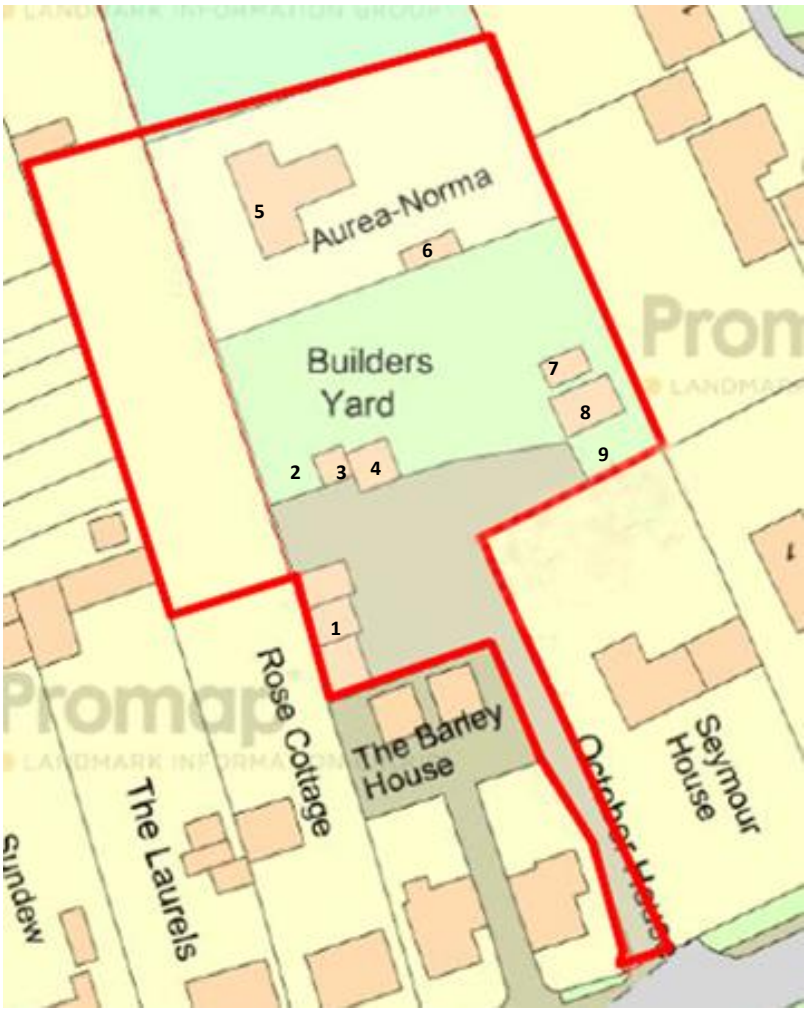


Figure 1: Buildings on site, numbered

4.3 The shed to the west (Building 2) is wooden with a bitumen-lined roof. It had no evidence of bats or roost potential. The wooden shed next to it (Building 3), and the metal shed next to that (Building 4), are both covered in a lot of ivy and, therefore, have bird nesting potential.

Office building

4.4 The office building in the south-west corner (building 1, photo 1) was accessed. Inside it was full of shelving and there was a window open to the west – a potential access point for wildlife. It has a metal corrugated roof, with wooden panelling and beams internally. There were lots of cobwebs and no evidence of bats present. It presented some roosting potential in crevices and features inside. The adjoined garage was also accessible and showed no evidence of bats or bat potential. The building has medium bat roosting potential.

Photo 1: Office building in south-west corner (building 1)

Photo 2: Three outbuildings adjacent to each other to the north-east of builder's yard (buildings 2, 3 and 4)

Photo 3: Building 6, with a thick ivy cover suitable for nesting birds

Photo 4: Building 8 on the right with the semi-circular roof, with a thick ivy cover suitable for nesting birds

4.5 The one-storey dwelling near the centre of the site (building 5, photo 5) has high bat roosting potential due to many gaps of varying sizes under its clay roofing tiles on all sides of the roof (photo 6). The building appeared to be uninhabited for quite some time and had patches covered in thick ivy, providing further roosting potential for bats and also nesting potential for birds.

Photo 5: One-storey dwelling near the centre of the site (building 5)

Photo 6: South-facing roof of one-storey dwelling (building 5), with some of the gaps under roofing tiles circled (red)

Other Neutral Grassland

4.6 The north of the site was composed of bare earth along with patches of grass and other vegetation, with large piles of cleared trees and shrubs, scrub and general vegetation (photo 7, 8) when the site was initially surveyed in 2021. By the end of

summer 2021 a range of species had started to colonise the areas covered in woodchip and by 2023 the species were more established. Species present included: Bramble, False Oat Grass, Nettles, Greater Plantain, St Johns Wort, Thistle, Yorkshire Fog, Cocksfoot, Buttercup, Broadleaf Willowherb, Hogweed, Selfheal, Ragwort, Yarrow and Bindweed.

Photo 7: The northern half of the site, previously cleared

Photo 8: The north of the site, adjacent to the trees

4.7 Although these species are relatively widespread and common they have wildlife value and add to the biodiversity value of the local area. As new dwellings will be constructed on site there will be less space available for gardens and areas of planting therefore it is recommended that a range of bulbs are planted at the boundaries of the new gardens along with native hedgerow shrubs as compensation for the loss of diversity and to ensure there is a net gain. A drainage area will also be managed as a wildflower area.

Lawn (Modified Grassland)

4.8 The area to the west which is the rear garden of the property to the west is managed as a lawn. Species present include: Perennial Ryegrass, Yorkshire Fog, Cocksfoot,

Meadow Grass, Ribwort Plantain, Nettles, Selfheal and Yarrow – this is improved grassland and is maintained short.

4.9 These species are relatively widespread and the habitat is common. As new dwellings will be constructed on site there will be less space available for gardens and areas of planting therefore it is recommended that a range of bulbs are planted at the boundaries of the new gardens along with native hedgerow shrubs as compensation for the loss of diversity and to ensure there is a net gain.

Trees and shrubs

4.10 There are several trees and shrubs at the boundary and occasional shrubs centrally within the site. Two mature Oak (Photo 9) are located to the eastern boundary along with a Hazel – these will all be retained and protected during construction. To the western boundary are some shrubs and trees including: Cypress, Hawthorn, Yew, Spindle and Sumach. A Spindle and Yew are proposed to be removed here but this boundary will have a new native hedge planted with similar species. Some Cypress (Photo 10), a Laurel and a Hawthorn are located along the eastern edge of the lawned area, although these are non-natives they do contribute to a bat flight line and therefore it is important that there is new tree planting on site, especially along the western boundary to enhance the existing tree line here.

Photo 9: Mature oak tree in north-east corner

Photo 10: Cypress along eastern edge of lawned area

Hedge

4.11 A small section, approximately 10m long, of Beech Hedgerow is located along the southern boundary of the site near to the entrance, separating the site from the adjacent garages (Photo 11). This hedgerow will be retained and protected during construction.

Photo 11: Beech hedgerow to the south of the site

Bats

4.12 Five European Protected Species licences for bats have been granted within 2km:

- 2015-13002-EPS-MIT for brown long-eared and common pipistrelle
- 2015-13002-EPS-MIT-1 for brown long-eared and common pipistrelle
- 2016-25566-EPS-MIT for brown long-eared, serotine and common pipistrelle
- EPSM2012-4707 for common pipistrelle, soprano pipistrelle and Natterer's, allowing the destruction of a breeding site
- EPSM2012-4382 for brown long-eared and serotine

4.13 Various buildings on site have bat roosting potential and will require further survey work to determine their bat roosting status. The mature Oak on the adjacent land to the east has bat roosting potential however this will be retained and protected during construction.

4.14 The previously granted bat licences show the area is of importance to these species. Based upon the quantity and type of vegetation cleared on site, along with previous aerial images, it is evident the site would have previously provided much habitat for foraging and commuting bats and it is important that any new landscaping is diverse and structured to ensure there is no loss in biodiversity. This could be achievable by planting new trees and hedgerows and supplementing these with new bulb planting.

Phase 2 bat surveys

4.15 During the four bat emergence surveys no bats were confirmed roosting in the dwelling on site however common pipistrelle and serotine bats were recorded nearby

mostly along the western boundary, on both sides of the hedgerow, commuting and foraging, but also on the eastern hedgerow from time to time. The bat are potentially roosting to the west and east in adjacent properties, where the buildings are more suitable than the derelict buildings on site. The surveys took place over a good time frame and buildings were inspected before or after each visit.

4.16 Table 1 below shows a summary of the conditions, equipment and personnel present during the bat surveys.

Survey Date	Survey type	Surveyors	Equipment used	Duration	Weather	Sunset /sunrise time
18th May 2021	Dusk	DM, NC, RN	Elekon X 2	2040 - 2230	75% cloud cover, wind force 0-1, no rain, 16°C at start of survey and 14°C at end	2056
2nd June 2021	Dusk	DM, CA, SA, JH, CH	Elekon X 3	2100 - 2245	100% cloud cover, wind force 0-1, no rain, 20°C at start of survey and 18°C at end	2114
2nd July 2021	Dawn	DM, RN, JH	Elekon X 3	0326 - 0515	100% cloud cover, wind force 1, no rain, 18°C at start of survey and 16°C at end	0456
11th July 2023	Dusk	GL, CD, JH, WD	Elekon x 3	2100 - 2249	60% cloud cover, wind force 1-3, no rain, 19°C at start of survey and 17°C at end	2119

***Table 1** – Phase 2 bat survey details*

4.17 During the first bat survey common pipistrelle activity was noted from 2100 until 2219, small numbers of bats were present with at least 2-3 on several occasions. These passed through the site from the east and west and spent 5-10 minutes on foraging loops towards the northern end of the site. A serotine came from outside the site from the south-west direction and then flew along the western side and from here west – this occurred at 2152. A noctule was heard towards the end of the survey. Common pipistrelle social calls were recorded a few times to the north. A myotis bat was heard but not seen to the north at 2147, this is likely to have been a Natterer's. A myotis was heard again at 2148 and 2156.

4.18 During the second bat survey there was more activity. A common pipistrelle came from the west of the site, close by, outside of the site boundary and then continued to forage along the western hedgerow and around the house for the first half of the survey. Three serotine bats came from the south-east of the site at 2125, the bats flew in quick succession and it appeared that they were roosting a short distance away in that direction. Serotines were recorded hunting along the hedgerow to the west for some time and within the site before they disappeared north/west. A noctule was recorded high up travelling west to east across the site at 2138 and then occasionally later.

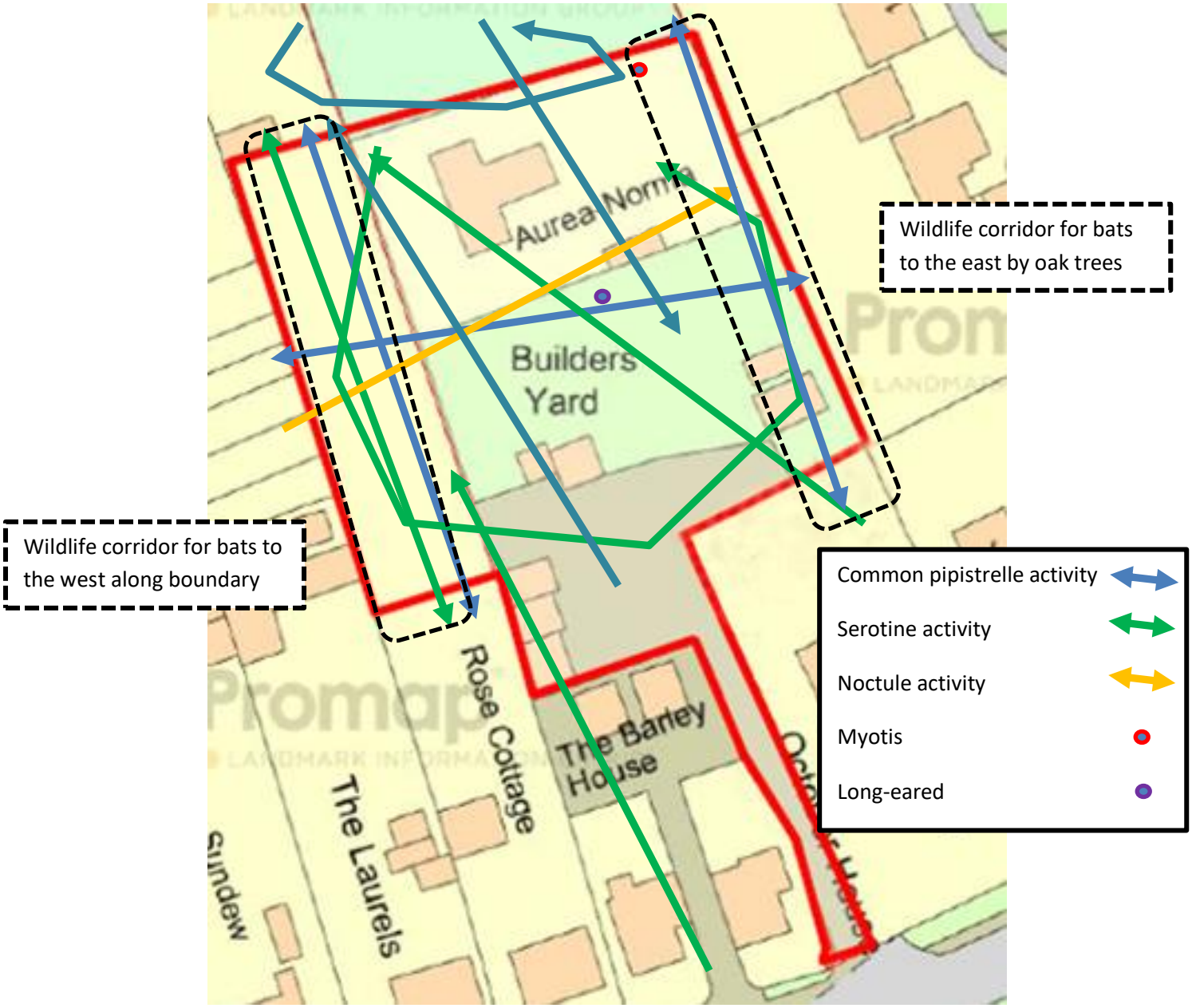
4.19 During the third bat survey a serotine was recorded flying to the north of the site at 0344. A common pipistrelle was heard but not seen at 0244 and a common pipistrelle was seen flying from south to north through the site at 0405. Common pipistrelle foraging activity was noted near the house and in the adjacent sites sporadically up until approximately 0430. The common pipistrelle are likely to be roosting nearby.

4.20 During the fourth survey no bats were recorded emerging from the buildings being surveyed. A single Long-eared bat was recorded to the south of the house at 2145

and a single Myotis sp. was recorded to the north at 2238. Activity by a single Serotine bat was recorded at approximately 5 times during the survey to the south and north of the site, a Serotine bat was recorded coming into the site from the south at the start of the survey at 2146 and a Common Pipistrelle was recorded entering the site from the north at 2137.

4.21 No bats were recorded roosting in the buildings during any of the dawn/dusk surveys. A European Protected Species licence is not required to proceed with the proposal however care must still be taken during demolition in case bats are present in future – this will be overseen by an ecologist as the building has bird nesting and reptile potential at the base. The loss of features for roosting bats will need to be compensated for with new bat roosting features in the new development.

4.22 The existing land does provide some habitat for foraging and commuting bats, especially at the boundaries to the west and east and it is important that new landscaping is diverse and structured in these areas to ensure there is no loss in biodiversity and to maintain the flight corridors, this could be further achievable by planting new trees and hedgerows and supplementing these with new bulb planting at the base.



Plan 2 *– Results of bat activity*

4.23 Lighting design will also need to be considered to avoid new roosting features, the boundaries and a buffer and potential roosts outside the site boundary.

Reptiles

4.24 The initial phase 1 site visit in 2021 found that the site was suitable for reptiles.

4.25 A phase 2 presence/absence reptile survey took place to determine if a reptile population was present at the site, and if so where at in order that a suitable mitigation plan could be prepared if necessary. The results of the survey including the environmental conditions are shown below in Table 2.

Survey number	Survey date	Weather and times	Method	Peak Adult Count
Survey set up	8.3.21	-	Visual search	0
1	18.5.21	11:45-12:05 11°c Cc 50% Wind 2 Ground damp	M, mid SE corner under folded metal sheet	1
2	25.5.21	14:24-14:52 15°c Cc 99% Wind 3 Ground damp	F, SE corner under roofing material	1
3	27.5.21	13:51-14:25 18°c Cc 90% Wind 1 Ground damp	M, mid SE corner under folded metal sheet	1
4	31.5.21	11:55-12:24 17°c Cc % Wind 1 Ground dry	M, F, mid S under metal fencing (mating)	2
5	8.6.21	11:55-12:20 17°c Cc 25% Wind 1 Ground dry	F, S mid under metal fencing (mating) F just north of house J, SE corner	2
6	9.6.21	11:50-12:20 19°c Cc 0% Wind 1 Ground dry	-	-
7	15.6.21	10:37-11:01 17°c Cc 35% Wind 2 Ground dry	F, SE corner under metal sheeting	1

Table 2: *Summary of reptile survey results*

4.26 A low population of slow worms was recorded on the site in 2021, these were all confined to the boundaries, the reptiles were mostly found under extant refugia, sheets of corrugated metal established on site. A high density of refugia were laid out and a peak count of 2 adults would indicate that there is a low population in the local area. It is likely that the peak count of 2 adults would represent between 10-20% of the total population. As the season progressed in 2021 nettle beds began to appear over the site making areas that were bare earth into more attractive habitat for slow worms. A population of between 10-20 may have been present on site then. When the site was revisited in 2023 the habitat had become more established although the vegetation on site was mostly long and dense reducing light levels to the ground. The population may have increased slightly due to numbers increasing on site. The site ha limited connectivity to the wider countryside to the south, west and east, however it is more open to the north and this connectivity must be retained.

4.27 The proposals will result in a high degree of disturbance on site and the loss of the majority of areas of reptile habitat. It would be possible to maintain some of the boundary habitat to the east, outside of the construction zone, to be used as a receptor site during a translocation, this area to the east will allow movement of reptiles into the wider countryside to the north also. This receptor area will be

enhanced with log piles and hibernacula and then when construction is complete and landscaping finished the reptiles will be able to migrate back onto the site. A drainage field is proposed to the south-east of the site, this area can be managed as reptile habitat in the long term. Once construction is complete the remaining site will be landscaped to enhance the boundary habitat for reptiles, providing hedges that will benefit reptiles.

4.28 The reptile translocation will require a reptile fence and at least 15 - 30 translocation visits will need to be undertaken to move reptiles to the agreed receptor area, during the active reptile season from March – October inclusive. Once the translocation is complete and the site destructively searched, the construction work can commence.

Birds

4.29 Based upon the quantity and type of vegetation cleared on site, along with previous aerial images, it is evident the site would have previously provided much habitat including trees and shrubs that are suitable for common garden nesting birds. Therefore, any further clearance will need to be timed and/or undertaken with care to avoid disturbing nesting birds and reptiles as well as other wildlife.

4.30 Birds recorded on or around the site during the survey included buzzard, pigeon, blackbird and sparrow.

4.31 The loss of all vegetation will need to be mitigated for with new landscaping and nesting opportunities. Landscaping the site with new hedgerow and tree planting would benefit garden species of nesting birds, while erecting nest boxes for house sparrows and swifts would be an enhancement for these declining species.

Great Crested Newts

4.32 There are no waterbodies within 250m of the site. It is therefore considered highly unlikely that this species would be present on site at any time.

Hedgehogs

4.33 Hedgehogs hibernate and build their nests in areas of denser scrub and vegetation, at the bases of hedgerows and amongst piles of composting vegetation, all of which are present on site. Clearance of vegetation, rubble and buildings will need to take place under ecological supervision so any hedgehogs, if present, can be moved to safety.

4.34 Any new fencing on site should allow passage of hedgehogs into and out of the garden areas and into and out of the site by avoiding gravel boards or creating gaps at suitable locations in each new garden. A new hedgehog shelter at a suitable location would benefit hedgehogs locally.

5.0 Requirements and Recommendations

Reptiles

5.1 An outline reptile mitigation plan is set out below:

I. A suitable receptor site is along the eastern boundary of the site as shown in Appendix E – an area at least 2m wide from the boundary will be sectioned off with reptile fencing prior to construction and this area will remain outside of the main garden curtilage and be fenced off post construction with post and rail fencing – this area can then be landscaped with woody native vegetation e.g. Native hedgerow species or apple trees. This area will need to be enhanced with new hibernacula and log piles and this will take place under ecological supervision. The area will measure approximately 100sqm.

II. Reptile fencing will be erected excluding any retained trees and hedgerow and the receptor area. Erection of the reptile fence will be done under ecological supervision to ensure reptiles are not harmed. Additional shrub and tree removal may need to take place under ecological supervision to aid fence erection.

III. The reptile fencing will be constructed from polythene or similar suitable material dug 150mm into the ground and extending at least 600mm above ground, and supported by posts. No gaps will be present that would allow the movement of reptiles through it. The northern section of garden has sub-optimal reptile habitat so there is no need to use reptile fencing here (erecting a reptile fence here would be more disruptive than removing shrubs and vegetation under ecological supervision).

IV. The reptile fence will be folded over away from the development site and stapled to hold the fold in place as a further measure to restrict reptile passage into the site.

V. The fence is to remain in place during the entire construction period.

VI. 100 refugia will be laid out over the site within the reptile fence to assist in the reptile translocation and the translocation trapping exercise will take place over 30 days until there are at least 5 consecutive days with no trapping results or until the numbers are sufficiently low to indicate that the majority of animals have been moved. All reptiles will be moved to the receptor site.

VII. Any species of note can be moved to the exterior of the reptile fence where a new long/pile hibernaculum will be constructed under ecological supervision.

VIII. The reptile translocation can only take place in March – October/early November in suitable weather.

IX. After the translocation is complete a ‘destructive search’ will take place using a digger to check through all remaining vegetation and material on site, including the removal of paving slabs and the heaps of vegetation and material, areas where reptiles may be concealed. Grass, shrubs and other vegetation may need to be cut to manageable levels prior to the destructive search (a finger tip search where necessary) to make finding reptiles easier – the ecologist will decide on when this can take place and the removal will be done over different phases (cut to approximately 100mm on the first cut then to ground level after where necessary). The digger driver will be under close supervision and guidance by the ecologist. Results of the reptile translocation will be sent to the local authority.

X. New native hedgerow and other landscaping suitable for reptiles will be undertaken to create suitable corridors and habitat for foraging and dispersal (Appendix E). New fencing at the site boundary to the east will need to be in place to secure an area of new hedgerow planting with two hibernacula. Fencing between gardens will not exclude movement of reptiles and amphibians at ground level so gravel boards will be removed, avoided of adapted to allow movement of small animals at ground level.

XI. The drainage field will be sown with a neutral grassland seed mix and will be allowed to develop as a wildflower area. This will be managed by cutting it to a height of no

less than 150mm once every 1-2 years in late November – February. The vegetation will be raked off and removed or be allowed to rot down at the edge of the drainage field at the site boundary to act as a compost heap for reptiles.

Bats

5.2 Lighting design will also need to be considered to avoid new roosting features, landscaped areas and potential roosts outside the site boundary. LED downlighters will be used if external lighting is necessary along with down pointing bollard lighting.

5.3 The boundary and a buffer area at least 2m wide will be maintained as a dark corridor for bats, this will be maintained below 1lux.

5.4 Care will be taken when roof tiles are removed, an ecologist will be on site to oversee this.

5.5 Three integrated bat boxes will be used in the new development at suitable locations.

Birds

5.6 Removal of any buildings, bushes, trees, ivy or shrubs able to support breeding bird species along with building demolition are required to take place outside of the bird nesting season which runs from 1st March – 1st August inclusive, to ensure nesting birds are not harmed. Alternatively, this can be carried out under ecological supervision.

5.7 Removal of any vegetation able to support breeding bird species will need to be compensated for with new landscaping and nesting opportunities. Landscaping the site with new hedgerow and tree planting would benefit garden bird species birds.

5.8 Three house sparrow nest boxes and three swift nest boxes will be built into the new houses, one box per dwelling at least (Appendix E).

Pollution prevention and drainage

5.9 It is important that the proposals follow appropriate pollution prevention guidelines (PPG 6) and drainage guidelines (Defra guidelines for Sustainable Urban Drainage) to protect watercourses, ponds, groundwater and other habitats connected hydrologically to the site.

Landscaping

5.10 It is important that new landscaping is diverse and structured to ensure there is no loss in biodiversity; this will be achievable by planting new trees and hedgerows and supplementing these with new bulb planting at the bases.

5.11 At least 100m of new native hedgerow planted along the boundaries, this will include species such as hawthorn, blackthorn, hazel, guelder rose, spindle, wayfaring tree etc. This will be planted with bulbs at the base of the hedgerow at a density of 10-

20per m^2. This will be fenced off from the main curtilage using post and rail fencing. The hedge along the western boundary will be infill planted with native woody species and laying the hedge will be considered here.

5.12 At least 20 new trees including five new apple trees will be planted on site in gardens.

5.13 Any new garden or boundary fencing will need to allow the movement of hedgehogs and reptiles at ground level by leaving out barge boards or leaving gaps at least 100mm wide by 100mm high between any neighbouring gardens and between each garden and the outside of the site – See **Appendix D** for details on how access can be achieved.

5.14 Appropriate tree fencing will need to be erected prior to construction to protect any retained trees during construction. All construction works taking place in the vicinity of retained vegetation, and particularly those close to existing buildings, should conform to British Standards. A construction management plan will need to be set out with these protected areas and features clearly identified.

5.15 Logs from any tree removal can be used to create a reptile hibernaculum (pile of logs or varying sizes, typically in the corner of the garden).

5.16 A drainage field will be sown with and managed as a Neutral Grassland habitat.

Hedgehogs

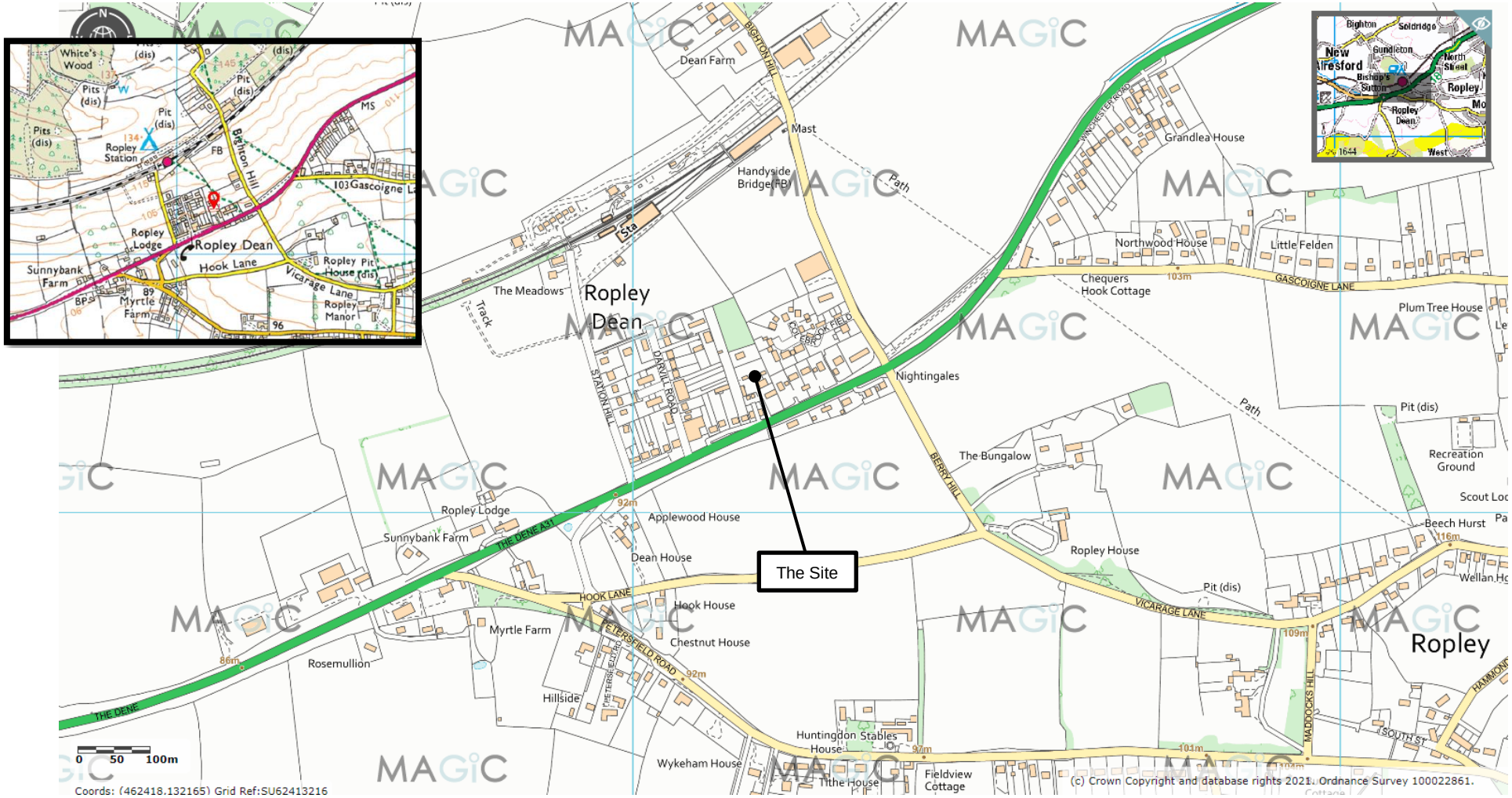
5.17 Incorporating hedgehog hibernation features into boundary hedgerow in each of the new residential curtilages and concealing these with vegetation can enhance the site ecologically and support this rapidly declining species. Plans for this can be put in place when specific development proposal plans become available.

Stag Beetles

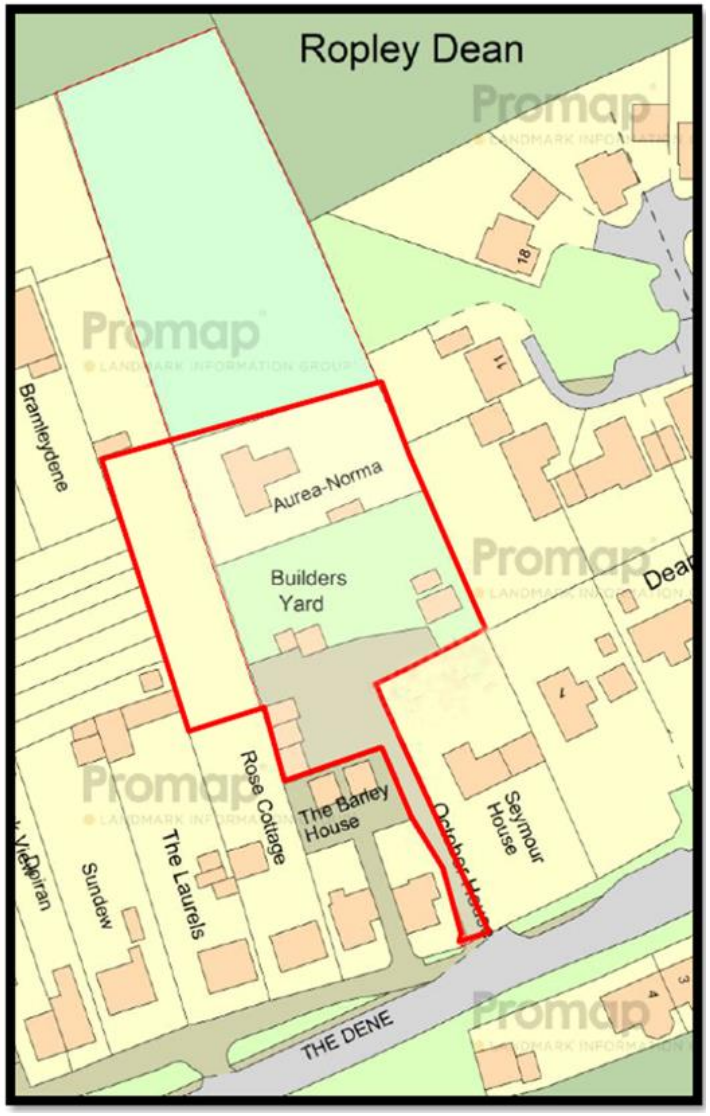
5.18 A log pile will be constructed under ecological supervision suitable for stag beetles. This will have upright standing logs and this will be constructed in the boundary of the site in an area outside the residential curtilage.

5.19 The stumps of any trees on site will be removed under ecological supervision and any stag beetle larva will be moved to the stag beetle log piles.

Appendix A: Site Location



Appendix B: Existing Plans



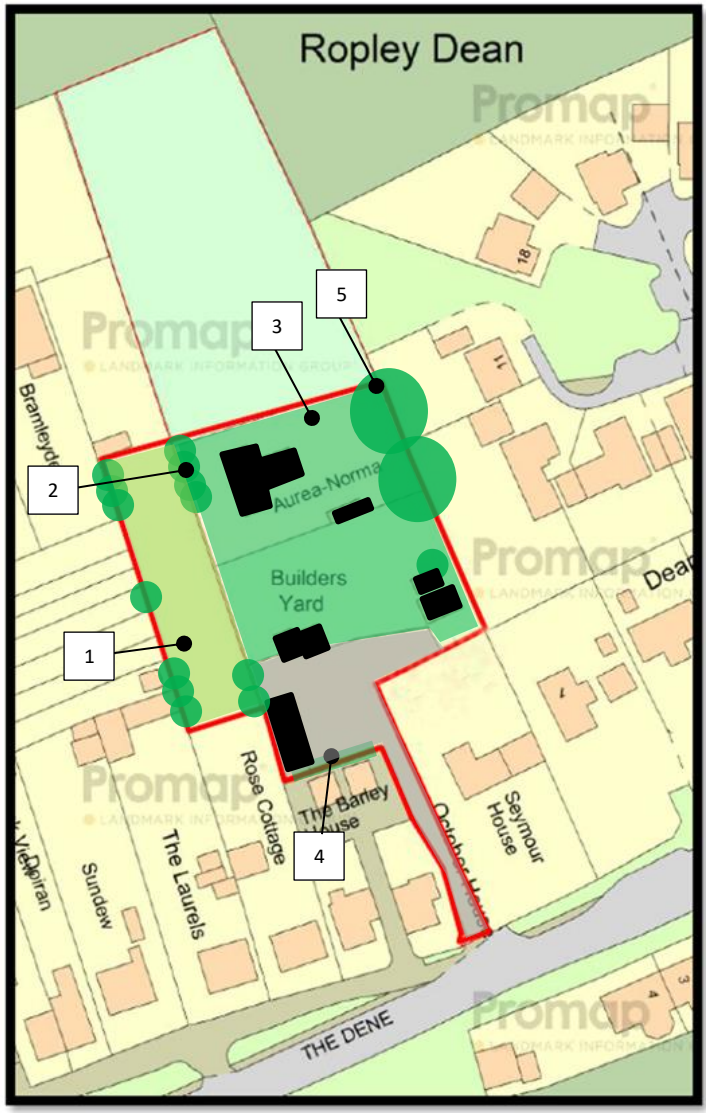
1 Lawn managed with regular cuts

2 Cypress trees

3 Ruderals growing over woodchip where vegetation was cleared

4 Beech hedge

5 Mature Oaks



Lawn/Modified grassland

Other Neutral Grassland with ruderals

Hard standing

Buildings

Hedge

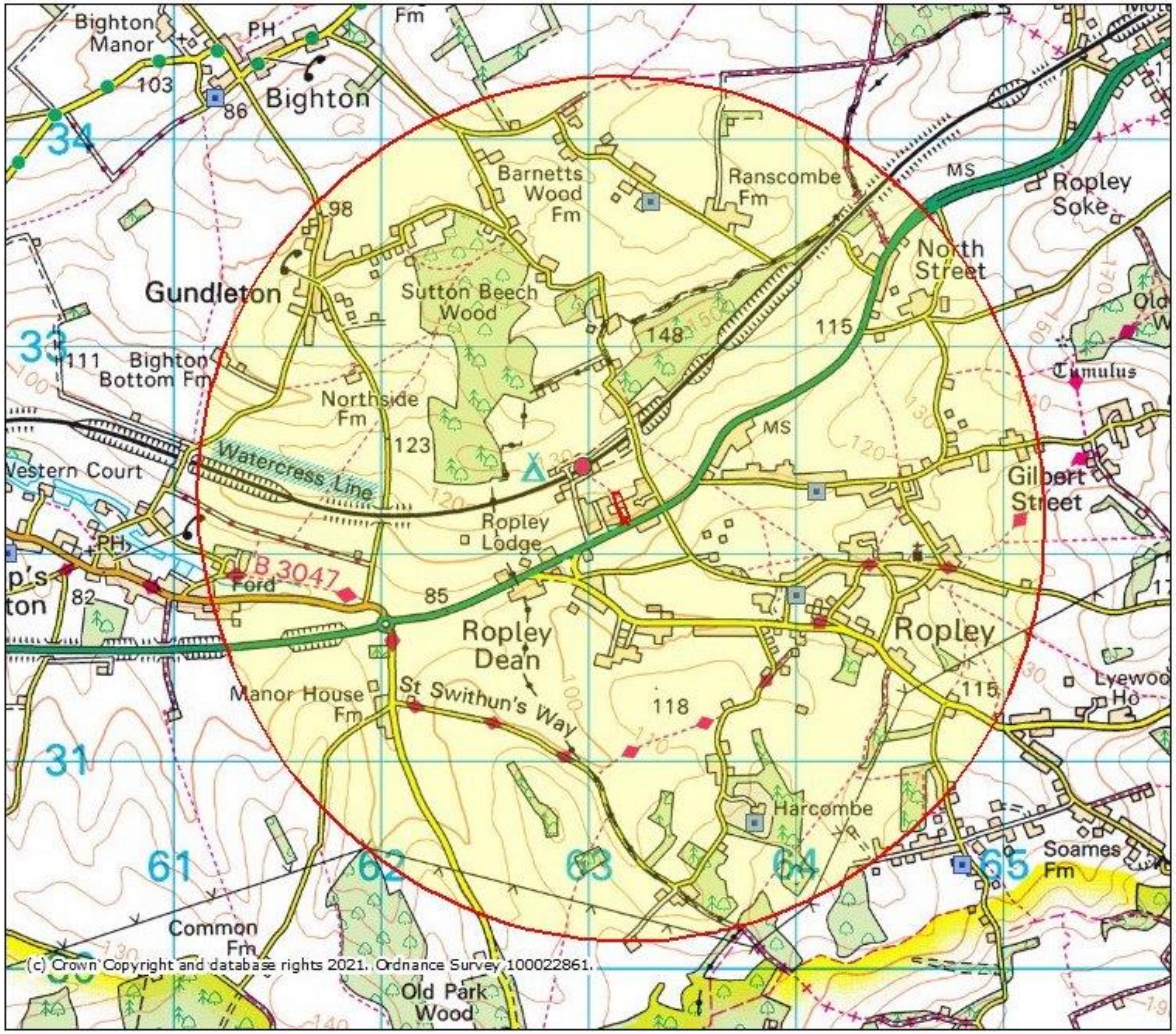
Trees and shrubs

Appendix C: Proposed Plans

Appendix D: Protected Sites and European Protected Species Data

MAGiC

Magic Map



Legend

- Local Nature Reserves (England)
- National Nature Reserves (England)
- Ramsar Sites (England)
- Special Areas of Conservation (England)
- Special Protection Areas (England)

Sites of Special Scientific Interest Units (England)

- Favourable Condition
- Unfavourable Recovering
- Unfavourable no change
- Unfavourable Declining
- Part Destroyed
- Destroyed
- Not Assessed

Granted European Protected Species Applications (England)

- Amphibian
- Bat
- Cetacean
- Invertebrate
- Other Mammal
- Plant
- Reptile

Projection = OSGB36
xmin = 458300
ymin = 129700
xmax = 467700
ymax = 134700

0 0.55 1.1
km

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Appendix E: Mitigation and Enhancement Plan

At least 100m of new native hedgerow planted along the boundaries, with bulbs at the base.

Dark corridor maintained below 2lux along eastern and western boundaries.

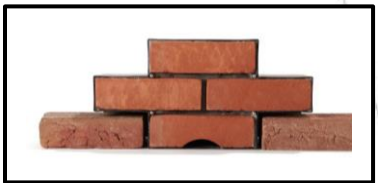
Construct log piles suitable for reptiles and stag beetle

Temporary reptile receptor area

Drainage field managed as a wildflower area suitable for reptiles

New tree planting to compensate for loss of trees on site and to maintain flight lines

Four hedgehog habitat nest boxes will be situated on site



Three bat brick incorporated into the new dwellings

Three swift box incorporated into the new dwellings

Three sparrow boxes incorporated into the new

Post and rail fencing used to segment off the hedge to the east. This will be located at least 2m from the site boundary. Two reptile hibernacula/log piles will be located in this receptor area

Appendix F: Hedgehog Access

Cut a gap out of the gravel board

Concrete gravelboards can have a section cut out

Raise the boards up

Modify your own way

Have an area of the fence that is set so that a natural gap can form

Appendix G: Protected species legislation

Amphibians

Natterjack toad, pool frog and great crested newt are protected under the Conservation of Habitats and Species Regulations 2017 (as amended). They are also afforded additional protection under the Wildlife and Countryside Act 1981 (as amended).

Natterjack toad, common toad, great crested newt and northern pool frog are also Species of Principal Importance (SPIs).

Reptiles

Smooth snake and sand lizard are protected under the Conservation of Habitats and Species Regulations 2017 (as amended). They are afforded additional protection under the Wildlife and Countryside Act 1981 (as amended).

Adder, grass snake, common lizard and slow-worm are all protected from killing and injury under the Wildlife and Countryside Act 1981 (as amended). All UK reptile species are SPIs.

Birds

All wild birds are protected under the Wildlife and Countryside Act 1981 (as amended). This includes damage and destruction of their nests whilst in use, or construction. Species listed under Schedule 1 of the Act, such as barn owl, are afforded protection from disturbance during the nesting season.

The following 50 bird species are SPIs: lesser redpoll, aquatic warbler, marsh warbler, skylark, white-fronted goose, tree pipit, scaup, bittern, dark-bellied brent goose, stone-curlew, nightjar, hen harrier, northern harrier, hawfinch, corncrake, cuckoo, Bewick's swan, lesser spotted woodpecker, corn bunting, cirl bunting, yellowhammer, reed bunting, red grouse, herring gull, black-tailed godwit, linnet, twite, Savi's warbler, grasshopper warbler, woodlark, common scoter, yellow wagtail, spotted flycatcher, curlew, house sparrow, tree sparrow, grey partridge, wood warbler, willow tit, marsh tit, dunnock, Balearic shearwater, bullfinch, roseate tern, turtle dove, starling, black grouse, song thrush, ring ouzel and lapwing.

Birds are also categorised according to their level of conservation concern indicated by their population status and stability. These are known as the Birds of Conservation Concern (BoCC4), Red, Amber and Green lists (Eaton et al, 2015). Where red and amber species are present, their conservation status should be considered in determining the likely impacts of proposed projects and plans.

The conservation status of birds recorded during the survey was assessed against the following criteria:

- EC Birds Directive 2009 Annex 1,
- Wildlife and Countryside Act 1981 (As Amended) Schedule 1, (Table 1, WCA1)
- Natural Environment and rural communities (NERC) Act 2006 – Section 41
- Red and Amber lists of Birds of Conservation Concern in England (BoCC4)

Badger

Badger is protected under the Protection of Badgers Act 1992. Under this legislation it is an offence to kill or injure a badger; to damage, destroy or block access to a badger sett; or to disturb badger in its sett. The Act also states the conditions for the Protection of Badgers licence requirements.

Bats

All bat species are protected under the Conservation of Habitats and Species Regulations 2017 (as amended), as detailed above. Bats are further protected under the Wildlife and Countryside Act 1981 (as amended), making it an offence to:

- Deliberately or recklessly damage or destroy any structure or place which bat(s) use for shelter or protection.
- Disturb bat(s) while occupying a structure or place which it uses for shelter or protection.
- Obstruct access to any structure or place which they use for shelter or protection.

Furthermore, seven bat species are SPIs, covered under Section 41 of the NERC Act 2006. These include western barbastelle, Bechstein's, noctule, soprano pipistrelle, brown long-eared, lesser horseshoe and greater horseshoe.

Hazel dormouse

Hazel dormouse is protected under the Conservation of Habitats and Species Regulations 2017 (as amended). It is afforded additional protection under the Wildlife and Countryside Act 1981 (as amended), including obstruction to a place of shelter or rest.

Hazel dormouse is also a SPI.

Hedgerow

Under the Hedgerows Regulations 1997 it is against the law to remove or destroy certain hedgerows without permission from the LPA, which are also the enforcement body for offences created by the Regulations. LPA permission is normally required before removing hedges that are at least 20 m in length, more than 30 years old and contain certain plant species. The authority will assess the importance of the hedgerow using criteria set out in the regulations. The regulations do not apply to hedgerows within the curtilage of, or marking a boundary of the curtilage of, a dwelling house.

Hedgerow is a Habitat of Principal Importance (HPI).

Other mammals

West European hedgehog, brown hare, mountain hare, pine marten, harvest mouse, polecat and red squirrel are all SPIs.

The following mammals are listed under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended): wildcat, brown hare (Schedule 5A), mountain hare (Schedule 5A), pine marten and red squirrel.

Non-native invasive plant species

Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) is a list of non-native plant species for which Section 14 of the Act applies. It is an offence to plant, or otherwise cause to grow in the wild species listed under Schedule 9 of the act. These include, but are not limited to:

- Himalayan balsam
- Cotoneaster sp.
- Japanese knotweed
- Giant hogweed

Habitats of Principal Importance

Section 41 of the NERC Act 2006 details 56 HPIs, of which the following could be present in south-east England: Lowland calcareous grassland, Lowland dry acid grassland, Lowland meadows, Lowland Heathland, Open Mosaic Habitats on Previously Developed Land, Lowland fens, Lowland raised bog, Reedbeds, Lowland beech and yew woodland, Lowland mixed deciduous woodland and Wet woodland.

Impacts to HPI are of material planning consideration.

Ancient woodland and veteran trees

The NPPF 2021 states that 'Planning permission should be refused for development resulting in the loss or deterioration of irreplaceable habitats, including ancient woodland and the loss of aged or veteran trees found outside ancient woodland, unless the need for, and benefits of, the development in that location clearly outweigh the loss'. In addition, Natural England's standing advice for ancient woodland indicates that a 15 m buffer is retained between ancient woodland and any works or development. Ancient woodlands, and ancient and veteran trees, may also be protected by Tree Preservation Orders.

National Planning Policy Framework (2021)

Details the Government's planning policies for England and how these should be applied, particularly to contribute to the Government's commitment to halt the decline of biodiversity. When assessing planning applications, LPAs should have regard to conserving and enhancing biodiversity by applying a number of principals, including:

- Avoiding impacts to biodiversity through appropriate site selection.
- Mitigating residual impacts.
- Encouraging the preservation and enhancement of biodiversity.
- Preventing the development of protected sites, such as SSSIs.
- Refusing permission where habitats that cannot be recreated, such as ancient woodland, would be lost.
- Encouraging good design that limits light pollution.
- Relevant paragraphs in the NPPF (2021) are detailed below.

Paragraph Number	Detail
174	"Planning policies and decisions should contribute to and enhance the natural and local environment by…minimising impact on and providing net gains for biodiversity" Protection of sites of biological values Preventing new and existing development from adverse impacts to soil, air, water or noise Development should help improve local conditions
175	Maintenance and enhancement of networks of habitats and green infrastructure; plan for the enhancement of natural capital at a catchment or landscape scale
179	"To protect and enhance biodiversity and geodiversity, plans should: a) Identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity; wildlife corridors and stepping stones that connect them; and areas identified by national and local partnerships for habitat management, enhancement, restoration or creation; and b) promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity."
180	"When determining planning applications, local planning authorities should apply the following principles: a) if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused; b) development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest; c) development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists; and d) development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to improve biodiversity in and around developments should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate."
181	The following should be given the same protection as habitats sites: a) potential Special Protection Areas and possible Special Areas of Conservation; b) listed or proposed Ramsar sites64; and c) sites identified, or required, as compensatory measures for adverse effects on habitats sites, potential Special Protection Areas, possible Special Areas of Conservation, and listed or proposed Ramsar sites.
185	"Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development. In doing so they should: … c) limit the impact of light pollution from artificial light on local amenity, intrinsically dark landscapes and nature conservation."

Environment Act (2021)

The Environment Act (2021) achieved Royal Assent in November 2021.

The Environment Act (2021) makes a provision for biodiversity net gain to be a condition of planning permission in England, however, it is not anticipated that a 10% biodiversity net gain will be mandatory until 2023. When it does become mandatory, planning applications will need to demonstrate a 10% biodiversity net gain can be met. A biodiversity net gain plan must be submitted and must include:

a) information about the steps taken or to be taken to minimise the adverse effect of the development on the biodiversity of the onsite habitat and any other habitat
b) the pre-development biodiversity value of the onsite habitat,
c) the post-development biodiversity value of the onsite habitat,
d) any registered offsite biodiversity gain allocated to the development and the biodiversity value of that gain in relation to the development,
e) any biodiversity credits purchased for the development.

It should be noted however, that the NPPF (2021) as set out below on does require a project to provide a measurable net gain for biodiversity.

Countryside and Right of Way Act 2000

Amends and strengthens the Wildlife and Countryside Act 1981 (as amended). It also details habitats and species for which conservation measures should be promoted.

Natural Environment and Rural Communities Act 2006

Section 40 of the Act places a duty on local planning authorities to conserve and enhance biodiversity in England whilst carrying out their normal functions. Section 41 comprises a list of Habitats of Principal Importance (HPIs) and Species of Principal Importance (SPIs) which should be considered.

The LPA will need to have particular regard to any relevant local nature recovery strategies, and any relevant species conservation strategy or protected site strategy prepared by Natural England.

Hedgerows Regulations 1997

Under these regulations it is an offence to intentionally or recklessly remove, or cause or permits another person to remove, a hedgerow. Important hedgerows are defined in Section 4 of the Regulations. This includes hedgerows that have existed for over 30 years or satisfies at least one criteria listed in Part II of Schedule 1.

Wild Mammals (Protection) Act 1996

Under this act wild mammals are protected from the intentional unnecessary suffering by crushing and asphyxiation.

ODPM Circular 06/05: Biodiversity and Geological Conservation – Statutory Obligations and Their Impact within the Planning System (2005)

The Government's Office of the Deputy Prime Minister (ODPM) Circular 06/05 (ODPM 2005) presents the legal requirement for planning authorities with regard to statutory designated sites. Planning approval should not be granted where impacts to statutory designated sites that are not connected to the site maintenance for nature conservation, or will have a significant effect on the site's conservation objectives and/or affect the site's integrity. Permission may be granted if the proposed development overrides public interest.

The presence of a protected species is a material planning consideration. The Circular clearly outlines that it is essential that the presence or otherwise of protected species, and the extent that they may be affected by the proposed development, is established before planning permission is granted. Otherwise, all relevant considerations may not have been addressed in making the decision.