Land at Common Road, Sissinghurst

Ecological Assessment

December 2019

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1 Introduction

1.1 Background and Proposals

1.1.1 Aspect Ecology has been commissioned by Invicta Self & Custom Build to advise in respect of ecological matters relating to land at Common Road, Sissinghurst (see Plan 5770/ECO1).

1.1.2 The site was the subject of a previous planning application for the construction of 9 self/custom build dwellings (application reference: 19/00205/OUT). In support of the application, ecological surveys were undertaken by a third-party consultancy in 2016 and 2017, comprising an Extended Phase 1 survey (incorporating a desk study, Phase 1 habitat and general faunal survey), and specific surveys for bats and Dormouse. These reports are provided at Appendices 5770/1, 5770/2 and 5770/3 respectively. This application was refused planning in July 2019 and is currently being appealed.

1.1.3 A new application is now being submitted for development of c.18 residential units at the site (see proposed layout at Appendix 5770/4). Accordingly, Aspect Ecology has been commissioned to undertake update ecological survey work in support of this new application, including an update Phase 1 habitat survey and general faunal survey, together with biodiversity impact calculations.

1.2 Site Overview

1.2.1 The site is located at Sissinghurst, to the east of Royal Tunbridge Wells in Kent. The site is located to the west of Common Road and is bounded by Frittenden Road to the north, residential properties to the west and Sissinghurst Primary School to the south.

1.2.2 The site itself comprise a grassland field bounded by hedgerows, with a wooded strip at the south-eastern edge, beyond which lies an area of tall ruderal and scrub vegetation.

1.3 Purpose of the Report

1.3.1 This report has been prepared to inform a new planning application for the site, setting out the results of the update ecological survey work undertaken and providing an assessment of the proposals.

2 Review of Previous Survey Information and Ecological Baseline

2.1 Ecological Designations

Review of Previous Survey Information and Assessment

2.1.1 The previous Extended Phase 1 Ecological Survey Report (see Appendix 5770/1) sets out that there are no statutory or non-statutory ecological designations within or immediately adjacent to the site. The closest statutory designation is Sissinghurst Park Wood Site of Special Scientific Interest (SSSI) located 900m to the north-east of the site, designated for a number of rare plant species which occur in the rides and are representative of Wealden woodlands. The closest non-statutory designation is Roundshill Park Wood Local Wildlife Site (LWS) located approximately 500m to the east of the site. No international designations are located within a 5km radius of the site.

Update Survey Work

2.1.2 To inform the current proposals, an update review of the online Multi-Agency Geographic Information for the Countryside (MAGIC) database was undertaken to confirm the presence of statutory designations within the surrounds of the site, including an extended search for international designations. The review of the MAGIC database confirmed the previous findings and identified that the closest international designation is Dungeness, Romney Marsh and Rye Bay Ramsar located 18.6km to the south-east.

Evaluation

2.1.3 The site is well separated from ecological designations, and given the small scale nature of the proposals, is unlikely to result in any adverse effect on these.

2.2 Habitats and Ecological Features

Review of Previous Survey Information and Assessment

2.2.1 The results of the previous habitat survey work undertaken by a third party consultancy in July 2016 to inform the previous planning application are set out in the Extended Phase 1 Survey Report at Appendix 5770/1 and are summarised briefly below.

- The main grassland field is characterised as semi-improved species-rich neutral grassland, with dominant species including Yorkshire Fog *Holcus lanatus*, White Clover *Trifolium repens*, Red Clover *Trifolium pratense*, Creeping Bent Agrostis stolonifera, Common Bird's-foot Trefoil *Lotus corniculatus* and Meadow Buttercup *Ranunculus acris*. However, it is noted that these species are also typical of species-poor semi-improved grassland, and few indicators of good quality meadow grassland are present.

- The south-eastern part of the site is characterised as tall ruderal habitat, with small areas of tall ruderals also present at the periphery of the field. Ruderal vegetation is recorded as being dominated by Common Nettle *Urtica dioica* and

Hogweed *Heracleum sphondylium*, with small stands of Bracken *Pteridium aquilinum* also present.

- Hedgerows border the entire site marking field boundaries. These are noted to support a range of native species including Hawthorn *Crataegus monogyna*, Hazel *Corylus avellana*, Sycamore *Acer pseudoplatanus*, Holly *Ilex aquifolium* and Blackthorn *Prunus spinosa*.

- Broadleaved scattered trees are noted to occur around the periphery of the site with species including Hazel, Elder *Sambucus nigra*, Willow *Salix sp.* and English Oak *Quercus robur*.

Update Survey Work

2.2.2 In order to provide up to date information in respect of habitats within the site, update survey work was undertaken by Aspect Ecology in October 2019.

2.2.3 The site was surveyed based on standard Phase 1 Habitat Survey methodology[1], whereby the habitat types present are identified and mapped, together with an assessment of the species composition of each habitat. This technique provides an inventory of the basic habitat types present and allows identification of areas of greater potential which require further survey. This method was extended, in line with the Guidelines for Preliminary Ecological Appraisal[2] to record details on the actual or potential presence of any notable or protected species or habitats.

2.2.4 In addition, given the presence of grassland considered to form species-rich grassland during the previous survey work, further detailed survey was undertaken in relation to the grassland habitat. This was based on methodology set out under the Farm Environment Plan (FEP) Manual[3], whereby vegetation occurring within a metre square quadrat is recorded at ten points within the habitat area. A zig zag route was taken across the field, with stopping points spaced regularly along this route, providing a representative sample of vegetation within the field[4]. Individual species are then categorised as 'rare' if they occur in up to two stops out of ten, 'occasional' if they occur in up to four stops out of ten, or 'frequent' if they occur in five or more stops out of ten. Species recorded were then compared against the lists of indicator species provided within the FEP Manual, together with an assessment of other habitat characteristics, to inform an evaluation and habitat condition assessment of the grassland. The results of this survey are provided at Appendix 5770/5.

2.2.5 The update survey work recorded broadly similar conditions as previously reported. The grassland was noted to be maintained at a short sward length, likely by mowing, whilst the hedgerows appear to have been subject to management, maintaining a

[1] Joint Nature Conservation Committee (2010) *Handbook for Phase 1 habitat survey: A technique for environmental audit.*
[2] Chartered Institute for Ecology and Environmental Management (CIEEM) (2013) *Guidelines for Preliminary Ecological Appraisal.*
[3] Natural England (March 2010) *Higher Level Stewardship Farm Environment Plan Manual.*
[4] It is acknowledged that the survey was carried out in October, outside of the optimum period for botanical survey. However, the majority of grassland species are still evident at this time of year and can be identified vegetatively in the absence of flowers. Notably, the majority of species previously recorded were observed during the 2019 survey. The only species unlikely to have been evident is Pignut, the leaves of which would not be apparent during the late summer/autumn, although this would likely be restricted to margins of the woodland/hedgerow areas.

dense, bushy growth. The main change noted was that the south-eastern area appears to have become encroached by scrub, with Bramble *Rubus fruticosus agg.* scrub dominating the main area whilst a band of mixed scrub dominated by Blackthorn and Willow is present along the southern boundary of this area. However, these areas remain to be of low ecological value. The south-eastern boundary of the grassland field is also characterised as a wooded strip, with mature Oaks and understorey vegetation forming a band of vegetation at least 5m in width. An update habitats plan is provided at Plan 5770/ECO2.

2.2.6 In regard to grasslands in particular, the update survey identified similar grass and herb species as previously recorded, although in general, the sward was noted to be relatively species-poor (an average of 8.3 species per m^2). Eight species noted as semi-improved or lowland meadow indicators under the FEP Manual were recorded, although four of these (Common Cat's-ear *Hypochaeris radicata*, Meadow Vetchling *Lathyrus pratensis*, Ribwort Plantain *Plantago lanceolata* and Bird's-foot Trefoil) were only recorded as rare (at two or fewer stops), whilst Black Knapweed *Centaurea nigra* was not recorded at any stops, only occurring with a limited distribution within the field. Meadow Buttercup and Red Clover were recorded as occasional (three to four stops) and Common Sorrel *Rumex acetosa* was recorded as frequent.

Evaluation

2.2.7 Based on the update survey work, it is considered that the previous conclusions in regard to habitats and ecological features largely remain valid. Notably, the key habitats for wildlife are considered to be the mature trees and hedgerows, whilst the survey work undertaken in relation to grassland confirms the previous assessment that regular grazing and mowing over the previous years together with nutrient inputs from manure from livestock have limited its value for supporting notable wildlife. However, it is considered that the classification of the grassland as species-rich is not supported by a more detailed assessment of species presence and abundance, as set out below.

Grassland

2.2.8 The grassland habitat within the site was recorded to support a moderate diversity of common and widespread species, during both the previous survey and the update survey. To provide a quantitative assessment of the value of the grassland field, the species assemblage recorded has been analysed in regard to Keys 2a and 2b and the associated condition assessments within the Farm Environmental Plan (FEP) Manual.

2.2.9 Under Key 2a, for a grassland to qualify as species-rich grassland, it should support more than 15 species/m^2 with cover of Rye-grass *Lolium* sp. and White Clover below 10%. These do not apply to the grassland at the site. For the grassland to qualify as (potentially species-rich) semi-improved grassland, it should meet at least two of the following three criteria:

- Cover of Rye-grasses and White Clover is less than 30%
- The sward is moderately species-rich (9-15 species/m^2, including grasses)
- The cover of wildflowers and sedges, excluding White Clover, Creeping Buttercup *Ranunculus repens* and injurious weeds, is 10% or more.

2.2.10 With a relatively high cover of Rye-grasses and White Clover, and an average of 8.3 species/m^2, it is considered that qualification under these criteria is borderline.

Assuming these criteria are met, under Key 2b, at least four wildflower indicators need to be at least occasional in the sward. As set out above, only three indicators were recorded as occasional or frequent, such that this criteria is not met, and the field is categorised as species-poor semi-improved grassland. This habitat type is relatively common and widespread, and accordingly the grassland is not considered to form an important ecological feature.

2.2.11 Hedgerows, trees and the wooded strip

2.2.12 Habitats of ecological importance at the site are considered to be limited to the boundary features, comprising hedgerows, trees and the wooded strip. These habitats will be largely retained and enhanced under the proposals, with open space to be provided at the margins and in the south-eastern part of the site, as shown at Appendix 5770/4. A small section of the eastern hedgerow and the wooded strip will be lost to provide the access to the site, although these gaps will be located to avoid loss of any sizeable trees, and are not considered to result in significant habitat losses. In any event, new habitat creation is proposed, as set out at Section 3 below.

2.3 Faunal Species

Review of Previous Survey Information and Assessment

2.3.1 The previous Extended Phase 1 Survey Report identifies potential for a range of faunal species, following which specific survey work was undertaken in relation to bats and Dormice (see Appendix 5770/2 and 5770/3 respectively). A summary of this survey work is set out below:

- Bats – two trees were recorded to support low bat roosting potential due to presence of mature thick Ivy. The vegetation at the boundary of the site is considered likely to support commuting and foraging bats, and accordingly specific survey work was undertaken in May, June and July 2017, comprising static and walked surveys. This recorded a total of six species including Common Pipistrelle *Pipistrellus pipistrellus*, Soprano Pipistrelle *Pipistrellus pygmaeus*, Nathusius Pipistrelle *Pipistrellus nathusii*, Noctule *Nyctalus noctula*, Serotine *Eptesicus serotinus* and Brown Long-eared bat *Plecotus auritus*. Activity was dominated by Common Pipistrelle.

- Badger *Meles meles* – no evidence of Badger was recorded, and the site is considered to have low potential to support this species.

- Dormouse *Muscardinus avellanarius* – background records of Dormouse were provided for the surrounding area, and the mature trees and hedgerows were considered to provide high potential for this species. Accordingly, specific survey work was undertaken in 2016, comprising placement of nest tubes which were checked for presence of Dormice. Several Dormice nests and feeding evidence were recorded, confirming presence of this species.

- Great Crested Newt *Triturus cristatus* – three waterbodies were identified within the surrounds of the site, although the closest is located 300m to the north and all three are well separated by main roads. Accordingly, the site is considered to have low potential to support Great Crested Newt.

- Reptiles – the mown/grazed grassland is considered to provide limited cover from predation and for reptiles to bask, forage and hibernate. Accordingly, the site is considered to have low potential to support reptiles.

- Birds – features such as the mature trees and hedgerows are considered to provide suitable nesting opportunities, and the site is considered to have high potential to support breeding birds.

- Invertebrates – no background records of protected or notable invertebrates were provided for the site, and the mown grassland and open nature of the site is considered to provide limited opportunities for notable invertebrates.

Update Survey Work

2.3.2 During the update Phase 1 habitat survey, general faunal activity, such as mammals or birds observed visually or by call during the course of the surveys was recorded. Specific attention was also paid to the potential presence of any protected, rare or notable species, with particular consideration given to roosting bats and Badger.

2.3.3 No additional evidence for protected or notable species was recorded during the update survey, whilst opportunities for faunal species are as recorded previously. The only change noted was an additional tree noted to support low bat roosting potential, as shown on Plan 5770/ECO2.

Evaluation

2.3.4 Based on the update survey work, it is considered that the conclusions set out in the previous Ecological Assessment relating to faunal use of the site remain valid. Faunal species are not considered to present any significant constraints to development of the site, although a number of mitigation measures are proposed, drawn from the recommendations set out in the previous report. These are set out at Section 3 and largely relate to safeguards in relation to Dormice and nesting birds, given that small sections of wooded vegetation will be lost under the proposals, together with sensitive lighting design for bats.

2.3.5 Subject to implementation of these recommendations, it is considered that any faunal species present within the site will be suitably safeguarded during development works.

3 Assessment of Proposals and Recommendations

3.1 Assessment of Ecological Effects

3.1.1 In terms of habitats, the site is dominated by semi-improved grassland, which is considered to be of limited ecological value, such that its loss to the proposed development is of little ecological significance. Similarly, small areas of vegetation were recorded, although given the small extent of these habitats, their loss under the proposals is also considered to be of little ecological significance.

3.1.2 With regard to features of elevated ecological value, habitat losses are limited to small gaps within the wooded strip and eastern boundary hedgerow to create the access road. These gaps would result in only very minor habitat loss (less than 0.01ha of the wooded strip) and accordingly are not considered to be significant. In any case, substantial new planting is proposed which would more than compensate for the minor habitat losses, whilst the remaining habitats will be maintained and enhanced within open space areas.

3.1.3 A number of trees with bat roosting potential have been identified within the site, although these are located at the boundaries and will be maintained under the proposals. The site supports some foraging and commuting habitat for bats, with activity dominated by Common Pipistrelle. Given the small size of the site, development of the central area is unlikely to result in any significant impacts on local bat populations, whilst implementation of a sensitive lighting design as detailed below would allow bats to continue to use the site.

3.1.4 The wooded vegetation has been recorded to support Dormice and offers potential for nesting birds. Accordingly, safeguards are required in relation to these species.

3.1.5 Measures to reduce potential identified adverse effects as a result of the works are set out below, in addition to measures to provide ecological enhancements under the proposals.

3.2 Mitigation and Safeguarding Measures

3.2.1 Based on the habitats, ecological features and associated fauna identified within the site, it is recommended that the following mitigation measures are implemented under the proposals. Further, detailed mitigation strategies or method statements can be secured via suitably-worded planning conditions, as recommended by relevant best practice guidance (BS 42020:2013).

Protection of Trees and Hedgerows

3.2.2 All hedgerows and trees to be retained within the proposed development shall be protected during construction in line with standard arboriculturalist best practice (BS5837:2012) or as otherwise directed by a suitably competent arboriculturalist. This will involve the use of protective fencing or other methods appropriate to safeguard the root protection areas of retained trees / hedgerows.

Bats

Lighting

3.2.3 The effects of lighting vary between species, with some bat species such as Common Pipistrelle and Soprano Pipistrelle able to cope with relatively high light levels (of up to 14 lux) (Fure, 2006)[5] and known to utilise lights as a foraging focus for insects attracted to lights (BCT, 2009)[6]. However, many bat species (particularly late emerging species such as Brown Long-eared and *Myotis* bats) will avoid lit areas, and attraction of insects to lit areas can result in adjacent habitats supporting reduced numbers of insects, further impacting on the ability of bats being able to feed.

3.2.4 To minimise the effects of lighting on habitats utilised by bats (and other nocturnal species) within and around the development area, it is recommended that a detailed lighting design is prepared at the appropriate stage, setting out measures to maintain dark corridors and reduce lightspill along key foraging and commuting corridors, where practical. This should be informed and reviewed by a suitably qualified ecologist to ensure that impacts on sensitive habitats are minimised. Such a strategy would likely include a number of design principles and mitigation measures such as:

- Avoidance of lighting where possible adjacent to the boundary vegetation and open space areas;
- Use of additional design measures where required, such as louvres, shields or hoods, to control lightspill;
- Careful selection of luminaries and their location in relation to sensitive habitats to minimise light spill; and
- Use of low pressure sodium lights or LED lights with a correlated temperature of lower than 4200K, reducing the blue and WV light content, in line with recent BCT guidance[7].

Dormouse

3.2.5 Small gaps will be created within the wooded strip and eastern boundary hedgerow to create access to the site. These habitat losses are minimal, although Dormouse could be at risk of injury or disturbance during works. As such, vegetation clearance works will need to be carried out under licence and with implementation of appropriate safeguarding measures. Further detail is set out below.

3.2.6 **Licensing.** To avoid an offence under the relevant legislation, it will be necessary for the vegetation clearance to be carried out under a European Protected Species (EPS) development licence, obtained from Natural England. When determining whether to grant a licence, Natural England will need to give consideration to the three derogation tests under Article 16 of the Habitats Directive (1992), namely whether the development is for imperative reasons of overriding public interest, no satisfactory alternative, and maintenance of favourable conservation status.

[5] Fure, A. (2006) *Bats and Lighting.* The London Naturalist: No. 85.
[6] Bat Conservation Trust (2009) *Bats and Lighting.*
[7] Bat Conservation Trust (2014) *Artificial lighting and wildlife. Interim Guidance: Recommendations to help minimise the impact artificial lighting.*

3.2.7 The need for the development is set out by the planning documents associated with the application. In summary, the scheme will meet a local need for new housing, whilst removal of small amounts of habitat is necessary to allow access to the site.

3.2.8 In terms of maintenance of favourable conservation status, this would be achieved through implementation of safeguarding measures and provision of replacement habitat opportunities within the proposed development as set out below.

3.2.9 On this basis, it is therefore considered that, subject to full planning permission being granted and confirmation of the detailed mitigation measures in line with those set out below, there is no reason to suggest that any associated licence would be unlikely to be granted by Natural England.

3.2.10 **Safeguarding measures during vegetation clearance.** In order to minimise the risk to Dormice during vegetation clearance works, a number of safeguarding measures will need to be implemented. This will include sensitive timing of works, involving clearance outside of the peak hibernation or breeding periods, or as a two-stage process (removal of above ground vegetation during the winter months, followed by removal of stumps and ground works the following late spring once Dormice have emerged from hibernation). Works will also be carried out under ecological supervision, with progressive clearance of vegetation by hand, and will be preceded by check surveys of habitats for nests. These measures will be detailed in the method statement accompanying the EPS licence application.

3.2.11 **Replacement habitat provision.** New tree and shrub planting will be provided at the margins of the site, more than compensating for the minor losses of habitat due to the road creation. Further detail is provided in the habitat creation and ecological enhancement section below.

Nesting Birds

3.2.12 Small areas of wooded vegetation will be removed to facilitate development works. These wooded habitats provide suitable opportunities for nesting birds. To avoid a potential offence under the Wildlife & Countryside Act, no clearance of suitable vegetation should be undertaken during the bird-nesting season (1st March to 31st August inclusive). If this is not practicable, any potential nesting habitat to be removed should first be checked by a competent ecologist in order to determine the location of any active nests. Any active nests identified would then need to be cordoned off (minimum 5m buffer) and protected until the end of the nesting season or until the birds have fledged. These checking surveys would need to be carried out *no more than three days in advance* of vegetation clearance.

3.3 Ecological Enhancements

3.3.1 The National Planning Policy Framework (NPPF) encourages new developments to maximise the opportunities for biodiversity through incorporation of enhancement measures. The proposals present the opportunity to deliver ecological enhancements at the site for the benefit of local biodiversity, thereby making a positive contribution towards the broad objectives of national conservation priorities and the local Biodiversity Action Plan (BAP).

3.3.2 The following ecological enhancement measures are considered appropriate given the context of the site and the scale and nature of the proposals.

Habitat Creation

3.3.3 **New Tree / Shrub Planting:** Various areas of new shrub and tree planting are proposed, bolstering existing boundary vegetation and providing new habitat areas. These should be planted with native species of local provenance, including trees and shrubs appropriate to the local area. Suitable species for inclusion within the planting could include native trees such as Oak and Field Maple *Acer campestre*, whilst native shrub species of particular benefit would likely include fruit and nut bearing species which would provide additional food for wildlife, such as Blackthorn, Hawthorn, Crab Apple *Malus sylvestris*, Hazel and Elder.

3.3.4 **Ponds:** A large pond is proposed in the southern part of the site, together with a smaller waterbody adjacent to the entrance to the site. These should be designed in accordance with ecological principles as set out below, providing a valuable wildlife habitat:

3.3.5 *Profile:* The banks of the pond should be profiled to ensure that gentle slopes and broad draw down zones are created. This will ensure the safety of visitors to the pond as well as providing a variety of microhabitats including shallows and shelves which will warm quickly in the mornings, with deeper 'cooler' areas of water available at the pond centres. Pond slopes should generally be between 1:5 and 1:20 in gradient, providing large areas of shallow water, and the margins should have a sinuous form, maximising the available edge habitat.

3.3.6 *Lining:* In order to prevent the pond from drying in the summer months it may be necessary to line the new pond with either with clay or an artificial pond liner to ensure it maintains permanent water throughout the year, in which case gravel and sand should be added to the top of the liner, particularly around the pond margins, to provide a suitable substrate for colonisation of plants.

3.3.7 *Planting:* In order to aid the establishment of vegetation, it is recommended that supplementary native planting is provided. Where possible, planting should be undertaken in spring or early summer, at the time when growth rates are highest. Planting of up to 50% of the pond margins will mean some areas of bare margin are retained, creating an additional habitat type and allowing natural colonisation of plants in these areas.

3.3.8 **Wildflower Grassland:** Areas of wildflower grassland are also proposed within the site. These should be sown with a species-rich grassland mix and be managed as meadow grassland, providing a rich nectar and pollen source for invertebrates. Longer sward areas adjacent to scrub and hedgerow margins would also offer potential for small mammal and reptile species.

3.3.9 **Other Planting:** Additional planting will also be provided amongst the housing areas. Where non-native species are proposed, these should include species of value to wildlife, such as varieties listed on the RHS' 'Plants for Pollinators' database, providing a nectar source for bees and other pollinating insects.

Bats

3.3.10 A number of bat boxes, such as Schwegler 2F or 1FF or similar should be incorporated within the proposed development. The provision of bat boxes will provide new roosting opportunities for bats in the area, such as Soprano Pipistrelle, a national

Priority Species. So as to maximise their potential use, the bat boxes should ideally be situated on suitable retained trees, erected as high up as possible and sited in sheltered wind-free areas that are exposed to the sun for part of the day, facing a south-east, south or south-westerly direction. In addition, where architectural design allows, a number of integrated bat boxes / roost features should be incorporated into a proportion of the new build, such as Weinerberger bat boxes.

Birds

3.3.11 A number of bird nesting boxes, such as Schwegler 1B or similar should be incorporated within the proposed development, thereby increasing nesting opportunities for birds at the site. Ideally, the bird boxes will have greater potential for use if sited on suitable, retained trees, situated as high up as possible, or on new buildings.

Invertebrates

3.3.12 A proportion of any deadwood arising from vegetation clearance works should be retained within the site in a number of wood piles located within areas of new planting, new wetland habitats or areas of wildflower grassland in order to provide potential habitat opportunities for invertebrate species, which in turn could provide a prey source for a range of other wildlife. In addition, the provision and management of new native landscape planting will likely provide additional opportunities for invertebrates at the site in the long term.

3.4 Biodiversity Net Gain

3.4.1 To provide a quantitative measure of biodiversity change under the proposals, a biodiversity impact assessment has been undertaken using the Defra 2.0 metric. This is based on the broad areas shown under the Landscape Strategy (see Appendix 5770/4). The metric data and headline results are provided at Appendix 5770/6. As this shows, a 10.85% net gain in biodiversity (relative to the existing value) is demonstrated. This clearly demonstrates that a measurable net gain in biodiversity can be achieved.

4 Summary and Conclusions

4.1 Aspect Ecology has been commissioned by Invicta Self & Custom Build to advise in respect of ecological matters relating to land at Common Road, Sissinghurst. The site was the subject of a previous planning application for the construction of 9 self/custom build dwellings (application reference: 19/00205/OUT). In support of the application, ecological surveys were undertaken by a third-party consultancy in 2016 and 2017, comprising an Extended Phase 1 survey (incorporating a desk study, Phase 1 habitat and general faunal survey), and specific surveys for bats and Dormouse. These reports are provided at Appendices 5770/1, 5770/2 and 5770/3 respectively. This application was refused planning in July 2019 and is currently being appealed.

4.2 A new application is now being submitted for development of c.18 residential units at the site (see proposed layout at Appendix 5770/4). Accordingly, Aspect Ecology has been commissioned to undertake update ecological survey work in support of this new application, including an update Phase 1 habitat survey and general faunal survey, together with biodiversity impact calculations.

4.3 The available information confirms that statutory and non-statutory nature conservation designations are well separated from the site, and are unlikely to be adversely affected by the proposals.

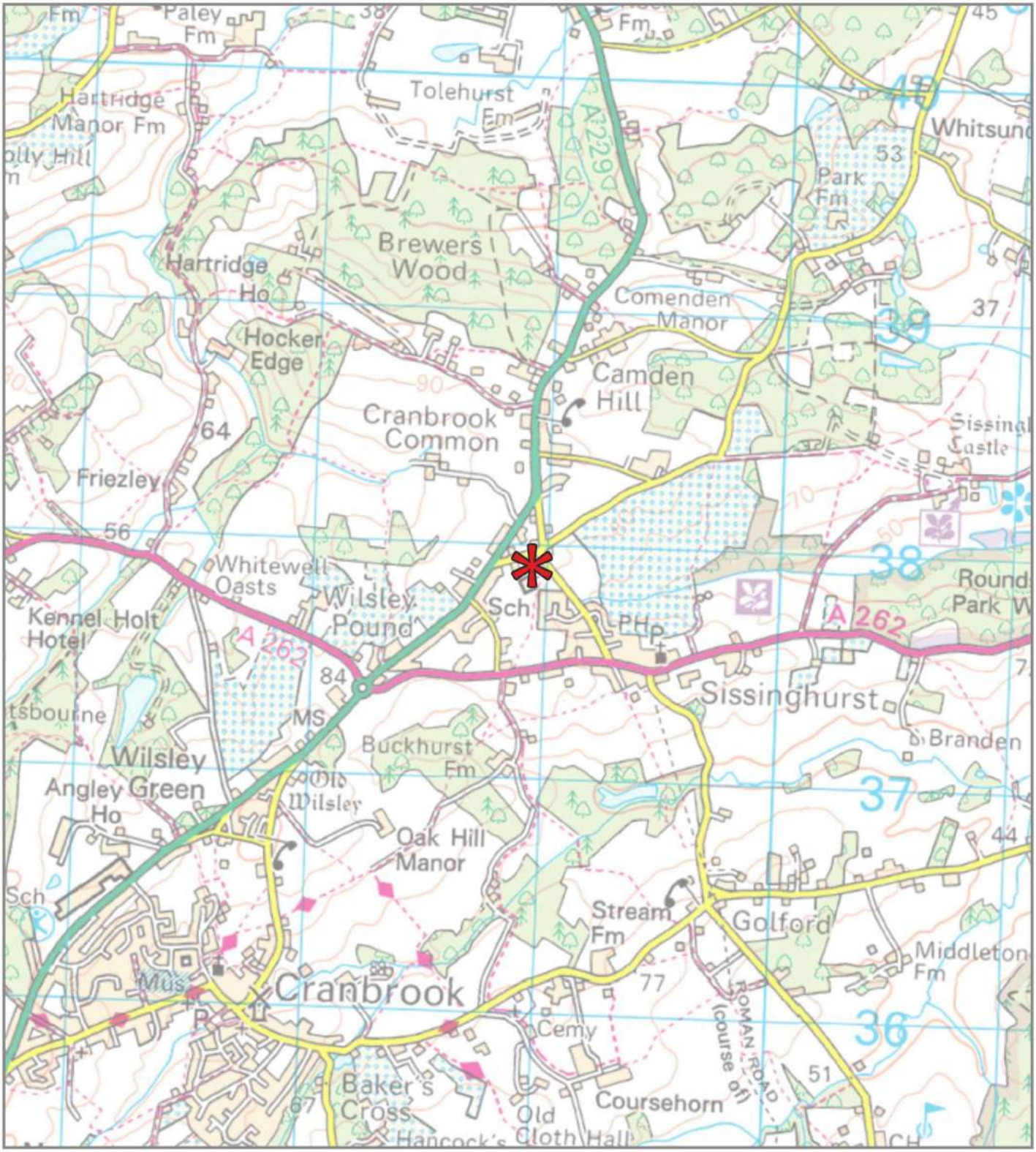
4.4 The habitat survey has established that the site is dominated by species-poor semi-improved grassland. Habitats of ecological importance are limited to the boundary hedgerows, trees and a wooded strip, which are retained under the proposals with the exception of small gaps for creation of access to the site.

4.5 The habitats within the site support a small number of protected species, including bats, Dormouse and nesting birds. Accordingly, a number of mitigation measures have been proposed to minimise the risk of harm to protected species.

4.6 In conclusion, the proposals have sought to minimise impacts and subject to the implementation of appropriate avoidance, mitigation and compensation measures, it is considered unlikely that the proposals will result in significant harm to biodiversity. On the contrary, the opportunity exists to provide a number of net gains for biodiversity as part of the proposals, with biodiversity impact assessment calculations showing that a 10% net gain in biodiversity would be achieved under the scheme.

Plan 5770/ECO1

Site Location



Key:

Site Location

aspect ecology

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Land at Common Road, Sissinghurst	PROJECT
Site Location	TITLE
5770/ECO1	DRAWING NO.
-	REV.
December 2019	DATE

Plan 5770/ECO2

Habitats and Ecological Features

H1
H2
H3
H4
H5
H6a
H6b
Collingwood
Fittenden Road
Common Road

Key:

- Semi Improved Grassland
- Bramble Scrub
- Mixed Scrub
- Wooded Strip
- Hedgerow
- Tree
- Tree Supporting Low Bat Roosting Potential
- ① Photograph Location

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Land at Common Road, Sissinghurst	PROJECT
Habitats and Ecological Features	TITLE
5770/ECO2	DRAWING NO.
-	REV.
December 2019	DATE

Appendix 5770/1

Extended Phase 1 Ecological Survey Report (Root3 Associated Ltd, 2016)

Extended Phase 1 Ecological Survey Report

Site Name	Location
Common Road Sissinghurst, Kent	Land adjacent to Common Road Sissinghurst, Kent
Job Ref	**Document Ref**
1970616	EC01
Site Code	**Grid Reference**
None	TQ 78954 37930
Surveyor	**Date of Survey**
Daniel Hone MIEEM BSc License holder for Dormice, Bats and White Clawed Crayfish	30.07.2016
Geology/Soil Type	**Designation**
Not needed	Pastoral field with hedgerows.

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FINAL

Document History

NOTICE

This document has been produced purely for the purpose of identifying ecological risks associated with the proposed development on Land adjacent to Common Road Sissinghurst, Kent.. It may not be used by any person, for any other purpose other than that specified without the express written permission of Root3 Associates Ltd. Any liability arising out of use by a third party of this document for purposes not wholly connected with the above shall be the responsibility who shall indemnify Root3 Associates Ltd against all claims costs damages and losses arising out of such use.

Job Number / REF : 1970616			Document ref : EC01			
Rev	Purpose and Description	Originated	Checked	Reviewed	Authorised	Date
-	For Review	DH				
	Final					

Contents

1.0 Introduction

Root3 Associates Ltd has been commissioned by Invicta Self and Custom Build Ltd to undertake an assessment of the potential ecological constraints for Land adjacent to Common Road Sissinghurst, Kent. The recommendations of this report will highlight key ecological areas, potential constraints and recommended further action in the form of more detailed species specific surveys or ecological enhancements where necessary.

The site and habitats present are shown on Figures 1 in the figures section.

Survey Objectives

The purpose of this survey is to produce a phase 1 habitat survey report to comply with wildlife legislation and planning policy objectives such as such as National Planning Policy Framework and Local Planning Policy.

The key objectives are as follows:

- Identify all relevant statutory and non-statutory designated sites and features of ecological significance within the site and its surroundings.
- Using JNCC 2007 Phase 1 methodology identify key habitats on and adjacent to site. The recognised standard for mapping ecological habitats.
- Assess the potential for the presence of protected species and species of principal conservation importance within the site and its surroundings. Using the Chartered Institute for Ecology and Environmental Guidelines undertaken by an experienced and qualified ecologist.
- Provide recommendations for further surveys where assessed as necessary and suggest potential enhancements.
- Provide an early indication of potential ecological mitigation and compensation requirements.

Further information on wildlife legislation and planning policy has been included in Appendix A.

Survey Limitations

This survey records the flora and fauna evident on the day of the site visit. It does not record any flora or fauna that may appear at other times of the year, and as such, were not evident at the time of visit.

2.0 Desk Study

Biological records from Kent and Medway Biological Records Centre were obtained for a 1km radius. The records obtained contain all relevant records and information held by the local wildlife trust on the area. An extensive search of web based information for the area was also undertaken identifying records of protected and other notable species of flora, fauna together with statutory/non-statutory wildlife sites.

Web-based resource Multi-Agency Geographic Information for the Countryside was also consulted to identify designated nature conservation sites within or immediately adjacent to the site surveyed.

2.1 Field Surveys

Phase 1 Habitat Mapping

The Joint Nature Conservation Committee (JNCC) is the statutory adviser to Government on UK and international nature conservation. Its work contributes to maintaining and enriching biological diversity, conserving geological features and sustaining natural systems. The JNCC Phase 1 Habitat Classification and associated field survey technique provide a standardised system to record semi-natural vegetation and other wildlife habitats. The approach is designed to cover large areas of countryside relatively rapidly. It presents the user with a basic assessment of habitat type and potential importance for nature conservation. Each habitat type/feature is identified by way of a brief description of its defining features. It is then allocated a specific name, an alpha-numeric code.

The use of this method relies on the ecologist being experienced in native botanical identification of common native plants, trees and grasses.

Daniel Hone has undertaken botanical surveys throughout the UK and as such is qualified to use this methodology accurately.

Scoping Survey

The site and its immediate surroundings were considered in terms of habitats, protected species present and the potential for presence species of principal conservation importance during a walkover survey undertaken on 1st July 2016.

Habitats were searched for:

• field signs of protected species in the form of latrines, feeding remains, active shelter/breeding sites.

• animal activity/behavior if observed.

• botanically diverse habitats.

• invasive introduced plants and animals.

• habitats with the potential to support protected species.

• habitat connectivity to surrounding habitats.

3.0 Results

3.1 Site Description

The site is a broadly rectangular shaped field located on the outskirts of the village of Sissinghurst. The field is semi-improved grassland the time of the survey. The sites' boundary is marked by mature hedges. Pictures below show various views of the site. (see figure 1 in the figure section for a plan of the site and its habitats). Various view of the site shown below.

3.2 Designated Nature Conservation Sites

See the figure section for a plan showing the designations in relation to site

Internationally Important Sites

There are no internationally important sites within a 5km radius.

One site of national importance Site of Special Scientific Interest (SSSI) is located within 2kms of the site. Sissinghurst Park Wood SSSI is located approximately 900m north east of the site boundary. This Sissinghurst Park Wood is designated for the number of rare

plant species which occur in the rides and are representative of Wealden woodlands. No woodlands are found within the site boundary. Therefore the rare plants identified within the Wealden woodland are unlikely to be present within the habitats found on site. Furthermore the site is located over 500meters north east of the site lacking habitat connectivity to the site which is separated by roads. Therefore the proposed works are unlikely to significantly affect the integrity of the Wealden woodlands wildlife site.

Non Statutory Wildlife Sites

Roundshill Park Wood Local Wildlife Site (LWS) is the only non-statutory site within 1km of the site. Rounshill Park Wood is located approximately 500m east of the site and is part of the wider Sissinghurst Castle estate.

3.3 Habitats Assessment

See figure 1 in the figures section for the location of habitats on site.

Habitat overview

Semi-improved species rich mown and grazed meadow dominates the site, which is bordered by hedgerows and mature oak trees along the southern and eastern boundaries. A small field in the south eastern corner of the site is dominated by tall ruderals and established willow scrub. All the trees on site will be retained.

Phase 1 habitats identified on site are listed below using the JNCC terminology JNCC (2007). See Figure 1 for the location of habitats on site:

Broadleaved scattered trees (A3).

Scattered trees occur across the periphery of the site. Species comprise, hazel (Corylus avellana), elder (Sambucus nigra) and English oak (Quercus robur) with occasional native and hybrid willow species located in the south eastern corner of the site.

Tall ruderals (C3.1)

Tall ruderals dominate the site where mowing and grazing has been less prevalent around the periphery of the field and site boundaries. The bottom south eastern corner of the site supported a small area which was 100% tall ruderals. The ruderal vegetation was dominated by stands of common nettle (Urtica dioica) and hogweed (Heracleum sphondylium). Small stands of bracken (Pteridium aquilinum) were also present along the western boundary.

Semi-Improved Species rich neutral grassland (B2.2).

This grassland type was found to be dominant across much of the site. Dominant species comprised Yorkshire fog (Holcus lanatus), white clover (Trifolium repens), red clover (Trifolium pratense), Creeping bent (Agrostis stolonifera), common birds foot trefoil (Lotus corniculatus) and meadow buttercup (Ranunculus acris). A full species list can be found in Appendix B.

Hedgerows (J2.1).

Hedgerows border the entire site marking field boundaries. Species comprise native species and vary in species richness which generally species poor. Dominant species comprised hawthorn (Crataegus monogyna), hazel (Corylus avellana), sycamore (Acer pseudoplatanus), holly (Ilex aquifolium), blackthorn (Prunus spinosa). The understorey of the hedges comprised ivy, (Hendra helix). A full species list for each hedgerow can be found in Appendix B.

3.4 Protected Species Potential Assessment

Protected Flora

It is considered that the site has a low potential to support notable flora as the grassland and hedgerow has been subjected to some improvement through regular grazing a manure from livestock in previous years. At the time of the site visit all meadow plants were in flower and therefore all plant species present on site could be accurately identified. Records of protected flora have been identified within 1km of the site although not on site. No notable plant species were identified during the survey. A full species list can be found in Appendix B.

Great Crested Newt

Records of great crested newts (GCN) have been identified within 1km of the site although not on or adjacent to site. There are no waterbodies on or adjacent site. Three water bodies were identified within a 500m radius of the site, however there are barriers to dispersal. The closest pond is located within Hayseldon Manor 299m north and is separated from the site by the busy A229. Pond 2 located south 469m a residential garden is also separated from the site by the busy A262. Pond 3 is located to the east 640meters from site which is outside the 500meter range for foraging commuting GCN.

The grassland dominating the site provides sub-optimal cover from predation. Therefore as there are no water bodies on or adjacent to site, and the site lacks habitat connectivity to suitable waterbodies the site should be considered to have a **low potential** to support GCN.

Common amphibian species are afforded limited legal protection under the Wildlife & Countryside Act 1981 (as amended). GCN's are afforded legal protection under Schedule 5 of the Wildlife & Countryside Act 1981 (as amended) and Schedule 2 of the Conservation (Natural Habitats, &c.) Regulations 1994 (as amended) (See Appendix A). GCN's are a European Protected Species (EPS).

Reptiles

Records of reptiles have been identified within 1km although not on or adjacent to site.

The mown/grazed grassland provides limited cover from predation and for native reptiles to bask, forage and hibernate. Mature tree canopy along the southern boundary reduce vegetation cover further. This then provides sub-optimal opportunities for native reptiles.

Therefore it should be considered that the site has a **low potential** to support common reptile species, namely viviparous lizard (Zootaca (Lacerta) vivipara), slow-worm (Anguis fragilis) and grass snake (Natrix natrix).

Common reptiles are afforded legal protection under Schedule 5 of the Wildlife & Countryside Act 1981 (as amended) (See Appendix A).

Birds

Features such as the mature trees and hedgerows provide suitable nesting bird habitat opportunities. Therefore the site should be regarded as having a **high potential** to support breeding birds. Species identified on site included blue tit, great tit, goldfinch.

All species of bird whilst actively nesting are afforded legal protection under the Wildlife & Countryside Act 1981 (as amended) and special penalties are available for offences related to birds listed on Schedule 1 (See Appendix A).

Badger

Badger records have been identified within 1km of the site. No burrows have been identified on site. No evidence of badger activity in the form of spraints and snuffle holes were identified on site. As such the site should be considered to have a **low potential** to support badger setts (Meles meles).

Badgers are afforded legal protection under the Badgers Act 1992 and Schedule 6 of the Wildlife & Countryside Act 1981 (as amended) (See Appendix A).

Bats

Records for bats were identified within 1km of the site within the biological records search. No known roosts were identified within the biological records on or adjacent to site. A flying bat was recorded along the southern boundary of the site. and closest roost was located approximately 130meters west of the site.

The scheme has been designed to avoid the native mature trees which lie along the site boundaries. Several of the mature oak trees T1 and T2 showing within figure 1 in the figures section support mature thick ivy. The stems of the ivy are thick enough to support the occasional roosting bats. Other than T1 and T2 the rest of the mature trees on site lacked features which could support roosting bats, such as cracks, splits and holes due to their species, age and form. The tree lines and hedgerows around the periphery of the site are likely to support commuting and foraging bats as the site supports mature hedgerows which have good habitat connectivity for a bat to the

surrounding farmland. Bats commute and forage using linear features such as treelines and hedgerows.

Therefore it should be considered that the site has a **moderate potential** to support roosting bats and a **high potential** to support commuting and foraging bats.

All species of bat are afforded legal protection under Schedule 5 of the Wildlife & Countryside Act 1981 (as amended) and Schedule 2 of the Conservation (Natural Habitats, &c.) Regulations 1994 (as amended) (See Appendix A). All species of bat are European Protected Species (EPS).

Hazel Dormouse

Records of dormice have been identified within the hedgerow south of the site and east of the site. Dormice are arboreal mice and therefore require mature woodlands and hedgerows with good canopy cover and connectivity to woodlands with sustainable populations as they tend to stay off the ground when feeding and foraging during the spring, summer and autumn. Therefore as the site has mature trees and hedgerows which have good habitat connectivity to records of dormice the site should be considered to have a **high potential** to support hazel dormouse (Muscardinus avellanarius).

Dormice are afforded legal protection under Schedule 5 of the Wildlife & Countryside Act 1981 (as amended) and Schedule 2 of the Conservation (Natural Habitats, &c.) Regulations 1994 (as amended) (See Appendix A). The dormouse is a European Protected Species (EPS).

Invertebrates

No biological records of protected or notable species have been identified on site. The mown grassland and open nature of the site provides limited opportunities for notable invertebrates. Therefore the site should be considered to have a low potential to support notable or protected invertebrates.

Invasive plants

No non-native invasive plants were identified on site such as Japanese knotweed or rhododendron.

4.0 Conclusions

The key habitats for wildlife on site are the mature trees and hedgerows around the site boundary. The species rich grassland which dominates the site is of some value for common insect and birds although the regular grazing and mowing over the previous years together with nutrient inputs from manure from livestock limits its value for supporting notable wildlife.

The site has the potential to support dormice within the hedgerows and bats foraging and commuting along the hedgerows and tree lines. Two mature oak trees have some limited potential for roosting bats.

The proposed scheme would necessitate the loss of a section of hedgerow along the eastern boundary. Therefore further surveys are required to ensure dormice which are European Protected Species, are not significantly affected by the hedgerow loss and to ensure that any mitigation proposed is proportionate and fit for purpose. Therefore a dormouse presence absence survey is required and likely license from Natural England to undertake works.

The majority of bats in the UK commute and forage following the route of landscape linier features such as tree lines and hedgerows avoiding well-lit areas. Whilst the trees and hedgerows will be largely unaffected the lighting scheme for the site should avoid key commuting foraging routes for bats locally. Therefore as a best practice measure a bat activity survey is recommended.

There are no designated sites within the zone of influence of the site.

5.0 Recommendations

The following recommendations are based on the principles of established survey techniques and comply with relevant best practice guidelines set out by the Chartered Institute for Ecology and Environmental Management (CIEEM).

<u>Birds</u>

On the basis that the site contains foraging and nesting habitats for breeding birds (i.e. mature trees).

Should there be a requirement to remove any trees, shrubs or structures that have the potential to be used by breeding birds, such works should be undertaken outside of the bird breeding season. The breeding bird season extends from March – August inclusive. It should be noted however that certain species are known to breed throughout the year (e.g. pigeons) and remain protected.

If trees / shrubs / structures cannot be removed outside of the bird breeding season, care should be taken. If a nest is identified either being built, has eggs or chicks the area around the nest should be avoided until the young have fledged.

Bats

As the site has the potential to support commuting and foraging bats. A bat activity survey of the site is recommended. This survey would inform the lighting and mitigation plans for bats locally. In accordance with the Bat Conservation Guidelines 2016 the survey will consist of two surveyors. The surveyors will walk pre-planned transects across the site using Bat box duet bat, and em3+ and anabat walk about detectors and recording equipment to confirm species, using sonographic analysis software.

Static anabat detectors will also be left on site to provide 3 days of data for each month. Thereby providing information on the species use over time.

The survey would take the form of three evening survey visits during the months of July, August and early September during suitable weather conditions e,g no heavy rain or strong winds or severe cold.

Dormice

As records of dormice have been identified adjacent the site boundary and the site supports suitable habitats for dormice, a dormouse presence/absence survey is recommended. In accordance with the Dormouse Conservation Handbook (English Nature, 2006) nest tubes would be installed within hedgerows in the best available locations at approximately 20m intervals. This type of survey can only be undertaken between the months of April – November.

In accordance with the Dormouse Conservation Handbook absence should not be based on a search effort score of less than 20 when calculated against the Chanin and Woods (2003) 'index of probability' as shown in Table 1.

Table 1 – Index of probability

Monthly Index of Dormouse Presence Probability	
April	1
May	4
June	2
July	2
August	5
September	7
October	2
November	2

Therefore the tubes would be left in situ and checked from April to September generating an index probability score of 21 recognised as a robust amount of time over which to conduct this type of survey.

In accordance with the guidelines a minimum of 50 nest tubes should be used during any one survey. A total of 50 tubes will be installed throughout the hedgerows bordering the site. A check will be undertaken at the beginning of each month until the required survey effort was reached.

Enhancements and Opportunities

Ecological enhancements should where possible be incorporated into the proposed development to contribute towards the objectives of planning legislation identified within the National Planning Policy Framework (NPPF).

In accordance with the above plans: "Plan policies and planning decisions should aim to maintain, and enhance, restore or add to biodiversity and geological conservation interests" and together with the Natural England & Rural Communities Act 2005, places a statutory duty to promote biodiversity and minimise impacts of a development upon ecology.

Furthermore, in accordance with the principles of NPPF, developments should contribute towards the degree of connectivity between natural habitats and avoid the effects of habitat fragmentation and isolation. These networks of habitats provide valuable routes or stepping-stones for the migration, dispersal and genetic exchange of species within the wider environment. Existing networks, where possible, should be strengthened by, or integrated within, new developments.

Enhancement recommendations:

- Any new proposed landscaping should use native broadleaved trees and plants which should be sourced locally.

- Addition of several martin/swallow nest boxes on the newly proposed buildings together. Examples of good bird box designs are found below and can be sourced at:http://www.wildcareshop.com/product/nest-boxes-artificial-habitats/bird-boxes.html

- Placing 3 bat boxes on new houses across the site. At a height of at least four metres above ground level. These boxes will be fixed using a (non-corrosive) aluminum nails Schwegler 1FF Bat box is sufficiently spacious to allow colonial bats to use as either a roost or nursery. Since the 1FF is open at the bottom, allowing droppings to fall out, it does not need cleaning and is therefore especially suitable for hanging in inaccessible places. http://www.wildcareshop.com/bat-box-65.html .

- Dormouse mitigation depending on the results of the further surveys, is likely to take the form of creation of an area in the north western corner of the site with hazel trees supporting several dormouse nest boxes.

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Figures

Figure 1: Phase 1 Habitat Plan

Job no.	Date
E1494	15/07/16


Thicket Mix 7
5 Corylus avellana
5 Crataegus monogyna
5 Ilex aquifolium
1 Carpinus betulus
1 Crataegus monogyna
Thicket Mix 7
1 Corylus avellana
1 Crataegus monogyna
1 Ilex aquifolium
Native Hedgerow Mix (NH3)
71 Corylus avellana
118 Crataegus monogyna
189 Fagus sylvatica
47 Ilex aquifolium
24 Lonicera periclymenum 'Belgica'
3 Rosa canina
WF1
Maintenance access gap
1 Quercus robur
1 Carpinus betulus
1 Acer campestre
Native Hedgerow Mix (NH3)
28 Corylus avellana
47 Crataegus monogyna
75 Fagus sylvatica
19 Ilex aquifolium
9 Lonicera periclymenum 'Belgica'
1 Rosa canina
Native Hedgerow Mix (NH3)
6 Corylus avellana
11 Crataegus monogyna
17 Fagus sylvatica
4 Ilex aquifolium
2 Lonicera periclymenum 'Belgica'
0 Rosa canina
Native Hedgerow Mix (NH3)
9 Corylus avellana
15 Crataegus monogyna
24 Fagus sylvatica
6 Ilex aquifolium
3 Lonicera periclymenum 'Belgica'
0 Rosa canina
Thicket Mix 7
4 Corylus avellana
4 Crataegus monogyna
4 Ilex aquifolium
Native Hedgerow Mix (NH3)
74 Corylus avellana
123 Crataegus monogyna
197 Fagus sylvatica
49 Ilex aquifolium
25 Lonicera periclymenum 'Belgica'
3 Rosa canina
Native Hedgerow Mix (NH3)
10 Corylus avellana
17 Crataegus monogyna
27 Fagus sylvatica
7 Ilex aquifolium
3 Lonicera periclymenum 'Belgica'
0 Rosa canina
298 Narcissus pseudonarcissus
451 Narcissus pseudonarcissus
Manage existing hedgerows to ensure maintenance access to ecological area
2 Crataegus monogyna
167 Corylus avellana
Native Hedgerow Mix (NH3)
52 Corylus avellana
87 Crataegus monogyna
140 Fagus sylvatica
35 Ilex aquifolium
17 Lonicera periclymenum 'Belgica'
2 Rosa canina
Native Hedgerow Mix (NH3)
81 Corylus avellana
135 Crataegus monogyna
216 Fagus sylvatica
54 Ilex aquifolium
27 Lonicera periclymenum 'Belgica'
4 Rosa canina
1,214 Galanthus nivalis
Native Hedgerow Mix (NH3)
58 Corylus avellana
97 Crataegus monogyna
154 Fagus sylvatica
39 Ilex aquifolium
19 Lonicera periclymenum 'Belgica'
3 Rosa canina
Native Hedgerow Mix (NH3)
9 Corylus avellana
15 Crataegus monogyna
24 Fagus sylvatica
6 Ilex aquifolium
3 Lonicera periclymenum 'Belgica'
0 Rosa canina
Native Hedgerow Mix (NH3)
52 Corylus avellana
87 Crataegus monogyna
140 Fagus sylvatica
35 Ilex aquifolium
17 Lonicera periclymenum 'Belgica'
2 Rosa canina
806 Galanthus nivalis
Native Hedgerow Mix (NH3)
29 Corylus avellana
48 Crataegus monogyna
76 Fagus sylvatica
19 Ilex aquifolium
10 Lonicera periclymenum 'Belgica'
1 Rosa canina
Mixed Native Hedgerow infill to be planted as required.
Native Hedgerow Mix (NH3)
16 Corylus avellana
26 Crataegus monogyna
42 Fagus sylvatica
11 Ilex aquifolium
5 Lonicera periclymenum 'Belgica'
1 Rosa canina
Native Hedgerow Mix (NH3)
10 Corylus avellana
16 Crataegus monogyna
25 Fagus sylvatica
6 Ilex aquifolium
3 Lonicera periclymenum 'Belgica'
0 Rosa canina
Mixed Native Hedgerow infill to be planted as required.
Native Hedgerow Mix (NH3)
28 Corylus avellana
46 Crataegus monogyna
74 Fagus sylvatica
18 Ilex aquifolium
9 Lonicera periclymenum 'Belgica'
1 Rosa canina
Mixed Native Hedgerow infill to be planted as required.
AG-s
RG
WF1

Planting Specification

General Guidance

All plant handling to be in accordance with the HTA 'Handling and establishing landscape plants' Part I, Part II and Part III (obtainable from the Horticultural Trades Association) and the CPSE publication: 'Plant Handling' and all planting to conform to National Planting Specification Guidelines.

The individual setting-out of the plants on site shall be the responsibility of the contractor and should follow closely the locations shown on the detailed planting proposal drawings supplied by the landscape architect. Contractor to ensure that plants are equally spaced within individual planting groups.

Contractor to ensure that smaller plants are located to the front of plant species groups as shown on detailed planting plans.

Contractor shall maintain existing levels around the base of existing trees and shall undertake all planting works occurring within root protection areas (RPA) in accordance with BS5837:2012. Contractor shall not remove or relocate any tree protection fencing without prior consent of the client.

Contractor to check the locations of all underground services, existing and proposed, prior to the excavation of any tree pits or shrub beds and identify any potential conflicts to the client / landscape architect.

All arisings shall be removed from site and the contractor shall at all times, keep the site free from rubbish and debris.

For the duration of the works the contractor shall keep the site free from injurious weeds as listed in the Weeds Act 1959.

All plants should be supplied at the same size and of the same species as specified in the planting schedules on the landscape proposals plan. Any proposed replacement species or deviation from the planting schedules should be highlighted to and agreed with the client prior to installation.

All plants shall be hardened-off at the Contractor's own nursery or at the source prior to planting out.

All field grown and rootballed trees must have been transplanted or undercut in the nursery no less than 18 months prior to supply.

The Contractor shall carry out the work while soil and weather conditions are suitable. Planting is not to take place during periods of frost or strong winds.

The contractor is to ensure that adequate watering and weed control is provided at the time of planting.

Any topsoil retained on site in stockpiles for use in planting works is to be stored in accordance with the DEFRA publication; 'Code of practice for the sustainable use of soils on construction sites'

Do not use peat or peat based products.

Prior to planting, planting areas shall be cleared of grass and weed growth physically and/or chemically with a proprietary translocated herbicide and a period of time shall be allowed to elapse as recommended by the manufacturer before commencement of soil preparation for planting.

All plants are to be watered thoroughly before planting stage to ensure rootball is thoroughly soaked prior to final backfilling.

Tree Planting

Generally plant trees in pits with minimum dimensions of;-

- 1000 x 1000 x 700-800mm deep for trees in soft, planted areas including; grass/shrub areas and rear gardens.

Backfill the pits in layers as specified below (from bottom up);-

Drainage layer

- 200mm layer of compacted inert free draining gravel or pea shingle, wrapped in geo-textile membrane
- 100m layer of washed medium-course sand to act as blinding layer between geotextile and soil.

Topsoil layer

- 400-500mm layer of retained site-sourced topsoil (free from weeds) or imported topsoil (Multi-purpose grade to BS3882:2015; sandy loam); depth dependant on size of rootball.

Depth of topsoil should only be as deep as the rootball of proposed tree to a max. depth of 400-500mm. Should the rootball be larger i.e. 800mm height, then the pit should be increased in depth to suit, but with the difference in depth from the 400-500mm topsoil layer and the drainage layer made up of quality imported free-draining subsoil to BS8601:2013 to avoid topsoil occurring at depths of greater than 500mm.

Likewise, for smaller trees i.e. feathered trees, with more limited rootballs/bare root, the depth of topsoil can be reduced to reflect the surrounding topsoil depths or to a max. topsoil depth of 350mm, with a further layer of site-sourced or imported subsoil (to BS8601:2013) below to create a total depth of growth medium of between 400-500mm i.e. 150-200mm layer of subsoil. Drainage layer should remain as above.

As stated above, the min. pit size for trees planted in newly created planting areas should be 1m x 1m, however where planting is occurring in clean, undisturbed ground, pits should be dug to approx. 200mm greater than the rootball to limit distribution of surrounding soil structure.

Break up bottom of tree pit to a depth of 200mm and ensure ground is free-draining. Loosen edges of tree pit at time of planting by hand, using a fork to ensure good drainage. Pits should be excavated no greater than 48hrs prior to planting and dewatered as required.

Incorporate a soil conditioner/ameliorant in the form of peat-free tree and shrub compost or well rotted spent mushroom compost or 'Rootmaster' by Greentech Ltd (01423 332100) into backfilled topsoil material at the rate of min. 40L per pit.

Incorporate soil improver 'Terracottem Arbor' by Greentech Ltd (01423 332100) at a rate of 1kg per pit, mixed thoroughly into backfilled topsoil.

Backfill topsoil mix in layers of 150mm, firming at each layer and loosening the pit sides to aid drainage. The surface level of the pit should be 50mm above the surrounding ground.

Trees shall be planted in the centre of the excavated pits.

Trees in soft planted areas to be dressed with a minimum 75mm mulch layer, consisting of pine bark fines, particle size 15-50mm to a min. diameter of 1000-1200mm where appropriate.

Extra-heavy standard trees shall be staked and supported with a low, double stake consisting of 2No. 75mm diameter x min. 2000mm length, rounded timber posts driven into the ground, 600mm above ground level and fixed to the tree by a proprietary rubber tree tie / horizontal cross support.

Standard trees shall be staked and supported with a low, single stake consisting of 1No. 75mm diameter x min. 2000mm length, rounded timber post driven into the ground at 45 degree angle to approx. 450mm above ground level and fixed to the tree by a proprietary rubber tree tie.

Trees shall be installed with proprietary flexible perforated irrigation/aeration pipe with integral cap. Pipe to be installed encircling equally around rootball to the full depth of planting pit, with the final cap section installed just above ground level and nailed securely in place to the adjacent timber stake.

All trees in grass areas to be protected by min. 225mm high x 12-15mm diam. proprietary plastic strimmer/vole guards. Where trees have a basal trunk diameter greater than 12mm e.g. semi-mature, then two or more guards should be joined together using jointing tape and then secured in place.

Root Barrier Membranes

Where trees are proposed in close proximity to hard paved areas or proposed service runs, a root barrier membrane is to be installed as prescribed below.

For all proposed trees centred in a location within 3m of an adjacent hard standing/footpath or carriageway kerb line, a proprietary root barrier membrane will be installed to protect the hard standing and any underground services located beneath from future damage by tree roots.

Root barrier membrane(s) to be installed on the tree side along the back edge of the kerb / edging restraint to the adjacent hard standing and are to extend a minimum 3m in each direction from a point taken perpendicular from the tree trunk to the kerb/edging face.

Root barrier membranes are to extend to a depth as outlined below:-

- For trees adjacent to hard standings only (no underground services); install 'Reroot 300' by GreenBlue Urban (01424 717797) or equal and approved, ribbed root barrier membrane, to a depth of 300mm, ribs facing tree, joints fixed with jointing tape, install 10mm above final surface level of soft landscaping.
- For trees adjacent to hard standings incorporating underground services; install the following dependant on the depth of underground services;

For services 450mm deep

- 'Reroot 600' by GreenBlue Urban (01424 717797) or equal and approved, ribbed root barrier membrane, to a depth of 600mm, ribs facing tree, joints fixed with jointing tape, install 10mm above final surface level of soft landscaping.

For services 800mm deep

- 'Reroot 1000' by GreenBlue Urban (01424 717797) or equal and approved, ribbed root barrier membrane, to a depth of 1000mm, ribs facing tree, joints fixed with jointing tape, install 10mm above final surface level of soft landscaping.

For services deeper than 800mm

- 'Reroot 2000' by GreenBlue Urban (01424 717797) or equal and approved, ribbed root barrier membrane, to a depth of 2000mm, ribs facing tree, joints fixed with jointing tape, install 10mm above final surface level of soft landscaping.

For locations where a hard standing with or without underground services exists on both sides of the tree e.g. grass verge, then a root barrier is to be installed against both kerb / edging faces.

For trees located within hard surfaces themselves i.e. surrounded by hard paved surfaces, install 'Root Director' by GreenBlue Urban (01424 717797) or equal and approved, ref: RD1400; 1400mm x 1400mm x 450mm, plastic root director with integral ribs.

Hedge Planting (incl. single species native hedges)

Plant hedges into pre-prepared planting trenches, 500-600mm wide for double rows. Planting strips to consist of topsoil to a depth of 350-400mm, mixed with soil conditioner as specified below.

Topsoil to be either; existing retained site-sourced topsoil (free from weeds) or imported topsoil (Multi-purpose grade to BS3882:2015; sandy loam) or a combination of the two as necessary.

Incorporate a soil conditioner/ameliorant in the form of peat free general-purpose shrub compost or well rotted spent mushroom compost along planting trench in a 50mm layer at the rate of 300g per m2, and incorporate to a depth of 225mm.

Install a proprietary weed suppressant membrane onto the surface of the pre-prepared trench, with minimum 300mm laps. Plant hedge plants into pre-prepared planting strips which are deep enough as to be 200mm greater than the root depth of the supplied plant stock.

All hedge planting areas to be dressed with a minimum 75mm mulch layer, consisting of medium chipped tree bark, composted for 2-4 weeks, particle size 15-50mm, laid directly on weed suppressant membrane.

Where not planted against an proposed fence-line or wall, hedges to be supported by min. 1000 high timber post and wire fence, consisting of min. 75mm diameter x 2000mm long, rounded timber posts, driven in at 2000mm centres with 3No. galvanised wire supports evenly spaced along the vertical axis of the post. Corner posts and/or straining posts are to be additionally supported by 45° angled, 50mm diameter timber struts.

Thicket Planting

Generally clear any surface vegetation in proposed thicket areas, utilising proprietary herbicide where appropriate and install plants into isolated pre-prepared planting pits, generally 300 x 300 x 450mm deep or 200mm greater than the rootstock, whichever is greater, backfilling with either existing retained site sourced topsoil (free from weeds) or imported topsoil (sandy loam, General Purpose grade to BS3882:2015) or a combination of the two as necessary.

Incorporate a soil conditioner/ameliorant in the form of peat free tree and shrub compost or well rotted spent mushroom compost into backfill material at the rate of 5L per pit, incorporating a slow release fertiliser e.g. Enmag (or similar approved) at a rate of 5g per pit.

Ensure planting conforms to planting matrix where appropriate and in all other areas appears random / natural and not formal in accordance with the planting proposal layouts.

Coppice

Plant coppice saplings as thicket planting above.

Coppice to be maintained with an initial thin and coppice at 3 years before moving to a rotational coppice with no more than 50% cut in each operation. Details of rotational coppice to be confirmed by consultant ecologist.

Plant Protection

Where rabbits are a known issue, all coppice and thicket areas are to be fully enclosed by min. 900mm high rabbit proof fencing, supplied as min. 19 Gauge (1.2mm) galvanised mesh with max. 31mm openings, nailed with galvanised 20mm staples to 50-75mm diameter treated timber stakes at 1.5m centres, incorporating 3No. horizontal galvanised straining wires. Mesh fence to be heeled into ground 150mm below ground level. Straining posts of 100mm diam. timber should be installed every 50m or at every turn of direction 90 degrees or greater.

If additional deer protection fencing is required, all coppice and thicket areas are to be fully enclosed by min. 1.8m proprietary plastic mesh fencing (50mm x 45mm gauge) secured to min. 100mm rounded, treated softwood posts, driven min. 750mm below ground level at 3.5m centres. Mesh fence to be heeled into ground 150mm below ground level. NB:- In areas where rabbits are also a known problem, an additional 300mm high section of min. 19 Gauge galvanised mesh (chicken wire) with max. 31mm openings to be fixed to the lower portion of the deer fencing and attached using proprietary plastic cable ties.

Any standard trees in the thicket areas to be protected by min. 225mm high x 12-15mm diam. proprietary plastic strimmer/vole guards.

All bushy thicket shrubs to be protected by min. 600mm high x 170-200mm diam, proprietary plastic mesh shrub shelters / guards and secured in place with treated softwood timber stake and plastic cable ties.

All single stem thicket transplants to be protected by min. 450mm high x 50mm proprietary plastic spiral guards secured with min. 12-14lb x 900mm long bamboo cane.

All coppice and thicket plants to be installed with a min. 500mm square, woven polypropylene mulch mat securely pegged in place.

Where coppice / thicket areas are created from freshly cultivated ground i.e. not into the existing sward, then the planting area should be over-seeded with a proprietary meadow grass mix ('A4' mix by Germinal Seeds Ltd) at a rate of 35gs m2 between planting stations.

Amenity Grass Seeding

Areas to be seeded are to be finely graded to bring to a uniform and even grade at the correct finished level and to remove all minor hollows and ridges. All stones and debris greater than 50mm in size to be removed and disposed of off-site.

Seeded areas are to consist of min. 150mm topsoil; either existing retained site sourced topsoil (free from weeds) or imported topsoil (Multi-purpose grade to BS3882:2015; sandy loam) or a combination of the two as necessary; overlying min. 150mm layer of clean, free-draining subsoil. Subsoil should be prepared as per shrub specification, ensuring full decompaction and free-drainage.

Unless otherwise stated, finished levels of seeded areas to be 30mm above adjoining paving and kerbs; 150mm below the dpc of adjoining buildings.

Final preparation of the seeded areas shall be carried out as to create a fine tilth surface suitable for seeding.

For amenity grass areas only, a pre-seeding fertiliser shall be applied at a rate of 250kg/ha approx. 7 days prior to seeding and raked into top surface e.g. GroRight Lawn Establishment fertiliser by Rolawn Ltd, slow-release granular fertiliser, 7:10:10 NPK; or equal and approved by Landscape Architect.

The area(s) is to be seeded between April and October with approved grass seed mix, as specified in the planting schedules at the specified rate. Following seeding, areas are to be hand raked and lightly rolled.

The contractor shall take the necessary precautions to ensure all grass areas are protected throughout the establishment period, with the use of chestnut pale fencing where appropriate.

The contractor shall ensure that all seeded and turfed areas are watered fully at the time of installation to the full cultivated depth, and that sufficient subsequent watering is carried out to ensure healthy establishment of the grass sward.

Wildflower Seeding

Kill off any existing vegetation by spraying off with proprietary herbicide and allow a time to elapse as recommended by the manufacturer before commencing any cultivation works.

If time permits, a 'stale seed bed' is to be established, by allowing the graded meadow area to colonise with weeds from the existing soil seed bank following initial cultivation / rotovation and an additional application of proprietary herbicide applied to remove any weed growth.

Areas to be seeded are to be finely graded to bring to a uniform and even grade at the correct finished level and to remove all minor hollows and ridges. All stones and debris greater than 50mm in size to be removed and disposed of off-site.

Wildflower seeded areas are to consist of min. 150mm deep existing retained topsoil (free from weeds):subsoil mix (50:50) over existing site subsoil layer. No imported topsoil should be used in the formation of wildflower meadows. Where feasible/practible, topsoil should be fully stripped and seeding conducted into pre-prepared subsoil layer.

Final preparation of the seeded areas shall be carried out as to create a medium tilth surface suitable for seeding.

No pre-seeding fertiliser shall be applied.

Wildflower seeded is to be undertaken preferably in Spring (Early March to late June) or if not feasible in Autumn (Mid August to October). Where sowing rates are low and sowing is to be undertaken by hand broad-casting, the contractor should mix the seed evenly with a fine, dry sand to bulk up the sowing mixture. Seeding by this method should only be undertaken on calm days with no wind, after seeding, areas are to be hand raked and lightly rolled.

The contractor shall take the necessary precautions to ensure all grass areas are protected throughout the establishment period, with the use of chestnut pale fencing where appropriate.

The contractor shall ensure that all seeded areas are watered fully at the time of installation to the full cultivated depth, and that sufficient subsequent watering is carried out to ensure healthy establishment of the grass sward.

General Planting Maintenance

All soft landscape areas to be maintained to BS7370-4:1993.

Sufficient watering should be undertaken by the contractor to establish and maintain healthy plant growth.

The first cut / mow of all amenity grass seeded / turf areas should be undertaken when the established sward reaches 50mm in height down to a height of 25mm, after which all amenity grassed areas should be maintained at a nominal height of 25-30mm (March to October). All arisings are to be removed from site and composted.

The first cut / mow of all meadow and wet meadow (wildflower) areas to be undertaken when the established sward reaches 50mm in height or weeds colonise to a height of 300mm (whichever is sooner), to a nominal height of 25mm.

For spring sown meadows/wet meadows, the second cut should take place about 8 weeks after sowing, after which establishing meadow should be cut monthly down to 100mm during the first growing season to control weed growth, after which all meadow grass areas should be cut twice annually (June and September), to a nominal height of 100mm, once any wildflowers have set seed.

For autumn sown meadows/wet meadows, the second cut should take place in April, after which establishing meadow should be cut monthly down to 100mm during the first growing season to control weed growth, after which all meadow grass areas should be cut twice annually (June and September), to a nominal height of 100mm, once any wildflowers have set seed.

All meadow arisings should be left lying for 48hrs before being removed from site and composted.

Meadow areas should be hand-weeded or spot swiped for any perennial weeds such as docks, nettles and ragwort.

All failed / defective plants identified within the first 5 years of installation should be replaced by the contractor at the soonest available planting season to ensure a continued coverage of growth. Replacement plants should be of the same species and specification of the failed specimens.

Bare areas and areas of dead grass which become apparent should be rectified by overseeding and/or turf re-installation at the soonest available planting season.

All amenity grassed areas and planting beds should receive an application of a proprietary slow release fertilizer twice yearly in the spring and the autumn.

All shrub planting and formal hedges shall be pruned at least twice per annum, removing dead or dying wood, to maintain a healthy, natural shape and promote good form.

Dead heading of herbaceous plants including flowering marginal aquatic plants, should be undertaken following flowering.

All planting areas should be kept tidy and free from weeds, trimmings, debris and litter. Weeds should be removed by hand unless where it is unfeasible; whereby weeds can be treated by the application of a suitable proprietary herbicide.

NB:- Herbicide usage to be limited to spray usage on calm days (no wind) and undertaken by suitably qualified operatives in accordance with current legislation.

Tree stakes, ties and guards should be checked annually for adjustment and/or replacement/removal as required.

N

0 5 10 metres

LEGEND

- EXISTING TREES / VEGETATION
- TREES / VEGETATION REMOVED
- HAZEL COPPICE
- THICKET MIX
- EXTRA HEAVY STANDARD TREE
- STANDARD TREE
- HEDGE PLANTING
- INFILL HEDGE PLANTING
- BULB PLANTING
- AG-s — **AMENITY GRASS SEEDING -** 'A22 (Low Maintenance) seed mix by Germinal Seeds Ltd or equal and approved. 50g / m2, overseed rate; 20g / m2.
- RG — **REAR GARDENS -** 'A22 (Low Maintenance) seed mix by Germinal Seeds Ltd or equal and approved. 50g / m2, overseed rate; 20g / m2.
- WF1 — **WILDFLOWER MEADOW MIX -** 'EH1 Hedgerow Mixture' by Emorsgate Seeds or equal and approved. 4g / m2
- ROUTE OF PUBLIC FOOTPATH

3528 Plant Schedule

Herbaceous - Bulb

Qty	Name	Common Name	Age	Height	Form	Girth	ClrStm	Brks	Root	Cntr	Measure Unit	Density (m2/lin m)	Centres
2020	Galanthus nivalis	Common snowdrop							BB		m2	25.00	0.200
749	Narcissus pseudonarcissus	Wild daffodil							BB		m2	25.00	0.200
2769													

Native Hedgerow Mix (NH3)

Qty	Name	Common Name	Age	Height	Form	Girth	ClrStm	Brks	Root	Cntr	Measure Unit	Density (m2/lin m)	Centres
533	Corylus avellana	Hazel, Cobnut	1+1	40-60cm				2	B		m	5.00	0.200
888	Crataegus monogyna	Common hawthorn	1+1	60-80cm	Transplant (seed-raised)				B		m	5.00	0.200
1420	Fagus sylvatica	Common beech	1u1	40-60cm	Seedling (undercut)				B		m	5.00	0.200
355	Ilex aquifolium	Holly		40-60cm					C	2L	m	5.00	0.200
176	Lonicera periclymenum 'Belgica'	Common honeysuckle var.		60-80cm				2	C	3L	m	5.00	0.200
21	Rosa canina	Dog rose	1+1	60-80cm				3	B		m	0.67	1.500
3393													

Thicket Mix 7

Qty	Name	Common Name	Age	Height	Form	Girth	ClrStm	Brks	Root	Cntr	Measure Unit	Density (m2/lin m)	Centres
10	Corylus avellana	Hazel, Cobnut	1+2	60-80cm				3	B		m2	0.44	1.500
10	Crataegus monogyna	Common hawthorn	1+0	60-80cm	Seedling				B		m2	0.44	1.500
10	Ilex aquifolium	Holly		60-80cm					C	3L	m2	0.44	1.500
30													

Tree -

Qty	Name	Common Name	Age	Height	Form	Girth	ClrStm	Brks	Root	Cntr	Measure Unit	Density (m2/lin m)	Centres
7	Acer campestre	Field maple	2x	300-350cm	Standard (Selected)	10-12cm	Min 200cm	4	RB		nr	0.00	0.000
8	Carpinus betulus	Hornbeam	2x	min 450cm	Standard (extra-heavy)	14-16cm	min 200cm	5	RB		nr	0.00	1.000
12	Crataegus monogyna	Common hawthorn	2x	300-350cm	Standard	10-12cm	175-200cm	3	B		nr	0.00	2.000
10	Quercus robur	Common, English oak	3x	425-600cm	Standard (extra-heavy)	14-16cm	Min 200cm		RB		nr	0.00	1.000
37													

Tree - Coppice

Qty	Name	Common Name	Age	Height	Form	Girth	ClrStm	Brks	Root	Cntr	Measure Unit	Density (m2/lin m)	Centres
167	Corylus avellana	Hazel, Cobnut	0/1	100-125cm					B		m2	0.44	1.500
167													
6396													

Rev	Date	By	Description
A	12/01/18	LG	Client Comments

CSA environmental

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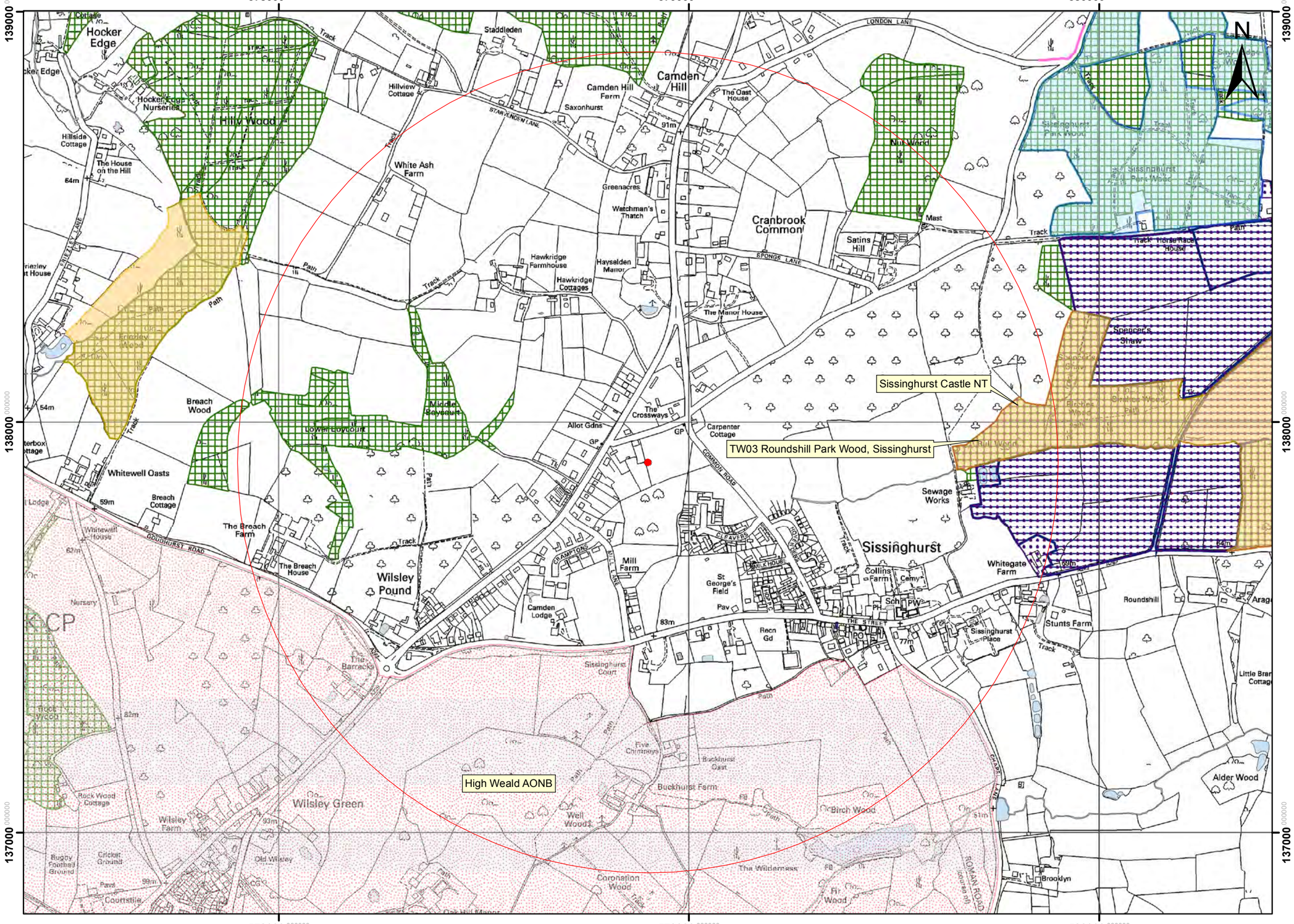
Project	Land at Common Road, Sissinghurst		
Title	Soft Landscape Proposals		
Client	Iceni Projects Ltd		
Scale	1:250 @ A0	Drawn	LG
Date	January 2018	Checked	BS
Drawing No.	CSA/3528/104	Rev	A

Kent & Medway Biological Records Centre

Map showing the statutory and non-statutory designated sites, ancient woodland, higher level stewardship and water features at Common Road, Sissinghurst
Daniel Hone, Hone Ecology
ENQ/16/327 30/06/2016

0 0.25 0.5 1 Kilometres

578000 579000 580000
139000 138000 137000



KEY

- Study Area
- Site Point
- Sites of Special Scientific Interest
- Area of Oustanding Natural Beauty
- Local Wildlife Site
- National Trust Property
- Higher Level Stewardship Scheme
- Roadside Nature Reserve
- Ancient Woodland
- Water Feature

Kent & Medway Biological Records Centre

Appendix A Legislation

The following is a summary of wildlife legislation and planning policy relevant to protected plant and animal species in the UK.

The sections on legislation have been extracted from the Joint Nature Conservation Committee's website and the Department of the Environment, Food and Rural Affairs website.

The Conservation (Natural Habitats & C) Regulations (1994) (as amended)

The Conservation (Natural Habitats, &c.) Regulations 1994 transpose Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (EC Habitats Directive) into UK law. The Regulations provide for the designation and protection of a network of 'European Sites' termed Natura 2000, the protection of 'European protected species', and the adaptation of planning and other controls for the protection of European Sites.

Amendments to the Habitats Regulations for England and Wales and the new Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007 came into force on the 21st August 2007.

The amendments relate to the protection status of European protected species covered by the Habitats regulations. Taken together it is an offence to undertake the following acts with regard to European Protected Species:

(a) deliberately capture, injure or kill any wild animal of a European Protected Species;

(b) deliberately disturb animals of any such species in such a way as to be likely to significantly affect:

> *(i) the ability of any significant group of animals of that species to survive, breed, or rear or nurture their young, or*
>
> *(ii) the local distribution or abundance of that species;*

(c) deliberately take or destroy the eggs of such an animal; or

(d) damage or destroy a breeding site or resting place of such an animal.

An offence will only be committed if the deliberate disturbance is likely to **significantly affect** a **significant group** of animals of that species' ability to survive, breed, or rear or nurture its young or **significantly affect** the local distribution or abundance of that species.

Any biological definition of what constitutes a significant group of animals should take into account the local abundance of the species, its behaviour and the circumstances in which the disturbance takes place. Species that tend to be solitary, **such as dormice**, probably never form significant groups of adults, but a family group with dependent young could constitute such a group, particularly if the species is rare in the area.
The Regulations make it an offence (subject to exceptions) to deliberately capture, kill, disturb or trade in the animals listed in **Schedule 2** or damage or destroy a breeding site or resting place of such an animal; or pick, collect, cut, uproot, destroy, or trade in the plants listed in **Schedule 4**. However, these actions can be made lawful through the granting of licences (European Protected Species Licence) by the appropriate authorities (Natural England in England and Countryside Council for Wales). Licences may be

granted for a number of purposes (such as science and education, conservation, preserving public health and safety), but only after the appropriate authority is satisfied that:

- **Regulation 44 (2)(e)** the development is 'in the interests of public health and public safety, or for other imperative reasons of overriding public interest, including those of a social or economic nature and beneficial consequences of primary importance for the environment'.
- **Regulation 44 (3)(a**) there is 'no satisfactory alternative'.
- **Regulation 44 (3)(b)** the action 'will not be detrimental to the maintenance of the population of the species at favourable conservation status in their natural range'.

To apply for a licence, the following information is required:

- The species concerned.
- The size of the population at the site (note this may require a survey to be carried out at a particular time of the year).
- The impact(s) (if any) that the development is likely to have upon the populations.
- What measures can be conducted to mitigate for the impact(s).

Amendments to the Habitats Regulations for England and Wales and the new Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007 came into force on the 21st August 2007. Both Regulations revised the definition of deliberate disturbance of European Protected Species.

The Wildlife & Countryside Act (as amended) 1981

The Wildlife & Countryside Act 1981 (as amended) is the principal piece of UK legislation relating to the protection of wildlife. It consolidates and amends existing national legislation to implement the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) and Council Directive 79/409/EEC on the Conservation of Wild Birds (Birds Directive) in Great Britain.

The Act makes it an offence (with exception to species listed in Schedule 2) to intentionally kill, injure, or take any wild bird or their eggs or nests. Special penalties are available for offences related to birds listed on **Schedule 1**, for which there are additional offences of disturbing these birds at their nests, or their dependent young. The Secretary of State may also designate Areas of Special Protection (subject to exceptions) to provide further protection to birds. The Act also prohibits certain methods of killing, injuring, or taking birds, restricts the sale and possession of captive bred birds, and sets standards for keeping birds in captivity.

The Act makes it an offence (subject to exceptions) to intentionally kill, injure, or take, possess, or trade in any wild animal listed in **Schedule 5**, and prohibits interference with places used for shelter or protection, or intentionally disturbing animals occupying such places. The Act also prohibits certain methods of killing, injuring, or taking wild animals listed in **Schedule 6**.

The Act makes it an offence (subject to exceptions) to pick, uproot, trade in, or possess (for the purposes of trade) any wild plant listed in **Schedule 8**, and prohibits the unauthorised intentional uprooting of such plants.

The Act contains measures for preventing the establishment of non-native species which may be detrimental to native wildlife, prohibiting the release of animals and planting of plants listed in **Schedule 9**. It also provides a mechanism making any of the above offences legal through the granting of licences by the appropriate authorities.

The Countryside & Rights of Way Act 2000

The Countryside and Rights of Way Act 2000 (CRoW) was passed to provide additional levels of protection for wildlife whilst also strengthening the protection afforded to Sites of Special Scientific Interest. The CRoW act now makes it an offence to 'recklessly' harm the majority of species listed on the Schedules of the Wildlife and Countryside Act.

The Act places a duty on Government Departments and the National Assembly for Wales to have regard for the conservation of biodiversity and maintain lists of species and habitats for which conservation steps should be taken or promoted, in accordance with the Convention on Biological Diversity **(Section 74)**.

Schedule 12 of the Act amends the Wildlife and Countryside Act 1981, strengthening the legal protection for threatened species. The provisions make certain offences 'arrestable', create a new offence of reckless disturbance, confer greater powers to police and wildlife inspectors for entering premises and obtaining wildlife tissue samples for DNA analysis, and enable heavier penalties on conviction of wildlife offences.

Natural Environment & Rural Communities Act 2006

The Natural Environment & Rural Communities Act 2006 (NERC) is designed to help achieve a rich and diverse natural environment and thriving rural communities through modernised and simplified arrangements for delivering Government policy.

It was created to make provision in connection with wildlife, sites of special scientific interest, National Parks and the Broads; to amend the law relating to rights of way; to make provision as to the Inland Waterways Amenity Advisory Council; to provide for flexible administrative arrangements in connection with functions relating to the environment and rural affairs and certain other functions; and for connected purposes.

NERC carries an extension of the CRoW Act biodiversity duty to public bodies and statutory undertakers to ensure due regard to the conservation of biodiversity.

The Badger Act 1992

In the UK, badgers are primarily afforded protection under the Protection of Badgers Act 1992. This makes it illegal to wilfully kill, injure, take, possess or cruelly ill-treat a badger, or to attempt to do so and to intentionally or recklessly interfere with a sett. Sett interference includes disturbing badgers whilst they are occupying a sett, as well as damaging or destroying a sett or obstructing access to it.

Badgers also receive limited protection under Schedule 6 of the Wildlife & Countryside Act 1981 (as amended). This outlaws certain methods of taking or killing animals.

Under Section 10 (1)(d) of the Protection of Badgers Act 1992, a licence may be granted by Natural England to interfere with a badger sett for the purpose of development, as defined by Section 55(1) of the Town & Country Planning Act 1990.

Section 3 of the Protection of Badgers Act 1992 defines interference as:

a) Damaging a badger sett;
b) Destroying a badger sett;

c) Obstructing access to, or any entrance of, a badger sett;
d) Causing a dog to enter a sett; or
e) Disturbing a badger when it is occupying a badger sett.

The Wild Mammals Act 1996

The Wild Mammals (Protection) Act (1996) makes it an offence for any person to mutilate, kick, beat, nail or otherwise impale, stab, burn, stone, crush, drown, drag or asphyxiate any wild mammal with intent to inflict unnecessary suffering.

The Abandonment of Animals Act 1960

The Abandonment of Animals Act comes into force when an animal is abandoned, whether permanently or not, in circumstances likely to cause unnecessary suffering. With regards to development, this has implications when translocations of animals are proposed. As such, care must be taken to ensure that any receptor sites are suitable for the species in terms of habitat and carrying capacity in order that minimal stress and suffering is imposed upon the animal(s) concerned.

The Hedgerows Regulations

The Hedgerows Regulations 1997 were introduced to protect hedgerows of importance from destruction. The Regulations define a hedgerow as, 'a row of bushes forming a hedge with the trees growing in it'. The law however does not clarify the difference between a line of trees and a hedgerow.

However the legislation does not apply to any hedgerow (even if it is within the list above) which is 'within or marking the boundary of the curtilage of a dwelling house'.

For the Regulations to be applicable, the hedgerow must be at least 20 metres in length and less than 5 metres wide. A hedgerow is deemed to be important if it is more than thirty years old and meets at least one of the criteria listed in Part II of Schedule 1 of the Regulations.

If a hedgerow that qualifies under the Regulations is to be removed, the landowner must contact the Local Planning Authority (LPA) in writing by submitting a hedgerow removal notice. The LPA then has a period of 42 days to decide whether or not the hedgerow meets the importance criteria of the regulations.

National Planning Policy Framework

The National Planning Policy Framework (NPPF) sets out the view of central Government on how planners should balance nature conservation with development and helps ensure that Government meets its biodiversity commitments with regard to the operation of the planning system. It is a key objective of NPPF to:

"promote the preservation, restoration and re-creation of priority habitats, ecological networks and the recovery of priority species, planning positively for the creation, protection, enhancement and management of networks of biodiversity and green infrastructure.

NPPF states that development plan policies and planning decisions should be based upon up-to-date information about the environmental characteristics of their areas, including biodiversity. It also states that the aim of planning decisions should be to prevent harm to biodiversity conservation interests and to "promote opportunities for the incorporation of beneficial biodiversity and geological features within the design of development.

Where granting planning permission would result in significant harm to those interests, local planning authorities will need to be satisfied that the development cannot be reasonably be located on any alternative sites that would result in less or no harm. In the absence of any such alternatives, local planning authorities should ensure that, before planning permission is granted, adequate mitigation measures are put in place. Where a planning decision would result in significant harm to biodiversity interests, which cannot be prevented or adequately mitigated against, appropriate compensation measures should be sought. If that significant harm cannot be prevented, adequately mitigated against, or compensated for, then planning permission should be refused.

This means that full ecological surveys should be carried out and suitable mitigation measures proposed prior to any planning application being submitted. It is common practice for planning officers to consult Natural England or other conservation bodies for advice regarding the suitability of proposals in relation to biodiversity conservation.

Biodiversity Action Plans

Biodiversity Action Plans (BAPS) set out actions for the conservation and enhancement of biological diversity at various spatial scales. They consist of both Habitat Action Plans (HAPs) and Species Action Plans (SAPs).

The UK BAP was the UK's response to the 1992 Convention on Biological Diversity in Rio de Janeiro. Following a review in 2007 a list of 1149 priority species and 65 priority habitats has been adopted, which are given a statutory basis for planning consideration under Section 74 of the CRoW Act 2000.

Red Data Books

Red Data Books (RDB) is an additional method for determining rarity of species and is often seen as a natural progression from Biodiversity Action Plans.

RDB species have no automatic legal protection (unless they are protected under any of the legislation previously mentioned). Instead they provide a means of assessing rarity and highlight areas where resources may be targeted. Various categories of RDB species are recorded ranging from RDB 1 (endangered) through to RDBX (extinct). As with Biodiversity Action Plans, where possible, steps should be taken to conserve RDB species, which are to be affected by development.

Appendix B – Hedgerow and Field Descriptions and Photos

All hedgerows are marked as numbers within figure 1 habitat site plan in the figures section.

As stated within the DEFRA Hedgerow Survey Guidelines a species rich hedgerow is defined as having a minimum of 5 woody species excluding brambles. Therefore the majority of the hedgerows identified below on site qualify as species rich.

H1 This hedge lies along the northern boundary of the site. Species comprised, blackthorn (Prunus spinosa), sycamore (Acer pseudoplatanus), holly (Ilex aquifolium), hazel (Corylus avellana). The understorey of the hedge supported tall ruderals such as hogweed (Heracleum sphondylium), cowpasley (Anthriscus sylvestris) and clevers (Galium aparine) although it was generally poor as ivy (Hedera helix) dominated the ground cover preventing other hedgerow species establishing.

H2 This hedge lies along the north eastern boundary of the site. Species comprised, blackthorn (Prunus spinosa), sycamore (Acer pseudoplatanus), holly (Ilex aquifolium), hazel (Corylus avellana). The understorey of the hedge supported tall ruderals such as hogweed (Heracleum sphondylium), cowpasley (Anthriscus sylvestris) and clevers (Galium aparine) although it was generally poor as ivy (Hedera helix) dominated the ground cover preventing other hedgerow species establishing.

H3 This hedge lies along the boundarybeween hedgerow 2, 4 and 5. Close to the western boundary supporting mature trees. Species comprised pedunculate oak (Quercus robur), hazel (Corylus avellana), elder (Sambucus nigra), hawthorn (Crataegus monogyna), holly (Ilex aquifolium), The understorey of this hedge was generally poor as ivy (Hedera helix) dominated the ground cover preventing other hedgerow species establishing.

H4. This hedge runs alogn the south eastern boundary. Species comprised, pedunculate oak (Quercus robur), hazel (Corylus avellana), elder (Sambucus nigra), hawthorn (Crataegus monogyna), eared willow (Salix cinerea) and goat willow (Salix caprea) The understorey of the hedge was poor with ivy (Hedera helix) and bramble (Rubus fruticosus agg.) dominated the ground cover preventing other hedgerow species establishing.

H5. This hedge runs east to west bordering a school to the south residential. Species comprised hawthorn (Crataegus monogyna), hazel (Corylus avellana), holly (Ilex aquifolium), pedunculate oak (Quercus robur). The understorey of the hedge was poor with grass being the only vegetation below its canopy.

H6. The hedge marked the western boundary of the site. Species comprised, blackthorn (Prunus spinosa), sycamore (Acer pseudoplatanus), holly (Ilex aquifolium), hazel (Corylus avellana). Mature oak, poplar sp and willow sp were also present within the hedge. The understorey of the hedge supported tall ruderals such as hogweed (Heracleum sphondylium), cowpasley (Anthriscus sylvestris) and clevers (Galium aparine).

Site Botanical species list

English name	Scientific name
Creeping bent	*Agrostis stolonifera*
Meadow foxtail	*Alopecurus pratensis*
Sweet vernal-grass	*Anthoxanthum odoratum*
False oat-grass	*Arrhenatherum elatius*
Crested dog's-tail	*Cynosurus cristatus*
Cock's-foot	*Dactylis glomerata*
Common couch	*Elytrigia repens*
Red fescue	*Festuca rubra*
Yorkshire-fog	*Holcus lanatus*
Black knapweed	Centaurea nigra
Common mouse-ear	Cerastium fontanum
Pignut	Conopodium majus
Smooth hawk's-beard	Crepis capillaris
Cleavers	Galium aparine
Common hogweed	Heracleum sphondylium
Meadow vetchling	Lathyrus pratensis
Bird's-foot trefoil	Lotus corniculatus
Self-heal	Prunella vulgaris
Meadow buttercup	Ranunculus acris
Common sorrel	Rumex acetosa
Red clover	Trifolium pratense)
White clover	Trifolium repens)
Creeping thistle	Cirsium arvense
Lesser stichwort	Stellaria graminea
Yarrow	Achillea millefolium
Timothy	Phleum pratense

Appendix 5770/2

Bat Activity Survey Report (Root3 Associated Ltd, 2017)

Bat Activity Survey Report

Site Name Common Road Sissinghurst, Kent	**Location** Land adjacent to Common Road Sissinghurst, Kent
Job Ref 1970616	**Document Ref** EC03
Site Code None	**Grid Reference** TQ 78954 37930
Surveyor Daniel Hone MIEEM BSc License holder for Dormice, Bats and White Clawed Crayfish	**Date of Survey** May – July 2017
Geology/Soil Type Not needed	**Designation** Pastoral field with hedgerows.

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FINAL

Document History

NOTICE

This document has been produced purely for the purpose of identifying ecological risks associated with the proposed development on Land adjacent to Common Road, Sissinghurst, Kent. It may not be used by any person, for any other purpose other than that specified without the express written permission of Root3 Associates Ltd. Any liability arising out of use by a third party of this document for purposes not wholly connected with the above shall be the responsibility who shall indemnify Root3 Associates Ltd against all claims costs damages and losses arising out of such use.

Job Number / REF : 1970616			Document ref : EC03			
Rev	Purpose and Description	Originated	Checked	Reviewed	Authorised	Date
-	For Review	DH	EM		EM	03/10/17
	Final	DH	EM		EM	03/07/17

Contents

1.0 Introduction

Root3 Associates Ltd has been commissioned by Invicta Self and Custom Build Ltd to undertake an assessment of bat activity across the site on land adjacent to Common Road Sissinghurst, Kent. Bats rely on natural linier features for commuting and foraging. As part of the protection status they are afforded as European Protected Species (EPS), their ability to forage and feed and commute is protected and this survey identifies the species using the treelines and vegetation for foraging over a three consecutive night periods in July, August and September using passive monitoring detectors. Three walking bat detector surveys were also undertaken during July, August and September. This has been undertaken to aid in the conservation strategy for bats using the site

The location of the detectors and the walking transect route are shown in the within the figures section.

Survey Objectives

The purpose of this survey is to provide a bat activity assessment. This survey has been undertaken to inform conservation plans for the site.

The key objectives are as follows:

- Provide an estimate of species and behaviour,
- Recommend ecological mitigation and enhancement where required.

Further information on wildlife legislation and planning policy has been included in Appendix A.

Survey Limitations

Bat activity changes throughout the year. The bat activity recorded is a snapshot as to how the habitats on site are used by bats and species found locally. July, August and September are optimal months for this type of survey Therefore this survey data should be considered to be robust and typical of bat usage of the site.

2.0 Methodology

The surveys were led by Daniel Hone who holds a Class 2 Natural England Bat survey licence (Licence number 2015-15567-CLS-CLS).

The survey method took due regard of the Bat Conservation Trust Guidelines 2016 for this type of survey.

Passive monitoring

Three Anabat Express remote bat detectors were used to collect bat activity at three key locations. The detectors were set with a night only recording trigger and linked by GPS to turn on automatically at dusk in accordance with their locations. Data was collected for 5 days during July, August and September 2016. The data was stored onto a SDHC 32GB memory card and were placed out for a minimum of three nights. More where weather was unsuitable or activity was poor.

Bat calls recorded were then analysed using sonogram analysis software (Analook and Batsound) to determine and verify the bat species and assess their behavior.

Walking transect

Three evening emergence surveys survey was undertaken per month using bat box duet bat detectors and anabat walk about bat detectors.

Species Identification

Species calls were identified and species were verified by flight patterns in the field. During surveys bats identified were recorded onto a MP3 and internal SDHC cards in the case of the EM3+ and analysed using specialist bat sonographic analysis software Batsound and Analook.

3.0 Results

3.1 Static detector results

All bat species identified were recorded foraging, commuting and feeding around each location. Common Pipistrelle and Soprano pipistrelle bats were recorded significantly more times than any other bat species. Bat activity dropped off during September.

The passive detectors identified a total of six species:

- Common pipistrelle (Pipistrellus pipistrellus)
- Soprano pipistrelle (Pipistrellus pygmaeus)
- Nathusius pipistrelle (Pipistrellus nathusii)
- Noctule (Nyctalus noctula)
- Serotine (Eptesicus serotinus)
- Brown long eared bat (Plecotus auritus)

3.2 Walking Transect Survey Results

A maximum of 2 bats were identified during any of the three walking transects one undertaken during the months of July, August and September. Common pipistrelle located along the eastern field boundary and brown long eared bat were identified along the treelined western boundary. See figure 1 in the figures section for a plan of the bat activity recorded. The weather during each visit was optimal for commuting foraging bats. Insects were flying and numerous within the field. All bats recorded were identified close to the end of the survey. This suggests roosts are significant distance from site.

The site is a broadly rectangular shaped field located on the outskirts of the village of Sissinghurst. The field is semi-improved grassland the time of the survey. The sites' boundary is marked by mature hedges. Pictures below show various views of the site. (see figure 1 in the figure section for a plan of the site and its habitats).

Various view of the site shown below.

Table1-3. below shows bats identified on site during the dusk transect survey visits.

DATE:	04/05/2017		TYPE OF SURVEY: Bat activity survey
SUNSET TIME:	20.22		
SURVEYORS:	Daniel Hone, Julie Merrett		WEATHER:10c, 100% cloud, moderate wind, no rain
START TIME:	20.05		FINISH TIME: 10.05
	Time (24hr)	Bat Species	Behaviour eg. Foraging, fly-by, swarming
Comments / Notes: No bat activity recorded throughout entire survey. All detectors working.			

Table 2.

DATE:	21/05/2017		TYPE OF SURVEY: Activity survey
SUNSET TIME:	20.45		
SURVEYORS:	Daniel Hone, Julie Merriett		WEATHER:12c, Light wind, 0% cloud, light rain
START TIME:	20.30		FINISH TIME: 22.45
	Time (24hr)	Bat Species	Behaviour eg. Foraging, fly-by, swarming
Comments / Notes:	21.50	Common pipistrelle	Commuting along western boundary

Table 3

DATE:	23/05/2017		TYPE OF SURVEY: Activity survey
SUNSET TIME	20.48		
SURVEYORS:	Daniel Hone, Elaine Mayon-white		WEATHER :18c. no wind, 0% cloud, no rain
START TIME:	20.35		FINISH TIME: 22.48
	Time (24hr)	Bat Species	Behaviour eg. Foraging, fly-by, swarming
Comments / Notes:	21.58	Common pipistrelle	Commuting south along the western boundary.

Table 4.

DATE:	23/05/2017		TYPE OF SURVEY: Activity survey
SUNSET TIME:	20.48		
SURVEYORS:	Daniel Hone, Julie Merriett		WEATHER:18c, no wind, 0% cloud, no rain
START TIME:	20.30		FINISH TIME: 22.45
	Time (24hr)	Bat Species	Behaviour eg. Foraging, fly-by, swarming
Comments / Notes:	21.50	Brown long eared bat	Commuting along western boundary

Table 5

DATE:	14/06/2017		TYPE OF SURVEY: Activity survey
SUNSET TIME	21.15		
SURVEYORS:	Daniel Hone, Elaine Mayon-white		WEATHER :20c. no wind, 0% cloud, no rain
START TIME:	21.00		FINISH TIME: 11.15
	Time (24hr)	Bat Species	Behaviour eg. Foraging, fly-by, swarming
Comments / Notes:	21.36	Common pipistrelle x2	Foraging in the south western corner in loops the heading west.
	21.52-21.56	Common pipistrelle x2	Foraging in the south western corner in loops the heading east towards eastern boundary.
	22.00-22.19	Common pipistrelle x2	Foraging back and forth along the eastern boundary then to the southern boundary then back.in the south western corner in loops the heading east towards eastern boundary.
	22.08	Brown longeared bat	Commuting from the southern boundary across the site over the eastern boundary hedge heading north east.

Table 6

DATE:	19/06/2017		TYPE OF SURVEY: Activity survey
SUNSET TIME	21.16		
SURVEYORS:	Daniel Hone, Elaine Mayon-white		WEATHER :22c. no wind, 0% cloud, no rain
START TIME:	21.00		FINISH TIME: 11.16
	Time (24hr)	Bat Species	Behaviour eg. Foraging, fly-by, swarming
Comments / Notes:	21.53 – 22.22	Common pipistrelle x2	Foraging back and forth along the eastern boundary then to the southern boundary then back and forth in loops.
	22.02	Soprano pipistrelle	Foraging back and forth along the eastern boundary then to the southern boundary then back and forth in loops.
	22.02	Brown longeared bat	Commuting from the southern western boundary across the site over the eastern boundary hedge heading north east.

Table 6

DATE:	29/06/2017		TYPE OF SURVEY: Activity survey
SUNSET TIME	21.14		
SURVEYORS:	Daniel Hone, Elaine Mayon-white		WEATHER :16c. light wind, 100% cloud, no rain
START TIME:	21.00		FINISH TIME: 11.14
	Time (24hr)	Bat Species	Behaviour eg. Foraging, fly-by, swarming
Comments / Notes:	21.58 – 22.10	Common pipistrelle x2	Foraging back and forth along the eastern boundary then to the southern boundary then back and forth in loops.
	22.05	Brown longeared bat	Commuting from the southern western boundary across the site over the eastern boundary hedge heading north east.

Table 7

DATE:	05/07/2017		TYPE OF SURVEY: Activity survey
SUNSET TIME	21.14		
SURVEYORS:	Daniel Hone, Elaine Mayon-white		WEATHER :20c. light wind, 0% cloud, no rain
START TIME:	21.00		FINISH TIME: 11.14
	Time (24hr)	Bat Species	Behaviour eg. Foraging, fly-by, swarming
Comments / Notes:	21.56 – till end of survey	Common pipistrelle x2	Foraging back and forth along the eastern boundary then to the southern boundary then back.
	22.15	Brown longeared bat	Commuting from the southern western boundary across the site over the eastern boundary hedge heading north east.

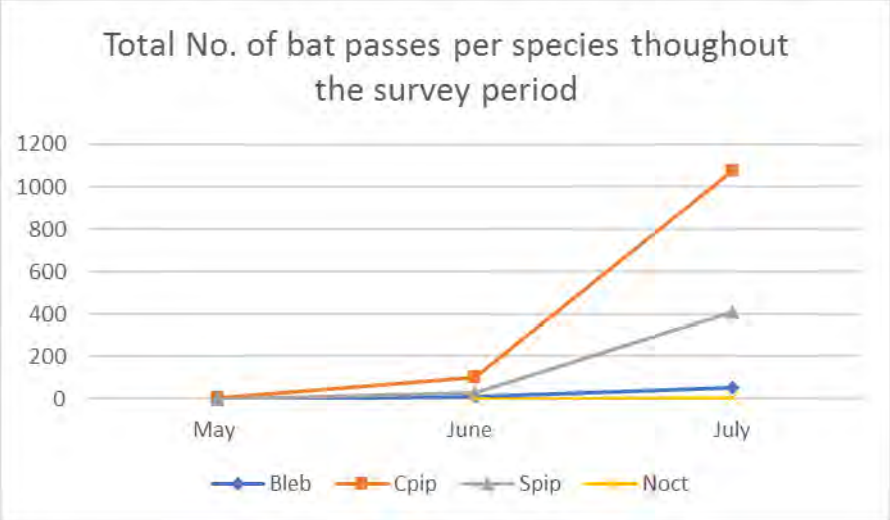
Table 8

DATE:	05/07/2017		TYPE OF SURVEY: Activity survey
SUNSET TIME	21.14		
SURVEYORS:	Daniel Hone, Elaine Mayon-white		WEATHER :20c. light wind, 0% cloud, no rain
START TIME:	21.00		FINISH TIME: 11.14
	Time (24hr)	Bat Species	Behaviour eg. Foraging, fly-by, swarming
Comments / Notes:	21.26 – till end of survey	Common pipistrelle	Foraging back and forth along the southern boundary then to the eastern treeline boundary then back and forth in loops
	22.15	Soprano pipistrelle	Commuting from the southern western boundary across the site over the eastern boundary hedge heading north east.

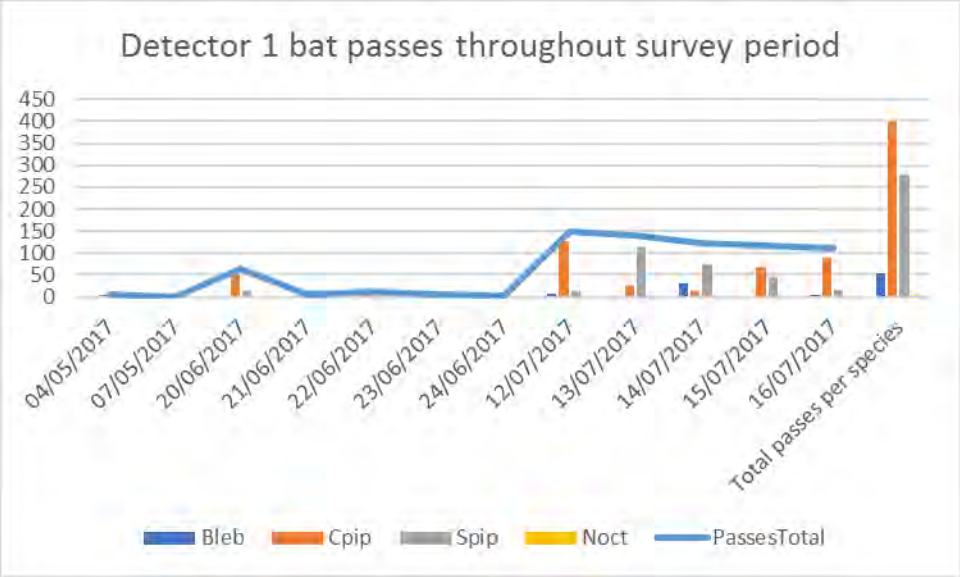
Table 9

DATE:	19/07/2017		TYPE OF SURVEY: Activity survey
SUNSET TIME	21.10		
SURVEYORS:	Daniel Hone, Elaine Mayon-white		WEATHER :19c. light wind, 0% cloud, no rain
START TIME:	21.00		FINISH TIME: 11.10
	Time (24hr)	Bat Species	Behaviour eg. Foraging, fly-by, swarming
Comments / Notes:	21.13 – till end of survey	Common pipistrelle x2	Foraging back and forth along the southern boundary then to the eastern treeline boundary then back and forth in loops
	22.09	Soprano pipistrelle	Commuting from the southern western boundary across the site over the eastern boundary hedge heading north east.
	22.13	Brown long eared bat	Commuting from the southern western boundary across the site over the eastern boundary hedge heading north east.

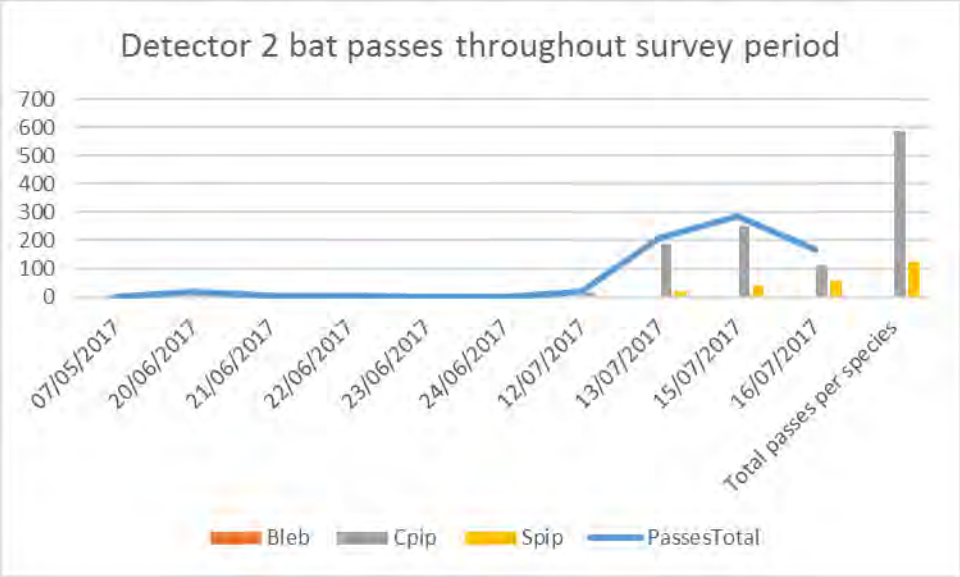
3.3 Graph 1 below shows total number of bat passes over the entire site during the total survey period.



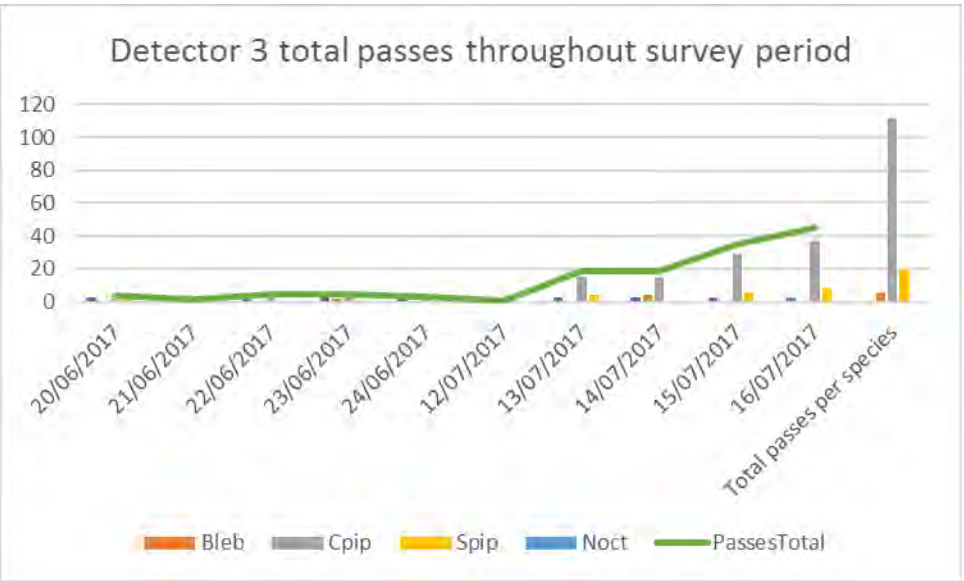
3.4 Graph 2 below shows the total number of bats recorded passing the passive detector 1 during the survey period.



3.5 Graph 3 below shows the total number of bats recorded passing the passive detector 2 during the survey period.



3.6 Graph 4 below shows the total number of bats recorded passing the passive detector 3 during the survey period.



4.0 Conclusion

Bat species using the site were typically pipistrelles which are generalist bat species. The bats recorded were typically the same species and in similar numbers during each night recorded. Bat activity passes were greatest at detector one with bat activity recorded during transects being focused along the southern and eastern treeline along hedgerow H5 (See appendix B for hedgerow details) although not significantly. This indicates that the site supports habitats which support a good insect diversity and population density. No one area was highlighted as being more important for commuting and or foraging bats.

The May bat activity was significantly less than during June and July. This is reflected in both the walking transect data and the passive detectors. Detector 3 passive detector was faulty during the survey period in May. This is unlikely to affect the mitigation strategy for the site as the hedgerow where it was placed along the northern boundary is not proposed to be affected and bat activity across the site was low during that time in any case.

During July when insect activity is at its highest bat passes were equally higher. However, walking transects identified that the number and species of bats across the site was the same throughout June and July with each species exhibiting the same behavior at the same locations throughout each transect visit.

The four bat species recorded of the 17 native to the UK, use this site for feeding and commuting. The transect data did not identify a high bat presence on site. Therefore the site should not be considered to be important for bats locally. Although boundary features such as mature trees and hedgerows along the southern and south eastern corner of the site boundaries are a likely to act as commuting foraging corridors of several individual bats. Therefore these boundaries should be enhanced through native planting and retained with any proposed lighting to be downward facing and light spill onto the boundaries should be avoided.

It is understood that the proposed scheme will enhance existing hedgerows along the western boundary and will add further species rich hedgerow planting between houses to mark boundary features. (See the figures section for the proposed landscape plan). There will be a loss of two small sections of hedgerow which were not identified as being important for commuting bats. The length to be removed in each instance along the eastern boundary is unlikely to prevent bats from crossing the site to the wider landscape. The additional hedgerow planting will provide a net gain in potential commuting and foraging habitat long term.

5.0 Recommendations

The following recommendations are based on the principles of established survey techniques and are comply with relevant best practice guidelines set out by the Chartered Institute for Ecology and Environmental Management (CIEEM).

Bats and lighting

Research has indicated that bats avoid well lit areas as it impairs their night vision, which despite common misconception they use as well as echolocation to see their environment and prey (Fure 2006). As the site supports tree lines which are likely to be used by bats for commuting and foraging, the proposed scheme should keep external lighting to a minimum and follow lighting guidance from the bat conservation trust which can be found at this link below. http://www.bats.org.uk/data/files/bats_and_lighting_in_the_uk__final_version_version_3_may_09.pdf Lighting should be downward facing and should avoid light spill onto any trees or vegetation.

Biodiversity: The UK Action Plan. H.M.S.O., (1994), London.
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Wildlife and Countryside Act 1981. H.M.S.O., London.

Figures

Figure 1: Bat activity recorded across the site showing the location of the passive bat detectors.

Job no.	Date
1970616	10/09/17

Illustrative Masterplan

1:500
0 5 10 20 30M

Key:
= Pathway

N

INVICTA

Proposed Self Build Development
Land at Common Road, Sissinghurst

Project Name;

Proposed
Illustrative Masterplan

Drawing Name;

Urban & Rural Ltd
Specialists in Bespoke Development
info@urbanandruralltd.co.uk 01227 272 585 / 07720 774 768

NOTE;

Do Not Scale.
Report all discrepancies, errors and omissions.
Verify all dimensions on site before commencing any work on site or preparing shop drawings.
All materials, components and workmanship are to comply with the relevant British & European Standards, Codes of Practice, and appropriate manufacturers recommendations that from time to time shall apply.
For all specialist work, see relevant drawings.

Revision;

date	note
19.12.18	P1 - Scheme Amended
03.01.19	P2 - Informal Pathway Added
03.01.19	P3 - Scheme Revised After Comments from Client
16.01.19	P4 - Scheme Amended - Following comments from LA

Drawing No;A1273-102
Revision; P4
Date; Nov 2017
Scale; 1:500@A1
RIBA STAGE 1

Appendix A Legislation

The following is a summary of wildlife legislation and planning policy relevant to protected plant and animal species in the UK.

The sections on legislation have been extracted from the Joint Nature Conservation Committee's website and the Department of the Environment, Food and Rural Affairs website.

The Conservation (Natural Habitats & C) Regulations (1994) (as amended)

The Conservation (Natural Habitats, &c.) Regulations 1994 transpose Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (EC Habitats Directive) into UK law. The Regulations provide for the designation and protection of a network of 'European Sites' termed Natura 2000, the protection of 'European protected species', and the adaptation of planning and other controls for the protection of European Sites.

Amendments to the Habitats Regulations for England and Wales and the new Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007 came into force on the 21st August 2007.

The amendments relate to the protection status of European protected species covered by the Habitats regulations. Taken together it is an offence to undertake the following acts with regard to European Protected Species:

(a) deliberately capture, injure or kill any wild animal of a European Protected Species;

(b) deliberately disturb animals of any such species in such a way as to be likely to significantly affect:

> *(i) the ability of any significant group of animals of that species to survive, breed, or rear or nurture their young, or*
>
> *(ii) the local distribution or abundance of that species;*

(c) deliberately take or destroy the eggs of such an animal; or

(d) damage or destroy a breeding site or resting place of such an animal.

An offence will only be committed if the deliberate disturbance is likely to **significantly affect** a **significant group** of animals of that species' ability to survive, breed, or rear or nurture its young or **significantly affect** the local distribution or abundance of that species.

Any biological definition of what constitutes a significant group of animals should take into account the local abundance of the species, its behaviour and the circumstances in which the disturbance takes place. Species that tend to be solitary, **such as dormice**, probably never form significant groups of adults, but a family group with dependent young could constitute such a group, particularly if the species is rare in the area.
The Regulations make it an offence (subject to exceptions) to deliberately capture, kill, disturb or trade in the animals listed in **Schedule 2** or damage or destroy a breeding site or resting place of such an animal; or pick, collect, cut, uproot, destroy, or trade in the plants listed in **Schedule 4**. However, these actions can be made lawful through the granting of licences (European Protected Species Licence) by the appropriate authorities (Natural England in England and Countryside Council for Wales). Licences may be granted for a number of purposes (such as science and education,

conservation, preserving public health and safety), but only after the appropriate authority is satisfied that:

- **Regulation 44 (2)(e)** the development is 'in the interests of public health and public safety, or for other imperative reasons of overriding public interest, including those of a social or economic nature and beneficial consequences of primary importance for the environment'.
- **Regulation 44 (3)(a**) there is 'no satisfactory alternative'.
- **Regulation 44 (3)(b)** the action 'will not be detrimental to the maintenance of the population of the species at favourable conservation status in their natural range'.

To apply for a licence, the following information is required:

- The species concerned.
- The size of the population at the site (note this may require a survey to be carried out at a particular time of the year).
- The impact(s) (if any) that the development is likely to have upon the populations.
- What measures can be conducted to mitigate for the impact(s).

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The Act makes it an offence (with exception to species listed in Schedule 2) to intentionally kill, injure, or take any wild bird or their eggs or nests. Special penalties are available for offences related to birds listed on **Schedule 1**, for which there are additional offences of disturbing these birds at their nests, or their dependent young. The Secretary of State may also designate Areas of Special Protection (subject to exceptions) to provide further protection to birds. The Act also prohibits certain methods of killing, injuring, or taking birds, restricts the sale and possession of captive bred birds, and sets standards for keeping birds in captivity.

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The Act makes it an offence (subject to exceptions) to pick, uproot, trade in, or possess (for the purposes of trade) any wild plant listed in **Schedule 8**, and prohibits the unauthorised intentional uprooting of such plants.

The Act contains measures for preventing the establishment of non-native species which may be detrimental to native wildlife, prohibiting the release of animals and planting of plants listed in **Schedule 9**. It also provides a mechanism making any of the above offences legal through the granting of licences by the appropriate authorities.

The Countryside & Rights of Way Act 2000

The Countryside and Rights of Way Act 2000 (CRoW) was passed to provide additional levels of protection for wildlife whilst also strengthening the protection afforded to Sites of Special Scientific Interest. The CRoW act now makes it an offence to 'recklessly' harm the majority of species listed on the Schedules of the Wildlife and Countryside Act.

The Act places a duty on Government Departments and the National Assembly for Wales to have regard for the conservation of biodiversity and maintain lists of species and habitats for which conservation steps should be taken or promoted, in accordance with the Convention on Biological Diversity **(Section 74)**.

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It was created to make provision in connection with wildlife, sites of special scientific interest, National Parks and the Broads; to amend the law relating to rights of way; to make provision as to the Inland Waterways Amenity Advisory Council; to provide for flexible administrative arrangements in connection with functions relating to the environment and rural affairs and certain other functions; and for connected purposes.

NERC carries an extension of the CRoW Act biodiversity duty to public bodies and statutory undertakers to ensure due regard to the conservation of biodiversity.

The Badger Act 1992

In the UK, badgers are primarily afforded protection under the Protection of Badgers Act 1992. This makes it illegal to wilfully kill, injure, take, possess or cruelly ill-treat a badger, or to attempt to do so and to intentionally or recklessly interfere with a sett. Sett interference includes disturbing badgers whilst they are occupying a sett, as well as damaging or destroying a sett or obstructing access to it.

Badgers also receive limited protection under Schedule 6 of the Wildlife & Countryside Act 1981 (as amended). This outlaws certain methods of taking or killing animals.

Under Section 10 (1)(d) of the Protection of Badgers Act 1992, a licence may be granted by Natural England to interfere with a badger sett for the purpose of development, as defined by Section 55(1) of the Town & Country Planning Act 1990.

Section 3 of the Protection of Badgers Act 1992 defines interference as:

a) Damaging a badger sett;
b) Destroying a badger sett;
c) Obstructing access to, or any entrance of, a badger sett;
d) Causing a dog to enter a sett; or
e) Disturbing a badger when it is occupying a badger sett.

The Wild Mammals Act 1996

The Wild Mammals (Protection) Act (1996) makes it an offence for any person to mutilate, kick, beat, nail or otherwise impale, stab, burn, stone, crush, drown, drag or asphyxiate any wild mammal with intent to inflict unnecessary suffering.

The Abandonment of Animals Act 1960

The Abandonment of Animals Act comes into force when an animal is abandoned, whether permanently or not, in circumstances likely to cause unnecessary suffering. With regards to development, this has implications when translocations of animals are proposed. As such, care must be taken to ensure that any receptor sites are suitable for the species in terms of habitat and carrying capacity in order that minimal stress and suffering is imposed upon the animal(s) concerned.

The Hedgerows Regulations

The Hedgerows Regulations 1997 were introduced to protect hedgerows of importance from destruction. The Regulations define a hedgerow as, 'a row of bushes forming a hedge with the trees growing in it'. The law however does not clarify the difference between a line of trees and a hedgerow.

However the legislation does not apply to any hedgerow (even if it is within the list above) which is 'within or marking the boundary of the curtilage of a dwelling house'.

For the Regulations to be applicable, the hedgerow must be at least 20 metres in length and less than 5 metres wide. A hedgerow is deemed to be important if it is more than thirty years old and meets at least one of the criteria listed in Part II of Schedule 1 of the Regulations.

If a hedgerow that qualifies under the Regulations is to be removed, the landowner must contact the Local Planning Authority (LPA) in writing by submitting a hedgerow removal notice. The LPA then has a period of 42 days to decide whether or not the hedgerow meets the importance criteria of the regulations.

National Planning Policy Framework

The National Planning Policy Framework (NPPF) sets out the view of central Government on how planners should balance nature conservation with development and helps ensure that Government meets its biodiversity commitments with regard to the operation of the planning system. It is a key objective of NPPF to:

"promote the preservation, restoration and re-creation of priority habitats, ecological networks and the recovery of priority species, planning positively for the creation, protection, enhancement and management of networks of biodiversity and green infrastructure.

NPPF states that development plan policies and planning decisions should be based upon up-to-date information about the environmental characteristics of their areas, including biodiversity. It also states that the aim of planning decisions should be to prevent harm to biodiversity conservation interests and to "promote opportunities for the incorporation of beneficial biodiversity and geological features within the design of development.

Where granting planning permission would result in significant harm to those interests, local planning authorities will need to be satisfied that the development cannot be reasonably be located on any alternative sites that would result in less or no harm. In the absence of any such alternatives, local planning authorities should ensure that, before planning permission is granted, adequate mitigation measures are put in place. Where a planning decision would result in significant harm to biodiversity interests, which cannot be prevented or adequately mitigated against, appropriate compensation measures should be sought. If that significant harm cannot be prevented, adequately mitigated against, or compensated for, then planning permission should be refused.

This means that full ecological surveys should be carried out and suitable mitigation measures proposed prior to any planning application being submitted. It is common practice for planning officers to consult Natural England or other conservation bodies for advice regarding the suitability of proposals in relation to biodiversity conservation.

Biodiversity Action Plans

Biodiversity Action Plans (BAPS) set out actions for the conservation and enhancement of biological diversity at various spatial scales. They consist of both Habitat Action Plans (HAPs) and Species Action Plans (SAPs).

The UK BAP was the UK's response to the 1992 Convention on Biological Diversity in Rio de Janeiro. Following a review in 2007 a list of 1149 priority species and 65 priority habitats has been adopted, which are given a statutory basis for planning consideration under Section 74 of the CRoW Act 2000.

Red Data Books

Red Data Books (RDB) is an additional method for determining rarity of species and is often seen as a natural progression from Biodiversity Action Plans.

RDB species have no automatic legal protection (unless they are protected under any of the legislation previously mentioned). Instead they provide a means of assessing rarity and highlight areas where resources may be targeted. Various categories of RDB species are recorded ranging from RDB 1 (endangered) through to RDBX (extinct). As with Biodiversity Action Plans, where possible, steps should be taken to conserve RDB species, which are to be affected by development.

Appendix B – Hedgerow and Field Descriptions and Photos

All hedgerows are marked as numbers within figure 1 habitat site plan in the figures section.

As stated within the DEFRA Hedgerow Survey Guidelines a species rich hedgerow is defined as having a minimum of 5 woody species excluding brambles. Therefore the majority of the hedgerows identified below on site qualify as species rich.

H1 This hedge lies along the northern boundary of the site. Species comprised, blackthorn (Prunus spinosa), sycamore (Acer pseudoplatanus), holly (Ilex aquifolium), hazel (Corylus avellana). The understorey of the hedge supported tall ruderals such as hogweed (Heracleum sphondylium), cowpasley (Anthriscus sylvestris) and clevers (Galium aparine) although it was generally poor as ivy (Hedera helix) dominated the ground cover preventing other hedgerow species establishing.

H2 This hedge lies along the north eastern boundary of the site. Species comprised, blackthorn (Prunus spinosa), sycamore (Acer pseudoplatanus), holly (Ilex aquifolium), hazel (Corylus avellana). The understorey of the hedge supported tall ruderals such as hogweed (Heracleum sphondylium), cowpasley (Anthriscus sylvestris) and clevers (Galium aparine) although it was generally poor as ivy (Hedera helix) dominated the ground cover preventing other hedgerow species establishing.

H3 This hedge lies along the boundarybeween hedgerow 2, 4 and 5. Close to the western boundary supporting mature trees. Species comprised pedunculate oak (Quercus robur), hazel (Corylus avellana), elder (Sambucus nigra), hawthorn (Crataegus monogyna), holly (Ilex aquifolium), The understorey of this hedge was generally poor as ivy (Hedera helix) dominated the ground cover preventing other hedgerow species establishing.

H4. This hedge runs alogn the south eastern boundary. Species comprised, pedunculate oak (Quercus robur), hazel (Corylus avellana), elder (Sambucus nigra), hawthorn (Crataegus monogyna), eared willow (Salix cinerea) and goat willow (Salix caprea) The understorey of the hedge was poor with ivy (Hedera helix) and bramble (Rubus fruticosus agg.) dominated the ground cover preventing other hedgerow species establishing.

H5. This hedge runs east to west bordering a school to the south residential. Species comprised hawthorn (Crataegus monogyna), hazel (Corylus avellana), holly (Ilex aquifolium), pedunculate oak (Quercus robur). The understorey of the hedge was poor with grass being the only vegetation below its canopy.

H6. The hedge marked the western boundary of the site. Species comprised, blackthorn (Prunus spinosa), sycamore (Acer pseudoplatanus), holly (Ilex aquifolium), hazel (Corylus avellana). Mature oak, poplar sp and willow sp were also present within the hedge. The understorey of the hedge supported tall ruderals such as hogweed (Heracleum sphondylium), cowpasley (Anthriscus sylvestris) and clevers (Galium aparine).

Site Botanical species list

English name	Scientific name
Creeping bent	*Agrostis stolonifera*
Meadow foxtail	*Alopecurus pratensis*
Sweet vernal-grass	*Anthoxanthum odoratum*
False oat-grass	*Arrhenatherum elatius*
Crested dog's-tail	*Cynosurus cristatus*
Cock's-foot	*Dactylis glomerata*
Common couch	*Elytrigia repens*
Red fescue	*Festuca rubra*
Yorkshire-fog	*Holcus lanatus*
Black knapweed	Centaurea nigra
Common mouse-ear	Cerastium fontanum
Pignut	Conopodium majus
Smooth hawk's-beard	Crepis capillaris
Cleavers	Galium aparine
Common hogweed	Heracleum sphondylium
Meadow vetchling	Lathyrus pratensis
Bird's-foot trefoil	Lotus corniculatus
Self-heal	Prunella vulgaris
Meadow buttercup	Ranunculus acris
Common sorrel	Rumex acetosa
Red clover	Trifolium pratense)
White clover	Trifolium repens)
Creeping thistle	Cirsium arvense
Lesser stichwort	Stellaria graminea
Yarrow	Achillea millefolium
Timothy	Phleum pratense

Appendix 5770/3

Dormouse Survey Report (Root3 Associated Ltd, 2019)

Dormouse Survey Report

Site Name Common Road Sissinghurst, Kent	**Location** Land adjacent to Common Road Sissinghurst, Kent
Job Ref 1970616	**Document Ref** EC02
Site Code None	**Grid Reference** TQ 78954 37930
Surveyor Daniel Hone MIEEM BSc License holder for Dormice, Bats and White Clawed Crayfish	**Date of Survey** April – September 2017
Geology/Soil Type Not needed	**Designation** Pastoral field with hedgerows.

FINAL

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Document History

NOTICE

This document has been produced purely for the purpose of identifying ecological risks associated with the proposed development on Land adjacent to Common Road Sissinghurst, Kent. It may not be used by any person, for any other purpose other than that specified without the express written permission of Root3 Associates Ltd. Any liability arising out of use by a third party of this document for purposes not wholly connected with the above shall be the responsibility who shall indemnify Root3 Associates Ltd against all claims costs damages and losses arising out of such use.

Job Number / REF : 1970616			Document ref : EC02			
Rev	Purpose and Description	Originated	Checked	Reviewed	Authorised	Date
-	For Review	DH	EM	EM	EM	05/10/17
-	Final	DH	EM	EM	EM	03/11/18
-	Final	DH	EM	EM	EM	04/01/19

Contents

1.0 Introduction

Root3 Associates Ltd has been commissioned by Invicta Self and Custom Build Ltd to undertake this survey report which identifies the presence or likely absence of native protected dormice (Muscardinus avellanarius) within hedgerows on land adjacent to Common Road Sissinghurst, Kent. This survey has been undertaken to inform works for the proposed housing scheme. This report will recommend enhancements for dormice where required.

Dormice are afforded legal protection under Schedule 5 of the Wildlife & Countryside Act 1981 (as amended) and Schedule 2 of The Conservation of Habitats Species Regulations (2010) (as amended) (See Appendix A). The dormouse is a European Protected Species (EPS).

Survey Objectives

The key objectives of this survey are as follows:

- assess the presence or likely absence of dormice within suitable habitat on site.
- if dormice are found to be present on the site, give an indication of the population size.
- recommend further where assessed as necessary potential enhancements.

Further information on wildlife legislation and planning policy has been included in Appendix A.

Survey Limitations

It should be noted that this survey was carried out in accordance with current best practice, and was undertaken in suitable weather conditions.

2.0 Methodology

In accordance with the Dormouse Conservation Handbook (English Nature, 2006) nest tubes were installed on trees in the best available locations at approximately 20m intervals.

In accordance with the guidelines a minimum of 50 nest tubes should be used during any one survey. A total of 50 tubes were installed throughout the woodland on 1st June 2015. Checks of the tubes were made at the beginning of each month until the required survey effort was achieved.

All checks were made by licensed dormouse surveyors Daniel Hone Class 1 Licence Registration 2016-21046-CLS-CLS.

All tubes were checked during each visit. Where the tube could be seen as empty no further check was made. Where the tube could not be seen easily, a sock was used to block the entrance of the tube and the end of the tube pushed back to inspect for evidence of nesting material or any animals. When nesting material/leaves were found, the tube was taken off and placed in a large plastic bag for detailed checking. Small plastic bags were taken to put any animals found in for weighing purposes using 60g balances. All surveys were carried out in suitable weather conditions e.g no rain.

Index of Probability

In accordance with the Dormouse Conservation Handbook (English Nature, 2006) absence should not be based on a search effort score of less than 20 when calculated against the Chanin and Woods (2003) 'index of probability' as shown in Table 1.

Table 1 – Index of probability

Monthly Index of Dormouse Presence Probability	
April	1
May	4
June	2
July	2
August	5
September	7
October	2
November	2

The tubes we left in situ and checked from April to September generating an index probability score of 21 recognised as a robust amount of time over which to conduct this type of survey.

3.0 Results

Hedgerow descriptions are shown in appendix B and referred to as H1-H6

Table 1. below shows the dates of the dormouse visits.

Date	Evidence	Location
02/05/2017	Dormouse nest	Along the northern (H1) hedgerow located close to the centre of the hedgerow
05/06/2017	Nothing found	
03/08/2015	Dormouse nest x2	Along the northern (H1) hedgerow located close to the centre of the hedgerow and at the western end of the hedge.
05/09/2015	Dormouse nest	Along the northern (H1) hedgerow located close to the centre of the hedgerow
02/10/2015	Dormouse nest x3 Dormouse feeding remains x2	Along the northern (H1) hedgerow located close to the western end two dormouse nests. One dormouse nest located along the northern end of the eastern (H2) boundary and two tubes along the eastern (H5) boundary contained feeding remains in the form of knawed hazel nuts.

Dormouse nests were identified within one tubes during the month of May, August within the northern boundary hedge and within two tubes during July. September was surveyed on the second of October to provide a full month of survey data for that month. The October survey visit found one dormouse nest along the eastern boundary and two tubes with feeding remains confirming the use of this boundary by dormice at well as the northern boundary. See figure 1 in the figures section for a map of the survey results.

Pictures of dormouse nests found within northern hedgerow shown below.

Dormice knawed hazel nuts found in several of the nest tubes along the eastern boundary.

4.0 Conclusions and Recommendations

Dormice are using the tree and hedge line which runs along the northern and eastern boundaries. This treeline along the eastern boundary will be partly affected by the proposed works. The rest of the tree lines and hedgerows bordering the site lacked any evidence of dormice. However habitat connectivity to hedgerows bordering the site is good. Dormice are arboreal mice which rely on aerial off the ground habitat connectivity to avoid predation and reach suitable foraging, breeding locations. Therefore as all the connecting hedgerows bordering the periphery of the site should be considered to support commuting and foraging dormice.

The works proposed comprise the removal of two small sections of hedgerow. In order to remove some of the vegetation as part of the proposed development which is linked to vegetation found to be supporting dormice, works will be carried out in such a way to minimise the risk of disturbance, injury or death of dormice under a mitigation license from Natural England once planning has been approved.

Mitigation for the loss of the hedgerow sections will comprise additional broadleaved scattered trees. Garden boundary's will also be marked by species rich hedgerows providing further commuting foraging opportunities. Five dormouse nest boxes will also be erected upon mature trees around the boundary of the site.

Once a natural England Mitigation licence has been obtained vegetation clearance works must follow the following procedure.

The removal of the vegetation will be undertaken in two stages:

- Stage 1 – the existing hedgerow coppicing of above ground vegetation to a height of 10" carried out over the winter months (January – February 2018) to avoid arboreal dormice activity and nesting birds; and
- Stage 2 – grubbing out of roots, stumps and arising's during the summer months (Must be done in May 2018) to avoid disturbing hibernating dormice.

The first stage of vegetation clearance will be undertaken by contractors briefed by a named ecologist or accredited agent. A tool box talk will be given to all contractors prior to clearance detailing the legal implications and legislation associated with dormice. The talk will outline their behavior and measures to ensure they are not disturbed or harmed during works and the procedure if a dormouse is found during works. The talk will be repeated if necessary.

Works will be carried out under the supervision of the named ecologist or accredited agent who will hand search the vegetation for dormice.

In the unlikely event a dormouse is found assuming it does not move to a safe area of vegetation on its own, the named ecologist or accredited agent will relocated the animal to the nearest section of retained and unaffected hedgerow along the northern boundary where dormouse have been found to be present on site.

Post Development Safeguard

Habitat/Site Management and Maintenance

During the proposed dormouse monitoring surveys, an assessment of the mitigation area will be carried out in each monitoring period. Recommendations for additional planting or replacement of failed plantings will be identified.

Population monitoring

Monitoring of the proposed mitigation area and associated dormouse nest boxes will be carried out as follows:

Monitoring will be carried out in years 1 and 3; where year 0 is the year of works completing on site.

Monitoring will take place in the form of repeat presence/absence surveys using the 10 dormice nest boxes erected within the mitigation area and a further 40 nest tubes across the site to a total the recommended 50 nest tube/boxes for dormice surveys which will be carried out by a suitably qualified ecologist;

Data collated from these surveys will be provided to Natural England and the local biological record centre following each survey period, with recommendations for remedial work to dormouse habitat or management tasks where required.

References and Bibliography

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Figures

root3

Figure 1: Dormice mitigation plan

Job no.	Date
1494	16/01/19

Figure 1: Dormice survey results

Job no.	Date
1970616	03/10/17

Appendix A Legislation

The following is a summary of wildlife legislation and planning policy relevant to protected plant and animal species in the UK.

The sections on legislation have been extracted from the Joint Nature Conservation Committee's website and the Department of the Environment, Food and Rural Affairs website.

The Conservation (Natural Habitats & C) Regulations (1994) (as amended)

The Conservation (Natural Habitats, &c.) Regulations 1994 transpose Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (EC Habitats Directive) into UK law. The Regulations provide for the designation and protection of a network of 'European Sites' termed Natura 2000, the protection of 'European protected species', and the adaptation of planning and other controls for the protection of European Sites.

Amendments to the Habitats Regulations for England and Wales and the new Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007 came into force on the 21st August 2007.

The amendments relate to the protection status of European protected species covered by the Habitats regulations. Taken together it is an offence to undertake the following acts with regard to European Protected Species:

(a) deliberately capture, injure or kill any wild animal of a European Protected Species;

(b) deliberately disturb animals of any such species in such a way as to be likely to significantly affect:

> *(i) the ability of any significant group of animals of that species to survive, breed, or rear or nurture their young, or*
>
> *(ii) the local distribution or abundance of that species;*

(c) deliberately take or destroy the eggs of such an animal; or

(d) damage or destroy a breeding site or resting place of such an animal.

An offence will only be committed if the deliberate disturbance is likely to **significantly affect** a **significant group** of animals of that species' ability to survive, breed, or rear or nurture its young or **significantly affect** the local distribution or abundance of that species.

Any biological definition of what constitutes a significant group of animals should take into account the local abundance of the species, its behaviour and the circumstances in which the disturbance takes place. Species that tend to be solitary, **such as dormice**, probably never form significant groups of adults, but a family group with dependent young could constitute such a group, particularly if the species is rare in the area.
The Regulations make it an offence (subject to exceptions) to deliberately capture, kill, disturb or trade in the animals listed in **Schedule 2** or damage or destroy a breeding site or resting place of such an animal; or pick, collect, cut, uproot, destroy, or trade in the plants listed in **Schedule 4**. However, these actions can be made lawful through the granting of licences (European Protected Species Licence) by the appropriate authorities (Natural England in England and Countryside Council for Wales). Licences may be granted for a number of purposes (such as science and

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- The size of the population at the site (note this may require a survey to be carried out at a particular time of the year).
- The impact(s) (if any) that the development is likely to have upon the populations.
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NERC carries an extension of the CRoW Act biodiversity duty to public bodies and statutory undertakers to ensure due regard to the conservation of biodiversity.

The Badger Act 1992

In the UK, badgers are primarily afforded protection under the Protection of Badgers Act 1992. This makes it illegal to wilfully kill, injure, take, possess or cruelly ill-treat a badger, or to attempt to do so and to intentionally or recklessly interfere with a sett. Sett interference includes disturbing badgers whilst they are occupying a sett, as well as damaging or destroying a sett or obstructing access to it.

Badgers also receive limited protection under Schedule 6 of the Wildlife & Countryside Act 1981 (as amended). This outlaws certain methods of taking or killing animals.

Under Section 10 (1)(d) of the Protection of Badgers Act 1992, a licence may be granted by Natural England to interfere with a badger sett for the purpose of development, as defined by Section 55(1) of the Town & Country Planning Act 1990.

Section 3 of the Protection of Badgers Act 1992 defines interference as:

a) Damaging a badger sett;

b) Destroying a badger sett;
c) Obstructing access to, or any entrance of, a badger sett;
d) Causing a dog to enter a sett; or
e) Disturbing a badger when it is occupying a badger sett.

The Wild Mammals Act 1996

The Wild Mammals (Protection) Act (1996) makes it an offence for any person to mutilate, kick, beat, nail or otherwise impale, stab, burn, stone, crush, drown, drag or asphyxiate any wild mammal with intent to inflict unnecessary suffering.

The Abandonment of Animals Act 1960

The Abandonment of Animals Act comes into force when an animal is abandoned, whether permanently or not, in circumstances likely to cause unnecessary suffering. With regards to development, this has implications when translocations of animals are proposed. As such, care must be taken to ensure that any receptor sites are suitable for the species in terms of habitat and carrying capacity in order that minimal stress and suffering is imposed upon the animal(s) concerned.

The Hedgerows Regulations

The Hedgerows Regulations 1997 were introduced to protect hedgerows of importance from destruction. The Regulations define a hedgerow as, 'a row of bushes forming a hedge with the trees growing in it'. The law however does not clarify the difference between a line of trees and a hedgerow.

However the legislation does not apply to any hedgerow (even if it is within the list above) which is 'within or marking the boundary of the curtilage of a dwelling house'.

For the Regulations to be applicable, the hedgerow must be at least 20 metres in length and less than 5 metres wide. A hedgerow is deemed to be important if it is more than thirty years old and meets at least one of the criteria listed in Part II of Schedule 1 of the Regulations.

If a hedgerow that qualifies under the Regulations is to be removed, the landowner must contact the Local Planning Authority (LPA) in writing by submitting a hedgerow removal notice. The LPA then has a period of 42 days to decide whether or not the hedgerow meets the importance criteria of the regulations.

National Planning Policy Framework

The National Planning Policy Framework (NPPF) sets out the view of central Government on how planners should balance nature conservation with development and helps ensure that Government meets its biodiversity commitments with regard to the operation of the planning system. It is a key objective of NPPF to:

"promote the preservation, restoration and re-creation of priority habitats, ecological networks and the recovery of priority species, planning positively for the creation, protection, enhancement and management of networks of biodiversity and green infrastructure.

NPPF states that development plan policies and planning decisions should be based upon up-to-date information about the environmental characteristics of their areas, including biodiversity. It also states that the aim of planning decisions should be to prevent harm to biodiversity conservation interests and to "promote opportunities for the incorporation of beneficial biodiversity and geological features within the design of development.

Where granting planning permission would result in significant harm to those interests, local planning authorities will need to be satisfied that the development cannot be reasonably be located on any alternative sites that would result in less or no harm. In the absence of any such alternatives, local planning authorities should ensure that, before planning permission is granted, adequate mitigation measures are put in place. Where a planning decision would result in significant harm to biodiversity interests, which cannot be prevented or adequately mitigated against, appropriate compensation measures should be sought. If that significant harm cannot be prevented, adequately mitigated against, or compensated for, then planning permission should be refused.

This means that full ecological surveys should be carried out and suitable mitigation measures proposed prior to any planning application being submitted. It is common practice for planning officers to consult Natural England or other conservation bodies for advice regarding the suitability of proposals in relation to biodiversity conservation.

Biodiversity Action Plans

Biodiversity Action Plans (BAPS) set out actions for the conservation and enhancement of biological diversity at various spatial scales. They consist of both Habitat Action Plans (HAPs) and Species Action Plans (SAPs).

The UK BAP was the UK's response to the 1992 Convention on Biological Diversity in Rio de Janeiro. Following a review in 2007 a list of 1149 priority species and 65 priority habitats has been adopted, which are given a statutory basis for planning consideration under Section 74 of the CRoW Act 2000.

Red Data Books

Red Data Books (RDB) is an additional method for determining rarity of species and is often seen as a natural progression from Biodiversity Action Plans.

RDB species have no automatic legal protection (unless they are protected under any of the legislation previously mentioned). Instead they provide a means of assessing rarity and highlight areas where resources may be targeted. Various categories of RDB species are recorded ranging from RDB 1 (endangered) through to RDBX (extinct). As with Biodiversity Action Plans, where possible, steps should be taken to conserve RDB species, which are to be affected by development.

Appendix B – Hedgerow and Field Descriptions and Photos

All hedgerows are marked as numbers within figure 1 habitat site plan in the figures section.

As stated within the DEFRA Hedgerow Survey Guidelines a species rich hedgerow is defined as having a minimum of 5 woody species excluding brambles. Therefore the majority of the hedgerows identified below on site qualify as species rich.

H1 This hedge lies along the northern boundary of the site. Species comprised, blackthorn (Prunus spinosa), sycamore (Acer pseudoplatanus), holly (Ilex aquifolium), hazel (Corylus avellana). The understorey of the hedge supported tall ruderals such as hogweed (Heracleum sphondylium), cowpasley (Anthriscus sylvestris) and clevers (Galium aparine) although it was generally poor as ivy (Hedera helix) dominated the ground cover preventing other hedgerow species establishing.

H2 This hedge lies along the north eastern boundary of the site. Species comprised, blackthorn (Prunus spinosa), sycamore (Acer pseudoplatanus), holly (Ilex aquifolium), hazel (Corylus avellana). The understorey of the hedge supported tall ruderals such as hogweed (Heracleum sphondylium), cowpasley (Anthriscus sylvestris) and clevers (Galium aparine) although it was generally poor as ivy (Hedera helix) dominated the ground cover preventing other hedgerow species establishing.

H3 This hedge lies along the boundarybeween hedgerow 2, 4 and 5. Close to the western boundary supporting mature trees. Species comprised pedunculate oak (Quercus robur), hazel (Corylus avellana), elder (Sambucus nigra), hawthorn (Crataegus monogyna), holly (Ilex aquifolium), The understorey of this hedge was generally poor as ivy (Hedera helix) dominated the ground cover preventing other hedgerow species establishing.

H4. This hedge runs alogn the south eastern boundary. Species comprised, pedunculate oak (Quercus robur), hazel (Corylus avellana), elder (Sambucus nigra), hawthorn (Crataegus monogyna), eared willow (Salix cinerea) and goat willow (Salix caprea) The understorey of the hedge was poor with ivy (Hedera helix) and bramble (Rubus fruticosus agg.) dominated the ground cover preventing other hedgerow species establishing.

H5. This hedge runs east to west bordering a school to the south residential. Species comprised hawthorn (Crataegus monogyna), hazel (Corylus avellana), holly (Ilex

aquifolium), pedunculate oak (Quercus robur). The understorey of the hedge was poor with grass being the only vegetation below its canopy.

H6. The hedge marked the western boundary of the site. Species comprised, blackthorn (Prunus spinosa), sycamore (Acer pseudoplatanus), holly (Ilex aquifolium), hazel (Corylus avellana). Mature oak, poplar sp and willow sp were also present within the hedge. The understorey of the hedge supported tall ruderals such as hogweed (Heracleum sphondylium), cowpasley (Anthriscus sylvestris) and clevers (Galium aparine).

Appendix 5770/4

Landscape Strategy

1 Existing Vegetation / Site Boundaries
The Landscape Strategy demonstrates how the vast majority of the existing on-site vegetation can be retained within a sensitive residential layout. A short section of the eastern Site boundary hedgerow and a short section of the internal field boundary hedgerow will require removal in order to facilitate the proposed vehicular access road through the Site. Two small sections of the northern Site boundary hedgerow will also require removal to facilitate pedestrian access into the Site. All the Veteran Trees along the southern Site boundary will be retained and respected with no built form or associated rear gardens located within the buffer zones.
The existing boundary trees and hedgerows will be reinforced with new native planting in order to enhance species diversity and helping to further filter views of the proposed housing from neighbouring vantage points.
2 Proposed Open Space and Veteran Tree protection
The proposals include a large area of public open space at the entrance to the development to respect views from the adjacent public footpath and Common Road. The open space will include areas of grassland together with a wildlife pond near the vehicular access point.
In order to respect the buffer zones of the three Veteran Trees along the southern Site boundary, a large area of public open space has been proposed adjacent to the existing footpath and hedgerow. A SuDS basin is proposed within this area which will be planted with wetland planting and designed as semi-natural habitats including an area of new aquatic planting. It will be set within a mosaic of grassland and scrub planting. In order to maximise the ecological benefit of this area there will be a connection between the public footpath and the centre of the development through the proposed hedge with public access restricted to this route. The planting within the area will be designed to provide a balance between ecological benefit and provide an aesthetically pleasing area of public open space suitable to the village setting.
The existing public footpath which crosses the south-eastern corner of the Site will be retained along its current alignment and integrated into a green infrastructure corridor formed of new hedging. This will provide biodiversity benefits as well as helping to further filter views of the proposed housing from neighbouring vantage points. A new pedestrian route is also proposed to run alongside the northern and eastern sides of the Site which will provide for safer pedestrian travel along Common and Frittenden Road.
3 Spine Road and Avenue Trees
A central spine road will provide the main vehicular access through the development. The grass verges will be planted with suitable avenue trees of large stature (eg Quercus robur) to provide a legible and attractive route through the development.
4 Sustainable Drainage Features and Wildlife Ponds
A network of sustainable drainage features will form an integral part of the open spaces within the new development. These features will store surface water run off during periods of rainfall. They will be landscaped to provide new areas of species rich grassland and marginal and aquatic habitat for local wildlife and invertebrates.
5 Common Road Frontage
Development will be set back from the frontage with Cranfield Road and orientated to overlook the highway. New hedgerow planting will be undertaken at the Site frontage to replace sections of hedgerow lost to permit access to the Site. Native and ornamental tree planting will soften views of the new homes and provide an attractive edge to the development area.
N
1:200
LEGEND
EXISTING TREES / VEGETATION
TREES / VEGETATION REMOVED
VETERAN TREES
VETERAN TREES ROOT PROTECTION AREA
VETERAN TREES BUFFER ZONES
INDICATIVE NEW TREE PLANTING
THICKET MIX
HEDGE PLANTING
AMENITY GRASS
WILDFLOWER MEADOW
EXISTING ROUTE OF PUBLIC FOOTPATH
PROPOSED NEW PEDESTRIAN CONNECTION
MOWN GRASS FOOTPATH
PROPOSED POND
PROPOSED HIBERNACULA to be constructed in accordance with ecological best practice
CSA environmental
Project Land at Common Road, Sissinghurst
Title Landscape Strategy
Client Invicta Self & Custom Build Ltd
Date December 2019

Appendix 5770/5

Results of Grassland Survey

Results of Grassland Survey

Species	Quadrat (m^2)										No. of quadrats present
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	
Bird's-foot Trefoil *Lotus corniculatus*			Y							Y	2
Black Knapweed *Centaurea nigra*											0
Broad-leaved Dock *Rumex obtusifolius*	Y										1
Cock's-foot *Dactylis glomerata*	Y										1
Common Cat's-ear *Hypochaeris radicata*						Y				Y	2
Common Chickweed *Stellaria media*										Y	1
Common Sorrel *Rumex acetosa*	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	10
Creeping Buttercup *Ranunculus repens*	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	10
Dandelion *Taraxacum officinale agg.*	Y	Y	Y								3
Hogweed *Heracleum sphondylium*	Y	Y	Y		Y	Y	Y	Y	Y		8
Meadow Buttercup *Ranunculus acris*		Y		Y	Y						3
Meadow Vetchling *Lathyrus pratensis*		Y	Y								2
Perennial Rye-grass *Lolium perenne*	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	10
Red Clover *Trifolium pratense*				Y			Y		Y	Y	4
Red Fescue *Festuca rubra*	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	10
Ribwort Plantain *Plantago lanceolata*											0
White Clover *Trifolium repens*	Y	Y	Y	Y	Y	Y	Y	Y		Y	9
Yorkshire-fog *Holcus lanatus*			Y	Y	Y	Y	Y	Y		Y	7
Total number of species	**9**	**9**	**10**	**8**	**8**	**8**	**8**	**7**	**6**	**10**	**(Average 8.3)**

Key:

Listed as a semi-improved grassland indicator under the FEP Manual

Listed as a lowland meadow indicator under the FEP Manual

Appendix 5770/6

Results of Defra Biodiversity Metric 2.0

Headline Results

Return to results menu

On-site baseline	*Habitat units*	5.52
	Hedgerow units	0.00
	River units	0.00
On-site post-intervention (Including habitat retention, creation, enhancement & succession)	*Habitat units*	6.12
	Hedgerow units	0.00
	River units	0.00
Off-site baseline	*Habitat units*	0.00
	Hedgerow units	0.00
	River units	0.00
Off-site post-intervention (Including habitat retention, creation, enhancement & succession)	*Habitat units*	0.00
	Hedgerow units	0.00
	River units	0.00
Total net unit change (including all on-site & off-site habitat retention/creation)	*Habitat units*	0.60
	Hedgerow units	0.00
	River units	0.00
Total net % change (including all on-site & off-site habitat creation + retained habitats)	*Habitat units*	10.85%
	Hedgerow units	0.00%
	River units	0.00%

A-1 Site Habitat Baseline

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	Habitats and areas			Habitat distinctiveness	Habitat condition	Ecological connectivity	Strategic significance	Suggested action to address habitat losses	Ecological baseline	Retention category biodiversity value								Bespoke compensation agreed for unacceptable losses
Ref	Broad Habitat	Habitat type	Area (hectares)	Distinctiveness	Condition	Ecological connectivity	Strategic significance		Total habitat units	Area retained	Area enhanced	Area succession	Baseline units retained	Baseline units enhanced	Baseline units succession	Area lost	Units lost	
1	Woodland and forest	Woodland and forest - Lowland mixed deciduous woodland	0.05	High	Moderate	Medium	Area/compensation not in local strategy/ no local strategy	Same habitat required	0.66		0.05		0.00	0.66	0.00	0.00	0.00	
2	Heathland and shrub	Heathland and shrub - Bramble scrub	0.13	Medium	Poor	Low	Area/compensation not in local strategy/ no local strategy	Same broad habitat or a higher distinctiveness habitat required	0.52				0.00	0.00	0.00	0.13	0.52	
3	Heathland and shrub	Heathland and shrub - Mixed scrub	0.05	Medium	Poor	Low	Area/compensation not in local strategy/ no local strategy	Same broad habitat or a higher distinctiveness habitat required	0.20		0.05		0.00	0.20	0.00	0.00	0.00	
4	Grassland	Grassland - Modified grassland	1.28	Low	Fairly Poor	Low	Area/compensation not in local strategy/ no local strategy	Same distinctiveness or better habitat required	3.84		0.18		0.00	0.54	0.00	1.10	3.30	
5	Grassland	Grassland - Modified grassland	0.1	Low	Fairly Poor	Low	Area/compensation not in local strategy/ no local strategy	Same distinctiveness or better habitat required	0.30		0.1		0.00	0.30	0.00	0.00	0.00	
6																		
7																		
8																		
9																		
		Total site area ha	1.61					Total Site baseline	5.52	0.00	0.38	0.00	0.00	1.70	0.00	1.23	3.82	

A-2 Site Habitat Creation

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Post development/ post intervention habitats								
				Ecological	Strategic significance	Temporal multiplier	Difficulty	
Proposed habitat	Area (hectares)	Distinctiveness	Condition	Ecological connectivity	Strategic significance	Time to target condition/years	Difficulty of creation category	Habitat units delivered
Urban - Developed land; sealed surface	0.53	V.Low	N/A - Other	Low	Area/compensation not in local strategy/ no local strategy	0	Low	0.00
Urban - Vegetated garden	0.51	Low	Poor	Low	Area/compensation not in local strategy/ no local strategy	1	Low	0.98
Lakes - Ponds (Non- Priority Habitat)	0.03	High	Good	Medium	Area/compensation not in local strategy/ no local strategy	5	Low	0.50
Grassland - Other neutral grassland	0.07	Medium	Good	Low	Area/compensation not in local strategy/ no local strategy	15	Low	0.49
Urban - Amenity grassland	0.07	Low	Poor	Low	Area/compensation not in local strategy/ no local strategy	1	Low	0.14
Heathland and shrub - Mixed scrub	0.02	Medium	Good	Low	Area/compensation not in local strategy/ no local strategy	7	Low	0.19
Totals	**1.23**							**2.30**

A-3 Site Habitat Enhancement

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	Baseline habitats	Post development/ post intervention habitats: Change in distinctiveness and condition			Area (hectares)	Distinctiveness	Condition	Ecological connectivity	Strategic significance	Temporal multiplier	Difficulty multipliers	Habitat units delivered
Baseline ref	Baseline habitat	Proposed habitat (Pre-populated but can be overridden)	Distinctiveness change	Condition change				Ecological connectivity score	Strategic significance	Time to target condition/years	Difficulty of enhancement category	
1	Woodland and forest - Lowland mixed deciduous woodland	Woodland and forest - Lowland mixed deciduous woodland	High - High	Moderate - Good	0.05	High	Good	Medium	Area/compensation not in local strategy/ no local strategy	20	High	0.71
3	Heathland and shrub - Mixed scrub	Heathland and shrub - Mixed scrub	Medium - Medium	Poor - Good	0.05	Medium	Good	Low	Area/compensation not in local strategy/ no local strategy	10	Low	0.48
4	Grassland - Modified grassland	Heathland and shrub - Mixed scrub	Low - Medium	Lower Distinctiveness Habitat - Good	0.18	Medium	Good	Low	Area/compensation not in local strategy/ no local strategy	7	Low	1.80
5	Grassland - Modified grassland	Grassland - Other neutral grassland	Low - Medium	Lower Distinctiveness Habitat - Good	0.1	Medium	Good	Low	Area/compensation not in local strategy/ no local strategy	15	Low	0.83
				Total site area	0.38						Enhancement total	3.82

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