LIZARD
Landscape Design and Ecology

PRELIMINARY ECOLOGICAL APPRAISAL

Apuldram House, Dell Quay Road, Chichester

On behalf of Randell Design Group Ltd.

Prepared by	CF
Checked by	GS
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Contents

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SUMMARY

Lizard Landscape Design and Ecology has been commissioned by Randell Design Group Ltd. to undertake a Preliminary Ecological Appraisal (PEA) of development proposed at Apuldram House, Dell Quay Road, Chichester (*Grid Reference SU 83667 02701 – hereafter referred to as 'the site'*). An initial habitat appraisal survey was undertaken on 14th January 2021 to evaluate the existing ecological resources of the site, to highlight any potential ecological constraints and opportunities to inform scheme design and to identify the need for further assessment prior to application.

The site is located to the south of Dell Quay close to the Fishbourne Channel and within the Chichester District of West Sussex. The site also lies within the Chichester Harbour Area of Outstanding Natural Beauty and adjacent to the Chichester Harbour SSSI, Chichester and Langstone Harbour SPA and Ramsar, and the Solent Maritime SAC nature conservation designations. The site consists of three buildings with associated hardstanding, scattered trees and hedgerows, amenity and semi-improved grassland, and ornamental planting. Native species hedgerows and tree lines are Habitats of Principal Importance (NERC, 2006) and as such are a material consideration within the planning process. Therefore, efforts should be made to protect, retain and enhance these features wherever possible, particularly the large and mature tree specimens, which are of superior ecological value.

As the south western boundary of the site is adjacent to the Chichester Harbour, which is protected by several national and international nature conservation designations, the scheme must avoid directly impacting on this feature. Works with the potential for indirect impacts, e.g., through noise and dust pollution, should be conducted during the summer, when overwintering birds are not present.

The site offers some potential to support nesting birds and reptiles. Further phase 2 protected species surveys are unlikely to be required for these species groups as impact are small, temporary, and easily avoided through simple precautionary measures. The main building on site offers low potential to support roosting bats, therefore, should impacts to the roof of this structure be anticipated, e.g. through solar panel installation, it may be necessary to conduct a single presence / absence bat survey, in order to scope in or out the potential presence of a bat roost.

A summary of recommendations is as follows:

- Protect, retain and enhance all trees and hedgerow scheduled for retention on site in line with BSI standards (BSI, 2012) (BSI, 2013), for the wider benefit of biodiversity.
- Any trees scheduled for removal should be removed to ground level September – February inclusive to avoid impacting on nesting birds (or following inspection from a suitably ecologist)
- Stumps may be uprooted, and initial ground works should be conducted March – October so that any reptiles on site are active and able to move out of harm's way.
- Any construction works which are likely to have unavoidable disturbance impacts (e.g. noise, dust, lighting) should be conducted outside of the wintering bird season to avoid impacting on wintering birds designated as part of the Chichester Harbour suite of sites, i.e.. within March – October inclusive
- Should proposals involve the citing of solar panels on the main building, an initial single presence / absence survey is recommended in order to confirm likely absence of a bat roost, or to inform the need for further survey and investigation. Survey may be conducted May – August inclusive.
- Incorporation of plants of known value to wildlife within any planting scheme.
- Provision of a Wildflower Meadow Creation, Management and Monitoring Plan, or secured delivery of this feature through agreement with a reputable supplier / contractor.
- Avoid nocturnal illumination of the site, or provision of a sensitive lighting strategy which limits light spill into the surrounding environs and is line with current guidance (BCT & ILP, 2018)
- Provision of enhancements for the benefit of local wildlife in line with Policy 49; Biodiversity, of the Chichester Local Plan (Chichester District Council, 2015)

1.0 INTRODUCTION

1.1 Lizard Landscape Design and Ecology has been commissioned by Randell Design Group Ltd. to undertake a Preliminary Ecological Appraisal (PEA) survey of Apuldram House, Dell Quay Road, Chichester (*Grid Reference: SU 83667 02701 – hereafter referred to as 'the site'*).

1.2 An initial site visit and habitat assessment was undertaken on 14th January 2021 to appraise the existing ecological resources within the site and the surrounding area. The habitat appraisal survey comprised a baseline survey conforming broadly to the *JNCC Extended Phase 1 Habitat Survey methodology* (JNCC, 2010), to identify and map existing habitats. In addition, a protected species assessment was undertaken to identify the potential for European and nationally protected species to be present within and adjacent to the site.

1.3 The field survey data and analysis contained in this report was undertaken and prepared by Caleb Fry (*BSc (Hons) ACIEEM, Project Ecologist; Lizard Landscape Design and Ecology*). The report has been reviewed by George Sayer (*MCIEEM, Senior Ecologist; Lizard Landscape Design and Ecology*).

Site Information

1.4 The site covers an area of c. 1.0ha and consists of an irregular shaped plot accessed from Dell Quay Road. The site contains three buildings, including a main abode and 2 outbuilding/garages, hardstanding associated with landscaping and access, actively managed amenity grassland, semi-improved grassland, native and ornamental non-native scattered trees and hedgerows, as well as ornamental shrubbery. The site is located within Chichester Harbour AONB. No Tree Protection Orders (TPOs) cover any part of the site. No other ecological designations for this site exist.

Surrounding Landscape

1.5 The site is located to the south of Dell Quay, and part of the site lies adjacent to the Chichester Harbour which is designated nationally and internationally for its unique tidal habitat and overwintering bird assemblage. Immediately to the west and north of the site lies the Dell Quay Sailing Club marina and associated outlets. The site is bounded on the north by Dell Quay Road and neighbouring residential properties bound the majority of the eastern and western aspects of the site. The south western aspect of the site is adjacent to the Fishbourne Channel, the southern and south eastern aspect of the site lies adjacent to arable land. The site lies within a predominantly rural environment, connected by a network of hedgerows and watercourses.

Development Proposals

1.6 It is understood that proposals are for the removal of the existing garage, for the construction of a new garage, the relocation of the Multi-Use Games Area, the relocation of the swimming pool and pool house, possible solar thermal on roof of main house, diverted driveway and a variety of minor works and new soft landscaping proposals.

2.0 SCOPE OF THE SURVEY

2.1 The aim of the Preliminary Ecological Appraisal has been:

- Identify any ecological constraints and opportunities for development of the site
- Inform scheme design
- Identify further ecological surveys and investigation necessary to inform a full Ecological Impact Assessment (EcIA) of the site
- Highlight opportunities for ecological enhancements and Biodiversity Net Gain (BNG)

3.0 METHODOLOGY

3.1 Desk Study

3.1.1 The Multi-Agency Geographical Information Centre (MAGIC) was consulted for information regarding priority habitats, statutory designated sites and permitted European Protected Species Licences (EPSL's) within a potential zone of influence of the development site. Due to the nature of proposals it is considered that a data search from the local biological records centre would be unlikely to provide information necessary to inform the assessment and so has not been called upon. This is an approach in line with current best practice guidance (CIEEM, 2020).

3.1.2 In accordance with Natural England's GCN Mitigation Guidelines (English Nature, 2001) a desktop search was undertaken to identify ponds within 500m and 250m of the site, which may have the potential to support breeding great crested newts (GCN) *Triturus cristatus,* using Ordnance Survey mapping, the *MAGIC* database and aerial photography.

3.2 Site Visit

3.2.1 An initial site visit and habitat appraisal survey was undertaken on 14th January 2021 and the site subjected to an ecology survey using guidelines set out in the *Handbook for Phase 1 Habitat Survey – A Technique for Environmental Audit (JNCC, 2010).* This has resulted in a Site Habitat Plan *(Figure No. 01)* and Species Lists for Habitat Parcels (*Table No. 05).*

3.2.2 Habitats within the site were classified and the presence, or potential presence, of certain protected and/or notable species of flora and fauna were identified. This involved identifying features that may be used by protected species, potential foraging areas and other signs of use. Water bodies were recorded wherever possible, within 500m of the proposed development site.

3.2.3 Due to the field survey consisting of only one site visit, certain species, particularly flowering plants, may not have been visible or may have been otherwise inconspicuous at the time of the survey and hence overlooked. These are accepted constraints associated with the standard *Phase 1 Habitat Survey Methodology* (JNCC, 2010).

3.2.4 The results are summarised and accompanied in large part by photographic evidence contained in *Appendix A – Site Photographs.* Recommendations for further investigation and survey are made herein where necessary.

3.3 Evaluation and Assessment

3.3.1 The evaluation and assessment of ecological features is beyond the scope of a PEA and therefore has not been undertaken. Formal evaluation and assessment of any important ecological features should be undertaken as part of a full Ecological Impact Assessment (EcIA), or receptor specific survey and assessment, in accordance with current guidance (CIEEM, 2018).

3.4 Preliminary Bat Roost Assessment

3.4.1 A Preliminary Bat Roost Assessment was undertaken on 14th January 2021 by an experienced bat surveyor who undertook a ground-level assessment of all trees and buildings within the proposed development site.

3.4.2 The bat surveyor assessed the existing buildings visually and searched for evidence such as:

- Grease Marks;
- Urine Stains;
- Bat Droppings;
- Feeding Remains;
- Dead or Live Bats.

3.4.3 Trees were visually identified from the ground, using binoculars where necessary, for features that could be used by bats such as:

- Woodpecker Holes;
- Knot Holes;
- Tear-outs;
- Flush Cuts;
- Double Leaders

3.4.4 Once features had been assessed the trees were then categorised in accordance with *Table 4.1 Bat Surveys for Professional Ecologists; Good Practice Guidelines (Collins, 2016):*

Table No. 01 – Categorisation Criteria

Category	***Building***	***Trees***
`Negligible`	No suitable features identified.	No suitable features identified.
`Low`	A structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by large numbers of bats (i.e. unlikely to be suitable for maternity or hibernation).	Tree of sufficient size and age to support bat roost features; but with none identified from the ground, or with only very limited roosting potential.
`Moderate`	A structure or tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only)	
`High`	A structure or tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.	

3.4.5 The surrounding habitat within and directly adjacent to the site was assessed for its suitability to support foraging and commuting bats which may influence the likelihood of bats roosting within on-site trees and buildings.

4.0 RESULTS

4.1 Desk Study

Statutory Protected Sites

4.1.1 The following potential zones of influence have been used when identifying designated sites in the local area: Local Nature Reserves (LNRs), National Nature Reserves (NNRs) and Sites of Special Scientific Interest (SSSIs) within a 2.0km radius of the site, and internationally designated sites including Special Areas of Conservation (SACs), Special Protection Areas (SPAs) and Ramsars (Wetlands of International Importance) within a 10km radius of the site. Statutory protected sites within a potential zone of influence of the site include:

Table No. 02 – Statutory Designated Sites

Site	Special interests or Qualifying features	Location
Internationally Designated Statutory Sites within 10.0 km		
Chichester and Langstone Harbours SPA	The SPA is designated under Annex II of Directive 92/43/EEC for supporting important populations of species listed under Article 4 of Directive 2009/147/EC, including northern pintail *Anas acuta,* northern shoveler *Anas clypeata,* teal *Anas crecca,* wigeon *Anas Penelope,* ruddy turnstone *Arenaria interpres,* dark-bellied brent goose *Branta bernical bernicla,* sanderling *Calidris alba,* dunlin *Calidris alpine,* ringed plover *Charadrisu hiaticula,* bar-tailed godwit *Limosa lapponica,* red-breasted merganser *Mergus serrator,* curlew *Numenius arquata,* grey plover *Pluvialis squatarola,* little tern *Sterna albifrons,* common tern *Sterna hirundo,* sandwich tern *Sterna sandvicensis,* shelduck *Tadorna tadorna* and redshank *Tringa tetanus*	Directly adjacent to the south west boundary of the site
Solent Maritime SAC	The SAC is primarily designated for supporting Annex I Habitats; Estuaries, Spartina swards *Spartinion maritimae* and Atlantic salt meadows (*Glauco-puccinellietalia maritimae*)	Directly adjacent to the south west boundary of the site
Chichester and	The site is designated for meeting three criteria	Directly

Langstone Harbours Ramsar	of the Ramsar convention; criterion 1, 5 and 6. For supporting two large estuarine basins linked by the channel which divides Hayling Island from the main Hampshire coastline; the site includes intertidal mudflats, saltmarsh, sand and shingle spits and sand dunes. For supporting a waterfowl assemblage of international importance, and for supporting important populations of ringed plover, black-tailed godwit *Limosa limosa islandica,* dark-bellied brent goose, shelduck, grey plover and dunlin, respectively.	adjacent to the south west boundary of the site
Pagham Harbour SPA	The SPA is designated under Annex II of Directive 92/43/EEC for supporting important populations of species listed under Article 4 of Directive 2009/147/EC, including dark-bellied brent goose, little tern, common tern and ruff *Calidris pugnax.*	c. 4.18km south east
Pagham Harbour Ramsar	The site is designated under the Ramsar Convention for meeting criterion 6; supporting important populations of dark-bellied brent goose and black-tailed godwit	c. 4.18km south east
Kingley Vale SAC	The SAC is primarily designated for supporting the largest extent of Annex I habitat *Taxus baccata* woods in the British Isles.	c. 7.32km north by north west
Nationally Designated Statutory Sites within 2.0km		
Chichester Harbour SSSI	The SSSI is designated for its extensive mud and sandflat habitats, which support wintering wildfowl, waders and breeding birds, as well as a range of habitats which support important plant communities.	Directly adjacent to the south west boundary of the site

4.1.2 No results for LNRs or NNRs were returned within 2km of the site.

4.1.3 The entire site is located within the Dell Quay Conservation Area, which is a landscaping consideration, designated as an area of special architectural or historic interest. The site also lies within the Chichester Harbour Area of Outstanding Natural Beauty (AONB) designated for its significant landscape value.

Non-Statutory Protected Areas

4.1.4 *Sites of Nature Conservation Importance* (*SNCIs*) are designations applied to the most important non-statutory nature conservation sites. They are recognised by the *National Planning Policy Framework (2019)* and as such are material considerations when assessing planning applications. Non-statutory designated sites within a potential zone of influence of the site include:

Table No. 03 – Non-Statutory Designated Sites

Site	Location
River Lavant Marsh SNCI	c. 0.86km north by north east
Chichester Yacht Basin Meadow & Pool SNCI	c. 1.17km south
Salterns Copse SNCI	c. 1.21km south west
Fishbourne Meadows SNCI	c. 1.42km north by north east
Chichester Canal SNCI	c. 1.50km south east
Birdham Pool SNCI	c. 2.00km south west

Pond Study

4.1.5 A single pond lies within 500m of the site, located within a pastoral field c. 350m north of site.

4.2 Habitats

4.2.1 Within 2.0km of the site there are priority habitats of *Mudflats, Coastal Saltmarsh, Saline Lagoon, Coastal and Floodplain Grazing Marsh, Lowland Meadows, Reedbeds, Deciduous Woodland, Ancient Woodland* and *Traditional Orchard.* No priority habitats exist within the site. However, *Mudflats* lie directly adjacent to the south western site boundary.

4.2.2 Habitats within the site include:

- *Amenity Grassland;*
- *Semi-improved Grassland;*
- *Scattered Trees;*
- *Hedgerows;*
- *Introduced Shrub; and*
- *Buildings and Hardstanding.*

Amenity Grassland

4.2.3 Grassland covers much of the site. The grassland lawn is actively managed and kept very short, making it difficult to identify the presence of individual forbs within the sward. However, it possible to identify the presence of perennial rye grass *Lollium perenne* and red fescue *Festuca rubra* alongside feather moss's *Ptilium sspp.* To the north of site mosses are abundant, and grasses less frequent, although towards the south of site this distribution switches and grasses are more abundant. Daisy's *Bellis perennis* and ribwort plantain *Plantago lanceolata* are frequently found throughout, as is the occasional patch of bare ground. Towards the north of site rare patches of snowdrops *Galanthus nivalis* are present, and winter aconite *Eranthis hyemalis* borders the western aspect of the drive. The grassland is managed for largely aesthetic purposes and has little ecological value, significant at no greater than **Site** level.

Semi-improved Grassland

4.2.4 The bank which bounds the south west of site is less intensively managed and a greater abundance of native flora is present here. The bank supports cow parsley *Anthriscus sylvestris*, bramble *Rubus fruticosus agg.*, false oat grass *Arrhenatherum elatius,* butcher's broom *Ruscus aculeatus,* lords-and-ladies *Arum maculatum,* primrose *Primula vulgaris,* yarrow *Achillea millefolium* and an abundance of winter heliotrope *Petasites fragrans*. Winter heliotrope is an invasive non-native species, though not listed on the Schedule 9 of the Wildlife and Countryside, and therefore, there is no legal requirement to prevent the spread of the plant.

Scattered Trees

4.2.4 An abundance of trees of varying ages and species are present throughout the site, including native and non-native species. Of particular note are the mature horse chestnut *Aesculus hippocastanum* trees which line either side of the drive entranceway at the north of site, the mature oaks *Quercus sp.* which bound the north west of site, as well as scattered cherry *Prunus sp.,* semi-mature sycamore *Acer pseudoplatanus*, beech *Fagus sylvatica,* mature scot's pine *Pinus sylvestris* and silver birch *Betula pendula* trees. Given there is a general dearth of trees and woodland in the surrounds, and that the assemblage of trees on site is diverse in species and age, it is likely that the assemblage of trees on site are valuable at the **Local** level. A full list of tree species is viewable in Table No. 5, with further detail provided in the Tree Constraints Plan (separate report). All native species treelines over 20m long are Section 41 Habitats and as such are designated under the NERC Act (2006).

Hedgerows

4.2.5 Hedgerows bound much of the site. A small section, c. 25m long, of hawthorn *Crategus monogyna* hedgerow is present at the south of the site, immediately west of the pool. A good deal of yew *Taxus baccata* hedgerow is present throughout the site, including along the southern boundary and to the west of the house. A small section of garden privet *Ligustrum ovalifolium* is present at the south of site and New Zealand broadleaf *Griselinia littoralis* bounds the north west of the site. All native woody species hedgerows are Section 41 Habitats and as such are designated under the NERC Act (2006), and therefore the yew and hawthorn hedgerows on site are subject to this designation. Overall, the hedgerow habitats on site are do not offer a diverse species assemblage and are managed for aesthetic landscape purposes, likely to be significant at the **Site** level.

Introduced Shrub

4.2.6 Ornamental shrub is present in beds throughout the site, primarily located to the east of the existing storage building and to the east and south of the main house. These habitats are small in extent and consist of non-native ornamental species, and as such are a habitat of **Negligible** ecological value.

Buildings and Hardstanding

4.2.7 Hardstanding is present throughout the site, to provide access and parking off Dell Quay Road, and as paving / patio for associated landscaping. For the purpose of this assessment the pool and MUGA court will also be considered as hardstanding as they are of similar broad **Negligible** ecological value. Three buildings are present on site.

- B1; the largest building, c. 220m^2, is located towards the centre of site and is the main abode. The building has a crossed gabled roof with a small lean-to on the northern aspect. An 'm' shaped pitch is present at the top of the roof where a 'v' shaped valley is present. The roof is composed of clay tiles and the building has two storeys.
- B2; a smaller, c. 80m^2, building with a single pitch roof and gable ends on its northern and southern aspect is present towards the west of site. The building is used for storage, has a wood clad exterior and a felt roof.
- B3; a similar size, c. 80m^2, building with a painted wood clad exterior and felt roof. A lean-to is present on the southern aspect, whereas dormer windows are present on the western aspect. The building has two floors.

4.3 Protected Species Assessment

Amphibians

Desk Study

4.3.1 Great crested newts (GCN) and their resting / breeding sites are protected under *The Conservation of Habitats and Species Regulations 2017 and The Wildlife and Countryside Act 1981 (as amended).* No records were returned for existing EPSL's within the search area.

Site Assessment

4.3.2 The only pond identified within a dispersible range of the site for GCN is located c. 350m north of site. The GCN mitigation guidelines (EN, 2001) acknowledge that the majority of GCN dispersal occurs within 250m of breeding ponds, unless connected by highly suitable habitat. Suitable habitat exceeding this range is likely to have low to negligible use by GCN. As the site is not directly connected to this pond by suitable habitat, and the extent of works proposed is only likely to have minor impacts to suitable GCN terrestrial habitat (e.g., refuges presented at the base of trees and in hedgerows) it is considered that GCN are unlikely to utilise habitat across site, and proposals have **Negligible** potential to impact on GCN. Therefore, their potential to occur will not be considered further in this report.

Reptiles

Desk Study

4.3.3 Population of common and widespread reptiles, such as grass snake *Natrix helvetica*, common lizard *Zootoca vivipara* and slow worm *Anguis fragilis* are likely to exist within areas of suitable habitat throughout the landscape. All species of UK reptile are protected against reckless or intentional killing or injury, under *The Wildlife and Countryside Act 1981 (as amended).*

Site Assessment

4.3.4 Reptiles require opportunities for basking, foraging and refuge to persist in a landscape. Some limited opportunities are presented by hedgerow / grassland assemblages on the site. However, the botanical assemblage of the hedgerows and lawn species is not diverse, and is intensively managed, unlikely to support prey opportunities viable to support any considerable populations of reptiles, and overall, the site offers **Low** potential to support the species group.

Bats

Desk Study

4.3.5 All species of bat and their roosts are protected under *Regulation 41* of the *Conservation of Habitats and Species Regulations 2017* and *Section 9* of the *Wildlife and Countryside Act 1981*. It is an offence to kill, injure or handle a bat and to disturb a roosting bat intentionally or recklessly. It is also an offence to damage, destroy or obstruct access to any place used by bats for shelter, whether they are present or not.

4.3.6 Two records were returned for EPSL's from within the search area. Records included licences to permit works to common pipistrelle *Pipistrellus pipistrellus,* soprano pipistrelle *Pipistrellus pygmaeus* and Natterer's bat *Myotis nattereri* roosts.

Site Assessment - Trees

4.3.7 All trees on site were assessed for features which could be utilised by roosting bats. Generally, most trees are yet to reach an age of senescence whereby suitable roosting features are present. Some cavities were observed on mature horse chestnut trees at the entrance to the site. However, these were assessed and it was concluded that they do not penetrate far enough into the tree to present sufficient shelter for bats, and therefore are unlikely to be used as roosting features. Overall, the trees on site are likely to offer **Negligible** roosting opportunities for roosting bats.

Site Assessment - Building

4.3.8 The existing buildings on site were assessed for their potential to support roosting bats. A summary of the assessment is shown below:

Table No. 04 – Building Assessment

Ref.	Description	Category
B1	*The internal roof void was assessed from the inside of the structure and no ingress opportunities or evidence of bats was observed. The external assessment noted lifted tiles on the roof, and gaps between different aspects of the roof, which could potentially offer roosting features for crevice dwelling species.*	***Low***
B2	*The building was examined externally only and, owing to the felt roofing, ingress opportunities were concluded to be absent. The soffit / barge board area of the building was assessed for suitable roosting opportunities and none were found.*	***Negligible***
B3	*The building was examined externally only and, owing to the felt roofing, ingress opportunities were concluded to be absent. The soffit / barge board area of the building was assessed for suitable roosting opportunities and none were found.*	***Negligible***

Site Assessment – Commuting and Foraging

4.3.9 The habitats on site are likely to be of some limited use for foraging bats as the site offers shelter from high winds (owing to proximity to the harbour) and could be used as a foraging resource. The surrounding landscape is largely arable land, sparsely connected by degraded hedgerows, of sub-optimal use for bats, which could serve to draw bats in from the wider area. However, due to the limited extent of habitats on site, the site is unlikely to support a notable assemblage of species and is probably significant at the **Site / Local** level.

Dormouse

Desk Study

4.3.10 Hazel Dormice *Muscardinus avellanarius* are protected under *The Wildlife and Countryside Act 1981 (as amended) through their inclusion on Schedule 5 and The Conservation of Habitats and Species Regulations 2017.* No records for EPS licences in relation to dormice were returned from the search area.

Site Assessment

4.3.11 Dormice require extents of arboreal habitat to exist in a landscape, such as woodland and hedgerows. There is a general dearth of woodland in the surrounds and the site is too far away from any notable pockets of woodland where populations are likely to persist. The overall potential for dormice to be found on site is **Negligible** and their potential to occur will not be considered further in this report.

Badger

4.3.12 Badgers *Meles meles* are common and widespread species and are likely to be present in low numbers in agricultural fields throughout the surrounds and in higher concentrations in woodland. However, no evidence of badger was found during the initial survey. Furthermore, the site offers no suitable sett building opportunities for the species, the site is securely fenced off from the wider surrounds and is subject to an anthropic disturbance likely to dissuade badgers from using the site. Overall, the site offers **Negligible** potential to support these species and there potential to occur will not be considered further in this report.

Water Vole

Site assessment

4.3.13 Water vole *Arvicola amphibius* require reedbed habitat to persist in a landscape. As there is no such habitat on site their potential to occur is severely limited and the site is determined to be of **Negligible** suitability for the species. Their potential to occur will not be considered further in this report.

Birds

Desk Study

4.3.14 All wild birds are protected under the *Wildlife and Countryside Act (1981) (as amended),* making it an offence to intentionally kill, injure or take any wild bird, to intentionally take, damage or destroy the egg of any wild bird. Furthermore, it is an offence under the same act to intentionally or recklessly disturb any Schedule 1 listed bird while it is nest building, or at a nest containing eggs or young.

Site Assessment

4.3.15 Hedgerow and scattered trees are likely to support nesting birds during the breeding season, and several old nests were identified at the time of survey. The site itself offers limited potential to support any Schedule 1 species, although the Chichester Harbour SPA, which lies directly adjacent to the south western boundary of site, is likely to support a notable assemblage of species. At the time of survey several wetland birds, including oystercatcher *Haematopus ostralegus*, dunlin *Calidris alpina*, redshank *Tringa tetanus* and wigeon *Anas penelope,* which are all amber listed (Eaton *et al*, 2015), were observed feeding on the mudflats directly adjacent to the site. Wetland birds are known to utilise amenity grassland for feeding and roosting at high tide. However, these birds tend to roost in wide open spaces, so that they can observe the approach of any potential predators. It is considered that the grassland on site is too enclosed, and too small in extent, to be likely to be used as a high tide roost. Great spotted woodpecker *Dendrocopos major* amongst other common passerine birds were noted on site during the walkover survey.

Invertebrates

Site Assessment

4.3.16 The habitats on site are likely to be of some value to common and widespread invertebrates. However, these habitats are ubiquitous throughout the surrounds and do not offer the diversity of microhabitats to support notable guilds of. Overall, the site is likely to be of no greater than **Site** value to invertebrates.

Others

4.3.17 No suitable habitat for any other protected species was recorded on site.

4.4 Survey Constraints / Considerations

4.4.1 The survey was conducted outside of the optimal botanical season, when the presence of certain flora is likely to be restricted. However, it is considered that the survey was sufficiently robust for the purpose of this assessment.

5.0 DISCUSSION AND RECOMMENDATIONS

5.1 Habitats

5.1.1 The greatest ecological interest at the site is associated with the hedgerows and scattered trees. Native species hedgerows and treelines are Habitats of Principal Importance, as listed under the NERC Act (2006) and so are material consideration under the planning process. Policy 49; Biodiversity, of the Chichester Local Plan (Chichester District Council, 2015) states that:

"Planning permission will be granted where it can be demonstrated that […] the biodiversity of the site is safeguarded, demonstratable harm to habitats or species which are protected or are of importance to biodiversity is avoided or mitigated, the proposal has incorporated features that enhance biodiversity as part of good design and sustainable development, and that the benefits of development outweigh any adverse impact on biodiversity on site."

Therefore, efforts to protect, retain and enhance features of ecological value on site should be made wherever possible. Proposals for hedgerow and tree retention should accord with those provided by the British Standards Institution (BSI, 2012) (BSI, 2013).

5.1.2 The neighbouring mudflats, which lie directly adjacent to the south west boundary of the site, are Habitats of Principle Importance (NERC, 2006) and are designated at the national level as a SSSI, and at the international level under the Chichester and Langstone Harbour SPA and Ramsar, and Solent Maritime SAC. Therefore, development must seek to avoid adversely impacting on this feature.

5.1.3 Proposals are for a wildflower meadow toward the north of site, which will be an excellent ecological enhancement and demonstrates good design and sustainable development, meeting local plan policy 49 (Chichester District Council, 2015). There are a variety of ways of creating a wildflower meadow. The quickest and simplest is by installing turf already sown with wildflowers[1] although this can be costly. Alternatively creating a wildflower meadow from scratch involves reducing the fertility of the soil by removing nutrients with successive cuts, initially, 2 to 3 times a year for 2 to 3 years, then reducing to 1 annual cut. Alternatively, this can be expediated by removing c. 6 inches of topsoil, before digging to create a fine tilth and covering to remove weeds until there is bare soil. Then wildflowers may be sown and the meadow should be cut once annually in September. There is a range of guidance available[2]. In order to secure the delivery of this feature the Local Planning Authority may wish to condition that an appropriate wildflower meadow creation, management and monitoring plan is produced, or ensure delivery through agreement with a reputable contractor.

5.1.4 Furthermore, it may be possible to remove the winter heliotrope from the bank to the south west of site and subject the area of semi-improved grassland to annual cutting to promote the growth of wildflowers and increase the natural biodiversity value of the bank.

[1] https://www.wildflowerturf.co.uk/products/wildflower-turf/

[2] https://www.rspb.org.uk/get-involved/activities/give-nature-a-home-in-your-garden/garden-activities/startawildflowermeadow/

5.2 Nature Conservation Designations

Chichester and Langstone Harbour SPA

5.2.1 The SPA is located directly adjacent to the south western boundary of the site. The SPA is designated for its notable assemblage of overwintering waders and waterfowl, including brent geese *Branta bernicla*. Such birds are known to feed on seagrass beds exposed at low tide, and at high tide feed in large open areas of amenity grasslands and farmland with cereal and pasture, often close to the estuary (King, 2010). Such habitat exists directly adjacent to, and in the immediate surrounds of the site. Survey work conducted by the Solent Waders and Brent Goose Strategy determined that the arable field adjacent to the south of site (site code: C3H) is a core area for the strategy. Core areas are defined as sites that have an 'important network score', e.g. they function as 'hubs' or 'bottlenecks' with connections to lots of other sites, linking areas of the network together, and/or have scored highly in GB/SPA importance, and/or have had a max count bird use of 1000 or more (Whitfield, 2019). The arable field to the north of site (site code: C117), on the opposite side of Dell Quay Road, is also designated under the strategy but as a secondary support area. These areas offer a supporting function to the core and primary areas and are generally used less frequently by designated wintering birds and therefore are generally less important. However, these sites become important when wintering bird populations are high or when the land is in suitable management.

5.2.2 It is known that disturbance can have a marked effect on brent geese (amongst other wading birds), causing them to disrupt feeding initially, then fly away if/when volume levels increase (ibid.). However, the nature of the development is temporary, small, involving minimal ground works and unlikely to result in a level of disturbance which would deter wintering birds away from the fields or mudflats which neighbour the site. Nevertheless, as a precaution works that could result in abnormal disturbance levels should aim to be completed between April to September inclusive to avoid impacting on wintering birds whatsoever.

5.2.3 Works should be completed within daylight hours and the site should not be lit at night. The current level of background noise in the area already present from the nearby roads, harbours and from other anthropic sources is likely to significantly increase the level of disturbance required in order to adversely affect any feeding or roosting wintering birds in nearby fields. The SPA is also designated for some summer breeding birds (e.g. present April to September), however these are terns which spend much of their time out at sea, and roost exclusively on shingle coastline habitat, and therefore are not likely to be present within a practicable zone of influence of the development.

5.2.4 As proposals will not result in any net increase in the population in the area, there will not be an increased level of recreational impact, surface run-off, traffic levels, nitrate levels etc. which could directly or indirectly result in a likely significant effect to the SPA or its interest features and overall, **No likely significant effect** is predicted.

Solent Maritime SAC

5.2.5 As set out in para 5.2.3, proposals will not result in an increased population in the local area which could directly or indirectly lead to increased pressures on the SACs interest features. There may be a temporary increase in dust levels resulting from ground works, however this will be extremely small in extent and duration due to the size and nature of the development. Potential impact pathways have been considered alongside the site vulnerabilities (JNCC, 2015) and it is considered that the interest features of the SAC are sufficiently robust to any impact pathways, and therefore development will not result in any likely significant effect and **No likely significant effect** is predicted.

Chichester and Langstone Harbours Ramsar

5.2.5 The Ramsar designation directly overlaps with the Solent Maritime SAC and Chichester and Langstone Harbours SPA designations, and the interest features of the Ramsar are in relation to ornithological and botanical aspects which are addressed in paras 5.2.1 to 5.2.4. **No likely significant** effect is anticipated.

Pagham Harbour SPA & Pagham Harbour Ramsar

5.2.6 As these sites overlap the same area and cover similar interest features (e.g. ornithological) they will be considered together. Potential impacts to terns and dark-bellied brent geese have been considered in paras 5.2.1 - 5.2.2. Ruff are known to favour wet grassland close to the harbour but have not occurred at the harbour in notable numbers for many years (NE, undated) and there is no suitable habitat to support the species within a practicable zone of influence from the development, based on aerial mapping. The potential for black-tailed godwit to be impacted upon is considered within the potential impacts to interest features designated by the Chichester and Langstone Harbour SPA in para 5.2.1 and overall, **No likely significant effect** is predicted.

Kingley Vale SAC

5.2.7 Kingley Vale SAC is designated for its yew woodland, located c. 7.3km north of site. As proposal will not result in any net increase in the local population, the SAC does not stand to be impacted upon from increased recreational pressures or pollution levels etc resultant from proposals. No impact pathways have been identified and therefore **No likely significant effect** is predicted.

Chichester Harbour SSSI

5.2.8 The SSSI designation overlaps with the Chichester and Langstone Harbour SPA and Ramsar, and the Solent Maritime SAC, as well as covering the same interest features. Therefore, provisions to address impacts are considered in paras 5.2.1 to 5.2.5 and **No likely significant effects** are predicted.

Non-Statutory Designated Sites

5.2.9 The site is sufficiently far from any local wildlife sites, identified within a practicable zone of influence of the site, to result in any direct or indirect impacts to their interest features.

5.3 Protected Species

Reptiles

5.3.1 Hedgerow and grassland habitat across the site has been identified as offering habitat suitable to support reptiles, although as the site is small only small populations would be likely to be present, if any, and a full suite of reptile surveys are unlikely to be required. Furthermore, reptiles can be safeguarded throughout development and impacts can be avoided with some simple precautionary measures.

5.3.2 The height of the grass within the grassland should be maintained short preceding and throughout development, to remove any cover opportunities for reptiles, focusing them toward the base of hedgerows and trees. Tree and hedgerow stumps requiring removal should not be uprooted between November and February inclusive when reptiles may be overwintering around their root systems and there is risk of incidental killing and injury, but may be uprooted between March – October inclusive, when reptiles are active and able to move of harm's way. Any loose aggregate should not be left on site, as this could function as a hibernacula and serve to attract reptiles on to the site.

5.3.3 There is the opportunity to provide ecological enhancements for the benefit of reptiles, which could include the provision of a hibernacula, log piles or a mosaic of scrub and grassland habitat within the planting scheme, in line with Policy 49; Biodiversity, of the Chichester Local Plan (Chichester District Council, 2015). A log pile / hibernacula would be particularly well placed towards the north of site, close to the 'Wildflower Meadow' area, which could provide foraging habitat for the species group.

Bats

5.3.4 No roosting potential was observed on the garage located towards the east of site (B2), or throughout trees on site, and further phase 2 survey and investigation are unlikely to be required for elements of proposal which will impact these features. However, low roosting potential was identified across the main building (B1), presented by gaps between the clay tiles. Therefore, should the scheme seek to install solar thermals on this roof, a single presence / absence survey is recommended to scope in or out the presence or likely absence of bats roosting within the structure.

5.2.5 The survey should confirm to good practice standards (Collins, 2016), should be conducted by at least three surveyors to cover all aspects of the roof, and must be conducted between May to August inclusive. If no roosting bats are seen to emerge it will be possible to confirm likely absence and works to the roof may continue regardless. However, should a roost be identified it will be necessary to conduct two further surveys to provide information required to design appropriate mitigation, and in preparation for a licence application to Natural England, in order to permit works which might otherwise constitute an offence under the *Conservation of Habitats and Species Regulations (2017) (as amended)* and the *Wildlife and Countryside Act (1981)(as amended*).

5.2.6 Proposals should avoid impacting upon, and the nocturnal illumination of boundary features, which could offer commuting and foraging opportunities for bats. Ideally, proposals should avoid nocturnal illumination of the site whatsoever, however, if this is not possible lighting proposals should be in line with guidance in relation to bats and lighting (BCT & ILP, 2018) and incorporate features such as PIR and downward facing lights. Furthermore, construction should avoid nocturnal illumination of the site.

5.3.7 There is the opportunity to provide ecological enhancements for bats, such as the installation of bat boxes on boundary trees or incorporated into the fabric of buildings (e.g. the new garage). Lifted tiles provide roosting opportunities for roosting bats and could be considered as part of proposals, in line with Policy 49; Biodiversity, of the Chichester Local Plan (Chichester District Council, 2015).

Birds

5.3.8 Many of the hedgerows and scattered trees on site are suitable to support nesting birds. The grassland is too intensively managed, small and enclosed to support ground nesting birds. All works to hedgerows and scattered trees across the site scheduled for removal should be undertaken outside of the main bird nesting season (given to run March to August inclusive) bearing in mind that any stumps should not be uprooted between November to February to avoid potential impacts to reptiles. Where this is not possible trees and hedgerows may be removed following inspection from a suitably qualified ecologist, who will check for active nests prior to works. Where any active nests are identified a buffer zone should be installed around the nest,

in which no works must take place until the birds have fledged (typically not longer than 3 weeks).

5.3.9 There is the potential to provide ecological gains for nesting birds through the provision of nesting opportunities. This could include shrub and tree planting, and / or bird boxes installed on trees, buildings, or within the fabric of the new building, in line with Policy 49; Biodiversity, of the Chichester Local Plan (Chichester District Council, 2015).

Invertebrates

5.3.10 In order to maintain and enhance local wildlife, in line with Policy 49; Biodiversity, of the Chichester Local Plan (Chichester District Council, 2015), provision for invertebrates should be taken into account during scheme design. This should include forming a planting scheme with flora of known value to invertebrates and pollinators, and the inclusion of insect boxes and/or log piles where possible.

Summary of Recommendations

5.3.11 A summary of recommendations is as follows:

- Protect, retain and enhance all trees and hedgerow scheduled for retention on site in line with BSI standards (BSI, 2012) (BSI, 2013), for the wider benefit of biodiversity.
- Any trees scheduled for removal should be removed to ground level September – February inclusive to avoid impacting on nesting birds (or following inspection from a suitably ecologist)
- Stumps may be uprooted, and initial ground works should be conducted March – October so that any reptiles on site are active and able to move out of harm's way.
- Any construction works which are likely to have unavoidable disturbance impacts (e.g. noise, dust, lighting) should be conducted outside of the wintering bird season to avoid impacting on wintering birds designated as part of the Chichester Harbour suite of sites, e.g. March – October inclusive
- Should proposals involve the siting of solar panels on the main building, an initial single presence / absence survey is recommended in order to confirm likely absence of a bat roost, or to inform the need for further survey and investigation. Survey may be conducted May – August inclusive.
- Incorporation of plants of known value to wildlife within any planting scheme.
- Provision of a Wildflower Meadow Creation, Management and Monitoring Plan, or secured delivery of this feature through agreement with a reputable supplier / contractor.
- Avoid nocturnal illumination of the site, or provision of a sensitive lighting strategy which limits light spill into the surrounding environs, is line with current guidance (BCT & ILP, 2018)
- Provision of enhancements for the benefit of local wildlife in line with Policy 49; Biodiversity, of the Chichester Local Plan (Chichester District Council, 2015).

6.0 ECOLOGICAL ENHANCEMENTS / OPPORTUNITIES

6.1 The design of the proposed development will include ecological enhancements for the benefit of wildlife in line with the *National Planning Policy Framework* and *Local Planning Policy* in order to achieve Biodiversity Net Gain. Recommendations for ecological enhancements that should be considered as part of development proposals include:

- The use of flowering plants as listed within the RHS 'Plants for Pollinators' plant list, within the soft landscape scheme to provide year-round value for invertebrates[3];
- The provision of nesting boxes for a variety of bird species to be placed in suitable locations. Positioning guidance is provided by the RSPB[4];
- The provision of a bat box / lifted tiles, suitable for a range of species to be incorporated in the design stage. Boxes may be situated facing south / south-west, positioned 3-5m above ground and out of reach of cats;
- The provision of log piles and/or insect box, for which a wide variety of models are available, to be located within an area of site subject to the minimal disturbance, such as the northern woodland boundary; and
- There is the opportunity to create a wildlife pond as part of proposals. Guidance for designing such a pond is provided by the RSPB[5] and will be given due consideration.

[3] https://www.rhs.org.uk/science/conservation-biodiversity/wildlife/plants-for-pollinators
[4] https://www.rspb.org.uk/birds-and-wildlife/advice/how-you-can-help-birds/nestboxes/nestboxes-for-small-birds/making-and-placing-a-bird-box/
[5] https://www.rspb.org.uk/birds-and-wildlife/advice/gardening-for-wildlife/water-for-wildlife/planning-a-pond/

7.0 CONCLUSIONS

7.1 The site consists of a main house and two subsidiary garages. The rest of the site is an actively managed garden inclusive of well mown lawns, semi-improved grassland, pruned hedgerows and scattered trees. The greatest ecological interest feature at the site is the assemblage of scattered trees, which provide habitat and foraging resources for a range of widespread fauna. Therefore, efforts should be made to protect, retain and enhance these features wherever possible, particularly the large and mature specimens. Furthermore, the south western boundary of the site is adjacent to the Chichester Harbour, which is protected by several national and international designations. The scheme has been designed so that it is possible to avoid directly impacting upon the harbour whatsoever. Works with the potential for indirect impacts, e.g. through noise and dust pollution should be conducted during the summer, when overwintering birds are not present.

7.2. Given the quantum and nature of development proposed, no investigation in relation to Habitats Regulations work is likely to be required, although precautionary working practices are proposed in order to safeguard important ecological features, and to ensure the favourable conservation status of protected species is maintained. Further phase 2 survey work may be required in relation to bats should impacts to the roof of the main house be anticipated.

7.3 No evidence was recorded on site which would preclude the provision of a well-designed scheme which takes into account the sensitivity of potential ecological receptors. Efforts have been made to imbed a wildflower meadow in scheme design, which will enhance the ecological value of the site in line with Policy 49; Biodiversity, of the Chichester Local Plan (Chichester District Council, 2015). There is potential to incorporate further enhancements where suitable.

8.0 REFERENCES

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Table No. 05 – Species List for Habitat Parcels

Amenity Grassland

Common Name	***Scientific Name***	***DAFOR***
Perennial rye grass	*Lollium perenne*	***A***
Red fescue	*Festuca rubra*	***A***
Feather Moss	*Ptilium sspp.*	***A***
Ribwort plantain	*Plantago lanceolata*	***F***
Daisy	*Bellis perennis*	***F***
Snowdrop	*Galanthus nivalis*	***R***
Winter aconite	*Eranthis hyemalis*	***O***

Semi-improved Grassland

Common Name	***Scientific Name***	***DAFOR***
Perennial rye grass	*Lollium perenne*	***F***
False oat grass	*Arrhenatherum elatius*	***F***
Red fescue	*Festuca rubra*	***O***
Ribwort plantain	*Plantago lanceolata*	***R***
Feather Moss	*Ptilium sspp.*	***O***
Bramble	*Rubus fruitcosus agg.*	***R***
Yarrow	*Achillea millefolium*	***O***
Daisy	*Bellis perennis*	***O***
Cow parsley	*Anthriscus sylvestris*	***F***
Butcher's broom	*Ruscus aculeatus*	***R***
Lords-n-ladies	*Arum maculatum*	***O***
Primrose	*Primula vulgaris*	***R***
Winter heliotrope	*Petasites fragrans*	***A***

Scattered Trees

Common Name	***Scientific Name***	***DAFOR***
Cherry	*Prunus sp.*	***O***
Horse Chestnut	*Aesculus hippocastanum*	***F***
Leyland Cypress	*Cupressus x leylandii*	***F***
Loquat	*Eriobotrya japonica*	***R***
Magnolia	*Magnolia sp.*	***R***
Rhododendron	*Rhododendron ponticum*	***R***
Blue atlas cedar	*Cedrus atlantica*	***R***
Sycamore	*Acer pseudoplatanus*	***O***
Elm	*Ulmus sp.*	***R***
Beech	*Fagus sylvatica*	***O***
Hawthorn	*Crataegus monogyna*	***O***
Holm oak	*Quercus ilex*	***R***
Pedunculate oak	*Quercus robur*	***F***
Scot's pine	*Pinus sylvestris*	***O***
Pine	*Pinus sp.*	***R***
Apple / pear	*Malus sp. / Pyrus sp.*	***O***

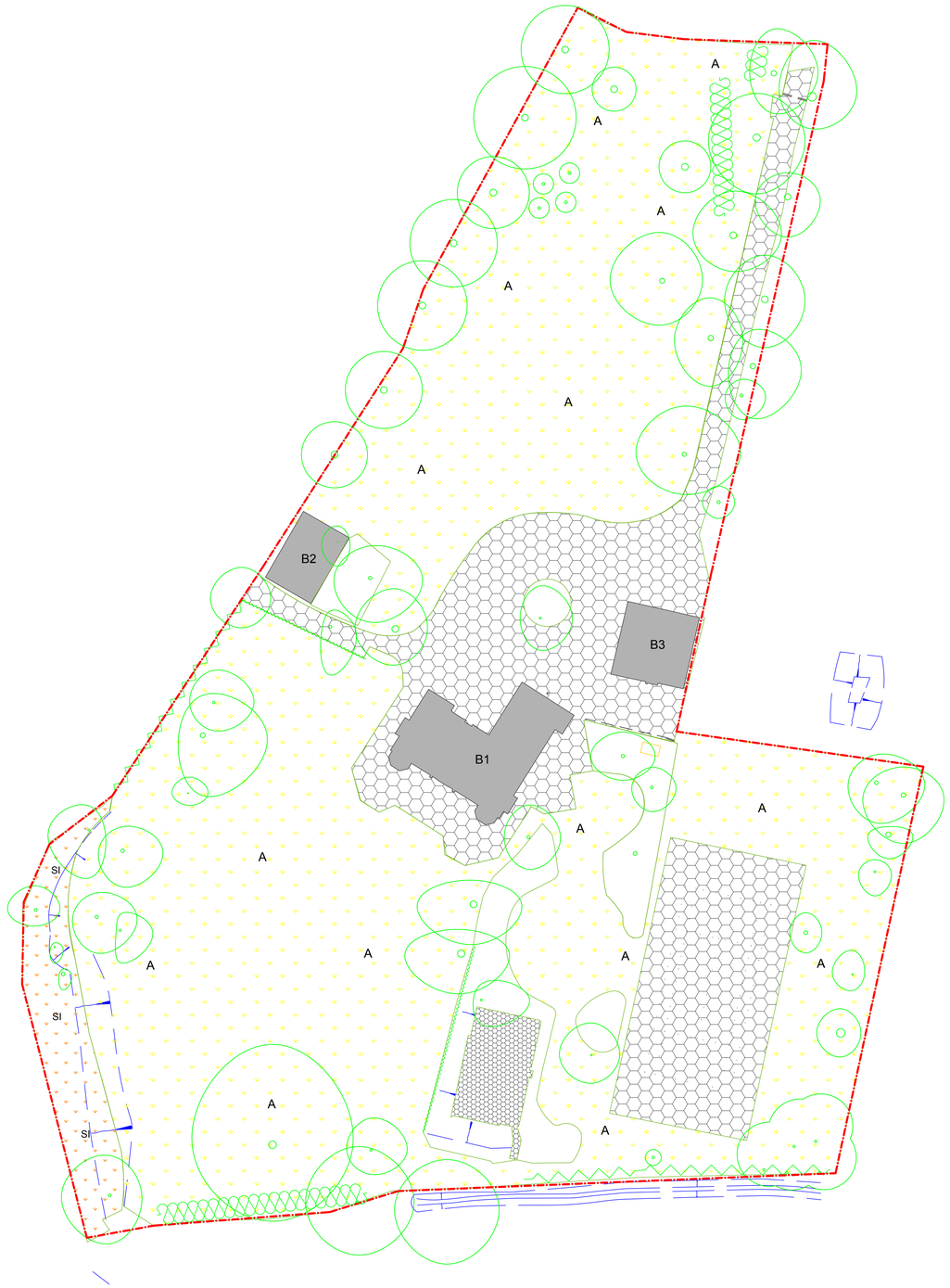
Silver birch	*Betula pendula*	***O***
Walnut	*Juglans sp.*	***O***

Hedgerows

Common Name	***Scientific Name***	***DAFOR***
Portuguese laurel	*Prunus lusitanica*	***R***
Cherry laurel	*Prunus laurocerasus*	***O***
Yew	*Taxus baccata*	***F***
Hawthorn	*Crataegus monogyna*	***R***
New Zealand broadleaf	*Griselinia littoralis*	***O***

D – Dominant; A – Abundant; F – Frequent; O – Occasional; R – Rare; L – Locally

Figure No. 01 - Site Habitat Plan



Legend - 1:250

- Site Boundary.
- Existing Building.
- B1 — Building Number.
- Hardstanding.
- A — Amenity Grassland.
- SI — Semi Improved Grassland.
- Introduced Shrub.
- Scattered Trees.
- Intact Hedge: Species Poor.
- Non-native Hedgerow.

N

Figure No.1 - Site Habitat Plan
Apuldram House, Dell Quay Road, Chichester

Planning Issue

Rev	Description	Date	Initials
00	Planning Issue	02.02.21	LB

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Client
Randell Design Group Ltd.

Project Title and Location
Apuldram House
Dell Quay Road, Chichester

Drawing Title
Figure No.1 - Site Habitat Plan

Scale	Drawn	Approved	Date
1:250@A0	LB	GS	02.02.21

Drawing No: LLD2207-ECO-FIG-001
Revision: 00

Appendix A – Site Photographs

Photograph No: 1 - Oystercatcher feeding on mudflats off site

Photograph No: 2 - Gaps between tiles present potential roosting features for crevice dwelling bats

Photograph No: 3 - Amenity grassland with little floristic diversity

Photograph No: 4 - Patch of ornamental planting