

LAND SOUTH OF CORNFIELD CLOSE LITTLEHAMPTON

ECOLOGICAL IMPACT ASSESSMENT



Ecology
Archaeology
Arborealiculture
Landscape Architecture

THAKEHAM CLIENT
ON BEHALF OF
CLARION HOUSING
ASSOCIATION

Written By:	SL
Checked By:	DW
Date:	12.11.18
Document File Ref:	THA21635
Revision:	R2

Contents

1.0	EXECUTIVE SUMMARY	1
2.0	INTRODUCTION, CONTEXT AND PURPOSE	3
3.0	METHODOLOGY	5
4.0	BASELINE CONDITIONS	16
5.0	LEGISLATION AND PLANNING POLICY	36
6.0	ASSESSMENT OF EFFECTS AND MITIGATION MEASURES	43
7.0	CONCLUSIONS	55

APPENDIX 1	ECOLOGICAL FEATURES PLAN
APPENDIX 2	POND LOCATION PLAN
APPENDIX 3	REPTILE REFUGIA LOCATION AND ACTIVITY PLAN
APPENDIX 4	PROPOSED SITE PLAN
APPENDIX 5	ECOLOGICAL MITIGATION AND COMPENSATION PLAN

1.0 EXECUTIVE SUMMARY

- 1.1 ACD Environmental Ltd carried out an Ecological Impact Assessment of a parcel of land south of Cornfield Close, Littlehampton, hereafter referred to as the 'Application Site'.
- 1.2 The Application Site is dominated by managed grassland, with single-storey buildings concentrated on the north-east corner of the site. Other habitats on site include introduced shrub, scattered trees, a tree line, dense scrub, refuse-tips, tall ruderal vegetation and hedgerows.
- 1.3 The Application Site will be subject to a planning application for residential development, comprising 77 units.
- 1.4 The invasive Japanese knotweed is present on the northern and western boundary of the Application Site, therefore, its immediate removal by a specialist contractor is recommended.
- 1.5 Ten trees along the southern boundary are assessed as having varying levels of suitability to support roosting bats and the boundary features are suitable for foraging and commuting bats. The southern boundary tree line is anticipated for retention, however, two trees of high suitability for roosting bats require removal for reasons of Health and Safety, according to the Arboricultural Assessment. Subsequently, an endoscopic survey was undertaken of the two trees in May 2018, which reassessed one to be of low suitability for bats due to the shallowness of a rot hole and the presence of a bee hive in a woodpecker hole. The second tree was reassessed to be of medium suitability for bats roosting due to the presence of foliage in front of the suitable features which is likely to discourage bats and the debris recorded and absence of evidence of bats, such as droppings within the crevices themselves. The two trees are to be removed following a 'soft-felling' methodology, under the supervision of a suitably licenced ecologist. Lighting control measures are also recommended to retain the Application Site's suitability for roosting, foraging and commuting bats.
- 1.1 A reptile presence/likely absence survey was undertaken within the Application Site throughout the month of May 2018. The survey identified one juvenile slow-worm

within the north-west corner of the Application Site. According to best practice guidelines juveniles are not included within a population count, however, the presence of a juvenile implies that adults are also likely to be present in low numbers. In response to the survey results a translocation programme is not deemed necessary and a more pragmatic approach is recommended in the form of a phased clearance methodology under the supervision of a suitably qualified ecologist. The phased clearance will allow reptiles to move on their own accord to the site boundaries which are to be retained throughout the development.

- 1.2 The Application Site is assessed as having potential to support nesting birds within the dense scrub, trees, hedgerows and introduced shrub. Precautionary clearance measures have been recommended to prevent the risk of death and/or injury of nesting birds.
- 1.3 There is potential for other notable species to be present on site in the form of badger and hedgehog. Precautionary clearance measures of dense vegetation have been recommended for birds and slow-worm, which will also prevent unnecessary harm to badger and hedgehog.
- 1.4 Habitat and protected species compensation and enhancements have been provided within this report. They include strengthening of the western boundary hedgerow, and creation of new native species-rich hedgerows along the southern and eastern boundaries. This will provide suitable shelter for slow-worm, hedgehog, nesting birds and enhanced foraging habitat for bats. Extensive amount of tree and shrub planting and meadow sowing of species of known benefit to wildlife is also recommended as well as, the creation of hibernacula for reptiles and artificial bird, bat and insect boxes.
- 1.5 Provided that the mitigation and enhancements outlined within this report are adhered to the proposals will be in compliance with legislation and planning policies, including the NPPF and Local Policy.

2.0 INTRODUCTION, CONTEXT AND PURPOSE

Introduction

- 2.1 ACD Environmental Ltd was commissioned by Thakeham Client Ltd on behalf of Clarion Housing Association Ltd to carry out a Preliminary Ecological Appraisal (PEA) of a parcel of land south of Cornfield Close, Littlehampton, BN17 6HY (TQ 03389 03261), hereafter referred to as the Application Site.
- 2.2 The Application Site is approximately 2.7ha and bordered by residential development to the north and north-east, Cornfield School to the north-west and an open access field, frequently utilised by dog walkers, to the south, east and west. The site comprises a former campsite and the grassland is regularly managed and maintained as a short sward. There are single-storey buildings located on the north-east corner of the site and an unmanaged area along the western boundary dominated by dense scrub and tall ruderal vegetation with mown paths weaving through. A mature tree line also extends along the southern boundary and overhangs into the southern half of the eastern boundary.



Image 1: Site location and approximate site boundary shown in red (Google Maps).

Context

- 2.3 Planning is being sought to re-develop the Application Site for 77 residential units. Site access is to remain as existing, via Cornfield Close on the north-east corner. The proposals include the retention of the boundary trees and western boundary hedgerow.

Purpose

- 1.6 Ecological Impact Assessment (EclA) assesses the effects of a non-EIA development proposal on ecological resources/features, clearly identifying any 'likely significant effect/s' (LSE) and impacts on any designated sites or protected species, and detailing the mitigation measures required, as well as how these will be secured.
- 1.7 An EclA can be considered as having three main purposes:
- Providing an objective assessment of the ecological impacts and effects of the proposed development or activity;
 - Enable objective determination of the consequences of the proposals in terms of National, regional and local policies relevant to biodiversity and nature conservation; and
 - Demonstrate that the proposed development will meet the legal requirements relating to habitats and species.
- 1.8 This report includes all the ecological information necessary for a decision to be made. Key aspects include:
- Statement of ecological survey methods used;
 - Description of the existing ecological baseline conditions;
 - Description of legal and policy consequences;
 - Identification of likely impacts and an explanation of their significance on the ecological receptors; and

- Explanation of the required mitigation and compensation measures and recommended enhancement measures

3.0 METHODOLOGY

Names and qualifications of surveyors

- 3.1 The Phase 1 Habitat survey was carried out by Sophie Lancaster of ACD Environmental Ltd. Sophie is an Ecologist for ACD Environmental Ltd. She has been involved in a wide range of ecological projects including extended Phase 1 surveys, Phase 2 surveys for protected species, and EPS licence applications. She is an Associate Member of the Chartered Institute of Ecology and Environmental Management (ACIEEM) and holds Natural England licences for bats and great crested newt *Triturus cristatus*.
- 3.2 Subsequent reptile presence/likely absence surveys were conducted by Sophie Lancaster, Victoria Mercier (Graduate Ecologist for ACD Environmental) and Rosie Tobin-Moss (Graduate Ecologist for ACD Environmental).
- 3.3 The endoscopic survey was undertaken by Nicholas Jones and Sophie Lancaster. Nicholas is a Senior Ecologist with over 10 years' experience and has been involved in a wide range of ecological projects involving Extended Phase 1 surveys, Phase 2 surveys for protected species and European Protected Species (EPS) licence applications. Nicholas holds Natural England Class Licences for bats, great crested newt and barn owl and is one of a small number of ecologists who is a Registered Consultant under the Bat Low Impact Class Licence (BLICL). Nicholas has extensive development project experience, on sites of varying sizes from individual dwellings to strategic land allocations involving a wide range of issues. He has experience of projects from PEA to Ecological Impact Assessments (EclA) and Environmental Statements (ES) for Environmental Impact Assessment (EIA). Nicholas is a Full Member of CIEEM

Background Data Search

- 3.4 Whilst field survey is invaluable and provides a "snap-shot" of the species and habitats present, it is also important to research existing ecological knowledge, such as biological records, and any relevant ecological information from the surrounding area.
- 3.5 The data search has been undertaken within a 5km radius of the Application Site

for statutory protected nature conservation sites and within a 2km radius for non-statutory protected sites and protected species records.

3.6 The data search involved collating information from the following sources and, where relevant, the information provided has been incorporated with acknowledgement within this report:

- The Multi-Agency Geographic Information for the Countryside (MAGIC) website¹, (statutory protected nature conservation sites within a 5km radius); and
- Sussex Biodiversity Record Centre (SBRC), (non-statutory protected sites and species within a 2km radius).

Habitat Survey

3.7 The Application Site was surveyed on 11th January 2018, using a technique based upon Phase I habitat survey methodology². This 'extended' Phase I technique provides an inventory of the basic habitat types present and allows identification of areas of greater potential which require further survey. Any such areas identified can then be examined in more detail. The vegetation present was clearly visible and allowed an accurate assessment to be made.

3.8 Using the above method, the site was classified into areas of similar botanical community types with a representative sample of those species present at the time of the survey being described.

3.9 Although the survey falls outside the recommended seasonal period for botanical work and could therefore have some limitations, ACD believe that the evaluation and habitat descriptions, and hence the impacts and their significance are fully accurate because given the type of vegetation and habitats present, the valuation of the intrinsic interest is very unlikely to change.

Fauna

3.10 Incidental records of fauna were also made during the survey and the habitats

¹ <http://www.natureonthemap.naturalengland.org.uk/MagicMap.aspx>.

² JNCC, (2010), *Handbook for Phase 1 habitat survey - a technique for environmental audit*. JNCC, Peterborough.

identified were evaluated for their potential to support legally protected species and other species of conservation concern, including species listed on UK Post-2010 Biodiversity Framework, which supersedes UK Biodiversity Action Plan and lists Habitats and Species of Principal Importance.

3.11 In addition to the extended Phase I survey, the following species surveys were undertaken:

- Badger *Meles meles* – visual survey;
- Bats – Ground level tree assessments for bats and inspection of bat potential roosting features (PRFs) in trees with an endoscope; and
- Reptile presence/likely absence survey.

Badger

3.12 A search for badger setts and evidence of badgers was carried out as part of the PEA. January is considered to be an optimal month for this type of survey. The Application Site was systematically surveyed for evidence of badgers, in the form of:

- Faeces - badgers deposit faeces in characteristic excavated pits, concentrations of which (latrine sites) are typically found at home range boundaries, field boundaries and around setts;
- Setts, comprising either single isolated holes or a series of holes, which may be linked to each other underground;
- Worn paths used by badgers, often linked to setts or foraging grounds;
- Scratching posts at the base of tree trunks;
- Snuffle holes (scrapes where badgers have searched for food);
- Day nests (bundles of grass and other vegetation where badgers may sleep above ground);
- Hairs (usually found outside setts or caught under fencing); and

- Footprints.

3.13 The dense scrub on the western boundary was impenetrable and there is potential for existing badger setts to be missed as a result. Appropriate mitigation has been recommended within this report to combat this limitation.

Bats - Preliminary Roost Assessment

3.14 A Preliminary Roost Assessment (PRA) was carried out on 29th May 2018, with reference to guidance published by the Bat Conservation Trust³. This is an external and internal inspection survey, the purpose of which is to assess the likelihood of bats being present and the need for further survey and/or mitigation.

3.15 A systematic search was made of the building and the ground, especially below potential access points where present. Such features include windows sills, window panes, walls, tiles, weather boarding, lead flashing, eaves, behind peeling paintwork or surfacing materials and under tiles, and other cracks and crevices that provide protection from the elements. Such features are known to be used by roosting bats.

3.16 Once the external inspection had been completed, an internal inspection was also undertaken. Where present, particular attention was paid to the following:

- Droppings, urine staining and bat corpses;
- Timber beams (for free hanging bats);
- Timber joints (for crevice-dwelling bats);
- Clean swept floors (which may indicate evidence has been removed);
- Droppings beneath the ridge and hip beams of the roof and junctions between the two;
- Droppings and urine staining on and at the base of dividing walls, gable end walls and around chimney breasts;
- Droppings beneath timber work;

³ Collins, J. (ed.) (2016) *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn)*. The Bat Conservation Trust, London.
ACD Environmental

- Droppings and corpses beneath roof insulation;
- Corpses at the base of walls and near wall plates at the base of rafters;
- Corpses in uncovered water (header) tanks or other containers in the roof;
- Bat-fly (Nycteribiid) pupal cases;
- Scratch marks and characteristic staining from fur oil on timber and walls;
- Mortise joints and junctions between roof timbers and between timbers and walls;
- Clean gaps and sections of ridge beam and other timber and walls within the roof;
- Gaps between lintels above windows or doors;
- Light gaps in the roof indicating access points to the outside;
- Access to cavity or rubble-filled walls; and
- Cool areas suitable for torpor or hibernation.

3.17 The following equipment was used for the bat survey:

- Elevation and baseline drawings of the building or structure;
- Binoculars;
- Powerful torch to illuminate dark corners from the ground;
- Ladder;
- Collection pots and labels for corpses and droppings;
- Camera to record evidence and potential roosting sites; and
- Personal protective equipment (e.g. boots, gloves, helmet, mobile phone).

3.18 In addition to the building, the trees scheduled for arboricultural work were also

assessed for bat roosting potential. The following features and signs of bats were searched for on the trees:

- Cracks, splits and loose bark;
- Cavities and hollows;
- Woodpecker holes;
- Smoothing of surfaces around entry points or inside cavities;
- Dark staining from droppings and urine;
- Bat droppings in and around entrance;
- Audible squeaking during warm weather;
- Flies around entrance; and
- Smell of bats.

3.19 An inspection of the PRFs within two trees anticipated for removal was undertaken using an endoscope (Rigid Micro CA-300) on the 29th May 2018. The features were accessible from ground level and ladder.

3.20 Full access to the buildings on the north-east corner of the site was not possible. This is not considered a significant limitation as the buildings are small with a simple single-pitched roof design and thus, no visual limitations were reported with undertaking the external inspection from a distance.

Reptiles

3.21 The tall ruderal vegetation, scrub and introduced shrub habitat within the Application Site was assessed to be suitable to support widespread species of reptiles.

3.22 Surveys were carried out with reference to the *Herpetofauna Workers' Manual*⁴ and

⁴ Gent, A. H., and Gibson, S. D., eds. (1998). *Herpetofauna Workers' Manual*. Joint Nature Conservation Committee, Peterborough.

Froglife Advice Sheet 10: Reptile Survey⁵. The survey comprised an artificial refuge survey where refugia are deployed in suitable reptile habitat. To establish presence or absence, a minimum of seven checks of the refugia were carried out in suitable weather conditions during May 2018.

3.23 The total area of the Application Site is approximately 2.7 hectares. In accordance with Gent and Gibson⁶, refugia should be deployed at a density of at least 10/ha of suitable habitat. Reptile mats were deployed on 30th April 2018 comprising a total of 60 refugia in suitable habitat within the Application Site. The refugia were therefore deployed at a density exceeding the minimum required by 130%.

3.24 The refugia were left for 8 days before checking to allow the refugia to 'bed-in' and become more attractive to reptiles before the first survey commenced.

3.25 The weather conditions during the reptile surveys are shown in **Table 3.1** below.

Table 3.1 Weather conditions during the reptile surveys.

Survey	Date	Time	Weather Conditions
1	08/05/18	9.45 – 10.15	Cloud cover 0%, wind Beaufort 2, Temperature 14 - 15°C
2	10/05/18	12:00 – 12:30	Cloud cover 50%, wind Beaufort 3, Temperature 14°C
3	15/05/18	9:00 – 9:30	Cloud cover 5%, wind Beaufort 3, Temperature 16 - 17°C
4	17/05/18	11:30 – 12:00	Cloud cover 0%, wind Beaufort 2, Temperature 14°C
5	21/05/18	10:30 – 11:00	Cloud cover 0%, wind Beaufort 4, Temperature 14°C
6	24/05/18	09:50 - 10:20	Cloud cover 100%, wind Beaufort 1, Temperature 15°C
7	29/05/18	09:15 – 10:00	Cloud cover 100%, wind Beaufort 5, Temperature 16°C

3.26 Relative population size and density was estimated by taking the maximum number

⁵ Froglife Advice Sheet 10: An Introduction to Planning, Conducting and Interpreting Surveys for Snake and Lizard Conservation. [Online]. Available from: www.froglife.org.

of adults recorded by one person in one day, as recommended by Froglife⁶. The Froglife system classifies populations as either 'low', 'good' or 'exceptional' based on the peak adult count seen by observation and/or under tins (placed at a density of up to 10 per hectare), by one person in one day. A peak count of less than 5 adults equates to a low population, a peak count of 5-20 adults equates to a good population, and a peak count of more than 20 adults equates to an exceptional population.

Limitations

3.27 The majority of the surveys were carried out during the optimal survey month of May and all survey were undertaken during suitable weather conditions; with temperatures between 9°C - 18°C, dry and low winds.

3.28 Although attempts have been made to standardise reptile surveys methods, there is no single accepted standard methodology for surveying reptile populations or estimating population size.

3.29 Froglife⁷ states that 20 visits can be required on certain sites to obtain a population estimate. However, Sewell *et al* (2013)⁸ suggests that 20 visits are only required for capture-mark-recapture techniques - which call for intensive (and more invasive) effort. For those reasons, capture-mark-recapture is very impractical and is not advocated for most development projects. Sewell *et al* (2013)⁹ recommends for reptile counts and densities, 6-10 visits are required, ideally spread over the periods when highest counts are likely are required.

3.30 When determining presence/absence of reptiles, Sewell *et al* (2012)¹⁰ found that three to four checks provided a 95% confidence in the results. Therefore, the survey effort conducted here is considered suitable to establish presence/ likely absence

⁶ Froglife (1999). Reptile survey - An introduction to planning, conducting and interpreting surveys for snake and lizard conservation. Froglife advice sheet 10. <http://www.froglife.org/advice/sheets/htm>

⁷ Froglife (1999). Reptile survey - An introduction to planning, conducting and interpreting surveys for snake and lizard conservation. Froglife advice sheet 10. <http://www.froglife.org/advice/sheets>

^{14&9} Sewell, D., Griffiths, R. A., Beebee, T. J. C., Foster, J., and Wilkinson, J. W (2013). Survey protocols for the British Herpetofauna. ARC, University of Kent and University of Sussex.

¹⁰ Sewell, D., Guillera-Arroita, G., Griffiths, R.A. and Beebee, T.J.C. (2012). *When is a species declining? Optimizing survey effort to detect population changes in reptiles*. PLoS ONE 7(8): e43387.doi:10.1371/journal.pone.0043387.

of reptile species.

Habitats and Species Evaluation and Impact Assessment

3.31 The habitats and species evaluations are made with reference to the CIEEM guidelines for Ecological Impact Assessment¹¹, Ecological Report Writing¹² and Guidelines for Preliminary Ecological Appraisal¹³ (PEA).

3.32 These guidelines aim to give a degree of consistency in approach to evaluating the importance of the ecological features within the Application Site and any effects or impacts a scheme will have upon them.

3.33 Firstly, the species or habitats must be valued and a commonly used framework involves assigning a level of geographical importance to ecological receptors. This framework incorporates a wide range of legislation and governmental guidance in assessing each feature's value.

3.34 Next, the impacts of the proposed scheme have to be predicted, taking into account different stages and activities within the development process. These impacts then have to be assessed for their significance, based upon the value of the species or habitat in question. The assessment of impact significance is done before and after any proposed mitigation to give an overall indication of significance.

3.35 The value of specific ecological receptors (sites, habitats or species) is assigned according to their level of importance using the following terms:

- International value;
- UK value;
- National value (England);
- Regional value (South West);

¹¹ CIEEM (2016) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater and Coastal, 2nd edition. Chartered Institute of Ecology and Environmental Management, Winchester

¹² CIEEM (2017) Guidelines on Ecological Report Writing. Chartered Institute of Ecology and Environmental Management, Winchester.

¹³ CIEEM (2017) Guidelines for Preliminary Ecological Appraisal, 2nd edition. Chartered Institute of Ecology and Environmental Management, Winchester.

- County value (Hampshire);
- District value (New Forest National Park Authority);
- Local or Parish value (Pennington); and
- Of value within the context of the Application Site; and
- Negligible value.

3.36 When describing ecological impacts, consideration should be made (where applicable) to the following characteristics:

- Beneficial or adverse (positive or negative);
- Extent (spatial or geographical area);
- Magnitude (minor, moderate, major, extreme);
- Duration/timing – short and medium term (construction phase) and long term (operational phase);
- Frequency (in relation to number of years/lifecycles); and
- Reversibility (temporary or permanent).

Significance Criteria

3.37 In accordance with the current CIEEM guidance and terminology, a significant effect, in ecological terms, is defined as an effect that either supports or undermines biodiversity conservation objectives for ‘important ecological features’ (which could be species or habitats), or for biodiversity in general. Effects can be considered significant at a wide range of scales from international to local.

3.38 A significant effect is a positive or negative ecological effect that should be given weight in judging whether to authorise a project. It can influence whether permission is given or refused and, if given, whether the effect is important enough to warrant conditions, restrictions or further requirements such as monitoring.

3.39 A significant effect does not necessarily equate to an effect so severe that consent

for the project should be refused planning permission. For example, many projects with significant negative ecological effects can be lawfully permitted, as long as the mitigation hierarchy has been applied effectively as part of the decision-making process.

3.40 In broad terms, significant effects encompass impacts on structure and function of defined sites, habitats or ecosystems and the conservation status of habitats and species (including extent, abundance and distribution).

3.41 Significant effects should be qualified with reference to an appropriate geographic scale. For example, a significant effect on a Site of Special Scientific Interest (SSSI) is likely to be of national significance. However, the scale of significance of an effect may not be the same as the geographic context in which the feature is considered important. For example, an effect on a species which is on a national list of species of principal importance for biodiversity may not have a significant effect on its national population. Examples of other relevant scales include regional and county. It should be noted that effects may be significant at the local scale, particularly in view of policies for no net loss of biodiversity.

3.42 When seeking mitigation or compensation solutions, efforts should be consistent with the geographical scale at which an effect is significant. For example, mitigation and compensation for effects on a species population significant at a county scale should ensure no net loss of the population at a county scale. The relative geographical scale at which the effect is significant will have a bearing on the required outcome which must be achieved.

Precautionary Principle

3.43 The evaluation of significant effects is based on the results of the ecological surveys carried out in the Application Site and other available evidence. In cases of reasonable doubt, where it is not possible to robustly justify a conclusion of no significant effect, a significant effect is assumed. Where uncertainty exists, it has been duly acknowledged.

4.0 BASELINE CONDITIONS

4.1 Set out below are the results of the background data searches and field surveys.

Context

4.2 The Application Site is located within the seaside town of Littlehampton, surrounded by the associated residential and commercial development. The southern half of the Application Site is bounded by public open space and the northern half is bounded by a school and residential properties.

Data Search Results

Designated Sites

4.3 Statutory designated sites are the most significant ecological receptors and include Special Areas of Conservation (SACs), Special Protection Areas (SPAs) and Ramsar sites of **International Value** and Site of Special Scientific Interest (SSSIs) of **National Value**

4.4 Local Nature Reserves (LNRs) are notified under Section 21 of the National Parks and Access to the Countryside Act 1949 by local authorities and are of **Local Value**. They are not necessarily of great ecological value, and are intended for public appreciation and enjoyment of wildlife. The LNR designation does not afford special protection, although LNRs are protected under legislation and planning policy.

Table 4.1 List of statutory designated sites within a 5km radius of the site.

Name of statutory designated sites	Approximate distance from Application Site	Reason for designation
West Beach LNR	1.78km south-west	The LNR is predominantly within the footprint of Climbing Beach SSSI (below).
Climbing Beach SSSI	2.1km south-west	The designation comprises a stretch of coast with a nationally uncommon habitat of vegetated shingle beach, behind which is a sand dune system. The intertidal zone supports important populations of wintering birds including numbers of wintering sanderling <i>Calidris alba</i> of European significance. Other wintering birds include grey plover <i>Pluvialis squatarola</i> and oystercatcher

		<i>Haematopus ostralegus</i> .
Arundel Park SSSI	4.3km north	The designation qualifies for: • Species-rich chalk grassland containing several plants uncommon in Sussex; • Woodland comprising rare/notable shrubs and herbaceous varieties; • Swanbourne Lake and an active quarry with uncommon flora; • Rare invertebrates include the field cricket <i>Gryllus campestris</i> and the beetle <i>Laemophloeus monilis</i>, 25 butterfly species and a rare mollusc in the river bank reedbed; and • Notable bird species and assemblages, including important numbers of wintering wildfowl such as gadwall <i>Anas strepera</i> and pochard <i>Aythya ferina</i>. The Wildfowl Reserve supports a locally notable population of breeding sedge warbler <i>Acrocephalus schoenobaenus</i> and reed warblers <i>A. scirpaceus</i>.

4.5 In Sussex, local sites are termed Local Wildlife Sites (LWS), which are of **County Value**.

Table 4.2 shows the LWS sites within 2km of the site.

Name of SSCI	Approximate distance from Application Site	Nature Conservation Interest
Littlehampton Golf Course and Atherington Beach LWS	1.57km south-west	The golf course is botanically significant. There are pockets with species rich swards supporting numerous notable/county rare/nationally scarce species. There is also notable ditch flora and a vegetated shingle beach with uncommon plants. The whole area is of ornithological importance, particularly for migrant birds. Several pairs of reed warblers breed in the small patches of reed on the golf course.

Protected Species Records

4.6 The relevant protected species records are incorporated into the Fauna section, below, with due acknowledgement.

Survey Results

Habitats

4.7 The Application Site supports the following habitats:

- Buildings and Hardstanding;
- Dense Scrub;
- Introduced Shrub;
- Poor Semi-improved Grassland;
- Native Species-poor Hedgerow;
- Refuse-tip;
- Scattered Trees/Tree Line; and
- Tall Ruderal Vegetation.

4.8 For ease of reference, habitat types have been described alphabetically, below. All the features described are shown on the Ecological Features Plan at **Appendix 1**.

Buildings (J3.6) and Hardstanding

4.9 A tarmac road circles around the Application Site and six single-storey buildings are located within the north-east corner. Four of the six buildings are within private property, where access was not permitted during the Application Site visit. However, the buildings were still visible from a distance and identified to predominantly comprise ship-lap elevations, with the exception of a weatherboard garden shed (referenced as Building 6 in **Appendix 1**). The garden shed (Building 6) and Building 3 featured flat bitumen felt roofs. Building 5, features a single pitched roof with a mixture of translucent and opaque corrugated sheeting. Only Building 2 features a tiled roof, with the tiles being interlocking clay tiles in good condition.

4.10 The two properties outside of private residence include the reception building (Building 1), which comprises shiplap elevations, a pitched bitumen felt roof and uPVC window and door frames. The second building (Building 4), has since been demolished by the previous owners. The building was a toilet and shower facility

with shiplap elevations and a single pitched roof comprising a mixture of opaque and translucent corrugated sheeting.



Photograph 1: Communal toilet and shower building (since been demolished), which is the typical building design within the Application Site.

4.11 The buildings and hardstanding within the Application Site are of **negligible value**.

Dense Scrub (A2.1)

4.12 The dense scrub is predominantly located on the western boundary and is dominated by bramble *Rubus fruticosus* agg. with scattered buddleia *Buddleja davidii* and young trees of elder *Sambucus nigra*, Norway maple *Acer platanoides*, Monterey pine *Cupressus macrocarpa* and cherry *Prunus* sp.

4.13 A thin strip of bramble scrub is also present on the northern boundary. On the south-east corner of the Application Site is a less dense and lower lying area of bramble scrub with a small amount of holly *Ilex aquifolium*.

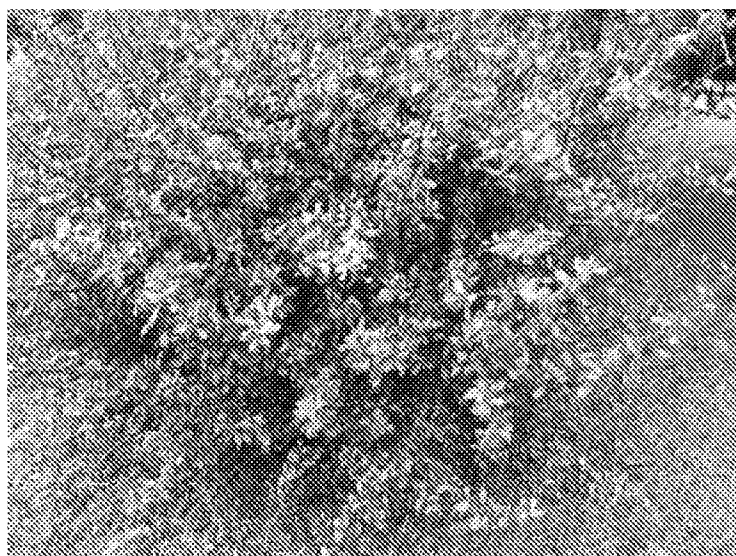


Photograph 2: Example of dense scrub within the Application Site.

4.14 The dense scrub within the Application Site is of **site value**.

Introduced Shrub (J4)

4.15 Patches of introduced shrub are scattered throughout the Application Site, predominantly located within the circular tarmac road. The varieties are predominantly non-native ornamentals including cotoneaster sp., rosemary *Rosmarinus officinalis* and snowberry *Symphoricarpos albus*. Native species mixed in with the planting include yew *Taxus baccata* with single young specimens of ash *Fraxinus excelsior* and sycamore *Acer pseudoplatanus*.



Photograph 3: Introduced shrub on site.

- 4.16 A large stand of Japanese knotweed *Fallopia japonica* is present along the western half of the northern boundary and the northern half of the western boundary (see Target Note (TN) 12 in **Appendix 1**). The Japanese knotweed has evidently been maintained over several years as boundary feature planting.
- 4.17 Japanese knotweed are listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended). This makes it illegal to plant or otherwise cause the species to grow in the wild



Photograph 4: View of Japanese knotweed on northern boundary.

- 4.18 The introduced shrub on site is of **site value** with the exception of the areas of Japanese knotweed which are of **negligible ecological value**.

Poor Semi-improved Grassland (B6)

- 4.19 Poor semi-improved grassland predominates on site and is managed at a short height. The grassland is assessed as being a low value sward as grasses dominate and the herbaceous species present are indicative of high nutrient inputs. The species present include perennial rye-grass *Lolium perenne*, dove's-foot crane's-bill *Geranium molle*, white clover *Trifolium repens*, creeping buttercup *Ranunculus repens*, cleaver's *Galium aparine*, annual meadow-grass *Poa annua*, cock's-foot *Dactylis glomerata*, daisy *Bellis perennis*, lesser trefoil *Trifolium dubium*, common ragwort *Senecio jacobaea*, creeping cinquefoil *Potentilla reptans*, scarlet pimpernel *Anagallis arvensis subsp. arvensis*, ribwort plantain *Plantago lanceolata*, yarrow *Achillea millefolium*, smooth sow-thistle *Sonchus oleraceus*, spotted medick

Medicago arabica, dog-violet *Viola* sp., oxeye daisy *Leucanthemum vulgare*, common mouse-ear *Cerastium fontanum*, cut-leaved crane's-bill *Geranium dissectum*, false oat-grass *Arrhenatherum elatius*, spear thistle *Cirsium vulgare*, white dead-nettle *Lamium album* and great mullein *Verbascum Thapsus*.



Photograph 5: View of grassland within the Application Site.

4.20 The poor semi-improved grassland is of **site value**.

Native Species-poor Hedgerow (J2.1.2)

4.21 An unmanaged hedgerow extends along the western boundary and is obscured by the dense scrub within the Application Site. The hedgerow comprises a native mix of blackthorn *Prunus spinosa*, elder and hawthorn *Crataegus monogyna* with bramble and ivy *Hedera helix*. Additional hedgerows within the Application Site are short Leyland cypress *X Cuprocyparis leylandii* hedgerows located on the north-east corner.

4.22 Due to the built-up surroundings the native species hedgerow is isolated and subsequently is not a wildlife corridor of ecological value. The hedgerow is also not classified as 'important' under the Hedgerow Regulations 1997 largely due to the limited number of features associated with hedgerows that would enhance their ecological value, such as diverse ground flora, bridleways, banks, connections, ditches. Therefore, the hedgerow is assessed to be of **site value**.

Refuse-tip (I2.4)

- 4.23 There are two refuse piles located on the south-west corner of the Application Site, which predominantly comprise brash with wooden planks and rubble interspersed. There is also a compost heap of grass cuttings on the south-east corner of the Application Site, which at the time of the survey was saturated with water.



Photograph 6: Brash pile on the south-west corner of the site.

- 4.24 The refuse piles on site are of **negligible value**.

Scattered Trees (A3.3) Tree Line

- 4.25 The scattered trees on site vary in age and condition, as detailed in the Tree Report by ACD Environmental¹⁴ and are predominantly located around the site boundaries. The highest density of trees is along the southern boundary which also comprises a large number of mature specimens and is defined as a tree line within this report. Tree species include grey poplar *Populus canescens*, sycamore, Lombardy poplar *Populus nigra 'Italica'*, hybrid black poplar *Populus x canadensis*, Norway maple, elder, whitebeam *Sorbus aria* and hornbeam *Carpinus betulus*.
- 4.26 On the southern end of the eastern boundary the majority of the trees (shown in **Appendix 1**) are rooted outside of the site boundary and overhang into the site. The trees rooted within the eastern boundary are a couple of Norway Maples, two young sycamore and an ash tree.

¹⁴ ACD Environmental (2018). Cornfield Close, Littlehampton – Tree Report (Tree Survey and Constraint Advice). Ref. THA21635tr, dated: 18.01.2018

4.27 Scattered within the centre of the site are broadleaved trees that range from young to semi-mature. The species include horse chestnut *Aesculus hippocastanum*, wild cherry *Prunus avium*, Norway maple, elder and goat willow *Salix caprea*.



Photograph 7: Scattered trees on site.

4.28 A mature tree line of Leyland cypress extends between the toilet/shower facility building and the tarmac road. This tree line has since been felled.



Photograph 8: View of mature Leyland cypress tree line, which have since been felled.

4.29 Lastly, scattered trees are present along the northern boundary, all of which are mature in age. The species include two sycamore, two Corsican pines *Pinus nigra* 'maritima', two whitebeam, a wild cherry and a Monterey cypress.

4.30 The tree specimens that have been assessed by the arboriculturalist to be of

Category A to C in accordance to BS5837:2012 are of **Local Value**, with the exception of the mature Leyland cypress. All other trees on site are of **site value**.

Tall Ruderal Vegetation (C3.1)

4.31 Tall ruderal vegetation makes up a small total area of the site and is mixed in with the dense scrub that extends along the western boundary. A comprehensive species list of the tall ruderal vegetation was not possible at the time of the site visit due to the winter timing, however, burdock *Arctium* sp., common nettle *Urtica dioica* and a dense matting of ivy was recorded.



Photograph 9: View of tall ruderal vegetation on site.

4.32 The tall ruderal vegetation on site is of **site value**. The value of the tall ruderal vegetation has the potential to increase if notable species are recorded during the reptile surveys (**Section 6.0**), anticipated for spring 2018.

Fauna

4.33 For ease of reference, descriptions of the fauna have been described alphabetically, below.

Amphibians

4.34 There are no records of great crested newt within a 2km radius of the site, however, this does not confirm the absence of the species in the local area.

4.35 The site itself does not support any waterbodies and a review of OS mapping and

aerial imagery recorded five waterbodies within a 500m radius of the site (as shown in **Appendix 2**). Only one of the waterbodies is located within 250m of the site, in the form of a small pond 65m north-west, likely created to catch run-off from the A259. The other four waterbodies include two ornamental ponds within a business park located 308m north-east, an attenuation basin located 326m north and an ornamental pond located 490m north.

4.36 The A259 is a significant barrier to dispersal for great crested newt and separates the site from the four ponds located greater than 250m from the site.

4.37 To support a viable great crested newt population multiple well-connected ponds are necessary. As the pond located 65m from the site is fragmented from other waterbodies by the A259 and dense development it is likely absent of great crested newt.

4.38 Due to the absence of suitable breeding habitat within dispersal range of the site, great crested newt are assessed as **likely absent** and not considered further in this report.

Badgers

4.39 SBRC data search does not include records of badger.

4.40 A visual assessment for setts was undertaken during the site visit, however, the dense scrub on the western boundary hindered the assessment.

4.41 No evidence of badger was recorded on site, such as, snuffle holes, prints and latrines, however, the site is suitable for commuting and foraging badger. The managed grassland offers foraging opportunities, although limited in extent, and the scrub comprises berry producing species suitable for foraging badger.

4.42 The likelihood of badger being present on site is considered low due to the absence of evidence recorded during the survey, in combination with the developed location.

4.43 Overall, the Application Site is assessed to be of **site value** for badger

Bats

4.44 The desk study data from SBRC returned records of at least 10 bat species within

a 2km radius of the Application Site. The nearest records are of serotine *Eptesicus serotinus* and common pipistrelle *Pipistrellus pipistrellus* located approximately 210m south of the site. Soprano pipistrelle *Pipistrellus pygmaeus* and an unidentified *Myotis* sp. were recorded in 2013 approximately 430m east and an unknown bat roost was recorded in 2010 approximately 920m south. Lastly, numerous records were received from 2014 approximately 1.8km north of the site for Alcatraz bat *Myotis alcathoe*, Daubenton's bat *Myotis daubentonii*, whiskered/Brandt's bat *Myotis mystacinus/brandti*, Natterer's bat *Myotis nattereri* and noctule *Nyctalus noctula*.

Roosting Habitat

- 4.45 The buildings' shiplap elevations and corrugated sheeting and bitumen felt roofs do not offer opportunities for bats to roost. Building 2 was also in good condition and no lifted tiles were recorded during the site visit. Overall, no potential bat-roosting features were recorded on the buildings within the Application Site.



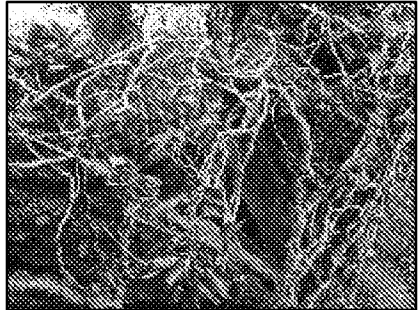
Photograph 10: Example of general building type within the Application Site.

- 4.46 Suitable bat-roosting habitat within the Application Site is associated with the semi-mature and mature trees along the southern boundary. The trees that were identified to support potential bat-roosting features are target noted within the Ecological Features Plan in **Appendix 1**. **Table 4.1** specifies the trees supporting potential bat-roosting features and the suitability of the trees to support tree roosting bats.

Table 4.1 Identification of trees within the Application Site that support potential bat-

roosting features and the suitability of each tree to support roosting bats.

Tree Identification	Potential Roosting Features	Suitability	Photo
TN1 – Acer sp. Within (G10) As per Tree Reference Plan.	Splits along branches creating crevices.	Medium	 Photo 11: View of Acer sp.
TN2 – Elder (T42)	Hollow in tree	High	 Photo 12: View of elder
TN3 – Grey Poplar (T38)	One woodpecker hole and one rot hole. Endoscopic inspection identified the rot hole to be shallow and the woodpecker hole occupied by bees.	Low	 Photo 13: View of grey poplar
TN4 – Whitebeam (T35)	Hazard beam and a split at the end of the branch	Medium	 Photo 14: View of hazard beam and split
TN5 – Norway	Split in trunk	Low	NO PHOTO

maple (G3)			
TN6 - Sycamore (T25)	Deep rot hole approximately 1m up trunk	High	NO PHOTO
TN7 – Lombardy poplar	Three woodpecker holes	High	NO PHOTO
TN8 – Grey poplar (T19)	Hazard beam	Medium	 Photo 15: View of grey poplar
TN9 – Grey poplar (T14)	Woodpecker hole and flaking bark	High	NO PHOTO
TN10 – Hybrid black poplar (T12)	Broken branch located low to ground. The crevices resulting from the break are deep but covered in foliage during the May endoscopic inspection.	Medium	 Photo 16: View of break in tree

4.47 Trees TN3 and TN10 are to be removed to facilitate the development and therefore, their PRFs were inspected with an endoscope. The two PRFs of TN3 have been reassessed and woodpecker hole was concluded to be of low suitability as it supported an active bee hive, however, there is potential for bat occupation in the future when the bees have vacated. The rot hole was shallow as well as being covered by foliage and was assessed to be of negligible suitability. Overall, TN3 was reassessed to be of **low suitability** to support bats roosting

4.48 The deep crevices near the base of TN10 have been confirmed to be very deep, however, in May extensive amount of hanging foliage hid the PRFs, which is likely to deter bats from utilising the crevices as they prefer clear flight paths for

entering/egressing from roosts. Furthermore, at closer inspection the crevices consisted of debris which implies lack of use. Furthermore, no evidence of bats was recorded such as droppings or urine staining. Therefore, TN10 has been reassessed to be of **medium suitability** for roosting bats.

Migrating, Foraging and Commuting Habitat

4.49 The local records of Daubenton's bat and whiskered/Brandt's bat are of county significance as they are considered rare and scattered across West Sussex. Furthermore, noctule and Natterer's are considered uncommon within West Sussex¹⁵. The Alcathoe bat is also considered to be rare, although widely considered to be under recorded as the species is difficult to distinguish between whiskered/Brandt's bat. The local recordings of these less common species were attained outside of the developed area of Littlehampton, which is to be expected, as they are generally considered to be more light adverse species. Therefore, considering the Application Sites location, surrounded by development it is unlikely to be of value to the rarer, light adverse species of bat.

4.50 Furthermore, the Application Site is not connected to an extensive wildlife corridor (e.g. hedgerow network, river, woodland copses) and is too small to support foraging bats in isolation. The sites suitability for foraging and commuting bats is associated with boundary habitats of tree lines, hedgerow and dense scrub.

4.51 Overall, the site is assessed to be of **medium suitability** to support foraging and commuting bats and at a geographical scale is of **site value**.

Birds

4.52 A high number of bird records within a 2km radius were attained from SBRC. Many of the notable bird species recorded are waterfowl and waders associated with the English Channel and River Arun and are not of relevance to the site. Locally recorded species that have potential to utilise the site include:

- Red listed species - starling *Sturnus vulgaris*, house sparrow *Passer domesticus*, yellowhammer *Emberiza citronella*, turtle dove *Streptopelia*

¹⁵ The Mammal Society, Mammal Watch South East, South East Mammal Atlas-5 (Bats)

turtur, Linnet *Carduelis cannabina*, grasshopper warbler *Locustella naevia*.

- Amber listed species - dunnoek *Prunella modularis*, stock dove *Columba oenas*, swift *Apus apus*, bullfinch *Pyrrhula pyrrhula*, willow warbler *Phylloscopus trochilus* and house martin *Delichon urbicum*.
- Green listed species – barn owl, which is protected under Schedule 1 of the Wildlife and Countryside Act (see paragraph 5.6).

4.53 The introduced shrub, dense scrub, scattered trees, tree line and hedgerow on site are suitable to support nesting birds. The immediate surrounding landscape offers suitable nesting habitat in the form of residential gardens and public open space.

4.54 The site's small size and dominating habitat of short grassland is not suitable for ground nesting birds and it is of limited suitability for over-wintering birds due to its small size, however, small numbers of over-wintering species may occasionally occur. Due to the sites limited suitability for such species, ground nesting birds and over-wintering birds are not considered further in this report.

4.55 The habitats suitable to support birds within the Application Site are widespread and makes up a very small percentage of suitable nesting habitat within the local landscape for more common and widespread species only, therefore the habitats are of **site value** for birds

Hazel Dormouse

4.56 There are no records of hazel dormouse within a 2km radius of the Application Site, however, this does not confirm the absence of the species within the countryside beyond the residential area of Littlehampton.

4.57 The Application Site is too small to support a viable hazel dormouse population in isolation and is significantly fragmented from the countryside by existing development. Overall, due to the Application Sites isolation from suitable hazel dormouse habitat, in the form of, an extensive hedgerow network and woodland copses, hazel dormouse are determined to be **absent** and are not considered further in this report.

Reptiles

4.58 Common lizard *Zootoca vivipara* have been recorded within an allotment located approximately 340m north-west of the Application Site. There are no further records of reptiles within a 2km radius of the Application Site, however, this does not confirm the absence of slow-worm *Anguis fragilis*, which are frequently found within residential gardens that are abundant in the local landscape.

4.59 The majority of the Application Site comprises managed grassland of poor suitability for common species of reptiles and the introduced shrub patches are relatively isolated and, thus considered sub-optimal for this species group. Suitable habitat for reptiles within the Application Site include the dense scrub, tall ruderal vegetation, hedgerows, refuse-tips (TN11 in **Appendix 1**), and the bases of mature tree specimens. The latter two habitats have potential to offer suitable hibernacula for reptiles.

4.60 The results of the reptile survey are shown in **Table 4.2** below. The locations of the slow worm is presented in **Appendix 3**.

Table 4.1: Reptile Survey Results

Date	Reptiles Found				Observation Notes	Other Species
	Slow worm					
	M	?	F	Juvenile		
08/05/18					No reptiles	
10/05/18					No reptiles	
15/05/18					No reptiles	
17/05/18				1	One juvenile slow-worm	
21/05/18					No reptiles	
24/05/18					No reptiles	
29/05/18					No reptiles	

4.61 A single juvenile slow-worm was recorded on the north-west corner of the Application Site. Juveniles are not included within population size estimations according to best practice guidance by Froglife¹⁶, however, the presence of a juvenile does imply that at least a very low population of adult slow-worm are locally

¹⁶ Froglife Advice Sheet 10: An Introduction to Planning, Conducting and Interpreting Surveys for Snake and Lizard Conservation. [Online]. Available from: www.froglife.org

present and can/have colonised the Application Site. Furthermore, the juvenile recorded should be considered in the population count as it is likely from the 2017 breeding season and has thus survived its first winter and survival into adulthood is likely.

4.62 The public open space field bounding the southern half of the Application Site and the allotment to the north-west, as well as, the abundant residential gardens within the surrounding landscape offer suitable habitat for slow-worm. These surrounding habitats also offer colonisation opportunities onto the Application Site.

4.63 Overall, the Application Site is assessed to support a 'low' population of slow-worm assessed to be of **site value**.

Other Wildlife

4.64 There are numerous records of stag beetle *Lecanus cervus*, with the closest located approximately 430m east of the Application Site. Stag beetle are protected under Schedule 5 of the Wildlife and Countryside Act 1981¹⁷. Hedgehog *Erinaceus europaeus* have also been recorded within the local area and are a species of principal importance under Section 41 of the NERC Act and a Biodiversity Action Plan (BAP)¹⁸ species.

4.65 Furthermore, a large number of UK and County BAP moth and butterfly species have been recorded within a 2km radius of the Application Site. Lastly, notable bee species recorded within a 2km radius include the Bryony mining bee *Andrena rubricata* and sharp-collared furrow bee *Lasioglossum (Evylaeus) malachurum*.

4.66 The nectar provided by the dense scrub, tall ruderal vegetation and trees within the Application Site may attract many of these notable invertebrate species. Furthermore, the dense scrub, hedgerows, introduced shrub and refuse-tips provide suitable shelter for hedgehog. However, as the Application Site is small in size and supports relatively common and widespread habitats it is not considered that local populations of UK BAP species would be reliant on the Application Site.

¹⁷ WACA-Sch5_sect9.5a – Covers selling, offering for sale, possessing or transporting for the purpose of sale (live or dead animal, part or derivative).

¹⁸ UK BAP was superseded in 2012 by the UK Post-2010 Biodiversity Framework. However, UKBAP it is still referred to as the species and habitats agreed under UK BAP still form the basis of conservation action today.

4.67 Overall, the Application Site is assessed to be of **site value** for other, notable wildlife.

4.68 An overview of the baseline conditions for each habitat and protected species within the Application Site is shown within **Table 4.3** below.

Table 4.3: Summary of Baseline Conditions

Feature	Scale of Importance
Buildings and Hardstanding	Negligible
Dense Scrub	Site
Introduced Shrub	Site
Poor Semi-Improved Grassland	Site
Native Species-Poor Hedgerow	Site
Refuse-Tip	Negligible
Scattered Trees/Tree Line	Local and Site
Tall Ruderal Vegetation	Site
Amphibians	Negligible
Badger	Site
Bats	Site
Birds	Site
Dormouse	Negligible
Reptiles	Site
Other Wildlife	Site

5.0 LEGISLATION AND PLANNING POLICY

5.1 This section summarises the legislation and national, regional and local planning policies, as well as other reference documents, relevant to the baseline ecology results.

Legislation

5.2 Specific habitats and species receive legal protection in the UK under various pieces of legislation, including:

- The Wildlife and Countryside Act 1981 (as amended);
- The Conservation of Habitats and Species Regulations 2017;
- The Countryside and Rights of Way Act 2000;
- The Hedgerows Regulations 1997;
- The Protection of Badgers Act 1992; and
- The Natural Environment and Rural Communities Act 2006.

5.3 Where relevant, the assessment takes account of the legislative protection afforded to specific habitats and species.

Wildlife Legislation

Non-European Protected Species

5.4 Badgers and their setts are protected under the Protection of the Badgers Act 1992¹⁹. Activities that can harm badgers include destroying a sett, causing noise, additional lighting or vibration and pile driving, quarry blasting, lighting fires or using chemicals. It is an offence to:

- Wilfully capture, kill or injure badgers;
- Damage, destroy or block access to setts (even accidentally);

¹⁹ http://www.legislation.gov.uk/ukpga/1992/51/pdfs/ukpga_19920051_en.pdf

- Disturb badgers in their setts;
- Cruelly ill-treat a badger;
- Deliberately introduce a dog into a sett;
- Bait badgers;
- Dig for badgers;
- Possess, sell to offer for sale a live badger;
- Possess or control a dead badger or parts of the a badger (if unlawfully obtained); or
- Mark or attach a device to a badger.

5.5 All wild birds²⁰ and their nests are protected under the WCA as amended. It is an offence to:

- intentionally kill, injure or take any wild bird;
- intentionally take, damage or destroy the nest of any wild bird whilst it is in use or being built;
- intentionally take or destroy the egg of any wild bird;
- have in one's possession or control any wild bird, dead or alive, or any part of a wild bird, which has been taken in contravention of the Act or the Protection of Birds Act 1954;
- have in one's possession or control any egg or part of an egg which has been taken in contravention of the Act or the Protection of Birds Act 1954;
- use traps or similar items to kill, injure or take wild birds;
- have in one's possession or control any bird of a species occurring on

²⁰ <https://www.gov.uk/wild-birds-protection-surveys-and-licences>

Schedule 4 of the Act unless registered, and in most cases ringed, in accordance with the Secretary of State's regulations (see *Schedules*);
or

- intentionally or recklessly disturb any wild bird listed on Schedule 1 while it is nest building, or at a nest containing eggs or young, or disturb the dependent young of such a bird.

5.6 Widespread reptiles²¹ (including; adder, common lizards, grass snakes and slow worms) are protected under the WCA as amended and it is therefore an offence to deliberately kill, injure, sell or trade widespread reptiles.

European Protected Species

5.7 European Protected Species are protected The Conservation (Natural Habitats, &c.) Regulations 1994, under regulation 39²², as well as the WCA. These species include great crested newts, all bat species, dormice and otter.

5.8 This level of protection for these species (at all stages of their life cycle) makes it an offence to do the following:

- deliberately to capture or kill a wild animal of a European protected species;
- deliberately to disturb any such animal;
- deliberately to take or destroy the eggs of such an animal;
- to damage or destroy a breeding site or resting place of such an animal;
or
- to keep, transport, sell or exchange, or offer for sale or exchange, any live or dead wild animal of a European protected species, or any part of, or anything derived from, such an animal.

²¹ <http://naturenet.net/law/herps.html>

²² <http://www.legislation.gov.uk/ukxi/1994/2716/regulation/39/made>

Planning Policy

National Planning Policy Framework

- 1.1. The National Planning Policy Framework (NPPF)²³ sets out planning policies on protection of biodiversity and geological conservation through the planning system for local authorities in England. The NPPF outlines the role of the decision maker in considering the requirements of wildlife legislation to protect wildlife.
- 1.2. The NPPF states that the planning system should contribute to and enhance the natural and local environment, by measures including the following:
 - Minimising impacts on biodiversity and providing net gains in biodiversity;
 - Contributing to the Government's commitment to halt the overall decline in biodiversity;
 - Establishing coherent ecological networks that are more resilient to current and future pressures; and
 - Recognising the wider benefits from natural capital and ecosystem services.
- 1.3. The NPPF states that when determining planning applications, local planning authorities should aim to conserve and enhance biodiversity by applying principles including the following:
 - If significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated for, or, as a last resort, compensated for, then planning permission should be refused; and
 - Development on land within or outside a SSSI, and which is likely to have an adverse effect on that designated site (either individually or in combination with other developments), should not normally be permitted. Where adverse effects on the site's notified special interest features is likely, an exception should only be made where the benefits of the development clearly outweigh both the impacts that it is likely to have on the features of the site that make of special scientific interest and any broader impacts on the national networks of SSSIs.

²³ Ministry of Housing, Communities and Local Government (2018). *National Planning Policy Framework*. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/728643/Revised_NPPF_2018.pdf

- 1.4. The Government Circular 06/2005²⁴ accompanies the NPPF and sets out the application of the law in relation to planning and nature conservation in England.

Local Planning Policy

Arun District Council Local Plan

- 5.9 Arun District Council adopted a new Local Plan in July 2018, named Arun Local Plan 2011-2031. The relevant policies of relevance to nature conservation are as follows:

Policy ENV SP1 – Natural Environment:

- 5.10 Arun District Council will encourage and promote the preservation, restoration and enhancement of biodiversity and the natural environment through the development process and particularly through policies for the protection of both designated and non-designated sites. Where possible it shall also promote the creation of new areas for habitats and species. In relation to designated sites, development will be permitted where it protects sites that are recognised for the species and habitats contained within them. These sites include Pagham Harbour Ramsar Site, SPA, SSSI and LNR; Arun Valley SPA and SAC; Solent and Dorset Coast pSPA; Bognor Reef SSSI; Felpham SSSI; Climping Beach SSSI; West Beach LNR; Bersted Brooks LNR; Ferring Rife and Meadows SNCI; Littlehampton Golf Course and Atherington Beach; Littlehampton SNCI; Elmer Rocks SNCI; Fontwell Park Race Course SNCI; and, Middleton Shingle SNCI.

Policy ENV DM1 – Designated Sites of biodiversity or geological importance:

- 5.11 Proposed development likely to have an adverse effect on land with the designated features of any Site of Biodiversity (listed in paragraph 5.10) or Geological Importance, or any subsequently designated sites (either individually or in combination with other developments), will not normally be permitted. Consideration will be given to the exact designated features present on the site, their scarcity/rarity and recognition of the protection offered by their existing status. Development on wildlife sites with the highest value will only be permitted exceptionally where the

²⁴ Office of the Deputy Prime Minister (2005). *Government Circular: Biodiversity and Geological Conservation – Statutory Obligations and their Impact within the Planning System*. Available at: < <http://www.communities.gov.uk/documents/planningandbuilding/pdf/147570.pdf> >

following can be demonstrated:

- There is no alternative solution (which shall be adequately demonstrated by the developer;
- There are reasons of public health or public safety; or
- There are benefits of primary importance to the environment; or
- There are imperative reasons of overriding public interest

5.12 Notwithstanding the above however, the presumption in favour of sustainable development does not apply where development requiring appropriate assessment under the Birds or Habitats Directives is being considered, planned or determined.

5.13 In determining any planning application affecting Sites of Biodiversity or Geological Importance the Council will ensure that the intrinsic natural features of particular interest are safeguarded or enhanced having regard to;

- The European, National or Local status and designation of the site;
- The nature and quality of the site's features, including its rarity value;
- The extent of any adverse impacts on the notified features of interest;
- The need for compensatory measures in order to re-create remaining features of habitats on or off the site.

5.14 Where appropriate the Council will ensure the effective management of designated sites through the imposition of planning conditions or Section 106 agreements as appropriate.

Policy ENV DM2 – Pagham Harbour:

5.15 Within Zone A (0-400m from the boundary) as identified on the Policies Maps, development will only be permitted in exceptional circumstances where the developer is able to demonstrate there will be no detrimental effects on Pagham Harbour, including non-native species and the water environment. Regard shall also be had to tests 1-4 as set out in Policy DM1 (Designated Sites of Biodiversity or

Geological Importance).

5.16 Within Zone B (0-5km) for all new residential development and development which is likely to have an impact on Pagham Harbour will be required to:

1. Make developer contributions towards the agreed strategic approach to access management at Pagham Harbour.
2. Create easily accessible new green spaces for recreation within or adjacent to the development site. These shall be capable of accommodating the predicted increases in demand for local walking, including dog walking. Good pedestrian links shall be provided between housing areas and new and existing green space in order to discourage car use.

5.17 Major developments (as defined in the GDPO 1995 as amended) taking place outside Zone B and close to its boundary will be considered on a case by case basis to determine any potential effects on Pagham Harbour, and the need for any avoidance or mitigation measures.

Policy ENV DM3 – Biodiversity Opportunity Areas:

5.18 Development shall:

1. Retain and sympathetically incorporate locally valued and important habitats, including wildlife corridors and stepping stones
2. Be designed in order to minimise disturbance to habitats

5.19 Development proposals that do not reasonably address opportunities for enhancing these through their design, layout and landscaping or access/management shall not be permitted. Where a development scheme would result in a habitat loss, mitigation measures will be proposed as part of the proposed scheme and such measures agreed with the Local Planning Authority prior to the determination of any planning application. Within Biodiversity Opportunity Areas (BOAs) identified on the Policies Maps or where likely to have an impact on species or habitats within the BOAs, any application for planning permission shall include a properly conducted survey of the presence of that species and habitat and impact(s) that development may have on the BOA.

Policy ENV DM4 – Protection of Trees:

5.20 Development will be permitted where it can be demonstrated that trees protected by a Tree Preservation Order(s), (TPO) identified as Ancient Woodland, in a Conservation Area or contributing to local amenity, will not be damaged or destroyed now and as they reach maturity, unless development:

1. Would result in the removal of one or more trees in the interests of good arboricultural practice. This shall be demonstrated by the developer following the advice of a suitably qualified person which shall be guided by BS 5837 (2012). Details of any advice received having regard to BS 5837 (2012) shall be submitted, in writing, as part of a planning application; or
2. Would enhance the survival and growth prospects of other protected trees;
3. The benefits of the proposed development in a particular location outweigh the loss of trees or woodland, especially ancient woodland.

5.21 Where planning permission is granted in any of the above instances, conditions shall be used to ensure that, for any trees which are removed as part of a development, at least an equivalent number of a similar species and age (where practical) are planted on the proposed development site. Sufficient space for replacement trees to mature without causing future nuisance or damage shall be provided. The planting of new trees shall form an integral part of the design of any development scheme.

5.22 Proper provision must be made for the protection and management of trees or areas of woodland on-site when undertaking development. A management plan shall be provided as part of a planning application in accordance with BS 5837 (2012) in order to ensure that trees are adequately protected during development and appropriately maintained in the future. Conditions for the continued protection of trees on sites shall be included in any planning permission given.

5.23 Where there are existing trees on or adjacent to a development site, developers shall be required to provide:

1. Land and tree surveys
2. A tree constraints plan
3. An arboricultural impact assessment to include a tree protection plan and arboricultural method statement

5.24 These will ensure that development is planned to take a comprehensive view of tree issues at an early stage in the design process and that development works do not have a negative impact on existing trees.

Policy ENV DM5 – Development and Biodiversity

5.25 Development schemes shall, in the first instance, seek to achieve a net gain in biodiversity and protect existing habitats on site. They shall also however incorporate elements of biodiversity including green walls, roofs, bat and bird boxes as well as landscape features minimising adverse impacts on existing habitats (whether designated or not). Development schemes shall also be appropriately designed to facilitate the emergence of new habitats through the creation of links between habitat areas and open spaces. Together, these provide a network of green spaces which serve to reconnect isolated sites and facilitate species movement.

5.26 Where there is evidence of a protected species on a proposed development site, planning applications shall include a detailed survey of the subject species, with details of measures to be incorporated into the development scheme to avoid loss of the species. This involves consideration of any impacts that will affect the species directly or indirectly, whether within the application site or in an area outside of the site, which may be indirectly affected by the proposals. All surveys shall be carried out at an appropriate time of year and shall be undertaken by a qualified and, where appropriate, suitably licensed person.

5.27 All developments shall have regard to Natural England's standing advice for protected species.

6.0 ASSESSMENT OF EFFECTS AND MITIGATION MEASURES

- 6.1 In accordance with CIEEM guidelines, where receptors have been evaluated at “site value” or lower, no further assessment is deemed necessary as the impact on these receptors is not likely to be of significance. However, it will be noted that mitigation measures may still be required to ensure protection of receptors to comply with current wildlife legislation and best practice guidelines (for example common species of reptile).
- 6.2 The Application Site is dominated by poor semi-improved grassland with scattered introduced shrub and trees. The boundaries comprise dense scrub, hedgerow, trees, refuse-tips and tall ruderal vegetation. The design of the proposed development has followed the mitigation hierarchy; firstly impacts to biodiversity have been largely avoided by retaining the more valuable habitats in the form of the hedgerow and trees. Secondly, adverse effects have been avoided or minimised through mitigation measures and lastly, where there are significant residual adverse ecological effects despite the mitigation proposed, these have been offset by appropriate compensatory measures.
- 6.3 The following valuable ecological receptors have been identified and will be carried forward to impact assessment:

Statutory and Non-Statutory Designated Sites

- *None*

Habitats

- Scattered Trees

Species

- Tree roosting, foraging and commuting bats;
- A ‘low’ population of slow-worm.

Designated Sites

- 6.4 There are three designations within a 5km radius of the Application Site. The nearest

statutory designation is West Beach LNR located approximately 1.78km south-west of the site. There is one non-statutory designation within 2km of the Application Site, named Littlehampton Golf Course and Atherington Beach LWS located approximately 1.57km south-west. Both designations are significantly removed from the Application Site by extensive existing development, therefore, no risks to local designations are anticipated as a result of the development proposals.

- 6.5 The Application Site is not located within a Natural England Sites of Special Scientific Interest Impact Risk Zones (SSSI IRZ) that requires planning applications for residential development to fulfil specific criteria. Therefore, no consultation with Natural England is considered necessary for this planning application.

Habitats

Buildings (J3.6) and Hardstanding

- 6.6 The development proposals will include the removal of the buildings and hardstanding on-site. Considering the buildings and hardstanding are assessed as being of negligible intrinsic ecological value, their loss will have a **negligible effect**.

Dense Scrub (A2.1)

- 6.7 The proposals will result in the permanent loss of the dense scrub on site which will result in a reduction in biodiversity of site value.
- 6.8 The loss of the dense scrub habitat can be compensated for by incorporating shrub borders within the proposed open space and the apartment blocks communal gardens. It is recommended that native shrub species are favoured such as, dogwood *Cornus sanguinea*, spindle *Euonymus europaeus*, wild privet *Ligustrum vulgare*, wayfaring tree *Viburnum lantana*, guelder rose *Viburnum opulus*, field rose *Rosa arvensis* and English whitebeam *Sorbus anglica*.
- 6.9 Provided that the compensatory measures are followed the residual impacts on the dense scrub are anticipated to be **non-significant negative**.

Introduced Shrub (J4)

- 6.10 The proposals will result in the permanent loss of the introduced shrub on site which will result in a reduction in biodiversity of site value. The proposals will also include

the removal of the Japanese knotweed which will result in an improvement to biodiversity.

6.11 The loss of the introduced shrub can be compensated for by incorporating the compensatory native shrub planting detailed in **paragraph 6.8**, above.

6.12 The Japanese Knotweed on site requires immediate removal by specialist contractors. To prevent further spread of Japanese knotweed no works are to occur within proximity of the growth until the completion of its controlled removal.

6.13 Provided that the recommended native shrub planting and Japanese knotweed removal is undertaken as part of the proposals, the residual impacts are anticipated to be **non-significant positive**.

Poor Semi-improved Grassland (B6)

6.14 The development will result in the loss of the poor semi-improved grassland on site, of site value.

6.15 To compensate for the loss of the poor semi-improved grassland within the Application Site it is recommended that the proposed areas of open space are sown with wildflower seed or laid with wildflower turf. The turf/seed should be chosen based on the soil type, filtration and shade levels.

6.16 The meadow will not require fertilizing and if preferred, cutting regimes can differ throughout the meadow, e.g. frequently mown paths winding through long flowering swards that are annually cut in late summer (August-September). The cuttings should be removed to prevent the grassland from becoming enriched with nitrates from discarded arisings. This will deter vigorous weed species such as common nettle and creeping thistle from colonising the meadow area.

6.17 The overall residual impacts are anticipated to be **non-significant negative**; however, the incorporation of the compensatory wildflower meadow has potential to result in a **non-significant positive** impact.

Native Species-poor Hedgerows (J2.2)

6.18 The development proposals include the retention of the western boundary

hedgerow. However, there is potential for the hedgerow to be damaged during ground works. The survival of the hedgerow in perpetuity is also at risk during the operational phase; if the hedgerow is included within the boundaries of the proposed residential properties, as shown in **Appendix 3**. The removal of the Leyland cypress hedgerows on site is not anticipated to be of ecological consequence and thus, no mitigation is deemed necessary.

6.19 Root Protection Areas (RPAs) will be established around the hedgerow to be retained in line with BS5837:2012, using Heras fencing or similar. RPAs are shown within the ACD Environmental Tree Reference Plan.

6.20 The existing hedgerow is to be strengthened by planting up existing gaps, particularly from the section which is likely to be impacted by the Japanese knotweed removal works. Species to be planted are to be inclusively native varieties, such as hawthorn, blackthorn, wild cherry, crab apple *Malus Sylvestris*, wild-service tree *Sorbus torminalis*, guelder rose, dog-rose *Rosa canina*, spindle, hazel *Corylus avellane*, field maple *Acer campestre*, English whitebeam and beech *Fagus sylvetica*.

6.21 To protect the western boundary hedgerow throughout the operational phase of the development post and rail fencing is to be installed along its length to denote the end of the residential gardens.

6.22 The overall residual impacts are anticipated to be **neutral** provided the mitigation measures above are followed.

Refuse-tip (I2.4)

6.23 The development proposals will include the removal of the refuse-tips on site. Considering the refuse-tips are assessed as being of negligible intrinsic ecological value, its loss will have a **negligible effect**.

Scattered Trees (A3.2)/Tree Line

6.24 There is inherent mitigation incorporated within the proposals through the retention of the boundary trees within the Application Site, which include the healthy specimens assessed to be of Local value. The loss of the line of Leyland cypress is

not of ecological significance as they are a non-native species of negligible value.

6.25 Tree Retention and removal has been informed through the Arboricultural Assessment and a small number of trees have been identified for removal for reasons and Health and Safety.

6.26 It is recommended that any tree removal is compensated for by planting a replacement native tree for each one removed.

6.27 Root protection zones (RPZs) will be established around trees to be retained in line with BS5837:2012 through use of Heras fencing or similar.

6.28 The overall residual impacts are anticipated to be **neutral** provided the mitigation measures above are followed.

Tall Ruderal Vegetation (C3.1)

6.29 The development proposals will result in the loss of the tall ruderal vegetation on site, which is of site value.

6.30 The proposed native shrub, wildflower meadow planting and hedgerow strengthening within **paragraphs 6.8, 6.15 and 6.20** above will, in part, compensate for the loss of the tall ruderal vegetation on site.

6.31 The overall residual impacts are anticipated to be **non-significant negative** provided that the compensatory measures above are followed.

Fauna

Badgers

6.32 No evidence of badger was identified during the site visit, however, there is potential for a badger sett to be missed on the western boundary, due to the impenetrable nature of the dense scrub. Due to the small size of the Application Site, it is considered to be of limited value to badger as a foraging resource and the proposals will not implicate commuting badger, however, there is a risk of badger becoming trapped and/or harmed during construction works.

6.33 Precautionary measures are recommended during the clearance of the impenetrable

sections of scrub, as the presence of setts could not be ruled out during the Preliminary Ecological Appraisal. The precautionary clearance is detailed within the reptile mitigation within this report. Prior to this clearance being undertaken no ground works can occur within 20m of the impenetrable patches of dense scrub.

- 6.34 To prevent the risk of badger becoming trapped in excavations during construction works, the excavations are to be covered up or, a timber ramp will be inserted to allow the animal to escape of its own accord.
- 6.35 Provided that the above mitigation is adhered to, **non-significant negative** impacts on badger are anticipated as a result of the proposals.

Bats - Roosting

- 6.36 The development proposals will be retaining the majority of the trees identified to be of bat-roosting potential within the Application Site, with the exception of two trees; TN3 and TN10.
- 6.37 The endoscopic survey reassessed TN3 and TN10's roosting bat suitability and at closer inspection TN3 is of low suitability for bats to roost and TN10 is of medium suitability. No further survey effort is required for TN3 or TN10, however, a precautionary clearance methodology is required. A precautionary clearance method is considered appropriate for TN10, as although it is usual for trees of medium suitability to undergo further survey effort, paragraph 6.3.10 of the Bat Conservation Trust does state that on completion of a PRF inspection survey, further surveys are not always necessary. The requirement for further surveys is dependent on whether or not all PRFs could be closely inspected and as TN10 PRFs are at ground level no limitations to the survey effort were identified.
- 6.38 Therefore, appropriate mitigation is to be undertaken for TN3 and TN10 in the form of a 'soft felling' methodology. The 'soft felling' methodology consist of cutting the trees in sections, avoiding cutting through suitable roosting features and gently lowering to the ground and leaving the sections to rest over-night. Immediately prior to the 'soft felling' a suitably licenced ecologist will undertake a final endoscopic survey of the features and will supervise the removal works to assure adherence to the 'soft-felling' methodology.

6.39 To compensate for the minor loss of suitable roosting bat features within the Application Site it is recommended that a total of two Habitat Bat Boxes are incorporated into the brickwork of two proposed properties (as shown in **Appendix 5**). Integrated bat boxes are favoured over conventional boxes as they are less prone to vandalism, are unobstructive and aesthetically pleasing.

6.40 The trees with potential to support roosting bats may also be made less suitable for bats to roost as a result of an increase in light pollution. Mitigation to retain the on-site trees suitability for roosting bats is detailed in **Paragraph 6.44**.

6.41 Provided that the mitigation and compensatory measures are undertaken, the residual effects of the development on roosting bats is assessed to be **neutral**.

Bats – Migrating, Foraging and Commuting

6.42 The development is to retain the boundary habitats (hedgerow and tree line), which offer suitable foraging and commuting habitat for bats. However, the proposals may deter foraging and commuting bats as a result of an increase in light pollution.

6.43 In accordance with Paragraph 2.2.5 of the Current Bat Conservation Trust Guidance, the requirement for further surveys is influenced by numerous factors such as:

“size, nature and complexity of site, species concerned, scale of the proposed activities and likelihood of bats being present. Professionals should take a proportionate approach to ensure the provision of information with the planning application is appropriate to the environmental risk associated with the development and its location.”

6.44 An appropriate approach is for the incorporation of lighting control measures that assures that the Application Site remains suitable for foraging and commuting bats, as well as roosting bats (if present). Surveys are not deemed necessary due to the small size of the Application Site, the surrounding development and inherent mitigation included within the proposals, in the form of habitat retention. Furthermore, bat surveys would not influence mitigation, which is based on the assumption that the Application Site is utilised as part of a foraging and commuting route by many if not all of the species locally recorded. The recommended lighting

controls are as follows:

- During the construction phase any security lighting is to be motion activated, hooded with rear deflectors and directed away from the site boundaries and any trees identified to have roosting bat potential;
- During the construction phase the requirement for lighting will be avoided by works only being undertaken during daylight hours;
- Low level bollard lighting favoured over tall-columned street lighting;
- Light bulbs to be installed within the properties are to be LED, preferably avoiding blue or white light, as they emit lower UV levels;
- The lighting to be installed in the new development will be motion activated (where feasible) comprise hooded luminaires, task related, with LUX levels being as low as possible and avoiding blue and white light; and
- Under no circumstances will lighting be directed at the site boundaries.

6.45 To compensate for the increase in lighting it is recommended that a tree line is planted along the northern boundary and that the proposed tree planting detailed within Proposed Site Plan Option L (**Appendix 4**) is undertaken. Suitable specimens include, crab apple and wild cherry, English whitebeam, pear *Prunus sp.*, rowan *Sorbus aucuparia* and field maple *Acer campestre*.

6.46 The residual impacts will be **neutral** provided that the mitigation and compensatory measures are followed.

Birds

6.47 The removal of dense scrub, trees, introduced shrub and hedgerows to facilitate the development will result in the loss of suitable nesting bird habitat and potential loss of active nest if the trees are removed during the nesting bird season.

6.48 The removal of hedgerows, dense scrub and introduced shrub cannot be undertaken outside the breeding bird season which extends from March to September as this is conflicting with the reptile mitigation. Therefore, an ecologist

will be present immediately prior to clearance to inspect the vegetation for active nests, as well as for reptiles. Any active nests will be retained within a suitable buffer until the young have fledged.

- 6.49 The trees can be removed outside of the nesting bird season provided that the stumps are retained and removed during the reptile active season (April to September), inclusively.
- 6.50 Inherent mitigation has been incorporated into the development in the form of tree and hedgerow retention. However, the minor loss of suitable nesting bird habitat can be compensated for via the habitat compensation measures detailed within this report.
- 6.51 Provided that the mitigation measures followed the impact on nesting birds is **non-significant negative** and there is potential for a **non-significant positive** result to be achieved depending on the extent of suitable replacement habitat incorporated into the proposals.

Reptiles

- 6.52 A low population of slow-worm has been recorded within the Application Site. The dense scrub, tall ruderal vegetation, refuse-tips, hedgerows and bases of mature trees are suitable for supporting widespread species of reptile. The removal of these habitats risk harming slow-worm and will result in a net loss of slow-worm habitat.
- 6.53 Widespread reptiles are protected from death and injury only, their habitat is not protected, however, as a protected species sufficient effort is to be made to retain reptile populations on site. This is to be achieved via ensuring the incorporation of suitable reptile habitat during the design stage, such as hedgerow strengthening and creation of a new native species-rich hedgerow along the southern and eastern boundary (see **Appendix 5**). Furthermore, as the proposed gardens mature a suitable habitat mosaic will form for slow-worm.
- 6.54 Additional hibernacula can be incorporated into the proposals in the form of wooden compost bins that provide opportunities for slow-worm to enter/egress and two large hibernacula hidden within the hedgerows.



Image 2: compost bin with gaps in the wooden slats for slow-worm to enter/egress

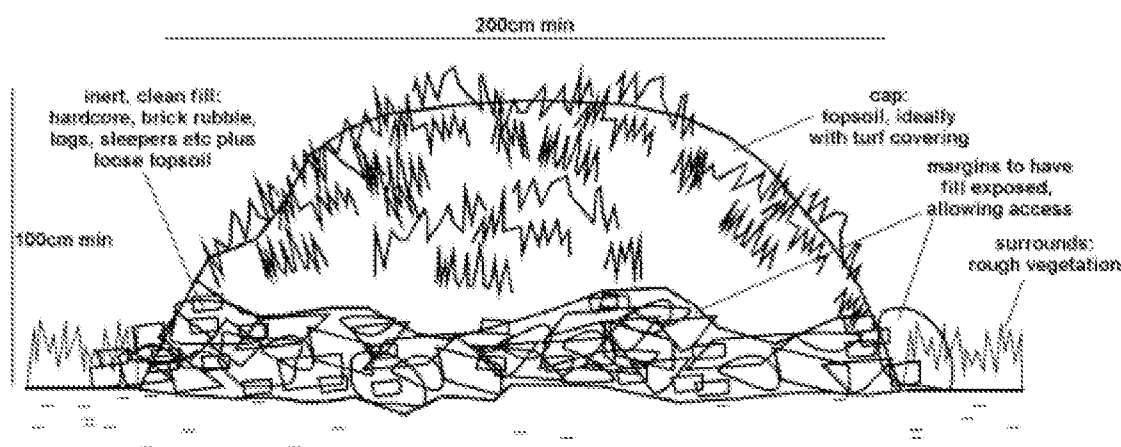


Image 3: Hibernacula specifications

6.55 It is required that the Japanese knotweed removal works, hedgerow strengthening, new hedgerow creation, and the hibernacula creation occurs prior to undertaking the methodical clearance methodology. Where such habitat works is not feasible, alternative compensation agreed by a suitably qualified ecologist is to be undertaken prior to the methodical clearance methodology, detailed below.

6.56 To prevent the risk of harming reptiles it is recommended that the tall ruderal vegetation and dense scrub is methodically strimmed over two days, with the first strim undertaken to a height of no less than 10-15cm and the second strim down to ground level. The strimming will also be directed towards the retained boundaries. Strimming will be undertaken under the supervision of a suitably qualified ecologist and on warm sunny days between April to September (inclusive), when reptiles would be active.

- 6.57 Where the dense scrub is too thick to be strimmed it is recommended that these areas are cut to approximately 15-30cm from ground level and on a separate day the remaining scrub is removed. Such clearance is also to be undertaken when reptiles are active and under the supervision of a suitably qualified ecologist.
- 6.58 The existing refuge-tip is to be removed by hand and/or using hand tools only, under the supervision of a suitably qualified ecologist. In the circumstance that larger equipment is required a digger with a toothed bucket can be used to slowly remove layers of material.
- 6.59 If winter tree removal is to occur in order to avoid the nesting bird season, it is recommended that the stumps are retained and removed during April to September, when reptiles are no longer hibernating.
- 6.60 The overall residual effects are anticipated to be **neutral** provided that the mitigation and compensatory measures are adhered to.

Other Wildlife

- 6.61 The development proposals will result in the loss of suitable hedgehog habitat on site and there is a risk of deadwood (TN3 and TN10) being removed of suitability for stag beetle. There is also potential for the development to result in the loss of nectar resource for pollinating invertebrates
- 6.62 It is recommended that the dense scrub, introduced shrub and hedgerows are checked for the presence of hedgehog during its removal. If dense scrub removal occurs during the nesting bird season the check will be inherently undertaken (see nesting bird mitigation detailed above).
- 6.63 Dead wood to be removed should be retained on site as a log pile and placed under the hedgerow on the western boundary.
- 6.64 The proposed wildflower meadow creation, native shrub and hedgerow planting will provide a new nectar resource for pollinating insects.
- 6.65 The residual impacts on notable wildlife is **non-significant negative** provided that the mitigation measures above are followed.

Enhancements

6.66 The National Planning Policy Framework encourages development to provide net gains in biodiversity where possible.

6.67 It is recommended that the following enhancements are provided within the site:

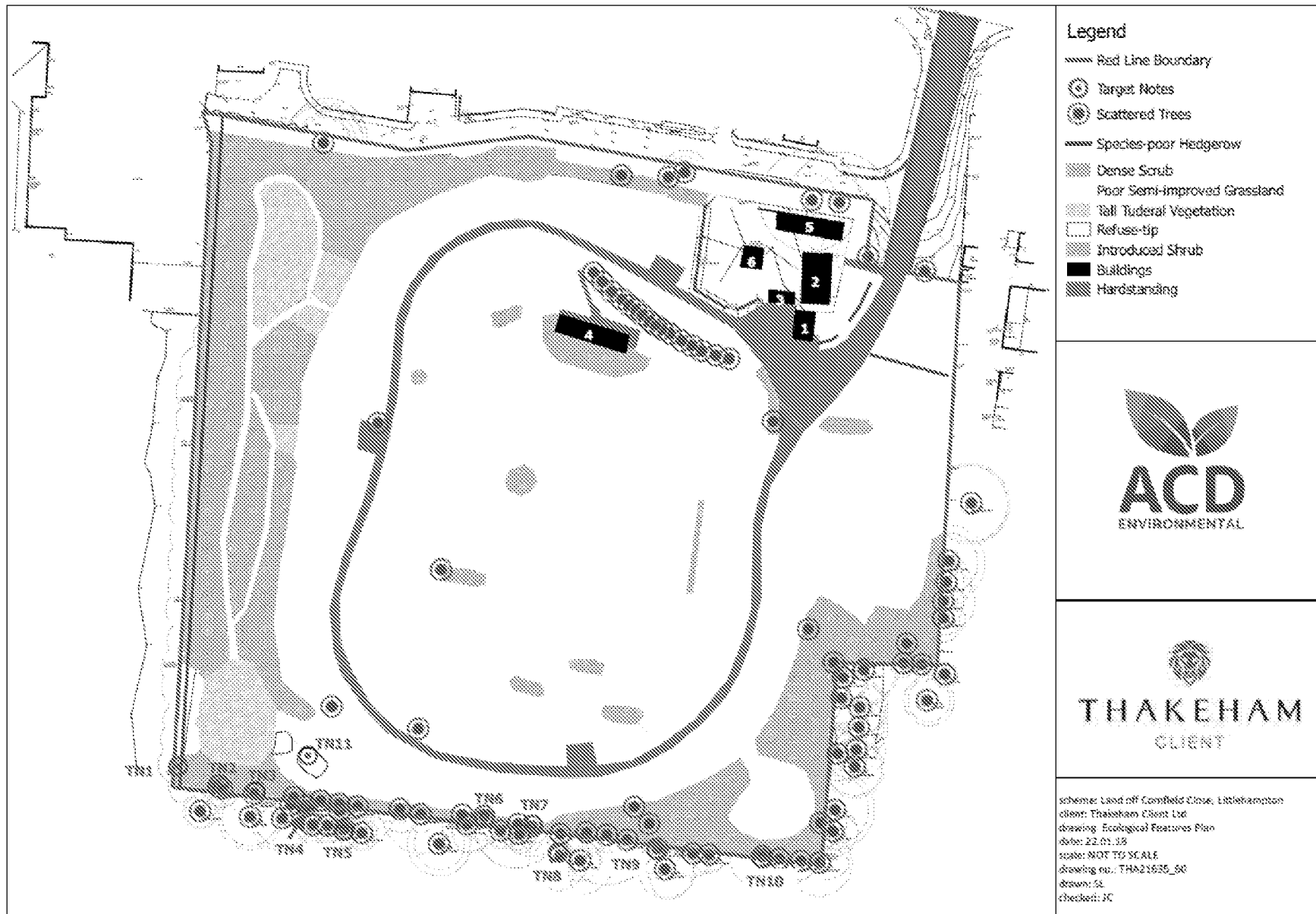
- Slow-worm and hedgehog are known to utilise residential gardens, therefore, to assure they can attain access to the proposed gardens it is recommended that each stretch of boundary fencing has a 5sq” hole cut at the base to connect the gardens.
- Climbers such as jasmine *Jasminum officinale* and honeysuckle *Lonicera periclymenum* are to be planted on boundary fences and proposed properties to provide additional value for invertebrates and foraging bats.
- Three Terraced Sparrow Boxes or Schwegler 1SP Sparrow Terrace Boxes (dependent on whether integrated or external fixtures are preferred) are to be installed. The boxes are to be installed on properties northern or eastern elevations exclusively and at least 3m from the ground, away from window ledges.
- At least three discrete Bug Boxes²⁵ are to be installed along the southern boundary tree line and/or the western boundary hedgerow, well hidden from the public to prevent vandalism.

²⁵ Available at: https://www.nhbs.com/browse/search?q=insect%20box&hPP=30&idx=titles&p=0&is_v=1

7.0 CONCLUSIONS

- 7.1 The Ecological Impact Assessment has identified the Application Site to be utilised by a low population of slow-worm. The Application Site also has potential to be utilised by roosting, foraging and commuting bats, nesting birds and badger. In accordance with NPPF and Local Planning Policy ENV DM5, recommendations have been made within this report to ensure the protection of these legally protected species and provide compensatory habitat.
- 7.2 The Application Site is significantly distanced from internationally designated sites and therefore, no impacts on such designations are anticipated, in accordance with Local Planning Policies ENV SP1.
- 7.3 The proposed retention of trees within the Application Site and the recommended replacement planting of trees to be removed will also adhere to Local Policy ENV DM4.
- 7.4 This EclA report has explicitly set out mitigation aimed at ensuring no net loss in biodiversity and no adverse effects on protected species, to support the planning application. The mitigation will ensure compliance with relevant legislation and policy. The recommended enhancements in the form of wildflower meadow creation, new tree and hedgerow planting, Japanese knotweed removal, wildlife beneficial borders, compost bins and bat and bird boxes will provide a net gain biodiversity in accordance to NPPF and Local Planning Policy ENV DM5.

APPENDIX 1 ECOLOGICAL FEATURES PLAN



APPENDIX 2 POND LOCATION PLAN



Legend

----- 250m

500m

 Ponds

THAKEHAM

current

scheme: Land at Cornfield Close,
Littlehampton

client: Thakeham Group

drawing: Pond Location Plan

date: 19.01.18

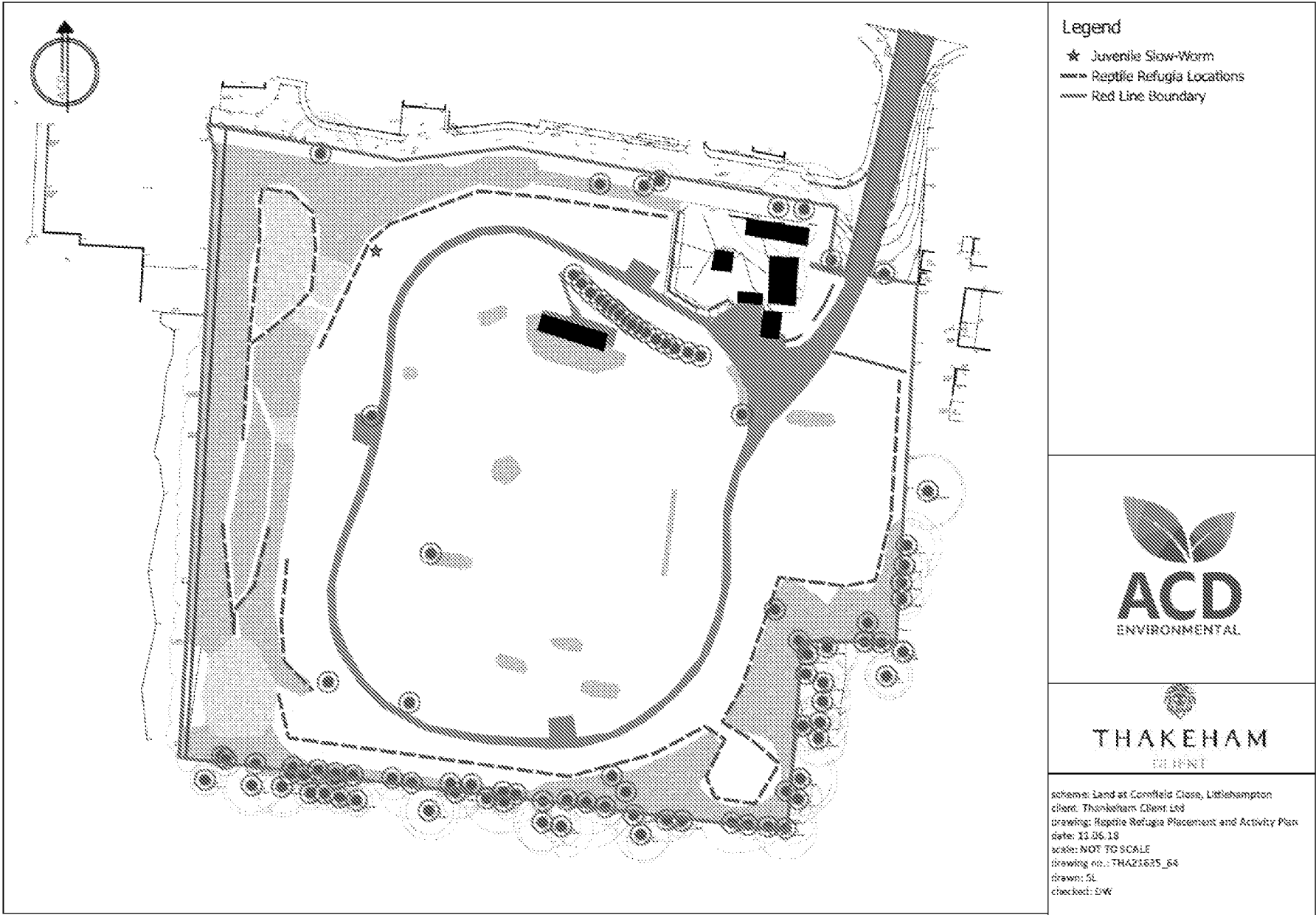
scale: NOT TO SCALE

drawing no.: THA21635_63

drawn: SL

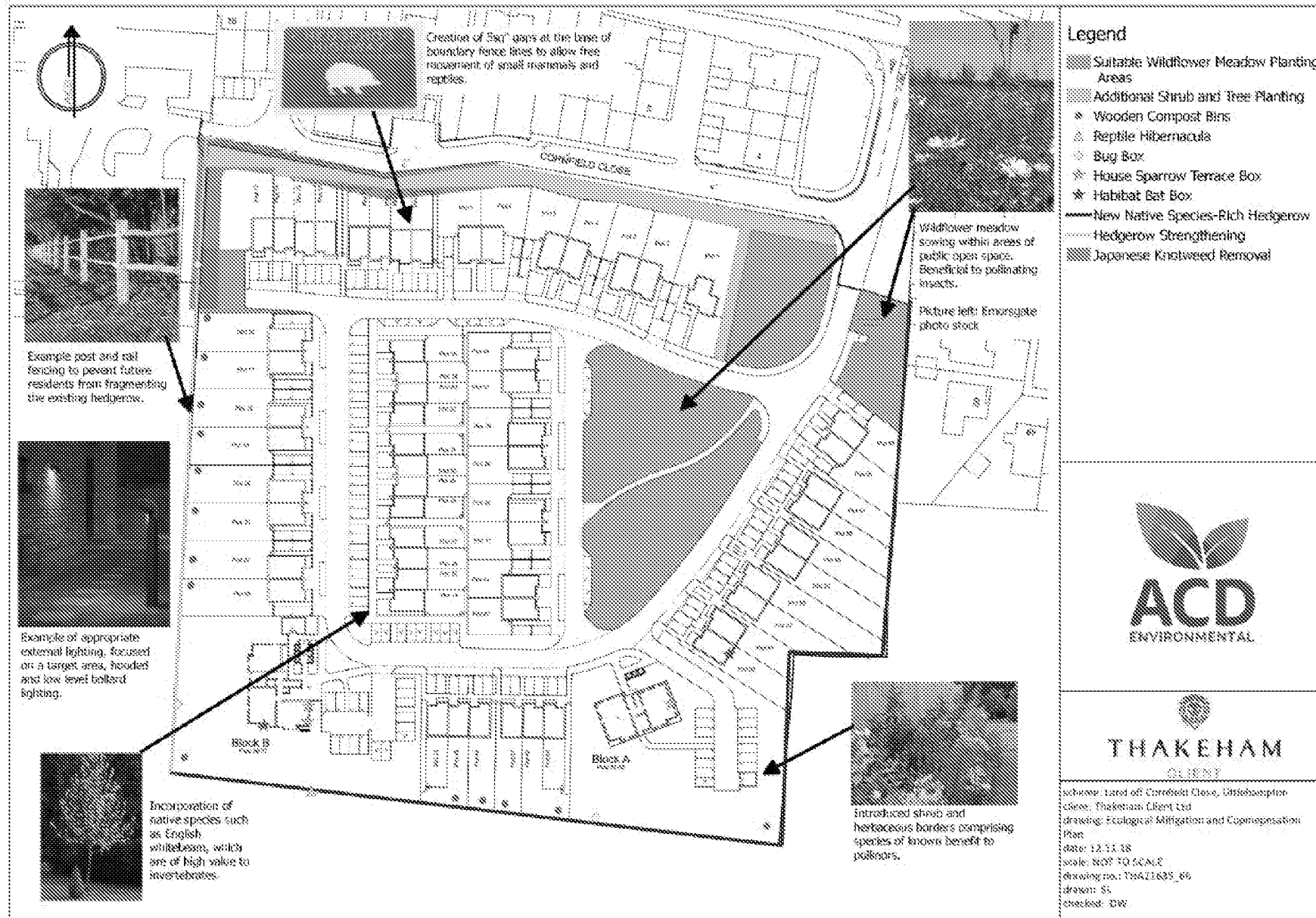
checked: DW

APPENDIX 3 REPTILE REFUGIA LOCATION AND ACTIVITY PLAN



APPENDIX 4 PROPOSED SITE PLAN

APPENDIX 5 ECOLOGICAL MITIGATION AND COMPENSATION PLAN





Head Office

Rodbourne Rail Business Centre
Grange Lane
Malmesbury
SN16 0ES



Surrey Office

Courtyard House
Mill Lane
Godalming
GU7 1EY



Hampshire Office

Suite 6
Crescent House
Yonge Close
Eastleigh
SO50 9SX



Cambridgeshire Office

9 Brownlow Road
Cambridge
CB4 3NG



Ema



Website: www.acdenvironmental.co.uk

ECOLOGICAL SURVEYS * PROTECTED SPECIES LICENSING * MITIGATION * IMPACT ASSESSMENT
ARBORICULTURAL SITE MONITORING AND SUPERVISION * ARCHAEOLOGY
LANDSCAPE & VISUAL IMPACT ASSESSMENT * LANDSCAPE AUDIT * PROJECT MANAGEMENT
EXPERT WITNESS* LANDSCAPE DESIGN & PLANNING LANDSCAPE MANAGEMENT