ecology solutions

DALEMARCH (SHEPPEY) LTD
AND ASDA STORES LTD

LAND AT PLOVER ROAD, MINSTER, ISLE OF SHEPPEY, KENT

Ecological Assessment

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ecology solutions for planners and developers

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1. INTRODUCTION

1.1. Background and Proposals

1.1.1. Ecology Solutions was commissioned in March 2013 by DHA Planning on behalf of Dalemarch (Sheppey) Ltd and Asda Stores Ltd to review ecological information gathered in respect of the site at Plover Road, Minster, Isle of Sheppey in Kent (see Plan ECO1), and to provide strategic advice on suitable mitigation measures. The site had previously been subject to survey work carried out by Lloyd Bore Landscape and Ecology.

1.1.2. Subsequently Ecology Solutions was instructed in August 2014 to prepare an Ecological Assessment for submission as part of a planning application for the site, and to update surveys where necessary. The Lloyd Bore report of 2012 is referenced where appropriate in this assessment to provide background information.

1.1.3. The proposals for the site are for retail and residential buildings with associated hardstanding and landscaping, to be sought through separate planning applications.

1.2. Site Characteristics

1.2.1. The site consists of a large area of rough grassland which has been unmanaged for a considerable period of time, with dense patches of scrub throughout. It is bound to the south by Plover Road and to the northwest by Parish Road. Immediately adjacent to the site in the southwest is Yarrow Drive leading to an area of existing residential development and infrastructure including a children's play area (planning reference SW/04/1409). To the east and beyond Parish Road in the west are existing residential properties, while to the northeast is the recently completed Benning Brothers development (planning reference SW/13/0943).

1.3. Ecological Assessment

1.3.1. This document assesses the ecological interest of the site. The importance of the habitats within the site are evaluated with due consideration given to the guidance published by the Chartered Institute of Ecology and Environmental Management (CIEEM)[1].

1.3.2. Where necessary, mitigation measures are recommended so as to safeguard any significant existing ecological interest within the site and, where appropriate, potential enhancement measures are put forward and reference made to both national and local biodiversity priorities.

[1]Institute of Ecology and Environmental Management (2006) *Guidelines for Ecological Impact Assessment in the United Kingdom* (version 7 July 2006). http://www.ieem.org.uk/ecia/index.html

2. SURVEY METHODOLOGY

2.1. The methodology utilised for the survey work can be split into three areas, namely desk study, habitat survey and faunal survey. These are discussed in more detail below.

2.2. Desk Study

2.2.1. In order to compile background information on the site and the surrounding area, Ecology Solutions contacted Kent and Medway Biological Records Centre (KMBRC) and East Kent Badger Group in August 2014.

2.2.2. Further information on designated sites from a wider search area was obtained from the online Multi-Agency Geographic Information for the Countryside (MAGIC)[2] database, which uses information held by Natural England and other organisations. This information is reproduced at Appendix 1 and where appropriate on Plan ECO1.

2.3. Habitat Survey

2.3.1. An initial walkover of the site was undertaken in May 2013, in order to ascertain the broad land uses and identify areas where further survey would likely be required. Further habitat surveys were undertaken in September and October 2014 in order to ascertain the general ecological value of the site and to identify the main habitats and associated plant species.

2.3.2. The site was surveyed based around extended Phase 1 survey methodology[3], as recommended by Natural England, whereby the habitat types present are identified and mapped, together with an assessment of the species composition of each habitat. This technique provides an inventory of the basic habitat types present and allows identification of areas of greater potential which require further survey. Any such areas identified can then be examined in more detail.

2.3.3. Using the above method, the site was classified into areas of similar botanical community types, with a representative species list compiled for each habitat identified.

2.3.4. All the species that occur in each habitat would not necessarily be detectable during survey work carried out at any given time of the year, since different species are apparent in different seasons. Nonetheless, given the habitats present and the timing of the habitat survey it is considered an accurate and robust assessment has been made.

2.4. Faunal Survey

2.4.1. Obvious faunal activity, such as birds or mammals observed visually or by call during the course of the surveys, was recorded. Specific attention was paid to any potential use of the site by protected species, Biodiversity Action Plan (BAP) species, or other notable species.

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[2]http://www.magic.gov.uk
[3]Joint Nature Conservation Committee (2010). *Handbook for Phase 1 Habitat Survey – a Technique for Environmental Audit*. England Field Unit, Nature Conservancy Council, reprinted JNCC, Peterborough.

2.4.2. In addition to general observations of faunal activity, specific surveys have been completed or are scheduled to be completed for the presence of Badger *Meles meles*, Great Crested Newts *Triturus cristatus* and common reptiles.

Badgers

2.4.3. The site was surveyed for Badgers in May 2013 with subsequent observations made during additional site visits.

2.4.4. The surveys comprised two main elements: firstly, searching thoroughly for evidence of Badger setts. For any setts encountered each sett entrance would be noted and plotted, even if the entrance appeared disused. The following information would be recorded:

i) The number and location of well used or very active entrances; these are clear of any debris or vegetation and are obviously in regular use and may, or may not, have been excavated recently.

ii) The number and location of inactive entrances; these are not in regular use and have debris such as leaves and twigs in the entrance or have plants growing in or around the edge of the entrance.

iii) The number of disused entrances; these have not been in use for some time, are partly or completely blocked and cannot be used without considerable clearance. If the entrance has been disused for some time all that may be visible is a depression in the ground where the hole used to be together with the remains of the spoil heap.

2.4.5. Secondly, evidence of Badger activity such as well-worn paths, run-throughs, snagged hair, footprints, latrines and foraging signs was recorded so as to build up a picture of the use of the site by Badgers.

Reptiles

2.4.6. As the initial habitat surveys confirmed the presence of habitats suitable for supporting common reptiles, specific surveys were completed to ascertain presence or absence of this partially protected group.

2.4.7. Specific presence / absence reptile surveys were undertaken at the site by Ecology Solutions in September and October 2014, in order to update earlier surveys undertaken by Lloyd Bore between May and July 2012.

2.4.8. The methodology utilised principally derived from guidance given in the Froglife Advice Sheet 10: Reptile Survey leaflet[4], the Herpetofauna Workers Manual[5], the Herpetofauna Groups of Britain and Ireland's (HGBI) advisory

[4] Froglife (1999). *Reptile Survey: an introduction to planning, conducting and interpreting surveys for snake and lizard conservation*. Froglife Advice Sheet 10. Froglife, Halesworth.
[5] Gent, T and Gibson, S. (2003). *Herpetofauna Workers Manual*. JNCC, Peterborough

note[6] and Natural England's Standing Advice for Reptiles[7]. Furthermore, regard was made to the Reptile Habitat Management Handbook[8].

2.4.9. The surveys followed the standard guidelines and utilised squares of thick roofing felt known as 'tins' which were cut to approximately 0.5m x 0.5m. The tins provide shelter and heat up quicker than the surroundings in the morning and can remain warmer than the surroundings in the late afternoon. Being ectotherms (cold blooded), reptiles use them to bask under or upon to raise their body temperature which allows them to forage earlier and later in the day.

2.4.10. The survey guidelines produced by Froglife state that a minimum of between 5 to 10 reptile tins should be placed within a survey site. The distribution of the reptile tins was completed on 2 September 2014, whereby Ecology Solutions placed 106 reptile tins within suitable habitat across the site. The tins were allowed a period to allow them to 'bed in' before surveys were commenced. The tins were then checked seven times during suitable weather conditions and when the refugia were not too hot in September and October 2014, in line with the recommended guidelines.

2.4.11. Other refugia within the site, such as large rocks and logs, were also searched beneath for any signs of reptiles during the surveys completed in September and October 2014.

Amphibians

2.4.12. The site was assessed for its suitability to support Great Crested Newts. The habitat on site was considered suitable to support Great Crested Newts during their terrestrial phase. The earlier report produced by Lloyd Bore Landscape and Ecology highlighted five waterbodies in the vicinity, ruling out three of these due to dispersal barriers.

2.4.13. Detailed surveys of the two ponds considered to have connectivity with the site undertaken in 2012 found no evidence of Great Crested Newts but from a review of online information it is noted that one of the offsite ponds to the west appears to support the species. This shows that they are present in the area and therefore it may be possible that colonisation of the waterbodies from which they were previously absent could have occurred in the interim. These two ponds were therefore subject to specific Great Crested Newt Surveys in accordance with survey guidelines issued by Natural England.

2.4.14. All survey work was undertaken in suitable weather conditions, employing three survey methods per visit (bottle trapping, torch survey and netting) where possible, whilst searches for eggs were also conducted during the course of the survey period.

[6] Herpetofauna Groups of Britain and Ireland (HGBI) (1998). *Evaluating Local Mitigation/Translocation Programmes: Maintaining Best Practice and Lawful Standards*.
[7] Natural England (2011). *Standing Advice Species Sheet: Reptiles*. http://www.naturalengland.org.uk/Images/Reptiles_tcm6-21712.pdf
[8] Edgar, P, Foster, J. and Baker, J. (2010). *Reptile Habitat Management Handbook*. Amphibian and Reptile Conservation, Bournemouth.

2.4.15. Torch counting involves the use of high-powered torches to count the number of each amphibian species. The perimeter of each pond was walked once, slowly checking for Great Crested Newts.

2.4.16. In theory, netting involves sampling for a period dictated by the size of the waterbody, and the guidance recommends 15 minutes of search time for every 50 metres of shoreline. In practice, search times significantly exceeded this minimum specification.

2.4.17. The presence of other amphibian species within or in the vicinity of the waterbodies was noted.

2.4.18. All surveys were undertaken by two experienced ecologists under the supervision of a Great Crested Newt survey licence holder.

2.4.19. In addition, any suitable refugia in the vicinity of the ditches / ephemeral area were checked for the potential presence of Great Crested Newts. This involved searching under logs and rocks, which are favoured hiding places for the species.

2.4.20. The land within and surrounding the site was assessed in terms of its habitat quality and its ability to support Great Crested Newts. In addition the waterbodies were subject to a Habitat Suitability Index (HSI) assessment.

2.4.1. The HSI for the Great Crested Newt was developed by Oldham et al. (2000)[9] and was applied during the surveys according to guidance set out by the National Amphibian and Reptile Recording Scheme launched in 2007.

2.4.2. An HSI survey is a measure of habitat suitability for Great Crested Newts and is based on ten suitability indices. The ten suitability indices are:

- Location;
- Pond area;
- Pond drying;
- Water quality;
- Shade;
- Fowl;
- Fish;
- Ponds;
- Terrestrial habitat; and
- Macrophytes cover.

2.4.3. Scores are attributed to each index and are then converted to SI scores, on a scale from 0.01 to 1. The ten scores are then multiplied together and the tenth root of this number is then calculated.

2.4.4. The calculation then gives a score of between 0 and 1 (1 represents optimal suitability, a score of below 0.5 represents poor suitability) and the overall HSI of a pond can then be determined. The scoring system is shown in Table 2.1 below.

[9] Oldham R.S., Keeble J., Swan M.J.S. & Jeffcote M. (2000). Evaluating the suitability of habitat for the Great Crested Newt (Triturus cristatus). *Herpetological Journal* 10 (4), 143-155.

HSI Score	Pond Suitability
<0.5	Poor
0.5 – 0.59	Below Average
0.6 – 0.69	Average
0.7 – 0.79	Good
>0.8	Excellent

Table 2.1. Habitat Suitability Index (HSI) for Great Crested Newts Scores Summary.

3. ECOLOGICAL FEATURES

3.1. A habitat survey was undertaken within the site by Ecology Solutions in May 2013 with further surveys undertaken in September and October 2014.

3.2. The site consists of a large area of rough grassland with ruderal elements and pockets of scrub (see Plan ECO2).

3.3. The following main habitat / vegetation types were identified within the site during the surveys undertaken:

- Rough Grassland;
- Ditch; and
- Scrub.

3.4. The locations of these habitats are shown on Plan ECO2.

3.5. Rough Grassland

3.5.1. The majority of the site is tussocky rough grassland which has been lacking management for some time (see Photographs 1 and 2).

3.5.2. The vegetation is dominated by Yorkshire Fog *Holcus lanatus*, Cocksfoot *Dactylis glomerata* and False Oat-grass *Arrhenatherum elatius*, with frequent Red Clover *Trifolium pratense*, Ragwort *Senecio jacobaea* and Meadow Foxtail *Alopecurus pratensis*; occasional Ribwort Plantain *Plantago lanceolata*, Crested Dog's-tail *Cynosurus cristatus*, Fleabane sp., Broad-leaved Dock *Rumex obtusifolius*, Mugwort *Artemisia vulgaris*, Bush Vetch *Vicia sepium*, Creeping Cinquefoil *Potentilla reptans*, Cow Parsley *Anthriscus sylvestris* and Herb Robert *Geranium robertianum*; and, in the context of the site, rare Wild Radish *Raphanus raphanistrum*, Ivy *Hedera helix* and Greater Plantain *Plantago major*.

3.6. Ditch

3.6.1. Ditch D1 holds water after rain but is largely overshaded and dominated by scrub.

3.7. Scrub

3.7.1. Throughout the rough grassland there are patches of dense scrub. Species present include frequent Hawthorn *Crataegus monogyna*; frequent to locally dominant Blackthorn *Prunus spinosa*; and occasional Crab Apple *Malus sylvestris*, Ash *Fraxinus excelsior*, Field Rose *Rosa arvensis* and Dogwood *Cornus sanguinea*.

3.7.2. Along the western boundary there is a dense line of Blackthorn.

3.7.3. Associated with the areas of scrub are a number of tall ruderal species including: frequent to locally dominant Common Nettle *Urtica dioica*; frequent to locally abundant Bristly Ox-tongue *Helminthotheca echioides*; frequent Creeping Thistle *Cirsium arvense* and Bramble *Rubus fruticosus*; occasional Cleavers *Galium aparine* and Spear Thistle *Cirsium vulgare*; and, in the context of the site, locally frequent Fennel *Foeniculum vulgare*,

Rosebay Willowherb *Chamerion angustifolium* and Hemlock *Conium maculatum*.

3.8. Background Records

3.8.1. No records of notable plant species were returned from specifically within the site.

4. WILDLIFE USE OF THE SITE

4.1. General observations were made during the surveys of any faunal use of the site, with specific attention paid to the potential presence of protected species.

4.2. Badgers

4.2.1. No evidence of Badgers was recorded within the site during any of the surveys undertaken.

4.2.2. KMBRC returned no records of Badgers from within the search area. In a response dated 4 September 2014, Martin Newcombe of the East Kent Badger Group states that *"the last reliable record of a Badger sett on the Isle of Sheppey was in 1842. Sheppey may always have been too small an area to support Badgers without persecution in the past, and is now either too wet (half the island) or too developed with busy road[s]. In addition, the nearest mainland sett is two miles from the Swale whose [sic] strong currents would be likely to make Badgers effectively unable to recolonise the island".* It is therefore highly unlikely that Badgers would be present in the locality.

4.3. Bats

4.3.1. There are no buildings on site or trees with suitable features present that bats could make use of for roosting. It is considered that the site may be used by foraging or commuting bats.

4.3.2. Records returned by KMBRC show the closest bat record is of a Common Pipistrelle bat *Pipistrellus pipistrellus* approximately 0.14km north of the site in 2010.

4.3.3. Soprano Pipistrelle bat *Pipistrellus pygmaeus* were recorded approximately 0.82km northwest of the site in 2012. Serotine bat *Eptesicus serotinus* recorded approximately 2.31km southwest of the site in 2005. Noctule bat *Nyctalus noctula* recorded approximately 3.46km southwest of the site in 2005. Daubenton's bat *Myotis daubentonii* recorded approximately 2.93km northwest of the site in 2005. Nathusius' Pipistrelle bat *Pipistrellus nathusii* recorded approximately 2.87km northwest of the site in 2010.

4.4. Other Mammals

4.4.1. It is considered that small common mammal species could make use of vegetation within the site, but none of these are likely to be notable species.

4.4.2. The closest record returned by KMBRC is of a Hedgehog *Erinaceus europaeus* approximately 0.69km southeast of the site in 2008.

4.4.3. The closest Water Vole *Arvicola amphibius* record is from approximately 1.51km southwest of the site in 2005. Records of Harvest Mouse were returned by KMBRC from 2007 in grid squares TQ97K and TQ97F.

4.5. Birds

4.5.1. The site is considered to offer suitable opportunities for both nesting and foraging birds. A number of birds were seen or heard during the course of

the surveys and these include: Goldfinch *Carduelis carduelis*, Carrion Crow *Corvus corone*, Magpie *Pica pica* and European Robin *Erithacus rubecula*.

4.5.2. Information received from the desk study returned a number of bird records from within the search area, although no records were from within the site.

4.5.3. A number of birds were returned by KMBRC as being within the grid square TQ9573 which at its closest point is approximately 0.68km northeast of the site. Species recorded include: Snow Bunting *Plectrophenax nivalis* in 2012; Grey Heron *Ardea cinerea*, Black-headed Gull *Chroicocephalus ridibundus*, Common Gull *Larus canus*, Sandwich Tern *Sterna sandvicensis*, Common Tern *Sterna hirundo*, Little Tern *Sterna albifrons*, Barn Owl *Tyto alba*, Sand Martin *Riparia riparia*, Grey Wagtail *Motacilla cinerea*, Waxwing *Bombycilla garrulus*, Yellow-browed Warbler *Phylloscopus inornatus* and Firecrest *Regulus ignicapillus* in 2011; Dunlin *Calidris alpina* in 2010; Cormorant *Phalacrocorax carbo*, Canada Goose *Branta canadensis*, Brent Goose *Branta bernicla*, Common Buzzard *Buteo buteo* and *Curlew Numenius arquata* in 2009; Dartford Warbler *Sylvia undata*, Bewick's Swan *Cygnus columbianus* and Marsh Harrier *Circus aeruginosus* in 2008; Grasshopper Warbler *Locustrella naevia*, Tawny Owl *Strix aluco* and Hen Harrier *Circus cyaneus* in 2007; White-throated Sparrow *Zonotrichia albicollis* in 2006 and Little Grebe *Tachybaptus ruficollis* in 2005.

4.5.4. The location of the site close to the east coast means that unusual and vagrant species are recorded in the area relatively frequently.

4.6. Reptiles

4.6.1. Ecology Solutions conducted presence / absence reptile surveys at the site following standard guidelines and during suitable weather conditions. A summary of results is shown in Table 4.1 below.

Survey Number	Date	Time	Cloud Cover %	Temp. (°C)	Number of Slow Worms Recorded
1	28.09.2014	09:30	50	16	6
2	03.10.2014	09:30	100	14	2
3	05.10.2014	09:30	0	10	0
4	06.10.2014	10:00	100	16	0
5	07.10.2014	14:00	100	15	2
6	10.10.2014	10:00	0	12	0
7	13.10.2014	15:15	100	17	0
8	21.10.2014	09:30	50	15	0

Table 4.1. Reptile Survey Results 2014.

4.6.2. The indicative locations of the Slow Worms *Anguis fragilis* are shown on Plan ECO3. The numbers recorded during the September and October 2014 surveys would appear to indicate a low population of Slow Worms spread throughout the site. Information obtained by previous consultants in 2012 was to the effect that a medium or 'good' population of Slow Worms was present within the site.

4.6.3. Information from planning applications in the vicinity showed that a single Slow Worm was recorded within the development site directly north of the site as discussed in planning application SW/13/0943.

4.6.4. KMBRC returned a number of reptile records within the search area. The closest record is of a Grass Snake *Natrix natrix* approximately 0.44km west of the site. The closest Slow Worm record is from approximately 0.55km northeast of the site in 2010. Common Lizard *Zootoca vivipara* were also recorded in this location in 2010.

4.7. Amphibians

4.7.1. The habitats present on-site are considered suitable for Great Crested Newts *Triturus cristatus* during their terrestrial phase.

4.7.2. Kent Reptile and Amphibian Group (KRAG) provided a list of ponds within the search area. Ecology Solutions identified five ponds within 500 metres of the site.

4.7.3. The two ponds to the west are isolated from the site by existing infrastructure and residential properties which are considered to be significant dispersal barriers. There are three ponds to the east of the site. The furthest is at a distance of approximately 500m and is isolated from the site by residential properties and infrastructure. The remaining two ponds are considered to be within an accessible range for Great Crested Newts, facilitated by a stream running towards the north of the site. The closer of these two ponds (Pond P1) is approximately 30m east of the site whilst the other (Pond P2) is 300m east (as shown on Plan ECO1). These were subject to Great Crested Newt surveys by Lloyd Bore in April and May 2012.

4.7.4. Pond P2 was assessed by Lloyd Bore to have ‘poor’ suitability under the Habitat Suitability Index and was therefore not subject to further survey in 2012.

4.7.5. No Great Crested Newts were recorded by Lloyd Bore in 2012 in Pond P1 during any of the four surveys although bottle traps were not deployed given the risk of public disturbance.

4.7.6. Since these surveys in 2012, a new development has been completed to the north of the site. This development now acts as a further dispersal barrier for any amphibians that may be present to the north.

4.7.7. The results of surveys completed by Ecology Solutions in 2015 are presented in Tables 4.2 and 4.3 below.

Pond	Habitat Suitability Index (HSI) score	Pond Suitability
Pond P1	0.61	Average
Pond P2	0.46	Poor

Table 4.2. Habitat Suitability Index (HSI) scores of Ponds P1 and P2.

Pond P1													
Survey No.	Date	Great Crested Newt						Smooth Newt					
		Torch		Bottle Trap		Netting		Torch		Bottle Trap		Netting	
		M	F	M	F	M	F	M	F	M	F	M	F
1	22.04.15	0	0	0	0	0	0	0	0	0	0	0	0
2	07.05.15	0	0	0	0	0	0	0	0	0	0	0	0
3	11.05.15	0	0	0	0	0	0	**2**	**3**	0	0	0	0
4	27.05.15	0	0	0	0	0	0	0	0	0	0	0	0
Peak count Great Crested Newts: 0													

Pond P2													
Survey No.	Date	Great Crested Newt						Smooth Newt					
		Torch		Bottle Trap		Netting		Torch		Bottle Trap		Netting	
		M	F	M	F	M	F	M	F	M	F	M	F
1	22.04.15	0	0	0	0	0	0	**1**	**1**	0	0	0	0
2	07.05.15	0	0	0	0	0	0	0	0	0	0	0	0
3	11.05.15	0	0	0	0	0	0	**8**	**17**	0	0	0	0
4	27.05.15	0	0	0	0	0	0	0	0	0	0	0	0
Peak count Great Crested Newts: 0													

Table 4.4. Great Crested Newt survey results for Ponds P1 and P2.

4.7.8. No Great Crested Newts were recorded in either pond during the surveys undertaken. The surveys did confirm the presence of Smooth Newt *Lissotriton vulgaris*, with a low population centred on Pond P1 and a medium population centred on Pond P2.

4.7.9. Great Crested Newt records were returned by KMBRC as being within the search area. KRAG consider the likelihood of presence of Great Crested Newts to be possible. The closest record is from 0.34km west of the site in 1986 and the most recent record is from 2014 approximately 0.44km west of the site. The closest Common Frog *Rana temporaria* record returned by KMBRC is from approximately 0.08km north of the site in 2010. The most recent Smooth Newt record is from 2013 approximately 0.94km northeast of the site and the closest record is from approximately 0.58km west in 2011. Common Toad *Bufo bufo* was recorded approximately 0.58km west of the site in 2011.

4.8. Invertebrates

4.8.1. It is likely that any species present would be locally common and would only be temporary displaced from the site.

4.8.2. Information returned as part of the desk study included a number of invertebrate species.

4.8.3. Records returned by the KMBRC include: Beaded Chestnut *Agrochola lychnidis*, Dusky Brocade *Apamea remissa*, Figure of Eight *Diloba caeruleocephala*, Buff Ermine *Spilosoma luteum*, Garden Dart *Euxoa nigricans*, Hedge Rustic *Tholera cespitis*, Latticed Heath *Chiasmia clathrata*, Mottled Rustic *Caradrina morpheus*, Shoulder-striped Wainscot

Mythimna comma, Small Emerald *Hemistola chrysoprasaria*, Small Square-spot *Diarsia rubi*, White Ermine *Spilosoma lubricipeda*, Rustic *Hoplodrina blanda* and Mouse Moth *Amphipyra tragopoginis* in 2009; Cinnabar *Tyria jacobaeae* and Grey Dagger *Acronicta psi* in 2008; Mullein Wave *Scopula marginepunctata*, Brindled Beauty *Lycia hirtaria*, Dark Spinach *Pelurga comitata* and Dot Moth *Melanchra persicariae* in 2007; Double Dart *Graphiphora augur*, Green-brindled Crescent *Allophyes oxyacanthae* and Large Wainscot *Rhizedra lutosa* in 2006; Rosy Rustic *Hydraecia micacea* and Shaded Broad-bar *Scotopteryx chenopodiata* in 2005; and Pretty Chalk Carpet *Melanthia procellata* in 2003 recorded approximately 1.47km northeast of the site.

5. ECOLOGICAL EVALUATION

5.1. The Principles of Ecological Evaluation

5.1.1. The guidelines for ecological evaluation produced by CIEEM propose an approach that involves professional judgement, but makes use of available guidance and information, such as the distribution and status of the species or features within the locality of the project.

5.1.2. The methods and standards for site evaluation within the British Isles have remained those defined by Ratcliffe[10]. These are broadly used across the United Kingdom to rank sites so priorities for nature conservation can be attained. For example, current sites of Special Scientific Interest (SSSI) designation maintains a system of data analysis that is roughly tested against Ratcliffe's criteria.

5.1.3. In general terms, these criteria are size, diversity, naturalness, rarity and fragility, while additional secondary criteria of typicalness, potential value, intrinsic appeal, recorded history and the position within the ecological / geographical units are also incorporated into the ranking procedure.

5.1.4. Any assessment should not judge sites in isolation from others, since several habitats may combine to make it worthy of importance to nature conservation.

5.1.5. Further, relying on the national criteria would undoubtedly distort the local variation in assessment and therefore additional factors need to be taken into account, e.g. a woodland type with a comparatively poor species diversity, common in the south of England, may be of importance at its northern limits, say in the border country.

5.1.6. In addition, habitats of local importance are often highlighted within a local Biodiversity Action Plan (BAP). The Kent BAP has been considered as part of this assessment and is referenced where relevant.

5.1.7. Levels of importance can be determined within a defined geographical context from the immediate site or locality through to the international level.

5.1.8. The legislative and planning policy context are also important considerations and have been given due regard throughout this assessment.

[10]Ratcliffe, D A (1977).*A Nature Conservation Review: the Selection of Study areas of Biological National Importance to Nature Conservation in Britain*. Two Volumes. Cambridge University Press, Cambridge.

5.2. Habitat Evaluation

Designated Sites

5.2.1. **Statutory Sites.** There are no statutory designations of nature conservation value within the site or immediately adjacent to it. The nearest statutory designated site is The Swale Site of Special Scientific Interest (SSSI), Special Protection Area (SPA), and Ramsar site which is approximately 1.7 km south of the site, part of which is also designated as Elmley National Nature Reserve (NNR). Adjacent to this designated area is Medway Estuary and Marshes SSSI, SPA and Ramsar site.

5.2.2. The Swale SSSI, SPA and Ramsar site is designated amongst other reasons, for the internationally important numbers of wintering and passage wildfowl and waders, and there are also important breeding populations of a number of bird species. It includes the largest remaining areas of freshwater grazing marsh in Kent. The mudflats are extremely rich with over 350 species of invertebrates recorded whilst the saltmarshes are noted for the rich plant life.

5.2.3. It is not considered likely that there would be a significant effect on the designated sites as a result of the proposed development.

5.2.4. **Non-statutory Sites.** The site is not subject to a non-statutory designation. The nearest non-statutory designation is SW07 Minster Marshes Local Wildlife Site (LWS) which is approximately 1.2km north of the site (see Plan ECO1).

5.2.5. It is not considered that development of the site would have a significant adverse effect on this site due to the nature of the development and the distance it is removed from the site.

5.2.6. A number of additional statutory and non-statutory sites are located in the wider area as identified on Plan ECO1, but no significant adverse effects are anticipated.

Habitats

5.2.7. The majority of the site consists of rough grassland, which is of low ecological interest. Throughout the rough grassland there are dense areas of scrub which are also considered to be of low ecological value.

5.3. Faunal Evaluation

Bats

5.3.1. **Legislation.** All bats are protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and included on Schedule 2 of the Conservation of Habitats and Species Regulations 2010 (“the Habitats Regulations”). These include provisions making it an offence:

- Deliberately to kill, injure or take (capture) bats;
- Deliberately to disturb bats in such a way as to:-

(i) be likely to impair their ability to survive, to breed or reproduce, or to rear or nurture their young, or to hibernate or migrate; or
(ii) affect significantly the local distribution or abundance of the species to which they belong;

- To damage or destroy any breeding or resting place used by bats;
- Intentionally or recklessly to obstruct access to any place used by bats for shelter or protection (even if bats are not in residence).

5.3.1. **Site Usage.** There are no buildings or trees within the site that are considered to offer suitable opportunities for roosting bats.

5.3.2. The site is considered to offer some opportunities for foraging bats. The site currently supports areas of dense scrub, which are likely to support a good assemblage of invertebrates, and therefore offer opportunities for foraging bats and also offer navigational features. It is recommended that alternative native species are planted to replace and enhance the foraging opportunities.

5.3.3. It is recommended that the design for the lighting scheme for the proposed development have due regard to the potential presence of foraging and commuting bats.

Birds

5.3.4. **Legislation.** Section 1 of the Wildlife and Countryside Act 1981 (as amended) is concerned with the protection of wild birds, whilst Schedule 1 lists species that are protected by special penalties. All species of birds receive general protection whilst nesting.

5.3.5. **Site Usage.** The majority of the site is of some ornithological interest due to habitats present which are suitable for nesting and foraging.

5.3.6. Owing to the protection afforded to nesting birds any dense area of vegetation to be removed may be subject to timing constraints. Where it is necessary, this should be undertaken outside the bird nesting season (March to July inclusive) to avoid a possible offence. Removal can be undertaken during the nesting season if surveys by an experienced ecologist confirm the absence of nesting birds prior to removal.

5.3.7. No Schedule 1 or Red List bird species were recorded within the site during the course of the surveys undertaken.

5.3.8. In order to mitigate against the loss of nesting opportunities within the site it is recommended that new areas of landscape planting be provided based around a diverse mixture of native species or species of known wildlife value.

Reptiles

5.3.9. **Legislation.** Rare, endangered or declining species receive full protection under the Wildlife & Countryside Act 1981 as well as protection under the Conservation of Habitats and Species Regulations 2010. Species that are fully protected are Smooth Snake *Coronella austriaca* and Sand Lizard *Lacerta agilis*. It is illegal to:

- Deliberately kill, injure or take (capture) these reptiles;
- Deliberately disturb these reptiles in such a way as to be likely:–
    a) to impair their ability to survive, to breed or reproduce, or to rear or nurture their young, or to hibernate; or
    b) to affect significantly their local distribution or abundance;
- Damage or destroy any breeding or resting place used by these reptiles;
- Intentionally or recklessly obstruct access to any place used by these reptiles for shelter or protection (even if the reptiles are not present at the time);
- Sell, offer for sale, possess or transport for purposes of sale these reptiles (live or dead animal, part or derivative).

5.3.10. Owing to their abundance in Britain, Common Lizard, Slow Worm, Grass Snake and Adder *Vipera berus* are 'partially protected' under the Wildlife & Countryside Act 1981 (as amended) and as such only receive protection from:

- Intentional killing and injuring;
- Being sold or other forms of trading.

5.3.11. The habitat of common reptiles is therefore not directly protected. However, because of their partial protection, disturbing or destroying their habitat while they are present may lead to an offence.

5.3.12. All reptile species are listed as a Species of Principal Importance under Section 41 of the Natural Environment and Rural Communities Act (NERC) 2006. The NERC Act places responsibility upon public bodies to have regard for the conservation of biodiversity in England.

5.3.13. **Site Usage.** The site supports suitable opportunities for this group, particularly in the areas of rough grassland where there is an absence of any formal management regime.

5.3.14. Checks of refugia within the site during September and October 2014 confirmed the presence of Slow Worms. The numbers recorded suggest that a low population is spread throughout the site.

5.3.15. Earlier surveys carried out in 2012 by Lloyd Bore suggested that a ‘good’ population was present (see previous section), and the approach to mitigation will assume this is the case to account for a ‘worst case scenario’.

5.3.16. It is understood that the proposed development is to be brought forward in two phases, with the retail proposals in the southeast of the site being commenced in advance of the residential development of the wider site. Prior to the commencement of any site clearance or construction activity, a reptile translocation exercise will be implemented in order to remove Slow Worms from the site. This may involve a degree of habitat manipulation to encourage reptiles to move away from particular areas.

5.3.17. This exercise will follow standard methodology, namely the deployment of a high density of artificial refugia to attract reptiles in order that they may be

captured and removed. Generally speaking the site is bounded by areas of unsuitable habitat (roads and new development) or by close board wooden fences, which limit any possibility for ingress, and therefore the need for temporary herpetofauna fencing will be similarly limited.

5.3.18. Depending on the timescales for development, the reptile translocation exercise may be undertaken as one exercise with animals removed from the whole site; alternatively a two-stage process could be adopted. In both cases it is likely that a length of temporary herpetofauna fencing would be installed to separate the retail from the residential area.

5.3.19. The reptile population cannot be maintained on site owing to the nature of the proposed development. A suitable off-site receptor area will therefore be identified. This will be in a condition suitable to receive Slow Worms. At all times during the exercise the welfare of the captured animals will be paramount.

6. PLANNING POLICY CONTEXT

6.1. The planning policy framework that relates to nature conservation at the site is issued at two main administrative levels: nationally through the National Planning Policy Framework (NPPF); and locally through Swale Borough Council policy documents.

6.2. Any proposed development will be judged in relation to the policies contained within these documents.

6.3. National Planning Policy

National Planning Policy Framework

6.3.1. The National Planning Policy Framework (NPPF) (March 2012) sets out the Government's requirements for the planning system. It replaces and revokes previous national planning policy, including PPS9 (Biodiversity and Geological Conservation).

6.3.2. The key element of the NPPF is that there should be '*a presumption in* favour *of sustainable development, which should be seen as a golden thread running through both plan-making and decision-taking*' (paragraph 14). It is important to note that this presumption '*does not apply where development requiring Appropriate Assessment under the Birds or Habitats Directives is being considered, planned or determined'* (paragraph 119).

6.3.3. A number of policies in the NPPF are comparable to those in PPS9, including reference to minimisation of impacts to biodiversity and provision of net gains to *biodiversity* where possible (paragraph 109) and ensuring that Local Authorities place appropriate weight to statutory and non-statutory nature conservation designations, protected species and biodiversity.

6.3.4. The NPPF also considers the strategic approach which Local Authorities should adopt with regard to the protection, enhancement and management of green infrastructure, priority habitats and ecological networks, and the recovery of priority species.

6.3.5. Paragraph 118 of the NPPF comprises a number of principles which Local Authorities should apply, including encouraging opportunities to incorporate biodiversity in and around developments, provision for refusal of planning applications if significant harm cannot be avoided, mitigated or compensated for, applying the protection given to European sites to potential SPAs, possible SACs, listed or proposed Ramsar sites and sites identified (or required) as compensatory measures for adverse effects on European sites, and the provision for the refusal for developments resulting in the loss or deterioration of 'irreplaceable' habitats unless the need for, and benefits of, the development in that location clearly outweigh the loss.

6.3.6. National policy therefore implicitly recognises the importance of biodiversity such that with sensitive planning and design, development and conservation of the natural heritage can co-exist and benefits can, in certain circumstances, be obtained.

6.4. Local Policy

Local Development Framework

6.4.1. The document within the Local Development Framework which is pertinent to nature conservation is the Adopted Swale Borough Local Plan 2008. Due consideration should also be made to the emerging Bearing Fruits: Swale Borough Local Plan Part 1 August 2013 document.

Adopted Swale Borough Local Plan 2008

6.4.2. In 2010 the Secretary of State saved a number of policies within this document. Those policies not listed in the Secretary of State's Direction expired in February 2011. There are six saved policies within this document which relate to nature conservation and these are described below.

6.4.3. Policy SP2 is concerned with protecting and enhancing special features of the ecological environments of the Borough. Where a planning decision would result in significant harm to biodiversity interests, which cannot be prevented or adequately mitigated against, appropriate compensation measures will be sought.

6.4.4. Policy E1 is concerned with the protection and enhancement of the natural environment.

6.4.5. Policy E2 states that development proposals would not be permitted that would give rise to pollution that would significantly adversely affect flora and fauna.

6.4.6. Policy E10 is concerned with the protection of trees (including old orchards and fruit trees, hedgerows, woodland and scrub) that make an important contribution to the nature conservation value of the site or surrounding area. This policy encourages the retention of trees on site as far as possible and providing new tree planting.

6.4.7. Policy E11 is generally concerned with the protection, conservation and enhancement of biodiversity conservation interests, particularly where they have been identified as national and county priorities in the UK and Kent BAPs or through protected species legislation.

6.4.8. Policy E12 is concerned with the protection and enhancement of designated sites in the area. The Borough Council will give priority to their protection in accordance with their relative importance for biodiversity. Where the reasons for the development outweigh the nature conservation value of the site, planning measures will be required to mitigate the harmful aspects of the development.

Bearing Fruits Local Plan Examination Version (December 2014)

6.4.9. The Local Plan will set out the strategic planning framework for the Borough to guide development over the period from 2011 to 2031.

6.4.10. The core planning policy pertaining to the natural environment is Policy CP7: Conserving and enhancing the natural environment – providing for green infrastructure. This policy states that the council will ensure the

protection, enhancement and delivery of the Swale natural assets and green infrastructure network.

6.4.11. Policy DM28: Biodiversity and geological conservation. This is a general policy concerned with the conservation and enhancement of biodiversity whilst minimising any adverse impacts and compensate where impacts cannot be mitigated. This includes the protection of designated sites and the habitats and species in UK and local Biodiversity Action Plans. It promotes the preservation, restoration and re-creation of linear and continuous landscape features, aged or veteran trees; and irreplaceable habitat, including ancient woodland and traditional orchards.

6.4.12. Policy DM29 is concerned with the protection of woodlands, trees and hedgerows.

6.4.13. Policy DM30 refers to the biodiversity enhancement by securing the long-term future and appropriate management of land within Biodiversity Opportunity Areas.

6.5. Discussion

6.5.1. The development is proposed on land that is currently of low ecological interest. It is not subject to any statutory or non-statutory nature conservation designation. Recommendations have been put forward in this report that would fully safeguard the existing ecological interest of the site, and wherever possible, measures to enhance ecological and biodiversity value have been set out.

7. SUMMARY AND CONCLUSIONS

7.1. Ecology Solutions was commissioned in March 2013 by DHA Planning on behalf of Dalemarch (Sheppey) Ltd and Asda Stores Ltd to review ecological information gathered in respect of the site at Plover Road, Minster, Isle of Sheppey in Kent (see Plan ECO1) and to provide strategic advice on suitable mitigation measures. The site had previously been subject to survey work carried out by Lloyd Bore Landscape and Ecology.

7.2. Subsequently Ecology Solutions was instructed in August 2014 to prepare an Ecological Assessment for submission as part of a planning application for the site, and to update surveys where necessary.

7.3. The proposals for the site are for retail and residential buildings with associated hardstanding and landscaping, to be sought through separate planning applications.

7.4. **Statutory Sites.** There are no statutory designations of nature conservation value within the site or immediately adjacent to it. The nearest statutory designated site is The Swale Site of Special Scientific Interest (SSSI), Special Protection Area (SPA), and Ramsar site which is approximately 1.7 km south of the site, part of which is also designated as Elmley National Nature Reserve (NNR). Adjacent to this designated area is Medway Estuary and Marshes SSSI, SPA and Ramsar site.

7.5. It is not considered likely that there would be a significant effect on the designated sites as a result of the proposed development.

7.6. **Non-statutory Sites.** The site is not subject to a non-statutory designation. The nearest non-statutory designation is SW07 Minster Marshes Local Wildlife Site (LWS) which is approximately 1.2km north of the site (see Plan ECO1).

7.7. It is not considered that development of the site would have a significant adverse effect on this site due to the nature of the development and the distance it is removed from the site.

7.8. **Habitats.** The majority of the site consists of rough grassland, which is of low ecological interest. Throughout the rough grassland there are dense areas of scrub which are also considered to be of low ecological value.

7.9. **Bats.** There are no buildings or trees within the site that are considered to offer suitable opportunities for roosting bats. The site is considered to offer some opportunities for foraging bats. The site currently supports areas of dense scrub, which are likely to support a good assemblage of invertebrates, and therefore offer opportunities for foraging bats and also offer navigational features. It is recommended that alternative native species are planted to replace and enhance the foraging opportunities. It is recommended that the design for the lighting scheme for the proposed development have due regard to the potential presence of foraging and commuting bats.

7.10. **Birds.** The majority of the site is of some ornithological interest due to habitats present which are suitable for nesting and foraging. Owing to the protection afforded to nesting birds any dense area of vegetation to be removed may be subject to timing constraints. Where it is necessary, this should be undertaken outside the bird nesting season (March to July inclusive) to avoid a possible

offence. Removal can be undertaken during the nesting season if surveys by an experienced ecologist confirm the absence of nesting birds prior to removal. In order to mitigate against the loss of nesting opportunities within the site it is recommended that new areas of landscape planting be provided based around a diverse mixture of native species or species of known wildlife value.

7.11. **Amphibians.** Surveys undertaken of off-site ponds did not record the presence of Great Crested Newts. No mitigation measures are required.

7.12. **Reptiles.** The site supports suitable opportunities for reptiles, particularly in the areas of rough grassland where there is an absence of any formal management regime. Checks of refugia within the site during September and October 2014 confirmed the presence of Slow Worms. The numbers recorded suggest that a low population is spread throughout the site. Earlier surveys indicated that a medium or 'good' population was present, and this will be assumed for the purposes of mitigation.

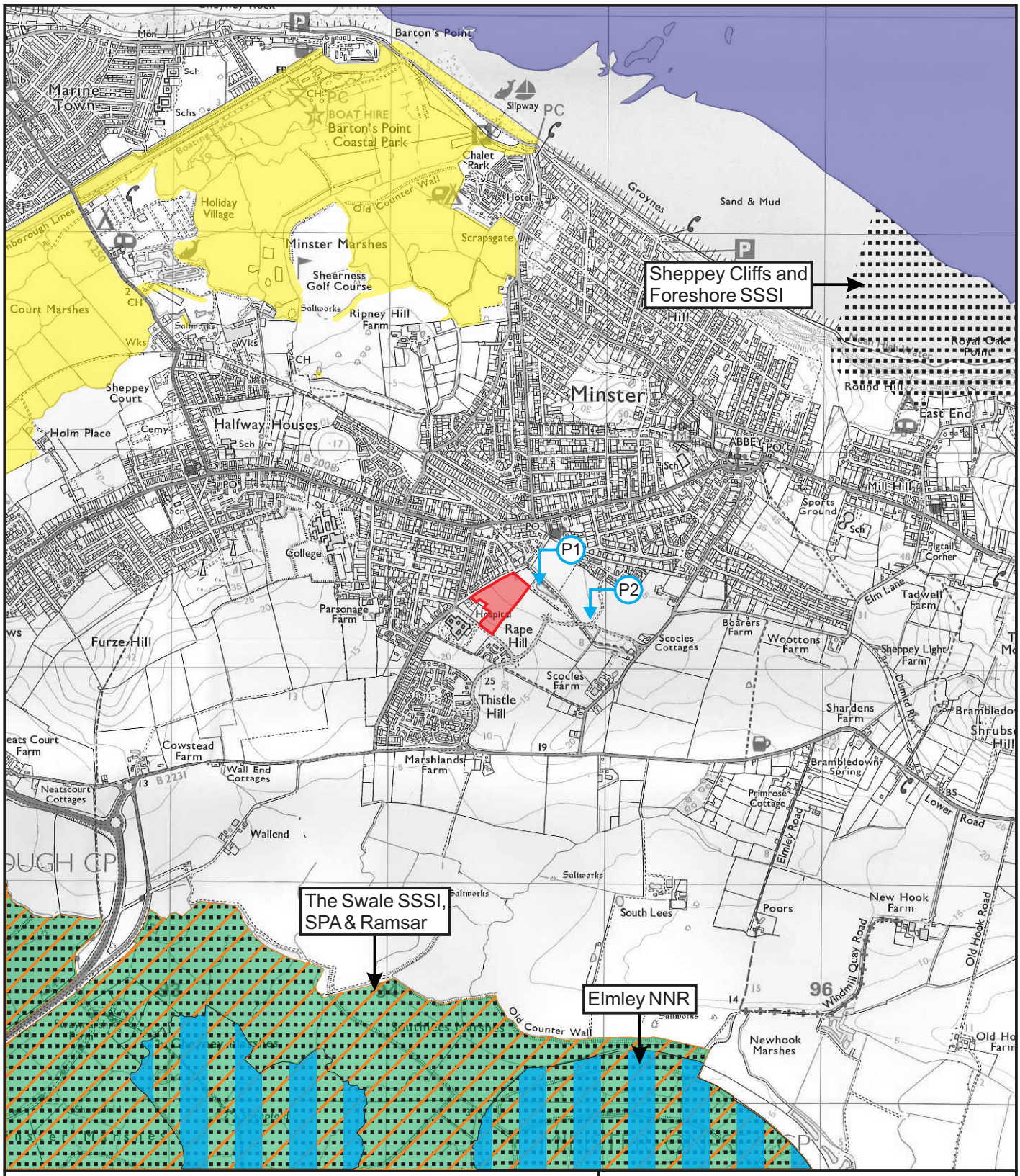
7.13. It is understood that the proposed development is to be brought forward in two phases, with the retail proposals in the southeast of the site being commenced in advance of the residential development of the wider site. Prior to the commencement of any site clearance or construction activity, a reptile translocation exercise following standard methodology will be implemented in order to remove Slow Worms from the site to a suitable off-site receptor area.

7.14. Overall, subject to appropriate mitigation, on the basis of the current evidence there are not considered to be any overriding ecological reasons why the site could not be developed. The proposed development appears to be in line with all relevant national and local planning policy and with relevant legislation planning policy related to nature conservation.

PLANS

PLAN ECO1

Site Location and Ecological Designations



KEY:

- SITE LOCATION
- SITE OF SPECIAL SCIENTIFIC INTEREST (SSSI)
- SPECIAL PROTECTION AREA (SPA)
- POTENTIAL MARINE SPA
- NATIONAL NATURE RESERVE (NNR)
- RAMSAR SITE
- LOCAL WILDLIFE SITE (LWS)

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5834: LAND AT PLOVER ROAD, MINSTER, ISLE OF SHEPPEY, KENT

PLAN ECO1: SITE LOCATION AND ECOLOGICAL DESIGNATIONS

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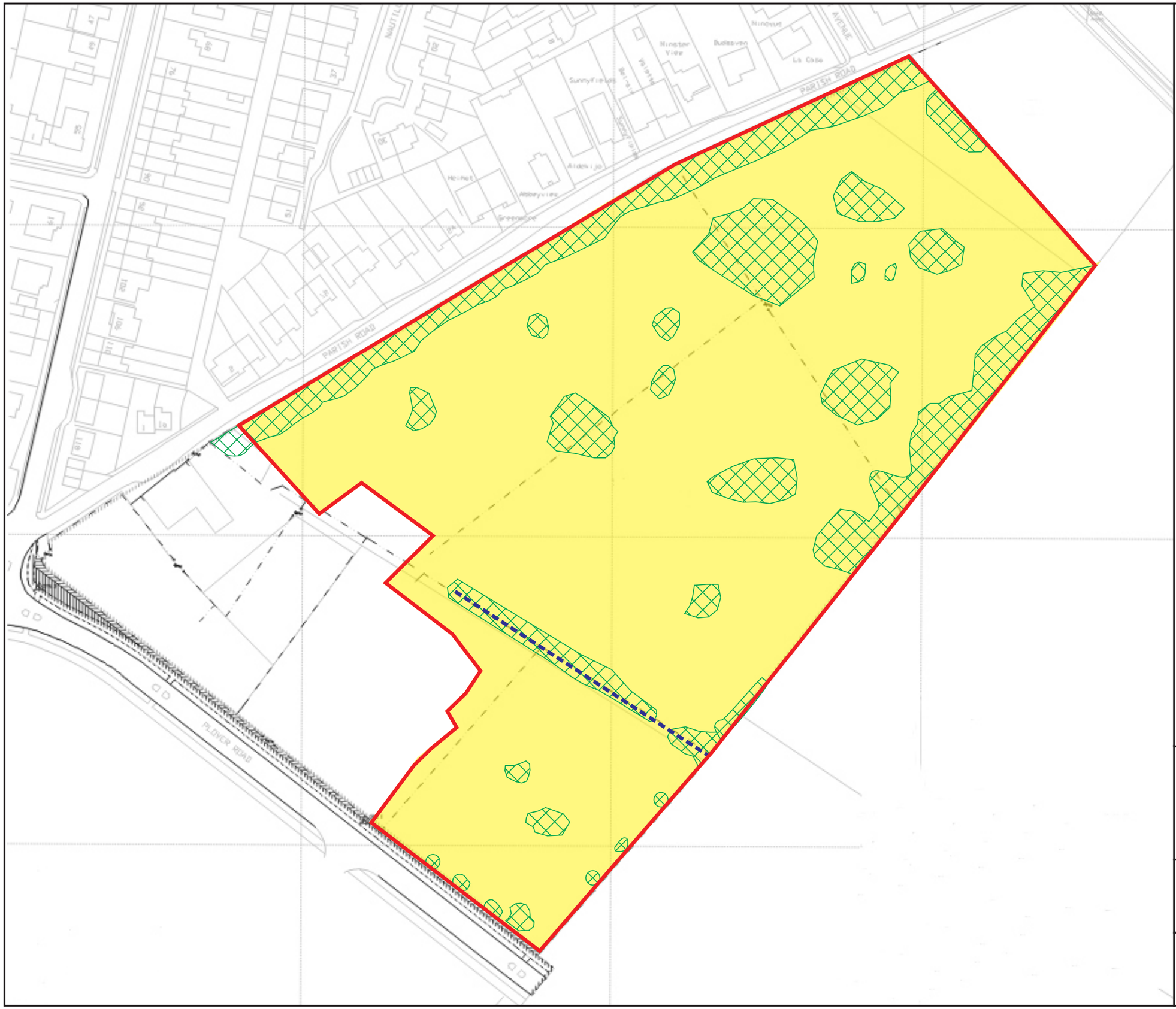
PLAN ECO2

Ecological Features



KEY:

- SITE BOUNDARY
- ROUGH GRASSLAND
- SCRUB
- DITCH
- ARTIFICIAL REFUGIA LOCATION

Based on drawings 1621/01 provided by Sitech Surveying Services

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5834: LAND AT PLOVER ROAD, MINSTER, ISLE OF SHEPPEY, KENT

PLAN ECO2: ECOLOGICAL FEATURES

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PLAN ECO3

Reptile Survey Results

KEY:

- SITE BOUNDARY
- ROUGH GRASSLAND
- SCRUB
- DITCH
- ARTIFICIAL REFUGIA LOCATION
- SLOW WORM RECORD 2014

Based on drawings 1621/01 provided by Sitech Surveying Services

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5834: LAND AT PLOVER ROAD, MINSTER, ISLE OF SHEPPEY, KENT

PLAN ECO3:
REPTILE SURVEY RESULTS

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PHOTOGRAPHS