Preliminary Ecological Appraisal

Shoreham Fort, Forthaven, Shoreham-by-Sea, East Sussex BN43 5HY

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Guidelines

This assessment has been designed to meet:

- Chartered Institute of Ecology and Environmental Management 'Guidelines for Preliminary Ecological Appraisal Second Edition, December 2017';
- Chartered Institute of Ecology and Environmental Management 'Guidelines for Ecological Impact Assessment in the UK and Ireland. Terrestrial, Freshwater, Coastal and Marine, September 2018'; and
- British Standard 42020 (2013) 'Biodiversity – Code of Practice for Planning and Development'.

Proportionality

> The work involved in preparing and implementing all ecological surveys, impact assessments and measures for avoidance, mitigation, compensation and enhancement should be proportionate to the predicted degree of risk to biodiversity and to the nature and scale of the proposed development. Consequently, the decision-maker should only request supporting information and conservation measures that are relevant, necessary and material to the application in question. Similarly, the decision-maker and their consultees should ensure that any comments and advice made over an application are also proportionate.
>
> This approach is enshrined in Government planning guidance, for example, paragraph 193 of the National Planning Policy Framework for England.
>
> The desk studies and field surveys undertaken to provide a preliminary ecological appraisal (PEA) might in some cases be all that is necessary.
>
> (BS 42020, 2013)

In consequence of the scale and intensity of the proposed development, the low impact on ecological receptors identified through both the site survey and search of local biological records, and the passive interface with the mitigation hierarchy, this plan-led report is considered adequate and proportionate. It communicates all relevant information necessary to determine a planning application or support the recommendations for further surveys.

Executive summary

Arbtech Consulting Limited was commissioned by Friends of Shoreham Fort to undertake a preliminary ecological appraisal (PEA) at Shoreham Fort, Forthaven, Shoreham-by-Sea, East Sussex BN43 5HY. The survey was completed on 20/08/19. The aim of the survey was to complete an extended phase 1 habitat survey of the survey area (all land that will be impacted by the proposals).

The development proposal is to create a raised trench area to enhance the historic and educational value of the site. The trench will be built on an area already significantly disturbed and changed by tidal flood defence work carried out by the Environment Agency in recent years. This location has been chosen by the Friends of Shoreham Fort in consultation with the land owners, Shoreham Port Authority and the Friends of Shoreham Beach, who are an independent support group for the Shoreham Beach Local Nature Reserve to avoid any impact on sensitive habitats and rare and protected species, and because it is outside of the ancient Monument and Local Nature Reserve Designations. A planning application has been submitted to Adur and Worthing Council.

Recommendations –

Ecological Factor	Survey assessment conclusions (with justification)	Recommendations
Designated sites	The site within Shoreham Beach LWS and Brighton and Lewes Downs Biosphere Reserve. The site is adjacent to Shoreham Fort Scheduled monument and is 100m from Shoreham beach LNR.	A construction plan will be provided that will demonstrate the construction materials and techniques to be used. This must ensure that there will be no impact on surrounding habitats, including areas for material storage and access routes. The materials that will be used to create the landscaping will use soil and shingle from the wider site only which have already been collected and earmarked for use. This will ensure the plant communities present will be native to the area and habitat types present. Additional planting of species such as vipers bugloss and starry clover on the new banks will enhance the habitats present, creating more robust colonies of these species, and offsetting the loss of the shingle habitat. This new planting will create additional foraging opportunities for invertebrates including rarer butterflies and pollinators. This will increase the biodiversity of the area. The new banks must be created and managed to encourage low nutrient soil plant species and controlled to prevent grasses and scrub becoming dominant.
Notable habitats and plants	The site is designated as vegetated shingle and good quality semi improved grassland. In recent years this particular area of shingle beach has undergone damage and disturbance during Environment Agency flood defence work. The flood defence work has also begun to change the character of the habitat present, as it is no longer subject	A detailed construction plan will be provided that will demonstrate the construction materials and techniques to be used. This must ensure that there will be no impact on surrounding habitats, including areas for material storage and access routes. The materials that will be used to create the new

	to periodically washing away of soil and particles by the sea. There is already scrub encroaching on the area, which will eventually replace the shingle if left in its current state. There are no rare species associated with vegetated shingle within the development footprint.	landscaping will use soil and shingle from the wider site only which have already been collected and earmarked for use. This will ensure the plant communities present will be native to the area and habitat types present. Additional planting of species such as vipers bugloss and starry clover on the new banks will enhance the habitats present, creating more robust colonies of these species, and offsetting the loss of the shingle habitat. This new planting will create additional foraging opportunities for invertebrates including rarer butterflies and pollinators. This will increase the biodiversity of the area. The new banks must be created and managed to encourage low nutrient soil plant species and controlled to prevent grasses and scrub becoming dominant.
Reptiles	Although there are slow worm records within the Shoreham Fort area, the habitat on site does not provide suitable foraging opportunities or cover for this species. There is a large population of wall lizards present around the fort ruins.	To avoid killing or injury, the area must be cleared between April and October to avoid hibernating animals. The addition of the grassland habitat on the new trench banks will provide improved habitat for slow worms. The walls on the interior of the trench will provide holes and crevices in which reptiles, particularly the wall lizards can inhabit. There will be a net increase in reptile habitat post development.

See section 4.2 for full details.

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1.0 Introduction and Context

1.1 Background

Arbtech Consulting Limited was commissioned by Sharon Penfold to undertake a preliminary ecological appraisal (PEA) at Shoreham Fort, Forthaven, Shoreham-by-Sea, East Sussex BN43 5HY. The survey was completed on 20/08/19. The aim of the survey was to complete an extended Phase 1 Habitat Survey of the survey area (all land that will be impacted by the proposals).
No previous reports have been produced for this site by Arbtech Consulting Ltd.

1.2 Site Context

The survey area is located at National Grid Reference TQ 2337 0460 and has an area of approximately 0.07ha.

1.3 Scope of the report

This report describes the baseline ecological conditions at the site; evaluates habitats within the survey area in the context of the wider environment; and describes the suitability of those habitats for notable or protected species. It identifies significant ecological impacts as a result of the development proposals; summarises the requirements for further surveys and mitigation measures, to inform subsequent mitigation proposals, achieve planning or other statutory consent, and to comply with wildlife legislation.
To achieve this, the following steps were taken:

- The desk study area and field survey area (generally 50m from the site boundary or proposed footprint and including the 'zone of influence' of the scheme) have been identified
- A desk study has been carried out.
- Baseline information on the site and surrounding area has been recorded through an 'extended phase 1 habitat survey', including a phase 1 habitat survey (JNCC 2010) and recording further details in relation to notable or protected habitats and species.
- The ecological features present within the survey area have been evaluated where possible (CIEEM, December 2017).
- Invasive plant and animal species (such as those listed on Schedule 9 of the Wildlife & Countryside Act) have been identified.
- Likely impacts on features of value, as a result of the development proposals, have been identified.
- Recommendations for further survey and assessment have been made
- Recommendations for mitigation and enhancements of the developed site have been provided based on current information.

A survey plan is presented in Appendix 1, proposed plans in Appendix 2 (where available), desk study results in Appendix 3 and a summary of relevant legislation is presented in Appendix 4.

1.4 Project Description

The development proposal is to create a raised trench area to enhance the historic and educational value of the site. The trench will be built on an area already significantly disturbed and changed by tidal flood defence work carried out by the Environment Agency in recent years. This location has been chosen by the Friends of Shoreham Fort in consultation with the local

wildlife trust to avoid any impact on sensitive habitats and rare and protected species, and because it is outside of the ancient Monument and Local Nature Reserve Designations. A planning application has been submitted to Adur and Worthing Council.

2.0 Methodology

2.1 Desk Study methodology

The desk study included a 1km radius review of statutory and non-statutory designated sites, biodiversity action plan (BAP) priority habitats and granted EPSML records for bats held on Magic database. An assessment of the surrounding landscape structure was also completed using aerial images from Google Earth and OS maps.

To conform to best practice guidelines biological records data (BRD) within a 2km radius of the site are usually required. Due to the small scale of the development, a 1km search radius is sufficient for the purposes of this report.

2.2 Site Survey methodology

The survey was undertaken by Natalie Evans, (Natural England Bat Licence Number: 2018-37888-CLS-CLS) on 20th August 2019.

The methodology for the Phase 1 habitat survey is based on the best practice publication Phase 1 Habitat Survey Methodology (JNCC, 2010). All land parcels are described and mapped according to JNCC Phase 1 Habitat Classification. Where appropriate, target notes provide supplementary information on habitat conditions, features too small to map to scale, species composition, structure and management.

During the survey, habitats were assessed for their suitability to support protected species, and field signs indicating their presence recorded. The assessment takes into consideration the findings of the desk study, the habitat conditions on site and in the context of the surrounding landscape, and the ecology of the protected species. The likelihood of the presence of protected species is ranked; the habitats on site are evaluated against their likelihood to provide suitable habitat for protected species.

The ecological value of the survey area has been assessed based on the Guidelines for Ecological Impact Assessment (CIEEM, 2018), and the Handbook of Biodiversity Methods: Survey, Evaluation and Monitoring (Hill, 2005), using geographic frames of reference. The biodiversity value of any identified designated sites, habitat types and associated species assemblages has been considered. The distribution and extent of invasive species listed on Schedule 9 of the Wildlife and Countryside Act (1981 as amended 1996) were also noted throughout the survey area.

The methodology for the PRA is informed by the Bat Conservation Trust publication Bat Surveys for Professional Ecologists – Good Practice Guidelines (Collins, J. (Ed) 2016). All features that will be impacted by the project proposals were assessed for their bat roosting and/or commuting habitat. The surveyor systematically surveyed all features suitable for-bats and signs of bat activity.

<u>For any surveyed buildings:</u>

A non-intrusive visual appraisal from the ground using binoculars, inspecting the external features of the building(s) for potential access and egress points, and for signs of bat use. An internal inspection of the building was also made, including the living areas of derelict or abandoned buildings and the accessible roof spaces of all buildings, using an endoscope, torch and ladders.

The surveyor paid particular attention to the floor and flat surfaces, window shutters and frames, lintels above doors and windows, and carried out a detailed search of numerous features within the roof space.

For any surveyed trees

A visual inspection from ground level using binoculars and where accessible an internal inspection of suitable roosting features using an endoscope, torch and ladders.

The surveyor also made note of any other ecological constraints observed during the survey, notably the likelihood of presence or signs of breeding birds, and the suitability of the site for barn owls *Tyto alba*.

2.3 Suitability Assessment

The likelihood of occurrence of protected species is ranked according to the criteria listed in Table 1. The habitats on site were evaluated as to their likelihood to provide sheltering, roosting, foraging, basking or nesting habitat.

Table 1: showing criteria considered when assessing the likelihood of occurrence of protected species

Present	**Species are confirmed as present from the current survey or historical confirmed records.**
High	Habitat and features of high quality for species/species assemblage. Species known to be present in wider landscape (desk study records). Good quality surrounding habitat and good connectivity.
Medium	Habitat and features of moderate quality. The site in combination with surrounding land provides all habitat/ecological conditions required by the species/assemblage. Within known national distribution of species and local records in desk study area. Limiting factors to suitability, including small area of suitable habitat, some severance/poor connectivity with wider landscape, poor to moderate habitat suitability in local area.
Low	Habitats within the survey area poor quality. Few or no records from data search. Despite above, presence cannot be discounted as within national range, all required features/conditions present on site and in surrounding landscape. Limiting factors could include isolation, poor quality landscape, or disturbance.
Negligible	Very limited or poor quality habitats and features. No local records from desk study; site on edge of, or outside, national range. Surrounding habitats considered unlikely to support species/species assemblage.

2.4 Limitations – evaluation of the methodology

It should be noted that whilst every effort has been made to describe the baseline conditions within the survey area, and evaluate these features, this report does not provide a complete characterisation of the site. This assessment provides a preliminary view of the likelihood of protected species being present. This is based on suitability of the habitats on the site and in the wider landscape, the ecology and biology of species as currently understood, and the known distribution of species as recovered during the searches of historical biological records.

There were no specific limitations to the survey.

3.0 Results and Evaluation

3.1 Desk Study Results

A summary of desk study results is provided below; full details are included in Appendix 3.

3.2 Designated sites

Details of any statutory and non-statutory designated sites within a 1km radius of the survey site, including their reasons for notification, are provided in Table 4 below.

Table 2: Designated sites within 1km radius of the site

Designated Site Name	Distance from Site (approx.)	Reasons for Notification from Natural England and/or BRD or LPA policy maps
Statutory Sites		
Brighton and Lewes Downs Biosphere Reserve	Site is within the Biosphere Reserve	**Core Areas** – these are strict areas of protection for nature conservation. They are made up of 14 Sites of Special Scientific Interest (SSSIs) which lie almost entirely within the South Downs National Park and form a 'string of pearls' in their distribution. They are home to a rich mixture of rare orchid wild flowers, butterflies, birds and geological interest. Two of these sites – Castle Hill and Mount Caburn – are also designated as National Nature Reserves and European Special Areas of Conservation for their chalk grassland wildlife interest. **Buffer Zones** –these are larger areas around the core areas that are looked after through sustainable management. On land, this is the rural South Downs National Park, and in the sea it is the Marine Conservation Zone of 'Beachy Head West' – the western section of which runs along the coast between Brighton Marina and Newhaven. **Transition Areas** – these are where most people live and work, and they represent 'test beds' for sustainable development. On land they are made up of the urban areas of Brighton & Hove, Lewes, Newhaven, Peacehaven, Shoreham, Southwick and Telscombe. Sustainable development happens here through more wildlife rich housing estates, parks and open spaces, healthy local food production and greener built development for example. The rest of the sea makes up the marine transition area, which can supply sustainable fish for local consumption.
Shoreham Fort Scheduled Monument	Adjacent to the south west	Shoreham Fort belongs to the class of military installation termed 'batteries' - self contained positions where guns were mounted for purposes of offensive or defensive action; the objective being primarily to bring guns to bear on a specific area, to provide the appropriate range and to protect the guns (and crew) during action. Ammunition was usually stored behind the rampart (the area known as the 'gorge') and by the later 19th century, in purpose built magazines. As a source of information for developments in military technology and as indications of the ebb and flow of international politics, all examples exhibiting a significant degree of preservation are considered worthy of protection. Shoreham Fort is a good example of a 19th century artillery fort, which survives well. It retains upstanding structures and below-ground archaeological information relating to the use and history of the site. Shoreham Fort marks an important stage in the development of 19th century fortification following improvements in heavy guns with increased range. The design of the surrounding Carnot wall, following the principles of the French General Lazare Nicholas Marguerite Carnot (1753-1823) on active defence, is of particular interest. (Historic England)
Shoreham Beach Local Nature Reserve (LNR)	100m south west	The vegetated shingle on this beach is an internationally rare habitat that contains such plants as Yellow Horned Poppy, Sea Kale and Curled Dock. These plants encourage a wealth of wildlife to the beach.

Designated Site Name	Distance from Site (approx.)	Reasons for Notification from Natural England and/or BRD or LPA policy maps
Non-statutory Sites		
Shoreham Beach Local Wildlife Site (LWS)	The site is within the LWS boundary	The site includes all of the landward side of Shoreham Beach, from Widewater Lagoon in the west to the old fort by the entrance to Shoreham Harbour. Its main interest is its highly specialised shingle flora, adapted to withstand harsh and extreme conditions. Largely due to habitat destruction, this community is very rare in West Sussex.

3.3 Landscape

A review of the designated sites, aerial photographs (Figure 1), the Magic database and OS maps has been undertaken. Collated together, the site's local habitat is described below:

The local landscape provides rare and valuable coastal habitats which are particularly important for specialised plant communities associated with vegetated shingle and semi improved grassland.

Priority habitats within 1km of the site are listed in Table 5.

Table 3: Priority Habitat Inventory within 1km (Magic.gov.uk):

Habitat	Closest distance from site
Deciduous Woodland	865m north east
Coastal vegetated shingle	On site
Good quality semi improved grassland	On site
Intertidal substrate foreshore	25m north east
Coastal mudflats	300m north west



Figure 1: Aerial photo of site, showing landscape structure

3.4 Historical records

Biological records have been obtained from Sussex Biodiversity Records Centre and are summarised below. Only records from within the last 10 years have been included.

Table 4: Historical records within 2km of the site

Taxon Group	Common name	Scientific binomial	Record details
Bats	Common pipistrelle	*Pipistrellus Pipistrellus*	One record
Birds – circa 200 species including the following associated with the coastal habitats:	Tundra bean goose	*Anser fabalis rossicus*	Nine records
	Barnacle goose	*Branta leucopsis*	One record
	Brent goose	*Branta bernicla*	49 records
	Mute swan	*Cygnus olor*	64 records including Shoreham Fort
	Eider	*Somateria mollissima*	88 records
	Common shelduck	*Tadorna tadorna*	Four records
	Widgeon	*Anas penelope*	16 records
	Gadwall	*Anas strepera*	10 records
	Teal	*Anas crecca*	Six records
	Mallard	*Anas platyrhynchos*	18 records
	Pintail	*Anas acuta*	Four records
	Tufted duck	*Aythya fuligula*	Four records
	Scaup	*Aythya marila*	15 records
	Long tailed duck	*Clangula hyemalis*	17 records
	Common scoter	*Melanitta nigra*	55 records including Shoreham Fort and Shoreham Beach
	Little egret	*Egretta garzetta*	66 records

	Great white egret	*Ardea alba*	One record
	Spoonbill	*Platalea leucorodia*	Four records
	Quail	*Coturnix coturnix*	Five records
	Red throated diver	*Gavia stellata*	102 records including Shoreham Fort and Shoreham Beach
	Black throated diver	*Gavia arctica*	23 records including Shoreham Fort and Shoreham Beach
	Great northern diver	*Gavia immer*	49 records including Shoreham Beach
	Little grebe	*Tachybaptus ruficollis*	46 records
	Great crested grebe	*Podiceps cristatus*	52 records
	Slavonian grebe	*Podiceps auritus*	29 records including Shoreham Beach
	Black necked grebe	*Podiceps nigricollis*	Six records
	Fulmar	*Fulmarus glacialis*	Six records
	Gannet	*Morus bassanus*	44 records
	Shag	*Phalacrocorax aristotelis*	109 records
	Honey buzzard	*Pernis apivorus*	Nine records
	Red kite	*Milvus milvus*	Five records
	Sparrowhawk	*Accipiter nisus*	24 records
	Osprey	*Pandion haliaetus*	16 records
	Kestrel	*Falco tinnunculus*	Seven records
	Merlin	*Falco columbarius*	14 records including Shoreham Beach
	Peregrine	*Falco peregrinus*	297 records
	Oystercatcher	*Haematopus ostralegus*	65 records
	Ringed plover	*Charadrius hiaticula*	127 records including Shoreham Fort and Shoreham Beach
	Grey plover	*Pluvialis squatarola*	Six records
	Lapwing	*Vanellus vanellus*	13 records
	Common sandpiper	*Actitis hypoleucos*	20 records including Shoreham Fort

	Snipe	*Gallinago gallinago*	Four records
	Whimbrel	*Numenius phaeopus*	20 records
	Curlew	*Numenius arquata*	Three records
	Woodcock	*Scolopax rusticola*	Nine records
	Knot	*Calidris canutus*	Eight records
	Sanderling	*Calidris alba*	17 records
	Little stint	*Calidris minuta*	Four records
	Culew sandpiper	*Calidris ferruginea*	11 records
	Dunin	*Calidris alpine*	30 records
	Purple sandpiper	*Calidris maritima*	640 records
	Black tailed godwit	*Limosa limosa*	Four records
	Redshank	*Tringa tetanus*	25 records
	Greenshank	*Tringa nebularia*	Two records
	Turnstone	*Arenaria interpres*	300 records
	Pomarine skua	*Stercorarius pomarinus*	12 records
	Arctic skua	*Stercorarius parasiticus*	23 records
	Great skua	*Stercorarius skua*	14 records
	Little gull	*Hydrocoloeus minutus*	77 records
	Little tern	*Sternula albifrons*	10 records
	Mediterranean gull	*Larus melanocephalus*	263
	Common gull	*Larus canus*	71 records including Shoreham Fort
	Lesser black backed gull	*Larus fuscus*	65 records
	Yellow legged gull	*Larus michahellis*	41 records
	Herring gull	*Larus argentatus*	230 records
	Iceland gull	*Larus glaucoides*	44

	Glaucus gull	*Larus hyperboreus*	130 records
	Great black backed gull	*Larus marinus*	56 records
	Caspian gull	*Larus cachinnans*	One record
	Black headed gull	*Chroicocephalus ridibundus*	188 records
	Kittiwake	*Rissa tridactyla*	36 records
	Black tern	*Chlidonias niger*	29 records including Shoreham Fort and Shoreham Beach
	Sandwich tern	*Sterna sandvicensis*	121 records including Shoreham Fort
	Common tern	*Sterna hirundo*	85 records
	Arctic tern	*Sterna paradisaea*	75 records
	Guillemot	*Uria aalge*	95 records
	Razorbill	*Alca torda*	65 records
	Puffin	*Fratercula arctica*	Two records
	Kingfisher	*Alcedo atthis*	Five records including Shoreham Fort
	Black redstart	*Phoenicurus ochruros*	352 records including Shoreham Beach
Reptiles	Grass snake	*Natrix natrix*	One record
	Slow worm	*Anguis fragilis*	Eight records; two from Shoreham Fort and two from Shoreham Beach
	Adder	*Vipera berus*	Two records
Amphibians	Common frog	*Rana temporaria*	13 records
Other Terrestrial Mammals	Hedgehog	*Erinaceus europaeus*	Ten records
Invertebrates	White footed furrow bee	*Lasioglossum (Dialictus) leucopus*	Two records from Shoreham Fort and Shoreham Beach

	Bee wolf	*Philanthus triangulum*	Three records from Shoreham Fort and Shoreham Beach
	Stag beetle	*Lucanus cervus*	Nine records
	Small blue butterfly	*Cupido minimus*	One record from Shoreham Fort
	White letter hairstreak butterfly	*Satyrium w-album*	One record
	Long winged cone head grasshopper	*Conocephalus fuscus*	Five records from Shoreham Fort and Shoreham Beach
	Garden tiger moth	*Arctia caja*	Four records from Shoreham Beach and other locations
	Six belted clearwing moth	*Bembecia ichneumoniformis*	One record from Shoreham Fort
	Toadflax brocade moth	*Calophasia lunula*	Six records from Shoreham Beach and other locations
	Long legged china mark moth	*Dolicharthria punctalis*	One record
	Five spot ermel moth	*Ethmia terminella*	One record
	Grass rivulet moth	*Perizoma albulata*	One record
	Mallow groundling moth	*Platyedra subcinerea*	One record from Shoreham Beach
	Mullein wave moth	*Scopula marginepunctata*	Two records one from Shoreham beach
Higher plants	Chives	*Allium schoenoprasum*	Two records from Shoreham beach
	Sea rocket	*Cakile maritima*	One record from Shoreham Beach
	Yellow horned poppy	*Glaucium flavum*	Nine records from Shoreham beach and Shoreham harbour
	Welsh poppy	*Meconopsis cambrica*	One record from Shoreham beach

	Toothed medic	*Medicago polymorpha*	Ten records from Shoreham beach amongst other sites
	Curved hard grass	*Parapholis incurva*	Three records from Shoreham beach and others
	Childing pink	*Petrorhagia nanteuilii*	22 records from Shoreham beach and others
	Bulbous meadow grass	*Poa bulbosa*	Four records from Shoreham beach and others
	Ragged robin	*Silene flos-cuculi*	One record from Shoreham beach
	Henbane	*Hyoscyamus niger*	Two records
	Wild strawberry	*Fragaria vesca*	One record
	Water soldier	*Stratiotes aloides*	One record
	Starry clover	*Trifolium stellatum*	57 records from Shoreham beach, Shoreham fort and other areas
	Yellow vetch	*Vicia lutea*	Five records from Shoreham beach and others

A search of the Magic database for granted European protected species mitigation licences (EPSMLs) within a 1km radius of the site has been completed. Displaced protected species from licenced sites >1km away from the survey site will find alternative habitat either within the mitigation measures implemented as part of the licence or will relocate to other suitable habitat in close proximity to the Licenced site.

Table 5: Granted EPSMLs within 1km of the site

Case reference of granted application	**Approx. distance from site**	**Species Effected**	**Licence Start Date:**	**Licence End Date:**	**Impacts allowed by licence**
None within 1km					

3.5 Field Survey Results

The site is a small area of vegetated shingle set just to the north east of Shoreham Fort Scheduled Monument. This is illustrated in the map in Appendix 1. The weather conditions recorded at the time of the survey are shown in Table 7.

Table 6: Weather conditions during the survey

Date: 20/08/19	
Temperature	20°C
Relative Humidity	60%
Cloud Cover	0%
Wind	15mph
Rain	None

3.6 Site Feature descriptions and photos

H3 Shingle

The development site is an area of shingle measuring approx. 0.07ha. In recent years this particular area of shingle beach has undergone damage and disturbance during Environment Agency flood defence work. The flood defence work has also begun to change the character of the habitat present, as it is no longer subject to periodically washing away of soil and particles by the sea. There is already scrub encroaching on the area, which will eventually replace the shingle if left in its current state. The photograph opposite shows the proposed site facing south east, with the encroaching scrub visible at the right hand side of the picture.



The area supports some shingle vegetation, but none of the rarer notable examples such as starry clover of viper bugloss. Species within the development area include: yarrow, ox tongue, scarlet pimpernel, ribwort plantain, sea plantain, sow thistle, common mallow, pineapple weed, broad leaved dock, curled dock, field bindweed, enchanters nightshade, birds' foot trefoil, scurvygrass, and sea kale. The photograph opposite shows the proposed development area facing north west.



A2 Scrub

To the south of the development area is an area of bramble scrub.



4.0 Conclusions, Impacts and Recommendations

4.1 Informative guidelines

Likelihood of the presence of protected species

Where physical evidence of the presence of protected species is indeterminate during the survey, the habitats on site are evaluated as to their likelihood to provide sheltering, roosting, foraging, basking or nesting habitat. The likelihood of occupancy of protected species is ranked according to the criteria listed in Table 1.

Where this report supports a planning application, the ecological interest of the study area (including the survey area) and the proposed development has also been evaluated in terms of the planning policies relating to biodiversity. It is clearly stated where a preliminary value can be given and where further information is required.

Appropriate justification for this assessment is provided in Section 2.3 of this report.

4.2 Evaluation

Taking the desk study and site survey results into account, the following conclusions for ecological factors has been reached.

Table 7: Evaluation of site

Ecological Factor	**Survey assessment conclusions (with justification)**	**Foreseen impacts**	**Recommendations**	**Enhancements** The Local Planning Authority has a duty to ask for enhancements under the NPPF (July 2018)
Designated sites	The site within Shoreham Beach LWS and Brighton and Lewes Downs Biosphere Reserve. The site is adjacent to Shoreham Fort Scheduled monument and is 100m from Shoreham beach LNR.	The development will lead to a small (0.07ha) loss of shingle habitat. It is the rare plant communities which thrive in this habitat that have led to the classification of the area as a local wildlife site. The wider area has been confirmed to support the rare flora that can be found on shingle; however, the proposed development site has been specifically chosen because it does not contain any rare plant communities. It is therefore assessed that the development will not impact the integrity of the local wildlife site or the species and habitats for which it has been designed. Due to the small scale of the development there will be no secondary impacts on the nearby local nature reserve or scheduled monument.	A construction plan will be provided that will demonstrate the construction materials and techniques to be used. This must ensure that there will be no impact on surrounding habitats, including areas for material storage and access routes. The materials that will be used to create the new landscaping will use soil and shingle from the wider site only which have already been collected and earmarked for use. This will ensure the plant communities present will be native to the area and habitat types present. Additional planting of species such as vipers bugloss and starry clover on the new banks will enhance the habitats present, creating more robust colonies of these species, and offsetting the loss of the shingle habitat. This new planting will create additional foraging opportunities for invertebrates including rarer butterflies and pollinators. This will increase the biodiversity of the area. The new banks must be created and managed to encourage low nutrient soil plant species and controlled to prevent grasses and scrub becoming dominant.	Not applicable.
Notable habitats and plants	The site is designated as vegetated shingle and good quality semi improved grassland. In recent years this particular area of shingle beach has undergone	The development will lead to a small (0.07ha) loss of shingle habitat. The wider area has been confirmed to support the rare	A construction plan will be provided that will demonstrate the construction materials and techniques to be used. This must ensure that there will be no impact on surrounding habitats, including	Not applicable.

	damage and disturbance during Environment Agency flood defence work. The flood defence work has also begun to change the character of the habitat present, as it is no longer subject to periodically washing away of soil and particles by the sea. There is already scrub encroaching on the area, which will eventually replace the shingle if left in its current state. There are no rare species associated with vegetated shingle within the development footprint.	flora that can be found on shingle; however, the proposed development site has been specifically chosen because it does not contain any rare plant communities. Although the development will result in the loss of a small area of shingle, it will increase the area of good quality semi improved grassland.	areas for material storage and access routes. The materials that will be used to create the new landscaping will use soil and shingle from the wider site only which have already been collected and earmarked for use. This will ensure the plant communities present will be native to the area and habitat types present. Additional planting of species such as vipers bugloss and starry clover on the new banks will enhance the habitats present, creating more robust colonies of these species, and offsetting the loss of the shingle habitat. This new planting will create additional foraging opportunities for invertebrates including rarer butterflies and pollinators. This will increase the biodiversity of the area. The new banks must be created and managed to encourage low nutrient soil plant species and controlled to prevent grasses and scrub becoming dominant.	
Invasive / Non-native species	The site supports an exceptional population of wall lizards. Although technically non-native, this species could be considered naturalised, and does not pose any threat to native reptile species. Anecdotal evidence also suggests the presence of Italian lizards.	No impacts.	No further work required.	Not applicable.
Bats	There is no suitable foraging or roosting habitat for bats within the development area.	No impacts.	No further work required.	Not applicable.
Birds	There are numerous protected and notable bird species present within the Shoreham Beach/Shoreham Fort area and are expected to be present in the wider area around the development site. Due to its disturbed nature, the development site itself is unsuitable for nesting, and does not provide the	No impacts.	No further work required.	Not applicable.

	foraging opportunities required for any of the sea or shoreline birds present. The ongoing flood defence work just to the north of the site will have been causing and will continue to cause enough disturbance to ensure a marked reduction in any bird activity in the near vicinity which includes the proposed site.			
Reptiles	Although there are slow worm records within the Shoreham Fort area, the habitat on site does not provide suitable foraging opportunities or cover for this species. There is a large population of wall lizards present around the fort ruins.	Although the risk is low due to the suitable habitat for reptiles elsewhere on site and not within the development area, there is a low risk of killing or injury of individuals during excavation work. The addition of the grassland habitat on the new trench banks will provide improved habitat for slow worms.	To avoid killing or injury, the area must be cleared between April and October to avoid hibernating animals. The addition of the grassland habitat on the new trench banks will provide improved habitat for slow worms. The walls on the interior of the trench will provide holes and crevices in which reptiles, particularly the wall lizards can inhabit. There will be a net increase in reptile habitat post development.	Not applicable.
Great crested newts	There are no ponds within 500m to provide suitable breeding habitat for this species they are therefore considered likely absent from the site.	No impacts.	No further work required.	Not applicable.
Other Terrestrial Mammals	Due to the dry, open, exposed nature of the site, it is unlikely that any terrestrial mammals are present.	No impacts.	No further work required.	Not applicable.
Invertebrates	The Shoreham Fort area has records of several notable invertebrates, including the white footed furrow bee and small blue butterfly.	There will be no loss of invertebrate biodiversity as a result of the development. In fact, the loss of the barely vegetates shingle to be replaced with well managed semi improved grassland is likely to produce an increase in invertebrate biodiversity	No further work required.	Not applicable.

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Appendix 1: Phase 1 Habitat Survey Map

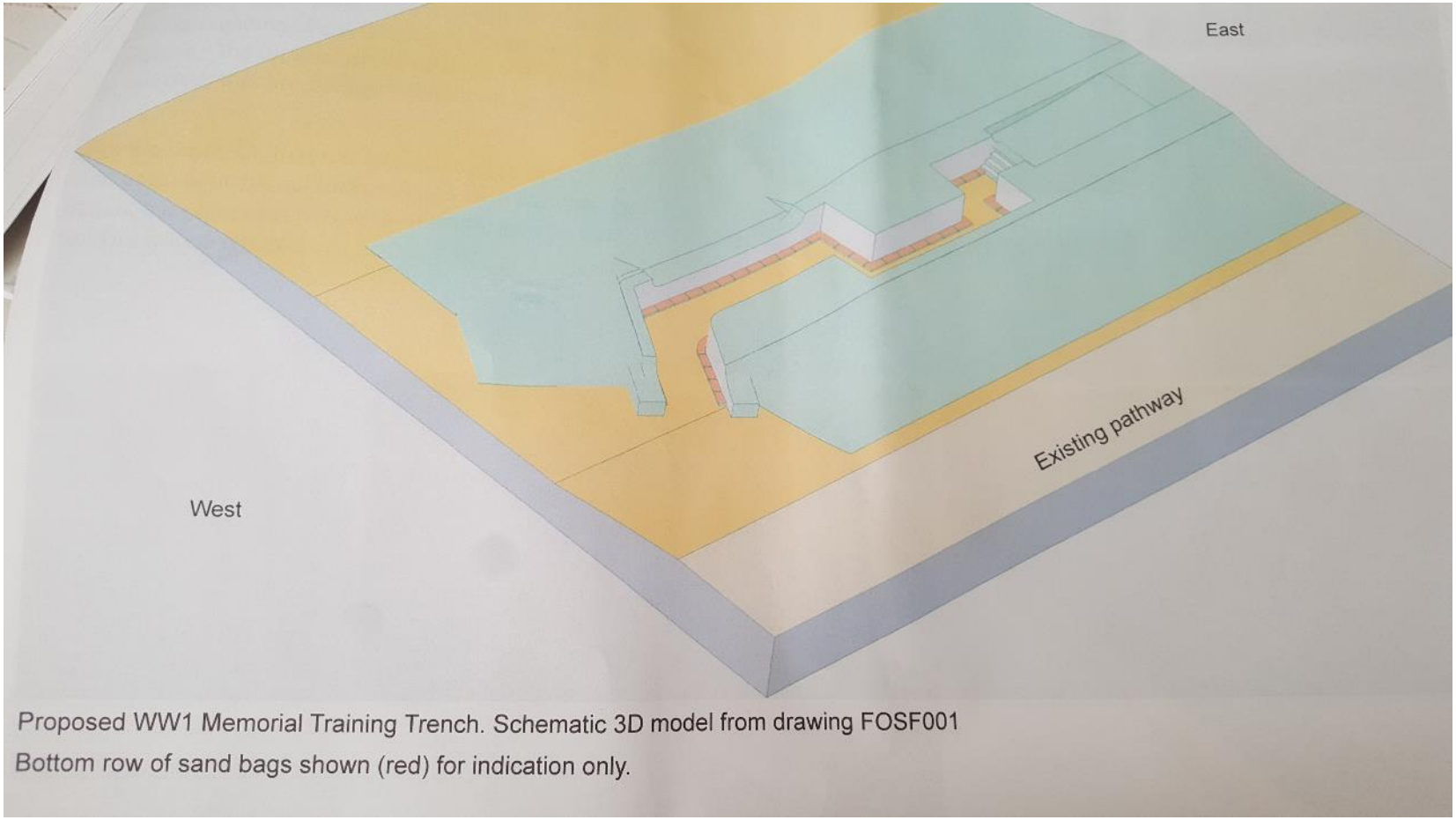


Target Notes

TN1 – vegetated shingle, species present are: yarrow, ox tongue, scarlet pimpernel, ribwort plantain, sea plantain, sow thistle, common mallow, pineapple weed, broad leaved dock, curled dock, field bindweed, enchanters nightshade, birds' foot trefoil, scurvygrass, and sea kale.

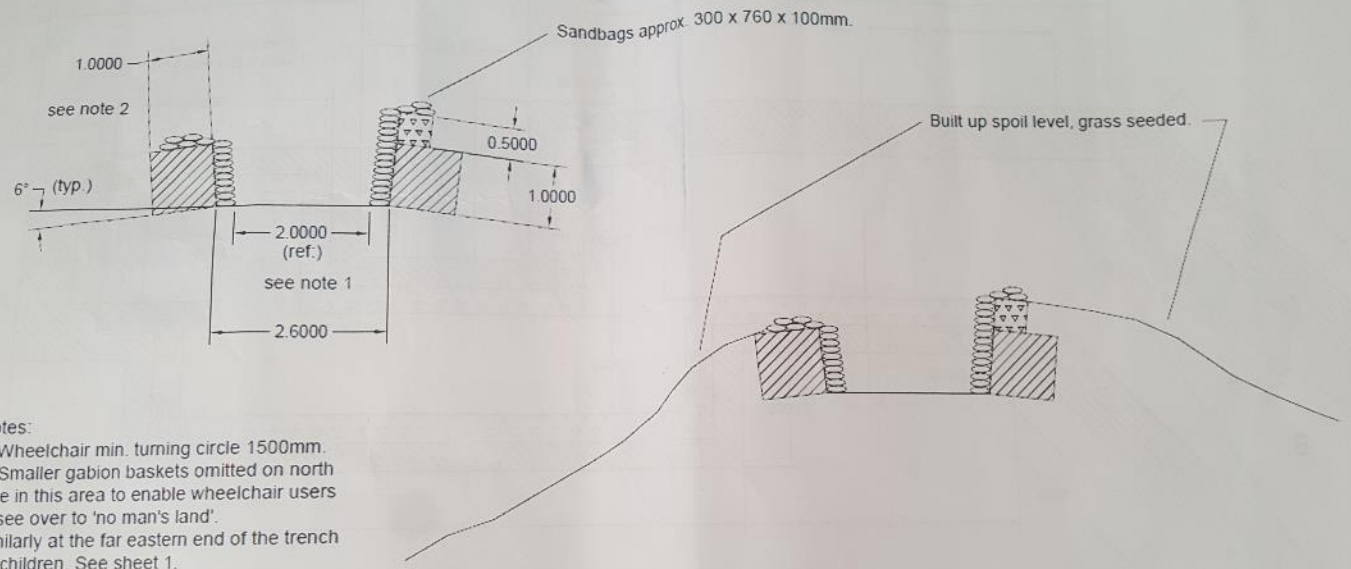
TN2 – dense bramble scrub encroaching on shingle.

Appendix 2: Proposed Site Plan



Proposed WW1 Memorial Training Trench. Schematic 3D model from drawing FOSF001
Bottom row of sand bags shown (red) for indication only.

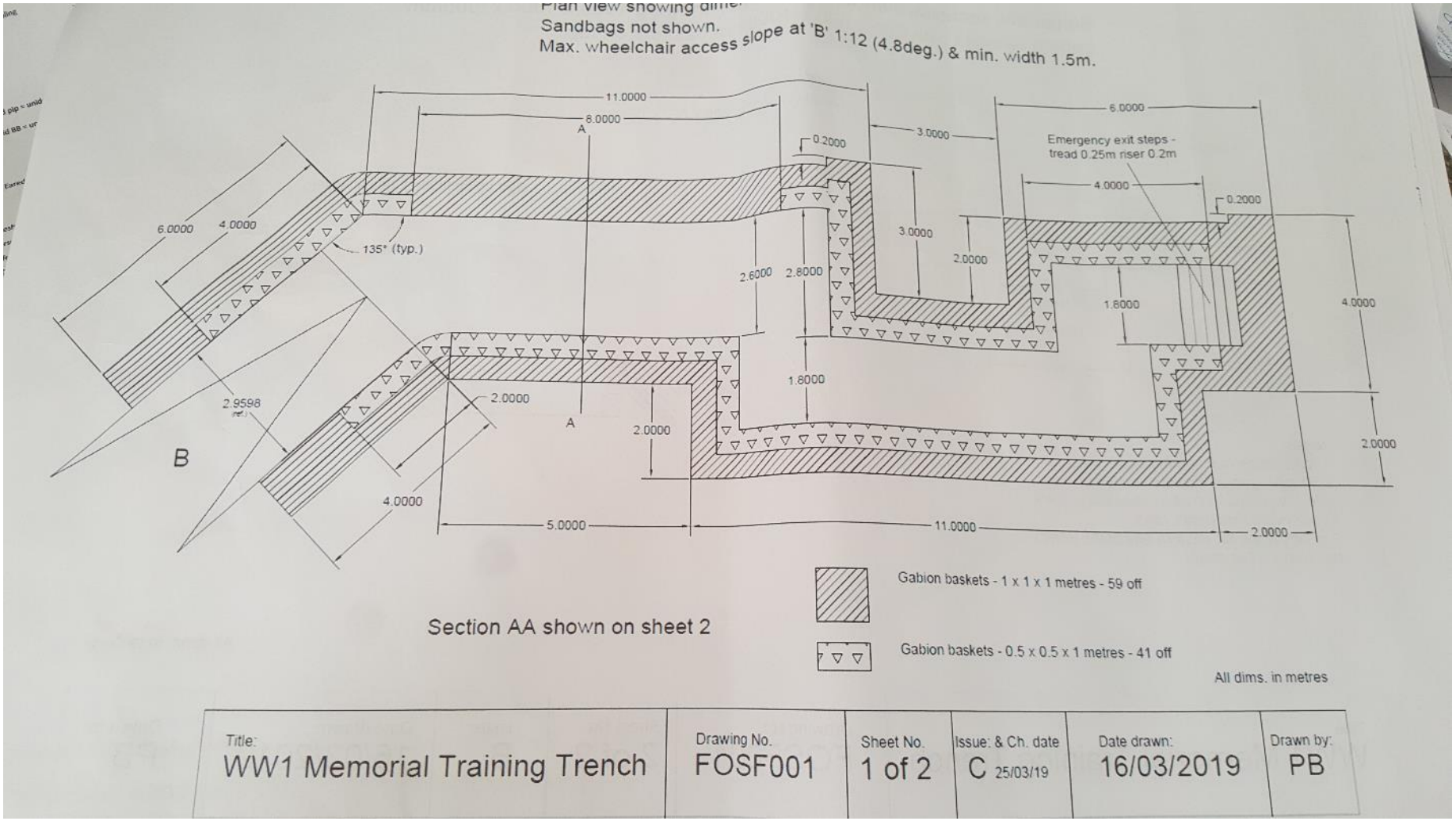
Schematic sectional view on 'A' (sheet 1) showing 1000 x 1000 x1000mm gabion baskets with 500 x 500 x 1000mm baskets on top.



Notes:
1. Wheelchair min. turning circle 1500mm.
2. Smaller gabion baskets omitted on north side in this area to enable wheelchair users to see over to 'no man's land'.
Similarly at the far eastern end of the trench for children. See sheet 1.

All dims. in metres

Title:	Drawing No.	Sheet No.	Issue:	Date drawn:	Drawn by:
WW1 Memorial Training Trench	FOSF001	2 of 2	B	16/03/2019	PB

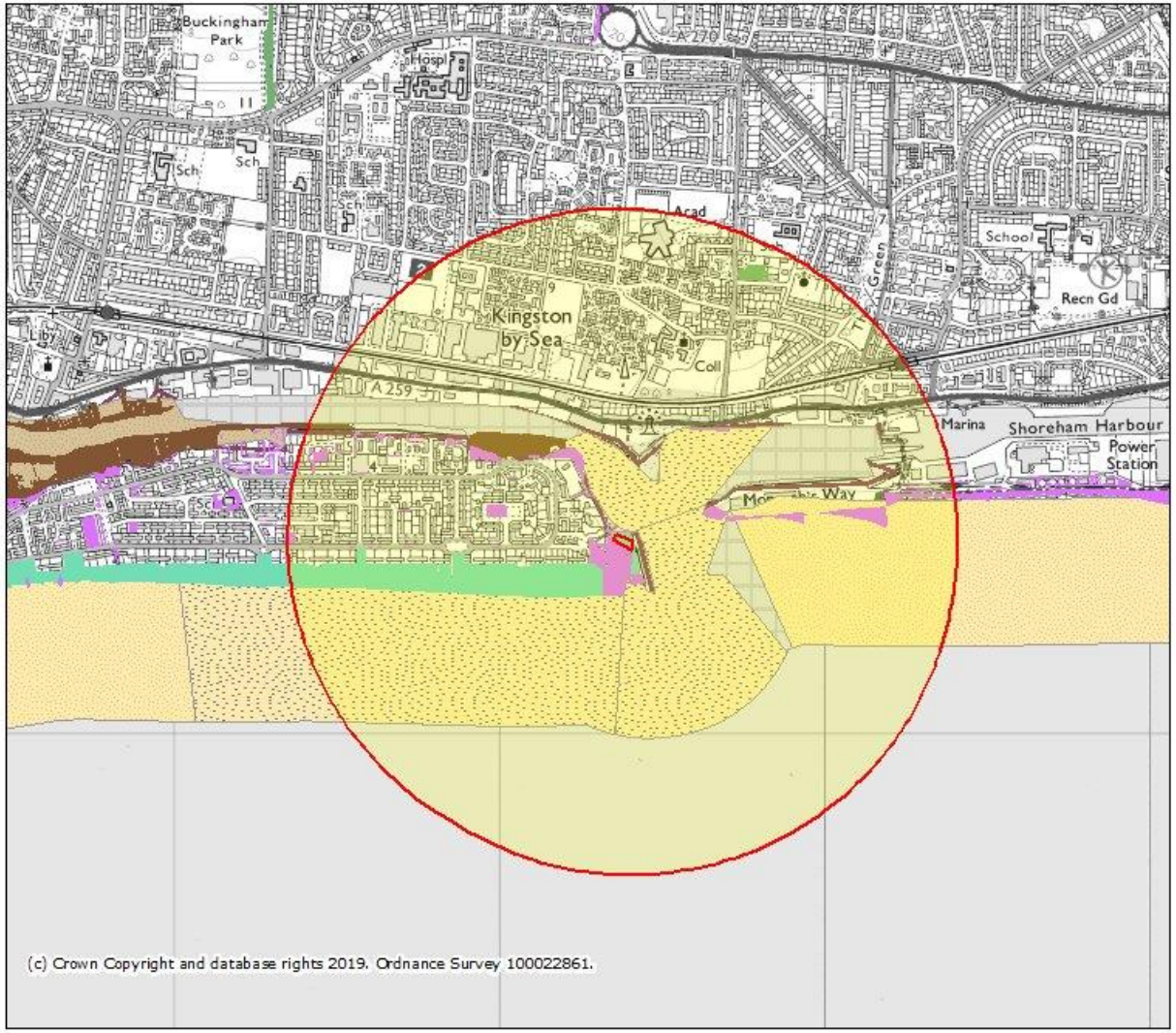

Sandbags not shown.
Max. wheelchair access slope at 'B' 1:12 (4.8deg.) & min. width 1.5m.
11.0000
8.0000
A
0.2000
3.0000
6.0000
Emergency exit steps - tread 0.25m riser 0.2m
4.0000
0.2000
6.0000
4.0000
135° (typ.)
3.0000
2.0000
2.6000
2.8000
1.8000
4.0000
2.9598
ref.)
2.0000
A
2.0000
1.8000
B
2.0000
4.0000
5.0000
11.0000
2.0000
Gabion baskets - 1 x 1 x 1 metres - 59 off
Section AA shown on sheet 2
Gabion baskets - 0.5 x 0.5 x 1 metres - 41 off
All dims. in metres
Title:
WW1 Memorial Training Trench
Drawing No.
FOSF001
Sheet No.
1 of 2
Issue: & Ch. date
C 25/03/19
Date drawn:
16/03/2019
Drawn by:
PB

Appendix 3: Desk Study Information

Full historical records can be provided on request.

MAGiC

Habitats



Legend

- Priority Habitat Inventory - Coastal Vegetated Shingle (England)
- Priority Habitat Inventory - Mudflats (England)
- Priority Habitat Inventory - Good quality semi-improved grassland (Non Priority) (England)

Intertidal Substrate Foreshore (England and Scotland)

- Boulders/Loose Rock
- Gravel
- Made Ground (Man Made)
- Mud
- Mud and Gravel
- Not Present
- Rock Platform
- Rock Platform with Bank of Gravel
- Rock Platform with Boulders/Loose Rock
- Sand
- Sand and Gravel
- Sand and Mud
- Unspecified
- Priority Habitat Inventory - Deciduous Woodland (England)

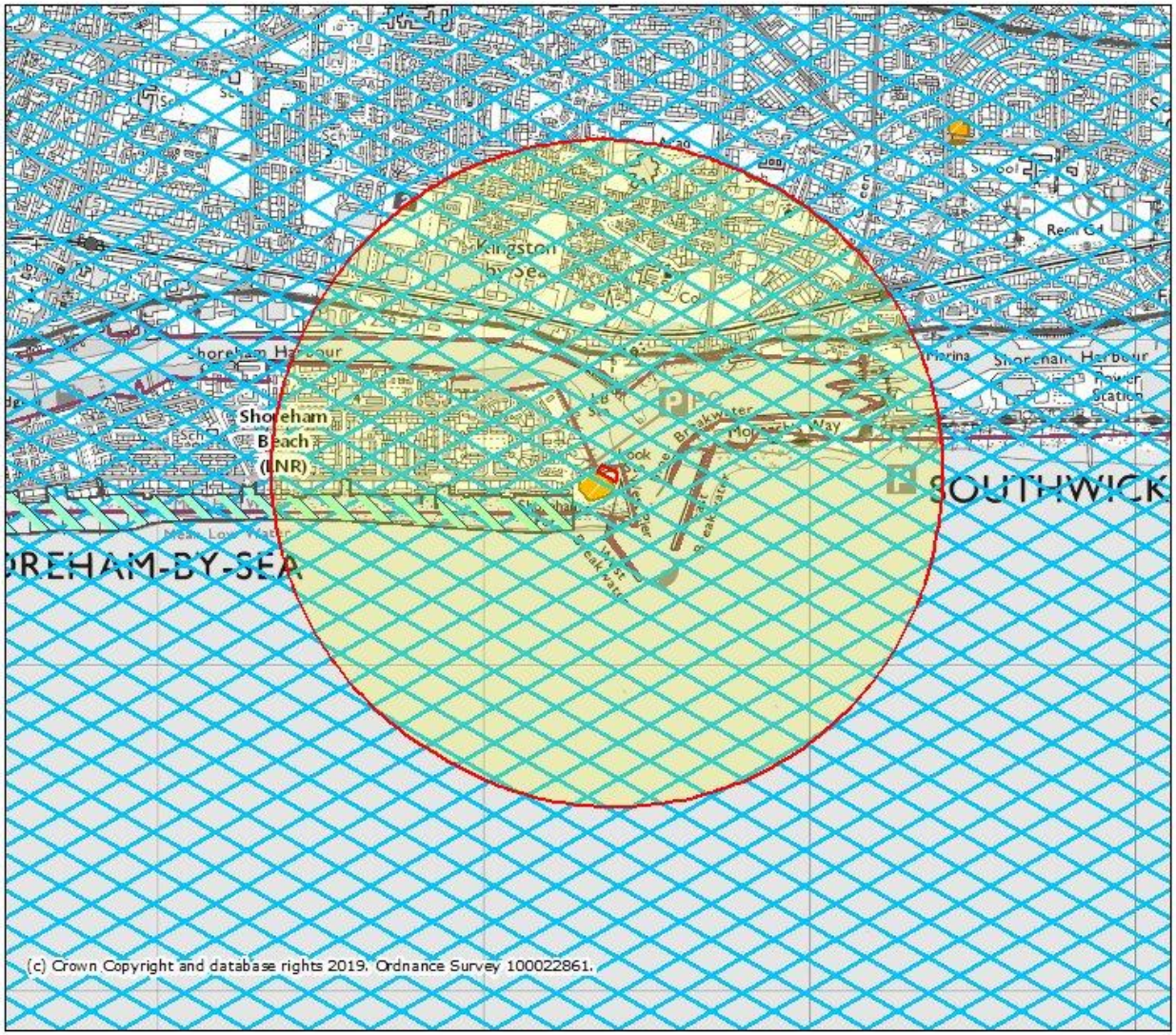
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ymin = 102500
xmax = 527800
ymax = 106900

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km

Map produced by MAGIC on 28 August, 2019.
Copyright resides with the data suppliers and the map must not be reproduced without their permission. Some information in MAGIC is a snapshot of the information that is being maintained or continually updated by the originating organisation. Please refer to the metadata for details as information may be illustrative or representative rather than definitive at this stage.

MAGiC

Designated Sites



Legend

- Local Nature Reserves (England)
- Biosphere Reserves (England)
- Scheduled Monuments (England)

Projection = OSGB36
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ymax = 106800

0 0.35 0.7
km

Map produced by MAGIC on 28 August, 2019.

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Appendix 4: Legislation and Planning Policy

LEGAL PROTECTION

National and European Legislation Afforded to Habitats

International Statutory Designations

Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) are sites of European importance and are designated under the EC Habitats Directive 92/43/EEC on the Conservation of natural habitats and of wild fauna and flora (the Habitats Directive) and the EC Birds Directive 2009/147/EC on the conservation of wild birds respectively. Both form part of the wider Natura 2000 network across Europe.

Under the Habitats Directive Article 3 requires the establishment of a network of important conservation sites (SACs) across Europe. Over 1.000 animal and plant species, as well as 200 habitat types, listed in the directive's annexes are protected in various ways:

Annex II species (about 900): core areas of their habitat are designated as sites of Community importance (SCIs) and included in the Natura 2000 network. These sites must be managed in accordance with the ecological needs of the species.

Annex IV species (over 400, including many annex II species): a strict protection regime must be applied across their entire natural range within the EU, both within and outside Natura 2000 sites.

Annex V species (over 90): Member States must ensure that their exploitation and taking in the wild is compatible with maintaining them in a favourable conservation status.

SPAs are classified under Article 2 of the Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds both for rare bird species (as listed on Annex I) and for important migratory species.

SACs and SPAs up to 12 nautical miles from the coast (i.e. 'territorial waters') are afforded protection in the UK under the Conservation of Habitats and Species Regulations 2017 which consolidate all amendments made to the Conservation (Natural Habitats, &c.) Regulations 1994.

The Conservation of Offshore Marine Habitats and Species Regulations 2017 consolidate and update the Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007. The 2017 Regulations introduce amendments which transfer responsibility for European nature conservation in the Welsh offshore region to Welsh Ministers. This gives Welsh Ministers similar powers in Welsh offshore waters to those currently exercised by Scottish Ministers in Scottish offshore waters. These regulations transpose into national law Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (Habitats Directive), and elements of Council Directive 2009/147/EC on the conservation of wild birds (Wild Birds Directive) in the UK offshore area. They came into force on 30th November 2017. These regulations apply to the UK's offshore marine area which covers waters beyond 12 nautical miles, within British Fishery Limits and the seabed within the UK Continental Shelf Designated Area. The Conservation of Habitats and Species Regulations 2017 form the legal basis for the implementation of the Habitats and Birds Directives in terrestrial areas and territorial waters out to 12nm in England and Wales (including the inshore marine area) and to a limited extent in Scotland and Northern Ireland.

Ramsar sites are designated under the Convention on Wetlands of International Importance, agreed in Ramsar, Iran, in 1971. The Convention covers all aspects of wetland conservation and recognises the importance of wetland ecosystems in relation to global biodiversity conservation. The Convention refers to wetlands as "*areas of marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six metres*".

However, they may also include riparian and coastal zones. Ramsar sites are statutorily protected under the Wildlife & Countryside Act 1981 (as amended 01.04.1996) with further protection provided by the Countryside and Rights of Way (CRoW) Act 2000. Policy statements have been issued by the Government in England and Wales highlighting the special status of Ramsar sites. The Government in England and Wales has issued policy statements which ensure that Ramsar sites are afforded the same protection as areas designated under the EC Birds and Habitats Directives as part of the Natura 2000 network (e.g. SACs & SPAs). Further provisions for the protection and management of SSSIs have been introduced by the Nature Conservation (Scotland) Act 2004.

National Statutory Designations

Sites of Special Scientific Interest (SSSI) are designated by nature conservation agencies in order to conserve key flora, fauna, geological or physio-geographical features within the UK. The original designations were under the National Parks and Access to the Countryside Act 1949 but SSSIs were then re-designated under the Wildlife & Countryside Act 1981 (as amended). As well as reinforcing other national designations (including National Nature Reserves), the system also provides statutory protection for terrestrial and coastal sites which are important within the European Natura 2000 network and globally.

Local Statutory Designations

Local authorities in consultation with the relevant nature conservation agency can declare Local Nature Reserves (LNRs) under the National Parks and Access to the Countryside Act 1949. LNRs are designated for flora, fauna or geological interest and are managed locally to retain these features and provide research, education and recreational opportunities.

Non- Statutory Designations

All non-statutorily designated sites are referred to as Local Wildlife Sites (LWS) and can be designated by the local authority for supporting local conservation interest. Combined with statutory designation, these sites are considered within Local Development Frameworks under the Town and Country Planning system and are a material consideration during the determination of planning applications. The protection afforded to these sites varies depending on the local authority involved.

Regionally Important Geological Sites (RIGs) are the most important geological and geomorphological areas outside of statutory designations. These sites are also a material consideration during the determination of planning applications.

The Hedgerow Regulations 1997

The Hedgerow Regulations 1997 are designed to protect ‘important’ countryside hedgerows. Importance is defined by whether the hedgerow (a) has existed for 30 years or more; or (b) satisfies at least one of the criteria listed in Part II of Schedule 1 of the Regulations.

Under the Regulations, it is against the law to remove or destroy hedgerows on or adjacent to common land, village greens, SSSIs (including all terrestrial SACs, NNRs and SPAs), LNRs, land used for agriculture or forestry and land used for the keeping or breeding of horses, ponies or donkeys without the permission of the local authority. Hedgerows 'within or marking the boundary of the curtilage of a dwelling-house' are excluded.

National and European Legislation Afforded to Species

The Habitats Directive

The EC Habitats Directive aims to promote the maintenance of biodiversity by requiring Member States to take measures to maintain or restore wild species listed on the Annexes to the Directive at a favourable conservation status, introducing robust protection for those species of European importance. The Directive is transposed into UK law by The Conservation of Habitats and Species Regulations 2017 (the Conservation Regulations) and the Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007 (as amended). The following notes are relevant for all species protected under the EC Habitats Directive:

In the Directive, the term 'deliberate' is interpreted as being somewhat wider than intentional and may be thought of as including an element of recklessness.

The Habitats Regulations do not define the act of 'migration' and, therefore, as a precaution, it is recommended that short distance movement of animals for e.g. foraging, breeding or dispersal purposes are also considered.

In order to obtain a European Protected Species Mitigation (EPSM) licence, the application must demonstrate that it meets all of the following three 'tests':

- The action(s) are necessary for the purpose of preserving public health or safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequence of primary importance for the environment;
- There is no satisfactory alternative; and
- The action authorised will not be detrimental to the maintenance of the species concerned at a favourable conservation status in their natural range.

The Wildlife and Countryside Act (WCA) 1981 (as amended)

The Wildlife and Countryside Act (WCA) 1981 (as amended) implements the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention 1979, implemented 1982) and implements the species protection requirements of EC Birds Directive 2009/147/EC on the conservation of wild birds in Great Britain (the birds Directive). The WCA 1981 has been subject to a number of amendments, the most important of which are through the Countryside and Rights of Way (CRoW) Act (2000) and Nature Conservation (Scotland) Act 2004.

Other legislative Acts affording protection to wildlife and their habitats include:

- Deer Act 1991
- Natural Environment & Rural Communities (NERC) Act 2006
- Protection of Badgers Act 1992
- Wild Mammals (Protection) Act 1996

Badgers

Badgers *Meles meles* are protected under The Protection of Badgers Act 1992 which makes it an offence to:

- Wilfully kill, injure, take, or attempt to kill, injure or take a badger
- Cruelly ill-treat a badger, including use of tongs and digging
- Possess or control a dead badger or any part thereof
- Intentionally or recklessly damage, destroy or obstruct access to a badger sett or any part thereof
- Intentionally or recklessly disturb a badger when it is occupying a badger sett
- Intentionally or recklessly cause a dog to enter a badger sett

- Sell or offers for sale, possesses or has under his control, a live badger

Effects on development works:

A development licence will be required from the relevant countryside agency (i.e. Natural England, Natural Resources Wales, Scottish Natural Heritage) for any development works likely to affect an active badger sett, or to disturb badgers whilst they occupy a sett. Guidance has been issued by the countryside agency's to define what would constitute a licensable activity. It is no possible to obtain a licence to translocate badgers.

Birds

With certain exceptions, all birds, their nests and eggs are protected under Sections 1-8 of the WCA. Among other things, this makes it an offence to:

- Intentionally (or recklessly in Scotland) kill, injure or take any wild bird
- Intentionally (or recklessly in Scotland) take, damage or destroy (or, in Scotland, otherwise interfere with) the nest of any wild bird while it is in use or being built
- Intentionally take or destroy an egg of any wild bird
- Sell, offer or expose for sale, have in his possession or transport for the purpose of sale any wild bird (dead or alive) or bird egg or part thereof.
- Intentionally or recklessly obstruct or prevent any wild bird from using its nest (Scotland only)

Certain species of bird, for example the barn owl, bittern and kingfisher receive additional protection under Schedule 1 of the WCA and Annex 1 of the European Community Directive on the Conservation of Wild Birds (2009/147/EC) and are commonly referred to as "Schedule 1" birds.

This affords them protection against:

- Intentional or reckless disturbance while it is building a nest or is in, on or near a nest containing eggs or young
- Intentional or reckless disturbance of dependent young of such a bird
- In Scotland only, intentional or reckless disturbance whilst lekking
- In Scotland only, intentional or reckless harassment

Effects on development works:

Works should be planned to avoid the possibility of killing or injuring any wild bird, or damaging or destroying their nests. The most effective way to reduce the likelihood of nest destruction in particular is to undertake work outside the main bird nesting season which typically runs from March to August. Where this is not feasible, it will be necessary to have any areas of suitable habitat thoroughly checked for nests prior to vegetation clearance.

Schedule 1 birds are additionally protected against disturbance during the nesting season. Thus, it will be necessary to ensure that no potentially disturbing works are undertaken in the vicinity of the nest. The most effective way to avoid disturbance is to postpone works until the young have fledged. If this is not feasible, it may be possible to maintain an appropriate buffer zone or standoff around the nest.

Reptiles (Amphibians and reptiles)

The sand lizard *Lacerta agilis*, smooth snake *Coronella austriaca*, natterjack toad *Epidalea calamita*, pool frog *Pelophylax lessonae* and great crested newt *Triturus cristatus* receive full protection under Habitats Regulations through their inclusion on Schedule 2. Regulation 41 prohibits:

- Deliberate killing, injuring or capturing of Schedule 2 species
- Deliberate disturbance of species in such a way as:
- To impair their ability to survive, breed, or reproduce, or to rear or nurture young;
- To impair their ability to hibernate or migrate
- To affect significantly the local distribution or abundance of the species
- Damage or destruction of a breeding site or resting place

With the exception of the pool frog, these species are also listed on Schedule 5 of the WCA and they are additionally protected from:

- Intentional or reckless disturbance (at any level)
- Intentional or reckless obstruction of access to any place of shelter or protection
- Selling, offering or exposing for sale, possession or transporting for purpose of sale.

Other native species of reptiles are protected solely under Schedule 5, Section 9(1) & (5) of the WCA, i.e. the adder *Vipera berus*, grass snake *Natrix natrix*, common lizard *Zootoca vivipara* and slow-worm *Anguis fragilis*. It is prohibited to:

- Intentionally or recklessly kill or injure these species.

<u>Effects on development works:</u>

A European Protected Species Mitigation (EPSM) Licence issued by the relevant countryside agency (i.e. Natural England, Natural Resources Wales, Scottish Natural Heritage) will be required for works likely to affect the breeding sites or resting places amphibian and reptile species protected under Habitats Regulations. A licence will also be required for operations liable to result in a level of disturbance which might impair their ability to undertake those activities mentioned above (e.g. survive, breed, rear young and hibernate). The licences are to allow derogation from the relevant legislation, but also to enable appropriate mitigation measures to be put in place and their efficacy to be monitored.

Although not licensable, appropriate mitigation measures may also be required to prevent the intentional killing or injury of adder, grass snake, common lizard and slow worm, thus avoiding contravention of the WCA.

Water voles

The water vole *Arvicola terrestris* is fully protected under Schedule 5 of the WCA. This makes it an offence to:

- Intentionally kill, injure or take (capture) water voles
- Intentionally or recklessly damage, destroy or obstruct access to any structure or place used for shelter or protection
- Intentionally or recklessly disturb water voles while they are occupying a structure or place used for shelter or protection

Effects on development works:

If development works are likely to affect habitats known to support water voles, the relevant countryside agency (i.e. Natural England, Natural Resources Wales, Scottish Natural Heritage) must be consulted. It must be shown that means by which the proposal can be re-designed to avoid contravening the legislation have been fully explored e.g. the use of alternative sites, appropriate timing of works to avoid times of the year in which water voles are most vulnerable, and measures to ensure minimal habitat loss. Conservation licences for the capture and translocation of water voles may be issued by the relevant countryside agency for the purpose of development activities if it can be shown that the activity has been properly planned and executed and thereby contributes to the conservation of the population. The licence will then only be granted to a suitably experienced person if it can be shown that adequate surveys have been undertaken to inform appropriate mitigation measures. Identification and preparation of a suitable receptor site will be necessary prior to the commencement of works.

Otters

Otters *Lutra lutra* are fully protected under the Conservation Regulations through their inclusion on Schedule 2. Regulation 41 prohibits:

- Deliberate killing, injuring or capturing of Schedule 2 species
- Deliberate disturbance of species in such a way as:
- To impair their ability to survive, breed, or reproduce, or to rear or nurture young;
- To impair their ability to hibernate or migrate
- To affect significantly the local distribution or abundance of the species
- Damage or destruction of a breeding site or resting place

Otters are also currently protected under the WCA through their inclusion on Schedule 5. Under this Act, they are additionally protected from:

- Intentional or reckless disturbance (at any level)
- Intentional or reckless obstruction of access to any place of shelter or protection

Effects on development works:

An EPSM Licence issued by the relevant countryside agency (i.e. Natural England, Natural Resources Wales, Scottish Natural Heritage) will be required for works likely to affect otter breeding or resting places (often referred to as holts, couches or dens) or for operations likely to result in a level of disturbance which might impair their ability to undertake those activities mentioned above (e.g. survive, breed, and rear young). The licence is to allow derogation from the relevant legislation but also to enable appropriate mitigation measures to be put in place and their efficacy to be monitored

Bats

All species are fully protected by Habitats Regulations 2010 as they are listed on Schedule 2. Regulation 41 prohibits:

- Deliberate killing, injuring or capturing of Schedule 2 species (e.g. All bats)
- Deliberate disturbance of bat species in such a way as:
- To impair their ability to survive, breed, or reproduce, or to rear or nurture young;
- To impair their ability to hibernate or migrate
- To affect significantly the local distribution or abundance of the species

- Damage or destruction of a breeding site or resting place

Bats are afforded the following additional protection through the WCA as they are included on Schedule 5:

- Intentional or reckless disturbance (at any level)
- Intentional or reckless obstruction of access to any place of shelter or protection

Effects on development works:

An EPSM Licence issued by the relevant countryside agency (i.e. Natural England, Natural Resources Wales, Scottish Natural Heritage) will be required for works are likely to affect a bat roost or an operation which are likely to result in an illegal level of disturbance to the species will require an EPSM licence. The licence is to allow derogation from the legislation through the application of appropriate mitigation measures and monitoring.

Dormice

Hazel Dormice *Muscardinus avellanarius* are fully protected under Habitats Regulations through their inclusion on Schedule 2. Regulation 41 prohibits:

- Deliberate killing, injuring or capturing of Schedule 2 species
- Deliberate disturbance of species in such a way as:
- To impair their ability to survive, breed, or reproduce, or to rear or nurture young;
- To impair their ability to hibernate or migrate
- To affect significantly the local distribution or abundance of the species
- Damage or destruction of a breeding site or resting place

Dormice are also protected under the WCA through their inclusion on Schedule 5. Under this Act, they are additionally protected from:

- Intentional or reckless disturbance (at any level)
- Intentional or reckless obstruction of access to any place of shelter or protection

Effects on development works:

Works which are liable to affect a dormice habitat or an operation which are likely to result in an illegal level of disturbance to the species will require an EPSM licence issued by the relevant countryside agency (i.e. Natural England, Natural Resources Wales (NB: Hazel Dormouse are entirely absent from Scotland)). The licence is to allow derogation from the legislation through the application of appropriate mitigation measures and monitoring.

White clawed crayfish

There is a considerable amount of legislation in place in an attempt to protect the White-clawed crayfish *Austropotamobius pallipes*. This species is listed under the European Union's (EU) Habitat and Species Directive and is listed under Schedule 5 of the Wildlife and Countryside Act (1981). This makes it an offence to:

- Protected against intentional or reckless taking
- Protected against selling, offering or advertising for sale, possessing or transporting for the purpose of sale

It is also classified as Endangered in the IUCN Red List of Endangered Species. As a result of this and other relevant crayfish legislation such as the Prohibition of Keeping of Live Fish (Crayfish) Order 1996, a series of licences are needed for working with White-clawed and non-native crayfish. These are:

- A licence to handle crayfish (therefore survey work) in England
- A licence for the keeping of crayfish in England and Wales with an exemption for Signal crayfish (England).
- People in the post-code areas listed with crayfish present prior to 1996 do not need to apply for consent for crayfish already established. It does not, however, allow any new stocking of non-native crayfish into waterbodies. Consent for trapping of non-native crayfish for control or consumption is most likely to be granted in Thames and Anglian regions in the areas with "go area" postcodes.
- Harvesting of crayfish is prohibited in much of England and in any part of Scotland and Wales.

Effects on development works:

The relevant countryside agency (i.e. Natural England, Natural Resources Wales, Scottish Natural Heritage) will need to be consulted about development which could impact on a watercourse or wetland known to support white clawed crayfish. Conservation licences for the capture and translocation of crayfish can be issued if it can be shown that the activity has been properly planned and executed and thereby contributes to the conservation of the population. The licence will only be granted to a suitably experienced person if it can be shown that adequate surveys have been undertaken to inform appropriate mitigation measures. Identification and preparation of a suitable receptor site will be necessary prior to the commencement of the works.

Wild Mammals (Protection Act) 1996

All wild mammals are protected against intentional acts of cruelty under the above legislation. This makes it an offence to mutilate, kick, beat, nail or otherwise impale, stab, burn, stone, crush, drown, drag or asphyxiate any wild mammal with intent to inflict unnecessary suffering.

To avoid possible contravention, due care and attention should be taken when carrying out works (for example operations near burrows or nests) with the potential to affect any wild mammal in this way, regardless of whether they are legally protected through other conservation legislation or not.

Legislation afforded to Plants

With certain exceptions, all wild plants are protected under the WCA. This makes it an offence for an 'unauthorised' person to intentionally (or recklessly in Scotland) uproot wild plants. An authorised person can be the owner of the land on which the action is taken, or anybody authorised by them.

Certain rare species of plant, for example some species of orchid, are also fully protected under Schedule 8 of the Wildlife and Countryside Act 1981 (as amended). This prohibits any person from:

- Intentionally (or recklessly in Scotland) picking, uprooting or destruction of any wild Schedule 8 species (or seed or spore attached to any such wild plant in Scotland only)
- Selling, offering or exposing for sale, or possessing or transporting for the purpose of sale, any wild live or dead Schedule 8 plant species or part thereof
- In addition to the UK legislation outlined above, several plant species are fully protected under Schedule 5 of The Conservation of Habitats and Species Regulations 2010. These are species of European importance. Regulation 45 makes it an offence to:
- Deliberately pick, collect, cut, uproot or destroy a wild Schedule 5 species
- Be in possession of, or control, transport, sell or exchange, or offer for sale or exchange any wild live or dead Schedule 5 species or anything derived from such a plant.

Effects on development works:

An EPSM licence will be required from the relevant countryside agency (i.e. Natural England, Natural Resources Wales, Scottish Natural Heritage) for works which are likely to affect species of planted listed on Schedule 5 of the Conservation or Habitats and Species Regulations 2010. The licence is to allow derogation from the legislation through the application of appropriate mitigation measures and monitoring.

Invasive Species

Part II of Schedule 9 of the WCA lists non-native invasive plant species for which it is a criminal offence in England and Wales to plant or cause to grow in the wild due to their impact on native wildlife. Species included (but not limited to):

- Japanese knotweed *Fallopia japonica*
- Giant hogweed *Heracleum mantegazzianum*
- Himalayan balsam *Impatiens glandulifera*

Effects on development works:

It is not an offence for plants listed in Part II of Schedule 9 of the WCA 1981 to be present on the development site, however, it is an offence to cause them to spread. Therefore, if any of the species are present on site and construction activities may result in further spread (e.g. earthworks, vehicle movements) then it will be necessary to design and implement appropriate mitigation prior to construction commencing.

Injurious weeds

Under the Weeds Act 1959 any land owner or occupier may be required prevent the spread of certain 'injurious weeds' including (but not limited to):

- Spear thistle *Cirsium vulgare*
- Creeping thistle *Cirsium arvense*
- Curled dock *Rumex crispus*
- Broad-leaved dock *Rumex obtusifolius*
- Common ragwort *Senecio jacobaea*

It is a criminal offence to fail to comply with a notice requiring such action to be taken. The Ragwort Control Act 2003 establishes a ragwort control code of practice as common ragwort is poisonous to horses and other livestock. This code provides best practice guidelines and is not legally binding.

National Planning Policy Framework (England)

The National Planning Policy Framework promotes sustainable development. The Framework specifies the need for protection of designated sites and priority habitats and species. An emphasis is also made on the need for ecological infrastructure through protection, restoration and re-creation. The protection and recovery of priority species (considered likely to be those listed as UK Biodiversity Action Plan priority species) is also listed as a requirement of planning policy.

In determining a planning application, planning authorities should aim to conserve and enhance biodiversity by ensuring that: designated sites are protected from harm; there is appropriate mitigation or compensation where significant harm cannot be avoided; opportunities to incorporate biodiversity in and around developments are encouraged; and planning permission is refused for development resulting in the loss or deterioration of irreplaceable habitats including aged or veteran trees and also ancient woodland.

The Natural Environment and Rural Communities Act 2006 and the Biodiversity Duty

Section 40 of the Natural Environment and Rural Communities (NERC) Act, 2006, requires all public bodies to have regard to biodiversity conservation when carrying out their functions. This is commonly referred to as the 'biodiversity duty'.

Section 41 of the Act (Section 42 in Wales) requires the Secretary of State to publish a list of habitats and species which are of 'principal importance for the conservation of biodiversity.' This list is intended to assist decision makers such as public bodies in implementing their duty under Section 40 of the Act. Under the Act these habitats and species are regarded as a material consideration in determining planning applications. A developer must show that their protection has been adequately addressed within a development proposal.

Scottish Planning Policy (Published: 23 Jun 2014)

The SPP sits alongside the Scottish Government planning policy documents. The National Planning Framework (NPF) provides a statutory framework for Scotland's long-term spatial development. The NPF sets out the Scottish Government's spatial development priorities for the next 20 to 30 years.

A Natural, Resilient Place - Valuing the Natural Environment (National Planning Framework Context) Paragraph 193. The natural environment forms the foundation of the spatial strategy set out in NPF3. The environment is a valued national asset offering a wide range of opportunities for enjoyment, recreation and sustainable economic activity. Planning plays an important role in protecting, enhancing and promoting access to our key environmental resources, whilst supporting their sustainable use.

Policy Principles: Paragraph 194. The planning system should:

- Facilitate positive change while maintaining and enhancing distinctive landscape character;
- **Conserve and enhance protected sites and species, taking account of the need to maintain healthy ecosystems and work with the natural processes which provide important services to communities;**
- Promote protection and improvement of the water environment, including rivers, lochs, estuaries, wetlands, coastal waters and groundwater, in a sustainable and co-ordinated way;
- Seek to protect soils from damage such as erosion or compaction;

- Protect and enhance ancient semi-natural woodland as an important and irreplaceable resource, together with other native or long-established woods, hedgerows and individual trees with high nature conservation or landscape value;
- Seek benefits for biodiversity from new development where possible, including the restoration of degraded habitats and the avoidance of further fragmentation or isolation of habitats; and
- Support opportunities for enjoying and learning about the natural environment.

Planning Policy Wales (Draft 2018)

Paragraph 5.42 of the document refers to Biodiversity and Ecological Networks and states:

The planning system has a key role to play in helping to reverse the decline in biodiversity and increasing the resilience of ecosystems, at various scales, by ensuring appropriate mechanisms are in place to both protect against loss and to secure enhancement. Addressing the consequences of climate change should be a central part of any measures to conserve biodiversity and the resilience of ecosystems. Information contained in The State of Natural Resources Report (SoNaRR) (published by Natural Resources Wales and Area Statements should be taken into account. Development plan strategies, policies and individual development proposals must take into account the need to:

- Promote the conservation of biodiversity, in particular the conservation of wildlife and habitats;
- Ensure action in Wales contributes to meeting international responsibilities and obligations for biodiversity and habitats;
- Ensure statutorily designated sites are properly protected and managed;
- Safeguard protected species; and existing biodiversity assets from impacts which directly affect their nature conservation interests and compromise the resilience of ecological networks and the components which underpin them, such as water and soil; and
- Seek enhancement of and improvements to ecosystem resilience by improving diversity, condition, extent and connectivity of ecological networks.

Environment (Wales) Act 2016 and the Biodiversity Duty

The Environment (Wales) Act introduces a new biodiversity duty, which highlights biodiversity as an essential component of ecosystem resilience. This new duty replaces the biodiversity duty in the Natural Environment and Rural Communities Act 2006 (referred to as the NERC Act). Part 1 of the Act deals with Sustainable management of natural resources including Biodiversity and Resilience of Ecosystems Duty. The Environment Act enhances the current NERC Act duty to require all public authorities, when carrying out their functions in Wales, to seek to “maintain and enhance biodiversity” where it is within the proper exercise of their functions. In doing so, public authorities must also seek to “promote the resilience of ecosystems”. As under the NERC Act the new duty will apply to a range of public authorities such as the Welsh Ministers, local authorities, public bodies and statutory undertakers. This ensures that biodiversity is an integral part of the decisions that public authorities take in relation to Wales. It also links biodiversity with the long term health and functioning of our ecosystems, therefore helping to align the biodiversity duty with the framework for sustainable natural resource management provided in the Act.

Biodiversity and Resilience of Ecosystems Duty (Section 6 Duty)

5.44 Planning authorities must seek to maintain and enhance biodiversity in the exercise of their functions. Planning authorities must also take account of and promote the resilience of ecosystems, in particular the following aspects:

a) Diversity between and within ecosystems;

b) The connections between and within ecosystems;

c) The scale of ecosystems;

d) The condition of ecosystems (including their structure and functioning); and

e) The adaptability of ecosystems.

5.45 In fulfilling this duty, planning authorities must have regard to:

a) The list of habitats of principal importance for Wales, published under Section 7 of the Environment (Wales) Act 2016;

b) The State of Natural Resources Report (SoNaRR), published by NRW; and

c) Any Area Statement that covers all or part of the area in which the authority exercises its functions.

5.46 A proactive approach towards facilitating the delivery of biodiversity and resilience outcomes should be taken by all those participating in the planning process. In particular, planning authorities should demonstrate that they have sought to fulfil the duties and requirements of Section 6 of the Environment Act by taking all reasonable steps to maintain and enhance biodiversity in the exercise of their functions. The broad framework for implementing the duty and building resilience through the planning system includes addressing:

- Diversity: to ensure mechanisms are in place to minimise further loss and that circumstances allow for species' populations to expand and recolonise their natural range (former range) or adapt to future change. This means development should provide a net benefit for biodiversity, and at the very least, with no significant loss of habitats or populations of species, locally or nationally;
- Extent: to ensure mechanisms allow for the maintenance of existing assets and networks and promote the restoration of damaged, modified or potential habitat and the creation of new habitat. This means that planning choices should incorporate measures which seek the creation and restoration of green networks and linkages between habitats and maintaining and
- enhancing other green infrastructure features and networks;
- Condition: this is more complex to address, not least because of the interactions of various factors which underpin habitats. At the very least planning approaches should not compromise the condition of ecosystems. By taking an integrated approach to development, for example, which considers both direct and wider impacts and benefits it should be possible to make a positive contribution through the planning system; and
- Connectivity: to take opportunities to develop functional habitat and ecological networks across landscapes, building on existing connectivity and quality and encouraging habitat creation and restoration. The opportunities could include enlarging habitat areas, developing buffers around designated sites or other biodiversity assets or corridors (including transport and river corridors) and the creation of 'stepping stones' which will strengthen the ability of habitats and ecological networks to adapt to change, including climate change.