Natural Resources Wales

Stephenson Street Flood Defence Scheme

Preliminary Ecological Appraisal Addendum - North of Transporter Bridge Ground Raising

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1 Introduction

1.1 Background

Ove Arup and Partners Limited (Arup) has been commissioned by Natural Resources Wales (NRW) to undertake a Preliminary Ecological Appraisal (PEA)[1] in relation to proposed improvement works to the Stephenson Street flood defence embankment, to reduce flood risk from the River Usk on the Spytty area of Newport.

An existing 1,350 m long flood defence embankment is located on the left (eastern) bank of the River Usk from Stephenson Street at the north to Corporation Road (Bird Port) in the south. This section of flood defence is commonly referred to as Stephenson Street Embankment.

Stephenson Street Embankment (hereafter referred to as the Site) provides tidal flood risk protection to much of the Spytty area of Newport. This includes significant industry, leisure and residential properties. In the embankment's current condition, it would be classified as a failing asset due to subsidence and structural failures. Modelling predicts that defence enhancements are required both along the Stephenson Street Embankment parallel to the River Usk, and to the south at Corporation Road (within Bird Port).

The preferred solution comprises:

1. Stephenson Street Embankment enhancement; two different designs proposed. An earth bund next to the Coronation Park (250 m section) and a sheet piled wall along the remainder of the length (950 m section) until Bird Port.

2. Corporation Road (Bird Port) flood defences, comprising road raising and flood walls.

The proposed works will be divided into two phases. Phase 1 comprising the Stephenson Street Embankment enhancements, and Phase 2 comprising Bird Port works. Additional works are now proposed as part of Phase 2 and which include a flood wall at the Railway site, further to the south of Bird Port, adjacent to Liberty Steel works.

A PEA report was written by Arup in February 2019[2] covering part of the Phase 2 works. This PEA Addendum covers an additional area of the Phase 2 works to the north of the Site. It should be read in conjunction with the PEA report from 2019 and the previous ecological report which covers the Phase 1 works[3].

[1] Chartered Institute of Ecology and Environmental Management (CIEEM) (2018). Guidelines for Preliminary Ecological Appraisal. Second Edition.
[2] Arup (2019). Stephenson Street Preliminary Ecological Appraisal.
[3] Arup (2018). Ecological appraisal report: Stephenson Street.

See sections 1.2, 1.3, 1.4 and 1.5 of the 2019 PEA report[2] for Proposed Works, Study Area, Objectives and Legislative Context.

2 Methods

See Sections 2.2.1, 2.2.2 and 2.2.3 of the 2019 PEA report[2] for the methodology used for Extended Phase 1 Habitat Survey and great crested newt Habitat Suitability Index (HSI) assessment.

The Extended Phase 1 Habitat Survey was undertaken on 4th April 2019 and completed on 17th May 2019 due to access constraints.

2.1 Limitations

During the Extended Phase 1 Habitat Survey, some areas of dense scrub were not accessible for survey. It is therefore not possible to rule out the presence of protected species in this area.

It should be stressed that the findings presented in this study represent those at the time of survey and reporting, and data collected from available sources. Ecological surveys are limited by factors which affect the presence of species, such as temporal weather conditions, migration patterns and behaviour.

The weather is not considered to be a limitation, as all surveys were undertaken during optimal weather conditions. Every effort has been made to ensure that the findings of the study present as accurate an interpretation as possible of the species and habitats within the study area.

3 Results

3.1 Desk Study

3.1.1 Statutory Designated Sites

The search using MAGIC highlighted four European Sites and three national statutory designated Sites within 5 km and 2 km of the Site boundary respectively. All statutory designated Sites and their proximity to the Site are listed in Table 1 below. See Appendix B of the 2019 PEA report[2] for full citations.

Table 1: Statutory designated Sites within 5 km and 2 km of the Site boundary, for international and national Sites, respectively

Site Name	Approximate Distance from the Site
Internationally Designated Sites	
River Usk Special Area of Conservation (SAC)	Within the Site boundary
Severn Estuary Ramsar Site	2 km south (hydrologically connected via the River Usk)
Severn Estuary SAC	2 km south (hydrologically connected via the River Usk)
Severn Estuary Special Protection Area (SPA)	2 km south (hydrologically connected via the River Usk)
Nationally Designated Sites	
River Usk Site of Special Scientific Interest (SSSI)	Within the Site boundary
Gwent Levels – St Brides SSSI	2 km southwest (hydrologically connected via the River Usk/Severn Estuary)
Severn Estuary SSSI	2 km southeast (hydrologically connected via the River Usk)

3.1.2 Non-Statutory Designated Sites

There are four non-statutory designated sites within 2 km of the Site, all of which are Sites of Importance for Nature Conservation (SINCs). All non-statutory

designated Sites and their proximity to the Site are listed in Table 2 below. See Appendix B of the 2019 PEA report[2] for full citations.

Table 2: Non-Statutory Designated Sites within 2 km of the Site boundary

Site Name	Approximate Distance from the Site
Monkey Island SINC	Immediately north of the Site
Marshall's SINC	Immediately south of the Site
Solutia Site SINC	1.2 km southeast of the Site
Alpha Steel SINC	2 km southeast of the Site

Monkey Island SINC is a mosaic of post-industrial grassland, scrub and ruderal. Several blue pimpernel (*Anagallis foemina*) have been found on the site, which are the only known record of this species in Gwent.

Marshall's SINC is notified for its mosaic of habitats including scrub and tall ruderal, post-industrial land, neutral grassland and wetland along the banks of the Usk.

Solutia SINC supports a series of improved and semi-improved grasslands with traditional ditches and ponds, supporting a range of species including nesting birds such as Cetti's warbler (*Cettia cetti)* and invertebrates including hairy dragonfly (*Brachyton prantense).*

Alpha Steel is an area of former levels, scrub, and other habitat that supports a range of species including scarce moth species, birds such as Cetti's warbler, plants including orchids: marsh helleborine (*Epicactis palustris),* bee orchid (*Ophrys apifera),* pyramidal orchid (*Anacamptis pyramidalis),* and spotted orchid sp. (*Dactylorhiza* spp*).*

3.1.3 Protected and Notable Species

SEWBReC provided data on protected and notable species within 2 km of the Site boundary. Reptiles, amphibians and mammal records are detailed in Table 3 below.

Table 3: Summary of protected reptile, amphibian, mammal records within 2 km of the Site boundary from the last ten years. Distances are approximate

Species / Group	Status [4]	Summary of Records	Year of nearest record[5]
Amphibians and Reptiles			
Great crested newt *(Triturus cristatus)*	EPS, WCA, Section 7	Seven records with the closest approximately 1.3 km southeast.	2017
Palmate newt (*Lissotriton helveticus*)	WCA	One record, approximately 300 m northwest.	2009
Smooth newt (*Lissotriton vulgaris*)	WCA	Eight records, with the closest approximately 1 km southeast.	Most recent in 2017
Common frog (*Rana temporaria*)	WCA, Section 7	One record approximately 2 km southeast in the Solutia site.	2017
Common toad *(Bufo bufo*)	WCA, Section 7	One record approximately 2 km southeast in the Solutia site.	2017
Common lizard (*Zootoca vivipara)*	WCA, Section 7	Two records with the closest approximately 200 m northeast.	2009
Grass snake (*Natrix helvetica*)	WCA, Section 7	One record, approximately 2 km east.	2014
Bats			
Noctule bat (*Nyctalus noctula)*	EPS, WCA, Section 7	One record approximately 600 m south.	2012
Brown long-eared bat *(Plecotus auritus)*	EPS, WCA, Section 7	One record of a roost approximately 600 m west of the Site.	2011
Common pipistrelle *(Pipistrellus pipistrellus)*	EPS, WCA, Section 7	Four records with the closest approximately 600 m south.	Most recent in 2017
Whiskered bat (*Myotis mystacinus*)	EPS, WCA, Section 7	One record approximately 50 m east of the Site.	2017
Mammals			
Grey Seal (*Halichoerus grypus*)	EPA, WCA, Section 7	One record approximately 100 m west of the Site.	2018

[4] EPS = European Protected Species as listed under Schedule 2 of the Conservation of Habitats and Species Regulations (2010)
WCA = Species protected under Schedule 5 (animals) or Schedule 8 (plants) of the Wildlife and Countryside Act (1981) as amended
Section 7 = Species listed in Section 7 of the Environment (Wales) Act 2016
[5] Only records from the last ten years are used.

Species / Group	Status [4]	Summary of Records	Year of nearest record[5]
Water vole (*Arvicola amphibius*)	WCA, Section 7	No records were provided by SEWBReC for recent water vole but information supplied by Welsh Government indicates that water vole are present 1 km to the east of the site.	2018
Badger (*Meles meles)*	BA	One record approximately 2 km southeast. Records supplied by the Welsh Government from surveys associated with the new proposed M4 corridor suggest there are badger setts along the railway line, and 200 m to the east of the Site	2016
Hedgehog *(Erinaceus europaeus)*	WCA, section 7	SEWBReC returned five records with the closest approximately 1.3 km east.	2016

3.1.3.1 Birds

SEWBReC provided records of ten birds listed on Schedule 1 of the Wildlife and Countryside Act 1981 within the 2 km search area from the last 10 years. Of these (listed in Appendix B in full), two are considered to have to potential to breed locally, Cetti's warbler and little ringed plover (*Charadrius dubius)*.

SEWBReC also provided numerous records of Section 7 birds. These are listed in full in Appendix B in the 2019 PEA report[2].

3.1.3.2 Section 7 Species

SEWBReC returned data on Section 7 species within the 2 km search area. These included flowering plants: Deptford pink (*Dianthus armeria*), divided sedge (*Carex divisa)*, yellow bird's-nest (*Monotropa hypopitys* subsp. *hypophegea*), and cornflower (*Centaurea cyanus*).

Fish species included: European eel (*Anguilla anguilla*), whiting (*Merlangius merlangus*) and smelt (*Osmerus eperlanus*).

There are numerous Section 7 moth and butterfly species records, including small square spot (*Diarsia rubi*), shaded broad bar (*Scotopteryx chenopodiata*), rosy rustic (*Hydraecia micacea*), grayling (*Hipparchia semele*), ghost moth (*Hepialus humuli*), august thorn (*Ennomos quercinaria*), large wainscot (*Rhizedra lutosa*), centre barred sallow (*Atethmia centrago*), sallow (*Cirrhia icteritia*), small heath

(*Coenonympha pamphilus*), grizzled skipper (*Pyrgus malvae*), latticed heath (*Chiasmia clathrata*), mottled rustic (*Caradrina morpheus*), rustic (*Hoplodrina blanda*), garden tiger (*Arctia caja*), ear moth (*Amphipoea oculea*), dot moth (*Melanchra persicariae*) and cinnabar moth (*Tyria jacobaeae*).

Other insects include shrill carder bee (*Bombus sylvarum*) and brown-banded carder bee (*Bombus humilis*).

3.2 Field Survey

3.2.1 Habitats – Extended Phase 1 Survey

A total of 10 habitats were identified on Site; these are shown on Figure 1 and summarised below. All Target Notes (TN) recorded during the survey are also shown on Figure 1.

The Site comprises the habitats adjacent to the eastern bank of the River Usk, from the transporter bridge, north to the A48 bridge. Along the river bank, the habitat was predominantly intertidal mud / sand, with saltmarsh at the top of the banks. A wading bird was seen in the river (TN 2) and fox prints (TN3) were identified in the mud along the river bank.

The River Usk is designated as a Special Area of Conservation (SAC) and as a Site of Special Scientific Interest (SSSI). See Appendix B of the 2019 PEA report[2] for details of the site designations.

Further from the river bank, the habitat graded into dense / continuous scrub comprising bramble (*Rubus fruticosus* agg.) and buddleia (*Buddleja davidii*).

A line of broadleaved trees and scattered scrub was present to the south of the Site, with species present including buddleia, silver birch (*Betula pendula*), ash (*Fraxinus excelsior*), elder (*Sambucus nigra*) and willow species (*Salix* sp.). A silver birch tree with moderate bat roosting suitability (TN1) was identified here. The potential roosting feature on the tree was a single knot hole.

Amenity grassland surrounded car parks and buildings to the south of the Site. Species present included perennial rye-grass (*Lolium perenne*), annual meadow grass (*Poa annua*), daisy (*Bellis perennis*), dandelion (*Taraxacum* agg.) and ribwort plantain (*Plantago lanceolata*). Ornamental vegetation was also present in these areas.

The southernmost part of the Site was wet woodland, comprised of willow trees. A pond (TN4) was present within the woodland. It was very silted with shallow water and no aquatic vegetation.

No invasive non-native species were identified during the Extended Phase 1 Habitat Survey.

3.3 Species

3.3.1 Amphibians – Great crested newts

One waterbody (TN4) was present on Site and was subjected to HSI assessment. The HSI score was 0.42, therefore the waterbody is considered to have low suitability for supporting great crested newts. Photographs of the waterbody are given in Appendix A. Great crested newts are therefore not considered further in this assessment.

3.3.2 Bats

One potential roost feature was identified on one tree on Site (TN1).

The Site has the potential to support foraging and commuting bats that may be roosting in the surrounding area due to the presence of dense scrub, waterbodies and linear features.

3.3.3 Badger

No signs of badger were observed on Site during the Extended Phase 1 Habitat Survey. It was not possible to inspect dense areas of scrub, and therefore the presence of badger setts within these areas cannot be ruled out.

3.3.4 Birds

The scrub and trees on Site may support nesting birds. A wading bird (TN2) was seen on the River Usk during the Extended Phase 1 Habitat Survey. A number of bird species, including waders are qualifying features of The Severn Estuary Ramsar and SPA.

3.3.5 Dormice

The brambles and scrub on Site provide suitable foraging and nesting habitats for dormice. However, fragmentation from other potential dormouse habitat including those with dormouse records within the wider area due to barriers such as roads, rivers and rail means dormouse are unlikely to occur within the Site. Furthermore, M4 surveys undertaken in the area of the Site did not find any evidence of this species being present.

3.3.6 Reptiles

The mosaic of habitats, including scrub and also wetland areas, provide suitable habitat for reptiles specifically common lizard, slow worm and grass snake.

3.3.7 Otter and Water Vole

No signs of otter or water vole were observed during the Extended Phase 1 Habitat Survey. No suitable habitat was identified on Site for water vole. Water vole are therefore not considered further in this assessment.

Otter may use the River Usk for commuting and foraging, but no suitable areas were identified on Site for holts or couches. Otter are a qualifying feature of the River Usk SAC, which the Site is immediately adjacent to.

3.3.8 Invertebrates

Areas of woodland within the Site are likely to support at least a moderate range of invertebrate species, potentially including Section 7 species.

3.3.9 Other Mammals

It is likely that small mammals such as rabbit (*Oryctolagus cuniculus*) would occur within the Site in wooded / scrub habitats, and potentially more notable species such as the European hedgehog (*Erinaceus europaeus*), a Section 7 species.

3.3.10 Fish

Sea lamprey (*Petromyzon marinus*), brook lamprey (*Lampetra planeri*), river lamprey (*Lampetra fluviatilis*), twaite shad (*Alosa fallax*), Allis shad (*Alosa alosa),* Atlantic salmon (*Salmo salar*) and bullhead (*Cottus gobio*) are all qualifying features of the River Usk SAC and may therefore be present immediately adjacent to the Site. The river is also likely to support European eel (*Anguilla anguilla*).

4 Recommendations

Recommendations for further consultation, further species surveys or general best practice mitigation to minimise impacts of the Proposed Works on habitat and species are stated below, in line with PEA guidance[6]. Measures to enhance biodiversity are also recommended in this section.

4.1 Pre-construction & Vegetation Clearance

4.1.1 Designated Sites

A Habitat Regulation Assessment (HRA) screening report should be written to assess potential pathways for effect on internationally designated sites within 10 km of the Site. As a result of new case law as ruled by the European Court of Justice (ECJ, 2018)[7], mitigation measures relating to qualifying features of the protected sites cannot be included within the Screening Stage of HRA, and therefore any potential pathways for effect will need to be evaluated within an Appropriate Assessment. The HRA report will require consultation with Conservation Staff in NRW.

Due to the works being within the River Usk SSSI, it will be necessary to obtain SSSI assent from NRW to allow the works to proceed.

For any planning applications, the Local Planning Authority (LPA) will also require a copy of the Appropriate Assessment as it assumed they would become the 'competent authority'.

4.1.2 Habitats

Consultation should be undertaken with relevant teams within NRW regarding impacts on the River Usk SSSI and a National Vegetation Classification (NVC) of the salt marsh habitats along the river bank on Site may be required.

4.1.3 Species

4.1.3.1 Bats

The Site provides potential roosting habitat in one single tree (TN1). If this tree is to be removed or if there is potential for disturbance within 50 m of the tree, a further survey should be undertaken to confirm presence or likely absence of bats.

[6] Chartered Institute of Ecology and Environmental Management (CIEEM) (2017). Guidelines for Preliminary Ecological Appraisal. Second Edition. Available online at: https://cieem.net/resource/guidance-on-preliminary-ecological-appraisal-gpea/ (accessed 16/07/19).

[7] ECJ (2018). People over Wind, Case C323/17 European Court of Justice, 12th April 2018.

4.1.3.2 Badger

Given the mobile nature of this species and dense scrub present, ecological supervision is recommended for any vegetation clearance ahead of construction to ensure no setts are present.

If any setts are found and could be damaged by the works, a licence will be required from NRW. The impact of any vibration effects should also be considered.

4.1.3.3 Breeding Birds

All vegetation clearance of suitable bird nesting habitat should be undertaken outside of the core bird nesting season (the bird nesting period is 1 March to 31 August, subject to regional and seasonal variations) to avoid damage or destruction of occupied nests or harm to breeding birds. If this cannot be achieved, works within the core bird nesting season will require an inspection of vegetation to be cleared for breeding birds and their occupied nests by a suitably qualified ecologist no more than 24 hours prior to any works commencing. If any nesting birds are identified during the survey they should be left in situ for their entire nesting period and alternative approaches to the work proposed. This may include leaving an exclusion zone around the nests to avoid disturbance.

4.1.3.4 Reptiles

All vegetation clearance should be carried out under an ecological watching brief, due to the likely presence of reptiles in the scrub and grassland habitat on Site. Vegetation should be cut in two stages - the first cut to 300 mm (to allow any reptiles to move away from the works) and the second cut to ground level.

4.2 During Construction

4.2.1 General

A toolbox talk should be given to all contractors on Site by a suitably qualified ecologist prior to works, detailing the potential for protected species on Site, the working methods to be employed and the procedure to follow should any species be identified. A record of attendance should be kept on Site, which contractors should sign to indicate they have understood the toolbox talk.

4.2.2 Habitats

Best practice guidelines should be implemented for all works in proximity to a watercourse:

- No works will be undertaken within 30 m of Mean High Water Springs (MHWS) tide limit to prevent changes in the flow regime / physical habitat of the River Usk.

- An Environmental Action Plan will be produced and should be maintained by the contractor during the construction phase. This will include Site-specific methods to ensure that all Site activities, especially those in proximity to watercourses and waterbodies are controlled and are in accordance with relevant legislation and undertaken in compliance with the relevant Guidance for Pollution Prevention (GPPs) and industry best practice (GPP5[8], CIRIA[9]).
- Where possible, any disturbed habitats should be re-instated post construction, and re-seeded / planted with an appropriate seed / plant mix or left to revegetate naturally, as approved by NRW.

4.2.3 Species

4.2.3.1 Bats

Due to suitable foraging and commuting habitat present on site, the following should be implemented:

- All works should be carried out during daylight hours (typically up to 30 mins before sunset and 30 minutes after sunrise) within the main active period (April to October) where possible, to avoid disturbance to commuting or foraging bats.
- Any task lighting required for health and safety or security reasons should be directional lighting (towards the ground) to avoid light spill onto habitats immediately within or adjacent to the Site

4.2.3.2 Otter

The following mitigation should be implemented to minimise impacts on commuting / foraging otter:

- Good practice working methods should be adhered to which to prevent any adverse impact to otter; i.e. materials should not be left overnight in an area accessible to these species and excavations should not be left uncovered overnight. If any excavations are required to be left open overnight, a ramp should be created to allow any animals to escape, including other mammals at the Site.
- Access for otter along all waterbodies should be maintained during construction and operation, thus ensuring that movement of otter is not impeded during operation of the Proposed Works.
- All works should be carried out during daylight hours (up to 30 minutes after sunrise and 30 minutes before sunset) where possible, to avoid disturbance to

[8] Natural Resources Wales (NRW), the Northern Ireland Environment Agency (NIEA), Scottish Environment Protection Agency (SEPA) (2018). Guidance for Pollution Prevention – Works or maintenance in or near water: GPP5 v1.2 Feb 2018. http://www.netregs.org.uk/media/1418/gpp-5-works-and-maintenance-in-or-near-water.pdf (accessed 15.02.19)
[9] CIRIA (2018) CIRIA http://www.ciria.org (accessed 15.02.19)

commuting or foraging otters. Any use of task lighting should be directional to avoid illumination of the river corridor at night.

- If any otter resting places are found during pre-construction checks, additional mitigation measures may also be required to reduce disturbance, which may be included in an EPS licence.
- Any further mitigation measures that may be highlighted in the HRA will also need to be adhered to.

4.2.3.3 Fish

The following mitigation should be implemented to minimise impacts on fish species:

- Strict pollution prevention measures must be adhered to so as not to cause an adverse effect on the River Usk.
- All works should be carried out during daylight hours (up to 30 minutes after sunrise and 30 minutes before sunset) where possible to avoid disturbance to spawning and migrating fish. Any use of task lighting should be directional to avoid illumination of the river corridor at night.
- All piling works should be undertaken at least 30 m from the MHWS limit, following advice from NRW. Once more details of proposed works are known, further consultation with NRW may be necessary.
- Any further mitigation measures that may be highlighted in the HRA will also need to be adhered to.

4.3 Post-Construction

4.3.1 Habitat Re-instatement

All habitats that require removal to facilitate the works must be re-instated on at least a like-for-like basis. This will likely be a requirement of the SSSI assent and HRA.

4.3.2 Enhancement Measures

The following measures are recommended to enhance the biodiversity within the Site and surrounding area, in line with national and local planning policy[10] [11]:

[10] Welsh Government (2018). Planning Policy Wales. Edition 10. Available online at: https://beta.gov.wales/sites/default/files/publications/2018-12/planning-policy-wales-edition-10.pdf (accessed 15/02/19).

[11] Newport City Council (2015). Newport Local Development Plan 2016-2015. Available online at: http://www.newport.gov.uk /documents/Planning-Documents/LDP-2011-2026/LDP-Adopted-Plan-January-2015.pdf (accessed 15/02/19).

- The planting of native fruiting species to provide a food source for invertebrates and mammals;
- The installation of bird and bat boxes on retained trees within the Site; and
- The inclusion of logs / brash piles to encourage invertebrates and also act as a refuge for reptiles, amphibians and small mammals.

5 Summary and Conclusions

An Appropriate Assessment will be required to assess any likely significant effects on the River Usk SAC and other European designated sites within 10 km. Consultation with the LPA should be undertaken regarding any potential impacts to the River Usk SSSI.

General mitigation is recommended during construction to protect existing habitat and species such as badger, bats, birds and other mammals.

Measures are suggested to enhance the value of the Site for biodiversity, in line with planning policy and the Environment (Wales) Act 2016.

Once the design of the Proposed Works has been finalised, an Ecological Impact Assessment should be undertaken, detailing results and recommendations from any further ecological surveys.

This report is the result of survey work undertaken in April and May 2019. This report refers, within the limitations stated, to the condition or Proposed Works at the Site at the time of the inspections. Changes in legislation, guidance, best practice, etc. may necessitate a re-assessment / survey. It is also advised that if there is a delay of over a year in undertaking the works, an updated walkover survey is recommended to ensure the baseline conditions have not changed. No warranty is given as to the possibility of future changes in the condition of the Site.

This report is produced solely for the benefit of NRW and no liability is accepted for any reliance placed on it by any other party. This report is prepared for the proposed uses stated in the report and should not be used in a different context.

Figures

Figure 1 – Extended Phase 1 Habitat Survey

A3

Target Notes
TN1: Tree with low bat roost suitability.
TN2: Wading bird. Species unidentified.
TN3: Fox footprints along entire length of saltmarsh up to bridge, adjacent to housing.
TN4: Silted pond.

TN1
TN2
TN3
TN4

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Legend

- Target Note
- A2.2 - Scrub - scattered
- A3.1 - Broadleaved parkland/scattered trees
- No Access
- A1.1.1 - Broadleaved woodland - semi-natural
- A2.1 - Scrub - dense/continuous
- G1 - Standing water
- H1.1 - Intertidal - mud/sand
- H2.6 - Saltmarsh - dense/continuous
- J1.2 - Cultivated/disturbed land - amenity grassland
- J1.5 - Other vegetation
- J3.6 - Buildings

Issue	Date	By	Chkd	Appd
F1	2019-06-13	KJ	CP	PC

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Job Title
Stephenson Street

Extended Phase 1 Habitat Survey

Scale at A3
1:3,000

Job No	Drawing Status
246344	For Issue

Drawing No	Issue
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Appendix A

Photographs

A1 Photographs of the Site

Photograph 1 showing mud flat and salt marsh habitats.

Photograph 2 showing fox foot prints (TN3).

Photograph 3 showing dense scrub habitat.

Photograph 4 showing line of broadleaved trees.

Photograph 5 showing knothole on tree with moderate bat roost suitability (TN1).

Photograph 6 showing the waterbody within the woodland (TN4).