

Natural Resources Wales
**Stephenson Street Flood
Defence Scheme**
Preliminary Ecological Appraisal
Addendum - Felnex Estate and
Marshalls Estate

Issue | 14 February 2020

This report takes into account the particular instructions and requirements of our client.

It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

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Ove Arup & Partners Ltd
4 Pierhead Street
Capital Waterside
Cardiff CF10 4QP
United Kingdom
www.arup.com

ARUP

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1 Introduction

1.1 Background

Ove Arup and Partners Limited (Arup) has been commissioned by Natural Resources Wales (NRW) to complete ecological survey and assessment works 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, Wales.

An existing 1,350 m long flood defence embankment is located on the 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, including 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).

An overview of the preferred solution is shown on Drawing 1000 (Appendix A). Due to the developments in the scheme design, PEA reporting has been completed in phases as summarised below moving from north to south.

Table 1 - Summary of PEA reporting

Area of scheme	PEA Report
Three areas of minor ground raising to the north of Stephenson St within the Orb site	An addendum to the PEA report in 2019 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 (600 m section) until the Hansons conveyor belt site.	Original PEA report completed in 2018 (note this covers some area of the site where works are no longer proposed) ²
The Option 2b alignment which connects the defence alignment in to a railway embankment to the north east alongside East Bank Road. It is anticipated this will comprise a circa 600m long reinforced concrete flood wall.	This addendum report

¹ Arup (2019). *Stephenson Street; Preliminary Ecological Appraisal Addendum – Transporter Bridge*

² Arup (2018). *Stephenson Street Embankment; Ecological Appraisal*.

The Railway Wall Site, a circa 60m long reinforced concrete wall in the Liberty Steel sludge beds site.	A PEA report completed in 2019 ³
The Nash Site Flood Defence Mitigation Wall, a circa 50m long reinforced concrete wall in the Liberty Steel sludge beds site.	An addendum to the PEA report in 2019 ⁴

This addendum, which should be read in conjunction with the previously produced ecological reports (which are referred to when relevant), covers the Option 2b alignment, some of which overlaps with an area covered in the original Ecological Appraisal for Phase 1. This area that is the focus of this report is shown on Figure 1 and is henceforth referred to as the ‘Study Area’.

³ Arup (2019). *Stephenson Street Embankment; Preliminary Ecological Appraisal*.

⁴ Arup (2019). *Stephenson Street; Preliminary Ecological Appraisal Addendum –Nash treatment works*.

2 Methods

2.1 Desk Study

A desk study was carried out to identify statutory internationally designated sites (Natura 2000 sites) within 5km and nationally designated sites within 2km of the Study Area centre point using the Multi Agency Geographic Information for the Countryside (MAGIC)⁵.

A biodiversity records request of data was provided by South East Wales Biodiversity Records Centre (SEWBReC) on 22 January 2019. The records included protected and priority species⁶ up to 2 km from the Nash site boundary⁴ and details of local designations such as Sites of Importance for Nature Conservation (SINCs) within 2 km. These data have been reviewed to provide an indication of species presence/likely absence in the vicinity of the Site.

A review of existing field survey data in relation to the Site was also completed. Relevant survey data are referred to within this report; see Section 2 of the 2018 report² for the relevant methodologies in relation to:

- Great crested newt (*Triturus cristatus*) (GCN) Habitat Suitability Index (HSI)⁷ assessment and environmental DNA sampling (eDNA);
- Reptile survey; and
- Riparian mammal survey.

Detail in relation to GCN presence/absence surveys is provided within the Stephenson Street Embankment 2019 report³.

2.2 Field Survey

An Extended Phase 1 Habitat Survey (EP1HS) focussing upon the Study Area was completed. The aim of this survey was to identify the habitats present within the Study Area and a buffer of up to 50 m where access allowed, that may be affected by the proposed works. The survey was undertaken broadly following the standard JNCC Phase 1 Habitat Survey methodology⁸. EP1HS is the standard technique for rapidly obtaining baseline ecological information over a large area of land. It is primarily a mapping technique and uses a standard set of habitat definitions for classifying areas of land on the basis of the vegetation present.

⁵ <http://magic.defra.gov.uk/> [online] accessed 10/02/2020.

⁶ EU and UK legally protected species under the Conservation of Habitats and Species Regulations 2010 (as amended) and Wildlife and Countryside Act 1981 (as amended); and species present on the Species of Principal Importance in Wales list in response to Section 7 of the Environment (Wales) Act 2016 (known as Section 7 species).

⁷ Oldham et al (2000) *ARG UK Advice Note 5: Great Crested Newt Habitat Suitability Index*.

⁸ Joint Nature Conservation Committee (2016). *Handbook for Phase 1 habitat survey – a technique for environmental audit*. <http://jncc.defra.gov.uk/page-2468>

The survey also provided an assessment of the potential for habitats present to support legally protected species.

The field survey was undertaken on 17th January 2020 by Arup ecologists Eloise Arif (ACIEEM) and Kathryn Jones (ACIEEM).

2.3 Limitations

The habitat survey was conducted in January, just outside of the optimal period for botanical surveys (April to October). However, the survey recorded sufficient floral species to be able to provide an indicative assessment of the habitats on Site, as required for a EP1HS.

During the survey, access to the ditch sides to check for otter and water vole evidence was not possible due dense vegetation growth. However, relatively extensive survey work for these two species has been conducted previously, the results of which are discussed in Section 3.3.7.

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 suitable 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 Statutorily Designated Sites

The search using MAGIC highlighted four European sites and four national statutorily designated sites within 5 km and 2 km of the Study Area respectively. All statutorily designated sites and their proximity to the Study Area (centre) are listed in Table 1. See Appendix B of the 2018 PEA report² full citations.

Table 1: Statutory designated sites within 5 km and 2 km of the Study Area centre, for international and national sites, respectively

Site Name	Approximate Distance/Direction from the Study Area Centre
Internationally Designated Sites	
River Usk Special Area of Conservation (SAC)	Adjacent
Severn Estuary Ramsar Site	1.8 km south (hydrologically connected via the River Usk)
Severn Estuary SAC	1.8 km southwest (hydrologically connected via the River Usk)
Severn Estuary Special Protection Area (SPA)	1.9 km southwest (hydrologically connected via the River Usk)
Nationally Designated Sites	
River Usk Site of Special Scientific Interest (SSSI)	Adjacent
Newport Wetlands SSSI	2.0 km east (hydrologically connected via the River Usk/Severn Estuary)
Gwent Levels – Nash and Goldcliff SSSI	1.8 km west (hydrologically connected via the River Usk/Severn Estuary)
Severn Estuary SSSI	2.0 km south (hydrologically connected via the River Usk)

3.1.2 Non-Statutory Designated Sites

There are five non-statutory designated sites within 2 km of the Study Area centre, all of which are Sites of Importance for Nature Conservation (SINC). Details of these designated sites are provided within Table 2, with Appendix B of the 2018 PEA report² including full citations.

Table 2: Non-statutory designated sites within 2 km of the Study Area centre

Site Name	Approximate Distance from the Study Area Centre/Direction	Details
Marshall's SINC	Within Study Area	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 Site SINC	0.8 km / east	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 and invertebrates including hairy dragonfly (<i>Brachyton prantense</i>).
Alpha Steel Site SINC	1.0 km/ southeast	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, bee orchid (<i>Ophrys apifera</i>), pyramidal orchid (<i>Anacamptis pyramidalis</i>) and spotted orchid sp. (<i>Dactylorhiza</i> spp).
Monkey Island	1.2 km / north	Mosaic post-industrial grassland, scrub and ruderal. Local record of blue pimpernel found on Site (the only record in Gwent)
Julian's Gout Land SINC	1.5 km / southeast	Maritime influenced semi-improved neutral grassland, with willow car and large populations of marsh helleborine (<i>Epipactis palustris</i>), marsh orchids (<i>Dactylorhiza</i> spp.) and narrow leaved bird's-foot trefoil (<i>Lotus glaber</i>).
Afon Ebbw River	1.7 km / west	Associated <i>species include</i> : bulbous foxtail (<i>Alopecurus bulbosus</i>) near confluence with Usk,
Gwent Wetland Reserve SINC	1.8 km / south	A mosaic of wet grassland reed beds, open water, hedgerows and saline lagoon, which supports internationally important numbers of wildfowl as well as species such as water vole (<i>Arvicola amphibius</i>), great crested newt and brown hare (<i>Lepus europaeus</i>).

3.1.3 Protected and Notable Species

SEWBRc provided data on protected and notable species within 2 km of the Nash site boundary in 2019⁴. Relevant results from this data search are detailed within the below sections.

Table 3: Summary of protected reptile, amphibian, mammal records within 2 km of the Nash site boundary from the last ten years.

Species	Status ⁹	Number of Records	Year of nearest record ¹⁰
Amphibians and Reptiles			
Great crested newt	EPS, WCA, Section 7	7	2017
Smooth newt (<i>Lissotriton vulgaris</i>)	WCA	10	2012
Common frog (<i>Rana temporaria</i>)	WCA, Section 7	2	2014
Common toad (<i>Bufo bufo</i>)	WCA, Section 7	2	2017
Grass snake (<i>Natrix helvetica</i>)	WCA, Section 7	10	2017
Bats			
Noctule bat (<i>Nyctalus noctula</i>)	EPS, WCA, Section 7	3	2016
Pipistrelle species (<i>Pipistrellus</i> sp.)	EPS, WCA, Section 7	2	2009
Common pipistrelle (<i>P. pipistrellus</i>)	EPS, WCA, Section 7	6	2016
Soprano pipistrelle (<i>P. pygmaeus</i>)	EPS, WCA, Section 7	2	2016
Nathusius' pipistrelle (<i>P. nathusii</i>)	EPS, WCA, Section 7	1	2015
Natterer's bat (<i>Myotis natterii</i>)	EPS, WCA, Section 7	1	2011
Mammals			
Water vole	WCA, Section 7	3	2017
Badger (<i>Meles meles</i>)	BA	1	2016
Brown hare (<i>Lepus europaeus</i>)	Section 7	8	2013

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 during the last ten years. Of these, 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 of the 2019 PEA report³.

3.1.3.2 Other Section 7 Species

SEWBReC returned data on a range of other Section 7 species within the 2 km search area. These included flowering plants: Deptford pink (*Dianthus armeria*),

⁹ 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

BA = Protected of Badgers Act 1982

¹⁰ Only records from the last ten years are used.

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 were 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 included shrill carder bee (*Bombus sylvarum*) and brown-banded carder bee (*Bombus humilis*).

3.1.4 Review of Relevant Existing Survey Data

3.1.4.1 Great Crested Newt

On the 27th June 2019¹, Claire Pooley (NRW Licence no. 78081:OTH:SA:2018), with assistant, undertook environmental DNA (eDNA) surveys to assess the likely presence or absence of GCN within the pond and adjoining ditch within the Study Area (Figure 1). During these surveys, eDNA samples were also collected from three further ponds in the wider Site. In accordance with guidelines¹¹, surveys were undertaken within the optimum timeframe following the recommended methodology. Collected samples were sent to NatureMetrics for analysis. A negative result was returned from the waterbody within the Study Area. Sampling identified one waterbody within the wider Site that was confirmed to support GCN, located approximately 100 m east of the Study Area. However, presence/absence surveys (undertaken in 2019 following published guidance¹²), which included this pond and nine others within the wider Site, did not record any GCN³.

3.1.4.2 Reptile Survey

Following habitat suitability assessment for reptiles, which identified suitable habitats such as swamp with scrub and open areas of semi-improved grassland, presence/likely absence surveys were undertaken in those areas in accordance with accepted reptile survey guidelines¹³ in 2018. The reptile survey included a portion of the western section of the Study Area (from approximate grid reference

11 <https://naturalresources.wales/media/3509/guidance-on-use-of-dna-sampling-of-great-crested-newts.pdf>

12 English Nature (2001). *Great crested newt mitigation guidelines*.

13 Froglife Advice Sheet 10 (1999) *Reptile survey, an Introduction to planning, conducting and interpreting surveys for snake and lizard conservation*.

ST32298567), and extended north along the embankment to Coronation Park (approximate grid reference ST31928610).

Despite suitability of habitats, no reptiles were recorded during this targeted survey and no incidental observations of reptiles were made during other surveys carried out.

3.1.4.3 Riparian Mammal Survey

A riparian mammal survey specifically for otter and water vole was undertaken, where access allowed, during the EP1HS in March 2018², which included the deployment of two camera traps. No signs of otter or water vole were recorded.

Further otter and water vole surveys were completed in 2019³, of one waterbody within the Study Area and the others within the wider Site. These included the deployment of two camera traps at one waterbody (located c.1.2 km from the Study Area). Otter were recorded using this waterbody (being recorded by camera). In addition, signs of otter were recorded incidentally during a great crested newt survey (footprints) along the margins of this same waterbody, and (spraint) along a ditch running south from this waterbody. No otter resting or breeding places were recorded, and the habitat present was considered suboptimal for breeding/resting by this species. Any presence is considered likely to be limited to foraging and/or commuting otter, travelling through the Study Area.

The majority of waterbodies surveyed within the Site were assessed as having negligible suitability for water vole, although one waterbody (located c.1.2 km from the Study Area) was assessed as having low suitability due to presence of steeper earth banks and riparian vegetation. Likely water vole droppings and likely feeding remains were recorded at various locations in reedbeds at this location. However, no burrows or nests were recorded.

Another footprint recorded within the Site was considered to be from a European Mink (*Mustela lutreola*). The presence of mink also reduces the suitability of the Study Area for water vole.

3.2 Field Survey

3.2.1 Extended Phase 1 Habitat Survey

Habitat types/boundaries identified within the Study Area are shown on Figure 1 and summarised below. All Target Notes (TN) recorded during the field survey are also shown on Figure 1, with detail provided within Table 4.

The Study Area comprised three discrete sectors, the largest of which had been subject to EP1HS previously¹ (and is not described in detail here). This area (in the west of the Study Area (Figure 1)) comprised a large pond (with common reed *Phragmites australis*) and associated ditch surrounded by an extensive swathe of dense scrub, which included a small patch of Japanese Knotweed (*Fallopia japonica*) (TN6, mapped as introduced shrub) on its western side.

The small sector in the northeast of the Study Area was comprised of dense scrub with an adjacent line of broad-leaved trees (including sycamore *Acer pseudoplatanus*, oak *Quercus* sp., ash *Fraxinus excelsior*, field maple *Acer campestre* and poplar *Populus* sp) on its southern side.

The southeastern area comprised dense scrub and scattered scrub, a small patch of broad-leaved woodland and brash pile (TN2) and tall ruderal vegetation (with multiple rubble piles at the southeast end (TN1)). The dense scrub areas included buddleia (*Buddleja davidii*), bramble (*Rubus fruticosus* agg.), hawthorn (*Crataegus monogyna*), Himalayan honeysuckle (*Leycesteria Formosa*), blackthorn (*Prunus spinosa*), rosebay willowherb (*Chamaenerion angustifolium*), willow (*Salix* sp.) and rose (*Rosa* sp.). Scattered scrub included buddleia, mugwort (*Artemisia vulgaris*) and common reed. The area of tall ruderal vegetation included teasel (*Dipsacus fullonum*), evening primrose (*Oenothera biennis*), bristly oxtongue (*Helminthotheca echioides*), dandelion (*Taraxacum officinale*) and burdock (*Arctium lappa*).

3.2.2 Target Notes

Detail in relation to the Target Notes shown on Figure 1 are provided in Table 4.

Table 4: Target Notes

Target Note Number	Target Note Description
TN1	Multiple rubble piles.
TN2	Brash pile.
TN3	Burned fly tipping.
TN4	Willow tree with ivy <i>Hedera helix</i> cover - access not possible but may have low bat suitability.
TN5	Mammal paths leading into scrub.
TN6	Japanese knotweed.

3.3 Species

3.3.1 Amphibians

eDNA surveys, to determine presence/absence of GCN, returned a negative result for the waterbody within the Study Area¹. Sampling identified one waterbody within the Site that was confirmed to support GCN, although presence/absence surveys did not record any GCN³. Consequently, GCN are considered likely absent from the Study Area, and wider Site.

It is likely that the waterbody and adjacent terrestrial habitats within the Study Area may support common amphibians such as common frog, common toad and smooth newt (which were recorded within the Site during previous surveys³³).

3.3.2 Bats

A single willow tree (Figure 1, TN4) on the north side of the block of broad-leaved woodland was covered in ivy and, whilst close inspection of this tree was not possible, it was considered that it may have low potential to support roosting bats. The line of trees in the north of the Study Area (Figure 1) was considered to offer negligible potential for roosting bats.

The Study Area 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 definitive evidence of badger was recorded during the field survey. Mammal paths were recorded leading into dense scrub in the western portion of the Study Area (Figure 1, TN5).

Badger setts are known to be present within the Nash treatment works and Uskmouth power station. It was not possible to fully inspect all areas of dense scrub within the Study Area (and adjacent areas where damage/disturbance to setts could occur), and therefore the presence of badger setts within these areas cannot be ruled out at this time.

3.3.4 Birds

The scrub, trees and reedbeds within the Study Area are likely to support nesting birds. Cetti's warbler (a Schedule 1 species) has been confirmed as present within the Site during previous survey work.

In addition, the adjacent Usk estuary may support species of waders that are qualifying features of the Severn Estuary Ramsar and SPA.

3.3.5 Dormice

Scrub within the Study Area provides 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 Study Area. Furthermore, M4 surveys undertaken in the vicinity of the Site², did not find any evidence of this species being present.

3.3.6 Reptiles

The mosaic of habitats, including scrub and wetland areas, were considered to suitable habitat for reptiles, specifically common lizard, slow-worm and grass snake. However, a full reptile survey (completed between 10 May 2018 and 19 July 2018¹), which included an area in the west of the Study area and the embankment portion of the Site to the north, did not record any reptiles.

In the absence of detailed survey data for the Study Area, taking into account the habitats present and the results of the desk study, the presence of reptiles within the Study Area is considered possible.

3.3.7 Otter and Water Vole

No signs of otter or water vole were observed during the field survey.

The banks of the ditch that adjoins the large pond in the westernmost sector of the Study Area could not be accessed to facilitate survey; however, detailed survey work (including riparian mammal and an extended camera-trapping survey) completed in 2018² did not record any evidence of otter or water vole in association with this feature.

Water vole field signs were recorded during surveys of a waterbody located 1.5 km from the Study Area, although connectivity between the Study Area and this population is limited. Water vole are assessed to be likely absent from the Study Area and are therefore not considered further in this assessment.

Otter were also recorded within this waterbody (1.5 km from the Study Area) on cameras installed at this location. Taking into account the nearby presence of the River Usk SAC, for which otter are a qualifying feature, and the confirmed presence of otter using waterbodies in the wider area; it is considered possible that otter may frequent the Study Area.

3.3.8 Invertebrates

Areas of woodland/scrub within the Study Area are likely to support at least a moderate range of invertebrate species, potentially including Section 7 priority species. However, significant populations of any of these species are considered unlikely to occur within the Study Area.

3.3.9 Other Mammals

It is likely that mammals such as rabbit (*Oryctolagus cuniculus*) would occur within the Study Area in wooded/scrub habitats, and potentially more notable species such as the West European hedgehog (*Erinaceus europaeus*), a Section 7 priority 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 Study Area, in connecting watercourses. The river is also likely to support European eel (*Anguilla anguilla*), which may occur within waterbodies in the Study Area.

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 guidance¹⁴. 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 Study Area. As a result of new case law as ruled by the European Court of Justice (ECJ, 2018)¹⁵, 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.

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'.

Pending confirmation of the final design, consideration should be given to the requirement for obtaining a SSSI assent from NRW (if works are likely to impact the SSSI) to allow the works to proceed.

In addition, as Marshall's SINC is present within the Study Area, consultation with the LPA ecologist will be required.

4.1.2 Habitats

Consultation should be undertaken with relevant teams within NRW regarding potential impacts to the River Usk SSSI.

4.1.3 Species

4.1.3.1 Great Crested Newt

GCN are considered likely absent from the Site based on the results of comprehensive surveying. In the unlikely event that GCN are encountered during works, those works should cease and the potential requirement for licencing/mitigation determined in consultation with a suitably qualified ecologist.

14 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).

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

4.1.3.2 Bats

An ivy-covered willow tree (TN4) in the southeast of the Study Area was considered to be of low potential to support roosting bats. If this tree is to be removed, this should be completed under supervision of a bat licenced ecologist.

4.1.3.3 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 that no setts are present.

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

4.1.3.4 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, the nests should be left in situ until they are no longer active and alternative approaches to the work proposed. This may include leaving an exclusion zone around the nests to avoid disturbance.

4.1.3.5 Reptiles

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

4.1.3.6 Invasive Plants

Japanese knotweed is present within the Study Area. This species has no ecological value, but as a Schedule 9 species under the Wildlife and Countryside Act 1981, requires measures to avoid disturbance/spread. An eradication plan for treating Japanese knotweed (by stem injection) should be produced. A pre-construction survey should also be carried out to further inspect for invasive species and confirm distribution.

4.2 During Construction

4.2.1 General

A toolbox talk should be given to all contractors by an ecologist prior to works, detailing the potential for protected species, the working methods to be employed and the procedure to follow should any such species be discovered. A record of attendance should be kept on site, which contractors should sign to indicate they have received and 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 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 (GPP5¹⁶, CIRIA¹⁷).
- 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, the following should be implemented:

- All works should be carried out during daylight hours (typically up to 30 minutes 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.

16 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 03.02.20)

17 CIRIA (2018) CIRIA <http://www.ciria.org> (accessed 03.02.20)

- Any task lighting required for health and safety or security reasons should be directional lighting (towards the ground) to avoid light spill onto habitats within the Study Area or adjacent areas.

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 that 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 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.

4.2.3.4 Invasive Plants

Japanese knotweed is present within the Study Area. This species has no ecological value, but as a Schedule 9 species under the Wildlife and Countryside Act 1981, requires measures to avoid disturbance and spread within/from the Study Area/Site. This should include the production of an invasive species management plan, containing site-specific methods to ensure that all activities are controlled and are in accordance with best practice procedures. A pre-construction survey should also be carried out to further inspect for invasive species and confirm its distribution.

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 Study Area and surrounding area, in line with national and local planning policy¹⁸
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; and
- The inclusion of logs/brush piles (using material cleared during works) to encourage invertebrates and also act as a refuge for reptiles, amphibians and small mammals.

18 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 02/02/2020).

19 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 02/02/2020).

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. Consideration will need to be given to the requirement for a SSSI assent. Consultation with the LPA should be undertaken regarding any potential impacts to the Marshalls SINC.

General mitigation is recommended during vegetation clearance, construction and post construction to protect designated sites and protected/notable habitats and species.

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 January 2020. 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 Study Area.

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



Target Notes

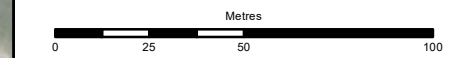
- TN1: Multiple rubble piles.
- TN2: Brash pile.
- TN3: Burned fly tipping.
- TN4: Willow tree with ivy cover, could not access but may have low bat suitability.
- TN5: Mammal paths leading into scrub.
- TN6: Japanese knotweed

Legend

- A3.1 - Broad-leaved parkland/scattered trees
- TN - Target note
- A3.1 - Broadleaved parkland/scattered trees
- J2.4 - Fence
- G1 - Standing water
- A1.1.1 - Broadleaved woodland - semi-natural
- A2.1 - Scrub - dense/continuous
- A2.2 - Scrub - scattered
- C3.1 - Other tall herb and fern - ruderal
- G1 - Standing water
- J1.4 - Introduced shrub

F1	2020-01-28	KJ	CP	PC
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Issue	Date	By	Chkd	Appd
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ARUP

4 Pierhead Street
 Cardiff CF10 4QP
 Tel +44 29 2047 3727 Fax +44 29 2047 2277
 www.arup.com

Client
Natural Resources Wales

Job Title
Stephenson Street

**Extended Phase 1 Habitat Survey
 Marshall's**

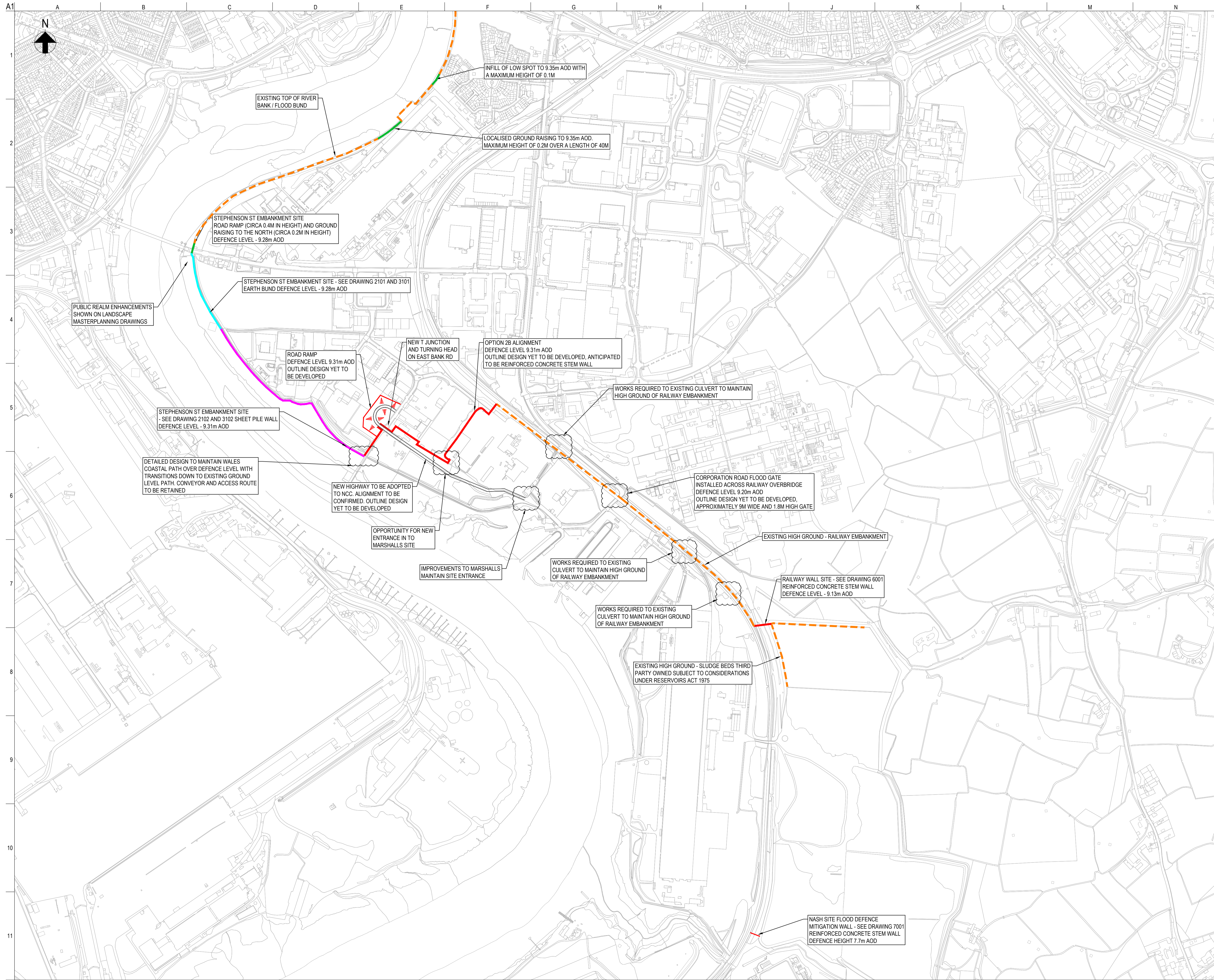
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Job No 246344	Drawing Status For Issue
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Drawing No 001	Issue F1
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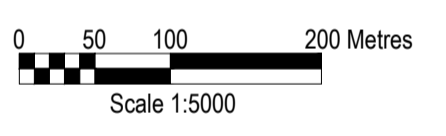
Appendix A

A1 Preferred works overview



- NOTE**
- REFER TO MCAN UTILITIES DRAWINGS MCAN-CJV-GEN-ZG-GEN-DR-WM-0034 AND 0035
 - DEFENCE LEVELS AS AGREED WITH NRW BASED ON PREFERRED APPROACH TO RESIDUAL UNCERTAINTY ANALYSIS (CONFIRMED BY JG BY EMAIL ON 01/03/2019)

- LEGEND:**
- EXISTING HIGH GROUND
 - GROUND RAISING
 - BUND
 - SHEET PILE WALL
 - REINFORCED CONCRETE WALL



P02	17/02/20	BW	JL	RC
PRELIMINARY				
P01	12/12/19	BW	JL	RC
FOR CONSTRUCTION				
Issue	Date	By	Chkd	Appd

ARUP

4 Pierhead St, Capital Waterside
Cardiff, CF10 4GP
T +44(0)29 2047327 F +44(0)29 2047227
www.arup.com

Client
**Cyfoeth Naturiol Cymru
Natural Resources Wales**

Job Title
STEPHENSON STREET

Drawing Title
SITE OVERVIEW PLAN

Scale at A1	1:5000
Discipline	Civil
Drawing Status	PRELIMINARY
Job No	246344
Drawing No	DRAWING 1000
Issue	P02