



Neath Port Talbot County Borough Council

HARBOURSIDE ENABLING WORKS

Construction Environmental Management Plan
(CEMP)





Neath Port Talbot County Borough Council

HARBOURSIDE ENABLING WORKS

Construction Environmental Management Plan (CEMP)

TYPE OF DOCUMENT (VERSION) CONFIDENTIAL

PROJECT NO. 70057278

DATE: JANUARY 2021

WSP

1 Capital Quarter
Tyndall Street
Cardiff
CF10 4BZ

Phone: +44 2920 769 200

WSP.com

QUALITY CONTROL

Issue/revision	First issue	Revision 1	Revision 2	Revision 3
Remarks	First draft for client review	Second draft following client comment	Final Issue following client comments	
Date	07/01/2021	11/01/2021	19/01/2020	
Prepared by	Louis Bishop	Louis Bishop	Louis Bishop	
Signature	<i>L. Bishop</i>	<i>L. Bishop</i>	<i>L. Bishop</i>	
Checked by	Rebekah Thompson	Rebekah Thompson	Rebekah Thompson	
Signature	<i>R. Thompson</i>	<i>R. Thompson</i>	<i>R. Thompson</i>	
Authorised by	Gavin Lewis	Gavin Lewis	Gavin Lewis	
Signature	<i>G. H Lewis</i>	<i>G. H Lewis</i>	<i>G. H Lewis</i>	
Project number	70057278	70057278	70057278	
Report number	V1	V2	V3	

CONTENTS

1	INTRODUCTION	1
1.2	PURPOSE OF THE CEMP	1
1.3	STRUCTURE OF THE CEMP	2
1.4	KEY ENVIRONMENTAL CONSTRAINTS	3
1.5	PROJECT ENVIRONMENTAL RISKS	3
2	SCHEME CONSTRUCTION	4
2.1	SITE LOCATION AND SCHEME DESCRIPTION	4
2.2	ANTICIPATED CONSTRUCTION PROGRAMME	4
2.3	WORKING HOURS	4
	ENVIRONMENTAL RESTRICTIONS	4
2.4	MAIN CONSTRUCTION METHODOLOGY	5
	CONSTRUCTION ACCESS, PARKING AND TRAFFIC	5
	TRAFFIC MANAGEMENT REQUIREMENTS DURING CONSTRUCTION	5
	PROPOSED KEY CONSTRUCTION SEQUENCE	6
2.5	CONSTRUCTION COMPOUND AND EQUIPMENT	6
	COMPOUND LOCATION	6
	CONSTRUCTION PLANT AND EQUIPMENT	6
2.6	GROUND REMEDIATION STRATEGY	7
	STRATEGY TO 'RELAX' SPECIFICATION:	8
	CONTINGENCY PLAN (IF THE PARAMETERS CANNOT BE RELAXED)	8
	CONSTRUCTION STAGE	9
	1. ASBESTOS	9
	2. SOIL CONTAINING HYDROCARBONS AND NAPL	9
	3. GROUND WATER CONTAINING HYDROCARBONS AND NAPL	10
	4. LONG TERM MONITORING TO MITIGATE RISK OF SEEPAGE	10

3	GENERAL ARRANGEMENTS	11
3.1	ROLES AND RESPONSIBILITIES	11
	COMPLAINTS PROCEDURE	14
4	ENVIRONMENTAL MANAGEMENT MEASURES	17
4.1	INTRODUCTION	17
4.2	GENERAL ENVIRONMENTAL MANAGEMENT MEASURES	17
4.3	AIR QUALITY AND DUST	17
	LOCAL SENSITIVE RECEPTORS	18
	MITIGATION AND SITE MANAGEMENT	18
	DUST MANAGEMENT PLAN	18
	ASBESTOS	19
4.4	NOISE	19
	LOCAL NOISE RECEPTORS	19
4.5	SURFACE WATER/ POLLUTION PREVENTION MEASURES	20
	FLOOD RISK	21
4.6	WASTE AND MATERIALS MANAGEMENT PLAN	22
	WASTE MANAGEMENT PLAN	22
	SOIL MANAGEMENT	24
	FUEL AND CHEMICAL STORAGE	24
	WATER AND ENERGY CONSUMPTION	25
4.7	BIODIVERSITY	25
	GENERAL MITIGATION MEASURES	26
4.8	LIGHTING	28
4.9	GENERAL MITIGATION AND SITE MANAGEMENT	28
5	EMERGENCY PREPAREDNESS	30
5.2	CONTROL MEASURES	30
5.3	SPILLAGE OF POTENTIALLY POLLUTING SUBSTANCE	30
5.4	DISCOVERY OF UNIDENTIFIED PROTECTED SPECIES	30

5.5	DISCOVERY OF UNIDENTIFIED ARTEFACTS, ARCHAEOLOGICAL OR HISTORICAL FEATURES	30
5.6	DISCOVERY OF UNEXPECTED CONTAMINATION	31
5.7	EMERGENCY RESPONSE PLAN	31
5.8	INCIDENT REPORTING	32
5.9	RESPONSIBLE PERSONS	32

TABLES

Table 3-1 – Key Environmental Roles and Responsibilities	11
Table 4-1 - Biodiversity Precautionary Measures During Site Clearance and Construction	27
Table 5-1 – Responsible persons and contact details.	32

1 INTRODUCTION

- 1.1.1. WSP have been commissioned by Andrew Scott Ltd for Neath Port Talbot County Borough Council (NPT CBC) to produce a Construction Environment Management Plan (CEMP) for an enabling works scheme to facilitate the regeneration of former brownfield land, located within the Harbourside Strategic Employment Site in Port Talbot. The enabling works scheme involves the construction of an access road, flood mitigation works, land contamination remediation works, improving the load capacity of the ground and associated works.
- 1.1.2. This CEMP has been developed to support the discharge of Condition 4 for the Proposed Scheme. It details, and where possible and appropriate, expands upon, the specific construction environmental risks, proposed mitigation, and commitments identified in the environmental reports that were submitted to support the planning application.
- 1.1.3. The CEMP describes how the construction activities would be undertaken and managed in accordance with these commitments as well as contractual and legislative requirements, and construction industry best practice.
- 1.1.4. This CEMP will be developed into a more detailed CEMP as design and construction plans are finalised and more detailed information on environmental effects becomes available. The appointed Contractor shall be responsible for safeguarding the environment and for mitigating the effects of the construction works by implementing the requirements detailed in the CEMP. Prior to commencement of construction the CEMP would be fully comprehensive.

1.2 PURPOSE OF THE CEMP

- 1.2.1. This CEMP describes how construction activities will be undertaken and managed by the contractor in accordance with legislative and other requirements and construction industry best practice. It also includes commitments and requirements identified within supporting environmental reports.
- 1.2.2. This document is a draft CEMP, as such the Contractor will be required to refine and update it to produce the CEMP, prior to the commencement of the construction, and once further information on the construction programme and techniques are available.
- 1.2.3. The CEMP is the main reference document to identify environmental aspects, risks, and mitigation to be implemented on site. It will contain a record of all the sensitive environmental features that have the potential to be affected by the construction of the Proposed Scheme in an Environmental Risk Register.
- 1.2.4. This version of the CEMP contains advice on information to be included in the management plans which will make up the CEMP. It provides details of control measures to be implemented by personnel on site to avoid, minimise or mitigate the impacts of construction works on the environment, and roles and responsibilities, monitoring and reporting procedures and emergency preparedness and response.

- 1.2.5. A CEMP is a live document which will be updated on a regular basis to take into account the following:
- Changes in design;
 - Changes in external factors such as regulations and standards;
 - Any unforeseen circumstances as they arise such as new protected species or new archaeological finds;
 - The results of inspections and audits; and
 - Learning points from environmental near misses and incidents.
- 1.2.6. Environmental responsibilities shall be brought to the attention of all personnel as applicable to their work, and to ensure that the CEMP is complied with. The requirements of the CEMP will be briefed to the site team, including ecological tool box talks as appropriate.
- 1.2.7. All staff will be competent and suitably trained for the roles they undertake during the works and training records will be kept. The management team should undertake environmental awareness training.
- 1.2.8. This CEMP describes how measures will be implemented on site in order to protect, and where possible enhance, the environment, and to ensure best environmental practices during construction. It describes how environmental requirements will be managed for the contract and specifies controls that will be implemented on site.
- 1.2.9. The CEMP will incorporate the following elements:
- Background and description of the construction being carried out;
 - Consideration of construction vehicle movements;
 - Environmental Management considerations; and
 - Emergency Preparedness.
- 1.2.10. All documentation in relation to the environmental management of the works shall be maintained by the Principal Contractor and made available to the Construction Project Manager and third parties as required.
- 1.2.11. Similarly, performance against environmental objectives and targets, and in achieving effective environmental management, shall be subject to on-going review by the appointed Contractor.
- 1.2.12. In order to assist in implementing environmental good practice, the Contractor will be required to register with a Considerate Constructors Scheme.

1.3 STRUCTURE OF THE CEMP

- 1.3.1. This Draft CEMP contains the following information:
- Chapter 1: Introduction – this section includes a summary of the proposed scheme, the purpose of the CEMP and key environmental constraints.
 - Chapter 2: Scheme construction – this section includes a summary of the construction programme and the main construction methodology.
 - Chapter 3: Project Team Roles and responsibilities – this section details who is responsible for key environmental responsibilities on site.

- Chapter 4: Environmental Management Measures – this section comprises general and site-specific mitigation measures which can be applied during construction to minimise potential environmental impacts.
- Chapter 5: Emergency Preparedness – this section details the measures to be followed in the event of an emergency of an environmental incident.

1.4 KEY ENVIRONMENTAL CONSTRAINTS

1.4.1. The following points below outline the key environmental impacts that could potentially impact the Scheme:

- Potential for contaminated land to be present;
- Potential for surface water pollution and flood risk;
- Presence of protected species including birds, reptiles, and invertebrates; and
- Loss of Site of Importance for Nature Conservation (SINC) / Local Biodiversity Action Plan habitat on Site.

1.5 PROJECT ENVIRONMENTAL RISKS

1.5.1. The risks to the environment that have been identified during the construction of the Scheme include the following:

- Environment and Ecology;
- Public interest and stakeholders including access and Site security;
- Health & Safety considerations to the Workforce;
- Archaeological features;
- Dust as a result of earthmoving, excavations, vehicle movements, in dry conditions;
- Noisy construction activities;
- Spills of concrete, fuel, oil or chemicals;
- Production/management of waste as a result of the works and incorrect handling of materials;
- Earthworks and earth moving resulting in silt and mud on roads; and
- Encountering contaminated material.

2 SCHEME CONSTRUCTION

2.1 SITE LOCATION AND SCHEME DESCRIPTION

- 2.1.1. The existing Site is within a large area of land adjacent to Port Talbot Docks. The northern boundary of the Site runs adjacent to Cramic Way and Port Talbot Parkway railway station and the southern boundary is aligned by Old Dock Road and Harbour Way (A4241). The Site is approximately 2.8ha and comprises an area of unused, derelict and heavily vegetated land within the Harbourside Strategic Employment Site in Port Talbot. The Ordnance Survey (OS) Grid Reference for the approximate centre of the Enabling Works is National Grid Reference 276570(E), 189509(N).
- 2.1.2. The Proposed Scheme involves a series of Enabling Works to facilitate the regeneration of former brownfield land for future commercial development. The Proposed Scheme comprises the construction of a new westbound access road which will access the Site from the existing Oakwood Road and connect to Harbourside Road. The Proposed Scheme also comprises flood mitigation works, land contamination remediation works and improvements to the load capacity of the ground located within the boundaries of the Site.

2.2 ANTICIPATED CONSTRUCTION PROGRAMME

- 2.2.1. Construction is anticipated to commence in February 2021.

2.3 WORKING HOURS

- 2.3.1. The Proposed Scheme is likely to take place within normal working hours, as set out below:
- 07:30 – 17:00 Monday – Friday; and
 - 08:00 – 16:00 on Saturdays (if required) and assumed no Sunday working.
- 2.3.2. In the instance that working outside of these hours becomes necessary, the contractor will agree the additional working hours with the clients representatives and NPT CBC.
- 2.3.3. All deliveries will be taken during normal site hours and received by a gateman/banksman. All suppliers will be informed of the site hours and provided a site layout plan at the time of placing order. All deliveries will be offloaded within the site boundaries, no offloading is permitted from the public highway. Dedicated offloading and laydown areas will be arranged with a one-way traffic system and segregated from the main works area. Bulk materials, such as aggregates, will be carefully monitored for volumes and sufficient quantities can be stored on site. This will spread any delivery requirements, reducing the risk of excess construction traffic creating a gridlock.

ENVIRONMENTAL RESTRICTIONS

- 2.3.4. In addition, it is likely that the following restrictions will be applied during construction and demolition work:
- 5m easement either side of new Afan Main diversion line to be marked out on site, additional measures such as bog mats to be incorporated for any plant tracking over;
 - DCWW (Dwr Cymru Welsh Water) have issued planning conditions regarding working around the 1200mm diameter water main in Old Docks Road and also protection measures for excavations around the 6" uPVC fire hydrant main;

- Access and egress to and from site is via Oakwood Roundabout off Harbour Way;
- The existing car park that is to be extended will remain in operation throughout the works;
- All pedestrian and cycle routes are to be diverted and remain operational as far as reasonably practicable throughout the works;
- The pedestrian footpath that runs along the North boundary of the main remediation works is to remain operational. This footpath is to be separated from the main works area to the south and the car park extension works to the north by solid timber hoarding;
- There will be a crossing point through this footpath for works to gain access from the site welfare (sited on the car park extension) to the main works area. This will require gated access with a gateman;
- Site traffic for deliveries and importing/exporting material will be through a dedicated entrance to the South of the Youth Offenders building. Wheel washing operations and a dedicated gateman/banksman to be implemented;
- Andrew Scott will liaise with on-site security to establish a protocol for signing in and out of the work site and for safe vehicular and pedestrian movements to and from the works area;
- Interfacing with the Harbour Master, Local Authority and Highways Department will be necessary facilitate various work elements, primarily the flood mitigation culvert; and
- Natural Resources Wales have highlighted the Afan River and Port Talbot Docks as future receptors at risk of any contamination – all remediation works and strategy to be approved by Natural Resources Wales (NRW) before work commences; and
- Ecology work to be undertaken during the Early Contractor Involvement (ECI) phase, including site clearance and grass cutting works which will facilitate the location of any slow worms which will be translocated. Any other species and reptiles of interest are to be highlighted to the ecologist.

2.4 MAIN CONSTRUCTION METHODOLOGY

CONSTRUCTION ACCESS, PARKING AND TRAFFIC

- 2.4.1. It is anticipated that all vehicles will be able to access the Site via Harbour Way (A4241). This route adjoins the A48 which provides access to the wider highway network and M4 J38 via the Margam Interchange. It is also anticipated that smaller vehicles will be able to access the Site via M4 J40, the A4107, A48 and Harbour Way (A4241).
- 2.4.2. Parking for construction vehicles will be made available in the construction compound which is to be located to the north-east of the Site and within the car park extension.
- 2.4.3. Further details relating to the construction compound are outlined in Section 2.5.
- 2.4.4. The total number of vehicle movements on site is not yet known.

TRAFFIC MANAGEMENT REQUIREMENTS DURING CONSTRUCTION

- 2.4.5. At the time of writing this CEMP, the traffic management measures to be implemented as part of the Proposed Scheme have not been formalised. It is anticipated that temporary traffic systems will be required for the new flood mitigation culvert and Cramic Way upgrade works. These will be implemented by a specialist traffic management company, Forest Traffic Management.

- 2.4.6. For general site traffic such as wagon access/egress and movement of plant, the Contractor will create a Site Traffic Management Plan. This will look at requirements for suitable signage, barriers, warnings, pedestrian segregation and traffic marshals.
- 2.4.7. The contractor will look to employ a full-time traffic marshal at the site entrance for elements of works that require large volumes of heavy traffic, such as the earthworks. This is as an additional traffic control measure and also for the wheel washing facilities.
- 2.4.8. Upon selection of the finalised traffic management options, it will be the responsibility of the contractor to update the CEMP so that it reflects the decision, and to incorporate subsequent details related to the functionality and specific timings of the options.

PROPOSED KEY CONSTRUCTION SEQUENCE

- 2.4.9. The sequence in which the construction of the Proposed Scheme will take place is outlined below:
- Carpark extension and site compound / welfare facilities;
 - Traffic Management set-up and construction of Flood mitigation culvert;
 - Cramic Way upgrade;
 - Earthworks and Ground Remediation including Breakout of Concrete Structures and Filling of Voids etc;
 - Highway Storm Drainage, including Hydro-brake Chamber and Pumping Station;
 - New Link Road Construction;
 - Biodiversity Area and Butterfly Hibernacula; and
 - Works to Biodiversity Area 2

2.5 CONSTRUCTION COMPOUND AND EQUIPMENT

COMPOUND LOCATION

- 2.5.1. A construction compound will be located the north-east of the Site and situated within the car park extension. The construction compound will provide the following elements:
- Parking and access for construction vehicles;
 - Two No 32' Offices;
 - Two No 32' Canteen/Welfare Block;
 - One No 16' toilet block;
 - Two No 20' secure stores;
 - Recycling and storage units; and
 - Vehicular entrance / exit and secure pedestrian entrance / exit.

CONSTRUCTION PLANT AND EQUIPMENT

- 2.5.2. The following construction plant and equipment is envisaged:
- HIAB Crane Lorry;
 - Lifting chains and pins;
 - Ladders;
 - Heras Fencing;
 - Pedestrian safety barrier;
 - Traffic management/signage;

- Small Tools;
- Generator;
- Double banded fuel bowser;
- COSHH/chemical store;
- Temporary matting;
- Shoring / propping equipment;
- De-watering systems;
- Water cleaning systems / silt-busters;
- Scaffolding / hand railing;
- 360 Excavators of various sizes with hydraulic breaker attachment;
- Air compressor;
- Dumpers of various sizes;
- Mobile Crane for lifting culvert units (size to be confirmed);
- Cutting/grinding and other hot work equipment;
- Low-loader lorries;
- Concrete Pump;
- 6m³ Concrete Mixer trucks;
- Concrete / rock crusher and screener;
- Various sizes of rollers and vibrating compaction plant;
- Water suppression plant, pressure washer bowzers;
- Wheel wash;
- CAT & Genny; and
- Street paver (Barber Greene).

2.5.3. The following measures will be in place to mitigate and reduce disruption during construction:

- Materials will be stored locally to the work area to minimise plant access;
- Delivery timings will be coordinated to avoid peak time to alleviate congestion within the 'live' car park;
- The site compound will be enclosed with solid timber hoarding to temporary works design with vehicle access gate that is to be locked when not in use;
- The main site is to be enclosed with heras fencing around the majority of the site. Solid timber hoarding will be utilised along areas of pedestrian footpath that are moderately trafficked;
- All access gates will be locked during evening/ night and closed during the working day;
- Security will be provided by a specialist security firm erecting a number of CCTV cameras across the site. These will be monitored and a guard dispatched at any sign of intrusion; and
- A daily fence inspection will be undertaken and recorded. Any issues will be rectified immediately.

2.6 GROUND REMEDIATION STRATEGY

- 2.6.1. The contractor's overall strategy aims to provide a sustainable remediation to the site whilst delivering betterment and maximising re-use of site won materials and thus minimising the disposal of materials off site as waste.
- 2.6.2. In order to facilitate this, the contractor engaged with specialists during the tender period to collaboratively review the existing ground information and devise a sustainable approach to the project.

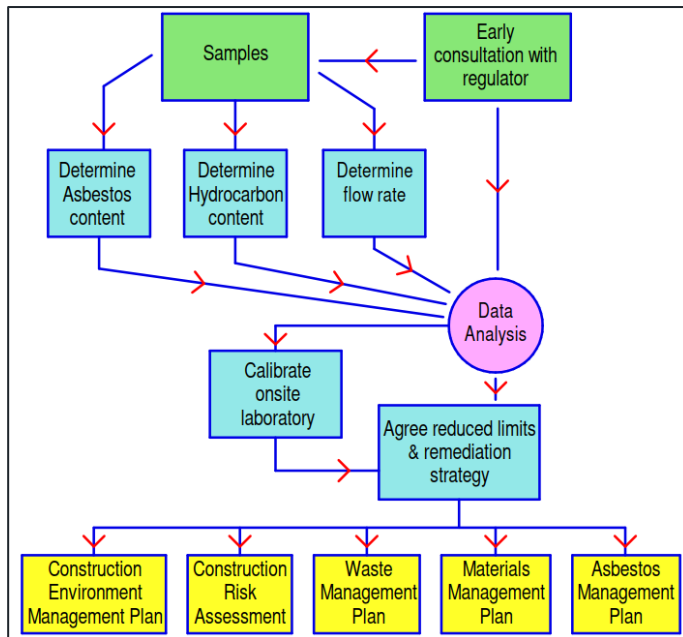
STRATEGY TO 'RELAX' SPECIFICATION:

- 2.6.3. Engagement with Regulators at the earliest opportunity will facilitate discussions on options to relax the 'acceptable' parameters to achieve a more attainable criterion. This will effectively reduce the potential for export and increase the potential to re-use site won material with Ground water pumping significantly reduced.
- 2.6.4. The contractor also proposes to use an on-site testing lab to obtain testing results quickly. There is a long-term remediation solution to assist with intended 'relaxed' pass parameters which is explained further in the document. During ECI, the contractor will collaboratively determine a sampling regime and undertake analysis criteria to support an evidence-based theory. The intention here will be to give the regulators confidence in our approach and provide the information and advice required to ascertain our strategy.
- 2.6.5. Sampling and validation strategy is to be agreed with the regulators following commencement of works.

CONTINGENCY PLAN (IF THE PARAMETERS CANNOT BE RELAXED)

- 2.6.6. The ECI stage will be utilised to essentially provide a remediation strategy which is achievable and sustainable to the site. Early consultations with the regulators will determine sampling criteria, monitoring criteria, information and evidence to support the contractors intended strategy.
- 2.6.7. Trial holes will be undertaken to determine:
 - Asbestos Management Plan – currently the asbestos testing is at 'screening stage' therefore concentrations and further detail analysis is required to satisfy Asbestos regulations. Here Licencing status will be ascertained and further working practices to supplement the Asbestos management plan;
 - Bore hole investigations – Flow rates will be determined to support discharge applications and filtration system designs;
 - Materials Management Plan – for review and declaration to CL:AIRE to enable soils to be re-used without being deemed as 'waste disposal';
 - On site Lab systems – sample testing will assist with calibration of our on-site lab which will ensure our testing will be aligned with specification parameters;
 - Construction worker - Chemical Contamination Risk assessment: This will provide information on the control measures required during earthworks to mitigate contamination risks;
 - **(This Document)** Construction Environment Management Plan (CEMP) – This will set out the environmental management framework to which our management systems will apply. This will include environmental management and monitoring measures to be implemented throughout the works and
 - Waste Management Plan – the WMP will be incorporated into The CEMP to include Legislative compliance requirements, waste minimisation, recycling and disposal. This will be implemented by the Principal Contractor to effectively identify, monitor and manage materials, arisings and waste on site.
- 2.6.8. An overview of the ECI Stage can be seen in **Figure 2-1**.

Figure 2-1 - ECI Stage and remediation strategy flow chart



CONSTRUCTION STAGE

2.6.9. The remediation strategy will comprise the following construction phases:

1. ASBESTOS

2.6.10. The final strategy consists of a 600mm protective capping layer. During the works the contractor will consider risk to workforce and surrounding public. Following approval of the remediation strategy the contractor will devise a method statement risk assessment containing controls to adhere to whilst working. Every aspect of the works that poses an expose risk will be identified, such as:

- Ground remediation;
- Drainage;
- Site clearance (excavation of concrete slabs);
- Lagoon excavation; and
- Lamp column pots.

2. SOIL CONTAINING HYDROCARBONS AND NAPL

2.6.11. In accordance with the approved management plan, it is envisaged that the highly contaminated soils will be exported from site. To align with the strategy, partially contaminated soils will potentially be able to be treated and reused on site, it is expected that elements to be on the perimeter of the contamination 'hot spots'. 'Hot Spots' will be identified following investigation during ECI stage and will be our start point for excavation.

2.6.12. As the excavation progressed soils with varying contaminated content will be separated into 'holding' stockpiles. The on-site lab testing will determine potential for the soils to be reused and establish soils to be exported. Once selected for re use, the stockpiles will be classified to establish its position in the construction build ups. Exportation of the non-usable soils will continue until the contaminated soils have been cleared.

3. GROUND WATER CONTAINING HYDROCARBONS AND NAPL

- 2.6.13. The objective of the proposed strategy will be to agree with the regulators a lower acceptable degree of 'cleaning' required as described previously. This will significantly reduce the pumping and discharge requirements also reduce the risk of excessive, long term pumping and cleaning which would delay road construction. To remediate the water, open excavations will expose the contaminants on the water surface to enable a 'skimming' operation to remove the contaminants. Testing will be ongoing by the on-site lab, once the 'accepted' criteria is met, excavations can be backfilled with the recycled material and roadwork's will begin.
- 2.6.14. If the accepted limits cannot be achieved through skimming, the ground water will need to be pumped and 'cleaned'. The contractor has consulted with Siltbuster who worked with us in the TATA project that had similar remediation requirements. As a contingency there will be a filtration system in place to further clean the water to acceptable criteria to discharge to the nearby foul sewer. The contractor has made contact with NRW and WW to ascertain the discharge criteria to which the filtration system will be designed to meet.
- 2.6.15. The proposed treatment system will comprise of the following stages:
- **Step 1:** Siltbuster HB50-OWS to remove coarse silt/sand/gravel sized solids from suspension recover both floating free phase hydrocarbon (LNAPL's) and capture any heavier sinking oil fractions (DNAPL's) within the units sludge storage area;
 - **Step 2:** Transfer skid to allow the waters gravity fed from the HB50 OWS into a transfer skid where they are boosted up via a pump;
 - **Step 3:** MT8 8m3 3-stage reaction tank with 2No. vertical mixers split by a central baffle complete with 3 stage flow proportional chemical dosing system (capable of adding coagulant flocculan and sodium hydroxide);
 - **Step 4:** Siltbuster HB40R lamella clarifier to recover now flocculated clay/colloidal sized solids & recover any precipitated material prior to discharge;
 - **Step 5:** Provision of 5m3 Granular Activated Carbon (GAC) vessel & associated transfer skid; and
 - **Step 6:** provision of all interconnecting pipe work.

4. LONG TERM MONITORING TO MITIGATE RISK OF SEEPAGE

- 2.6.16. Once the acceptable limits have been achieved, the area will be backfilled for the roadworks to progress. A ground water monitoring regime will be ongoing with ground water being tested through installed boreholes. Due to the risk of seepage from outside the work area which may become evident during the monitoring procedure, it is advised that a long-term skimming solution is available, this would remediate any contaminated seepage in the area without disrupting the proposed works. This will consist of pneumatic skimmers situated within the boreholes which will be automatically activated once the set 'trigger levels' are reached.
- 2.6.17. The Remediation Strategy will be carried out in accordance with the environmental best practice, mitigation and management measures outlined in **Section 4** of this report.

3 GENERAL ARRANGEMENTS

3.1 ROLES AND RESPONSIBILITIES

- 3.1.1. In order to the Environmental commitments outlined in the CEMP and allow effective construction environmental management, it is important to provide a clear identification of roles and responsibilities. These are identified in Table 3-1.

Table 3-1 – Key Environmental Roles and Responsibilities

Activity	Responsible Person	Contact Details
Ensure resources are made available to carry out environmental responsibilities	Contractor's Project Manager	TBC following Contractor Appointment.
Ensure measures detailed in the CEMP are carried out	Contractor's Construction Manager	TBC following Contractor Appointment.
Review CEMP	Contractor's Construction Manager / Health and Safety (HSE) Manager	TBC following Contractor Appointment.
Carry out Environmental Induction Training on site (as part of overall site induction)	Contractor's Site Supervisor	TBC following Contractor Appointment.
Ensuring that all environmental standards and commitments are adhered to	Contractor's Construction Manager	TBC following Contractor Appointment.
Carrying out site specific environmental training	Contractor's Construction Manager	TBC following Contractor Appointment.
Carry out Waste Management Duties on Site	Site Waste Representative(s)	TBC following Contractor Appointment.
Carry out regular site environmental checks e.g. spills/leaks, housekeeping, materials storage	Contractor's Construction Manager	TBC following Contractor Appointment.

Ensuring Risk Assessments / Method Statements (RAMS) take into account environmental aspects and risks on site	Construction Manager / Site Agent	TBC following Contractor Appointment.
Review / Provide environmental input Risk Assessments / Method Statements (RAMS)	Contractor's Construction Manager	TBC following Contractor Appointment.
Identifying requirements for / inputting into / co-ordinating specific environmental RAMS for the works	Contractor's Construction Manager	TBC following Contractor Appointment.
Producing specific environmental RAMS e.g. ecology, archaeology etc.	Environmental Specialists	TBC following Contractor Appointment.

- 3.1.2. The Contractor will assume the duty of Environmental Clerk of Works (ECoW) to ensure the implementation of the CEMP and delivery of environmental commitments.

ENVIRONMENTAL CLERK OF WORKS (ECOW)

- 3.1.3. The ECoW will undertake the following tasks:

- Review, update and communicate the CEMP to all personnel on site;
- Provide advice and support to the Site Manager and the site team on all environmental matters;
- Carry out environmental training, toolbox talks and briefings. Environmental toolbox talks and briefings will be carried out every month as a minimum;
- Be the main contact point for liaison with Statutory Authorities and the Employer. Accompany Statutory Authorities and the Employer on site during environmental visits;
- Provide advice for managing waste on site;
- Carry out environmental audits and inspections and report any non-compliances on site;
- Carry out environmental incident investigations and brief out lessons learnt to the site teams;
- Take photos of good practices, any environmental issues and incidents;
- Carry out checks and implement environmental mitigation measures on a daily basis; and
- Ensure Environmental compliance during the works.

PROJECT / SITE MANAGER

- 3.1.4. The Project / Site Manager will undertake the following tasks:

- Has overall responsibility for delivery of the project and for meeting environmental objectives and targets;

- Has overall responsibility for ensuring that all appropriate mitigation measures are implemented in accordance with legal and other relevant environmental requirements, planning conditions, company procedures, best practice and as advised by the Environmental Clerk of Works;
- Responsible for ensuring that adequate resources are made available for delivering environmental requirements on site;
- Ensure the competence of staff is appropriate in order to carry out their environmental duties;
- Lead by example to ensure that a high standard of environmental performance is achieved;
- Liaise with the ECoW with regards to environmental aspects and issues associated with the project.

PLANT MACHINE OPERATORS

3.1.5. The Plant Machine Operator will undertake the following tasks:

- Responsible for carrying out pre-use environmental checks on their equipment;
- Responsible for ensuring that plant and equipment is accompanied by the required Certification and that plant and equipment is regularly serviced and maintained;
- Ensure that all plant and equipment is appropriately silenced;
- Ensure that, as a minimum, a 15 litre spill kit is provided on all mobile plant;
- Bring to the attention of the Site Manager / Supervisor any defect in equipment so that it can be taken out of service and repaired or replaced;
- Ensure that equipment is only refuelled at designated refuelling areas;
- Ensure that drip trays/plant nappies are installed under all refuelling operations;
- Comply with site rules with regards to refuelling, use of generators and other petrol/diesel driven plant;
- Ensure that plant and machinery in intermittent use is shut down between activities, or where not practicable, throttled down to a minimum;
- Report any environmental incidents, hazards or near misses to the supervisor/manager and/or the ECoW immediately;
- Ensure that all work is carried out in accordance with the CEMP, associated risk assessments and method statements.

ALL SITE PERSONNEL

3.1.6. All site personnel will undertake the following tasks:

- Must carry out their duties in a way that does not have a detrimental effect on the environment;
- Responsible for carrying out activities in compliance with all regulatory standards, codes of practice and project systems and procedures;
- Responsible for reporting any environmental concerns to their supervisors;
- Must attend environmental toolbox talks and briefings as instructed;
- Responsible for reporting all environmental incidents, hazards and near misses;
- Ensure that good housekeeping is practiced at all times;
- Ensure that personal conduct does not detrimentally affect the image of the project.

SUB-CONTRACTORS

- 3.1.7. Various subcontractors will be involved with the scheme of works, for items such as;
- Road surfacing;
 - Road marking;
 - Fencing;
 - Pumping Station;
 - Attenuation Systems;
 - Traffic Management;
 - Earthworks material testing; and
 - Contract crane lift.
- 3.1.8. It is the contractor's policy that all subcontractors shall be 'Constructionline' and SSIP Accredited wherever possible.
- 3.1.9. All sub-contractors to be selected using the contractor's process from the AMS for the selection of sub-contractors. This includes consideration of Safety, Quality and Environmental matters. Refer to the contractor's procedure PR-QS-001 – Selection of subcontractors.
- 3.1.10. Sub-contractors will be fully briefed on the project safety arrangements by the person in charge of the works.
- 3.1.11. Material suppliers will be required to provide full health and safety information for the safe use, storage and disposal of their products. This will be a condition of the order.

3.2 COMMUNICATION

- 3.2.1. Environmental issues will be communicated on each day of construction through the following arrangements on site. All site will attend Health and Safety progress meetings, risk assessment / method statement briefings and environmental toolbox talks.
- 3.2.2. A monthly report will be provided to Neath Port Talbot County Borough Council (NPT CBC) detailing the implementation of environmental commitments and mitigation measures, training delivered, environmental initiatives undertaken, proposed amendments to the CEMP, updates on environmental audits and monitoring undertaken, and any environmental incidents regarding the project.

3.3 EXTERNAL COMMUNICATION

- 3.3.1. A Contractor Representative will be made responsible for receiving, documenting and responding to any environmental communication from third parties and the local community as required and as agreed with the Employer.

COMPLAINTS PROCEDURE

- 3.3.2. The contractor will always aim to create good working relationships with stakeholders, persons and businesses that may be affected by our construction work. A bilingual newsletter will be produced and sent out to the interested parties to provide updates and information on the project. As part of

the newsletter, there will be a cut-off slip for comments/complaints which can be sent anonymously to the site or Head Office.

- 3.3.3. A complaints register is available for recording any complaints received and are dealt with in the appropriate manner (see FM-IMS-005 attached for use/reference). It is essential to the success of the company to establish communication links with all external interested parties.
- 3.3.4. The Site Foreman will be the direct contact for addressing complaints, their name and contact numbers will be displayed on notice boards posted on the site hoarding with options to escalate to the Site Manager, Contracts Manager and Head Office should it be necessary. The noticeboard will also contain updates and information on the project and will be bilingual.

3.4 TRAINING

- 3.4.1. Prior to starting on site all workforce will be made familiar with the site, works to be undertaken and hazards expected by way of a site induction. Operatives working on the tasks detailed in the RAMS will be briefed by the contractor's Site Supervisor and the briefing attendance sheet signed to confirm the briefing and understanding.
- 3.4.2. All Operatives will be trained to minimum of CPCS or CSCS level as appropriate.
- 3.4.3. Daily briefings will be given to Operatives prior to work commencing and Tool Box Talks will be given on a weekly basis on an appropriate topic linked to the works on site.
- 3.4.4. All required Permits will be issued on site by the contractor's Responsible Person (Site Agent/Manager, Foreman or Engineer) and Operatives will be briefed on the requirements of the permit before work commences.
- 3.4.5. All personnel will be experienced and competent in the tasks that they are being asked to undertake. Due to the nature of the brownfield site, it is expected that those operatives who will be working on the earthworks strategy and materials management will need to be Asbestos Awareness trained (as a minimum).

3.5 SITE AUDITING

- 3.5.1. Monthly inspections of the site will be carried out to ensure compliance with the CEMP and to minimise the risk of damage to the environment. All environmental incidents will be reported to the Contractor's Construction Manager / ECoW.
- 3.5.2. Document control will be in accordance with the Quality Management System (QMS) and copies of the environmental audit report, consents and licences will be maintained by the Contractor's Construction Manager / ECoW. These documents will be stored securely onsite and will be available for review at any time.
- 3.5.3. Internal and external environmental auditing and inspections will be complied with.
- 3.5.4. The Contractor will be responsible for investigating and addressing any non-compliance findings raised by the audit within an agreed time frame and ensuring that corrective and preventative actions have been addressed.
- 3.5.5. The Contractor will also be responsible for producing the Pollution Prevention Plan in order to discharge planning condition 4 (k). The Pollution Prevention Plan will resolve the specific details of



their selected system/methods which at this stage are anticipated to be standard mitigation measures, given there are no unusual features on site to accommodate.

4 ENVIRONMENTAL MANAGEMENT MEASURES

4.1 INTRODUCTION

- 4.1.1. This Section refers to generic and best practise measures to reduce environmental impacts during the construction of the scheme. This section also includes site specific mitigation under specific construction activities.

4.2 GENERAL ENVIRONMENTAL MANAGEMENT MEASURES

- 4.2.1. The following mitigation measures and best practise should be carried out throughout the whole of the construction phase (general mitigation measures per environmental topic are included in more detail between sections 4.3 – 4.9):
- Securement of Site and implementation of any additional fencing and/or hording around the site to prevent vandalism and pollution events;
 - Tool box talks to be delivered to all site personnel;
 - All machinery should use Ultra Low Sulphur Diesel (ULSD) where possible;
 - Plant should be well maintained and serviced regularly and shut down in the intervening periods between work, or throttled down to a minimum;
 - Use of noise control equipment such as jackets, hoods and shrouds on construction equipment such as generators etc.;
 - There should be constant monitoring of dust levels and effective methods of work should be adopted to prevent dust becoming airborne at the source for example; using wet sweeping methods to prevent accumulation of dust and mud and using effective exhaust ventilation and filtering to minimise potential dust pollution;
 - Spill kits must be made available on site and personnel should be competent at deploying spill kits in the event of a spillage. In the event of a pollution incident, work should cease in the vicinity of the incident and contaminants must be cleaned up immediately. All incidents must be reported and a Pollution Incident Report form completed. Subsequent waste material resulting from a spillage should be disposed of appropriately; and
 - Minimising the exposure of bare ground and covering stockpiles;
 - The works should be effectively programmed in advance to avoid delays in the construction programme.

4.3 AIR QUALITY AND DUST

- 4.3.1. Air quality will be managed in accordance with legal requirements and best practice guidance. The Contractor will adopt Best Practicable Means (BPM), as defined in the Control of Pollution Act 1974.
- 4.3.2. The main air quality impacts that may arise during construction activities are:
- Dust generated from construction activities;
 - Emissions from construction plant; and
 - Emissions from vehicles associated with the construction of the Proposed Scheme, import of construction materials and removal of waste materials, accessing and leaving the Site on the local road network.

LOCAL SENSITIVE RECEPTORS

- 4.3.3. The closest residential properties are located approximately 200m to the north and north-east of the Site, with the nearest properties located on Talbot Road (A48). In addition, the Port Talbot Justice Centre and Her Majesty's Court service is situated on Harbourside Road which is immediately west of the Site, the Youth Offending Team (Community organisation) is situated on Oakwood Road which is immediately north-east of the Site, and Port Talbot Docks commercial and industrial units are located approximately 160m south-east of the Site.

MITIGATION AND SITE MANAGEMENT

- 4.3.4. The following mitigation measures will be implemented throughout the construction phase to minimise air quality impacts:
- Damping down surfaces during dry weather;
 - Erection of appropriate hoarding and/or fencing to reduce dust dispersion and restrict public access;
 - Appropriate handling and storage of materials, especially stockpiled materials;
 - Covering materials stockpiles, deliveries or loads entering and leaving the construction site for the purposes of preventing materials and dust spillage;
 - Stockpiles and mounds will be maintained to avoid material slippage; and
 - Materials stockpiles likely to generate dust should be enclosed or securely sheeted, kept watered or stabilised as appropriate;
 - Use of a wheel wash, limiting of vehicle speeds to 5 mph, avoidance of unnecessary idling of engines and routing of Site traffic as far from residential, educational and commercial properties as possible;
 - Fitting all equipment (e.g. for cutting, grinding, crushing) with dust control measures such as water sprays wherever possible;
 - Damping down of dust-generating equipment and vehicles within the site and the provision of dust suppression in all areas of the site that are likely to generate dust;
 - Plant to be serviced regularly;
 - Plant should be well maintained and shut down in the intervening periods between work, or throttled down to a minimum;
 - All machinery should use Ultra Low Sulphur Diesel (ULSD) where possible; and
 - Ensuring that a road sweeper is available to clean mud and other debris from hardstanding roads and footpaths.

DUST MANAGEMENT PLAN

- 4.3.5. To ensure that dust emissions from vehicle movements are kept at a minimum, the following control measures will be implemented on Site:
- Haul roads and associated vehicle waiting areas shall be regularly inspected and kept cleaned of mud and materials which may give rise to emissions of dust;
 - Plant crossings, site accesses and egress points will be regularly swept and dampened down;
 - Unpaved roads and verges shall be maintained in a compacted condition as appropriate and necessary;

- Static water sprinklers and/or bowsters will be provided to damp down haul and access roads as necessary;
- Road sweepers will be used to limit the dust and material on paved roads;
- General site traffic shall be restricted to watered or treated haul roads; and
- Speed limits shall be established and enforced on site traffic routes (speed limits shall be reduced in the event of extreme dry conditions to further reduce the potential for the generation of dust).

4.3.6. In addition to the site access and haul roads, there is potential for the generation of dust from general site operations. The control measures to be implemented to reduce these emissions are described below:

- Burning on site of any waste arising from any construction activities is prohibited;
- Equipment likely to generate excessive quantities of dust shall be enclosed, shielded or where appropriate fitted with dust extractors, filters and scrubbers, which shall be fitted and maintained in accordance with the manufacturer's specifications;
- The number of material handling operations shall be kept to a practicable minimum;
- Drop heights of materials on to vehicles and stockpiles shall be kept to a practicable minimum;
- Where appropriate, wind breaks, netting screens or semi-permeable fences shall be used to reduce dust emissions from working areas and/or screen sensitive locations (as identified by the Project/Site Manager). Where necessary, water sprays shall be employed to control dust generated during construction of earthworks and during piling operations; and
- Long term stockpiles (greater than six months) shall be planted or sealed as appropriate

ASBESTOS

- 4.3.7. The following control measures could be implemented to manage the presence of Asbestos on site;
- PID Air monitoring;
 - Full overall protective clothing;
 - Respiratory protective equipment;
 - Dust control in the form of water suppression; and
 - Segregated areas

4.4 NOISE

- 4.4.1. The Contractor will adhere to the codes of practice for construction working given in British Standard BS 5228:2009 which provides details on industry best practice for the control of noise and vibration during various construction activities.
- 4.4.2. Construction activities such as excavation, breaking out of concrete and construction traffic could have potential impacts to noise.
- 4.4.3. The Contractor will adopt Best Practicable Means (BPM), as defined in the Control of Pollution Act 1974.

LOCAL NOISE RECEPTORS

- 4.4.4. The closest residential properties are located approximately 200m to the north and north-east of the Site, with the nearest properties located on Talbot Road (A48). Notably, the Port Talbot Justice

Centre and Her Majesty's Court service is situated on Harbourside Road which is immediately west of the Site.

- 4.4.5. The following measures will be implemented during the construction phase to ensure all general noise impacts are kept to a minimum:
- Employing and correctly operating only modern, relatively quiet and well-maintained equipment (all equipment must comply with the EC Directives and UK Regulations set out in Annex A of BS 5228:2009 Part 1);
 - Noise control equipment such as jackets, hoods and shrouds will be used on construction equipment such as generators etc;
 - Plant will be regularly serviced and maintained;
 - Plant will be located as far as reasonably practicable away from receptors, and will be shut down when not in use;
 - Consideration will be given to the use of “white noise” reversing alarms in preference to tonal reversing alarms;
 - All materials (including waste materials) will be handled, stored and used in a manner that minimises noise. This will include ensuring the efficient handling of materials to avoid unnecessary double handling and to ensure drop heights are minimised. Wherever practicable, materials will be lowered and not dropped from height; and
 - Avoidance of unnecessary noise (such as engines idling between operations, shouting, loud radios or excessive revving of engines) by effective site management.
 - All complaints regarding noise and / or vibration will be recorded and investigated and any corrective actions implemented.

4.5 SURFACE WATER/ POLLUTION PREVENTION MEASURES

- 4.5.1. The nearest surface water features to the sites are Port Talbot Docks, located 60m south, a pond, located 80m south-east, the River Afan, located 370m north-west and Swansea Bay, located 1.5km south-west.
- 4.5.2. The construction phase has the potential to impact upon the water environment through contaminated run-off, vehicular movements and / or as a result of potentially polluting substances such as fuel, oil, chemicals or wastewater. The following mitigation measures will be included within the CEMP and implemented during the construction phase.
- 4.5.3. Sequence and method of working will be planned to minimise impact on environmentally sensitive areas. The methods of working will be clearly outlined during specific operational method statement inductions.
- 4.5.4. Material stockpiles and spoil heaps will be located and constructed to minimise any potential run-off. All works will be managed to minimise any harm to the environment. All adjacent water courses will be monitored to check for any changes in water quality. If any significant changes are identified, the cause will be investigated and clean up measures will be implemented.
- 4.5.5. In order to protect drainage systems, they will be drawn up on the Site Plan showing the nature and course of the drainage on site. Surface water drainage will be marked BLUE and foul water drainage will be marked RED. Measures will also be taken to prevent silting of such waters and pollution spill

kits made available on site in case of emergency or accidental spillage. Discharges will only be made to drains and sewers with appropriate consents providers and regulators.

MITIGATION AND SITE MANAGEMENT

- 4.5.6. The following measures will be implemented during the construction phase to ensure all potential impacts to the water environment are minimised:
- Areas with a greater risk of spillage e.g. vehicle maintenance and storage areas for hazardous materials will be carefully sited e.g. away from drains or areas where surface waters may pond;
 - Measures will be put in place to prevent pollution from construction plant, vehicles and machinery including refuelling in designated areas, on an impermeable surface, away from drains and watercourses and supervised;
 - Plant, machinery and vehicles will be maintained in a good condition, to reduce the risk of hydrocarbon leaks and spills;
 - Washing and dust suppression measures will be managed to ensure that contaminants from plant wash down do not reach surface waters (particularly in relation to works using concrete and with areas where dust and mud can build up);
 - The movement of plant, machinery and vehicles and the storage of materials during the construction works will be at least 10 m from any surface or groundwater features;
 - All drains within the site will be identified and labelled and measure implemented to prevent polluting substances from entering them;
 - Stockpiles / excavated materials will be stored in such a way to minimise silt laden runoff and / or wind-blown particles e.g. by covering or seeding;
 - All loose materials would be covered so as not to give rise to a significant increase in sediment load to the drainage network;
 - Providing and maintaining spill clean-up kits on site at all times and training staff in their use;
 - Work sites to be adequately protected from intruders to prevent vandalism resulting in a pollution incident; and
 - If an unexpected source of pollution is identified on site during works, construction should cease immediately. The area around the pollution should be sealed off to prevent further spread / exposure of contaminants to workers. An appropriate environmental regulator (Natural Resources Wales) should be contacted for further advice.

FLOOD RISK

- 4.5.7. The Site has been assessed as being an area at risk from flooding from rivers or sea without defences (zone 3). The northern area of the Site shows high risk of flooding (30 year return period) with the central area showing medium risk (100 year return period) and the southern area low risk (1000 year return period).
- 4.5.8. The following mitigation measures will be implemented:
- Location of high-risk activities such as stockpiling of materials, on higher ground where possible;
 - All chemicals, fuels or materials that could cause pollution, will be stored in such a way that they can be moved easily in the event of a flood;
 - Detailed procedures for securing the site and plant equipment before a flood event; and

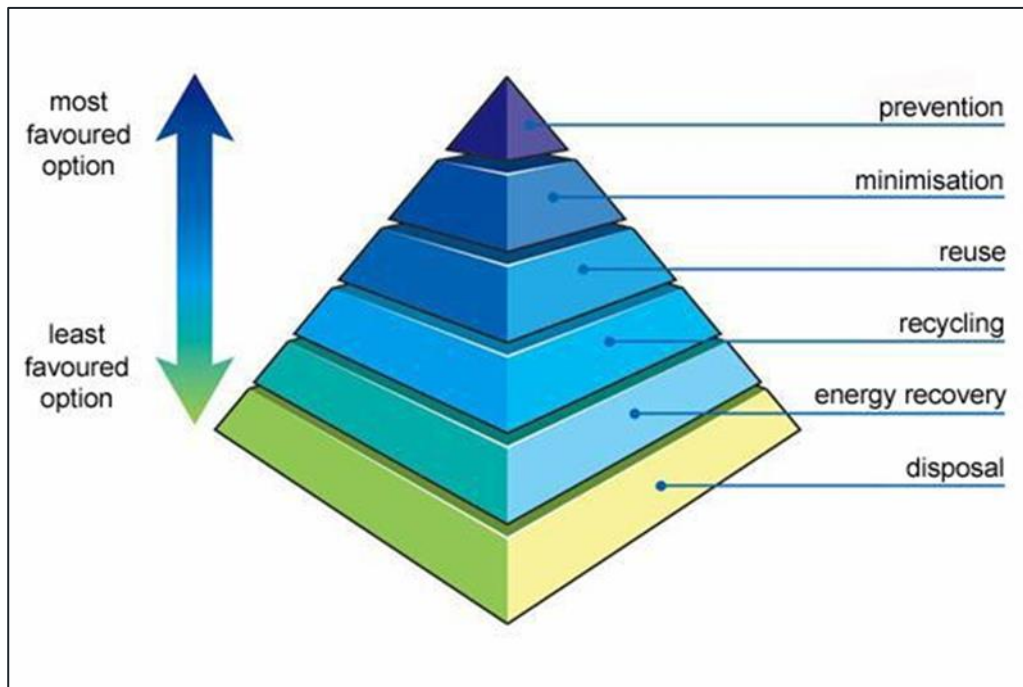
- Checking the Met Office and Natural Resources Wales's (NRW) Flood Warning service to ensure no equipment is stored or located within the flood channel during flood events.

4.6 WASTE AND MATERIALS MANAGEMENT PLAN

WASTE MANAGEMENT PLAN

- 4.6.1. The Site Agent is the Coordinator of the Site Waste Management Plan (SWMP) for this contract and is responsible for ensuring implementing the plan and that all employees are aware of this plan. The Site Agent will ensure the effectiveness of the SWMP on site and will update the plan with waste movements, manage site waste transfer notes and copy the data to the Head Office Document Controller. The Technical Manager collates all the data received to monitor waste movements against waste reduction targets for the company and contract specific targets.
- 4.6.2. The Site Agent will carry out a site induction of all employees including method of handling, segregation, re-use, recycling and disposal of waste. Induction will also include details of checking waste transfer notes, spill response plan and maintenance of records. Toolbox talks on waste management will be held at regular intervals on site to update and ensure all employees are aware of waste management issues and waste targets.
- 4.6.3. Surplus or Waste Materials arise from:
- Materials delivered to site:
 - Those generally intended for inclusion into the permanent or temporary works.
 - Those generated on site:
 - Those which exist on the site such as topsoil, subsoil, trees, demolition arising's etc.
 - Other considerations in relation to waste management on this site include:
 - Reduction of waste where possible (see waste hierarchy information in Figure 4-1);
 - Segregation of waste;
 - Waste disposal;
 - Monitoring and recoding of waste movements;
 - Legal compliance; and
 - Informing the workforce.

Figure 4-1 - Waste Hierarchy



4.6.4. Segregation:

4.6.5. A specific area shall be laid out and labelled to facilitate the separation of materials for potential recycling, salvage, reuse and return. Recycling and waste bins are to be kept clean and clearly marked in order to avoid contamination of materials. The contractor will look at adopting a Waste Colour Coding Scheme. If the skips are clearly identified the bulk of the workforce will deposit the correct materials into the correct skip. Skips for segregation of waste identified currently are:

- Wood;
- Metal;
- Paper/cardboard; and
- Canteen waste / general construction waste

4.6.6. A specific Waste Management Toolbox Talk will be held on this issue to ensure the workforce are aware of the waste management requirements on this project.

4.6.7. Management:

4.6.8. Waste materials fall into three categories for management, these are:

- Re-use;
- Recycle; and
- Landfill.

Re-used

4.6.9. If surplus materials can be used in the permanent works they are classified as materials, which have been re-used. If they are surplus to requirements and need to be removed from site and they can be removed and used in their present form, they can be removed from site for reuse.

Recycling

4.6.10. If the surplus material cannot be re-used in its present form but could be used in a different form, it is sent for recycling such as 50x50 timber to make chipboard.

4.6.11. Landfill

4.6.12. If either of the above cannot be satisfied then the only option left is to send the surplus materials to landfill.

SOIL MANAGEMENT

4.6.13. The following materials will be impacted by the control measures set out in 4.7.6:

- Site Strip/Top soil materials;
- Limestone aggregate (delivered by tipping lorry);
- Silo/Hopper/Batcher supplied materials;
- Sand;
- Cement;
- Lime;
- Plaster; and
- Grout;

4.6.14. The following control measures will be implemented for the storage and handling of loose granular material and bagged powder on site;

- Fine, dry materials shall be stored within buildings or with adequate protection from the wind;
- Silos and stockpiles shall be located, as far as is reasonably practicable, away from residential areas, places of public access, or other sensitive receptors as identified by the Project/Site Manager.
- Slopes of stockpiles, tips and mound., shall be maintained at an angle not greater than the natural angle of repose and sharp changes of shape shall be avoided;
- The surface of stockpiles of dry, fine or friable materials, shall be damped by controlled application of water spray, or shrouded or screened as appropriate and necessary;
- Handling areas shall be maintained as far as is reasonably practicable to reduce the risk of dust emission;
- Static sprinklers, bowzers and other watering methods shall be employed as necessary to reduce or prevent emissions of dust; and
- Procedures for the inspection of storage and handling facilities for dry, fine and friable materials shall be established and agreed, with the Site Environmental Manager, including procedures for the prompt clearance of any spillages (where practicable, spillages of cement powder shall be cleared using wet handling).

FUEL AND CHEMICAL STORAGE

4.6.15. Fuel / oil is to be stored at least 10m from any watercourse in suitable tanks and bunded to at least 110% of capacity. These bunds are to be protected from rainwater to prevent spillage. All refuelling points will have drip trays and spill kits adjacent. A site-specific emergency spill response plan will

be developed and site personnel inducted in its use to ensure any spills are acted upon immediately and correctly. The emergency spill response plan will be tested to ensure its effectiveness. Regular inspections will ensure plant is properly maintained and locked when not in use.

- 4.6.16. Fuel / oil will be located away from access routes, drains and watercourses on flat areas of ground. COSHH data will be available for all Hazardous Substances, which will all be appropriately labelled. All COSHH materials will be stored within a suitable locked chest within the site compound.
- 4.6.17. Environmental Toolbox talks will be given to the workforce when required.

WATER AND ENERGY CONSUMPTION

- 4.6.18. The contractor is committed to monitor, record and reduce our carbon footprint. A weekly record of each site's utility usage is recorded and then reported monthly, this includes water, electricity and diesel. In-line meters will be installed.
- 4.6.19. For this scheme water will be supplied using a hired standpipe from DCWW. Electricity will be provided by a super-silent diesel generator supplied by a reputable hire company ensuring compliance with emissions regulations. All equipment is to be regularly maintained and kept in good working order to ensure efficiency. We will aim to implement modern tools and plant, regularly updating and maintaining the contractors own fleet, seeking more energy efficient models where possible. When attending site, personnel will be asked to record their travel mileage - this will be monitored as we seek to keep resources and sub-contractors as local as possible. Where feasible, the contractor's operatives will van-share to reduce the number of vehicles on the road. Cabins will display posters to remind operatives to be energy conscious - turning water taps and lights off when not in use. Lights with PIR (Passive Infrared) sensors will be installed in the cabins.

4.7 BIODIVERSITY

- 4.7.1. The CEMP shall be implemented alongside the Biodiversity Mitigation Strategy produced by WSP (WSPa, 2021) for the Proposed Development. The Biodiversity Mitigation Strategy documents mitigation and avoidance measures to prevent impact to biodiversity features. A variety of habitats have been recorded within the Site boundary, largely made up of the following Phase 1 habitat types:
 - Dense continuous scrub;
 - Scattered scrub;
 - Ephemeral/short perennial; and
 - Bare ground
- 4.7.2. In addition to the above, large extents of hard-standing and buildings have been recorded within the Site boundary. Three female slow worms *Anguis fragilis* were observed during a reptile survey on Site, assessed as a low population. Scrub habitats within and adjacent to the Site provide suitable conditions for commuting and foraging bats. No roosts have been recorded within or adjacent to the Site. Dense scrub habitats within and adjacent to the Site provide suitable conditions for nesting birds.
- 4.7.3. The habitats within and adjacent to the Site are considered suitable to support important invertebrate species and has confirmed to support small blue butterfly *Cupido minimus* in particular. These pockets of suitable habitat along the coastal strip of Port Talbot are an important stronghold

and important at county level specifically for the small blue butterfly and species such as shrill carder bee's *Bombus sylvarum*.

- 4.7.4. Invasive non-native species (INNS) were identified on Site, these include Japanese knotweed *Reynoutria japonica*, *Cotoneaster sp.* and *Buddleja davidii*.
- 4.7.5. Specific measures documented in the Biodiversity Mitigation Strategy should be adhered to during construction.

GENERAL MITIGATION MEASURES

- 4.7.6. General good construction site management practices should be implemented to minimise the impacts to nature conservation. The following mitigation measures will be carried out throughout the construction phase of the scheme:
 - General good construction site management practices will be implemented to minimise generation of excessive litter, dust, noise and vibration, and the risk of accidental spills;
 - Construction personnel would be made aware of the potential presence of protected species (reptiles and breeding birds) located within the site and surrounding area. They will be shown how to identify signs/evidence of each species during their induction to site and through toolbox talks. Protocol and measures that should be implemented should such species, or evidence of species, be discovered during construction will also be set out appropriately during the induction and toolbox talks;
 - Sensitive site and vegetation clearance methodologies would be followed to minimise the risk of incidental mortality of small mammals and widespread amphibian and reptile species;
 - To ensure legal compliance if a bird nest is found, no works will be undertaken in that area (approximately 10m in all directions for most bird species) until the young birds are no longer dependent on the nest site;
 - Trenches and holes will be covered when not being worked on to prevent entry by mammals and where this is not possible exits and escape routes such as ramps or mammal ladders will be provided;
 - All chemicals, abrasives, liquids will be locked away in a secure container, and away from any watercourses / waterways in order to prevent pollution incidents;
 - Spill kits will be ready to hand in the unlikely event of an oil or chemical spill;
 - Materials that could be used by sheltering animals will not be stored adjacent to potentially suitable habitat, in order to ensure small mammals, reptiles and amphibians do not move onto the construction site;
 - Additionally, trenches will not be left open overnight so as to ensure that animals do not become trapped;
 - All pumps / generators to be set at least 10m away from watercourses, and suitably baffled to reduce the noise;
 - A designated Ecological Clerk of Works (ECoW) will be employed during construction activities to ensure compliance with the CEMP;
 - Vegetation clearance will be carried out in a staged process as per the Biodiversity Mitigation Strategy, reducing the suitability of the habitats for mammals, reptiles and birds which will be overseen by an ECoW; and

- The implementation of CIRIA C741 - Environmental Good Practice on Site (4th Edition) (CIRIA, 2015) will include a requirement for safe storage of all materials and machinery within compounds which would prevent injury to mammals.

- 4.7.7. Where invasive plant species are found and will be directly affected by the works, special measures must be put in place, in the first instance this means avoiding disturbing all stands. Invasive species should be mapped prior to Construction and a specialist contractor engaged.
- 4.7.8. In the unlikely event that new protected species establish in the construction area during construction, works will cease and the ECoW consulted for advice on how to proceed.
- 4.7.9. Table 4-1 below sets out measures to be implemented at each phase of the Proposed Development.

Table 4-1 - Biodiversity Precautionary Measures During Site Clearance and Construction

Phase of Proposed Development	Biodiversity Feature	Timing	Actions	Residual Actions
Pre-Construction	Invasive Non-Native Plant Species (INNS)	Prior to construction between March and September	Mapping of all stands of INNS	Engage specialist contractor to remove Japanese Knotweed and other INNS
Site and Vegetation Clearance	Breeding Birds	24 hours prior to clearance (if undertaken in March – September)	ECoW to give TBT to all site staff ECoW to undertake thorough check of all vegetation suitable for nesting birds 5m buffer implemented around active nests	N/A
	Reptiles	During clearance if undertaken between March – October	ECoW to give TBT to all site staff Two-stage cut of vegetation	N/A

			suitable to support reptiles Thorough check of hibernacula prior to dismantling	
Construction	Invasive Non-Native Plant Species (INNS)	At all times	Contractors and all site personnel to take reasonable steps to avoid spread of INNS	N/A
Landscaping	Habitat creation and enhancement	Immediately following completion of the Proposed Development	As per the Strategy and Landscape Designs	Monitoring of all newly created and enhanced habitats

4.8 LIGHTING

- 4.8.1. The construction works are anticipated to be undertaken during day time hours, therefore no additional artificial lighting will be required. However, some low-level lighting may be required for the security of the site. This should be effectively controlled and it is recommended the lighting is on a timer/ motion detector or similar to ensure the lighting is not being used for long periods of time.

4.9 GENERAL MITIGATION AND SITE MANAGEMENT

- 4.9.1. General good construction site management practices should be implemented to minimise the impacts to nature conservation. The following mitigation measures will be carried out throughout the construction phase of the scheme:
- General good construction site management practices will be implemented to minimise generation of excessive litter, dust, noise and vibration, and the risk of accidental spills;
 - Construction personnel would be made aware of the potential presence of protected species located within the site and surrounding area. They will be shown how to identify signs/evidence of each species during their induction to site and through toolbox talks. Protocol and measures that should be undertaken should such species, or evidence of species, be discovered during construction will also be set out appropriately during the induction and toolbox talks;
 - Should any protected species or evidence of protected species be uncovered or happened upon, the measures outlined in Section 5.4 would be followed;
 - Spill kits will be ready to hand in the unlikely event of an oil or chemical spill;
 - Materials that could be used by sheltering animals will not be stored adjacent to potentially suitable habitat, in order to ensure small mammals, reptiles and amphibians do not move onto the construction site;

- Additionally, trenches will not be left open overnight so as to ensure that animals do not become trapped;
- A designated Ecological Clerk of Works (EcCoW) will be employed during construction activities, including all vegetation clearance, to ensure compliance with the CEMP and associated method statements prepared for the Scheme; and
- The implementation of CIRIA C741 - Environmental Good Practice on Site (4th Edition) (CIRIA, 2015) will include a requirement for safe storage of all materials and machinery within compounds which would prevent injury to mammals.

5 EMERGENCY PREPAREDNESS

- 5.1.1. Environmental Incidents and non-conformances will be dealt with in accordance with the following sections.

5.2 CONTROL MEASURES

- 5.2.1. All site staff are encouraged to draw attention to any environmental risk or potential environmental risk as it may arise on site. In the event of an incident the following actions will be taken:
- Stop work in the affected area;
 - Identify the cause of the hazard or incident and act to prevent it from getting worse;
 - Use appropriate PPE where necessary;
 - Communicate the incident immediately to the Contractor's Construction Manager / ECoW, detailing the nature, cause and location (without putting the health and safety of yourself or others at risk); and
 - The Contractor's Construction Manager will coordinate the emergency response and inform the relevant authorities as necessary.
- 5.2.2. Any lessons learnt from the incident will be communicated to all relevant staff and action taken elsewhere on site if necessary.
- 5.2.3. The following sections provide specific guidance on potential environmental incidents.

5.3 SPILLAGE OF POTENTIALLY POLLUTING SUBSTANCE

- 5.3.1. A procedure for a general response shall be included in the Contractor's Health and Safety Plan, stating the chain of command and standby operatives, and clearly advised to all staff.

5.4 DISCOVERY OF UNIDENTIFIED PROTECTED SPECIES

- 5.4.1. Where protected species are discovered after construction work has begun the Responsible Person will carry out the following:
- Stop work immediately in the area;
 - Demarcate the area and restrict access to ensure that there is no disturbance to the habitat or species;
 - Do not attempt to disturb or remove protected species;
 - Contact the Contractor's Construction Manager who will seek guidance on how to proceed; and
 - Details of the incident, including photos and relevant information on the environmental Incident will be recorded and reported.

5.5 DISCOVERY OF UNIDENTIFIED ARTEFACTS, ARCHAEOLOGICAL OR HISTORICAL FEATURES

- 5.5.1. If archaeological remains are found after construction work has begun the Responsible Person will carry out the following:
- Stop work immediately in the area;
 - Mark the area to avoid further disturbance;

- Protect the find by fencing/blocking it off;
- Contact the Contractor's Construction Manager / ECoW immediately; and
- The Contractor's Construction Manager / ECoW will contact the Environment Team, so that the find can be inspected and recording can be undertaken if necessary.

5.6 DISCOVERY OF UNEXPECTED CONTAMINATION

- 5.6.1. During excavation the exposed ground will be observed for visual signs of contamination e.g. noxious fumes, petrol, oils, solvents, chemical residues, odours e.g. smell of rotten eggs indicates the presence of hydrogen sulphide.
- 5.6.2. When contamination is suspected the Responsible Person will carry out the following:
- Stop work immediately;
 - Report the discovery to the Contractor's Construction Manager / ECoW;
 - Seal off the area to contain the spread of contaminants, as long as it is safe to do so;
 - Contaminated spoil/materials shall be stored so as to prevent escape e.g. lined skip with material covered, covered skip or container;
 - In order to inform the appropriate disposal route, the Contractor's Construction Manager / ECoW will arrange for testing of the material to take place;
 - The Contractor's Construction Manager / ECoW will contact the Employer if it is confirmed that contamination has been found; and
 - Details of the incident, including photos and relevant information on the environmental Incident will be recorded and reported as per the procedure described in Section 5.8 below.

DISCOVERY OF UNEXPLODED ORDNANCE (UXO)

- 5.6.3. A Desk Top Study was also undertaken for potential historic Unexploded Ordnance (UXO) contamination for the future site at Harbourside, and assessed the likelihood of buried UXO. As the site had been subject of construction both Pre and Post WW2, it was considered possible that items of UXO had remained undetected up until this time. Therefore the risk level on the site was deemed medium. However, extensive site works have been carried out on the site over the last five years, and no additional work or mitigation was deemed necessary.
- 5.6.4. During the Construction phase, Risk Assessments will be undertaken prior to each stage of construction commencing for the possibility of Unexploded Ordnance being found within construction areas. Ongoing vigilance by the Appointed Contractor will be ensured to mitigate against potential discovery of unexploded ordnance. If any suspected Unexploded Ordnance is revealed works should immediately cease and a procedure will need to be in place to ensure that advice is sought from an appropriate specialist prior to recommencement.

5.7 EMERGENCY RESPONSE PLAN

- 5.7.1. The emergency contact details for the works shall be clearly displayed at the site where the public can see them.
- 5.7.2. The CEMP will include an Emergency Response Plan which details the processes and methods to be followed in the event of an accidental release of potentially polluting materials. The Emergency Response Plan will contain the following information:

- The names and 24-hour contact details of all emergency response personnel and emergency services;
- The procedures for reporting and documenting an emergency incident;
- Personnel responsibilities during an emergency incident;
- The location of on-site information on potentially polluting materials and spill containment materials; and
- A list of all nearby residential properties, downstream abstractors and other sensitive receptors that could be affected by an environmental incident will be compiled and maintained by the Contractor.

5.7.3. The Emergency Response Plan will be clearly communicated to all site staff.

5.7.4. Emergency procedures will be tested on a regular basis by the Construction Manager / Environmental Manager/Co-ordinator and results reported to the Project Manager.

5.8 INCIDENT REPORTING

5.8.1. The Employer's Project Manager will be notified within 30 minutes of the occurrence, or detection of, an environmental incident. Incidents will be reported to the relevant statutory authorities where appropriate.

5.8.2. Environmental incidents will be recorded by the Contractor including:

- Nature of spill/leak/incident;
- Time/date;
- Exact location and extent;
- Type of material released;
- Approximate amount/volume released;
- Actions taken to prevent contamination;
- Individuals reported to; and
- Lessons learnt.

5.8.3. Lessons learnt will be fed back to site staff through safety and environment briefings and used by the Environmental Manager/Co-ordinator to amend procedures and update the CEMP accordingly.

5.9 RESPONSIBLE PERSONS

5.9.1. Table 5-1 outlines the contractor's relevant contacts and details.

Table 5-1 – Responsible persons and contact details.

Role	Name	Number	Number 2	Email address
H&S Manager	Justin Kingdom	01639 889800	07775 807867	justin.kingdom@andrewscott.co.uk
H&S Advisor	Josh Wilkins	01639 889800	07784 070499	jwilkins@andrewscott.co.uk

Contracts Manager	Bill Pugh	01639 889800	07711 376222	william.pugh@andrewscott.co.uk
Site Agent	Chris Ledden	01639 889800	07393 012756	chris.ledden@andrewscott.co.uk



1 Capital Quarter
Tyndall Street
Cardiff
CF10 4BZ

wsp.com

CONFIDENTIAL