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METHOD STATEMENT & RISK ASSESSMENT

Written By:	Tyler Gibson	**Date Prepared:**	03/01/2024	**Ref. No:**	001
Client:	Surrey County Council	**Site Name:**	Thames Young Mariners		
		Location:	Surrey Outdoor Learning & Development, 76 Mallard Place, Richmond TW10 7RX		
Brief description of Task: **Mobilisation & Site set up.**					

Review

NOTE & INSTRUCTIONS: Reviews are to be undertaken on a monthly basis as a minimum.

Review Date	Signature

Revision

NOTE & INSTRUCTIONS: Revisions are to be undertaken on a 6 monthly basis as a minimum.

Revision Date	Revision Number	Signature

Step 1… ***Detail below the task to be undertaken.***

Describe Task:

- **Take delivery of all plant and equipment required for the first section of works.**
- **Set up all overhead procedures as per GS6 & all ground protection as per the temporary works brief.**
- **Install crane pad.**
- **Mobilise all floating plant and associated materials as per the lift plan provided by LAWS mobilisation department.**

Start Date:	05/02/2024	**Completion Date:**	16/02/2024	**No of Staff:**	10+

List of Significant Hazards:	**1. Lifting operations**	**5. Public**
	2. Overhead/underground services	**6. Manual Handling**
	3. Working near/on water	**7. Weather – Wind, Rain, Ice/Snow**
	4. People plant interface	**8.**

Step 2… ***Identify the equipment to be used and any required permit to work.***

List Plant / Equip to be Used	Special Requirements	Test Cert. Req'd?	Permit to work Req'd?
Welfare Units		Yes	
Fire Extinguishers		Yes	
Overhead Goal posts	Set up to GS6 Standard.	No	
Local barriers and cones			
Ground protection mats		No	
Hiab delivery lorries	Check all lift certs of the crane and operator. To be excorted during any reversing operations.	Yes	
Herras Fencing	Ensure that it is accompanied with ballast as per TW design.	No	
Crane mats		No	
250T Crane	Check all lift certs of the crane + operator	Yes	
Articulated delivery lorries	To be escorted by a bankmans during any reversing operations.	No	
Ravestein Ponton sections		Yes	
Knockdown Pontoon		Yes	
Shunter Tug		Yes	

LAWS Hoppers		Yes	
Safety Boat & outboard		Yes	
Excavator fitted with Movax		Yes	
8T LR excavator		Yes	
Double bunded Fuel Bowser			
Spill trays & spill kits		No	
Site statutory, public & site signage		No	
Various chains / lifting equipment	Check certs are in date.	Yes	
Small hand tools / equipment		No	

The above must be verified BEFORE work commences.

Step 3… ***Identify the operative numbers and skills with Training/certification to undertake the task***

Type of Operative Required	Number of Operatives	Skilled Operative?	Minimum Competency Required
Site Manager	1	Yes	SMSTS, TWSTC, IEMA, Environmental awareness, Waterwise Trained, Full first aid course
Site Forman	1	Yes	SSSTS, TWSTC, INNS, Environmental awareness, Waterwise Trained, Full first aid trained.
Site Ganger	1	Yes	SSSTS, TWSTC, INNS, Environmental awareness, Waterwise Trained, Full first aid trained.
Mobilisation Gang	3	Yes	Appointed Person, Lift Supervisor, Full first aid trained.
Crane operator	1	Yes	CPCS
Excavator operator	1	Yes	CPCS
Tug operator	1	Yes	RYA Certified.
Safety Boat operator	1	Yes	Rya Certified.
Movax operator	1	Yes	CPCS
Pile hand	1	Yes	CSCS
Deck Hand	1	Yes	CSCS
Labourer	2	Yes	CSCS
Banksman	1	Yes	CPCS

The above must be verified BEFORE work commences.

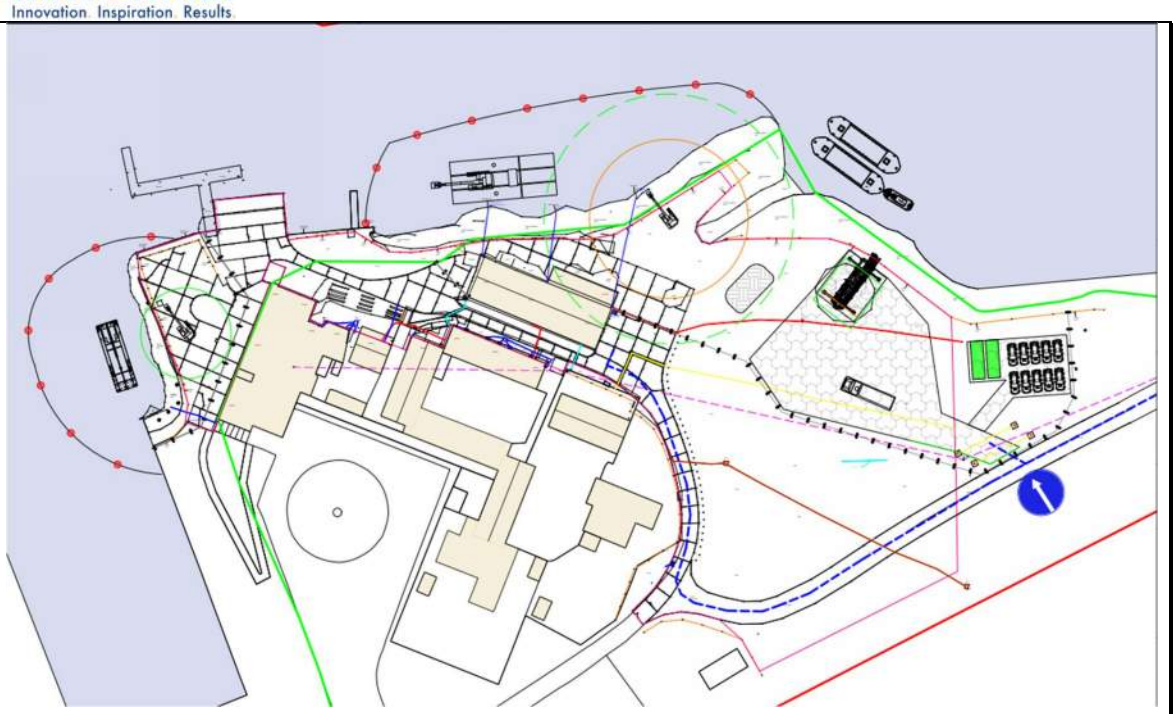
Step 5… *List sequencing of works*	
I.D	Instruction
1.0	***Scope of works covered by method statement***
1.1	Establish site compound
1.2	Mobilise floating plant & associated equipment.
2.0	***Methodology***

2.1	**Induction and site familiarisation:** All site staff will undergo a site-specific induction, the induction will detail the following aspects: 1. Site rules, including Covid-19 Risk Assessment 2. Company and site objectives 3. Location of welfare facilities 4. Site emergency procedures which will include the emergency plan for the dam. 5. Assembly points 6. First aiders and location points 7. Traffic management plan, covering vehicle routes & pedestrian routes & Overheads. 8. Site specific hazards and key controls 9. Site environmental hazards and key controls 10. Spill procedures 11. Near miss reporting 12. Location of; life rings, throw lines, fire extinguishers and spill kits/booms which will be strategically placed for quick deployment. The works shall only be undertaken once this RAMS have been briefed to all site operatives along with any relevant toolbox talks & site inductions undertaken where all competency certs will be reviewed, and copy shall be kept in the site safety file. The correct PPE for the task will be issued to staff before work commences. All compounds will be CAT scanned by a trained and competent person, and any overhead services will be identified and briefed.

Prior to mobilisation the site manager will register the site within the EA's flood warning scheme. This will ensure that they will receive a notification regarding raising water levels that they can then act upon appropriately.

Where possible deliveries will be requested to arrive on a timed basis, also all deliveries will contact the site manager/Foreman 30mins prior to arrival. Site will have 10mph speed limit in place on the access track and 5mph once inside the compound area. Any reversing operations will be accompanied by a banksman.

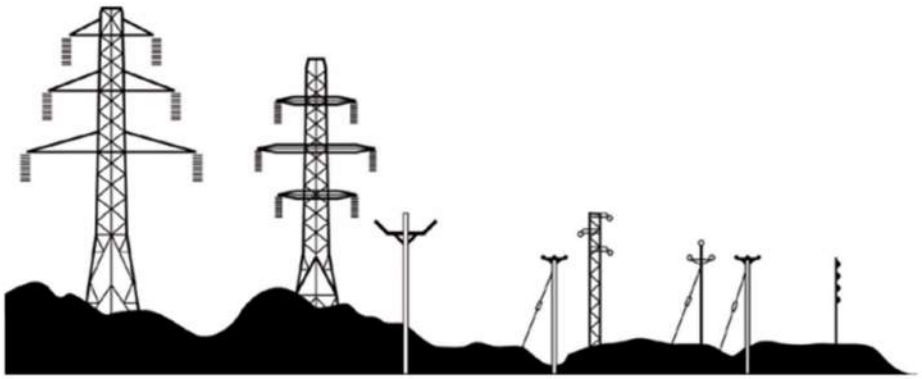
A double clipped Herras fenced compound will be established, see Access and Works location plan. Within the compound area will be a Welfare unit, Parking, Site stores, Fuel Bowser. A large operating area will also be established to accompany craning operations and deliveries, this will be large enough to allow for a one-way system to be in place. All materials required will be brought to site on a scheduled delivery basis so as not to have any excess materials stored within the compound areas.



2.2

A herras panel perimeter will be established to secure the site, the herras fencing will be accompanied by the required kentledge as per the TW design brief. Site signage will be displayed where needed for various instructions/warnings.

Goalposts will be set up as per the GS6 guidance at the entrance to the LAWS site to accommodate a telecom line that runs through the site.



- refer to the Energy Networks Association (ENA) publication *Look Out Look Up! A Guide to the Safe Use of Mechanical Plant in the Vicinity of Electricity Overhead Lines.*[2] This advises establishing exclusion zones around the line and any other equipment that may be fitted to the pole or pylon. The minimum extent of these zones varies according to the voltage of the line, as follows:
  - low-voltage line – 1 m;
  - 11 kV and 33 kV lines – 3 m;
  - 132 kV line – 6 m;
  - 275 kV and 400 kV lines – 7 m;

In addition to this there are also several other services that run through the site: Foul, Electric and Gas, where access is required over these services a crossing point is to be created as per the TW design brief provided by LAWS technical team. The Electric and Gas require a 100mm scrape and 100mm thick timber mats placed atop followed by the heavy-duty trackway. The positioning of the timber mats will be undertaken by a skilled excavator operative with lifting endorsements, the mats will be secured to the excavator using a set of 2 leg chains up to a suitable shackle, these will be selected and secured by a trained slinger signaller, tag lines will be used to control the lift operation and will be repeated until the required number of mats has been laid.. The foul will require a “bridge” to be created using a combination of stone and bog mats as per the TW design to alleviate any pressures placed on to it.

2.3	A key supplier for LAWS will supply and install a heavy-duty trackway as per the above site plan. This trackway can accommodate 70T point load and 1000T gross train weight. At the rear of the trackway where the spoil heap is located 5m x 1m x 100mm timber matts will be positioned using the same methodology mentioned above to allow the wagons to safety tip the stone away from the trackway, preventing any damage to it.
2.4	Once the above has been established the welfare and stores can be put into position as per the site set plan, along with local crowd barriers to enforce a walkway for pedestrians. All parking within the compound is to comprise of reverse parking only.
2.5	Next, the crane will arrive on site along with the LAWS mobilisation crew. Under the supervision of the lift supervisor a crane pad will be installed using 3no 5m x 1m x 100mm bog mats located at each rigger location along with specialist crane mats that will be supplied by the mobilisation team. Once the crane pad has been established, the crane can then begin its rigging process. When the crane is set up and all involved in the lifting process are satisfied, then the floating plant can start to be mobilised. This process will be undertaken under the Lift Plan provided by the Appointed person, all personnel involved with the lift process will need to be signed up to this lift plan and fully understand their role. Upon completion of all lifts the crane will de-rig and the crane mats supplied by the mobilisation team will be removed from site. The above activity will be repeated when the crane returns at a later date to load the next batch of piles onto the pontoon and during de-mobilisation of the floating kit.
2.6	Once all floating and static plant has been mobilised, site will then take delivery of the Movax excavator. The movax will be tracked to the pontoon via the grass slip way and manoeuvred onto the pontoon ensuring that the configurations and freeboard as per the stability calculations are maintained throughout.
2.7	Next, the safety boat will deploy a line of buoys demarcating the LAWS working areas within the watercourse to ensure that no unauthorised boaters enter our working space.
3.0	***Consents, licences & environmental issues***
3.1	FRAP
3.2	Planning Permission
3.3	
4.0	***Identify any Manual Handling involved in this Task*** (Ensure these items are included on the Manual Handling Poster)
4.1	• Erecting herras fencing. • Use of hand tools. • Attaching lifting appliances. • Placing of buoys. • General set up of site equipment (fire trolley/signs ect)
5.0	***Identify any hazardous substances used during the undertaking of this task*** **(Ensure these items are included on the COSHH Poster)**

5.1	• Hydraulic Oil • Diesel • Housekeeping products. • Petrol

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Step 6… ***Identify the Additional Risks and Personal Protective Equipment Required.***

What are the Hazards?	Who is at Risk?	How are they at Risk?	Without Controls				Site Specific Controls to be put in place	With Controls				Sign Once Action Complete
			Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)		Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)	
							•					
Manoeuvring of Plant	All site operatives and visitors	Contact with moving Plant	5	4	20	Y	• Only essential authorised staff to work near plant. • Line of communication to be established between plant operator and other(s) working in close proximity. • Only essential site personnel allowed in work areas. All visitors must be accompanied at all times. • All site staff and visitors must wear hi visibility vests at all times. •	5	1	5	N	
Operating in the working area	All site operatives	Slips, trips and falls Contact with moving Plant Entrapment	5	3	15	Y	• Regular inspection of site to take place (minimum daily) to assess conditions. • Plant operator to ensure that they operate equipment from a safe working area. • If water conditions cause concern, work must stop immediately. • Only designated travelling routes/ work areas to be used or worked.	5	1	5	N	
Unfit/ Untrained/ Unauthorised staff operating plant	All site operatives and visitors	Contact with moving Plant Equipment damage Property damage	4	3	12	Y	• Staff operating Plant must be adequately trained and certified (CITB). • Only medically fit staff to operate plant. • Any operator who may have a medical condition that could affect their capabilities must inform the site manager. • Anyone found operating plant under the	4	1	4	N	

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							influence of alcohol/drugs will be removed from site immediately. Anyone found misusing or abusing plant will be disciplined. • Any unauthorised person found operating plant will be subject to disciplinary action.					
Working in adverse weather conditions	All site operatives and visitors	Slips, trips and falls Vehicle collisions	4	4	16	Y	• In extreme adverse weather conditions, alternative work will be found or the job rescheduled. • Staff to be provided with suitable PPE which offers adequate thermal comfort. • Staff to be provided with suitable anti-slip footwear. • Suitable, adequate welfare facilities to be provided and staff actively encouraged to use the facilities provided. • Plant to be adequately lit when working out of daylight hours or during times of adverse visibility. • Access/ egress routes to be suitably maintained, matting may be required	4	1	4	N	
Working near plant	All site operatives	Contact with moving equipment	5	4	20	Y	• Offloading/ transfer points to be adequately fenced to prevent persons entering the area. • Appropriate warning signs to be posted. • Only essential authorised staff to work near plant. • Line of communication to be established between plant operator and other(s) working in close proximity.	5	1	5	N	
Working in adverse weather conditions	All site operatives and visitors	Slips, trips and falls Vehicle collisions	4	4	16	Y	• In extreme adverse weather conditions, alternative work will be found or the job rescheduled. • Staff to be provided with suitable PPE which	4	1	4	N	

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							offers adequate thermal comfort. • Staff to be provided with suitable anti-slip footwear. • Suitable, adequate welfare facilities to be provided and staff actively encouraged to use the facilities provided. • Plant to be adequately lit when working out of daylight hours or during times of adverse visibility. • Access/ egress routes to be suitably maintained, matting may be required					
Noise	Site operatives Members of the public	Hearing Impairment Noise nuisance	4	5	20	Y	• Appropriate ear protectors to be worn by all operatives within close vicinity of the activity. • Operation to be restricted to site opening times. • Site Manager has a noise monitor on site and will monitor what noise level is being produced. • PPE will be worn according to HSE guidelines. • The indirect effects of noise are to be assessed and accounted for-such as interference with audible • warnings or other sounds and communications that need to be audible in order to reduce risk at work.	4	1	4	N	
							• The impact of noisy machinery or plant in the area assessed to receptors. • Ear defenders are worn by the operatives in the vicinity of the noise. • Hood/ doors on the plant and equipment are					

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Noisy machinery or plant	Site operatives	Environmental noise Hearing impairment	4	5	20	Y	kept shut. • When plant is not in operational use the engines are turned off. • Plant is well maintained and noise suppression equipment such as muffs and silencers are used where necessary. • Personal contact is made with persons living or working in adjoining properties, or in other sensitive areas e.g. schools, hospitals. • Consultation with the Local Authority may be required regarding permitted hours of work and noise monitoring. • Manufactures guidelines will be followed when using any small tools or machine attachments.	4	1	4	N	
Combustible materials	Site operatives and visitors	Exposure to fire	4	2	8	Y	• Store combustible materials in a secure area away from sources of ignition. • Suitable fire fighting equipment is to be properly sited and a safe means of escape provided. • Ensure emergency evacuation procedures have been drawn up and are brought to the attention of all personnel on site.	4	1	4	N	
Toxic substances	Site operatives	Poisoning, Respiratory problems, Irritation to eyes or skin	4	2	8	Y	• COSHH assessments are carried out on all substances used.	4	1	4	N	

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Fumes	Site operatives and visitors	Explosions Asphyxiation Headaches from gasses from plant used or sludge / residues disturbed	5	4	20	Y	• No smoking or naked lights. • Ventilate the atmosphere with a gas monitor. • Use local extract ventilation. • Prepare method statement incorporating a safe system of work. • Entry only allowed on a 'Permit to work' system. COSHH assessments are carried out on all substances used.	5	1	5	N	
Work Equipment (including the use of portable tools and vibratory equipment)	Site operatives	Vibration-White finger Explosi ons Fires Noise Injuries to face and body	4	2	8	Y	• All safety and work equipment to be fit for purpose and regularly inspected and maintained. • All portable electrical equipment to be PAT tested. • Operative to be trained in the correct use of equipment and to wear appropriate PPE (gloves, ear defenders, safety goggles etc). • Portable equipment with potential significant risk e.g. disc cutters, grinders, portable gun drills etc shall be inspected for deterioration on a weekly basis and the inspections recorded. • All portable electrical equipment to be operated either by 110v transformer or battery. • Use anti-vibration equipment where appropriate and adhere to the recommended working times. Manage vibration exposure time using the LAWS HAVS forms.	4	1	4	N	
Poor Illumination	Site operatives and visitors	Slips, trips and falls	4	2	8	Y	Provide adequate illumination within the working space.	4	1	4	N	
Underground or		Contact with					• Ensure service location plans are obtained and clearly mark all underground services so that					

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Overhead services	Site operatives and visitors	electricity or and electrical discharge Damage to services	5	4	20	Y	contractors are aware of their location and if overhead cables or pipes cross or pass near to the site, adequate protection must be provided. Refer to risk assessment for overhead and buried services.	5	1	5	N	
Inadequate welfare facilities	Site operatives	Disease Ill health	4	3	12	Y	• Welfare facilities shall be suitable, sufficient, functional and kept clean. These will meet all criteria laid out in CDM regs.	4	1	4	N	
Transport to and on the site	Site operatives Motorist	Contact with moving vehicles Slippery road	5	3	15	Y	• Provide a suitable access road, traffic control measures, warning signs, speed limit signs, pedestrian segregation, and designated car parking areas. • Ensure access and egress routes are maintained and kept clean at all times. Provide vehicle wash facilities where necessary.	5	1	5	N	
Hazardous substances	Site operatives and visitors	Exposed to or in contact with harmful substances. Exposure to fire	4	3	12	Y	• Hazardous substances are stored in a secure and bunded container and away from sources of ignition. • Ensure a spill kit and where necessary bunds are available. • When handling hazardous materials ops to wear PPE based on the data sheet for the specific product. • Refer to the COSHH assessments for further control measures.	4	1	4	N	
Buried services	All site operatives	Contact with buried services					• Before commencing work, all known services to be identified/ marked out/ made aware to site manager and associated staff.					

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		Contact with electricity	5	4	20	Y	• Staff operating plant to proceed with caution at all times. • No excavation work to take place within 5-15m either side (dependent upon site condition) of any identified buried service. • If buried services need to be travelled across with heavy plant, site assessment to be undertaken by authorised personnel to ascertain if ground conditions are acceptable. • If ground conditions are not acceptable, no heavy plant to pass over this area. • If required, additional work(s) to be carried out to make travelling over buried services safe i.e. matting, concrete pad. • Should any unidentified buried services be identified, work(s) will stop immediately until an assessment has been made of what further action(s) are required by authorised personnel. • If buried services need to be exposed/ identified, • extreme caution must be taken and only hand tools used for the last 400mm of ground.	5	1	5	N	
Drowning	All site operatives and visitors	Slips, trips and falls	5	4	20	Y	• All staff working on, near (within 3m) or above water must wear a life jacket which is approved and is within its inspection/test date. • Staff wearing life jackets are to be fully trained in their use and operation. • Life jackets to be tested/maintained in accordance with manufacturers recommendations and the test certificates	5	1	5	N	

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							retained. • Any life jacket which has a defect or has not been tested within the specified period must be withdrawn from service until repaired/replaced. • Adequate first aid facilities to be available at all times when staff are working near water. • Anyone not wearing their life jackets will be subject to disciplinary action. • Staff required to work in water must be adequately trained and will only work at water level-under NO CIRCUMSTANCES will staff be allowed to lone work in water. Working in flows of water which are deemed 'strong' will be subject to further controls. • I.e. method statements, permit to work, etc.					
Contact with Vermin	All site operatives and visitors	Leptospirosis	4	4	16	Y	• Staff to be provided with suitable Personal Protective Equipment (PPE) and are trained in its use. • Always use waterproof gloves when working in water/ other PPE and always wash hands/ exposed skin after contact with water. • Staff to receive adequate information, instruction and supervision regarding Leptospirosis eg leaflets INDG84. • Staff to be encouraged to report sightings of vermin activity. • Any dead vermin to be left in situ. Under no circumstances must anyone remove vermin by direct contact unless authorised to do so.	4	1	4	N	

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							• Any dead vermin which have been removed must be carried out using a non-contact method. I.e. helping hand. • Any dead vermin which have to be removed must be disposed of in an approved manner. • Suitable/adequate welfare faculties to be provided • and staff actively encouraged to use the facilities provided.					
Exposure to Cold/Wet conditions	All site operatives and visitors	Thermal Comfort	4	3	12	N	• Staff to be provided with suitable PPE which offers thermal comfort. • Suitable welfare facilities to be provided. • Staff working in cold/wet conditions will be allowed to take sufficient breaks to allow them to work in comfort. • In extreme adverse weather conditions, alternative work may be carried out.	4	1	4	Y	
High winds	All Site operatives and visitors.	Slips, Trips & Falls. Flying debris.	4	2	8	Y	• Staff to be made aware of the hazards associated with working near water in high winds during the induction. • Operators to take particular care when operating in windy conditions. If they consider it unsafe they must stop work, make the Plant safe, and report it to the site manager. • In extreme windy conditions, the job should be suspended until conditions improve.	4	1	4	N	
							• Housekeeping standards must be maintained to an acceptable standard, paying particular attention to tripping / stumbling hazards. • Any material/sludge to be cleaned up as soon					

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Rainy wet conditions	All Site operatives and visitors.	Slips, Trips & Falls. Vehicle collisions	4	2	8	Y	as possible or the area cordoned off. • Longer term sites should have surface water ditches alongside access/ egress routes to prevent vehicles slipping. • Access/ egress routes should have hardcore layerto minimise vehicles skidding on mud.	4	1	4	N	
Foggy conditions	All Site operatives and visitors.	Slips, Trips & Falls.	4	2	8	Y	• Site manager to assess fog/poor visibility conditions on site. If considered unsafe, the equipment will be stood down and parked until conditions improve. • When working in poor light conditions, Machines are to be adequately lit	4	1	4	N	
Public accessing site during non- working hours	Members of the public	Slip, trip and falls Falling from height Entrapment Equipment security	4	2	8	Y	• Ensure all gates and fences are secure. • Ensure all equipment is locked and in a secure holding/ compound area. • Ensure that all signage is clear and visible. • Employ security personnel for problem sites. • Consider employing overnight/ weekend security. • Fit window cab guards to machines and equipment. • Employ deadlocks/ isolators to machinery/ equipment.	4	1	4	N	
Lifting procedures	Site staff / Site visitors	Falls from height / overturning of lift equipment / entrapment	5	5	25	**Y**	• Lifting procedures to controlled by the issue of 'Permit to Lift' • Tool box talks • Banksman / slinger – signaller / crane lift supervisor to supervise lifts as required • Equipment to be tested / compliant • Equipment to be used in conjunction with lifting duty / radius charts	5	1	5	**N**	

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							• Stability of excavator to checked before use • Competent lift operative • Daily site briefings • Implementation of operational controls – OC25 • Slew radius to be operated through 180 degrees and within compound area only • Excavator jib not be operated outside of the site boundary / over the top of the herras fence • Machine bucket to be removed from machine when undertaking lifting duties • Machine Operators who have lifting Op on CPCS card only to carry out lifts •					
Lifting appliance failure	Site operatives	Entrapment/Injury	5	4	20	Y	• Inspect the condition of chains and shackle before and after use • Test certificates required for all lifting tackle • All lifting operations on site are to have a permit to lift issued before lifting takes place • Chains and slings to be inspected before use and tested every 6 months, test sheets to be retained in site file • 12 month thorough examinations for lifting devises to be in place for all hiabs and excavators • Excavators used as a manual handling aid not to lift in excess of the SWL	5	1	5	N	

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Step 6… ***Identify the Additional Risks and Personal Protective Equipment Required.***

What are the Hazards?	Who is at Risk?	How are they at Risk?	Without Controls: Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)	Site Specific Controls to be put in place	With Controls: Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)	Sign Once Action Complete

Risk Rating:

Likelihood→ ↓Severity	Likely (5)	Probable (4)	Possible (3)	Unlikely (2)	Very unlikely (1)	KEY:
Death (5)	25	20	15	10	5	High risk
Major (Life threatening) Injury (4)	20	16	12	8	4	Medium risk
Major (non-life threatening)Injury (3)	15	12	9	6	3	Low risk
Minor Injury (2)	10	8	6	4	2	Very Low risk
No Injury (1)	5	4	3	2	1	

PPE Required:

Hard hat/High-Vis/Safety Boots	✓
Eye/ ear protection	✓
Suitable gloves	✓
Life Jacket	✓
Safety harness	
Other:	

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Step 7… *Before undertaking the task ensure the method statement is approved, signed & distributed*					
Approval	**Signature**	**Date Approved**	**Distribution List**	**No.**	**Issued ✓**
			Client	01	✓
Land & Water			**Staff carrying out task**	02	
Client ***(If Required)***			**Site file**	03	

Toolbox Talk

I am signing below to say that I have received a Toolbox Talk on the attached Method Statement and I am happy that I have understood what is required of me to undertake the task safely. I agree to stop work immediately if anything changes that could significantly alter the method or the task safety.

Date Undertaken: ……. **Subject: ……..**

INITIAL	SURNAME	JOB DESCRIPTION	COMPANY	SIGNATURE

Name of Person giving Talk: …… Signature: …….

Brief Back

NOTE & INSTRUCTIONS: This Brief Back is to be undertake no less than 1 day and no more than 3 days into the task. The site team are to brief back the requirements of this method statement to the Site Manager or Foreman to ensure that the requirements are understood by all involved.

Date Undertaken:

INITIAL	SURNAME	JOB DESCRIPTION	COMPANY	SIGNATURE

Name of Person Receiving Brief Back: ……. Signature: ……

METHOD STATEMENT & RISK ASSESSMENT

Written By:	Tyler Gibson	**Date Prepared:**	03/01/2024	**Ref. No:**	001
Client:	Surrey County Council	**Site Name:**	Thames Young Mariners		
		Location:	Surrey Outdoor Learning & Development, 76 Mallard Place, Richmond TW10 7RX		

Brief description of Task:

Installed piles a 2 locations within the Thames Young Mariners watercourse.

Install platypus anchors.

Back fill and re-grade the back behind the new pile line.

Review

NOTE & INSTRUCTIONS: Reviews are to be undertaken on a monthly basis as a minimum.

Review Date	Signature

Revision

NOTE & INSTRUCTIONS: Revisions are to be undertaken on a 6 monthly basis as a minimum.

Revision Date	Revision Number	Signature

Step 1… ***Detail below the task to be undertaken.***

Describe Task:

- **Installing 33m of AZ19-700 piles using a Ravenstein pontoon and excavator mounted movax.**
- **Back fill and re-grade the back behind the AZ piles section.**
- **Install approx. 47m GU21 N sheet piles using a Ravenstein pontoon and excavator mounted movax.**
- **Prepare GU21 N piles for Platypus anchors.**
- **Install platypus anchors.**
- **Backfill and regrade behind GU21 N pile line.**

Start Date:	05/02/2024	**Completion Date:**	16/02/2024	**No of Staff:**	10+

List of Significant Hazards:	**1. Lifting operations**	**5. Public**
	2. Noise	**6. Manual Handling**
	3. Working near/on water	**7. Weather – Wind, Rain, Ice/Snow**
	4. People plant interface	**8. Vibration**

Step 2… ***Identify the equipment to be used and any required permit to work.***

List Plant / Equip to be Used	Special Requirements	Test Cert. Req'd?	Permit to work Req'd?
Welfare Units		Yes	
Fire Extinguishers		Yes	
Overhead Goal posts	Set up to GS6 Standard.	No	
Local barriers and cones			
Ground protection mats		No	
Hiab delivery lorries	Check all lift certs of the crane and operator. To be escorted during any reversing operations.	Yes	
Herras Fencing	Ensure that it is accompanied with ballast as per TW design.	No	
Crane mats		No	
250T Crane	Check all lift certs of the crane + operator	Yes	
Articulated delivery lorries	To be escorted by a bankmans during any reversing operations.	No	

Ravestein Ponton sections		Yes	
Knockdown Pontoon		Yes	
Shunter Tug		Yes	
LAWS Hoppers		Yes	
Safety Boat & outboard		Yes	
Excavator fitted with Movax		Yes	
8T LR excavator		Yes	
Double bunded Fuel Bowser			
Spill trays & spill kits		No	
Site statutory, public & site signage		No	
Various chains / lifting equipment	Check certs are in date.	Yes	
Small hand tools / equipment		No	

The above must be verified BEFORE work commences.

Step 3… ***Identify the operative numbers and skills with Training/certification to undertake the task***

Type of Operative Required	Number of Operatives	Skilled Operative?	Minimum Competency Required
Site Manager	1	Yes	SMSTS, TWSTC, IEMA, Environmental awareness, Waterwise Trained, Full first aid course
Site Forman	1	Yes	SSSTS, TWSTC, INNS, Environmental awareness, Waterwise Trained, Full first aid trained.
Site Ganger	1	Yes	SSSTS, TWSTC, INNS, Environmental awareness, Waterwise Trained, Full first aid trained.
Mobilisation Gang	3	Yes	Appointed Person, Lift Supervisor, Full first aid trained.
Crane operator	1	Yes	CPCS
Excavator operator	1	Yes	CPCS
Tug operator	1	Yes	RYA Certified.
Safety Boat operator	1	Yes	Rya Certified.
Movax operator	1	Yes	CPCS
Pile hand	1	Yes	CSCS
Deck Hand	1	Yes	CSCS
Labourer	2	Yes	CSCS
Banksman	1	Yes	CPCS

The above must be verified BEFORE work commences.

Step 5… *List sequencing of works*	
I.D	Instruction
1.0	***Scope of works covered by method statement***
1.1	Pile the western aspect of the works.
1.2	Backfill and re-grade of piles in the western location.
1.3	Pile the northern area of revetment.
1.4	Install platypus anchors to northern revetment.
1.5	Backfill and re-grade northern revetment.
2.0	***Methodology***
2.1	**Induction and site familiarisation:** All site staff will undergo a site-specific induction, the induction will detail the following aspects: 1. Site rules, including Covid-19 Risk Assessment 2. Company and site objectives 3. Location of welfare facilities 4. Site emergency procedures which will include the emergency plan for the dam. 5. Assembly points 6. First aiders and location points 7. Traffic management plan, covering vehicle routes & pedestrian routes & Overheads. 8. Site specific hazards and key controls 9. Site environmental hazards and key controls 10. Spill procedures 11. Near miss reporting 12. Location of; life rings, throw lines, fire extinguishers and spill kits/booms which will be strategically placed for quick deployment. The works shall only be undertaken once this RAMS have been briefed to all site operatives along with any relevant toolbox talks & site inductions undertaken where all competency certs will be reviewed, and copy shall be kept in the site safety file. The correct PPE for the task will be issued to staff before work commences. All compounds will be CAT scanned by a trained and competent person, and any overhead services will be identified and briefed.

2.2	Prior to the piling operations a site engineer will have been to site to apply various setting out points along the desired pile line, these points will then be located using GPS GNSS unit to ensure that the pile line can be monitored throughout its installation ensuring it is on the correct course. As cracks have been noted in the outbuildings at TYM, a site engineer will be installing several crack gauges throughout the building to ensure that they can monitored over the course of the works, in addition to this LAWS will be implementing a seismograph to monitor vibration levels during the installation, if excessive vibration levels are reach then an alarm will sound and inform the pile hand, the vibration frequency of the movax will then be adjusted back to a satisfactory level before proceeding. The first pile will be installed at the furthest west location, this is expected to be 1 pile wide before returning back towards the bank approx. 7m and finalising its run parallel to the bank a further 25m, several clutches will be needed in order to achieve the correct orientation of the piles on route. Should any piles hit refusal before reaching the desired finish heigh then LAWs will contact the design team for guidance and present all options available to the client for further instruction. An excavator mounted with a side grip movax will be used to position and drive the piles in to their location, the movax will pick up one pile at a time aided by the guidance of the pile hand, once selected the operator will position the pile and begin driving it in its location. The piles will be check periodically for levelness both vertically and horizontally throughout its installation. The line of the piles will also be checked periodically to ensure that there is no deviation. This process will be repeated until all the piles have been installed within this location and the Northern location.
2.3	Once the piles have been installed in the Westerly location, an 8T Long reach will be sited on the bank, ensuring that it maintains the 45 degree rule of working on a bank, the long reach will be utilised to implement the cut and fill detail of bank as per the design. Once the bank has been cut in steps the back fill can proceed this will be completing using a combination plant, firstly a 38T 22m long reach will load the Indian hopper at the site works area shown on the site plan with fill material specified on the drawings, the hopper will be transported by a shunter tug to the piled location and moored along the knockdown pontoon. The knockdown pontoon will begin to unload the hopper of the fill material behind the piles in layers, a rammex will be lifted down behind the piles and onto the fill material ensuring that it is always secured to the 8T LR on the bank, the rammex will then be operated remotely to compact the fill material in accordance with MCHW series 600. This operation will continue until the fill has reached it finalised height, this will then be dressed with at least 100mm of type 5A/5B topsoil and seeded.

2.4	Whilst the back filling is operational, the Ravestein pontoon will return to the works area where the crane will have been re mobilised to load the remaining GU21 N piles onto the pontoon as per the mobilisation/site set up RAMS in order to commence the piling operations on the norther extent. When the Ravestein pontoon is in position in the northern location, the methodology mentioned above in step 2.2 will be implemented to install the GU21 N piles. Once this piling operation has been complete, the Ravestein pontoon, excavator and Movax can be demobilised from site.
2.5	Following the installation of the GU21 N piles, these will need to have holes blown out of them using a gas axe at various locations to allow for the installation of the platypus anchors. The operative blowing the holes in the piles will be equipped with an air fed welding mask to limit their exposure to any fumes. To prevent the operation being undertaken from the water, the piles will be partially back filled and rammax to provide a dry, solid surface for the operative to work from. Once enough of the piles have been blown out to ensure the operative is not within the slew radius of the excavator on the knockdown pontoon, the platypus anchors can start to be driven in, this will be completed with a post knocker attachment on the excavator that will drive the rods in at their required angle and depth, once that depth has been achieved the platypus anchors will then be pulled back out using a specialist hydraulic pump until it reaches the desired KN force. Once the platypus anchors have been installed the backfilling process will begin, at this location the 22m Long reach will be utilised to partially fill some of the void and in areas where it cannot reach the knockdown pontoon will fill the remainder. Again, ensuring that the fill material is compacted as per the MCHW series 600 mention above in section 2.3. The fill material will then be dressed with a minimum 100mm of type 5A/5B topsoil.
2.6	Following completion of these works the site engineer will record the readings from the crack monitors to ensure no movement has occurred.
2.7	Following completion all plant and equipment required for this activity can be de-mobbed from site.
3.0	***Consents, licences & environmental issues***
3.1	FRAP
3.2	Planning Permission
3.3	
4.0	***Identify any Manual Handling involved in this Task*** (Ensure these items are included on the Manual Handling Poster)
4.1	• Use of hand tools. • Attaching lifting appliances.

5.0	***Identify any hazardous substances used during the undertaking of this task*** **(Ensure these items are included on the COSHH Poster)**
5.1	• Hydraulic Oil • Diesel • Housekeeping products. • Petrol

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Step 6… ***Identify the Additional Risks and Personal Protective Equipment Required.***

What are the Hazards?	Who is at Risk?	How are they at Risk?	Without Controls				Site Specific Controls to be put in place	With Controls				Sign Once Action Complete
			Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)		Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)	
							•					
Manoeuvring of Plant	All site operatives and visitors	Contact with moving Plant	5	4	20	Y	• Only essential authorised staff to work near plant. • Line of communication to be established between plant operator and other(s) working in close proximity. • Only essential site personnel allowed in work areas. All visitors must be accompanied at all times. • All site staff and visitors must wear hi visibility vests at all times. •	5	1	5	N	
Operating in the working area	All site operatives	Slips, trips and falls Contact with moving Plant Entrapment	5	3	15	Y	• Regular inspection of site to take place (minimum daily) to assess conditions. • Plant operator to ensure that they operate equipment from a safe working area. • If water conditions cause concern, work must stop immediately. • Only designated travelling routes/ work areas to be used or worked.	5	1	5	N	
Unfit/ Untrained/ Unauthorised staff operating plant	All site operatives and visitors	Contact with moving Plant Equipment damage Property damage	4	3	12	Y	• Staff operating Plant must be adequately trained and certified (CITB). • Only medically fit staff to operate plant. • Any operator who may have a medical condition that could affect their capabilities must inform the site manager. • Anyone found operating plant under the	4	1	4	N	

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What are the Hazards?	Who is at Risk?	How are they at Risk?	Without Controls				Site Specific Controls to be put in place	With Controls				Sign Once Action Complete
			Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)		Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)	
							influence of alcohol/drugs will be removed from site immediately. Anyone found misusing or abusing plant will be disciplined. • Any unauthorised person found operating plant will be subject to disciplinary action.					
Working in adverse weather conditions	All site operatives and visitors	Slips, trips and falls Vehicle collisions	4	4	16	Y	• In extreme adverse weather conditions, alternative work will be found or the job rescheduled. • Staff to be provided with suitable PPE which offers adequate thermal comfort. • Staff to be provided with suitable anti-slip footwear. • Suitable, adequate welfare facilities to be provided and staff actively encouraged to use the facilities provided. • Plant to be adequately lit when working out of daylight hours or during times of adverse visibility. • Access/ egress routes to be suitably maintained, matting may be required	4	1	4	N	
Working near plant	All site operatives	Contact with moving equipment	5	4	20	Y	• Offloading/ transfer points to be adequately fenced to prevent persons entering the area. • Appropriate warning signs to be posted. • Only essential authorised staff to work near plant. • Line of communication to be established between plant operator and other(s) working in close proximity.	5	1	5	N	
Working in adverse weather conditions	All site operatives and visitors	Slips, trips and falls Vehicle collisions	4	4	16	Y	• In extreme adverse weather conditions, alternative work will be found or the job rescheduled. • Staff to be provided with suitable PPE which	4	1	4	N	

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Step 6… ***Identify the Additional Risks and Personal Protective Equipment Required.***

What are the Hazards?	Who is at Risk?	How are they at Risk?	Without Controls				Site Specific Controls to be put in place	With Controls				Sign Once Action Complete
			Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)		Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)	
							offers adequate thermal comfort. • Staff to be provided with suitable anti-slip footwear. • Suitable, adequate welfare facilities to be provided and staff actively encouraged to use the facilities provided. • Plant to be adequately lit when working out of daylight hours or during times of adverse visibility. • Access/ egress routes to be suitably maintained, matting may be required					
Noise	Site operatives Members of the public	Hearing Impairment Noise nuisance	4	5	20	Y	• Appropriate ear protectors to be worn by all operatives within close vicinity of the activity. • Operation to be restricted to site opening times. • Site Manager has a noise monitor on site and will monitor what noise level is being produced. • PPE will be worn according to HSE guidelines. • The indirect effects of noise are to be assessed and accounted for-such as interference with audible • warnings or other sounds and communications that need to be audible in order to reduce risk at work.	4	1	4	N	
							• The impact of noisy machinery or plant in the area assessed to receptors. • Ear defenders are worn by the operatives in the vicinity of the noise. • Hood/ doors on the plant and equipment are					

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Step 6… ***Identify the Additional Risks and Personal Protective Equipment Required.***

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			Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)		Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)	
Noisy machinery or plant	Site operatives	Environmental noise Hearing impairment	4	5	20	Y	kept shut. • When plant is not in operational use the engines are turned off. • Plant is well maintained and noise suppression equipment such as muffs and silencers are used where necessary. • Personal contact is made with persons living or working in adjoining properties, or in other sensitive areas e.g. schools, hospitals. • Consultation with the Local Authority may be required regarding permitted hours of work and noise monitoring. • Manufactures guidelines will be followed when using any small tools or machine attachments.	4	1	4	N	
Combustible materials	Site operatives and visitors	Exposure to fire	4	2	8	Y	• Store combustible materials in a secure area away from sources of ignition. • Suitable fire fighting equipment is to be properly sited and a safe means of escape provided. • Ensure emergency evacuation procedures have been drawn up and are brought to the attention of all personnel on site.	4	1	4	N	
Toxic substances	Site operatives	Poisoning, Respiratory problems, Irritation to eyes or skin	4	2	8	Y	• COSHH assessments are carried out on all substances used.	4	1	4	N	

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Step 6… ***Identify the Additional Risks and Personal Protective Equipment Required.***

What are the Hazards?	Who is at Risk?	How are they at Risk?	Without Controls				Site Specific Controls to be put in place	With Controls				Sign Once Action Complete
			Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)		Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)	
Fumes	Site operatives and visitors	Explosions Asphyxiation Headaches from gasses from plant used or sludge / residues disturbed	5	4	20	Y	• No smoking or naked lights. • Ventilate the atmosphere with a gas monitor. • Use local extract ventilation. • Prepare method statement incorporating a safe system of work. • Entry only allowed on a 'Permit to work' system. COSHH assessments are carried out on all substances used.	5	1	5	N	
Work Equipment (including the use of portable tools and vibratory equipment)	Site operatives	Vibration-White finger Explosi ons Fires Noise Injuries to face and body	4	2	8	Y	• All safety and work equipment to be fit for purpose and regularly inspected and maintained. • All portable electrical equipment to be PAT tested. • Operative to be trained in the correct use of equipment and to wear appropriate PPE (gloves, ear defenders, safety goggles etc). • Portable equipment with potential significant risk e.g. disc cutters, grinders, portable gun drills etc shall be inspected for deterioration on a weekly basis and the inspections recorded. • All portable electrical equipment to be operated either by 110v transformer or battery. • Use anti-vibration equipment where appropriate and adhere to the recommended working times. Manage vibration exposure time using the LAWS HAVS forms.	4	1	4	N	
Poor Illumination	Site operatives and visitors	Slips, trips and falls	4	2	8	Y	Provide adequate illumination within the working space.	4	1	4	N	
Underground or		Contact with					• Ensure service location plans are obtained and clearly mark all underground services so that					

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			Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)		Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)	
Overhead services	Site operatives and visitors	electricity or and electrical discharge Damage to services	5	4	20	Y	contractors are aware of their location and if overhead cables or pipes cross or pass near to the site, adequate protection must be provided. Refer to risk assessment for overhead and buried services.	5	1	5	N	
Inadequate welfare facilities	Site operatives	Disease Ill health	4	3	12	Y	• Welfare facilities shall be suitable, sufficient, functional and kept clean. These will meet all criteria laid out in CDM regs.	4	1	4	N	
Transport to and on the site	Site operatives Motorist	Contact with moving vehicles Slippery road	5	3	15	Y	• Provide a suitable access road, traffic control measures, warning signs, speed limit signs, pedestrian segregation, and designated car parking areas. • Ensure access and egress routes are maintained and kept clean at all times. Provide vehicle wash facilities where necessary.	5	1	5	N	
Hazardous substances	Site operatives and visitors	Exposed to or in contact with harmful substances. Exposure to fire	4	3	12	Y	• Hazardous substances are stored in a secure and bunded container and away from sources of ignition. • Ensure a spill kit and where necessary bunds are available. • When handling hazardous materials ops to wear PPE based on the data sheet for the specific product. • Refer to the COSHH assessments for further control measures.	4	1	4	N	
Buried services	All site operatives	Contact with buried services					• Before commencing work, all known services to be identified/ marked out/ made aware to site manager and associated staff.					

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What are the Hazards?	Who is at Risk?	How are they at Risk?	Without Controls				Site Specific Controls to be put in place	With Controls				Sign Once Action Complete
			Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)		Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)	
		Contact with electricity	5	4	20	Y	• Staff operating plant to proceed with caution at all times. • No excavation work to take place within 5-15m either side (dependent upon site condition) of any identified buried service. • If buried services need to be travelled across with heavy plant, site assessment to be undertaken by authorised personnel to ascertain if ground conditions are acceptable. • If ground conditions are not acceptable, no heavy plant to pass over this area. • If required, additional work(s) to be carried out to make travelling over buried services safe i.e. matting, concrete pad. • Should any unidentified buried services be identified, work(s) will stop immediately until an assessment has been made of what further action(s) are required by authorised personnel. • If buried services need to be exposed/ identified, • extreme caution must be taken and only hand tools used for the last 400mm of ground.	5	1	5	N	
Drowning	All site operatives and visitors	Slips, trips and falls	5	4	20	Y	• All staff working on, near (within 3m) or above water must wear a life jacket which is approved and is within its inspection/test date. • Staff wearing life jackets are to be fully trained in their use and operation. • Life jackets to be tested/maintained in accordance with manufacturers recommendations and the test certificates	5	1	5	N	

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			Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)		Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)	
							retained. • Any life jacket which has a defect or has not been tested within the specified period must be withdrawn from service until repaired/replaced. • Adequate first aid facilities to be available at all times when staff are working near water. • Anyone not wearing their life jackets will be subject to disciplinary action. • Staff required to work in water must be adequately trained and will only work at water level-under NO CIRCUMSTANCES will staff be allowed to lone work in water. Working in flows of water which are deemed 'strong' will be subject to further controls. • I.e. method statements, permit to work, etc.					
Contact with Vermin	All site operatives and visitors	Leptospirosis	4	4	16	Y	• Staff to be provided with suitable Personal Protective Equipment (PPE) and are trained in its use. • Always use waterproof gloves when working in water/ other PPE and always wash hands/ exposed skin after contact with water. • Staff to receive adequate information, instruction and supervision regarding Leptospirosis eg leaflets INDG84. • Staff to be encouraged to report sightings of vermin activity. • Any dead vermin to be left in situ. Under no circumstances must anyone remove vermin by direct contact unless authorised to do so.	4	1	4	N	

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What are the Hazards?	Who is at Risk?	How are they at Risk?	Without Controls				Site Specific Controls to be put in place	With Controls				Sign Once Action Complete
			Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)		Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)	
							• Any dead vermin which have been removed must be carried out using a non-contact method. I.e. helping hand. • Any dead vermin which have to be removed must be disposed of in an approved manner. • Suitable/adequate welfare faculties to be provided • and staff actively encouraged to use the facilities provided.					
Exposure to Cold/Wet conditions	All site operatives and visitors	Thermal Comfort	4	3	12	N	• Staff to be provided with suitable PPE which offers thermal comfort. • Suitable welfare facilities to be provided. • Staff working in cold/wet conditions will be allowed to take sufficient breaks to allow them to work in comfort. • In extreme adverse weather conditions, alternative work may be carried out.	4	1	4	Y	
High winds	All Site operatives and visitors.	Slips, Trips & Falls. Flying debris.	4	2	8	Y	• Staff to be made aware of the hazards associated with working near water in high winds during the induction. • Operators to take particular care when operating in windy conditions. If they consider it unsafe they must stop work, make the Plant safe, and report it to the site manager. • In extreme windy conditions, the job should be suspended until conditions improve.	4	1	4	N	
							• Housekeeping standards must be maintained to an acceptable standard, paying particular attention to tripping / stumbling hazards. • Any material/sludge to be cleaned up as soon					

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What are the Hazards?	Who is at Risk?	How are they at Risk?	Without Controls				Site Specific Controls to be put in place	With Controls				Sign Once Action Complete
			Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)		Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)	
Rainy wet conditions	All Site operatives and visitors.	Slips, Trips & Falls. Vehicle collisions	4	2	8	Y	as possible or the area cordoned off. • Longer term sites should have surface water ditches alongside access/ egress routes to prevent vehicles slipping. • Access/ egress routes should have hardcore layerto minimise vehicles skidding on mud.	4	1	4	N	
Foggy conditions	All Site operatives and visitors.	Slips, Trips & Falls.	4	2	8	Y	• Site manager to assess fog/poor visibility conditions on site. If considered unsafe, the equipment will be stood down and parked until conditions improve. • When working in poor light conditions, Machines are to be adequately lit	4	1	4	N	
Public accessing site during non- working hours	Members of the public	Slip, trip and falls Falling from height Entrapment Equipment security	4	2	8	Y	• Ensure all gates and fences are secure. • Ensure all equipment is locked and in a secure holding/ compound area. • Ensure that all signage is clear and visible. • Employ security personnel for problem sites. • Consider employing overnight/ weekend security. • Fit window cab guards to machines and equipment. • Employ deadlocks/ isolators to machinery/ equipment.	4	1	4	N	
Lifting procedures	Site staff / Site visitors	Falls from height / overturning of lift equipment / entrapment	5	5	25	**Y**	• Lifting procedures to controlled by the issue of 'Permit to Lift' • Tool box talks • Banksman / slinger – signaller / crane lift supervisor to supervise lifts as required • Equipment to be tested / compliant • Equipment to be used in conjunction with lifting duty / radius charts	5	1	5	**N**	

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Step 6… ***Identify the Additional Risks and Personal Protective Equipment Required.***

What are the Hazards?	Who is at Risk?	How are they at Risk?	Without Controls				Site Specific Controls to be put in place	With Controls				Sign Once Action Complete
			Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)		Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)	
							• Stability of excavator to checked before use • Competent lift operative • Daily site briefings • Implementation of operational controls – OC25 • Slew radius to be operated through 180 degrees and within compound area only • Excavator jib not be operated outside of the site boundary / over the top of the herras fence • Machine bucket to be removed from machine when undertaking lifting duties • Machine Operators who have lifting Op on CPCS card only to carry out lifts •					
Lifting appliance failure	Site operatives	Entrapment/Injury	5	4	20	Y	• Inspect the condition of chains and shackle before and after use • Test certificates required for all lifting tackle • All lifting operations on site are to have a permit to lift issued before lifting takes place • Chains and slings to be inspected before use and tested every 6 months, test sheets to be retained in site file • 12 month thorough examinations for lifting devises to be in place for all hiabs and excavators • Excavators used as a manual handling aid not to lift in excess of the SWL	5	1	5	N	

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			Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)		Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)	

Risk Rating:

Likelihood→ ↓Severity	Likely (5)	Probable (4)	Possible (3)	Unlikely (2)	Very unlikely (1)	KEY:
Death (5)	25	20	15	10	5	High risk
Major (Life threatening) Injury (4)	20	16	12	8	4	Medium risk
Major (non-life threatening)Injury (3)	15	12	9	6	3	Low risk
Minor Injury (2)	10	8	6	4	2	Very Low risk
No Injury (1)	5	4	3	2	1	

PPE Required:

Hard hat/High-Vis/Safety Boots	✓
Eye/ ear protection	✓
Suitable gloves	✓
Life Jacket	✓
Safety harness	
Other:	

METHOD STATEMENT & RISK ASSESSMENT

Written By:	Tyler Gibson	**Date Prepared:**	03/01/2024	**Ref. No:**	001
Client:	Surrey County Council	**Site Name:**	Thames Young Mariners		
		Location:	Surrey Outdoor Learning & Development, 76 Mallard Place, Richmond TW10 7RX		

Brief description of Task:

Break out the existing slabs that have been identified for replacement.

Pour the new concrete slabs.

Rake out and replace the expansion joints identified on drawing A123043-TGEE-ZZ-XX-DR-C-0010-C01

Review

NOTE & INSTRUCTIONS: Reviews are to be undertaken on a monthly basis as a minimum.

Review Date	Signature

Revision

NOTE & INSTRUCTIONS: Revisions are to be undertaken on a 6 monthly basis as a minimum.

Revision Date	Revision Number	Signature

Step 1… ***Detail below the task to be undertaken.***

Describe Task:

- **All existing concrete slabs that have been identified on drawing A123043-TGEE-ZZ-XX-DR-C-0010-C01 broken out for replacement, using a hydraulic breaker mounted to an excavator.**
- **Install K-form shuttering, dowels and A373 mesh to form the new slab. As per drawing A123043-TGEE-ZZ-XX-DR-C-0021**
- **Using a concrete pump, pour the new slabs and finish as per the existing slabs (tamped)**
- **All existing joints specified on A123043-TGEE-ZZ-XX-DR-C-0010-C01 to be raked out and re-instated as per drawing A123043-TGEE-ZZ-XX-DR-C-0021**

Start Date:	05/02/2024	**Completion Date:**	16/02/2024	**No of Staff:**	10+

List of Significant Hazards:	**1. Breaking out of concrete**	**5. Public**
	2. Noise	**6. Manual Handling**
	3. Working near/on water	**7. HAVS/Vibration**
	4. People plant interface	**8. COSHH**

Step 2… ***Identify the equipment to be used and any required permit to work.***

List Plant / Equip to be Used	Special Requirements	Test Cert. Req'd?	Permit to work Req'd?
Welfare Units		Yes	
Fire Extinguishers		Yes	
Overhead Goal posts	Set up to GS6 Standard.	No	
Local barriers and cones			
Ground protection mats		No	
Forward/Reverse diesel wacker plate			
Excavator with breaker attachment <5T		Yes	
K-Form shuttering		No	
Concrete delivery lorries	Check all lift certs of the crane and operator. To be escorted during any reversing operations.	Yes	
Herras Fencing	Ensure that it is accompanied with ballast as per TW design.	No	
Concrete Pump		No	

Articulated delivery lorries	To be escorted by a banksman during any reversing operations.	No	
Double bunded Fuel Bowser			
Spill trays & spill kits		No	
Site statutory, public & site signage		No	
Various chains / lifting equipment	Check certs are in date.	Yes	
Small hand tools / equipment		No	

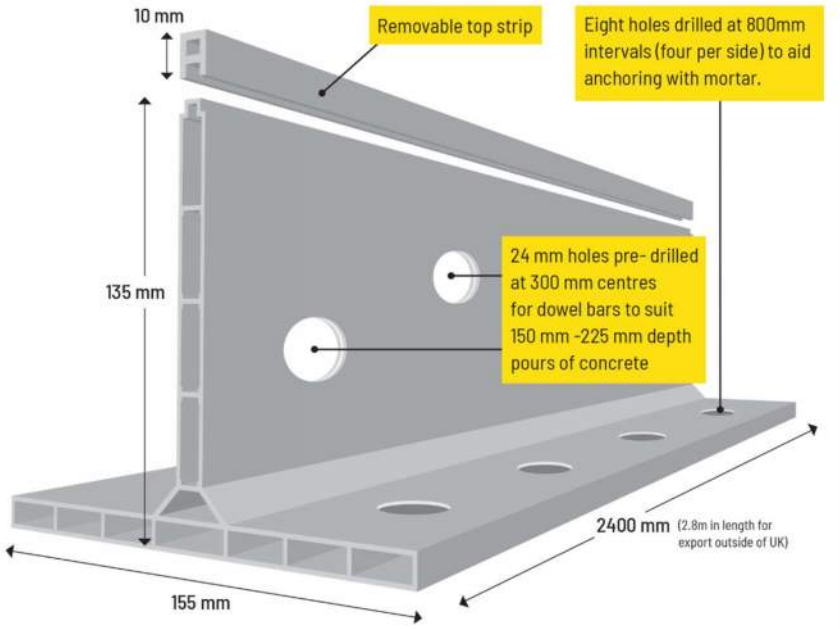
The above must be verified BEFORE work commences.

Step 3… ***Identify the operative numbers and skills with Training/certification to undertake the task***

Type of Operative Required	Number of Operatives	Skilled Operative?	Minimum Competency Required
Site Manager	1	Yes	SMSTS, TWSTC, IEMA, Environmental awareness, Waterwise Trained, Full first aid course
Site Forman	1	Yes	SSSTS, TWSTC, INNS, Environmental awareness, Waterwise Trained, Full first aid trained.
Site Ganger	1	Yes	SSSTS, TWSTC, INNS, Environmental awareness, Waterwise Trained, Full first aid trained.
Excavator operator	1	Yes	CPCS
Labourer	2	Yes	CSCS
Banksman	1	Yes	CPCS

The above must be verified BEFORE work commences.

Step 5… *List sequencing of works*	
I.D	Instruction
1.0	***Scope of works covered by method statement***
1.1	Break out concrete slabs on the Western Location and reinstate
1.2	Replace expansion joints at Western Location
1.3	Break out concrete slabs and reinstate at the Northern Location
1.4	Replace expansion joints in the Northern Location
2.0	***Methodology***
2.1	**Induction and site familiarisation:** All site staff will undergo a site-specific induction, the induction will detail the following aspects: 1. Site rules, including Covid-19 Risk Assessment 2. Company and site objectives 3. Location of welfare facilities 4. Site emergency procedures which will include the emergency plan for the dam. 5. Assembly points 6. First aiders and location points 7. Traffic management plan, covering vehicle routes & pedestrian routes & Overheads. 8. Site specific hazards and key controls 9. Site environmental hazards and key controls 10. Spill procedures 11. Near miss reporting 12. Location of; life rings, throw lines, fire extinguishers and spill kits/booms which will be strategically placed for quick deployment. The works shall only be undertaken once this RAMS have been briefed to all site operatives along with any relevant toolbox talks & site inductions undertaken where all competency certs will be reviewed, and copy shall be kept in the site safety file. The correct PPE for the task will be issued to staff before work commences. All compounds will be CAT scanned by a trained and competent person, and any overhead services will be identified and briefed.

2.2	The existing concrete slabs to be removed will be identified prior to works starting. Using a small excavator and breaker ensuring that the 45 degree rule is maintained the existing concrete slabs can be removed, where this 45 degree rule cannot be maintained an upright breaker will have to be utilised ensuring that the operator conforms with the HAVS requirements for that item. Once the concrete has been broken up it can be removed and placed into tonne bags to allow it to be transported to the compound area for removal from site. The sub-base condition will be assessed for suitability, if insufficient sub-soil/sub-base is found underneath the existing slabs then a layer of subbase will be installed dependant on the CBR% of the sub soil and compacted using a forward/reverse wacker plate to MCHW series 600 standards. If the subbase is deemed sufficient then the existing material will be proof rolled using the forward/reverse wacker prior to installation of any shuttering to allow a level building platform. K-form shuttering will be installed in accordance with the manufacturer's guidance, ensuring that the shutter is level through both axis, and bed on mortar to aid with anchoring. Once the shuttering has been installed dowel bars covered by polymeric corrosion resistant coating will need to be installed through the K-form. Where the new slab meets and existing hardstanding connection then dowels covered in a de-bonding sleeve will need to be installed through both the existing and new slab. A373 Mesh will be placed within the slab ensuring that it is 75mm from the sub-base and surface and sufficiently tied at any overlay points. 

	 Once the shuttering and mesh has been installed similar to that shown above and signed off by the TWS, then a concrete pump will be mobilised to site accompanied by a concrete wagon. The concrete (PAV2/C35) will then be pumped to the required location until all of the slabs have been filled, ensuring that the slabs are fully pokered throughout the pour to relieve and air bubbles that may be trapped within the concrete. A screed will be pulled across the slab to ensure a level surface and finished to a tamped finish specification. All personal involved in this operative will be required to wear appropriate PPE to prevent concrete burns, this included safety glasses/goggles.
2.3	Upon completion and curing of the slabs the existing expansion joints noted on drawing A123043-TGEE-ZZ-XX-DR-C-0010 will be raked out and cleaned. If required new filler board will be installed (20mm Fosroc Hydrocell XL or similar) de-bonding tape will then need to be applied to top of the filler board to ensure that the joint sealant bonds in the correct places. After the above has been applied then the joint sealant (Fosroc Colpor 200 or similar) can be installed as per the manufacturers specification and finished to smooth level finish.
2.4	Once works are complete, photos will be taken, and all plant/equipment utilised for the works can be off hired.
3.0	***Consents, licences & environmental issues***
3.1	FRAP
3.2	Planning Permission
4.0	***Identify any Manual Handling involved in this Task*** (Ensure these items are included on the Manual Handling Poster)
4.1	• Use of hand tools. • Attaching lifting appliances. • Forward/Reverse wacker. • Finishing/Spreading of concrete. • Removing/Reinstating the movement joints.
5.0	***Identify any hazardous substances used during the undertaking of this task*** **(Ensure these items are included on the COSHH Poster)**
5.1	• Hydraulic Oil • Diesel • Housekeeping products. • Petrol • Concrete • Fosroc Colpor 200

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Step 6… ***Identify the Additional Risks and Personal Protective Equipment Required.***

What are the Hazards?	Who is at Risk?	How are they at Risk?	Without Controls				Site Specific Controls to be put in place	With Controls				Sign Once Action Complete
			Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)		Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)	
							•					
Manoeuvring of Plant	All site operatives and visitors	Contact with moving Plant	5	4	20	Y	• Only essential authorised staff to work near plant. • Line of communication to be established between plant operator and other(s) working in close proximity. • Only essential site personnel allowed in work areas. All visitors must be accompanied at all times. • All site staff and visitors must wear hi visibility vests at all times. •	5	1	5	N	
Operating in the working area	All site operatives	Slips, trips and falls Contact with moving Plant Entrapment	5	3	15	Y	• Regular inspection of site to take place (minimum daily) to assess conditions. • Plant operator to ensure that they operate equipment from a safe working area. • If water conditions cause concern, work must stop immediately. • Only designated travelling routes/ work areas to be used or worked.	5	1	5	N	
Unfit/ Untrained/ Unauthorised staff operating plant	All site operatives and visitors	Contact with moving Plant Equipment damage Property damage	4	3	12	Y	• Staff operating Plant must be adequately trained and certified (CITB). • Only medically fit staff to operate plant. • Any operator who may have a medical condition that could affect their capabilities must inform the site manager. • Anyone found operating plant under the	4	1	4	N	

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							influence of alcohol/drugs will be removed from site immediately. Anyone found misusing or abusing plant will be disciplined. • Any unauthorised person found operating plant will be subject to disciplinary action.					
Working in adverse weather conditions	All site operatives and visitors	Slips, trips and falls Vehicle collisions	4	4	16	Y	• In extreme adverse weather conditions, alternative work will be found or the job rescheduled. • Staff to be provided with suitable PPE which offers adequate thermal comfort. • Staff to be provided with suitable anti-slip footwear. • Suitable, adequate welfare facilities to be provided and staff actively encouraged to use the facilities provided. • Plant to be adequately lit when working out of daylight hours or during times of adverse visibility. • Access/ egress routes to be suitably maintained, matting may be required	4	1	4	N	
Working near plant	All site operatives	Contact with moving equipment	5	4	20	Y	• Offloading/ transfer points to be adequately fenced to prevent persons entering the area. • Appropriate warning signs to be posted. • Only essential authorised staff to work near plant. • Line of communication to be established between plant operator and other(s) working in close proximity.	5	1	5	N	
Working in adverse weather conditions	All site operatives and visitors	Slips, trips and falls Vehicle collisions	4	4	16	Y	• In extreme adverse weather conditions, alternative work will be found or the job rescheduled. • Staff to be provided with suitable PPE which	4	1	4	N	

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			Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)		Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)	
							offers adequate thermal comfort. • Staff to be provided with suitable anti-slip footwear. • Suitable, adequate welfare facilities to be provided and staff actively encouraged to use the facilities provided. • Plant to be adequately lit when working out of daylight hours or during times of adverse visibility. • Access/ egress routes to be suitably maintained, matting may be required					
Noise	Site operatives Members of the public	Hearing Impairment Noise nuisance	4	5	20	Y	• Appropriate ear protectors to be worn by all operatives within close vicinity of the activity. • Operation to be restricted to site opening times. • Site Manager has a noise monitor on site and will monitor what noise level is being produced. • PPE will be worn according to HSE guidelines. • The indirect effects of noise are to be assessed and accounted for-such as interference with audible • warnings or other sounds and communications that need to be audible in order to reduce risk at work.	4	1	4	N	
							• The impact of noisy machinery or plant in the area assessed to receptors. • Ear defenders are worn by the operatives in the vicinity of the noise. • Hood/ doors on the plant and equipment are					

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Noisy machinery or plant	Site operatives	Environmental noise Hearing impairment	4	5	20	Y	kept shut. • When plant is not in operational use the engines are turned off. • Plant is well maintained and noise suppression equipment such as muffs and silencers are used where necessary. • Personal contact is made with persons living or working in adjoining properties, or in other sensitive areas e.g. schools, hospitals. • Consultation with the Local Authority may be required regarding permitted hours of work and noise monitoring. • Manufactures guidelines will be followed when using any small tools or machine attachments.	4	1	4	N	
Combustible materials	Site operatives and visitors	Exposure to fire	4	2	8	Y	• Store combustible materials in a secure area away from sources of ignition. • Suitable fire fighting equipment is to be properly sited and a safe means of escape provided. • Ensure emergency evacuation procedures have been drawn up and are brought to the attention of all personnel on site.	4	1	4	N	
Toxic substances	Site operatives	Poisoning, Respiratory problems, Irritation to eyes or skin	4	2	8	Y	• COSHH assessments are carried out on all substances used.	4	1	4	N	

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Fumes	Site operatives and visitors	Explosions Asphyxiation Headaches from gasses from plant used or sludge / residues disturbed	5	4	20	Y	• No smoking or naked lights. • Ventilate the atmosphere with a gas monitor. • Use local extract ventilation. • Prepare method statement incorporating a safe system of work. • Entry only allowed on a 'Permit to work' system. COSHH assessments are carried out on all substances used.	5	1	5	N	
Work Equipment (including the use of portable tools and vibratory equipment)	Site operatives	Vibration-White finger Explosi ons Fires Noise Injuries to face and body	4	2	8	Y	• All safety and work equipment to be fit for purpose and regularly inspected and maintained. • All portable electrical equipment to be PAT tested. • Operative to be trained in the correct use of equipment and to wear appropriate PPE (gloves, ear defenders, safety goggles etc). • Portable equipment with potential significant risk e.g. disc cutters, grinders, portable gun drills etc shall be inspected for deterioration on a weekly basis and the inspections recorded. • All portable electrical equipment to be operated either by 110v transformer or battery. • Use anti-vibration equipment where appropriate and adhere to the recommended working times. Manage vibration exposure time using the LAWS HAVS forms.	4	1	4	N	
Poor Illumination	Site operatives and visitors	Slips, trips and falls	4	2	8	Y	Provide adequate illumination within the working space.	4	1	4	N	
Underground or		Contact with					• Ensure service location plans are obtained and clearly mark all underground services so that					

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Overhead services	Site operatives and visitors	electricity or and electrical discharge Damage to services	5	4	20	Y	contractors are aware of their location and if overhead cables or pipes cross or pass near to the site, adequate protection must be provided. Refer to risk assessment for overhead and buried services.	5	1	5	N	
Inadequate welfare facilities	Site operatives	Disease Ill health	4	3	12	Y	• Welfare facilities shall be suitable, sufficient, functional and kept clean. These will meet all criteria laid out in CDM regs.	4	1	4	N	
Transport to and on the site	Site operatives Motorist	Contact with moving vehicles Slippery road	5	3	15	Y	• Provide a suitable access road, traffic control measures, warning signs, speed limit signs, pedestrian segregation, and designated car parking areas. • Ensure access and egress routes are maintained and kept clean at all times. Provide vehicle wash facilities where necessary.	5	1	5	N	
Hazardous substances	Site operatives and visitors	Exposed to or in contact with harmful substances. Exposure to fire	4	3	12	Y	• Hazardous substances are stored in a secure and bunded container and away from sources of ignition. • Ensure a spill kit and where necessary bunds are available. • When handling hazardous materials ops to wear PPE based on the data sheet for the specific product. • Refer to the COSHH assessments for further control measures.	4	1	4	N	
Buried services	All site operatives	Contact with buried services					• Before commencing work, all known services to be identified/ marked out/ made aware to site manager and associated staff.					

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			Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)		Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)	
		Contact with electricity	5	4	20	Y	• Staff operating plant to proceed with caution at all times. • No excavation work to take place within 5-15m either side (dependent upon site condition) of any identified buried service. • If buried services need to be travelled across with heavy plant, site assessment to be undertaken by authorised personnel to ascertain if ground conditions are acceptable. • If ground conditions are not acceptable, no heavy plant to pass over this area. • If required, additional work(s) to be carried out to make travelling over buried services safe i.e. matting, concrete pad. • Should any unidentified buried services be identified, work(s) will stop immediately until an assessment has been made of what further action(s) are required by authorised personnel. • If buried services need to be exposed/ identified, • extreme caution must be taken and only hand tools used for the last 400mm of ground.	5	1	5	N	
Drowning	All site operatives and visitors	Slips, trips and falls	5	4	20	Y	• All staff working on, near (within 3m) or above water must wear a life jacket which is approved and is within its inspection/test date. • Staff wearing life jackets are to be fully trained in their use and operation. • Life jackets to be tested/maintained in accordance with manufacturers recommendations and the test certificates	5	1	5	N	

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							retained. • Any life jacket which has a defect or has not been tested within the specified period must be withdrawn from service until repaired/replaced. • Adequate first aid facilities to be available at all times when staff are working near water. • Anyone not wearing their life jackets will be subject to disciplinary action. • Staff required to work in water must be adequately trained and will only work at water level-under NO CIRCUMSTANCES will staff be allowed to lone work in water. Working in flows of water which are deemed 'strong' will be subject to further controls. • I.e. method statements, permit to work, etc.					
Contact with Vermin	All site operatives and visitors	Leptospirosis	4	4	16	Y	• Staff to be provided with suitable Personal Protective Equipment (PPE) and are trained in its use. • Always use waterproof gloves when working in water/ other PPE and always wash hands/ exposed skin after contact with water. • Staff to receive adequate information, instruction and supervision regarding Leptospirosis eg leaflets INDG84. • Staff to be encouraged to report sightings of vermin activity. • Any dead vermin to be left in situ. Under no circumstances must anyone remove vermin by direct contact unless authorised to do so.	4	1	4	N	

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							• Any dead vermin which have been removed must be carried out using a non-contact method. I.e. helping hand. • Any dead vermin which have to be removed must be disposed of in an approved manner. • Suitable/adequate welfare faculties to be provided • and staff actively encouraged to use the facilities provided.					
Exposure to Cold/Wet conditions	All site operatives and visitors	Thermal Comfort	4	3	12	N	• Staff to be provided with suitable PPE which offers thermal comfort. • Suitable welfare facilities to be provided. • Staff working in cold/wet conditions will be allowed to take sufficient breaks to allow them to work in comfort. • In extreme adverse weather conditions, alternative work may be carried out.	4	1	4	Y	
High winds	All Site operatives and visitors.	Slips, Trips & Falls. Flying debris.	4	2	8	Y	• Staff to be made aware of the hazards associated with working near water in high winds during the induction. • Operators to take particular care when operating in windy conditions. If they consider it unsafe they must stop work, make the Plant safe, and report it to the site manager. • In extreme windy conditions, the job should be suspended until conditions improve.	4	1	4	N	
							• Housekeeping standards must be maintained to an acceptable standard, paying particular attention to tripping / stumbling hazards. • Any material/sludge to be cleaned up as soon					

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Rainy wet conditions	All Site operatives and visitors.	Slips, Trips & Falls. Vehicle collisions	4	2	8	Y	as possible or the area cordoned off. • Longer term sites should have surface water ditches alongside access/ egress routes to prevent vehicles slipping. • Access/ egress routes should have hardcore layerto minimise vehicles skidding on mud.	4	1	4	N	
Foggy conditions	All Site operatives and visitors.	Slips, Trips & Falls.	4	2	8	Y	• Site manager to assess fog/poor visibility conditions on site. If considered unsafe, the equipment will be stood down and parked until conditions improve. • When working in poor light conditions, Machines are to be adequately lit	4	1	4	N	
Public accessing site during non- working hours	Members of the public	Slip, trip and falls Falling from height Entrapment Equipment security	4	2	8	Y	• Ensure all gates and fences are secure. • Ensure all equipment is locked and in a secure holding/ compound area. • Ensure that all signage is clear and visible. • Employ security personnel for problem sites. • Consider employing overnight/ weekend security. • Fit window cab guards to machines and equipment. • Employ deadlocks/ isolators to machinery/ equipment.	4	1	4	N	
Lifting procedures	Site staff / Site visitors	Falls from height / overturning of lift equipment / entrapment	5	5	25	**Y**	• Lifting procedures to controlled by the issue of 'Permit to Lift' • Tool box talks • Banksman / slinger – signaller / crane lift supervisor to supervise lifts as required • Equipment to be tested / compliant • Equipment to be used in conjunction with lifting duty / radius charts	5	1	5	**N**	

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Step 6… ***Identify the Additional Risks and Personal Protective Equipment Required.***

What are the Hazards?	Who is at Risk?	How are they at Risk?	Without Controls				Site Specific Controls to be put in place	With Controls				Sign Once Action Complete
			Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)		Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)	
							• Stability of excavator to checked before use • Competent lift operative • Daily site briefings • Implementation of operational controls – OC25 • Slew radius to be operated through 180 degrees and within compound area only • Excavator jib not be operated outside of the site boundary / over the top of the herras fence • Machine bucket to be removed from machine when undertaking lifting duties • Machine Operators who have lifting Op on CPCS card only to carry out lifts •					
Lifting appliance failure	Site operatives	Entrapment/Injury	5	4	20	Y	• Inspect the condition of chains and shackle before and after use • Test certificates required for all lifting tackle • All lifting operations on site are to have a permit to lift issued before lifting takes place • Chains and slings to be inspected before use and tested every 6 months, test sheets to be retained in site file • 12 month thorough examinations for lifting devises to be in place for all hiabs and excavators • Excavators used as a manual handling aid not to lift in excess of the SWL	5	1	5	N	

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Step 6… ***Identify the Additional Risks and Personal Protective Equipment Required.***

What are the Hazards?	Who is at Risk?	How are they at Risk?	Without Controls: Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)	Site Specific Controls to be put in place	With Controls: Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)	Sign Once Action Complete

Risk Rating:

Likelihood→ ↓Severity	Likely (5)	Probable (4)	Possible (3)	Unlikely (2)	Very unlikely (1)	KEY:
Death (5)	25	20	15	10	5	High risk
Major (Life threatening) Injury (4)	20	16	12	8	4	Medium risk
Major (non-life threatening)Injury (3)	15	12	9	6	3	Low risk
Minor Injury (2)	10	8	6	4	2	Very Low risk
No Injury (1)	5	4	3	2	1	

PPE Required:

Hard hat/High-Vis/Safety Boots	✓
Eye/ ear protection	✓
Suitable gloves	✓
Life Jacket	✓
Safety harness	
Other:	

Land and Water Services Ltd
Environmental Management Plan (EMP)

The following stages in this plan are required to be completed to ensure all aspects of the operation, associated impacts and risks are assessed with the necessary control measures outlined. An environmental aspect is any element of the operational activities that can interact with the environment. An environmental impact is the effect that an aspect has on the environment. In essence it is the cause and effect of an activity on the environment.

Impacts are scored and ranked to enable the significant impacts to be identified and a priority allocated in a systematic manner to ensure that there are appropriate control procedures in place to minimise environmental risk. A set of Environmental Procedures and Guidance documents 'EP1-7' have been created to summarise the generic best practice techniques that are required as part of the environmental management system and provide additional measures that can be administered in specific circumstances.

Stage 1: Operational details

Site name & code:	**Thames Young Mariners**

Description of all works and activities due to be undertaken:	- West Bank
	  o Sheet pile installation
	  o Grading / benching back of bank
	  o Reinstating with engineered fill
	  o Replacement of concrete surfacing
	  o Replacement of concrete joints
	  o Extend drainage pipe.
	- North Bank
	  o Sheet pile installation
	  o Install platypus anchors
	  o Reinstating with graded engineered fill
	  o Replacement of concrete surfacing
	  o Replacement of concrete joints

Commencement and duration of works:	Dynamic – refer to construction programme
EMP completed by:	C.N – reviewed by T.G 02/01/2024
Approved by:	
Approval date:	

Review

Reviews are to be undertaken on a monthly basis as a minimum.

Review Date	Detail any changes to EMP	Signature

02/01/2024	**Updated description of works to include platypus anchors.**	**T.Gibson**

Revision

Revisions are to be undertaken on a 6-monthly basis as a minimum, where applicable.

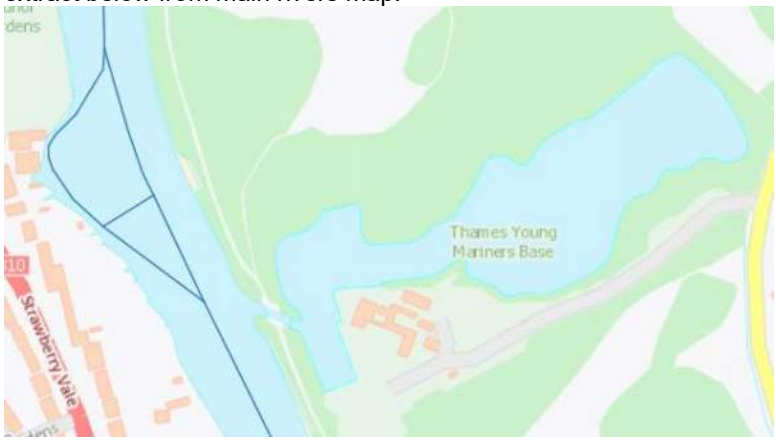
Revision Date	Revision Number	Signature

Stage 2: Impact assessment, risk identification and control measures *(Risk matrix and significance illustrated in Appendix)*

Aspects of the operation that could affect the environment	Outline of potential impacts to the environment from operation	Risk Identification WITHOUT additional control measures			Outline of additional control measures to be applied to operation	Risk Identification WITH additional control measures		
		S	**L**	**Risk (SxL)**		**S**	**L**	**Risk (SxL)**
Aspect 1: Emissions to air Impacts on the environment: Greenhouse gas emissions, air pollution.	Noise, vibrations, emissions, dust, odour from use of plant/ machinery/ equipment. Potential for dust Issues when undertaking earthworks/ handling or storing dredged silts. Dust derived from substances used on site (i.e.: Cement, Dry-add, Bentonite etc).	**4**	**4**	**16**	• Site layout designed considering the source- pathway- receptor model. All sensitive receptors i.e.: residential areas, schools, watercourses identified, and higher risk activities are located away from such areas. • Designated routes allocated for plant/ vehicles/ pedestrians with speed restrictions and appropriate access and egress points. • Re-fuelling areas located away from receptors, in designated areas. • Deliveries/ collections/ general transport movements staggered to reduce high vehicle numbers on site and arranged outside peak traffic hours. • The drop height when loading vehicles/ plant will be minimised to avoid unnecessary noise and dust emissions. • Use of hybrid staff vehicles, car sharing, conference calls, home working reduce greenhouse gas emissions and general use of fuel. • Fencing/ netting to be secured to minimise release of debris/ litter. Such material will be removed and cleaned on a regular basis and disposed appropriately.	**4**	**1**	**4**

	Release of debris/ litter							
Aspect 2: Waste and by-products Impacts on the environment: Contaminated substances harmful to land, flora, fauna, water ecosystems, humans. Pollution via landfill sites-various. Loss of natural resources as a result of waste mis-management.	On-site waste production/ handling/ storage/ treatment/ disposal. Storage and use of chemicals/ hazardous substances (COSHH assessed materials).	**5**	**5**	**25**	• LAWS EMS Procedure 'EP2- Waste Management' will be implemented and followed as standard best practice. • All waste material is assessed, classified & identified with an EWC code to ensure the appropriate methods of storage, handling and final use/ disposal are ascertained. • A Site Waste Management Plan will be produced for all works, where relevant. • The waste hierarchy is applied to ensure the most sustainable re-use/ disposal options are selected. • The quantity of waste requiring landfill disposal is reduced as far as practicable. • Waste will only be transported with a completed waste transfer note and by registered waste carriers, as per duty of care protocols. • Waste will only be disposed of or treated at facilities holding relevant, active Environmental Permits or exemptions. • All waste streams are segregated appropriately in suitable storage facilities for each waste type, i.e.: sealed skip/ drum/ double bagged. • Storage facilities are located as far as practicable from receptors to include: watercourses, sensitive habitats, residential areas. • Waste is covered to prevent water ingress, where necessary. • The potential for contaminated run-off is assessed and mitigation measures applied, i.e.: segregation, location, barriers, sealed units. • Waste is disposed of as fast as practicable. • Recycling of waste paper, plastic, cans, printer toners, batteries is a priority. • Regular inspections of waste production areas, storage areas, transport routes to ensure appropriate containment and rapid response in the event of unauthorised emissions. • COSHH assessments completed, materials labelled and stored accordingly. • Tyres, gas cylinders, aerosols and oily rags are to be stored in designated containers and disposed separately.	**5**	**1**	**5**
Aspect 3: Releases to water/ water	Reduction in Dissolved	**5**	**5**	**25**	**Water Quality:** LAWS EMS Procedure 'EP4- Water Quality' will be implemented and followed as standard best practice.	**5**	**1**	**5**

quality/ flood risk Impacts on the environment: Deterioration of water quality, harming water ecosystems flora and fauna. Negative effect on groundwater sources & drinking water, marine water systems. Harm to bankside species. Increased flood risk via changeable water flows, removal of flood attenuation, decreased/ increased channel capacity.	Oxygen (DO) levels negatively affecting water quality and potentially harming aquatic species. As a result of dredging, piling, channel (re-)construction/ engineering structures/ plant movements displacing silt/ affecting water levels. Unauthorised emissions from waste contamination, contaminated/ hazardous substances, chemicals, oil/ fuel spillages causing pollution events. Changes to waterbody				• Implementation of DO monitoring procedure to ensure DO levels remain within safe limits- refer to EP4 to undertake site specific risk assessment and allocate a monitoring protocol. • Prompt visual assessments & identification of changing fish behaviour. • Regular inspections & rapid response essential in the event of fish gasping/ in distress, excessive silt plumes, presence of algal blooms, unauthorised emissions. Site manager should be informed immediately, and works may be stopped as per procedure. LAWS Environmental scientist should be informed, who may report incident to Environment Agency as required. LAWS EMS Procedure 'EP2- Waste Management' will be implemented and followed as standard best practice to prevent unauthorised emissions. • Waste storage facilities are located as far as practicable from watercourses and in appropriately sealed containers. • Surface water drainage is designed to reduce risk of cross-contamination. • Water discharges are assessed and appropriately consented. • Contaminated liquids on site are controlled and disposed of appropriately. LAWS EMS Procedure 'EP3- Oil, fuel, chemical storage and spills' will be implemented and followed as standard best practice. • Regular inspections for unauthorised emissions as standard routine. • Rapid response essential in the event of an unauthorised emission. All spillages to be dealt with as soon as possible as per procedure and LAWS Environmental Scientist informed who may report to the Environment Agency as required. There are procedural techniques for small-scale and larger- scale spills. Spill training is completed on a regular basis to ensure a rapid response. • Use of biodegradable oils on all machinery. • Spill kits to be kept with all machinery and regularly checked. • Larger onsite spill kit to be kept at site compound & oil spill booms available as required. • All plant will be stored in a designated area, away from sensitive receptors, with plant nappies/ drip trays underneath. • Disconnected hydraulic hoses and similar will be stored appropriately in drip trays. • Well-kept machinery onsite only & all machine inspections to be up-to-date. Any faults will be reported asap. Any defective machinery to be isolated and repaired/ removed immediately. Pre-start sheets required on all machines, with attention to hydraulic systems and hoses. • Re-fuelling, oil and/or chemical storage areas are located as far as practicable from watercourses and in appropriate containers. The minimum amount of fuel required should be stored on site.			

	channels/ waterflows/ flood attenuation affecting flood risk on main rivers or ordinary watercourses/ storage of Plant/ equipment				• All primary containers of >200L oil including petrol will be stored in a secondary container that is bunded, impermeable and has a capacity to hold > than either 25% of the total volume of all the primary containers it holds or 110% of the volume of the largest container; whichever is greater **Flood risk:** The body of water the works are taking place within isn't a recognised main river. However, due to the locality of EA assets the works will require a Flood risk application permit. See extract below from main rivers map:  • Site will check and sign up for flood warnings via Gov.uk if they are available in the area. • Site will monitor the weather conditions daily via forecasting and observation to ensure any issues are addressed with as much notice as possible. Works will be deliberately assessed on a Friday to ascertain whether Plant, equipment should be relocated to a more suitable location. • Permanent works designs have been selected to ensure flood risk is as minimally affected as possible. • The site layout is designed to minimise any negative flood risk effects as far as practicable by storing Plant and equipment away from the banks of river. • The operational programme has been considered to ensure the most appropriate time of year has been selected in relation to the need for the works to be completed and risks associated with weather and water flows/ depth. • Any in-channel and bank works will be planned ahead to ensure they are as minimally invasive as possible using appropriate Plant and undertaken for the shortest period of time.			

Aspect 4: Releases to land Impacts on the environment: Contaminated substances harmful to land, flora, fauna. Damage/ loss to habitats/ biodiversity	Contamination from waste, contaminated substances, chemicals, oil/ fuel spillages. Release of debris/ litter	**4**	**4**	**16**	LAWS EMS Procedure 'EP2- Waste Management' will be implemented and followed as standard best practice. Refer to Aspect 2: Waste section for further details of required control measures. Refer to Aspect 5: Ecology for further control measures on protecting land and habitats. LAWS EMS Procedure 'EP3- Oil, fuel, chemical storage and spills' will be implemented and followed as standard best practice. • Regular inspections for unauthorised emissions as standard routine. • Rapid response essential in the event of an unauthorised emission. All spillages to be dealt with as soon as possible as per procedure and reported to the EA as required. There are procedural techniques for small-scale and larger- scale spills. Spill training is completed on a regular basis to ensure a rapid response. • Use of biodegradable oils on all plant/ machinery. • Spill kits to be kept with all machines and regularly checked. • All plant will be stored in a designated area, away from sensitive receptors, with plant nappies/ drip trays underneath. • Disconnected hydraulic hoses and similar will be stored appropriately in drip trays. • Well-kept machinery onsite only & all machine inspections to be up-to-date. Any faults will be reported asap. Any defective machinery to be isolated and repaired/ removed immediately. Pre-start sheets required on all machines, with attention to hydraulic systems and hoses. • Re-fuelling, oil and/or chemical storage areas are located as far as practicable from sensitive receptors and in appropriate containers. • 10m buffer zones created along the periphery of agricultural landspreading areas. • Fencing/ netting to be secured to minimise release of debris/ litter. Such material will be removed and cleaned on a regular basis and disposed appropriately.	**4**	**1**	**4**

Aspect 5: Ecology (General habitats & flora & fauna/ protected species/ invasive species/ environmental ly sensitive areas) Impacts on the environment: Generally affecting habitats & biodiversity. Harm to protected species. Contaminated substances harmful to soil systems, flora, fauna. Can affect species predation, migration, hibernation. Spread of invasive species affecting native habitats.	Construction engineering/ dredging/ vegetation clearance works can harm/ damage protected species (flora and fauna), general habitats and damage environmental ly sensitive areas such as: SSSI/ SPA /SAC /RAMSAR/ LNR. Such works can also encourage the spread of invasive species- Biosecurity hazards.	**5**	**5**	**25**	The HAM Lands SINC of 'Metropolitan' Importance covers an area which includes the site proposed for the works. The works will result in the removal of habitat within the SINC. As a result Tasha Hunter, the Ecology Policy and Planning Officer at London Borough of Richmond upon Thames council as to determine a suitable compensation habitat creation. It was agreed that rather than replacing the scrub, instead an area of grassland on site would be managed for wildlife. This is due to an excess of scrub and woodland regeneration within the wider Ham Lands SINC. Therefore, enhancement of an existing area of grassland would be superior for wildlife locally. In order to achieve biodiversity net gain through the DEFRA metric, this replacement habitat will be managed as a low density traditional orchard. LAWS staff are trained to identify invasive and protected species during general site inspections as a result of a specifically designed handbook for identification purposes. On site there is a known presence of Japanese Knotweed and Zebra Mussels. Transfer of these species accidentally is a criminal offence. Therefore, controls will be required to ensure that these are not spread. Japanese Knotweed Controls - The design approach taken for the areas contaminated with Japanese Knotweed has been decided to ensure that there is no requirement to undertake digging or mucking away of any soils within or near the impacted area. Therefore, no disturbance to the soil. Instead material will be placed directly on top of the bank to bring it up to the design level. - LAWS are aware that other areas of the lakes bank have Japanese knotweed present. These locations will be demarcated to ensure that floating plant / equipment does not accidently come into contact with it. - Check Clean and Dry protocols will be followed. Zebra mussels control - All equipment used in the watercourse is to be kept clean to reduce the risk of spreading the invasive species. - Make sure that surfaces of equipment (buckets etc.) are air dried completely. - Chemical iodophors can be used to disinfect equipment, boots, hand tools and machinery. These can be sprayed as per manufacturers instructions. - Do not move between catchments without disinfecting or drying out equipment completely.	**5**	**1**	**5**

Refer to LAWS EMS Procedure 'EP5- Protected species' for further guidance and information specific to a protected species or discuss with LAWS environmental scientist.

LAWS EMS Procedure 'EP6- Invasive species' & 'EP1- Environmental management plan, biosecurity and risk ID' will be implemented and followed as standard best practice.

An ecological survey and report has been commissioned prior to the works undertaking 'EcIA_Thames-Young Mariners_SOLD_June_2023'

Be mindful of the following protected species that may be found during LAWS works:

5.4 Protected Species

5.4.1 Bats

The site has been assessed as capable of supporting foraging and navigating bats. To ensure no negative impacts to bats, mitigation is required. Specifically, an Artificial Lighting Strategy should be put in place during the works phase to minimise disturbance.

5.4.2 Birds

Scattered scrub habitat has been assessed as having potential to support nesting birds. To ensure no negative impacts to birds, mitigation is required. Specifically, Precautionary Nesting Bird / Dormouse Mitigation will ensure that no active bird nests are accidentally destroyed by proposed clearance works.

5.4.3 Hazel Dormouse

The site has been assessed as having value for dormice, at least on occasion for foraging. Consequently, mitigation will be required. Precautionary Nesting Bird / Dormouse Mitigation will ensure that no nesting / foraging / hibernating dormice are impacted by proposed works.

5.4.4 Reptiles

Reptiles could be present within tall ruderal vegetation between the scattered shrubs on the bank. Proposed works would likely result in the injury or death of any reptiles present. Precautionary Reptile / Amphibian Mitigation is therefore required. This will involve the gradual phased degrading of habitat on site to encourage reptiles to leave the proposed works area. Replacement SINC Habitat will also provide replacement habitat for reptiles on site.

5.4.5 Amphibians

As with reptiles, it is possible that amphibians could be present on site during works and would then be at risk of injury or death. Precautionary Reptile / Amphibian Mitigation to encourage amphibians to leave the proposed works area will minimise the risk of such impacts, with Replacement SINC Habitat also providing replacement habitat for amphibians on site.

5.4.6 Invasive Non-Native Species

Japanese Knotweed and Zebra Mussels are known to be present on site and immediately adjacent. Consequently, works may result in the accidental spread of schedule 9 invasive species either through movement of soil or contamination of equipment used in the water. This would constitute a criminal offence and therefore mitigation is required. The control of either species noted is beyond the scope of this report, but Zebra Mussel Advice for minimising contamination of any equipment / clothing is detailed within this report. Specific advice regarding Japanese Knotweed removal should be sought.

5.4.7 Fox

Foxes are not afforded legal protection, nor are their resting places. However, in order to avoid a cruel death through asphyxiation or being crushed, a one-way gate should be erected on the identified den prior to works commencing. The erection of this gate must be carried out at a time which no kits are likely to be present. This will ensure that no foxes are present.

A one-way gate, similar to the strategy used to exclude badgers under a licence to destroy a sett, is required on the identified fox den. This will need to be erected when kits are not dependant so as to prevent them becoming trapped, should any be present. Wire mesh will be positioned around the gates to prevent foxes digging back in. This should be undertaken at least three weeks before planned works and monitored regularly to ensure that they have not dug back in.

					the future. Such management should include mowing grassland at least twice a year and preventing scrub encroachment. - Piles of brush wood and or log piles should be carefully inspected for signs of wildlife prior to their removal.			

6.2.4 Impact Avoidance During the Construction Phase

All activities on site should bear in mind the potential for wildlife or the environment beir harmed through the process of development from inception to end, with a proacti approach occurring for lawful protection of wildlife and the environment regarding use materials, machines, chemicals, and human activity on site.

- Contractors must ensure that no harm can come to wildlife by maintaining the si efficiently, clearing away any material such as wire in which animals can becom entangled and preventing access to toxic substances.
- Trenches or large excavations should be covered overnight to prevent wildlife such badgers or hedgehogs falling in and failing to escape. If this is not possible then strategically placed plank may provide a means of escape.
- If there is a substantial delay before development commences, the site should b maintained in a way that would prevent wildlife colonising it and causing constraints

6.2.5 Artificial Lighting Strategy

Wherever possible, no external artificial lighting should be introduced to the site during the works phases of the development. Light ONLY when and where it is needed for health and safety. When external lighting is needed for safety reasons, dynamic lighting schemes that are switched on only when needed should be considered. Dynamic lighting schemes are usually triggered via motion sensors. Prevent light-spill and spread. Eliminate bare bulbs, upward pointing lights, keep light near to or below the horizontal. E.g. flat cut-off lanterns. Such light should be positioned to only illuminate the required areas, limiting light spill, both horizontally and vertically. Additionally, hoods, cowls, louvers and/or shields may be utilised to further direct any lighting.

Aspect 6: Archaeology/ heritage/ areas of cultural significance Impacts on the environment: Loss of historical/ cultural features	Damage to heritage, areas of cultural significance and archaeological artefacts	**2**	**2**	**4**	• Site investigations haven't identified that there are any archaeological areas of importance on site. • Site layout designed to minimise the effect of the works to the site. • Regular inspections of areas of importance. • Pre and post-works photos may be required to provide evidence of minimal harm. • .	**2**	**1**	**2**
Any other aspects relevant to the operation, i.e.: Use of natural resources, use of energy, community	• Sustainable use of resources & materials • Disturbance to the public • Noise and light disturbance	**3**	**3**	**9**	• Use of sustainable products reduces the pressure on natural resources. • Appropriate signage and fencing will be deployed to warn the public of works and exclude the public from access to works area.	**3**	**1**	**3**

If there is a moderate, high or severe risk identified additional control measures may be required for a particular Aspect.

Stage 3: Environmental permitting, consents and documents checklist

Mark as appropriate the consents/ licenses/ permits/ documentation required for this operation:

Consent type	Required?
EA Environmental Permit application for waste treatment/ storage/ use/ disposal.	
EA Waste exemptions (such as: D1 (dredge to bank)/ U1 (use of waste in construction)/ T5 (screening)/ U13 spreading plant matter)/ many others)	
SWMP	
Hazardous waste registration for Wales only	
EA Flood risk activity exemption or permit	
Ordinary Watercourse Consent (via local authority)	
EA Consent for spraying herbicides nr watercourse	
EA management team consent- general	
MMO marine license	
Port works licence (i.e.: PLA/ Peel ports etc)	
Felling Licence	
Natural England consent for working in SSSI's/ other protected areas	
Natural England ecology licence	
EA Environmental Permit for water discharges/ abstraction	
Foul sewer discharge consent (via water treatment facility)	
CRT 3rd party consent	
Planning permission	
Tree Preservation Order (via local authority)	
Other (FSC)	

General control measures undertaken to minimise impacts:

- Internal audits are undertaken systematically on sites at varying times to ensure control measures are in place to minimise any identified risks.
- LAWS have in-house full-time environmental scientists to provide advice and guidance as required.
- Regular site walkovers should be undertaken by competent staff on site and any issues reported to the site manager.
- Inspections, monitoring, instructions, non-conformances and rectification are to be recorded in the site diary where appropriate.
- In the event of an environmental incident the 'Emergency preparedness and response procedure' should be followed.

APPENDIX: RISK MATRIX

LIKELIHOOD (1-5)LIK						
	HIGHLY PROBABLE (5)	5	10	15	20	25
	PROBABLE (4)	4	8	12	16	20
	LIKELY (3)	3	6	9	12	15
	UNLIKELY (2)	2	4	6	8	10
	EXTREMELY UNLIKELY (1)	1	2	3	4	5
		MINIMAL (1)	MINOR (2)	MAJOR (3)	SERIOUS (4)	EXTREME (5)
SEVERITY (1-5)						

KEY

High Risk
Medium Risk
Low Risk
Very Low Risk

RISK SCORE SIGNIFICANCE:
Severe environmental risk (16+) - DO NOT PROCEED- additional control measures will be required*
High environmental risk (10-15) - DO NOT PROCEED- additional control measures will be required*
Moderate environmental risk (6-9) - additional control measures may be required*
Low environmental risk (1-5) - additional control measures will not be required

*Discuss with LAWS environmental scientist

Procedure for Oil, Fuel, Chemical Storage and Spillages

Scope

The purpose of this procedure is to appropriately manage the storage of oils, fuels and chemicals to ensure measures are in place to minimize the risk of spillages and to provide rapid and best practice response in the event a spillage does occur. The documentation of these risks and associated control measures should be updated on the Environmental Management Plan (EMP). It is LAWS policy to ensure appropriate spill kits, drip trays and so on are available.

It is an objective of LAWS to reduce to the best of our ability the impact of all LAWS operations on the environment. This procedure is a tool in the LAWS Environmental Management System for how to meet and excel our objectives and targets.

Definitions

- **Environmental Hazard**- a substance, state or event which has the potential to threaten the surrounding natural environment and/ or adversely affect people's health.
- **Environmental Risk**- the “actual or potential threat of adverse effects on living organisms and the environment by effluents, emissions, wastes, resource depletion, etc., arising out of an organization's activities.”
- **EMP-** Environmental Management Plan
- **COSHH**- 'Control of Substances Hazardous to Health'
- **MSDS**- Material Safety Data Sheets
- **OFI**- Opportunity For Improvement
- **ACOP-** Approved Code of Practice

Duties and Responsibilities

Monitoring & Reporting

- Internal environmental and health and safety audits are undertaken systematically on sites at varying times to ensure control measures are in place to minimize any identified risks.
- Regular site walkovers should be undertaken by staff on site, any spillages rectified immediately as well as potential hazards controlled and any issues reported to the site manager immediately.
- The OC01 Accident investigation and reporting procedure should be followed in the event of an environmental incident.
- Inspections, monitoring, non-conformances, rectification, and instructions are to be recorded in the site diary and where appropriate an OFI form.
- Refer to the ACOP and Procedure for environmental management, biosecurity and risk ID for further guidance on site layout designs.

Hierarchy

Site Manager

- Complete the Environmental Management Plan to include the potential risks of spillages.
- Ensure any areas of significant risk are coupled with appropriate control measures and the site is designed as per the source- pathway- receptor model.
- Ensure that all control measures are implemented and continuously monitored for effectiveness.
- Review the EMP when any changes occur on site.
- Ensure there are appropriate quantities of spill kits, drip trays, containment and storage facilities etc. on site.

Operations Manager/ Divisional business Manager

- Ensure Site Manager has a EMP on site, which includes adequate control measures, that are appropriate and being implemented safely.
- Support Site Manager in any control measures that need to be put in place, providing adequate resources.
- Ensure that Site Manager is fulfilling all of their responsibilities.
- Ensure that this procedure is known by all staff operating under their management.

Environmental Scientist/Manager

- Assist and support the Site Manager in environmental matters as required.
- Provide up to date environmental advice and information where necessary.
- To Review EMPs as required.
- Issue environmental updates on legislation and best practice as it becomes available.

Procedure for Oil, Fuel, Chemical Spillages

A variety of products are regularly used as part of LAWS operational activities.

Key products used include:

- Cement/ Concrete

- Bentonite
- Antifreeze
- Cleansing products
- Fuels
- Lubricants
- Office products
- Oils
- De-greasers
- Paints
- Sealants
- Weed killer
- Welding products

All products have undergone COSHH assessments, which are available as part of the EMS. If large quantities of toxic or harmful substances or products, with a particularly high toxicity level, are proposed to be used on site then the COSHH assessment should be reviewed ***prior*** to delivery to site/ use and an appropriate health and safety and environmental risk assessment undertaken.

Such products should be identified in the HSQE file & EMP. For high risk products/ operations booms may need to be deployed if there is a severe risk of a spill near to a watercourse. Appropriate storage measures should be considered prior to the delivery of high risk substances. Always ensure there are a sufficient number of spill kits on site to deal with the volume of substances on site.

If a spillage of any substance occurs on site, the following procedure must be undertaken where appropriate. The HSQE team must be informed immediately of major spills or if the substance toxicity is high, who will review the appropriate COSHH and risk assessment and provide further advice where necessary.

Pollutants can escape into the environment via different pathways, always design a site layout to prevent easy access to pathways and think ahead in the event of a spill to break the 'pollutant linkage', examples of pathways can include:

- Through the surface water drainage system.
- Direct run-off into a watercourse.
- Through the soil or via soakaways, drains or damaged surfaces to groundwater.
- Through the foul sewer system, where pollutants may discharge through storm overflows to surface waters, pass through the sewage treatment works or reduce the performance of the works.

The following chart highlights the pollution control hierarchy which should be followed in the event of a spill:

The Pollution Control hierarchy

Preferred response

1. Contain at Source
2. Contain close to Source
3. Contain on the surface
4. Contain in the drainage system
5. Contain on or in the watercourse

Least Preferred response

Small- scale spillages procedure:

- If a spill occurs, the spill should be immediately contained and further spillage prevented where possible. 'Spill kits' should be located near all stored substances and on all operational plant; the 'spill kit' should be used immediately in an attempt to contain the spill ASAP. If the spill can be safely and efficiently contained using the 'spill kit' alone i.e.: there is no excess substance evident, then this should be sufficient to deal with the incident.
- Ensure all items that may have been affected by the spill are dealt with appropriately-damaged bottles, hoses, soiled clothing, rags are all placed in appropriate sealed containers or drip trays and disposed of in an appropriate manner as soon as possible.
- The site manager should be immediately contacted and details provided of the type of substance spilled and an estimate of the quantity.
- The site manager will complete an OFI for minor incidents. If the toxicity of the substance spilled is unknown inform the HSQE team immediately who can check the COSHH sheets and provide details of disposal management and facilities thereafter.

Large-scale spillages procedure:

- If a spill occurs, the spill should be immediately contained and further spillage prevented where possible. 'Spill kits' should be located near all stored substances and on all operational plant; the 'spill kit' should be used immediately in an attempt to contain the spill ASAP.
- Ensure all items that may have been affected by the spill are dealt with appropriately-damaged bottles, hoses, soiled clothing, rags are all placed in appropriate sealed containers or drip trays and disposed of in an appropriate manner as soon as possible.

- If a spill is too large and/or there is a risk of run-off into watercourses or general permeable landforms, then it should be considered to contain the spill ASAP using site materials i.e.: create soil bunds to act as barriers which can later be removed for disposal.
- If the spill contains known or suspected toxic or harmful substances the specific methodology and risk assessment protocols provided should be followed for that particular substance and the site manager contacted immediately.
- Ensure that the measures adopted in the EMP are undertaken. For example, where a boom may be required as an emergency procedure always ensure that the items are ready on site and easily accessible.
- The emergency preparedness and response procedure should be followed in the event of an environmental incident- a large scale spill or spills near to water should be notified immediately.
- Environmental incidents including large-scale spillages should be reported to the Environment Agency on the incident hotline: 0800 807 060- LAWS Environmental Scientist will deal with such reporting and liaise with the EA.
- Specialist companies can be hired to attend the site and deal with toxic or large- scale spills, the EA may wish to provide advice and recommendations on this matter.

Procedure for the storage and use of oils, fuels, chemicals

Control of Pollution (Oil Storage) (England) Regulations apply where more than 200litres of oil is stored above ground at industrial and commercial locations and include all types of oil including petrol.

- All primary containers of >200L oil including petrol will be stored in a secondary container that is bunded, impermeable and has a capacity to hold > than either 25% of the total volume of all the primary containers it holds or 110% of the volume of the largest container; whichever is greater
- All primary containers will be clearly labelled and strong enough not to burst or leak under normal circumstances

- Such containers will be stored >10m from all watercourses and >50m from boreholes/ wells.

The EA state however that all liquids in containers, whose emissions to water or land could cause pollution, should be provided with secondary containment unless other appropriate measures have been used to prevent leakage and spillage from the primary container.

The following best practice procedure therefore will apply to the storage and use of ALL COSHH assessed substances on site:

- All substances will be securely locked away when not in use, in containers. The 'polluter' will be required to pay for any clean-up operations by the EA- please note this includes if the spills occurred as a result of vandalism!
- Appropriate secondary containment should be utilised such as: drip trays, bunded storage areas, and other methods of containment suitable for the product.
- All pipes, funnels, gauges will be enclosed within the secondary container.
- Biodegradable oils e.g. Panolin will be used were practicable.
- Spill kits will be located near all stored substances and on all operational plant.
- Drip trays, nappies, mats or similar should be used when working outside the secondary container.
- All plant and equipment should be stored/ used on drip trays or similar where practicable.
- Appropriate absorbents should be used to mop up any oil collected in drip trays.
- All staff should be competent in fuelling/ spill procedures as necessary and permission to undertake such operations must be issued by the site manager.
- Fuel tanker drivers only should undertake the delivery operation on site.
- The emergency preparedness and response procedure should be followed in the event of an environmental incident.

Procedure for re-fuelling operations

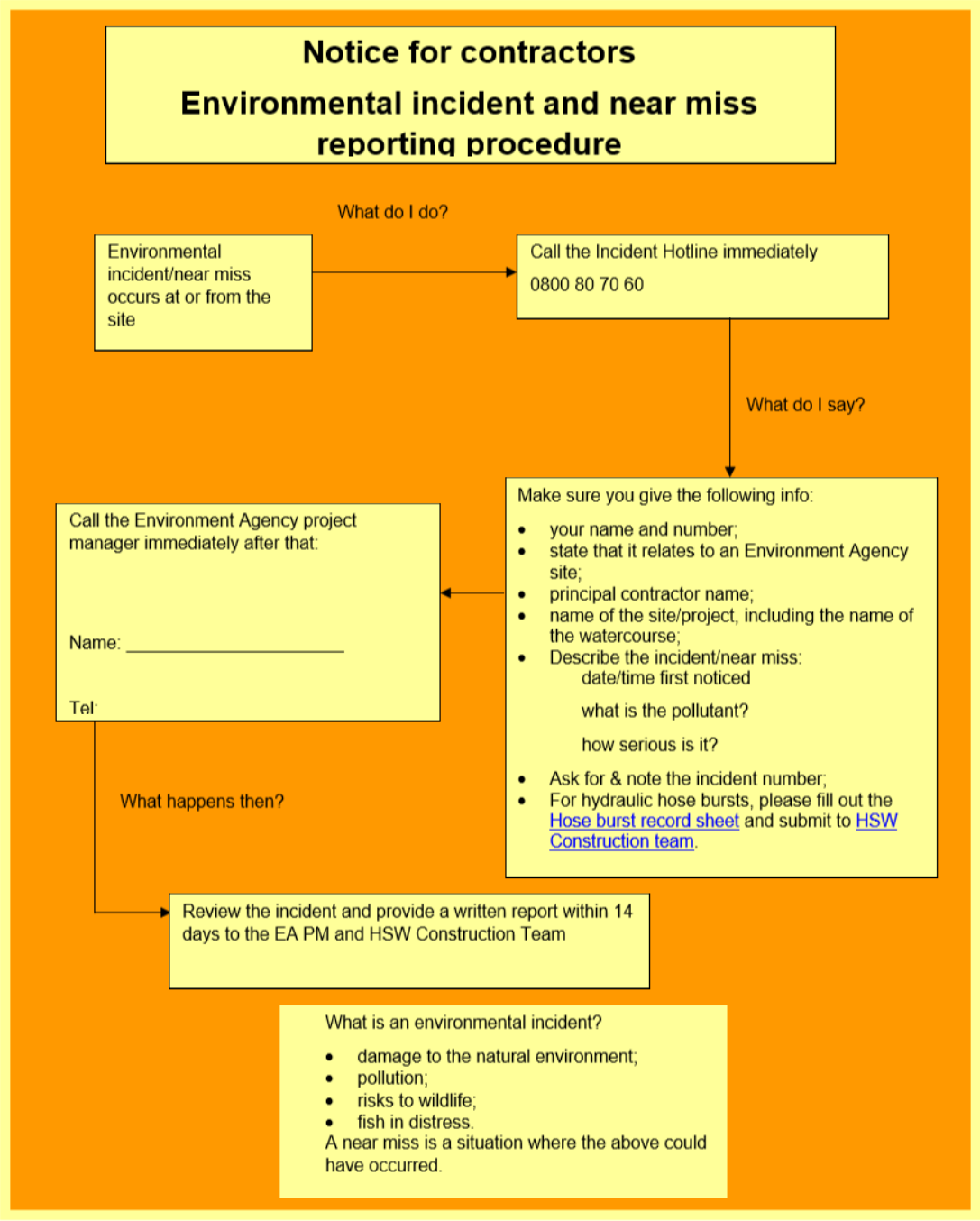
Fuelling Operations Afloat

- Where possible avoid having to place fuelling kit afloat.
- If not possible, can the Bowser be placed inside a hopper to increase bunding capacity?
- If the bowser has to go on pontoon, then use a static type rather than wheeled- strap down to ensure no movement.
- Try if possible to keep as far from excavator swing area as possible.
- Try to ensure fill can be directed using hose from bowser direct to machine, avoid cans if at all possible.
- If cans must be used, place a permanent plant spill nappy so cans can sit on this for filling, only use suitable cans, preferably use machine suck out device to empty cans into machine.
- If device not available use a suitable funnel and pour device on can, never, never attempt to pour without spill mats in position to intercept drips should they occur.
- If cans will not fit within the bund for storage remove and store safely ashore.

- A good supply of spill mats to be kept in the bowser or hung on it in the correct bag. Keep a least one small boom available with this kit all of the time.
- Always lock the bowser with fill pipe in it, do not leave out, always put hose and nozzle back within the bund.
- Good practice on a larger excavator afloat is to have two operatives fuelling up, that way the nozzle can be passed safely rather than the user having to climb tracks or steps holding the nozzle.
- Never, never leave fuel delivery hose running on automatic flow unattended.

Fuelling Operations Ashore

- Situate as far from watercourse as possible.
- If wheeled bowser- ensure it is level and flat, brakes on and locked if necessary.
- Assess whether to extend fuel delivery hoses to maintain appropriate distance.
- Can a small area be fenced off, which includes bowser for fuelling or just fence bowser on its own?
- Ensure fuel area can service all machines where possible and is on a reasonable route for machines to stop and fill.
- Make sure delivery tanker has good access to refill bowser.
- Try to ensure fill can be directed using hose from bowser direct to machine, avoid cans if at all possible.
- If cans must be used place permanent plant spill nappy so cans can sit on for filling, only use suitable cans, preferably use machine suck out device to empty cans into machine.
- If device not available use a suitable funnel and pour device on can, never, never attempt to pour without spill mats in position to intercept drips should they occur.
- If cans will not fit within the bund for storage, preferably lock inside other storage within nappy type spill tray.
- Do not store cans full unless the only option, in this case cans must be within bowser bund or on tray with capacity to take spill or leakage from can.
- A good supply of spill mats to be kept in the bowser or hung on it in the correct bag. Keep a least one small boom available with this kit all of the time.
- Always lock the bowser with fill pipe in it do not leave out always put hose and nozzle back within the bund.
- Good practice on a larger excavator is to have two operatives fuelling up, that way the nozzle can be passed safely rather than the user having to climb tracks or steps holding the nozzle.
- Never, never leave fuel delivery hose running on automatic flow unattended.
- Does fuel bowser need to be towed to fill machinery, if so make sure towing is level using correct tow hitch and fuel pipes are stored while traveling.
- Gauges should have automatic stops. Appropriate funnels and spouts will be used when re-fuelling and all fuelling hoses/ valves should be checked before use for signs of damage.



Environment Agency incident reporting procedure-

Please only use in emergencies for EA specific works only, contact LAWS HSQE manager/ ES where possible in the first instance

Procedure for Waste Management & Permitting

Scope

The purpose of this procedure is to identify all the risks associated with waste management handling, treatment, storage, transportation, re-use and disposal as well as the environmental permitting implications. This procedure outlines best practice techniques that may be relevant to a specific operation and should be implemented wherever feasible. It is essential that personnel have a thorough understanding of waste management and permitting protocols.

It is an objective of LAWS to reduce to the best of our ability the impact of all LAWS operations on the environment. This procedure is a tool in the LAWS Environmental Management System for how to meet and excel our objectives and targets.

Definitions & Abbreviations

- **EWC code**- European waste catalogue code
- **WAP**- Waste acceptance procedure (general process of assessing and classifying a waste stream)
- **WAC**- Waste acceptance criteria (essentially leachability testing for inert/ stable non-reactive waste etc.)
- **WM3**- Technical guidance for classification of hazardous waste
- **S4UL's**- 'Suitable for use levels' derived from the LQM Guidance document for assessing human health risks.
- **CEFAS**- Centre for environment, fisheries, and aquaculture science.
- **WEEE**- Waste electrical and electronic equipment
- **SSSI**- Site of special scientific interest
- **SPA**- Special protection area
- **SAC**- Special area of conservation
- **RAMSAR**- Wetlands of international importance designated under the Ramsar Convention
- **NVZ**- Nitrate vulnerable zone a conservation designation of the Environment Agency for areas of land that drain into nitrate polluted waters, or waters which could become polluted by nitrates.
- **EMP-** Environmental Management Plan
- **COSHH**- 'Control of Substances Hazardous to Health'
- **MSDS**- Material Safety Data Sheets
- **OFI**- Opportunity For Improvement

Duties and Responsibilities

Monitoring & Reporting

- Internal environmental and health and safety audits are undertaken systematically on sites at varying times to ensure control measures are in place to minimize any identified risks.
- Regular site walkovers should be undertaken by staff on site and any issues reported immediately, if any potential hazards are evident they should be rectified as soon as possible to prevent the possibility of an environmental incident.
- The OC01 Accident investigation and reporting procedure should be followed in the event of an environmental incident.
- Inspections, monitoring, non-conformances, rectification, and instructions are to be recorded in the site diary and where appropriate an OFI form.

Hierarchy

Site Manager

- Complete the Environmental Management Plan to their full ability outlining waste management control measures relevant to site.
- Ensure any areas of significant risk are coupled with appropriate control measures
- Ensure that all control measures are implemented and continuously monitored for effectiveness.
- Review the EMP when any changes occur on site.

Operations Manager/ Divisional business Manager

- Ensure Site Manager has a EMP on site, which includes adequate control measures, that are appropriate and being implemented safely.
- Support Site Manager in any control measures that need to be put in place, providing adequate resources.
- Ensure that Site Manager is fulfilling all of their responsibilities.
- Ensure that this procedure is known by all staff operating under their management.

Environmental Scientist/Manager

- Assist and support the Site Manager in waste management as required.
- Provide up to date environmental advice and information where necessary.
- To Review EMPs as required.
- Issue environmental updates on legislation and best practice as it becomes available.
- Ensure any necessary permits identified are in place prior to any work starting

Procedure for General Waste Management

- Develop a Site Waste Management Plan (SWMP) for all operations.
- Only use licensed waste carriers; a copy of the waste carrier's license should be obtained and filed in the HSQE file.
- Only use permitted receiving sites; you can check if a site is appropriately licensed by searching the site name and location on the EA public register.

- Complete a Waste Transfer Note (WTN) for each waste stream that is transported. Keep copies of all WTNs for a minimum of 2 years.
- Record European Waste Catalogue (EWC) codes on all waste transfer paperwork.
- If you are receiving a waste type on site, ensure the waste description and EWC code is applicable to the waste received.
- Ensure relevant waste streams have undergone appropriate testing as required.
- Check non-inert wastes have undergone a form of pre-treatment.
- Standard Industry Code (SIC code) for dredging operations is: **42910** for LAWS operations.
- Ensure the waste hierarchy is followed (in order): reduce, re-use, recycle/ compost, energy recovery, disposal.
- Banned wastes will not be disposed to landfill these include: tyres and liquids. There cannot be greater than 10% free-flowing liquid. If you put a stick in the waste and water re-fills the hole instantly it's too wet!

Hazardous waste

- Ensure hazardous waste is disposed of or treated at a licensed facility capable of dealing with the specific hazardous waste type (check active permit conditions).
- Register as a hazardous waste producer if you hold or produce waste quantities greater than 500kg per year in **Wales only.** ***This is no longer required in England.***
- Use hazardous waste consignment notes for all hazardous waste movements and retain copies. The consignment note reference should be displayed as follows: **LANDAN 0001** then 2/3 etc.
- Waste oils/ oily rags/ aerosols etc. generated at the yards/ maintenance on site should be isolated in appropriate containers and sent off for disposal via specialist disposal companies authorised to accept such waste.

'Special' Wastes

The following wastes may require specialist handling and appropriate disposal at a registered facility, contact the disposal site and/or environmental scientist for further details:

- Invasive plant tissue and soils/ silts contaminated with incidental invasive plant matter;
- Asbestos and asbestos contaminated material;
- WEEE.

General waste storage and treatment best practice

- Ensure all waste streams, i.e.: hazardous, non-hazardous, metal, sediment, plant matter, are thoroughly segregated where possible to ensure correct disposal, treatment or re-use and to minimise cross-contamination.
- Use suitable storage facilities for each waste type, e.g. sealed skips for hazardous waste. Ensure storage facilities are located as far as practicable from receptors to include: watercourses, sensitive habitats, residential areas.
- Unauthorized discharge of contaminated waste water could lead to prosecution by the EA as a direct breach of the activated permit or exemption. Therefore, particularly wet material may need to be stored in a sealed skip to prevent run-off.
- Cover waste to prevent water ingress where possible.

- Dispose of waste as fast as practicable.
- Locate stockpiles/ storage facilities out of direct wind or provide a wind break and damp down if dry.
- Minimize height of any stockpiles and create gentle slopes where possible.
- Consider wind speed/direction in relation to receptors before allocating general storage areas.
- Compact/ bind stockpile surfaces or vegetate if stored long-term, cover odorous or dusty wastes

Environmental permitting

The following are a list of the general requirements applicable when an environmental permit is active on a site:

- The specific permit conditions must be adhered to and should be reviewed prior to undertaking any permitted operation.
- Technically competent personnel must be available and an appropriately technically competent management system must be in place in order to minimize environment risks.
- Emissions to air, land or water must be those as approved in the permit activation, no other emissions are acceptable. An emissions management plan may be required if the EA believe an operation to be causing polluting emissions.
- Waste used under a permit must be assigned an accepted EWC code and conform to that description.
- Waste returns are required to be submitted to the EA each quarter detailing the waste imported or exported from site and the tonnages as per the permit approved quantities. The returns are completed by Environmental Scientist.
- Appropriate record keeping is required which must be retained for at least 6 years from the date of completion.
- The EA shall be notified without delay following the detection of:
- Any malfunction, breakdown or failure of equipment or techniques, accident or emission of a substance not controlled by an emission limit which has caused, is causing or may cause significant pollution;
- The breach of a limit specified in the permit approval or
- Any significant adverse environmental effects
- Written confirmation of actual or potential pollution incidents and breaches of emission limits shall be submitted within 24 hours

Consent checklist

List of consents that may be required for an operation:

Consent type	Required?
EA Permit application (for waste treatment/ storage/ use/ disposal/ water discharge/ abstraction)	
EA Waste exemptions (such as: D1 (dredge to bank)/ U1 (use of waste in construction)/ T5 (screening)/ U13 spreading plant matter)/ many others)	
SWMP	

Hazardous waste registration for Wales only	
EA Flood risk activity exemption or permit	
EA Consent for spraying herbicides nr watercourse	
EA consent- general	
MMO marine and/or port works license	
CRT 3rd party consent	
Planning permission	
3rd party	
Tree Preservation Order (local authority)	
Felling License	
Natural England consent for working in SSSI's/ other protected areas	
Natural England ecology license	
Foul sewer discharge consent (water treatment facility)	
Other (FSC)	

Step 1… ***Detail below the task to be undertaken.***

Describe Task:

- **Take delivery of all plant and equipment required for the first section of works.**
- **Set up all overhead procedures as per GS6 & all ground protection as per the temporary works brief.**
- **Install crane pad.**
- **Mobilise all floating plant and associated materials as per the lift plan provided by LAWS mobilisation department.**

Start Date:	05/02/2024	**Completion Date:**	16/02/2024	**No of Staff:**	10+

List of Significant Hazards:	**1. Lifting operations**	**5. Public**
	2. Overhead/underground services	**6. Manual Handling**
	3. Working near/on water	**7. Weather – Wind, Rain, Ice/Snow**
	4. People plant interface	**8.**

Step 2… ***Identify the equipment to be used and any required permit to work.***

List Plant / Equip to be Used	Special Requirements	Test Cert. Req'd?	Permit to work Req'd?
Welfare Units		Yes	
Fire Extinguishers		Yes	
Overhead Goal posts	Set up to GS6 Standard.	No	
Local barriers and cones			
Ground protection mats		No	
Hiab delivery lorries	Check all lift certs of the crane and operator. To be excorted during any reversing operations.	Yes	
Herras Fencing	Ensure that it is accompanied with ballast as per TW design.	No	
Crane mats		No	
250T Crane	Check all lift certs of the crane + operator	Yes	
Articulated delivery lorries	To be escorted by a bankmans during any reversing operations.	No	
Ravestein Ponton sections		Yes	
Knockdown Pontoon		Yes	
Shunter Tug		Yes	

LAWS Hoppers		Yes	
Safety Boat & outboard		Yes	
Excavator fitted with Movax		Yes	
8T LR excavator		Yes	
Double bunded Fuel Bowser			
Spill trays & spill kits		No	
Site statutory, public & site signage		No	
Various chains / lifting equipment	Check certs are in date.	Yes	
Small hand tools / equipment		No	

The above must be verified BEFORE work commences.

Step 3… ***Identify the operative numbers and skills with Training/certification to undertake the task***

Type of Operative Required	Number of Operatives	Skilled Operative?	Minimum Competency Required
Site Manager	1	Yes	SMSTS, TWSTC, IEMA, Environmental awareness, Waterwise Trained, Full first aid course
Site Forman	1	Yes	SSSTS, TWSTC, INNS, Environmental awareness, Waterwise Trained, Full first aid trained.
Site Ganger	1	Yes	SSSTS, TWSTC, INNS, Environmental awareness, Waterwise Trained, Full first aid trained.
Mobilisation Gang	3	Yes	Appointed Person, Lift Supervisor, Full first aid trained.
Crane operator	1	Yes	CPCS
Excavator operator	1	Yes	CPCS
Tug operator	1	Yes	RYA Certified.
Safety Boat operator	1	Yes	Rya Certified.
Movax operator	1	Yes	CPCS
Pile hand	1	Yes	CSCS
Deck Hand	1	Yes	CSCS
Labourer	2	Yes	CSCS
Banksman	1	Yes	CPCS

The above must be verified BEFORE work commences.

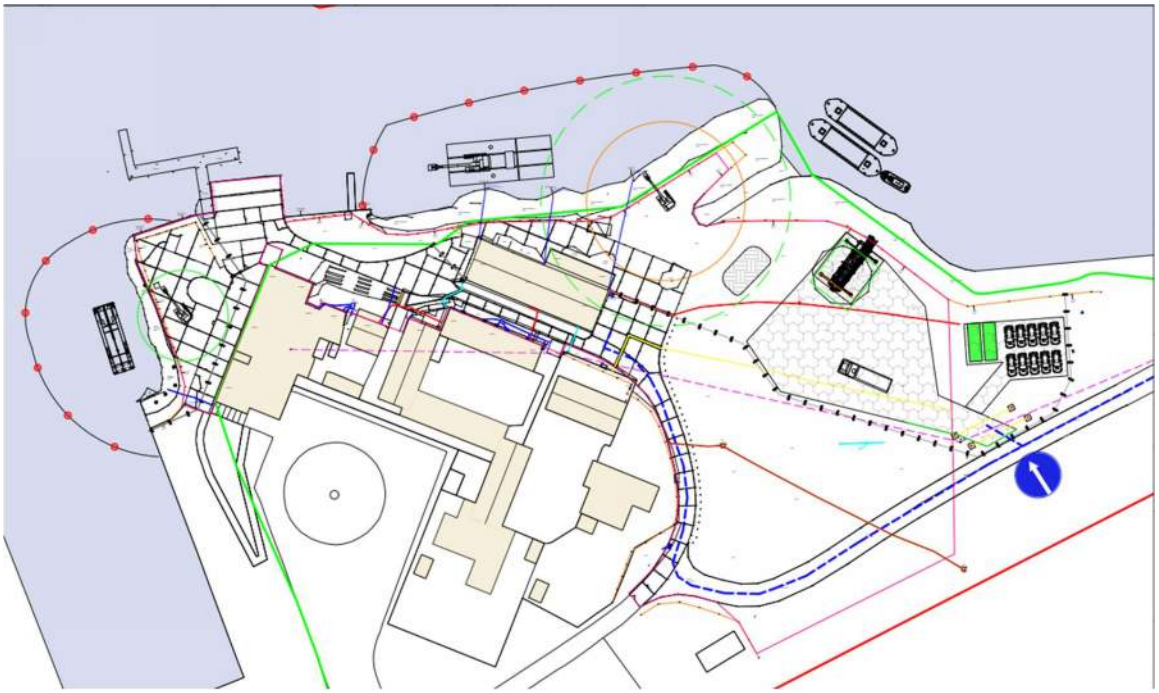
Step 5… *List sequencing of works*	
I.D	Instruction
1.0	***Scope of works covered by method statement***
1.1	Establish site compound
1.2	Mobilise floating plant & associated equipment.
1.3	
2.0	***Methodology***

2.1	**Induction and site familiarisation:** All site staff will undergo a site-specific induction, the induction will detail the following aspects: 1. Site rules, including Covid-19 Risk Assessment 2. Company and site objectives 3. Location of welfare facilities 4. Site emergency procedures which will include the emergency plan for the dam. 5. Assembly points 6. First aiders and location points 7. Traffic management plan, covering vehicle routes & pedestrian routes & Overheads. 8. Site specific hazards and key controls 9. Site environmental hazards and key controls 10. Spill procedures 11. Near miss reporting 12. Location of; life rings, throw lines, fire extinguishers and spill kits/booms which will be strategically placed for quick deployment. The works shall only be undertaken once this RAMS have been briefed to all site operatives along with any relevant toolbox talks & site inductions undertaken where all competency certs will be reviewed, and copy shall be kept in the site safety file. The correct PPE for the task will be issued to staff before work commences. All compounds will be CAT scanned by a trained and competent person, and any overhead services will be identified and briefed.

Prior to mobilisation the site manager will register the site within the EA's flood warning scheme. This will ensure that they will receive a notification regarding raising water levels that they can then act upon appropriately.

Where possible deliveries will be requested to arrive on a timed basis, also all deliveries will contact the site manager/Foreman 30mins prior to arrival. Site will have 10mph speed limit in place on the access track and 5mph once inside the compound area. Any reversing operations will be accompanied by a banksman.

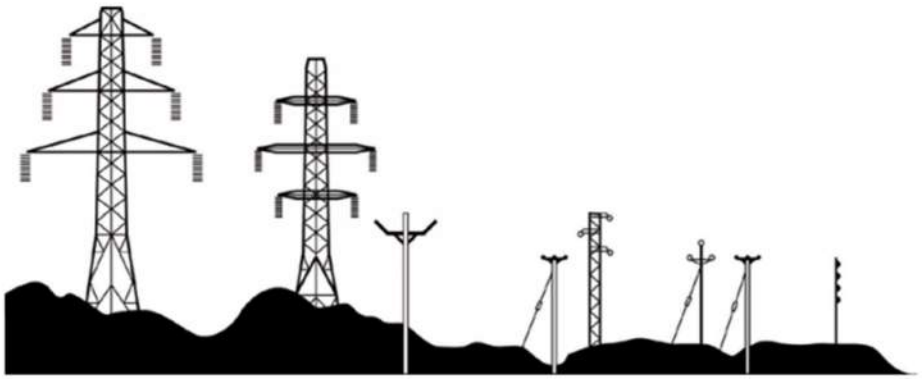
A double clipped Herras fenced compound will be established, see Access and Works location plan. Within the compound area will be a Welfare unit, Parking, Site stores, Fuel Bowser. A large operating area will also be established to accompany craning operations and deliveries, this will be large enough to allow for a one-way system to be in place. All materials required will be brought to site on a scheduled delivery basis so as not to have any excess materials stored within the compound areas.



2.2

A herras panel perimeter will be established to secure the site, the herras fencing will be accompanied by the required kentledge as per the TW design brief. Site signage will be displayed where needed for various instructions/warnings.

Goalposts will be set up as per the GS6 guidance at the entrance to the LAWS site to accommodate a telecom line that runs through the site.



- refer to the Energy Networks Association (ENA) publication *Look Out Look Up! A Guide to the Safe Use of Mechanical Plant in the Vicinity of Electricity Overhead Lines.*[2] This advises establishing exclusion zones around the line and any other equipment that may be fitted to the pole or pylon. The minimum extent of these zones varies according to the voltage of the line, as follows:
  - low-voltage line – 1 m;
  - 11 kV and 33 kV lines – 3 m;
  - 132 kV line – 6 m;
  - 275 kV and 400 kV lines – 7 m;

In addition to this there are also several other services that run through the site: Foul, Electric and Gas, where access is required over these services a crossing point is to be created as per the TW design brief provided by LAWS technical team. The Electric and Gas require a 100mm scrape and 100mm thick timber mats placed atop followed by the heavy-duty trackway. The positioning of the timber mats will be undertaken by a skilled excavator operative with lifting endorsements, the mats will be secured to the excavator using a set of 2 leg chains up to a suitable shackle, these will be selected and secured by a trained slinger signaller, tag lines will be used to control the lift operation and will be repeated until the required number of mats has been laid.. The foul will require a “bridge” to be created using a combination of stone and bog mats as per the TW design to alleviate any pressures placed on to it.

2.3	A key supplier for LAWS will supply and install a heavy-duty trackway as per the above site plan. This trackway can accommodate 70T point load and 1000T gross train weight. At the rear of the trackway where the spoil heap is located 5m x 1m x 100mm timber matts will be positioned using the same methodology mentioned above to allow the wagons to safety tip the stone away from the trackway, preventing any damage to it.
2.4	Once the above has been established the welfare and stores can be put into position as per the site set plan, along with local crowd barriers to enforce a walkway for pedestrians. All parking within the compound is to comprise of reverse parking only.
2.5	Next, the crane will arrive on site along with the LAWS mobilisation crew. Under the supervision of the lift supervisor a crane pad will be installed using 3no 5m x 1m x 100mm bog mats located at each rigger location along with specialist crane mats that will be supplied by the mobilisation team. Once the crane pad has been established, the crane can then begin its rigging process. When the crane is set up and all involved in the lifting process are satisfied, then the floating plant can start to be mobilised. This process will be undertaken under the Lift Plan provided by the Appointed person, all personnel involved with the lift process will need to be signed up to this lift plan and fully understand their role. Upon completion of all lifts the crane will de-rig and the crane mats supplied by the mobilisation team will be removed from site. The above activity will be repeated when the crane returns at a later date to load the next batch of piles onto the pontoon and during de-mobilisation of the floating kit.
2.6	Once all floating and static plant has been mobilised, site will then take delivery of the Movax excavator. The movax will be tracked to the pontoon via the grass slip way and manoeuvred onto the pontoon ensuring that the configurations and freeboard as per the stability calculations are maintained throughout.
2.7	Next, the safety boat will deploy a line of buoys demarcating the LAWS working areas within the watercourse to ensure that no unauthorised boaters enter our working space.
3.0	***Consents, licences & environmental issues***
3.1	FRAP
3.2	Planning Permission
3.3	
4.0	***Identify any Manual Handling involved in this Task*** (Ensure these items are included on the Manual Handling Poster)
4.1	• Erecting herras fencing. • Use of hand tools. • Attaching lifting appliances. • Placing of buoys. • General set up of site equipment (fire trolley/signs ect)
5.0	***Identify any hazardous substances used during the undertaking of this task*** **(Ensure these items are included on the COSHH Poster)**

5.1	• Hydraulic Oil • Diesel • Housekeeping products. • Petrol

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Step 6… ***Identify the Additional Risks and Personal Protective Equipment Required.***

What are the Hazards?	Who is at Risk?	How are they at Risk?	Without Controls				Site Specific Controls to be put in place	With Controls				Sign Once Action Complete
			Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)		Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)	
							•					
Manoeuvring of Plant	All site operatives and visitors	Contact with moving Plant	5	4	20	Y	• Only essential authorised staff to work near plant. • Line of communication to be established between plant operator and other(s) working in close proximity. • Only essential site personnel allowed in work areas. All visitors must be accompanied at all times. • All site staff and visitors must wear hi visibility vests at all times. •	5	1	5	N	
Operating in the working area	All site operatives	Slips, trips and falls Contact with moving Plant Entrapment	5	3	15	Y	• Regular inspection of site to take place (minimum daily) to assess conditions. • Plant operator to ensure that they operate equipment from a safe working area. • If water conditions cause concern, work must stop immediately. • Only designated travelling routes/ work areas to be used or worked.	5	1	5	N	
Unfit/ Untrained/ Unauthorised staff operating plant	All site operatives and visitors	Contact with moving Plant Equipment damage Property damage	4	3	12	Y	• Staff operating Plant must be adequately trained and certified (CITB). • Only medically fit staff to operate plant. • Any operator who may have a medical condition that could affect their capabilities must inform the site manager. • Anyone found operating plant under the	4	1	4	N	

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Step 6… ***Identify the Additional Risks and Personal Protective Equipment Required.***

What are the Hazards?	Who is at Risk?	How are they at Risk?	Without Controls				Site Specific Controls to be put in place	With Controls				Sign Once Action Complete
			Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)		Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)	
							influence of alcohol/drugs will be removed from site immediately. Anyone found misusing or abusing plant will be disciplined. • Any unauthorised person found operating plant will be subject to disciplinary action.					
Working in adverse weather conditions	All site operatives and visitors	Slips, trips and falls Vehicle collisions	4	4	16	Y	• In extreme adverse weather conditions, alternative work will be found or the job rescheduled. • Staff to be provided with suitable PPE which offers adequate thermal comfort. • Staff to be provided with suitable anti-slip footwear. • Suitable, adequate welfare facilities to be provided and staff actively encouraged to use the facilities provided. • Plant to be adequately lit when working out of daylight hours or during times of adverse visibility. • Access/ egress routes to be suitably maintained, matting may be required	4	1	4	N	
Working near plant	All site operatives	Contact with moving equipment	5	4	20	Y	• Offloading/ transfer points to be adequately fenced to prevent persons entering the area. • Appropriate warning signs to be posted. • Only essential authorised staff to work near plant. • Line of communication to be established between plant operator and other(s) working in close proximity.	5	1	5	N	
Working in adverse weather conditions	All site operatives and visitors	Slips, trips and falls Vehicle collisions	4	4	16	Y	• In extreme adverse weather conditions, alternative work will be found or the job rescheduled. • Staff to be provided with suitable PPE which	4	1	4	N	

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Step 6… ***Identify the Additional Risks and Personal Protective Equipment Required.***

What are the Hazards?	Who is at Risk?	How are they at Risk?	Without Controls				Site Specific Controls to be put in place	With Controls				Sign Once Action Complete
			Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)		Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)	
							offers adequate thermal comfort. • Staff to be provided with suitable anti-slip footwear. • Suitable, adequate welfare facilities to be provided and staff actively encouraged to use the facilities provided. • Plant to be adequately lit when working out of daylight hours or during times of adverse visibility. • Access/ egress routes to be suitably maintained, matting may be required					
Noise	Site operatives Members of the public	Hearing Impairment Noise nuisance	4	5	20	Y	• Appropriate ear protectors to be worn by all operatives within close vicinity of the activity. • Operation to be restricted to site opening times. • Site Manager has a noise monitor on site and will monitor what noise level is being produced. • PPE will be worn according to HSE guidelines. • The indirect effects of noise are to be assessed and accounted for-such as interference with audible • warnings or other sounds and communications that need to be audible in order to reduce risk at work.	4	1	4	N	
							• The impact of noisy machinery or plant in the area assessed to receptors. • Ear defenders are worn by the operatives in the vicinity of the noise. • Hood/ doors on the plant and equipment are					

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			Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)		Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)	
Noisy machinery or plant	Site operatives	Environmental noise Hearing impairment	4	5	20	Y	kept shut. • When plant is not in operational use the engines are turned off. • Plant is well maintained and noise suppression equipment such as muffs and silencers are used where necessary. • Personal contact is made with persons living or working in adjoining properties, or in other sensitive areas e.g. schools, hospitals. • Consultation with the Local Authority may be required regarding permitted hours of work and noise monitoring. • Manufactures guidelines will be followed when using any small tools or machine attachments.	4	1	4	N	
Combustible materials	Site operatives and visitors	Exposure to fire	4	2	8	Y	• Store combustible materials in a secure area away from sources of ignition. • Suitable fire fighting equipment is to be properly sited and a safe means of escape provided. • Ensure emergency evacuation procedures have been drawn up and are brought to the attention of all personnel on site.	4	1	4	N	
Toxic substances	Site operatives	Poisoning, Respiratory problems, Irritation to eyes or skin	4	2	8	Y	• COSHH assessments are carried out on all substances used.	4	1	4	N	

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			Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)		Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)	
Fumes	Site operatives and visitors	Explosions Asphyxiation Headaches from gasses from plant used or sludge / residues disturbed	5	4	20	Y	• No smoking or naked lights. • Ventilate the atmosphere with a gas monitor. • Use local extract ventilation. • Prepare method statement incorporating a safe system of work. • Entry only allowed on a 'Permit to work' system. COSHH assessments are carried out on all substances used.	5	1	5	N	
Work Equipment (including the use of portable tools and vibratory equipment)	Site operatives	Vibration-White finger Explosi ons Fires Noise Injuries to face and body	4	2	8	Y	• All safety and work equipment to be fit for purpose and regularly inspected and maintained. • All portable electrical equipment to be PAT tested. • Operative to be trained in the correct use of equipment and to wear appropriate PPE (gloves, ear defenders, safety goggles etc). • Portable equipment with potential significant risk e.g. disc cutters, grinders, portable gun drills etc shall be inspected for deterioration on a weekly basis and the inspections recorded. • All portable electrical equipment to be operated either by 110v transformer or battery. • Use anti-vibration equipment where appropriate and adhere to the recommended working times. Manage vibration exposure time using the LAWS HAVS forms.	4	1	4	N	
Poor Illumination	Site operatives and visitors	Slips, trips and falls	4	2	8	Y	Provide adequate illumination within the working space.	4	1	4	N	
Underground or		Contact with					• Ensure service location plans are obtained and clearly mark all underground services so that					

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What are the Hazards?	Who is at Risk?	How are they at Risk?	Without Controls				Site Specific Controls to be put in place	With Controls				Sign Once Action Complete
			Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)		Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)	
Overhead services	Site operatives and visitors	electricity or and electrical discharge Damage to services	5	4	20	Y	contractors are aware of their location and if overhead cables or pipes cross or pass near to the site, adequate protection must be provided. Refer to risk assessment for overhead and buried services.	5	1	5	N	
Inadequate welfare facilities	Site operatives	Disease Ill health	4	3	12	Y	• Welfare facilities shall be suitable, sufficient, functional and kept clean. These will meet all criteria laid out in CDM regs.	4	1	4	N	
Transport to and on the site	Site operatives Motorist	Contact with moving vehicles Slippery road	5	3	15	Y	• Provide a suitable access road, traffic control measures, warning signs, speed limit signs, pedestrian segregation, and designated car parking areas. • Ensure access and egress routes are maintained and kept clean at all times. Provide vehicle wash facilities where necessary.	5	1	5	N	
Hazardous substances	Site operatives and visitors	Exposed to or in contact with harmful substances. Exposure to fire	4	3	12	Y	• Hazardous substances are stored in a secure and bunded container and away from sources of ignition. • Ensure a spill kit and where necessary bunds are available. • When handling hazardous materials ops to wear PPE based on the data sheet for the specific product. • Refer to the COSHH assessments for further control measures.	4	1	4	N	
Buried services	All site operatives	Contact with buried services					• Before commencing work, all known services to be identified/ marked out/ made aware to site manager and associated staff.					

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What are the Hazards?	Who is at Risk?	How are they at Risk?	Without Controls				Site Specific Controls to be put in place	With Controls				Sign Once Action Complete
			Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)		Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)	
		Contact with electricity	5	4	20	Y	• Staff operating plant to proceed with caution at all times. • No excavation work to take place within 5-15m either side (dependent upon site condition) of any identified buried service. • If buried services need to be travelled across with heavy plant, site assessment to be undertaken by authorised personnel to ascertain if ground conditions are acceptable. • If ground conditions are not acceptable, no heavy plant to pass over this area. • If required, additional work(s) to be carried out to make travelling over buried services safe i.e. matting, concrete pad. • Should any unidentified buried services be identified, work(s) will stop immediately until an assessment has been made of what further action(s) are required by authorised personnel. • If buried services need to be exposed/ identified, • extreme caution must be taken and only hand tools used for the last 400mm of ground.	5	1	5	N	
Drowning	All site operatives and visitors	Slips, trips and falls	5	4	20	Y	• All staff working on, near (within 3m) or above water must wear a life jacket which is approved and is within its inspection/test date. • Staff wearing life jackets are to be fully trained in their use and operation. • Life jackets to be tested/maintained in accordance with manufacturers recommendations and the test certificates	5	1	5	N	

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			Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)		Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)	
							retained. • Any life jacket which has a defect or has not been tested within the specified period must be withdrawn from service until repaired/replaced. • Adequate first aid facilities to be available at all times when staff are working near water. • Anyone not wearing their life jackets will be subject to disciplinary action. • Staff required to work in water must be adequately trained and will only work at water level-under NO CIRCUMSTANCES will staff be allowed to lone work in water. Working in flows of water which are deemed 'strong' will be subject to further controls. • I.e. method statements, permit to work, etc.					
Contact with Vermin	All site operatives and visitors	Leptospirosis	4	4	16	Y	• Staff to be provided with suitable Personal Protective Equipment (PPE) and are trained in its use. • Always use waterproof gloves when working in water/ other PPE and always wash hands/ exposed skin after contact with water. • Staff to receive adequate information, instruction and supervision regarding Leptospirosis eg leaflets INDG84. • Staff to be encouraged to report sightings of vermin activity. • Any dead vermin to be left in situ. Under no circumstances must anyone remove vermin by direct contact unless authorised to do so.	4	1	4	N	

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			Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)		Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)	
							• Any dead vermin which have been removed must be carried out using a non-contact method. I.e. helping hand. • Any dead vermin which have to be removed must be disposed of in an approved manner. • Suitable/adequate welfare faculties to be provided • and staff actively encouraged to use the facilities provided.					
Exposure to Cold/Wet conditions	All site operatives and visitors	Thermal Comfort	4	3	12	N	• Staff to be provided with suitable PPE which offers thermal comfort. • Suitable welfare facilities to be provided. • Staff working in cold/wet conditions will be allowed to take sufficient breaks to allow them to work in comfort. • In extreme adverse weather conditions, alternative work may be carried out.	4	1	4	Y	
High winds	All Site operatives and visitors.	Slips, Trips & Falls. Flying debris.	4	2	8	Y	• Staff to be made aware of the hazards associated with working near water in high winds during the induction. • Operators to take particular care when operating in windy conditions. If they consider it unsafe they must stop work, make the Plant safe, and report it to the site manager. • In extreme windy conditions, the job should be suspended until conditions improve.	4	1	4	N	
							• Housekeeping standards must be maintained to an acceptable standard, paying particular attention to tripping / stumbling hazards. • Any material/sludge to be cleaned up as soon					

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			Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)		Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)	
Rainy wet conditions	All Site operatives and visitors.	Slips, Trips & Falls. Vehicle collisions	4	2	8	Y	as possible or the area cordoned off. • Longer term sites should have surface water ditches alongside access/ egress routes to prevent vehicles slipping. • Access/ egress routes should have hardcore layerto minimise vehicles skidding on mud.	4	1	4	N	
Foggy conditions	All Site operatives and visitors.	Slips, Trips & Falls.	4	2	8	Y	• Site manager to assess fog/poor visibility conditions on site. If considered unsafe, the equipment will be stood down and parked until conditions improve. • When working in poor light conditions, Machines are to be adequately lit	4	1	4	N	
Public accessing site during non- working hours	Members of the public	Slip, trip and falls Falling from height Entrapment Equipment security	4	2	8	Y	• Ensure all gates and fences are secure. • Ensure all equipment is locked and in a secure holding/ compound area. • Ensure that all signage is clear and visible. • Employ security personnel for problem sites. • Consider employing overnight/ weekend security. • Fit window cab guards to machines and equipment. • Employ deadlocks/ isolators to machinery/ equipment.	4	1	4	N	
Lifting procedures	Site staff / Site visitors	Falls from height / overturning of lift equipment / entrapment	5	5	25	**Y**	• Lifting procedures to controlled by the issue of 'Permit to Lift' • Tool box talks • Banksman / slinger – signaller / crane lift supervisor to supervise lifts as required • Equipment to be tested / compliant • Equipment to be used in conjunction with lifting duty / radius charts	5	1	5	**N**	

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			Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)		Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)	
							• Stability of excavator to checked before use • Competent lift operative • Daily site briefings • Implementation of operational controls – OC25 • Slew radius to be operated through 180 degrees and within compound area only • Excavator jib not be operated outside of the site boundary / over the top of the herras fence • Machine bucket to be removed from machine when undertaking lifting duties • Machine Operators who have lifting Op on CPCS card only to carry out lifts •					
Lifting appliance failure	Site operatives	Entrapment/Injury	5	4	20	Y	• Inspect the condition of chains and shackle before and after use • Test certificates required for all lifting tackle • All lifting operations on site are to have a permit to lift issued before lifting takes place • Chains and slings to be inspected before use and tested every 6 months, test sheets to be retained in site file • 12 month thorough examinations for lifting devises to be in place for all hiabs and excavators • Excavators used as a manual handling aid not to lift in excess of the SWL	5	1	5	N	

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Step 6… ***Identify the Additional Risks and Personal Protective Equipment Required.***

What are the Hazards?	Who is at Risk?	How are they at Risk?	Without Controls: Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)	Site Specific Controls to be put in place	With Controls: Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)	Sign Once Action Complete

Risk Rating:

Likelihood→ ↓Severity	Likely (5)	Probable (4)	Possible (3)	Unlikely (2)	Very unlikely (1)	KEY:
Death (5)	25	20	15	10	5	High risk
Major (Life threatening) Injury (4)	20	16	12	8	4	Medium risk
Major (non-life threatening)Injury (3)	15	12	9	6	3	Low risk
Minor Injury (2)	10	8	6	4	2	Very Low risk
No Injury (1)	5	4	3	2	1	

PPE Required:

Hard hat/High-Vis/Safety Boots	✓
Eye/ ear protection	✓
Suitable gloves	✓
Life Jacket	✓
Safety harness	
Other:	

METHOD STATEMENT & RISK ASSESSMENT

Written By:	Tyler Gibson	**Date Prepared:**	03/01/2024	**Ref. No:**	001
Client:	Surrey County Council	**Site Name:**	Thames Young Mariners		
		Location:	Surrey Outdoor Learning & Development, 76 Mallard Place, Richmond TW10 7RX		

Brief description of Task:

Installed piles a 2 locations within the Thames Young Mariners watercourse.

Install platypus anchors.

Back fill and re-grade the back behind the new pile line.

Review

NOTE & INSTRUCTIONS: Reviews are to be undertaken on a monthly basis as a minimum.

Review Date	Signature

Revision

NOTE & INSTRUCTIONS: Revisions are to be undertaken on a 6 monthly basis as a minimum.

Revision Date	Revision Number	Signature

Step 1… ***Detail below the task to be undertaken.***

Describe Task:

- **Installing 33m of AZ19-700 piles using a Ravenstein pontoon and excavator mounted movax.**
- **Back fill and re-grade the back behind the AZ piles section.**
- **Install approx. 47m GU21 N sheet piles using a Ravenstein pontoon and excavator mounted movax.**
- **Prepare GU21 N piles for Platypus anchors.**
- **Install platypus anchors.**
- **Backfill and regrade behind GU21 N pile line.**

Start Date:	05/02/2024	**Completion Date:**	16/02/2024	**No of Staff:**	10+

List of Significant Hazards:	**1. Lifting operations**	**5. Public**
	2. Noise	**6. Manual Handling**
	3. Working near/on water	**7. Weather – Wind, Rain, Ice/Snow**
	4. People plant interface	**8. Vibration**

Step 2… ***Identify the equipment to be used and any required permit to work.***

List Plant / Equip to be Used	Special Requirements	Test Cert. Req'd?	Permit to work Req'd?
Welfare Units		Yes	
Fire Extinguishers		Yes	
Overhead Goal posts	Set up to GS6 Standard.	No	
Local barriers and cones			
Ground protection mats		No	
Hiab delivery lorries	Check all lift certs of the crane and operator. To be escorted during any reversing operations.	Yes	
Herras Fencing	Ensure that it is accompanied with ballast as per TW design.	No	
Crane mats		No	
250T Crane	Check all lift certs of the crane + operator	Yes	
Articulated delivery lorries	To be escorted by a bankmans during any reversing operations.	No	

Ravestein Ponton sections		Yes	
Knockdown Pontoon		Yes	
Shunter Tug		Yes	
LAWS Hoppers		Yes	
Safety Boat & outboard		Yes	
Excavator fitted with Movax		Yes	
8T LR excavator		Yes	
Double bunded Fuel Bowser			
Spill trays & spill kits		No	
Site statutory, public & site signage		No	
Various chains / lifting equipment	Check certs are in date.	Yes	
Small hand tools / equipment		No	

The above must be verified BEFORE work commences.

Step 3… ***Identify the operative numbers and skills with Training/certification to undertake the task***

Type of Operative Required	Number of Operatives	Skilled Operative?	Minimum Competency Required
Site Manager	1	Yes	SMSTS, TWSTC, IEMA, Environmental awareness, Waterwise Trained, Full first aid course
Site Forman	1	Yes	SSSTS, TWSTC, INNS, Environmental awareness, Waterwise Trained, Full first aid trained.
Site Ganger	1	Yes	SSSTS, TWSTC, INNS, Environmental awareness, Waterwise Trained, Full first aid trained.
Mobilisation Gang	3	Yes	Appointed Person, Lift Supervisor, Full first aid trained.
Crane operator	1	Yes	CPCS
Excavator operator	1	Yes	CPCS
Tug operator	1	Yes	RYA Certified.
Safety Boat operator	1	Yes	Rya Certified.
Movax operator	1	Yes	CPCS
Pile hand	1	Yes	CSCS
Deck Hand	1	Yes	CSCS
Labourer	2	Yes	CSCS
Banksman	1	Yes	CPCS

The above must be verified BEFORE work commences.

Step 5… *List sequencing of works*	
I.D	Instruction
1.0	***Scope of works covered by method statement***
1.1	Pile the western aspect of the works.
1.2	Backfill and re-grade of piles in the western location.
1.3	Pile the northern area of revetment.
1.4	Install platypus anchors to northern revetment.
1.5	Backfill and re-grade northern revetment.
2.0	***Methodology***
2.1	**Induction and site familiarisation:** All site staff will undergo a site-specific induction, the induction will detail the following aspects: 1. Site rules, including Covid-19 Risk Assessment 2. Company and site objectives 3. Location of welfare facilities 4. Site emergency procedures which will include the emergency plan for the dam. 5. Assembly points 6. First aiders and location points 7. Traffic management plan, covering vehicle routes & pedestrian routes & Overheads. 8. Site specific hazards and key controls 9. Site environmental hazards and key controls 10. Spill procedures 11. Near miss reporting 12. Location of; life rings, throw lines, fire extinguishers and spill kits/booms which will be strategically placed for quick deployment. The works shall only be undertaken once this RAMS have been briefed to all site operatives along with any relevant toolbox talks & site inductions undertaken where all competency certs will be reviewed, and copy shall be kept in the site safety file. The correct PPE for the task will be issued to staff before work commences. All compounds will be CAT scanned by a trained and competent person, and any overhead services will be identified and briefed.

2.2	Prior to the piling operations a site engineer will have been to site to apply various setting out points along the desired pile line, these points will then be located using GPS GNSS unit to ensure that the pile line can be monitored throughout its installation ensuring it is on the correct course. As cracks have been noted in the outbuildings at TYM, a site engineer will be installing several crack gauges throughout the building to ensure that they can monitored over the course of the works, in addition to this LAWS will be implementing a seismograph to monitor vibration levels during the installation, if excessive vibration levels are reach then an alarm will sound and inform the pile hand, the vibration frequency of the movax will then be adjusted back to a satisfactory level before proceeding. The first pile will be installed at the furthest west location, this is expected to be 1 pile wide before returning back towards the bank approx. 7m and finalising its run parallel to the bank a further 25m, several clutches will be needed in order to achieve the correct orientation of the piles on route. Should any piles hit refusal before reaching the desired finish heigh then LAWs will contact the design team for guidance and present all options available to the client for further instruction. An excavator mounted with a side grip movax will be used to position and drive the piles in to their location, the movax will pick up one pile at a time aided by the guidance of the pile hand, once selected the operator will position the pile and begin driving it in its location. The piles will be check periodically for levelness both vertically and horizontally throughout its installation. The line of the piles will also be checked periodically to ensure that there is no deviation. This process will be repeated until all the piles have been installed within this location and the Northern location.
2.3	Once the piles have been installed in the Westerly location, an 8T Long reach will be sited on the bank, ensuring that it maintains the 45 degree rule of working on a bank, the long reach will be utilised to implement the cut and fill detail of bank as per the design. Once the bank has been cut in steps the back fill can proceed this will be completing using a combination plant, firstly a 38T 22m long reach will load the Indian hopper at the site works area shown on the site plan with fill material specified on the drawings, the hopper will be transported by a shunter tug to the piled location and moored along the knockdown pontoon. The knockdown pontoon will begin to unload the hopper of the fill material behind the piles in layers, a rammex will be lifted down behind the piles and onto the fill material ensuring that it is always secured to the 8T LR on the bank, the rammex will then be operated remotely to compact the fill material in accordance with MCHW series 600. This operation will continue until the fill has reached it finalised height, this will then be dressed with at least 100mm of type 5A/5B topsoil and seeded.

2.4	Whilst the back filling is operational, the Ravestein pontoon will return to the works area where the crane will have been re mobilised to load the remaining GU21 N piles onto the pontoon as per the mobilisation/site set up RAMS in order to commence the piling operations on the norther extent. When the Ravestein pontoon is in position in the northern location, the methodology mentioned above in step 2.2 will be implemented to install the GU21 N piles. Once this piling operation has been complete, the Ravestein pontoon, excavator and Movax can be demobilised from site.
2.5	Following the installation of the GU21 N piles, these will need to have holes blown out of them using a gas axe at various locations to allow for the installation of the platypus anchors. The operative blowing the holes in the piles will be equipped with an air fed welding mask to limit their exposure to any fumes. To prevent the operation being undertaken from the water, the piles will be partially back filled and rammax to provide a dry, solid surface for the operative to work from. Once enough of the piles have been blown out to ensure the operative is not within the slew radius of the excavator on the knockdown pontoon, the platypus anchors can start to be driven in, this will be completed with a post knocker attachment on the excavator that will drive the rods in at their required angle and depth, once that depth has been achieved the platypus anchors will then be pulled back out using a specialist hydraulic pump until it reaches the desired KN force. Once the platypus anchors have been installed the backfilling process will begin, at this location the 22m Long reach will be utilised to partially fill some of the void and in areas where it cannot reach the knockdown pontoon will fill the remainder. Again, ensuring that the fill material is compacted as per the MCHW series 600 mention above in section 2.3. The fill material will then be dressed with a minimum 100mm of type 5A/5B topsoil.
2.6	Following completion of these works the site engineer will record the readings from the crack monitors to ensure no movement has occurred.
2.7	Following completion all plant and equipment required for this activity can be de-mobbed from site.
3.0	***Consents, licences & environmental issues***
3.1	FRAP
3.2	Planning Permission
3.3	
4.0	***Identify any Manual Handling involved in this Task*** (Ensure these items are included on the Manual Handling Poster)
4.1	• Use of hand tools. • Attaching lifting appliances.

5.0	***Identify any hazardous substances used during the undertaking of this task*** **(Ensure these items are included on the COSHH Poster)**
5.1	• Hydraulic Oil • Diesel • Housekeeping products. • Petrol

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What are the Hazards?	Who is at Risk?	How are they at Risk?	Without Controls				Site Specific Controls to be put in place	With Controls				Sign Once Action Complete
			Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)		Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)	
							•					
Manoeuvring of Plant	All site operatives and visitors	Contact with moving Plant	5	4	20	Y	• Only essential authorised staff to work near plant. • Line of communication to be established between plant operator and other(s) working in close proximity. • Only essential site personnel allowed in work areas. All visitors must be accompanied at all times. • All site staff and visitors must wear hi visibility vests at all times. •	5	1	5	N	
Operating in the working area	All site operatives	Slips, trips and falls Contact with moving Plant Entrapment	5	3	15	Y	• Regular inspection of site to take place (minimum daily) to assess conditions. • Plant operator to ensure that they operate equipment from a safe working area. • If water conditions cause concern, work must stop immediately. • Only designated travelling routes/ work areas to be used or worked.	5	1	5	N	
Unfit/ Untrained/ Unauthorised staff operating plant	All site operatives and visitors	Contact with moving Plant Equipment damage Property damage	4	3	12	Y	• Staff operating Plant must be adequately trained and certified (CITB). • Only medically fit staff to operate plant. • Any operator who may have a medical condition that could affect their capabilities must inform the site manager. • Anyone found operating plant under the	4	1	4	N	

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Step 6… ***Identify the Additional Risks and Personal Protective Equipment Required.***

What are the Hazards?	Who is at Risk?	How are they at Risk?	Without Controls				Site Specific Controls to be put in place	With Controls				Sign Once Action Complete
			Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)		Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)	
							influence of alcohol/drugs will be removed from site immediately. Anyone found misusing or abusing plant will be disciplined. • Any unauthorised person found operating plant will be subject to disciplinary action.					
Working in adverse weather conditions	All site operatives and visitors	Slips, trips and falls Vehicle collisions	4	4	16	Y	• In extreme adverse weather conditions, alternative work will be found or the job rescheduled. • Staff to be provided with suitable PPE which offers adequate thermal comfort. • Staff to be provided with suitable anti-slip footwear. • Suitable, adequate welfare facilities to be provided and staff actively encouraged to use the facilities provided. • Plant to be adequately lit when working out of daylight hours or during times of adverse visibility. • Access/ egress routes to be suitably maintained, matting may be required	4	1	4	N	
Working near plant	All site operatives	Contact with moving equipment	5	4	20	Y	• Offloading/ transfer points to be adequately fenced to prevent persons entering the area. • Appropriate warning signs to be posted. • Only essential authorised staff to work near plant. • Line of communication to be established between plant operator and other(s) working in close proximity.	5	1	5	N	
Working in adverse weather conditions	All site operatives and visitors	Slips, trips and falls Vehicle collisions	4	4	16	Y	• In extreme adverse weather conditions, alternative work will be found or the job rescheduled. • Staff to be provided with suitable PPE which	4	1	4	N	

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			Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)		Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)	
							offers adequate thermal comfort. • Staff to be provided with suitable anti-slip footwear. • Suitable, adequate welfare facilities to be provided and staff actively encouraged to use the facilities provided. • Plant to be adequately lit when working out of daylight hours or during times of adverse visibility. • Access/ egress routes to be suitably maintained, matting may be required					
Noise	Site operatives Members of the public	Hearing Impairment Noise nuisance	4	5	20	Y	• Appropriate ear protectors to be worn by all operatives within close vicinity of the activity. • Operation to be restricted to site opening times. • Site Manager has a noise monitor on site and will monitor what noise level is being produced. • PPE will be worn according to HSE guidelines. • The indirect effects of noise are to be assessed and accounted for-such as interference with audible • warnings or other sounds and communications that need to be audible in order to reduce risk at work.	4	1	4	N	
							• The impact of noisy machinery or plant in the area assessed to receptors. • Ear defenders are worn by the operatives in the vicinity of the noise. • Hood/ doors on the plant and equipment are					

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			Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)		Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)	
Noisy machinery or plant	Site operatives	Environmental noise Hearing impairment	4	5	20	Y	kept shut. • When plant is not in operational use the engines are turned off. • Plant is well maintained and noise suppression equipment such as muffs and silencers are used where necessary. • Personal contact is made with persons living or working in adjoining properties, or in other sensitive areas e.g. schools, hospitals. • Consultation with the Local Authority may be required regarding permitted hours of work and noise monitoring. • Manufactures guidelines will be followed when using any small tools or machine attachments.	4	1	4	N	
Combustible materials	Site operatives and visitors	Exposure to fire	4	2	8	Y	• Store combustible materials in a secure area away from sources of ignition. • Suitable fire fighting equipment is to be properly sited and a safe means of escape provided. • Ensure emergency evacuation procedures have been drawn up and are brought to the attention of all personnel on site.	4	1	4	N	
Toxic substances	Site operatives	Poisoning, Respiratory problems, Irritation to eyes or skin	4	2	8	Y	• COSHH assessments are carried out on all substances used.	4	1	4	N	

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			Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)		Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)	
Fumes	Site operatives and visitors	Explosions Asphyxiation Headaches from gasses from plant used or sludge / residues disturbed	5	4	20	Y	• No smoking or naked lights. • Ventilate the atmosphere with a gas monitor. • Use local extract ventilation. • Prepare method statement incorporating a safe system of work. • Entry only allowed on a 'Permit to work' system. COSHH assessments are carried out on all substances used.	5	1	5	N	
Work Equipment (including the use of portable tools and vibratory equipment)	Site operatives	Vibration-White finger Explosi ons Fires Noise Injuries to face and body	4	2	8	Y	• All safety and work equipment to be fit for purpose and regularly inspected and maintained. • All portable electrical equipment to be PAT tested. • Operative to be trained in the correct use of equipment and to wear appropriate PPE (gloves, ear defenders, safety goggles etc). • Portable equipment with potential significant risk e.g. disc cutters, grinders, portable gun drills etc shall be inspected for deterioration on a weekly basis and the inspections recorded. • All portable electrical equipment to be operated either by 110v transformer or battery. • Use anti-vibration equipment where appropriate and adhere to the recommended working times. Manage vibration exposure time using the LAWS HAVS forms.	4	1	4	N	
Poor Illumination	Site operatives and visitors	Slips, trips and falls	4	2	8	Y	Provide adequate illumination within the working space.	4	1	4	N	
Underground or		Contact with					• Ensure service location plans are obtained and clearly mark all underground services so that					

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			Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)		Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)	
Overhead services	Site operatives and visitors	electricity or and electrical discharge Damage to services	5	4	20	Y	contractors are aware of their location and if overhead cables or pipes cross or pass near to the site, adequate protection must be provided. Refer to risk assessment for overhead and buried services.	5	1	5	N	
Inadequate welfare facilities	Site operatives	Disease Ill health	4	3	12	Y	• Welfare facilities shall be suitable, sufficient, functional and kept clean. These will meet all criteria laid out in CDM regs.	4	1	4	N	
Transport to and on the site	Site operatives Motorist	Contact with moving vehicles Slippery road	5	3	15	Y	• Provide a suitable access road, traffic control measures, warning signs, speed limit signs, pedestrian segregation, and designated car parking areas. • Ensure access and egress routes are maintained and kept clean at all times. Provide vehicle wash facilities where necessary.	5	1	5	N	
Hazardous substances	Site operatives and visitors	Exposed to or in contact with harmful substances. Exposure to fire	4	3	12	Y	• Hazardous substances are stored in a secure and bunded container and away from sources of ignition. • Ensure a spill kit and where necessary bunds are available. • When handling hazardous materials ops to wear PPE based on the data sheet for the specific product. • Refer to the COSHH assessments for further control measures.	4	1	4	N	
Buried services	All site operatives	Contact with buried services					• Before commencing work, all known services to be identified/ marked out/ made aware to site manager and associated staff.					

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What are the Hazards?	Who is at Risk?	How are they at Risk?	Without Controls				Site Specific Controls to be put in place	With Controls				Sign Once Action Complete
			Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)		Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)	
		Contact with electricity	5	4	20	Y	• Staff operating plant to proceed with caution at all times. • No excavation work to take place within 5-15m either side (dependent upon site condition) of any identified buried service. • If buried services need to be travelled across with heavy plant, site assessment to be undertaken by authorised personnel to ascertain if ground conditions are acceptable. • If ground conditions are not acceptable, no heavy plant to pass over this area. • If required, additional work(s) to be carried out to make travelling over buried services safe i.e. matting, concrete pad. • Should any unidentified buried services be identified, work(s) will stop immediately until an assessment has been made of what further action(s) are required by authorised personnel. • If buried services need to be exposed/ identified, • extreme caution must be taken and only hand tools used for the last 400mm of ground.	5	1	5	N	
Drowning	All site operatives and visitors	Slips, trips and falls	5	4	20	Y	• All staff working on, near (within 3m) or above water must wear a life jacket which is approved and is within its inspection/test date. • Staff wearing life jackets are to be fully trained in their use and operation. • Life jackets to be tested/maintained in accordance with manufacturers recommendations and the test certificates	5	1	5	N	

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			Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)		Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)	
							retained. • Any life jacket which has a defect or has not been tested within the specified period must be withdrawn from service until repaired/replaced. • Adequate first aid facilities to be available at all times when staff are working near water. • Anyone not wearing their life jackets will be subject to disciplinary action. • Staff required to work in water must be adequately trained and will only work at water level-under NO CIRCUMSTANCES will staff be allowed to lone work in water. Working in flows of water which are deemed 'strong' will be subject to further controls. • I.e. method statements, permit to work, etc.					
Contact with Vermin	All site operatives and visitors	Leptospirosis	4	4	16	Y	• Staff to be provided with suitable Personal Protective Equipment (PPE) and are trained in its use. • Always use waterproof gloves when working in water/ other PPE and always wash hands/ exposed skin after contact with water. • Staff to receive adequate information, instruction and supervision regarding Leptospirosis eg leaflets INDG84. • Staff to be encouraged to report sightings of vermin activity. • Any dead vermin to be left in situ. Under no circumstances must anyone remove vermin by direct contact unless authorised to do so.	4	1	4	N	

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			Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)		Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)	
							• Any dead vermin which have been removed must be carried out using a non-contact method. I.e. helping hand. • Any dead vermin which have to be removed must be disposed of in an approved manner. • Suitable/adequate welfare faculties to be provided • and staff actively encouraged to use the facilities provided.					
Exposure to Cold/Wet conditions	All site operatives and visitors	Thermal Comfort	4	3	12	N	• Staff to be provided with suitable PPE which offers thermal comfort. • Suitable welfare facilities to be provided. • Staff working in cold/wet conditions will be allowed to take sufficient breaks to allow them to work in comfort. • In extreme adverse weather conditions, alternative work may be carried out.	4	1	4	Y	
High winds	All Site operatives and visitors.	Slips, Trips & Falls. Flying debris.	4	2	8	Y	• Staff to be made aware of the hazards associated with working near water in high winds during the induction. • Operators to take particular care when operating in windy conditions. If they consider it unsafe they must stop work, make the Plant safe, and report it to the site manager. • In extreme windy conditions, the job should be suspended until conditions improve.	4	1	4	N	
							• Housekeeping standards must be maintained to an acceptable standard, paying particular attention to tripping / stumbling hazards. • Any material/sludge to be cleaned up as soon					

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			Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)		Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)	
Rainy wet conditions	All Site operatives and visitors.	Slips, Trips & Falls. Vehicle collisions	4	2	8	Y	as possible or the area cordoned off. • Longer term sites should have surface water ditches alongside access/ egress routes to prevent vehicles slipping. • Access/ egress routes should have hardcore layerto minimise vehicles skidding on mud.	4	1	4	N	
Foggy conditions	All Site operatives and visitors.	Slips, Trips & Falls.	4	2	8	Y	• Site manager to assess fog/poor visibility conditions on site. If considered unsafe, the equipment will be stood down and parked until conditions improve. • When working in poor light conditions, Machines are to be adequately lit	4	1	4	N	
Public accessing site during non- working hours	Members of the public	Slip, trip and falls Falling from height Entrapment Equipment security	4	2	8	Y	• Ensure all gates and fences are secure. • Ensure all equipment is locked and in a secure holding/ compound area. • Ensure that all signage is clear and visible. • Employ security personnel for problem sites. • Consider employing overnight/ weekend security. • Fit window cab guards to machines and equipment. • Employ deadlocks/ isolators to machinery/ equipment.	4	1	4	N	
Lifting procedures	Site staff / Site visitors	Falls from height / overturning of lift equipment / entrapment	5	5	25	**Y**	• Lifting procedures to controlled by the issue of 'Permit to Lift' • Tool box talks • Banksman / slinger – signaller / crane lift supervisor to supervise lifts as required • Equipment to be tested / compliant • Equipment to be used in conjunction with lifting duty / radius charts	5	1	5	**N**	

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			Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)		Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)	
							• Stability of excavator to checked before use • Competent lift operative • Daily site briefings • Implementation of operational controls – OC25 • Slew radius to be operated through 180 degrees and within compound area only • Excavator jib not be operated outside of the site boundary / over the top of the herras fence • Machine bucket to be removed from machine when undertaking lifting duties • Machine Operators who have lifting Op on CPCS card only to carry out lifts •					
Lifting appliance failure	Site operatives	Entrapment/Injury	5	4	20	Y	• Inspect the condition of chains and shackle before and after use • Test certificates required for all lifting tackle • All lifting operations on site are to have a permit to lift issued before lifting takes place • Chains and slings to be inspected before use and tested every 6 months, test sheets to be retained in site file • 12 month thorough examinations for lifting devises to be in place for all hiabs and excavators • Excavators used as a manual handling aid not to lift in excess of the SWL	5	1	5	N	

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			Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)		Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)	

Risk Rating:

Likelihood→ ↓Severity	Likely (5)	Probable (4)	Possible (3)	Unlikely (2)	Very unlikely (1)	KEY:
Death (5)	25	20	15	10	5	High risk
Major (Life threatening) Injury (4)	20	16	12	8	4	Medium risk
Major (non-life threatening)Injury (3)	15	12	9	6	3	Low risk
Minor Injury (2)	10	8	6	4	2	Very Low risk
No Injury (1)	5	4	3	2	1	

PPE Required:

Hard hat/High-Vis/Safety Boots	✓
Eye/ ear protection	✓
Suitable gloves	✓
Life Jacket	✓
Safety harness	
Other:	

METHOD STATEMENT & RISK ASSESSMENT

Written By:	Tyler Gibson	**Date Prepared:**	03/01/2024	**Ref. No:**	001
Client:	Surrey County Council	**Site Name:**	Thames Young Mariners		
		Location:	Surrey Outdoor Learning & Development, 76 Mallard Place, Richmond TW10 7RX		

Brief description of Task:

Break out the existing slabs that have been identified for replacement.

Pour the new concrete slabs.

Rake out and replace the expansion joints identified on drawing A123043-TGEE-ZZ-XX-DR-C-0010-C01

Review

NOTE & INSTRUCTIONS: Reviews are to be undertaken on a monthly basis as a minimum.

Review Date	Signature

Revision

NOTE & INSTRUCTIONS: Revisions are to be undertaken on a 6 monthly basis as a minimum.

Revision Date	Revision Number	Signature

Step 1… ***Detail below the task to be undertaken.***

Describe Task:

- **All existing concrete slabs that have been identified on drawing A123043-TGEE-ZZ-XX-DR-C-0010-C01 broken out for replacement, using a hydraulic breaker mounted to an excavator.**
- **Install K-form shuttering, dowels and A373 mesh to form the new slab. As per drawing A123043-TGEE-ZZ-XX-DR-C-0021**
- **Using a concrete pump, pour the new slabs and finish as per the existing slabs (tamped)**
- **All existing joints specified on A123043-TGEE-ZZ-XX-DR-C-0010-C01 to be raked out and re-instated as per drawing A123043-TGEE-ZZ-XX-DR-C-0021**

Start Date:	05/02/2024	**Completion Date:**	16/02/2024	**No of Staff:**	10+

List of Significant Hazards:	**1. Breaking out of concrete**	**5. Public**
	2. Noise	**6. Manual Handling**
	3. Working near/on water	**7. HAVS/Vibration**
	4. People plant interface	**8. COSHH**

Step 2… ***Identify the equipment to be used and any required permit to work.***

List Plant / Equip to be Used	Special Requirements	Test Cert. Req'd?	Permit to work Req'd?
Welfare Units		Yes	
Fire Extinguishers		Yes	
Overhead Goal posts	Set up to GS6 Standard.	No	
Local barriers and cones			
Ground protection mats		No	
Forward/Reverse diesel wacker plate			
Excavator with breaker attachment <5T		Yes	
K-Form shuttering		No	
Concrete delivery lorries	Check all lift certs of the crane and operator. To be escorted during any reversing operations.	Yes	
Herras Fencing	Ensure that it is accompanied with ballast as per TW design.	No	
Concrete Pump		No	

Articulated delivery lorries	To be escorted by a banksman during any reversing operations.	No	
Double bunded Fuel Bowser			
Spill trays & spill kits		No	
Site statutory, public & site signage		No	
Various chains / lifting equipment	Check certs are in date.	Yes	
Small hand tools / equipment		No	

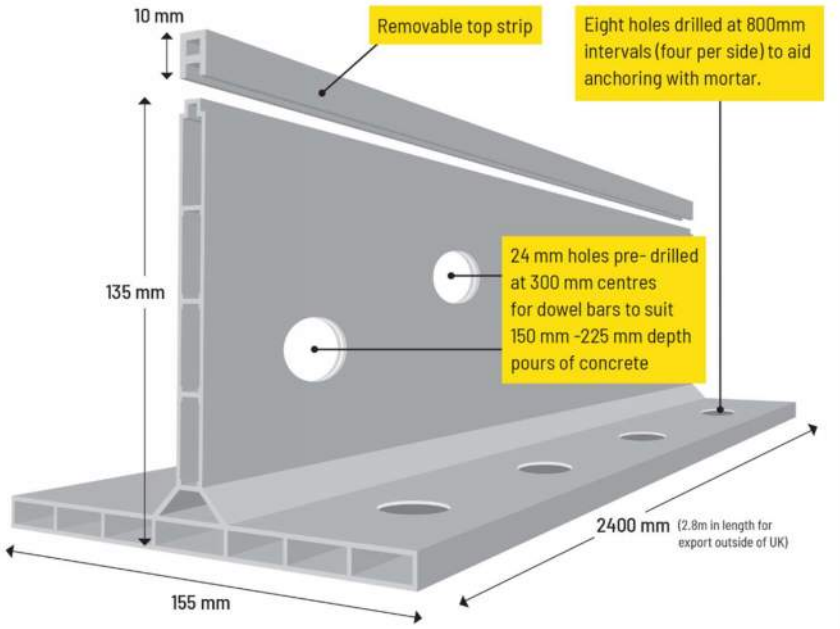
The above must be verified BEFORE work commences.

Step 3… ***Identify the operative numbers and skills with Training/certification to undertake the task***

Type of Operative Required	Number of Operatives	Skilled Operative?	Minimum Competency Required
Site Manager	1	Yes	SMSTS, TWSTC, IEMA, Environmental awareness, Waterwise Trained, Full first aid course
Site Forman	1	Yes	SSSTS, TWSTC, INNS, Environmental awareness, Waterwise Trained, Full first aid trained.
Site Ganger	1	Yes	SSSTS, TWSTC, INNS, Environmental awareness, Waterwise Trained, Full first aid trained.
Excavator operator	1	Yes	CPCS
Labourer	2	Yes	CSCS
Banksman	1	Yes	CPCS

The above must be verified BEFORE work commences.

Step 5… *List sequencing of works*	
I.D	Instruction
1.0	***Scope of works covered by method statement***
1.1	Break out concrete slabs on the Western Location and reinstate
1.2	Replace expansion joints at Western Location
1.3	Break out concrete slabs and reinstate at the Northern Location
1.4	Replace expansion joints in the Northern Location
2.0	***Methodology***
2.1	**Induction and site familiarisation:** All site staff will undergo a site-specific induction, the induction will detail the following aspects: 1. Site rules, including Covid-19 Risk Assessment 2. Company and site objectives 3. Location of welfare facilities 4. Site emergency procedures which will include the emergency plan for the dam. 5. Assembly points 6. First aiders and location points 7. Traffic management plan, covering vehicle routes & pedestrian routes & Overheads. 8. Site specific hazards and key controls 9. Site environmental hazards and key controls 10. Spill procedures 11. Near miss reporting 12. Location of; life rings, throw lines, fire extinguishers and spill kits/booms which will be strategically placed for quick deployment. The works shall only be undertaken once this RAMS have been briefed to all site operatives along with any relevant toolbox talks & site inductions undertaken where all competency certs will be reviewed, and copy shall be kept in the site safety file. The correct PPE for the task will be issued to staff before work commences. All compounds will be CAT scanned by a trained and competent person, and any overhead services will be identified and briefed.

2.2	The existing concrete slabs to be removed will be identified prior to works starting. Using a small excavator and breaker ensuring that the 45 degree rule is maintained the existing concrete slabs can be removed, where this 45 degree rule cannot be maintained an upright breaker will have to be utilised ensuring that the operator conforms with the HAVS requirements for that item. Once the concrete has been broken up it can be removed and placed into tonne bags to allow it to be transported to the compound area for removal from site. The sub-base condition will be assessed for suitability, if insufficient sub-soil/sub-base is found underneath the existing slabs then a layer of subbase will be installed dependant on the CBR% of the sub soil and compacted using a forward/reverse wacker plate to MCHW series 600 standards. If the subbase is deemed sufficient then the existing material will be proof rolled using the forward/reverse wacker prior to installation of any shuttering to allow a level building platform. K-form shuttering will be installed in accordance with the manufacturer's guidance, ensuring that the shutter is level through both axis, and bed on mortar to aid with anchoring. Once the shuttering has been installed dowel bars covered by polymeric corrosion resistant coating will need to be installed through the K-form. Where the new slab meets and existing hardstanding connection then dowels covered in a de-bonding sleeve will need to be installed through both the existing and new slab. A373 Mesh will be placed within the slab ensuring that it is 75mm from the sub-base and surface and sufficiently tied at any overlay points. 

	 Once the shuttering and mesh has been installed similar to that shown above and signed off by the TWS, then a concrete pump will be mobilised to site accompanied by a concrete wagon. The concrete (PAV2/C35) will then be pumped to the required location until all of the slabs have been filled, ensuring that the slabs are fully pokered throughout the pour to relieve and air bubbles that may be trapped within the concrete. A screed will be pulled across the slab to ensure a level surface and finished to a tamped finish specification. All personal involved in this operative will be required to wear appropriate PPE to prevent concrete burns, this included safety glasses/goggles.
2.3	Upon completion and curing of the slabs the existing expansion joints noted on drawing A123043-TGEE-ZZ-XX-DR-C-0010 will be raked out and cleaned. If required new filler board will be installed (20mm Fosroc Hydrocell XL or similar) de-bonding tape will then need to be applied to top of the filler board to ensure that the joint sealant bonds in the correct places. After the above has been applied then the joint sealant (Fosroc Colpor 200 or similar) can be installed as per the manufacturers specification and finished to smooth level finish.
2.4	Once works are complete, photos will be taken, and all plant/equipment utilised for the works can be off hired.
3.0	***Consents, licences & environmental issues***
3.1	FRAP
3.2	Planning Permission
4.0	***Identify any Manual Handling involved in this Task*** (Ensure these items are included on the Manual Handling Poster)
4.1	• Use of hand tools. • Attaching lifting appliances. • Forward/Reverse wacker. • Finishing/Spreading of concrete. • Removing/Reinstating the movement joints.
5.0	***Identify any hazardous substances used during the undertaking of this task*** **(Ensure these items are included on the COSHH Poster)**
5.1	• Hydraulic Oil • Diesel • Housekeeping products. • Petrol • Concrete • Fosroc Colpor 200

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			Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)		Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)	
							•					
Manoeuvring of Plant	All site operatives and visitors	Contact with moving Plant	5	4	20	Y	• Only essential authorised staff to work near plant. • Line of communication to be established between plant operator and other(s) working in close proximity. • Only essential site personnel allowed in work areas. All visitors must be accompanied at all times. • All site staff and visitors must wear hi visibility vests at all times. •	5	1	5	N	
Operating in the working area	All site operatives	Slips, trips and falls Contact with moving Plant Entrapment	5	3	15	Y	• Regular inspection of site to take place (minimum daily) to assess conditions. • Plant operator to ensure that they operate equipment from a safe working area. • If water conditions cause concern, work must stop immediately. • Only designated travelling routes/ work areas to be used or worked.	5	1	5	N	
Unfit/ Untrained/ Unauthorised staff operating plant	All site operatives and visitors	Contact with moving Plant Equipment damage Property damage	4	3	12	Y	• Staff operating Plant must be adequately trained and certified (CITB). • Only medically fit staff to operate plant. • Any operator who may have a medical condition that could affect their capabilities must inform the site manager. • Anyone found operating plant under the	4	1	4	N	

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Step 6… ***Identify the Additional Risks and Personal Protective Equipment Required.***

What are the Hazards?	Who is at Risk?	How are they at Risk?	Without Controls				Site Specific Controls to be put in place	With Controls				Sign Once Action Complete
			Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)		Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)	
							influence of alcohol/drugs will be removed from site immediately. Anyone found misusing or abusing plant will be disciplined. • Any unauthorised person found operating plant will be subject to disciplinary action.					
Working in adverse weather conditions	All site operatives and visitors	Slips, trips and falls Vehicle collisions	4	4	16	Y	• In extreme adverse weather conditions, alternative work will be found or the job rescheduled. • Staff to be provided with suitable PPE which offers adequate thermal comfort. • Staff to be provided with suitable anti-slip footwear. • Suitable, adequate welfare facilities to be provided and staff actively encouraged to use the facilities provided. • Plant to be adequately lit when working out of daylight hours or during times of adverse visibility. • Access/ egress routes to be suitably maintained, matting may be required	4	1	4	N	
Working near plant	All site operatives	Contact with moving equipment	5	4	20	Y	• Offloading/ transfer points to be adequately fenced to prevent persons entering the area. • Appropriate warning signs to be posted. • Only essential authorised staff to work near plant. • Line of communication to be established between plant operator and other(s) working in close proximity.	5	1	5	N	
Working in adverse weather conditions	All site operatives and visitors	Slips, trips and falls Vehicle collisions	4	4	16	Y	• In extreme adverse weather conditions, alternative work will be found or the job rescheduled. • Staff to be provided with suitable PPE which	4	1	4	N	

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What are the Hazards?	Who is at Risk?	How are they at Risk?	Without Controls				Site Specific Controls to be put in place	With Controls				Sign Once Action Complete
			Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)		Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)	
							offers adequate thermal comfort. • Staff to be provided with suitable anti-slip footwear. • Suitable, adequate welfare facilities to be provided and staff actively encouraged to use the facilities provided. • Plant to be adequately lit when working out of daylight hours or during times of adverse visibility. • Access/ egress routes to be suitably maintained, matting may be required					
Noise	Site operatives Members of the public	Hearing Impairment Noise nuisance	4	5	20	Y	• Appropriate ear protectors to be worn by all operatives within close vicinity of the activity. • Operation to be restricted to site opening times. • Site Manager has a noise monitor on site and will monitor what noise level is being produced. • PPE will be worn according to HSE guidelines. • The indirect effects of noise are to be assessed and accounted for-such as interference with audible • warnings or other sounds and communications that need to be audible in order to reduce risk at work.	4	1	4	N	
							• The impact of noisy machinery or plant in the area assessed to receptors. • Ear defenders are worn by the operatives in the vicinity of the noise. • Hood/ doors on the plant and equipment are					

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What are the Hazards?	Who is at Risk?	How are they at Risk?	Without Controls				Site Specific Controls to be put in place	With Controls				Sign Once Action Complete
			Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)		Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)	
Noisy machinery or plant	Site operatives	Environmental noise Hearing impairment	4	5	20	Y	kept shut. • When plant is not in operational use the engines are turned off. • Plant is well maintained and noise suppression equipment such as muffs and silencers are used where necessary. • Personal contact is made with persons living or working in adjoining properties, or in other sensitive areas e.g. schools, hospitals. • Consultation with the Local Authority may be required regarding permitted hours of work and noise monitoring. • Manufactures guidelines will be followed when using any small tools or machine attachments.	4	1	4	N	
Combustible materials	Site operatives and visitors	Exposure to fire	4	2	8	Y	• Store combustible materials in a secure area away from sources of ignition. • Suitable fire fighting equipment is to be properly sited and a safe means of escape provided. • Ensure emergency evacuation procedures have been drawn up and are brought to the attention of all personnel on site.	4	1	4	N	
Toxic substances	Site operatives	Poisoning, Respiratory problems, Irritation to eyes or skin	4	2	8	Y	• COSHH assessments are carried out on all substances used.	4	1	4	N	

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What are the Hazards?	Who is at Risk?	How are they at Risk?	Without Controls				Site Specific Controls to be put in place	With Controls				Sign Once Action Complete
			Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)		Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)	
Fumes	Site operatives and visitors	Explosions Asphyxiation Headaches from gasses from plant used or sludge / residues disturbed	5	4	20	Y	• No smoking or naked lights. • Ventilate the atmosphere with a gas monitor. • Use local extract ventilation. • Prepare method statement incorporating a safe system of work. • Entry only allowed on a 'Permit to work' system. COSHH assessments are carried out on all substances used.	5	1	5	N	
Work Equipment (including the use of portable tools and vibratory equipment)	Site operatives	Vibration-White finger Explosi ons Fires Noise Injuries to face and body	4	2	8	Y	• All safety and work equipment to be fit for purpose and regularly inspected and maintained. • All portable electrical equipment to be PAT tested. • Operative to be trained in the correct use of equipment and to wear appropriate PPE (gloves, ear defenders, safety goggles etc). • Portable equipment with potential significant risk e.g. disc cutters, grinders, portable gun drills etc shall be inspected for deterioration on a weekly basis and the inspections recorded. • All portable electrical equipment to be operated either by 110v transformer or battery. • Use anti-vibration equipment where appropriate and adhere to the recommended working times. Manage vibration exposure time using the LAWS HAVS forms.	4	1	4	N	
Poor Illumination	Site operatives and visitors	Slips, trips and falls	4	2	8	Y	Provide adequate illumination within the working space.	4	1	4	N	
Underground or		Contact with					• Ensure service location plans are obtained and clearly mark all underground services so that					

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What are the Hazards?	Who is at Risk?	How are they at Risk?	Without Controls				Site Specific Controls to be put in place	With Controls				Sign Once Action Complete
			Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)		Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)	
Overhead services	Site operatives and visitors	electricity or and electrical discharge Damage to services	5	4	20	Y	contractors are aware of their location and if overhead cables or pipes cross or pass near to the site, adequate protection must be provided. Refer to risk assessment for overhead and buried services.	5	1	5	N	
Inadequate welfare facilities	Site operatives	Disease Ill health	4	3	12	Y	• Welfare facilities shall be suitable, sufficient, functional and kept clean. These will meet all criteria laid out in CDM regs.	4	1	4	N	
Transport to and on the site	Site operatives Motorist	Contact with moving vehicles Slippery road	5	3	15	Y	• Provide a suitable access road, traffic control measures, warning signs, speed limit signs, pedestrian segregation, and designated car parking areas. • Ensure access and egress routes are maintained and kept clean at all times. Provide vehicle wash facilities where necessary.	5	1	5	N	
Hazardous substances	Site operatives and visitors	Exposed to or in contact with harmful substances. Exposure to fire	4	3	12	Y	• Hazardous substances are stored in a secure and bunded container and away from sources of ignition. • Ensure a spill kit and where necessary bunds are available. • When handling hazardous materials ops to wear PPE based on the data sheet for the specific product. • Refer to the COSHH assessments for further control measures.	4	1	4	N	
Buried services	All site operatives	Contact with buried services					• Before commencing work, all known services to be identified/ marked out/ made aware to site manager and associated staff.					

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What are the Hazards?	Who is at Risk?	How are they at Risk?	Without Controls				Site Specific Controls to be put in place	With Controls				Sign Once Action Complete
			Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)		Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)	
		Contact with electricity	5	4	20	Y	• Staff operating plant to proceed with caution at all times. • No excavation work to take place within 5-15m either side (dependent upon site condition) of any identified buried service. • If buried services need to be travelled across with heavy plant, site assessment to be undertaken by authorised personnel to ascertain if ground conditions are acceptable. • If ground conditions are not acceptable, no heavy plant to pass over this area. • If required, additional work(s) to be carried out to make travelling over buried services safe i.e. matting, concrete pad. • Should any unidentified buried services be identified, work(s) will stop immediately until an assessment has been made of what further action(s) are required by authorised personnel. • If buried services need to be exposed/ identified, • extreme caution must be taken and only hand tools used for the last 400mm of ground.	5	1	5	N	
Drowning	All site operatives and visitors	Slips, trips and falls	5	4	20	Y	• All staff working on, near (within 3m) or above water must wear a life jacket which is approved and is within its inspection/test date. • Staff wearing life jackets are to be fully trained in their use and operation. • Life jackets to be tested/maintained in accordance with manufacturers recommendations and the test certificates	5	1	5	N	

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What are the Hazards?	Who is at Risk?	How are they at Risk?	Without Controls				Site Specific Controls to be put in place	With Controls				Sign Once Action Complete
			Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)		Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)	
							retained. • Any life jacket which has a defect or has not been tested within the specified period must be withdrawn from service until repaired/replaced. • Adequate first aid facilities to be available at all times when staff are working near water. • Anyone not wearing their life jackets will be subject to disciplinary action. • Staff required to work in water must be adequately trained and will only work at water level-under NO CIRCUMSTANCES will staff be allowed to lone work in water. Working in flows of water which are deemed 'strong' will be subject to further controls. • I.e. method statements, permit to work, etc.					
Contact with Vermin	All site operatives and visitors	Leptospirosis	4	4	16	Y	• Staff to be provided with suitable Personal Protective Equipment (PPE) and are trained in its use. • Always use waterproof gloves when working in water/ other PPE and always wash hands/ exposed skin after contact with water. • Staff to receive adequate information, instruction and supervision regarding Leptospirosis eg leaflets INDG84. • Staff to be encouraged to report sightings of vermin activity. • Any dead vermin to be left in situ. Under no circumstances must anyone remove vermin by direct contact unless authorised to do so.	4	1	4	N	

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What are the Hazards?	Who is at Risk?	How are they at Risk?	Without Controls				Site Specific Controls to be put in place	With Controls				Sign Once Action Complete
			Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)		Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)	
							• Any dead vermin which have been removed must be carried out using a non-contact method. I.e. helping hand. • Any dead vermin which have to be removed must be disposed of in an approved manner. • Suitable/adequate welfare faculties to be provided • and staff actively encouraged to use the facilities provided.					
Exposure to Cold/Wet conditions	All site operatives and visitors	Thermal Comfort	4	3	12	N	• Staff to be provided with suitable PPE which offers thermal comfort. • Suitable welfare facilities to be provided. • Staff working in cold/wet conditions will be allowed to take sufficient breaks to allow them to work in comfort. • In extreme adverse weather conditions, alternative work may be carried out.	4	1	4	Y	
High winds	All Site operatives and visitors.	Slips, Trips & Falls. Flying debris.	4	2	8	Y	• Staff to be made aware of the hazards associated with working near water in high winds during the induction. • Operators to take particular care when operating in windy conditions. If they consider it unsafe they must stop work, make the Plant safe, and report it to the site manager. • In extreme windy conditions, the job should be suspended until conditions improve.	4	1	4	N	
							• Housekeeping standards must be maintained to an acceptable standard, paying particular attention to tripping / stumbling hazards. • Any material/sludge to be cleaned up as soon					

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What are the Hazards?	Who is at Risk?	How are they at Risk?	Without Controls				Site Specific Controls to be put in place	With Controls				Sign Once Action Complete
			Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)		Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)	
Rainy wet conditions	All Site operatives and visitors.	Slips, Trips & Falls. Vehicle collisions	4	2	8	Y	as possible or the area cordoned off. • Longer term sites should have surface water ditches alongside access/ egress routes to prevent vehicles slipping. • Access/ egress routes should have hardcore layerto minimise vehicles skidding on mud.	4	1	4	N	
Foggy conditions	All Site operatives and visitors.	Slips, Trips & Falls.	4	2	8	Y	• Site manager to assess fog/poor visibility conditions on site. If considered unsafe, the equipment will be stood down and parked until conditions improve. • When working in poor light conditions, Machines are to be adequately lit	4	1	4	N	
Public accessing site during non- working hours	Members of the public	Slip, trip and falls Falling from height Entrapment Equipment security	4	2	8	Y	• Ensure all gates and fences are secure. • Ensure all equipment is locked and in a secure holding/ compound area. • Ensure that all signage is clear and visible. • Employ security personnel for problem sites. • Consider employing overnight/ weekend security. • Fit window cab guards to machines and equipment. • Employ deadlocks/ isolators to machinery/ equipment.	4	1	4	N	
Lifting procedures	Site staff / Site visitors	Falls from height / overturning of lift equipment / entrapment	5	5	25	**Y**	• Lifting procedures to controlled by the issue of 'Permit to Lift' • Tool box talks • Banksman / slinger – signaller / crane lift supervisor to supervise lifts as required • Equipment to be tested / compliant • Equipment to be used in conjunction with lifting duty / radius charts	5	1	5	**N**	

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What are the Hazards?	Who is at Risk?	How are they at Risk?	Without Controls				Site Specific Controls to be put in place	With Controls				Sign Once Action Complete
			Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)		Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)	
							• Stability of excavator to checked before use • Competent lift operative • Daily site briefings • Implementation of operational controls – OC25 • Slew radius to be operated through 180 degrees and within compound area only • Excavator jib not be operated outside of the site boundary / over the top of the herras fence • Machine bucket to be removed from machine when undertaking lifting duties • Machine Operators who have lifting Op on CPCS card only to carry out lifts •					
Lifting appliance failure	Site operatives	Entrapment/Injury	5	4	20	Y	• Inspect the condition of chains and shackle before and after use • Test certificates required for all lifting tackle • All lifting operations on site are to have a permit to lift issued before lifting takes place • Chains and slings to be inspected before use and tested every 6 months, test sheets to be retained in site file • 12 month thorough examinations for lifting devises to be in place for all hiabs and excavators • Excavators used as a manual handling aid not to lift in excess of the SWL	5	1	5	N	

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What are the Hazards?	Who is at Risk?	How are they at Risk?	Without Controls: Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)	Site Specific Controls to be put in place	With Controls: Severity (S)	Likelihood (L)	Risk Rating (S times L)	Significant? (Y\N)	Sign Once Action Complete

Risk Rating:

Likelihood→ ↓Severity	Likely (5)	Probable (4)	Possible (3)	Unlikely (2)	Very unlikely (1)	KEY:
Death (5)	25	20	15	10	5	High risk
Major (Life threatening) Injury (4)	20	16	12	8	4	Medium risk
Major (non-life threatening)Injury (3)	15	12	9	6	3	Low risk
Minor Injury (2)	10	8	6	4	2	Very Low risk
No Injury (1)	5	4	3	2	1	

PPE Required:

Hard hat/High-Vis/Safety Boots	✓
Eye/ ear protection	✓
Suitable gloves	✓
Life Jacket	✓
Safety harness	
Other:	

Land and Water Services Ltd
Environmental Management Plan (EMP)

The following stages in this plan are required to be completed to ensure all aspects of the operation, associated impacts and risks are assessed with the necessary control measures outlined. An environmental aspect is any element of the operational activities that can interact with the environment. An environmental impact is the effect that an aspect has on the environment. In essence it is the cause and effect of an activity on the environment.

Impacts are scored and ranked to enable the significant impacts to be identified and a priority allocated in a systematic manner to ensure that there are appropriate control procedures in place to minimise environmental risk. A set of Environmental Procedures and Guidance documents 'EP1-7' have been created to summarise the generic best practice techniques that are required as part of the environmental management system and provide additional measures that can be administered in specific circumstances.

Stage 1: Operational details

Site name & code:	**Thames Young Mariners**

Description of all works and activities due to be undertaken:	- West Bank
	  o Sheet pile installation
	  o Grading / benching back of bank
	  o Reinstating with engineered fill
	  o Replacement of concrete surfacing
	  o Replacement of concrete joints
	  o Extend drainage pipe.
	- North Bank
	  o Sheet pile installation
	  o Install platypus anchors
	  o Reinstating with graded engineered fill
	  o Replacement of concrete surfacing
	  o Replacement of concrete joints

Commencement and duration of works:	Dynamic – refer to construction programme
EMP completed by:	C.N – reviewed by T.G 02/01/2024
Approved by:	
Approval date:	

Review

Reviews are to be undertaken on a monthly basis as a minimum.

Review Date	Detail any changes to EMP	Signature

02/01/2024	**Updated description of works to include platypus anchors.**	**T.Gibson**

Revision

Revisions are to be undertaken on a 6-monthly basis as a minimum, where applicable.

Revision Date	Revision Number	Signature

Stage 2: Impact assessment, risk identification and control measures *(Risk matrix and significance illustrated in Appendix)*

Aspects of the operation that could affect the environment	Outline of potential impacts to the environment from operation	Risk Identification WITHOUT additional control measures			Outline of additional control measures to be applied to operation	Risk Identification WITH additional control measures		
		S	**L**	**Risk (SxL)**		**S**	**L**	**Risk (SxL)**
Aspect 1: Emissions to air Impacts on the environment: Greenhouse gas emissions, air pollution.	Noise, vibrations, emissions, dust, odour from use of plant/ machinery/ equipment. Potential for dust Issues when undertaking earthworks/ handling or storing dredged silts. Dust derived from substances used on site (i.e.: Cement, Dry-add, Bentonite etc). Release of debris/ litter	**4**	**4**	**16**	• Site layout designed considering the source- pathway- receptor model. All sensitive receptors i.e.: residential areas, schools, watercourses identified, and higher risk activities are located away from such areas. • Designated routes allocated for plant/ vehicles/ pedestrians with speed restrictions and appropriate access and egress points. • Re-fuelling areas located away from receptors, in designated areas. • Deliveries/ collections/ general transport movements staggered to reduce high vehicle numbers on site and arranged outside peak traffic hours. • The drop height when loading vehicles/ plant will be minimised to avoid unnecessary noise and dust emissions. • Use of hybrid staff vehicles, car sharing, conference calls, home working reduce greenhouse gas emissions and general use of fuel. • Fencing/ netting to be secured to minimise release of debris/ litter. Such material will be removed and cleaned on a regular basis and disposed appropriately.	**4**	**1**	**4**

Aspect 2: Waste and by-products Impacts on the environment: Contaminated substances harmful to land, flora, fauna, water ecosystems, humans. Pollution via landfill sites- various. Loss of natural resources as a result of waste mis-management.	On-site waste production/ handling/ storage/ treatment/ disposal. Storage and use of chemicals/ hazardous substances (COSHH assessed materials).	**5**	**5**	**25**	• LAWS EMS Procedure 'EP2- Waste Management' will be implemented and followed as standard best practice. • All waste material is assessed, classified & identified with an EWC code to ensure the appropriate methods of storage, handling and final use/ disposal are ascertained. • A Site Waste Management Plan will be produced for all works, where relevant. • The waste hierarchy is applied to ensure the most sustainable re-use/ disposal options are selected. • The quantity of waste requiring landfill disposal is reduced as far as practicable. • Waste will only be transported with a completed waste transfer note and by registered waste carriers, as per duty of care protocols. • Waste will only be disposed of or treated at facilities holding relevant, active Environmental Permits or exemptions. • All waste streams are segregated appropriately in suitable storage facilities for each waste type, i.e.: sealed skip/ drum/ double bagged. • Storage facilities are located as far as practicable from receptors to include: watercourses, sensitive habitats, residential areas. • Waste is covered to prevent water ingress, where necessary. • The potential for contaminated run-off is assessed and mitigation measures applied, i.e.: segregation, location, barriers, sealed units. • Waste is disposed of as fast as practicable. • Recycling of waste paper, plastic, cans, printer toners, batteries is a priority. • Regular inspections of waste production areas, storage areas, transport routes to ensure appropriate containment and rapid response in the event of unauthorised emissions. • COSHH assessments completed, materials labelled and stored accordingly. • Tyres, gas cylinders, aerosols and oily rags are to be stored in designated containers and disposed separately.	**5**	**1**	**5**
Aspect 3: Releases to water/ water quality/ flood risk	Reduction in Dissolved Oxygen (DO) levels negatively affecting water	**5**	**5**	**25**	**Water Quality:** LAWS EMS Procedure 'EP4- Water Quality' will be implemented and followed as standard best practice. • Implementation of DO monitoring procedure to ensure DO levels remain within safe limits- refer to EP4 to undertake site specific risk assessment and allocate a monitoring protocol. • Prompt visual assessments & identification of changing fish behaviour.	**5**	**1**	**5**

Impacts on the environment: Deterioration of water quality, harming water ecosystems flora and fauna. Negative effect on groundwater sources & drinking water, marine water systems. Harm to bankside species. Increased flood risk via changeable water flows, removal of flood attenuation, decreased/ increased channel capacity.	quality and potentially harming aquatic species. As a result of dredging, piling, channel (re-)construction/ engineering structures/ plant movements displacing silt/ affecting water levels. Unauthorised emissions from waste contamination, contaminated/ hazardous substances, chemicals, oil/ fuel spillages causing pollution events. Changes to waterbody channels/ waterflows/ flood attenuation affecting flood risk on main				• Regular inspections & rapid response essential in the event of fish gasping/ in distress, excessive silt plumes, presence of algal blooms, unauthorised emissions. Site manager should be informed immediately, and works may be stopped as per procedure. LAWS Environmental scientist should be informed, who may report incident to Environment Agency as required. LAWS EMS Procedure 'EP2- Waste Management' will be implemented and followed as standard best practice to prevent unauthorised emissions. • Waste storage facilities are located as far as practicable from watercourses and in appropriately sealed containers. • Surface water drainage is designed to reduce risk of cross-contamination. • Water discharges are assessed and appropriately consented. • Contaminated liquids on site are controlled and disposed of appropriately. LAWS EMS Procedure 'EP3- Oil, fuel, chemical storage and spills' will be implemented and followed as standard best practice. • Regular inspections for unauthorised emissions as standard routine. • Rapid response essential in the event of an unauthorised emission. All spillages to be dealt with as soon as possible as per procedure and LAWS Environmental Scientist informed who may report to the Environment Agency as required. There are procedural techniques for small-scale and larger-scale spills. Spill training is completed on a regular basis to ensure a rapid response. • Use of biodegradable oils on all machinery. • Spill kits to be kept with all machinery and regularly checked. • Larger onsite spill kit to be kept at site compound & oil spill booms available as required. • All plant will be stored in a designated area, away from sensitive receptors, with plant nappies/ drip trays underneath. • Disconnected hydraulic hoses and similar will be stored appropriately in drip trays. • Well-kept machinery onsite only & all machine inspections to be up-to-date. Any faults will be reported asap. Any defective machinery to be isolated and repaired/ removed immediately. Pre-start sheets required on all machines, with attention to hydraulic systems and hoses. • Re-fuelling, oil and/or chemical storage areas are located as far as practicable from watercourses and in appropriate containers. The minimum amount of fuel required should be stored on site. • All primary containers of >200L oil including petrol will be stored in a secondary container that is bunded, impermeable and has a capacity to hold > than either 25% of the total volume of all the primary containers it holds or 110% of the volume of the largest container; whichever is greater **Flood risk:** The body of water the works are taking place within isn't a recognised main river. However, due to the locality of EA assets the works will require a Flood risk application permit. See extract below from main rivers map:			

	rivers or ordinary watercourses/ storage of Plant/ equipment				 • Site will check and sign up for flood warnings via Gov.uk if they are available in the area. • Site will monitor the weather conditions daily via forecasting and observation to ensure any issues are addressed with as much notice as possible. Works will be deliberately assessed on a Friday to ascertain whether Plant, equipment should be relocated to a more suitable location. • Permanent works designs have been selected to ensure flood risk is as minimally affected as possible. • The site layout is designed to minimise any negative flood risk effects as far as practicable by storing Plant and equipment away from the banks of river. • The operational programme has been considered to ensure the most appropriate time of year has been selected in relation to the need for the works to be completed and risks associated with weather and water flows/ depth. • Any in-channel and bank works will be planned ahead to ensure they are as minimally invasive as possible using appropriate Plant and undertaken for the shortest period of time.			
Aspect 4: Releases to land Impacts on the environment: Contaminated substances	Contamination from waste, contaminated substances, chemicals, oil/ fuel spillages.	**4**	**4**	**16**	LAWS EMS Procedure 'EP2- Waste Management' will be implemented and followed as standard best practice. Refer to Aspect 2: Waste section for further details of required control measures. Refer to Aspect 5: Ecology for further control measures on protecting land and habitats. LAWS EMS Procedure 'EP3- Oil, fuel, chemical storage and spills' will be implemented and followed as standard best practice. • Regular inspections for unauthorised emissions as standard routine.	**4**	**1**	**4**

harmful to land, flora, fauna. Damage/ loss to habitats/ biodiversity	Release of debris/ litter				• Rapid response essential in the event of an unauthorised emission. All spillages to be dealt with as soon as possible as per procedure and reported to the EA as required. There are procedural techniques for small-scale and larger- scale spills. Spill training is completed on a regular basis to ensure a rapid response. • Use of biodegradable oils on all plant/ machinery. • Spill kits to be kept with all machines and regularly checked. • All plant will be stored in a designated area, away from sensitive receptors, with plant nappies/ drip trays underneath. • Disconnected hydraulic hoses and similar will be stored appropriately in drip trays. • Well-kept machinery onsite only & all machine inspections to be up-to-date. Any faults will be reported asap. Any defective machinery to be isolated and repaired/ removed immediately. Pre-start sheets required on all machines, with attention to hydraulic systems and hoses. • Re-fuelling, oil and/or chemical storage areas are located as far as practicable from sensitive receptors and in appropriate containers. • 10m buffer zones created along the periphery of agricultural landspreading areas. • Fencing/ netting to be secured to minimise release of debris/ litter. Such material will be removed and cleaned on a regular basis and disposed appropriately.			
Aspect 5: Ecology (General habitats & flora & fauna/ protected species/ invasive species/ environmentally sensitive areas) Impacts on the environment: Generally affecting habitats & biodiversity. Harm to protected species.	Construction engineering/ dredging/ vegetation clearance works can harm/ damage protected species (flora and fauna), general habitats and damage environmentally sensitive areas such as: SSSI/ SPA /SAC /RAMSAR/ LNR.	**5**	**5**	**25**	The HAM Lands SINC of 'Metropolitan' Importance covers an area which includes the site proposed for the works. The works will result in the removal of habitat within the SINC. As a result Tasha Hunter, the Ecology Policy and Planning Officer at London Borough of Richmond upon Thames council as to determine a suitable compensation habitat creation. It was agreed that rather than replacing the scrub, instead an area of grassland on site would be managed for wildlife. This is due to an excess of scrub and woodland regeneration within the wider Ham Lands SINC. Therefore, enhancement of an existing area of grassland would be superior for wildlife locally. In order to achieve biodiversity net gain through the DEFRA metric, this replacement habitat will be managed as a low density traditional orchard. LAWS staff are trained to identify invasive and protected species during general site inspections as a result of a specifically designed handbook for identification purposes. On site there is a known presence of Japanese Knotweed and Zebra Mussels. Transfer of these species accidentally is a criminal offence. Therefore, controls will be required to ensure that these are not spread. Japanese Knotweed Controls - The design approach taken for the areas contaminated with Japanese Knotweed has been decided to ensure that there is no requirement to undertake digging or mucking	**5**	**1**	**5**

Contaminated substances harmful to soil systems, flora, fauna. Can affect species predation, migration, hibernation. Spread of invasive species affecting native habitats.	Such works can also encourage the spread of invasive species- Biosecurity hazards.				away of any soils within or near the impacted area. Therefore, no disturbance to the soil. Instead material will be placed directly on top of the bank to bring it up to the design level. - LAWS are aware that other areas of the lakes bank have Japanese knotweed present. These locations will be demarcated to ensure that floating plant / equipment does not accidently come into contact with it. - Check Clean and Dry protocols will be followed. Zebra mussels control - All equipment used in the watercourse is to be kept clean to reduce the risk of spreading the invasive species. - Make sure that surfaces of equipment (buckets etc.) are air dried completely. - Chemical iodophors can be used to disinfect equipment, boots, hand tools and machinery. These can be sprayed as per manufacturers instructions. - Do not move between catchments without disinfecting or drying out equipment completely. Refer to LAWS EMS Procedure 'EP5- Protected species' for further guidance and information specific to a protected species or discuss with LAWS environmental scientist. LAWS EMS Procedure 'EP6- Invasive species' & 'EP1- Environmental management plan, biosecurity and risk ID' will be implemented and followed as standard best practice. **An ecological survey and report has been commissioned prior to the works undertaking 'EclA_Thames-Young Mariners_SOLD_June_2023'** Be mindful of the following protected species that may be found during LAWS works:			

5.4 Protected Species

5.4.1 Bats

The site has been assessed as capable of supporting foraging and navigating bats. To ensure no negative impacts to bats, mitigation is required. Specifically, an Artificial Lighting Strategy should be put in place during the works phase to minimise disturbance.

5.4.2 Birds

Scattered scrub habitat has been assessed as having potential to support nesting birds. To ensure no negative impacts to birds, mitigation is required. Specifically, Precautionary Nesting Bird / Dormouse Mitigation will ensure that no active bird nests are accidentally destroyed by proposed clearance works.

5.4.3 Hazel Dormouse

The site has been assessed as having value for dormice, at least on occasion for foraging. Consequently, mitigation will be required. Precautionary Nesting Bird / Dormouse Mitigation will ensure that no nesting / foraging / hibernating dormice are impacted by proposed works.

5.4.4 Reptiles

Reptiles could be present within tall ruderal vegetation between the scattered shrubs on the bank. Proposed works would likely result in the injury or death of any reptiles present. Precautionary Reptile / Amphibian Mitigation is therefore required. This will involve the gradual phased degrading of habitat on site to encourage reptiles to leave the proposed works area. Replacement SINC Habitat will also provide replacement habitat for reptiles on site.

5.4.5 Amphibians

As with reptiles, it is possible that amphibians could be present on site during works and would then be at risk of injury or death. Precautionary Reptile / Amphibian Mitigation to encourage amphibians to leave the proposed works area will minimise the risk of such impacts, with Replacement SINC Habitat also providing replacement habitat for amphibians on site.

5.4.6 Invasive Non-Native Species

Japanese Knotweed and Zebra Mussels are known to be present on site and immediately adjacent. Consequently, works may result in the accidental spread of schedule 9 invasive species either through movement of soil or contamination of equipment used in the water. This would constitute a criminal offence and therefore mitigation is required. The control of either species noted is beyond the scope of this report, but Zebra Mussel Advice for minimising contamination of any equipment / clothing is detailed within this report. Specific advice regarding Japanese Knotweed removal should be sought.

5.4.7 Fox

Foxes are not afforded legal protection, nor are their resting places. However, in order to avoid a cruel death through asphyxiation or being crushed, a one-way gate should be erected on the identified den prior to works commencing. The erection of this gate must be carried out at a time which no kits are likely to be present. This will ensure that no foxes are present.

A one-way gate, similar to the strategy used to exclude badgers under a licence to destroy a sett, is required on the identified fox den. This will need to be erected when kits are not dependant so as to prevent them becoming trapped, should any be present. Wire mesh will be positioned around the gates to prevent foxes digging back in. This should be undertaken at least three weeks before planned works and monitored regularly to ensure that they have not dug back in.

6.2.4 Impact Avoidance During the Construction Phase

All activities on site should bear in mind the potential for wildlife or the environment being harmed through the process of development from inception to end, with a proactive approach occurring for lawful protection of wildlife and the environment regarding use of materials, machines, chemicals, and human activity on site.

- Contractors must ensure that no harm can come to wildlife by maintaining the site efficiently, clearing away any material such as wire in which animals can become entangled and preventing access to toxic substances.
- Trenches or large excavations should be covered overnight to prevent wildlife such as badgers or hedgehogs falling in and failing to escape. If this is not possible then a strategically placed plank may provide a means of escape.
- If there is a substantial delay before development commences, the site should be maintained in a way that would prevent wildlife colonising it and causing constraints in the future. Such management should include mowing grassland at least twice a year and preventing scrub encroachment.
- Piles of brush wood and or log piles should be carefully inspected for signs of wildlife prior to their removal.

					6.2.5 Artificial Lighting Strategy Wherever possible, no external artificial lighting should be introduced to the site during the works phases of the development. Light ONLY when and where it is needed for health and safety. When external lighting is needed for safety reasons, dynamic lighting schemes that are switched on only when needed should be considered. Dynamic lighting schemes are usually triggered via motion sensors. Prevent light-spill and spread. Eliminate bare bulbs, upward pointing lights, keep light near to or below the horizontal. E.g. flat cut-off lanterns. Such light should be positioned to only illuminate the required areas, limiting light spill, both horizontally and vertically. Additionally, hoods, cowls, louvers and/or shields may be utilised to further direct any lighting.			
Aspect 6: Archaeology/ heritage/ areas of cultural significance Impacts on the environment: Loss of historical/ cultural features	Damage to heritage, areas of cultural significance and archaeological artefacts	**2**	**2**	**4**	• Site investigations haven't identified that there are any archaeological areas of importance on site. • Site layout designed to minimise the effect of the works to the site. • Regular inspections of areas of importance. • Pre and post-works photos may be required to provide evidence of minimal harm. • .	**2**	**1**	**2**
Any other aspects relevant to the operation, i.e.: Use of natural resources, use of energy, community	• Sustainable use of resources & materials • Disturbance to the public • Noise and light disturbance	**3**	**3**	**9**	• Use of sustainable products reduces the pressure on natural resources. • Appropriate signage and fencing will be deployed to warn the public of works and exclude the public from access to works area.	**3**	**1**	**3**

If there is a moderate, high or severe risk identified additional control measures may be required for a particular Aspect.

APPENDIX: RISK MATRIX

LIKELIHOOD (1-5)LIK						
	HIGHLY PROBABLE (5)	5	10	15	20	25
	PROBABLE (4)	4	8	12	16	20
	LIKELY (3)	3	6	9	12	15
	UNLIKELY (2)	2	4	6	8	10
	EXTREMELY UNLIKELY (1)	1	2	3	4	5
		MINIMAL (1)	MINOR (2)	MAJOR (3)	SERIOUS (4)	EXTREME (5)
SEVERITY (1-5)						

KEY

High Risk
Medium Risk
Low Risk
Very Low Risk

RISK SCORE SIGNIFICANCE:
Severe environmental risk (16+) - DO NOT PROCEED- additional control measures will be required*
High environmental risk (10-15) - DO NOT PROCEED- additional control measures will be required*
Moderate environmental risk (6-9) - additional control measures may be required*
Low environmental risk (1-5) - additional control measures will not be required

*Discuss with LAWS environmental scientist

Procedure for Oil, Fuel, Chemical Storage and Spillages

Scope

The purpose of this procedure is to appropriately manage the storage of oils, fuels and chemicals to ensure measures are in place to minimize the risk of spillages and to provide rapid and best practice response in the event a spillage does occur. The documentation of these risks and associated control measures should be updated on the Environmental Management Plan (EMP). It is LAWS policy to ensure appropriate spill kits, drip trays and so on are available.

It is an objective of LAWS to reduce to the best of our ability the impact of all LAWS operations on the environment. This procedure is a tool in the LAWS Environmental Management System for how to meet and excel our objectives and targets.

Definitions

- **Environmental Hazard**- a substance, state or event which has the potential to threaten the surrounding natural environment and/ or adversely affect people's health.
- **Environmental Risk**- the “actual or potential threat of adverse effects on living organisms and the environment by effluents, emissions, wastes, resource depletion, etc., arising out of an organization's activities.”
- **EMP-** Environmental Management Plan
- **COSHH**- 'Control of Substances Hazardous to Health'
- **MSDS**- Material Safety Data Sheets
- **OFI**- Opportunity For Improvement
- **ACOP-** Approved Code of Practice

Duties and Responsibilities

Monitoring & Reporting

- Internal environmental and health and safety audits are undertaken systematically on sites at varying times to ensure control measures are in place to minimize any identified risks.
- Regular site walkovers should be undertaken by staff on site, any spillages rectified immediately as well as potential hazards controlled and any issues reported to the site manager immediately.
- The OC01 Accident investigation and reporting procedure should be followed in the event of an environmental incident.
- Inspections, monitoring, non-conformances, rectification, and instructions are to be recorded in the site diary and where appropriate an OFI form.
- Refer to the ACOP and Procedure for environmental management, biosecurity and risk ID for further guidance on site layout designs.

Hierarchy

Site Manager

- Complete the Environmental Management Plan to include the potential risks of spillages.
- Ensure any areas of significant risk are coupled with appropriate control measures and the site is designed as per the source- pathway- receptor model.
- Ensure that all control measures are implemented and continuously monitored for effectiveness.
- Review the EMP when any changes occur on site.
- Ensure there are appropriate quantities of spill kits, drip trays, containment and storage facilities etc. on site.

Operations Manager/ Divisional business Manager

- Ensure Site Manager has a EMP on site, which includes adequate control measures, that are appropriate and being implemented safely.
- Support Site Manager in any control measures that need to be put in place, providing adequate resources.
- Ensure that Site Manager is fulfilling all of their responsibilities.
- Ensure that this procedure is known by all staff operating under their management.

Environmental Scientist/Manager

- Assist and support the Site Manager in environmental matters as required.
- Provide up to date environmental advice and information where necessary.
- To Review EMPs as required.
- Issue environmental updates on legislation and best practice as it becomes available.

Procedure for Oil, Fuel, Chemical Spillages

A variety of products are regularly used as part of LAWS operational activities.

Key products used include:

- Cement/ Concrete

- Bentonite
- Antifreeze
- Cleansing products
- Fuels
- Lubricants
- Office products
- Oils
- De-greasers
- Paints
- Sealants
- Weed killer
- Welding products

All products have undergone COSHH assessments, which are available as part of the EMS. If large quantities of toxic or harmful substances or products, with a particularly high toxicity level, are proposed to be used on site then the COSHH assessment should be reviewed ***prior*** to delivery to site/ use and an appropriate health and safety and environmental risk assessment undertaken.

Such products should be identified in the HSQE file & EMP. For high risk products/ operations booms may need to be deployed if there is a severe risk of a spill near to a watercourse. Appropriate storage measures should be considered prior to the delivery of high risk substances. Always ensure there are a sufficient number of spill kits on site to deal with the volume of substances on site.

If a spillage of any substance occurs on site, the following procedure must be undertaken where appropriate. The HSQE team must be informed immediately of major spills or if the substance toxicity is high, who will review the appropriate COSHH and risk assessment and provide further advice where necessary.

Pollutants can escape into the environment via different pathways, always design a site layout to prevent easy access to pathways and think ahead in the event of a spill to break the 'pollutant linkage', examples of pathways can include:

- Through the surface water drainage system.
- Direct run-off into a watercourse.
- Through the soil or via soakaways, drains or damaged surfaces to groundwater.
- Through the foul sewer system, where pollutants may discharge through storm overflows to surface waters, pass through the sewage treatment works or reduce the performance of the works.

The following chart highlights the pollution control hierarchy which should be followed in the event of a spill:

The Pollution Control hierarchy

Preferred response

1. Contain at Source
2. Contain close to Source
3. Contain on the surface
4. Contain in the drainage system
5. Contain on or in the watercourse

Least Preferred response

Small- scale spillages procedure:

- If a spill occurs, the spill should be immediately contained and further spillage prevented where possible. 'Spill kits' should be located near all stored substances and on all operational plant; the 'spill kit' should be used immediately in an attempt to contain the spill ASAP. If the spill can be safely and efficiently contained using the 'spill kit' alone i.e.: there is no excess substance evident, then this should be sufficient to deal with the incident.
- Ensure all items that may have been affected by the spill are dealt with appropriately-damaged bottles, hoses, soiled clothing, rags are all placed in appropriate sealed containers or drip trays and disposed of in an appropriate manner as soon as possible.
- The site manager should be immediately contacted and details provided of the type of substance spilled and an estimate of the quantity.
- The site manager will complete an OFI for minor incidents. If the toxicity of the substance spilled is unknown inform the HSQE team immediately who can check the COSHH sheets and provide details of disposal management and facilities thereafter.

Large-scale spillages procedure:

- If a spill occurs, the spill should be immediately contained and further spillage prevented where possible. 'Spill kits' should be located near all stored substances and on all operational plant; the 'spill kit' should be used immediately in an attempt to contain the spill ASAP.
- Ensure all items that may have been affected by the spill are dealt with appropriately-damaged bottles, hoses, soiled clothing, rags are all placed in appropriate sealed containers or drip trays and disposed of in an appropriate manner as soon as possible.

- If a spill is too large and/or there is a risk of run-off into watercourses or general permeable landforms, then it should be considered to contain the spill ASAP using site materials i.e.: create soil bunds to act as barriers which can later be removed for disposal.
- If the spill contains known or suspected toxic or harmful substances the specific methodology and risk assessment protocols provided should be followed for that particular substance and the site manager contacted immediately.
- Ensure that the measures adopted in the EMP are undertaken. For example, where a boom may be required as an emergency procedure always ensure that the items are ready on site and easily accessible.
- The emergency preparedness and response procedure should be followed in the event of an environmental incident- a large scale spill or spills near to water should be notified immediately.
- Environmental incidents including large-scale spillages should be reported to the Environment Agency on the incident hotline: 0800 807 060- LAWS Environmental Scientist will deal with such reporting and liaise with the EA.
- Specialist companies can be hired to attend the site and deal with toxic or large- scale spills, the EA may wish to provide advice and recommendations on this matter.

Procedure for the storage and use of oils, fuels, chemicals

Control of Pollution (Oil Storage) (England) Regulations apply where more than 200litres of oil is stored above ground at industrial and commercial locations and include all types of oil including petrol.

- All primary containers of >200L oil including petrol will be stored in a secondary container that is bunded, impermeable and has a capacity to hold > than either 25% of the total volume of all the primary containers it holds or 110% of the volume of the largest container; whichever is greater
- All primary containers will be clearly labelled and strong enough not to burst or leak under normal circumstances

- Such containers will be stored >10m from all watercourses and >50m from boreholes/ wells.

The EA state however that all liquids in containers, whose emissions to water or land could cause pollution, should be provided with secondary containment unless other appropriate measures have been used to prevent leakage and spillage from the primary container.

The following best practice procedure therefore will apply to the storage and use of ALL COSHH assessed substances on site:

- All substances will be securely locked away when not in use, in containers. The 'polluter' will be required to pay for any clean-up operations by the EA- please note this includes if the spills occurred as a result of vandalism!
- Appropriate secondary containment should be utilised such as: drip trays, bunded storage areas, and other methods of containment suitable for the product.
- All pipes, funnels, gauges will be enclosed within the secondary container.
- Biodegradable oils e.g. Panolin will be used were practicable.
- Spill kits will be located near all stored substances and on all operational plant.
- Drip trays, nappies, mats or similar should be used when working outside the secondary container.
- All plant and equipment should be stored/ used on drip trays or similar where practicable.
- Appropriate absorbents should be used to mop up any oil collected in drip trays.
- All staff should be competent in fuelling/ spill procedures as necessary and permission to undertake such operations must be issued by the site manager.
- Fuel tanker drivers only should undertake the delivery operation on site.
- The emergency preparedness and response procedure should be followed in the event of an environmental incident.

Procedure for re-fuelling operations

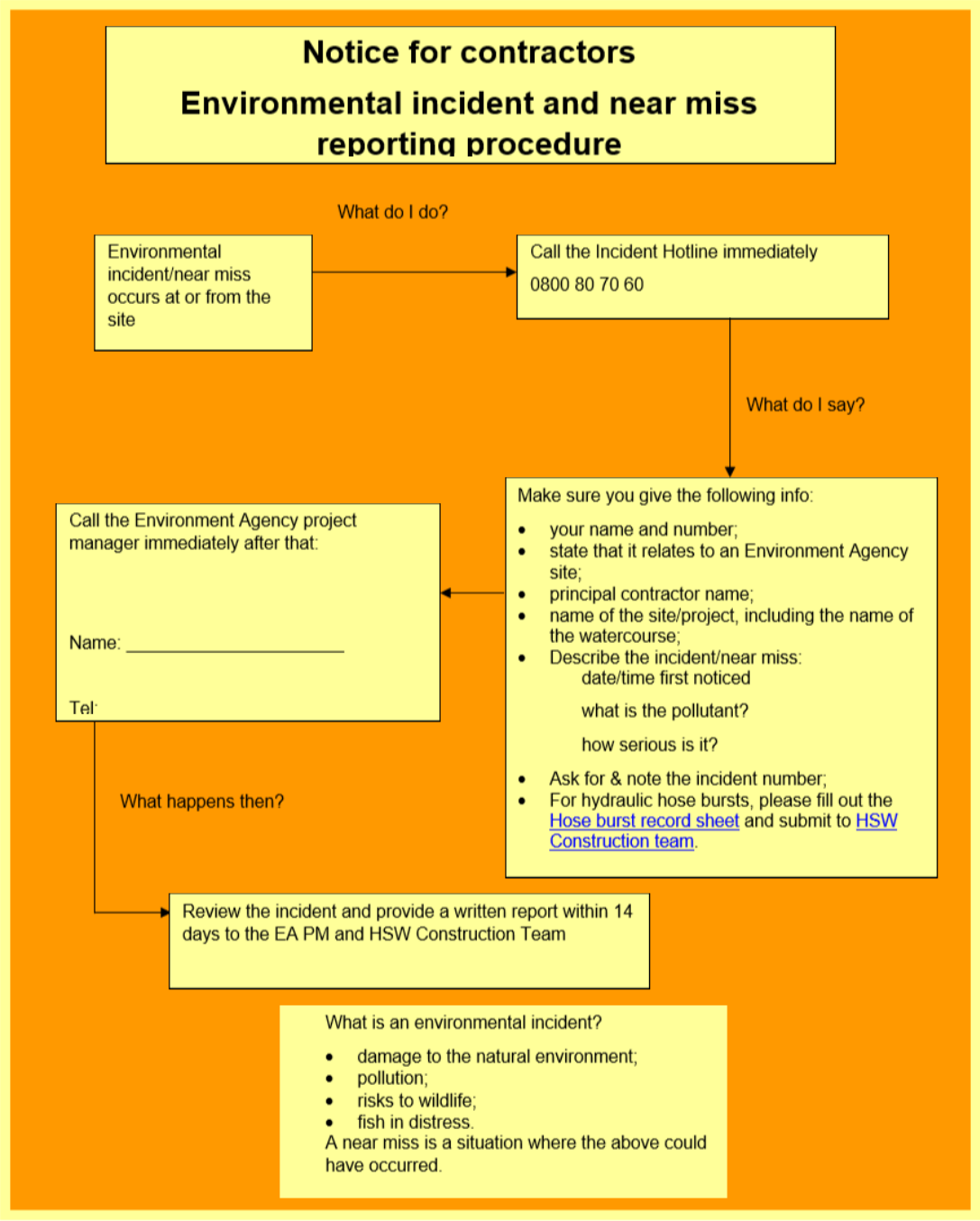
Fuelling Operations Afloat

- Where possible avoid having to place fuelling kit afloat.
- If not possible, can the Bowser be placed inside a hopper to increase bunding capacity?
- If the bowser has to go on pontoon, then use a static type rather than wheeled- strap down to ensure no movement.
- Try if possible to keep as far from excavator swing area as possible.
- Try to ensure fill can be directed using hose from bowser direct to machine, avoid cans if at all possible.
- If cans must be used, place a permanent plant spill nappy so cans can sit on this for filling, only use suitable cans, preferably use machine suck out device to empty cans into machine.
- If device not available use a suitable funnel and pour device on can, never, never attempt to pour without spill mats in position to intercept drips should they occur.
- If cans will not fit within the bund for storage remove and store safely ashore.

- A good supply of spill mats to be kept in the bowser or hung on it in the correct bag. Keep a least one small boom available with this kit all of the time.
- Always lock the bowser with fill pipe in it, do not leave out, always put hose and nozzle back within the bund.
- Good practice on a larger excavator afloat is to have two operatives fuelling up, that way the nozzle can be passed safely rather than the user having to climb tracks or steps holding the nozzle.
- Never, never leave fuel delivery hose running on automatic flow unattended.

Fuelling Operations Ashore

- Situate as far from watercourse as possible.
- If wheeled bowser- ensure it is level and flat, brakes on and locked if necessary.
- Assess whether to extend fuel delivery hoses to maintain appropriate distance.
- Can a small area be fenced off, which includes bowser for fuelling or just fence bowser on its own?
- Ensure fuel area can service all machines where possible and is on a reasonable route for machines to stop and fill.
- Make sure delivery tanker has good access to refill bowser.
- Try to ensure fill can be directed using hose from bowser direct to machine, avoid cans if at all possible.
- If cans must be used place permanent plant spill nappy so cans can sit on for filling, only use suitable cans, preferably use machine suck out device to empty cans into machine.
- If device not available use a suitable funnel and pour device on can, never, never attempt to pour without spill mats in position to intercept drips should they occur.
- If cans will not fit within the bund for storage, preferably lock inside other storage within nappy type spill tray.
- Do not store cans full unless the only option, in this case cans must be within bowser bund or on tray with capacity to take spill or leakage from can.
- A good supply of spill mats to be kept in the bowser or hung on it in the correct bag. Keep a least one small boom available with this kit all of the time.
- Always lock the bowser with fill pipe in it do not leave out always put hose and nozzle back within the bund.
- Good practice on a larger excavator is to have two operatives fuelling up, that way the nozzle can be passed safely rather than the user having to climb tracks or steps holding the nozzle.
- Never, never leave fuel delivery hose running on automatic flow unattended.
- Does fuel bowser need to be towed to fill machinery, if so make sure towing is level using correct tow hitch and fuel pipes are stored while traveling.
- Gauges should have automatic stops. Appropriate funnels and spouts will be used when re-fuelling and all fuelling hoses/ valves should be checked before use for signs of damage.



Environment Agency incident reporting procedure-

Please only use in emergencies for EA specific works only, contact LAWS HSQE manager/ ES where possible in the first instance

Procedure for Waste Management & Permitting

Scope

The purpose of this procedure is to identify all the risks associated with waste management handling, treatment, storage, transportation, re-use and disposal as well as the environmental permitting implications. This procedure outlines best practice techniques that may be relevant to a specific operation and should be implemented wherever feasible. It is essential that personnel have a thorough understanding of waste management and permitting protocols.

It is an objective of LAWS to reduce to the best of our ability the impact of all LAWS operations on the environment. This procedure is a tool in the LAWS Environmental Management System for how to meet and excel our objectives and targets.

Definitions & Abbreviations

- **EWC code**- European waste catalogue code
- **WAP**- Waste acceptance procedure (general process of assessing and classifying a waste stream)
- **WAC**- Waste acceptance criteria (essentially leachability testing for inert/ stable non-reactive waste etc.)
- **WM3**- Technical guidance for classification of hazardous waste
- **S4UL's**- 'Suitable for use levels' derived from the LQM Guidance document for assessing human health risks.
- **CEFAS**- Centre for environment, fisheries, and aquaculture science.
- **WEEE**- Waste electrical and electronic equipment
- **SSSI**- Site of special scientific interest
- **SPA**- Special protection area
- **SAC**- Special area of conservation
- **RAMSAR**- Wetlands of international importance designated under the Ramsar Convention
- **NVZ**- Nitrate vulnerable zone a conservation designation of the Environment Agency for areas of land that drain into nitrate polluted waters, or waters which could become polluted by nitrates.
- **EMP-** Environmental Management Plan
- **COSHH**- 'Control of Substances Hazardous to Health'
- **MSDS**- Material Safety Data Sheets
- **OFI**- Opportunity For Improvement

Duties and Responsibilities

Monitoring & Reporting

- Internal environmental and health and safety audits are undertaken systematically on sites at varying times to ensure control measures are in place to minimize any identified risks.
- Regular site walkovers should be undertaken by staff on site and any issues reported immediately, if any potential hazards are evident they should be rectified as soon as possible to prevent the possibility of an environmental incident.
- The OC01 Accident investigation and reporting procedure should be followed in the event of an environmental incident.
- Inspections, monitoring, non-conformances, rectification, and instructions are to be recorded in the site diary and where appropriate an OFI form.

Hierarchy

Site Manager

- Complete the Environmental Management Plan to their full ability outlining waste management control measures relevant to site.
- Ensure any areas of significant risk are coupled with appropriate control measures
- Ensure that all control measures are implemented and continuously monitored for effectiveness.
- Review the EMP when any changes occur on site.

Operations Manager/ Divisional business Manager

- Ensure Site Manager has a EMP on site, which includes adequate control measures, that are appropriate and being implemented safely.
- Support Site Manager in any control measures that need to be put in place, providing adequate resources.
- Ensure that Site Manager is fulfilling all of their responsibilities.
- Ensure that this procedure is known by all staff operating under their management.

Environmental Scientist/Manager

- Assist and support the Site Manager in waste management as required.
- Provide up to date environmental advice and information where necessary.
- To Review EMPs as required.
- Issue environmental updates on legislation and best practice as it becomes available.
- Ensure any necessary permits identified are in place prior to any work starting

Procedure for General Waste Management

- Develop a Site Waste Management Plan (SWMP) for all operations.
- Only use licensed waste carriers; a copy of the waste carrier's license should be obtained and filed in the HSQE file.
- Only use permitted receiving sites; you can check if a site is appropriately licensed by searching the site name and location on the EA public register.

- Complete a Waste Transfer Note (WTN) for each waste stream that is transported. Keep copies of all WTNs for a minimum of 2 years.
- Record European Waste Catalogue (EWC) codes on all waste transfer paperwork.
- If you are receiving a waste type on site, ensure the waste description and EWC code is applicable to the waste received.
- Ensure relevant waste streams have undergone appropriate testing as required.
- Check non-inert wastes have undergone a form of pre-treatment.
- Standard Industry Code (SIC code) for dredging operations is: **42910** for LAWS operations.
- Ensure the waste hierarchy is followed (in order): reduce, re-use, recycle/ compost, energy recovery, disposal.
- Banned wastes will not be disposed to landfill these include: tyres and liquids. There cannot be greater than 10% free-flowing liquid. If you put a stick in the waste and water re-fills the hole instantly it's too wet!

Hazardous waste

- Ensure hazardous waste is disposed of or treated at a licensed facility capable of dealing with the specific hazardous waste type (check active permit conditions).
- Register as a hazardous waste producer if you hold or produce waste quantities greater than 500kg per year in **Wales only.** ***This is no longer required in England.***
- Use hazardous waste consignment notes for all hazardous waste movements and retain copies. The consignment note reference should be displayed as follows: **LANDAN 0001** then 2/3 etc.
- Waste oils/ oily rags/ aerosols etc. generated at the yards/ maintenance on site should be isolated in appropriate containers and sent off for disposal via specialist disposal companies authorised to accept such waste.

'Special' Wastes

The following wastes may require specialist handling and appropriate disposal at a registered facility, contact the disposal site and/or environmental scientist for further details:

- Invasive plant tissue and soils/ silts contaminated with incidental invasive plant matter;
- Asbestos and asbestos contaminated material;
- WEEE.

General waste storage and treatment best practice

- Ensure all waste streams, i.e.: hazardous, non-hazardous, metal, sediment, plant matter, are thoroughly segregated where possible to ensure correct disposal, treatment or re-use and to minimise cross-contamination.
- Use suitable storage facilities for each waste type, e.g. sealed skips for hazardous waste. Ensure storage facilities are located as far as practicable from receptors to include: watercourses, sensitive habitats, residential areas.
- Unauthorized discharge of contaminated waste water could lead to prosecution by the EA as a direct breach of the activated permit or exemption. Therefore, particularly wet material may need to be stored in a sealed skip to prevent run-off.
- Cover waste to prevent water ingress where possible.

- Dispose of waste as fast as practicable.
- Locate stockpiles/ storage facilities out of direct wind or provide a wind break and damp down if dry.
- Minimize height of any stockpiles and create gentle slopes where possible.
- Consider wind speed/direction in relation to receptors before allocating general storage areas.
- Compact/ bind stockpile surfaces or vegetate if stored long-term, cover odorous or dusty wastes

Environmental permitting

The following are a list of the general requirements applicable when an environmental permit is active on a site:

- The specific permit conditions must be adhered to and should be reviewed prior to undertaking any permitted operation.
- Technically competent personnel must be available and an appropriately technically competent management system must be in place in order to minimize environment risks.
- Emissions to air, land or water must be those as approved in the permit activation, no other emissions are acceptable. An emissions management plan may be required if the EA believe an operation to be causing polluting emissions.
- Waste used under a permit must be assigned an accepted EWC code and conform to that description.
- Waste returns are required to be submitted to the EA each quarter detailing the waste imported or exported from site and the tonnages as per the permit approved quantities. The returns are completed by Environmental Scientist.
- Appropriate record keeping is required which must be retained for at least 6 years from the date of completion.
- The EA shall be notified without delay following the detection of:
- Any malfunction, breakdown or failure of equipment or techniques, accident or emission of a substance not controlled by an emission limit which has caused, is causing or may cause significant pollution;
- The breach of a limit specified in the permit approval or
- Any significant adverse environmental effects
- Written confirmation of actual or potential pollution incidents and breaches of emission limits shall be submitted within 24 hours

Consent checklist

List of consents that may be required for an operation:

Consent type	Required?
EA Permit application (for waste treatment/ storage/ use/ disposal/ water discharge/ abstraction)	
EA Waste exemptions (such as: D1 (dredge to bank)/ U1 (use of waste in construction)/ T5 (screening)/ U13 spreading plant matter)/ many others)	
SWMP	

Hazardous waste registration for Wales only	
EA Flood risk activity exemption or permit	
EA Consent for spraying herbicides nr watercourse	
EA consent- general	
MMO marine and/or port works license	
CRT 3rd party consent	
Planning permission	
3rd party	
Tree Preservation Order (local authority)	
Felling License	
Natural England consent for working in SSSI's/ other protected areas	
Natural England ecology license	
Foul sewer discharge consent (water treatment facility)	
Other (FSC)	

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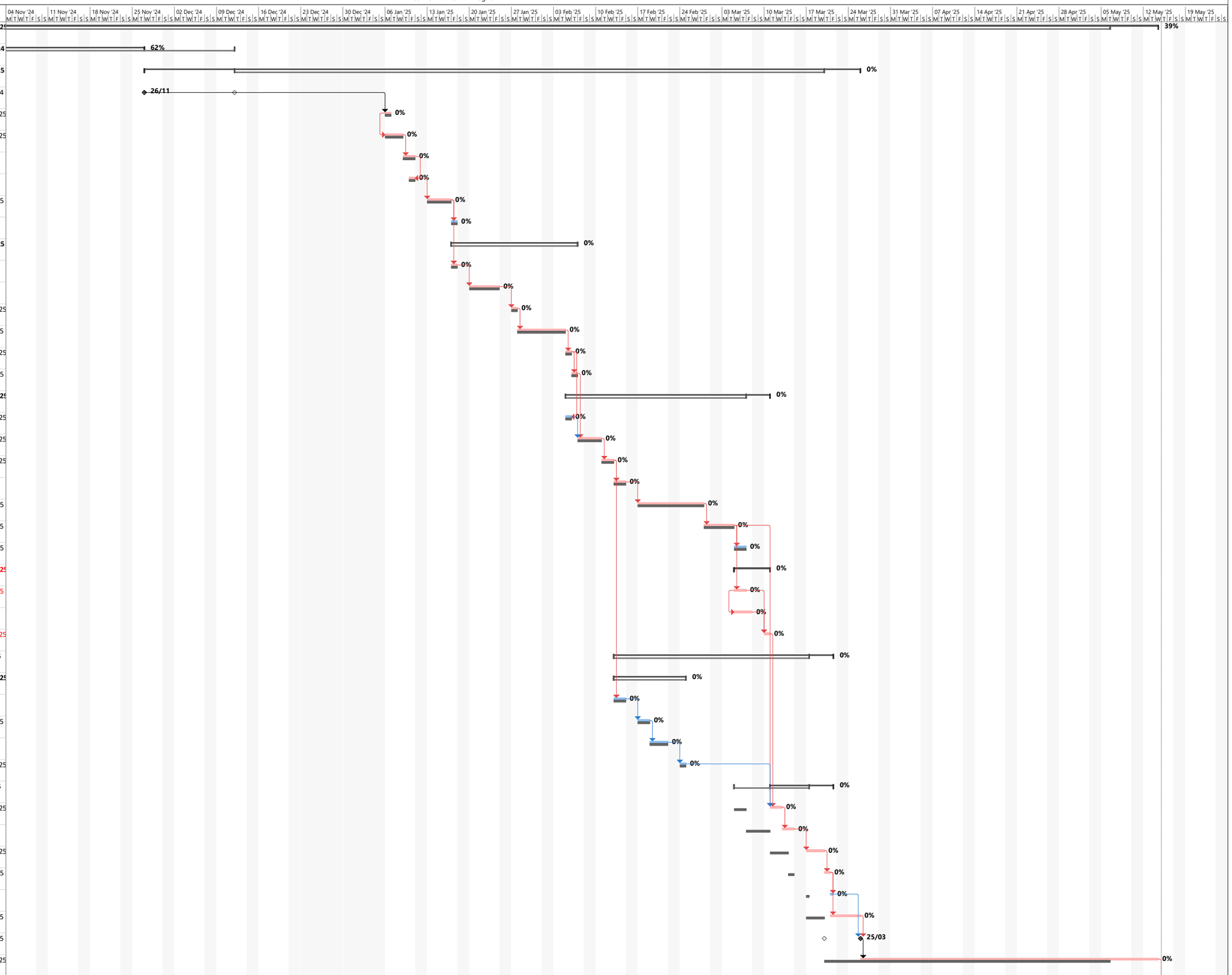
ID	Task Name	Duration	Start	Finish
1	**Project Duration**	**514.5 days**	**Tue 18/04/23**	**Wed 14/05/25**
2	**Pre-commencement**	**404 days?**	**Tue 18/04/23**	**Tue 26/11/24**
79	**Site Works**	**75 days**	**Tue 26/11/24**	**Tue 25/03/25**
80	Earliest Contractor Start Date	0 days	Tue 26/11/24	Tue 26/11/24
81	Mobilisation of Resources	1 day	Mon 06/01/25	Mon 06/01/25
82	Set up Compound and Assembly area	3 days	Mon 06/01/25	Wed 08/01/25
83	Mob Floating RAV	2 days	Thu 09/01/25	Fri 10/01/25
84	Mob Prep Fill Gang	1 day	Fri 10/01/25	Fri 10/01/25
85	Site clearance at piling areas	4 days	Mon 13/01/25	Thu 16/01/25
86	Demob LR Exc	1 day	Fri 17/01/25	Fri 17/01/25
87	**Piling**	**15 days**	**Fri 17/01/25**	**Thu 06/02/25**
88	Mob Movax and Piling Gang	1 day	Fri 17/01/25	Fri 17/01/25
89	Pile Area 1 (35m)	5 days	Mon 20/01/25	Fri 24/01/25
90	Internal site move	1 day	Mon 27/01/25	Mon 27/01/25
91	Pile Area 2+3 (49m)	6 days	Tue 28/01/25	Tue 04/02/25
92	Demob Movax	1 day	Wed 05/02/25	Wed 05/02/25
93	Installation of drainage in area 1 (NCE6)	1 day	Thu 06/02/25	Thu 06/02/25
94	**Fill to New Piles**	**24 days**	**Wed 05/02/25**	**Mon 10/03/25**
95	Mob Fill Gang	1 day	Wed 05/02/25	Wed 05/02/25
96	Prep Area 1	2 days	Fri 07/02/25	Mon 10/02/25
97	Fill Area 1 (80T)	2 days	Tue 11/02/25	Wed 12/02/25
98	Prep Area 2+3	2 days	Thu 13/02/25	Fri 14/02/25
99	Installation of platipus anchors	9 days	Mon 17/02/25	Thu 27/02/25
100	Fill Area 2+3 (160T)	3 days	Fri 28/02/25	Tue 04/03/25
101	Demob Floating Gang	2 days	Wed 05/03/25	Thu 06/03/25
102	**Flood Loss compensation area**	**4 days**	**Wed 05/03/25**	**Mon 10/03/25**
103	Excavate 100m3 and regrade bank to 1 in	2 days	Wed 05/03/25	Thu 06/03/25
104	Spread excavated material on site	3 days	Wed 05/03/25	Fri 07/03/25
105	Installation of matting over excavated ban	1 day	Mon 10/03/25	Mon 10/03/25
106	**Repair Defective Concrete**	**26.5 days**	**Thu 13/02/25**	**Fri 21/03/25**
107	**Area 1 (110m2)**	**8 days**	**Thu 13/02/25**	**Mon 24/02/25**
108	Remove defective concrete	2 days	Thu 13/02/25	Fri 14/02/25
109	Stone and prep surface	2 days	Mon 17/02/25	Tue 18/02/25
110	Prep and pour Slab	3 days	Wed 19/02/25	Fri 21/02/25
111	Joints and tidy	1 day	Mon 24/02/25	Mon 24/02/25
112	**Area 3 (125m2)**	**8.5 days**	**Tue 11/03/25**	**Fri 21/03/25**
113	Remove defective concrete	2 days	Tue 11/03/25	Wed 12/03/25
114	Stone and prep surface	2 days	Thu 13/03/25	Fri 14/03/25
115	Prep and pour Slab	3 days	Mon 17/03/25	Wed 19/03/25
116	Joints and tidy	1 day	Thu 20/03/25	Thu 20/03/25
117	Adjust 2 No downpipes (NCE6)	0.5 days	Fri 21/03/25	Fri 21/03/25
118	Clear site and Reinstate	3 days	Fri 21/03/25	Tue 25/03/25
119	Planned completion	0 days	Tue 25/03/25	Tue 25/03/25
120	Contractors terminal float	35.5 days	Wed 26/03/25	Wed 14/05/25



Critical · Critical Progress · Split · Manual Task · Finish-only · Baseline · Baseline Milestone · Summary Progress · Manual Summary · External Tasks · Inactive Task · Inactive Summary · Baseline Summary
Critical Split · Task · Task Progress · Start-only · Duration-only · Baseline Split · Milestone · Summary · Project Summary · External Milestone · Inactive Milestone · Deadline