Construction Method Statement for Works within and Adjacent to the New Dafen to support the Marine Licence and FRAP Application:

Bespoke Work Activity: Proposed Sluice Gates Work

Planned programme of works: Autumn 2023 – based upon the Marine Licence taking 52 weeks to determine: Start date and length of works (1st October 2024 – 18th October 2024 - approximately 3 weeks)

Contract:	Pentre Awel: Llanelli Wellness and Life Science Village	**Method Statement No:**	**1**
Name of Author:	Simon Hazel	**Date:**	**03/02/2022**
Name of Approver:	Dylan Jones	**Date:**	**14/04/2022**
Revisions:			

No:	Reason	Author	Date	Approved	Date
1	Removal of PPG to GPP	S. Hazel	08/08/2022	D.Jones	08/08/2022
2	Method statement reviewed so it can support the Marine Licence and FRAP application	S.Hazel	11/09/2023	D.Jones	12/09/2023

1.0 References

Relevant drawings available upon request:

- Pentre Awel Site Layout Plans;
- Pentre Awel Environmental Constraints Plan;

Relevant documents available upon request:

- CEMP
- KAYMAC Contractor RAMS – When issued;
- Project Environmental Assessment;
- Control of Sediment Run Off Plan;
- Discharge of Groundwater Plan;
- Pollution Prevention Plan;
- Environmental Incident Response Plan;
- Environmental Generic Risk Assessment;
- BYUK Environmental Minimum Standards
- Guidance for Pollution Prevention (GPP) 5 Works and Maintenance in or near water;
- GPP21 Pollution incident response planning

2.0 Scope of Work

As part of the wider works associated with the Pentre Awel project, there is a requirement to install an additional 3.5m (H) pre-fabricated stop log on top of the existing steel stop log already installed, and increase the height to 7.5m (H) in total to attenuate dischafge from extreme flood levels into the New Dafen.

This method statement and attached appendices (which are available on request) represent the environmentally compliant systems of work associated with the works required on the Sluice Gates, and form part of the Marine Licence and Flood Risk Activity Permit Method Statement for all works identified above that are within 16m of a tidal river.

Should the scope of work change, the NRW will be contacted to ensure compliance, record any emails and ensure handwritten amendments are made to this method statement and risk assessment.

2.1 Competence

All BYUK staff and sub-contractors are to be competent and to hold the relevant certifications required for the tasks in hand, and to follow all BYUK site procedures, Risk Assessments and Method Statements & CIRIA Tool Box Talks guidance.

3.0 Principal Environmental Considerations

3.1 Significant hazards

- Working compliantly to the conditions set in the Marine Licence and FRAP, and Planning Consent for the main works;
- Working within and adjacent to a watercourse which is linked to a SSSI/ SAC/ RAMSAR, and has International Importance;
- Working in an area where European and Nationally Protected Species are present – otters, water vole, reptiles etc;

3.2 Definition of Significant

Contamination of the watercourse and surrounding areas from silts, fuel, stored materials and plant etc in the working area within the flood plain, could lead to bad PR and prosecution from the Regulator: NRW. It is absolutely imperative that these risks are briefed out to all Site Staff and Visitors. Any breaches must be reported to the Site Manager and Environmental Manager immediately.

Preliminary works

APEM, Arup and Dalcour Maclaren (DM) Environmental Teams have undertaken a desk study of the site and have determined the following:

The following designated sites were identified:

- Carmarthen Bay and Estuaries (Special Area of Conservation- located approximately 100m west of the site)
- Burry Inlet SPA, Ramsar and Site of Special Scientific Interest (SSSI)- located approximately 300m west of the site.
- Pylla Mchynys SSSI is located approximately 300m south- west of the site.

- North Dock Dunes- Local Nature Reserve (LNR)- lies along the coast approximately 500m east of the site.

In 2018 a Baseline Ecological Report was produced by Arup updating a previous report from 2016 that details a desktop study and various protected species surveys. This included a boat survey of the New Dafen. Evidence of Otter Activity, Water vole and a Common Toad was recorded with the New Dafen supporting large number of fish.

Bouygues has engaged with Dalcour Maclaren to provide supporting information for Phase 1 of the Pentre Awel Scheme and the role of the Ecological Clerk of Works to support Bouygues during the construction phase of Phase 1. This will entail undertake a watching brief of all vegetation clearance and checking vegetation for nesting birds and other ecology support/ advice for the project. The Dalcour Maclaren supporting Document (Jan 2022) provides a summary of the environmental baseline and recommended mitigation during construction, in relation to ecology, arboriculture, protected and invasive species and archaeology.

Construction works will be undertaken in accordance with NRW suite of guidance:

- Guidance for Pollution Prevention (GPP) 5 Works and Maintenance in or near water;
- GPP21 Pollution incident response planning

- ….and Construction Industry Research and Information Association (CIRIA) Guidance such as C650 – Environmental good practice on site (Second edition, 2005);

4.0 Methodology

Site Set Up and Clearance

- Before any site works commence, the Site Manager will ensure that they have signed up via twitter, Facebook or mobile for alerts from the NRW for Flood Warning alerts, and display on site the Meteorological Office's 5 Day Weather Forecast to monitor the flood risk for the site that week, and to ensure perishable materials, fuels and chemicals and plant are moved to higher ground.
- Before anyone commences work on site, they will have a site induction which will include a comprehensive section on the environment, especially protected species, the conditions of the Marine Licence and FRAP, working close to designated sites, pollution prevention and controlling and monitoring of silty surface water from excavations and controlling sediment run off;
- The Environmental Manager/ ECOW will supervise the works to ensure compliance with any conditions associated with the works;
- Site staff will be expected to:
    - Check daily for signs of otter, water vole, reptiles, nesting birds and other protected species before commencing work – and to report any observations to the Environmental Manager;
    - Undertake suitable precautions to reduce dust, e.g., damping down;
    - Not remove any waste found on site previously, unless instructed otherwise;
    - Relevant environmental tool box talks such as:
        - Silt;
        - Working near watercourses
        - Washing down plant and machinery;
        - Dust & Air Quality;
        - Noise & Vibration;
        - Cement & Concrete;
        - Fuel & Oil;

- Spill Control;

Work that will require a Marine Licence and FRAP Consent:

Pentre Awel Stop Log Replacement- Outline methodology. Please note that this is subject to change following the detailed design stage. The methodology below describes the proposed works to leave the existing stop log arrangements in place and install further stop logs on top of existing to an increased height of 3.5m.

- Mobilise a suitably sized crane to the agreed lifting location. Bouygues will design and construct the required crane pad to suit the lifting requirements. Lifting radius and crane position not yet identified as the weight of the unit(s) is unknown at this stage.

Figure 1: Sluice Gates at the end of the New Dafen

- Working from a man riding basket attached to the crane, a steel insert will be installed to the vertical recesses at either end of the arrangement.

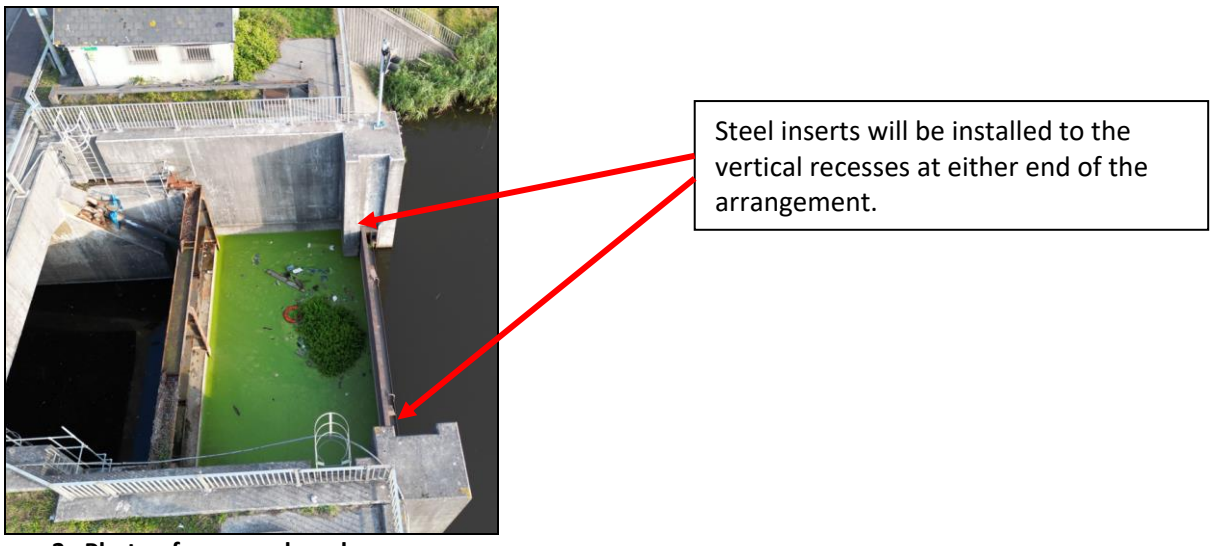

Figure 2: Photo of proposed works

- These will be installed so as to make the existing chase shape uniform and regular to accommodate a flat faced stop log arrangement (see sketch below).

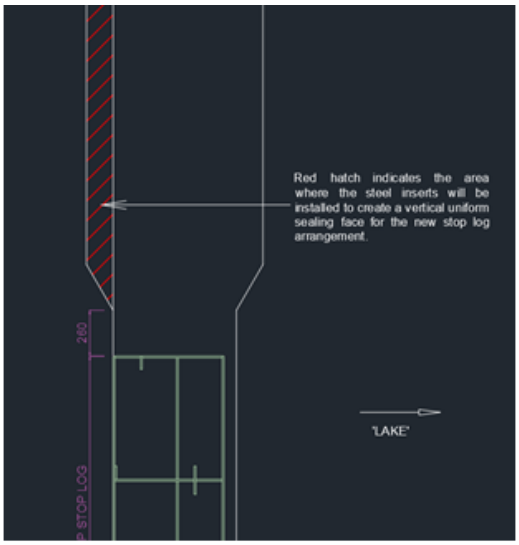

Figure 3: Sketch to demonstrate the flat faced stop log arrangement.

- The steel inserts will be drilled and fixed into the existing concrete using mechanical or resin type fixings. These works are to be undertaken above water working from the man riding basket.

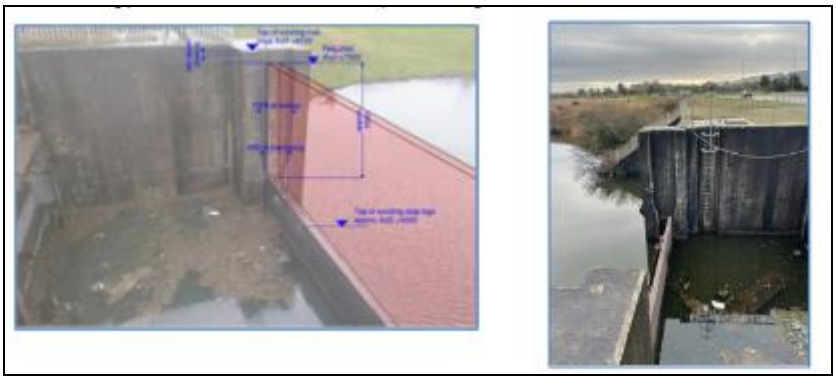

Figure 4: Inland side of the Sluice Gates

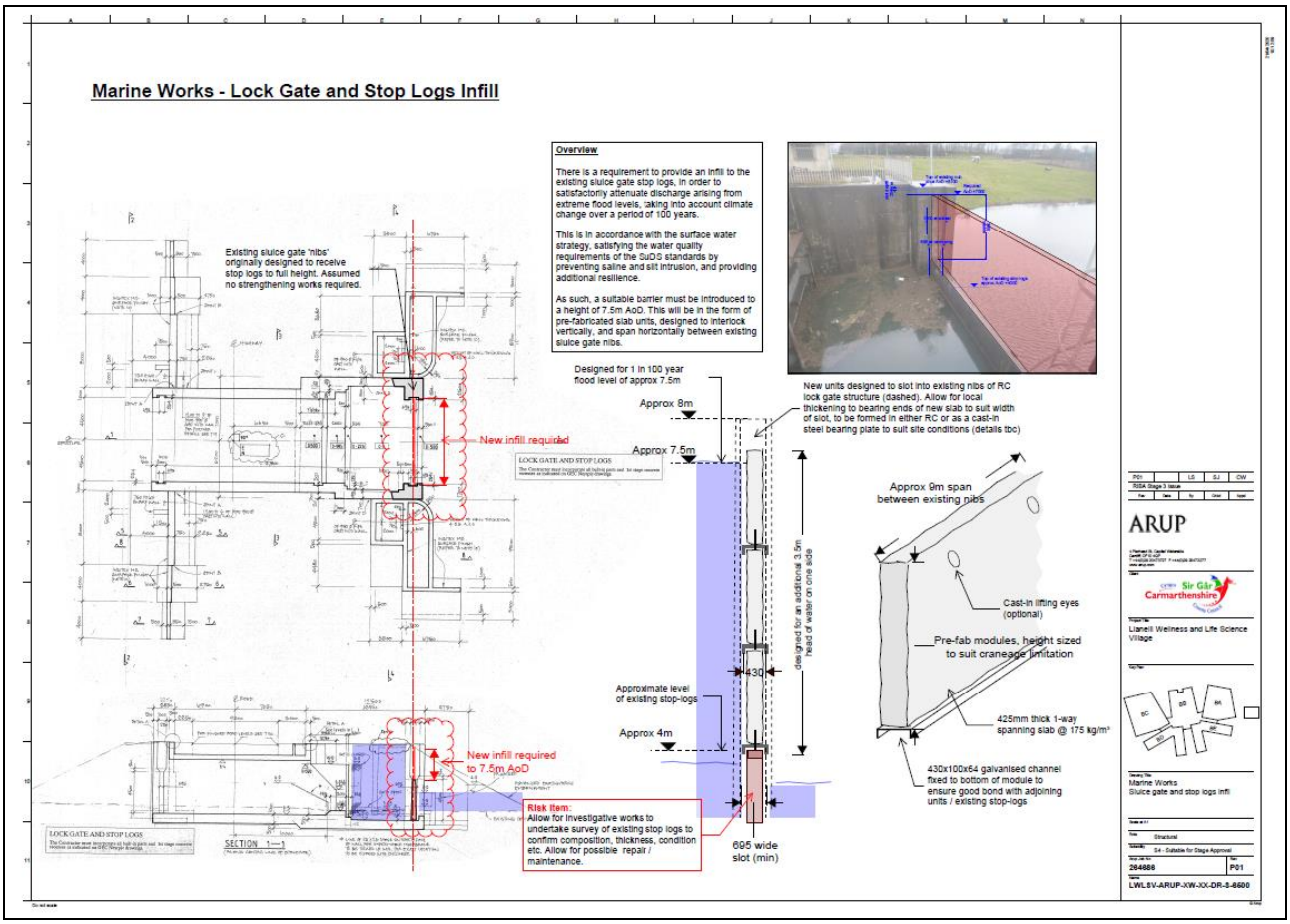

Figure 5: Marine Works – Lock Gate and Stop Logs Infill

- The new gate arrangement (single or modular steel units- weight TBC following design) will be delivered to site and offloaded adjacent to the crane. We assume at this stage that any Traffic Management arrangements that are required will be provided by Bouygues.

- The new gate((s)- if modular) will be lifted into position on top of the existing arrangement. Wedges/packers may be required to be installed by operatives working from the man basket if necessary.
- Upon completion of the works, the site will be demobilised.
- All works within and adjacent to the New Dafen will be compliant with the attached pollution prevention plans, Contractor RAMs, the EA/NRW suite of GPPs and any conditions that are included within the marine licence and flood risk activity permit;
- All reasonable care should be taken to ensure that the watercourse is kept free of foreign matter and floating debris during the construction period and on completion;
- All equipment and footwear used in the watercourse must be disinfected (using Virkon Aquatic) before and after this project, in order to prevent the spread of crayfish plague.
- It is not envisaged that a fish rescue will be required, but if so, it will be carried out by an NRW Approved Contractor such as Thompson Ecology. The Fish Rescue will be carried out in accordance with their RAMS and with prior approval from the NRW;
- The works on the Sluice Gates may generate minor levels of silt/ mortar arisings, which will be contained in the work area as shown below. If it starts to seep out, then a silt curtain will be installed, as per the photo below:

Figure 6: Example of how a Silt Curtain works.

- This cloudy water would be recycled/ over pumped through a 2" inch pump into a Siltbuster and back into the river which is landside of the silt curtain……this process of recycling will take place until the water inside the silt curtain is the same colour as that of the river on the other side of the curtain. If it doesn't, then it will be pumped into the foul sewer under agreement with DCWW.

Plant Required for the Project

The following items of plant and equipment will be required for the project. This is not an exhaustive list, but will include:

- Crane/ Hi-ab to lift cabins and materials into position;
- Any other plant that is associated with the project.

Materials Required for the Project. This is not an exhaustive list, but will include:

- Pre cast steel;
- Pre cast concrete;

Pollution prevention

Plant, Waste & Materials

- All plant and materials will be loaded and unloaded within a designated laydown area within the site compound, checked to see if they are fit for purpose – i.e any plant that is identified as having a leak or be in poor condition will be quarantined and sent back to the Hire Company for replacement. All materials will be checked to ensure they are suitable for use and sent back to the Supplier if damaged.
- All plant, waste and materials will be appropriately and securely stored when not in use. A dedicated area for the laydown or plant and materials and another one for the storage of plant and materials will be identified.

- Perishable materials will be stored undercover to avoid being damaged by the elements – the waste hierarchy will be implemented.
- All static plant and equipment will be stored over a plant nappy or drip tray and COSHH materials will be stored within a covered bunded location that is suitably bunded to 110% of the contents it is storing.
- All waste and materials will be contained/ covered and temporarily stored within the work zone and a minimum of 10m away from the watercourse;

Dust & Emissions

- To minimise emissions of dust, noise all plant on site will be modern and well maintained to a standard that satisfies current European Standards on environmental requirements. Where it is not possible to eliminate or reduce dust/odour/fume emissions then use the following guidelines:

    - dust suppression measures e.g., damping down;
    - minimising grinding;
    - using Local Exhaust Ventilation systems which filter pollutants out of the air;
    - maintaining plant and equipment with regular servicing and report any dark smoke coming from vehicle/plant exhausts.

Fuel & Chemical Storage

- All chemical and fuel containers on site shall be correctly labelled, fit for purpose, protected against unauthorised use, stored on impervious surfaces/ and or interceptor drip trays, clearly identified, spill kits immediately to hand, and securely stored to prevent them being damaged or accidentally spilt.
- Oils and oil type substances are covered by The Control of Pollution (Oil Storage) (England) Regulations 2001, and the following will be implemented:
    - the bund must be sufficient to contain 110% of the maximum contents of any oil container of 200 Litres or more;
    - tanks, drums or other containers must be legally compliant, UN Approved and suitable to store any fuels, oils or chemicals without leaking or bursting;
    - the oil container must be positioned away from any vehicle traffic to avoid damage from collision – fuel bowsers must be kept locked, level and secure at all times;
    - a bund or drip tray must be provided to catch any oil leaking from the container or its ancillary pipework and equipment;
    - where more than one container is stored, the bund should be capable of storing 110% of the largest tank or 25% of the total storage capacity, whichever is the greater;
    - the bund base and walls must be impermeable to water and oil and checked regularly for leaks;
    - any valve, filter, sight gauge, vent pipe or other ancillary equipment must be kept within the bund when not in use;
    - all valves / hoses shall be turned off and securely locked within the bund when not in use;
    - an above ground oil store or filling location must not be located within 10 metres of a watercourse or 50 metres of a well or borehole;
    - drip trays or plant nappy's must be used and spill kits and drain covers kept in close proximity;

- drip trays shall be protected to avoid any water entering them. If full of water, drip trays must be emptied in a suitable manner as agreed with the Environmental Manager. No contaminated water can at any circumstances enter any drains;
- empty containers are to be stored in the same way and safe disposal arranged for;
- all hazardous materials/substances (such as empty containers/ used spill kit waste) to be packaged, stored, handled, used and disposed of in strict accordance with the COSHH regulations 2002 and a clearly identifiable and separate enclosed skip is to be provided and maintained if COSHH materials are to be stored on site.

Plant/ Vehicle Movements

- All plant required for the scheme, will need to be checked prior to use – if any leaks are observed this item of plant will be quarantined away from the watercourse with a drip tray underneath and replaced immediately;
- All plant will be modern, well-maintained equipment and will be checked daily for fluid leaks;
- Care should also be taken when filling machinery to ensure that diesel/petrol/oil is not spilt on the ground as this could lead to pollution of the watercourse or groundwater by migration or direct run off. Spillages must not be washed away but absorbed by some medium and then removed from site to a suitable licensed waste facility. Any such incidents must be reported to the Natural Resources Wales immediately (Emergency Incident Number – 0300 065 3000);
- All plant will be refuelled in the main compound fuelling area and moved away from any gullies;
- To minimise any risk of environmental incident arising from a spillage or waste products discarded due to on-site plant servicing, where possible all plant servicing is to be undertaken off site;
- For large plant items (cranes etc) which have to be serviced on site and in the case of plant breakdown requiring on site repairs, the Site Manager is to be informed so that the environmental requirements can be discussed and assessed, and a suitable risk assessment produced.

Surface Water Run Off

- Site staff will monitor surface water run-off, and if inclement weather occurs a silt boom will be made available on site and will be installed around the work area. Silt fencing and sand bags will be laid along the watercourse edge of the work area to contain any potential silt/ surface water run-off;

Management of Nuisance Waters within the Sluice Gate

- Any nuisance waters that enter our excavations on site will be over pumped back into the New Dafen.

Pollution Prevention and Incident Management

- The site will be set up to ensure that adequate supplies of spill kits, drip trays and plant nappies are available to minimise any pollution event taking place;
- Refuelling must only take place in a designated area where the risk of contamination to watercourses and entering surface water gullies (including mains and foul sewers) can be minimised – operatives will be trained in the safe dispensation of fuel. Drip trays/ plant nappies must be used and spill kits and drain covers kept in close proximity. All static plant (generators, pumps, compressors etc.) if not internally bunded must be stored within a drip tray/ plant nappy or placed on top of an oil interceptor unit;

- All plant required for the scheme, will be modern, well maintained and checked daily for fluid leaks, and also checked prior to use – if any leaks are observed this item of plant will be quarantined away from gullies with a drip tray underneath and replaced immediately;
- Care should also be taken when filling machinery to ensure that diesel/petrol/oil is not spilt on the ground as this could lead to pollution of the watercourse or groundwater by migration or direct run off. Spillages must not be washed away but absorbed by some medium and then removed from site to a suitable licensed waste facility. Any such incidents must be reported immediately;
- To minimise any risk of environmental incident arising from a spillage or waste products discarded due to on-site plant servicing, where possible all plant servicing is to be undertaken off site;
- For large plant items (cranes etc) which have to be serviced on site and in the case of plant breakdown requiring on site repairs, the Site Manager is to be informed so that the environmental requirements can be discussed and assessed, and a suitable risk assessment produced;
- Due to the topography of the site, there will be a need to monitor and manage surface water and to prevent silty surface water run-off entering the nearby watercourses. The following controls will be implemented:
    - Minimising the amount and duration of exposed ground / only remove vegetation from the area that needs to be exposed in the near future;
- All near misses, minor and major incidents must be reported immediately to the Site Manager, so that an investigation can be carried out and the appropriate training carried out (such as a toolbox talk or PowerPoint presentation). All near misses, minor and major incidents must be reported to the Client, and to the Civils Service Centre (BYUK internal near miss line) on 0845 605 0477. Any major incident will be reported to the Natural Resources Wales immediately (Emergency Incident Number - 0800 807060) via the Site Manager/ and or Environmental Manager;

Precautions to be taken at the End of the Working Shift and Severe Flood Event

- At the end of the working day all plant and equipment should be positioned and immobilised so that it is safe and does not interfere or obstruct other contractors – this will be either in the site compound or the working area but away from the watercourse. Small items of plant should be isolated and left in a safe position with a drip tray or plant nappy underneath;
- All fuel points or bowsers are to be secured and positioned as to reduce the risk from theft or vandalism;
- The site manager will review the weather forecast, monitor any flood alerts and discuss the appropriate action to be taken with the Environmental Manager;
- Should the dumpy bag dam be damaged from a flood event, the site team will locate any dumpy bags washed downstream and collect them accordingly;
- Will review the effectiveness of the Environmental Incident Response Plan.