



Caernarfon Harbour Pontoons Outline Installation Methodology Statement

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Document Control Sheet

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Document Author(s):	Rhys Meilyr Thomas
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Project Manager:	Rhys Meilyr Thomas

Revision History

Date	Version No.	Summary of Changes
02/05/2025	0.01	First Draft
	0.02	First review
	0.03	Second review

Reviews

Name	Title	Date	Version
David O’Neil	Harbour Master	4/06/2025	0.01

Approvals

Name	Title	Date	Version
David O’Neil	Harbour Master	4/06/2025	0.01

Distribution

Name	Title	Date	Version

Caernarfon Harbour Pontoons – Outline Installation Methodology

1.1 Site Location

The site is located along the Cei Llechi area of Caernarfon Harbour, Caernarfon, Gwynedd.



Figure 1. Site location plan, shown in red.

1.2 Reference Documents

Scheme layout: NE2413-00-01 (REV A) Proposed Layout-A1.pdf

Scheme overview: NE2413-00-02 Proposed Layout (Overview)-A1.pdf

12732_Scrub deck layout and overview_0.1.pdf

Habitats Regulations Assessment (HRA) Report – 12732_Caernarfon Pontoons HRA_0.1

Water Framework Directive (WFD) Assessment Report – 12732_Caernarfon Pontoons WFD_V0.2

1.3 Description

The works consist of installing pontoons along the Cei Llechi (Slate Quay) area of the harbour in Caernarfon, Gwynedd. The proposals involve the installation of floating pontoons along a section of approximately 365m of the quay wall, secured off driven piles which are to be placed

on the foreshore adjacent to the quay wall. The proposals also include the installation of a 15m x 6m scrub deck adjacent to the harbour wall on the western side of the pontoons.

The work will involve the following:

- Set up temporary site compound and exclusion zones for piling and crane platform in car park.
- Foundation preparation on foreshore for scrub deck.
- Siting of piling rig on quay and installation of piles along the foreshore
- Concrete deck construction of scrub deck.
- Siting of crane on quay and lifting of pontoon sections into water.
- Positioning and fixing of pontoons onto piles.
- Installation of gangway and securing on to quay/car park.
- Removal of crane, equipment and site compound and re-instatement of car park.

1.4 Environmental and Cultural Heritage Constraints

The proposals are located approximately 43m south east of the Menai Strait and Conwy Bay SAC, and 32m north of the Afon Seiont SSSI.

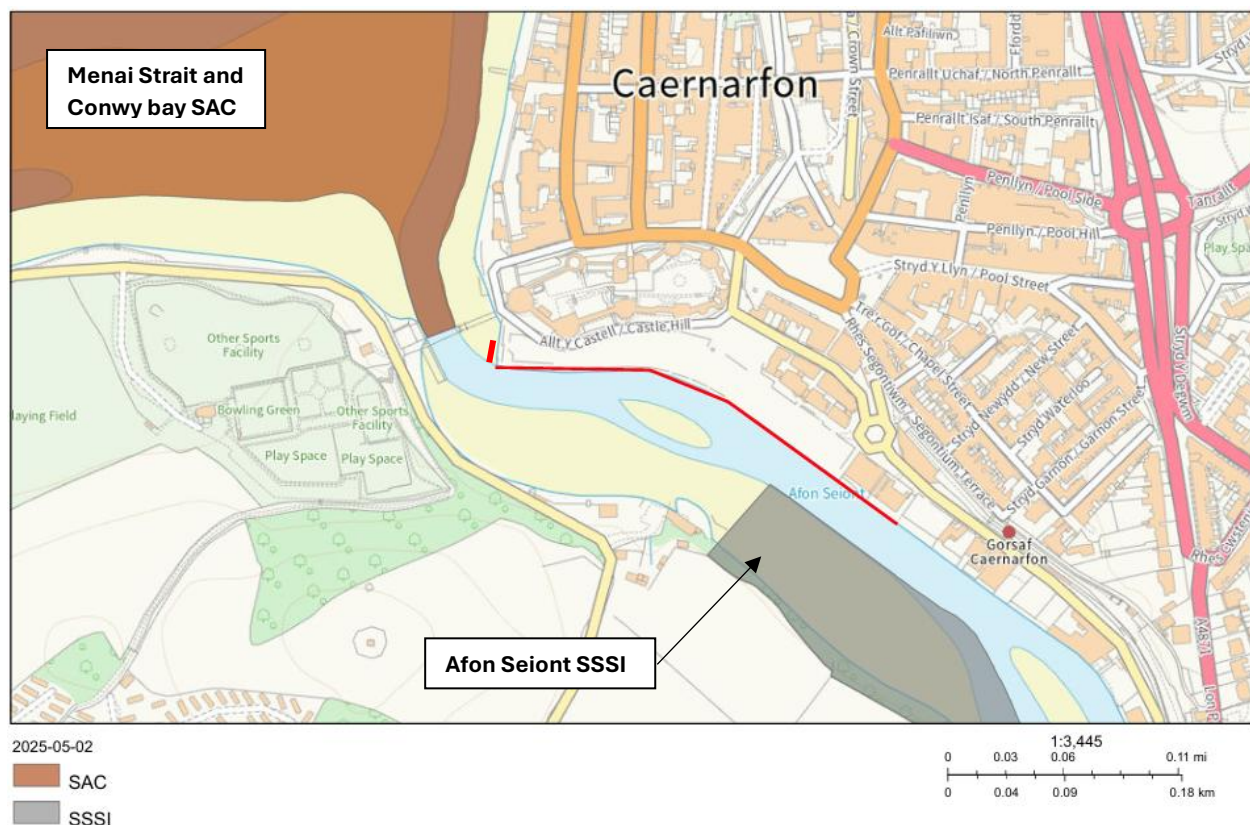


Figure 2. Conservation designations in the vicinity of the proposals

There are several cultural heritage designations in close proximity to the proposals. The quay wall is a listed structure (Grade II, reference 3815). The pontoon installation will not interact

directly with the quay wall itself, with the gangways secured to the car park area, not the capping stones of the quay wall. The scrub deck installation will interact with a length of 15m of the base of the quay wall. Works required to the listed wall will require Listed Building Consent.

There are other listed buildings nearby (shaded pink in figure 3 below), along with the castle and town walls which are designated a Scheduled Ancient Monument and World Heritage Site.

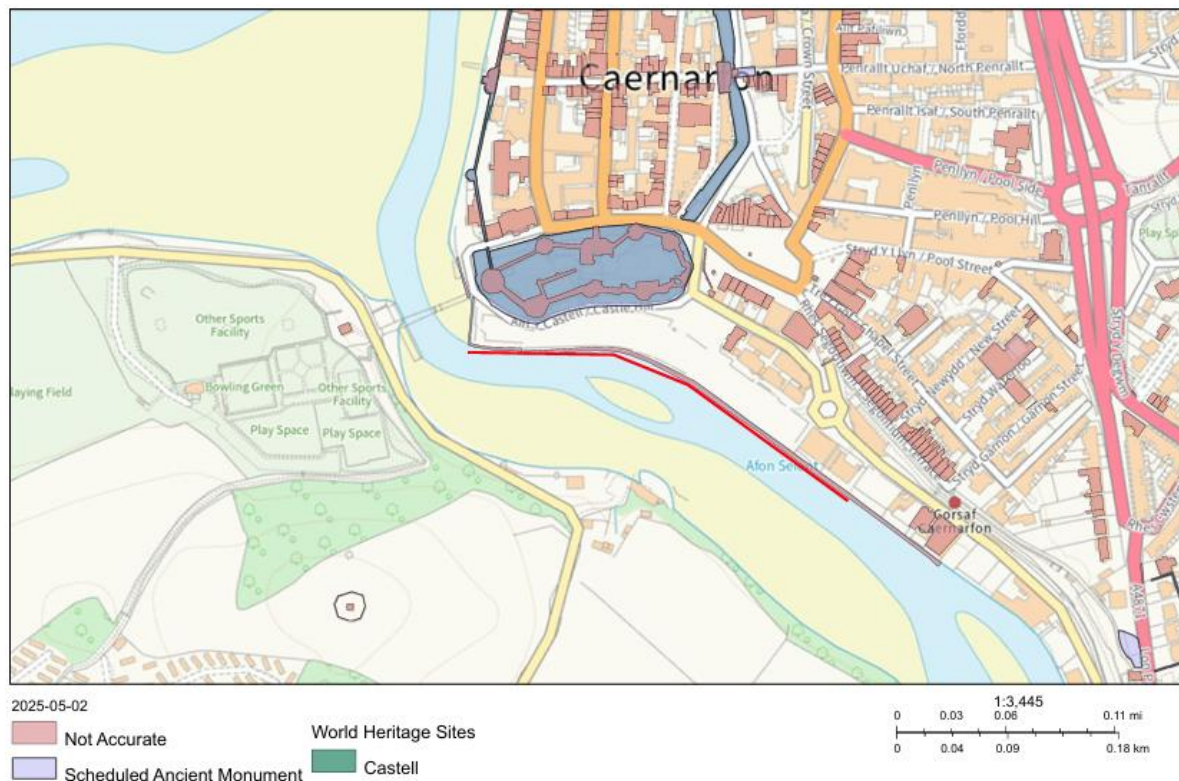


Figure 3: Cultural heritage designations in the vicinity of the proposals.

2.0 Sequence of works

2.1 Set up site compound

Proposed temporary site compound will be located within the existing Cei Llechi car park area.

Site compound to be securely fenced to prevent unauthorised access. Traffic and pedestrian management to be in place around compound.

Compound to consist of adequate welfare and storage facilities.

2.2 Pile installation:

Piling will be subject to the environmental constraints stated within this document, and the mitigation measures set out in the HRA report and WFD assessment accompanying the scheme.

High tide restrictions - Piling activities shall not take place within 3 hours either side of high tide within the harbour. Piling will cease and standing time will be implemented during high tide.

Piling installation method will be decided by the Contractor, however, the piles will be installed from the landward side with piling plant being sited a minimum of 2-3 metres away from the face of the existing quay wall. Piles to be driven using silent press-in rig where possible to reduce use of vibratory hammer.

Pontoon piles will be installed adjacent to the quay wall in the locations shown on the Pontoon Layout Plan (drawing number: ICMS/NE2413/00/01). The piles will not touch the quay wall and adequate protection measures will be put in place during construction to prevent damage to wall.

Steel sheet piling will be installed to support the scrub deck, in the location shown on plan *12732_Scrub deck layout and overview_0.1*. The sheet piling will extend 6m from the quay wall and 15m in length.

Work programme should be tailored so that piling activities do not take place within the salmonid migration run (June – Sept).

2.3 Pontoon installation:

Environmental protection procedures, in accordance with mitigation measures set out in the HRA report, will be put in place prior to locating construction equipment and vehicles close to watercourse.

Pontoons transported to site and lifted in to the water from the delivery vehicles. It is preferred to avoid storing units on site in order to avoid double handling, as such loads will be coordinated as to arrive on site on an “as needed” basis.

A mobile crane (50 -100T capacity), sited on the car park, will lift the pontoons into the water.

The mobile crane lifts pontoon units in to the water one at a time. When in the water the pontoon will be secured by operatives from work vessel with ropes.

When the next pontoon is lifted in to the water it is then connected end on end to the previously launched pontoons

When a line of pontoons has been launched and connected it is then towed to the install location by the workboat

Once in position against the piles the pile guides are affixed to connect the pontoons to the piles. This is repeated for all sections along the quay.

When the gangway landing pontoon has been installed then the gangway can be lifted from the delivery vehicles and installed.

M&E services and any ancillary equipment is installed once all the main pontoon equipment is in place and secured.

2.4 Scrub deck installation:

Level seabed at footprint of scrub deck through levelling and removal of sediment.

Drive sheet piles along perimeter of scrub deck footprint. Pile depth to suit load-bearing strata and lateral load resistance. Cut pile tops to level with coping beam elevation.

Further excavate within the working area to suitable formation level.

Lay compacted rock/gravel base.

Formwork setup to define slab extent, and install steel rebar mesh to strengthen concrete as per structural design.

Concrete pour of deck, using marine grade concrete resistant to saltwater corrosion (e.g C40/50 with SR cement). Concrete to be pumped from car park above. Concrete pours to be timed with tidal windows to maximise cure time and reduce risk of washout.

Install timber bearers on quay wall as required (to match existing).

2.5 Removal of temporary works and re-instatement:

Removal of piling / crane platform.

Removal of all equipment and compound area and re-instatement of car parking areas.

3.0 Measures to reduce the risk of pollution

The following measures will be implemented to further reduce the risk of environmental damage during the proposed works:

- A Construction Environment Management Plan (CEMP) is to be prepared which will detail what measures will be in place to protect the surrounding environment. Location of adjacent protected sites shall be clearly highlighted.
- Works to be timed to avoid periods of high tide.
- Integrity of formwork to be inspected prior to pouring/pumping of concrete.
- All concrete use within works to include quick setting cement to reduce risk of washout and ensure all new concrete elements are set prior to incoming tides.
- Biodegradable lubricant and hydraulic oil to be used in plant machinery where possible. Biodegradable oils are less toxic than most synthetic oil but should still be stored to the same standards as other oils and prevented from entering the water environment.
- Pollution spill kits to be readily available on site within plant/machinery at all times, with staff suitably trained in how to deploy.

- Contractor to have emergency incident response procedure in place in the case of a spillage. Response to include accurate procedure to swiftly remove any contaminated sand/material from site in the case of accidental spillage.
- Contractor to adhere to pollution prevention best practice guidelines, including;
- GGP5: Works and maintenance in or near water