

# Construction Environmental Management Plan (CEMP)

## for

# Nuclear Medicine Consolidation Glan Clwyd Hospital

## Project Number HNW 0347

Rev No 0

Dated 22<sup>nd</sup> Aug 2023

Prepared by Gareth Davies

Date 22<sup>nd</sup> Aug 2023

Approved by Rob Bailey

Date 22<sup>nd</sup> Aug 2023*Construction Director*

**Subsequent revisions of this CEMP will be distributed to all listed recipients.**

### Internal Distribution

The complete CEMP shall be distributed to the following:

Project Team, Regional Sustainability Advisor, Sustainability Manager

Business Systems shall receive signed front sheet only.

**External Distribution**, e.g. Client, Subcontractors, Others (please specify)

Issued to	Date
Gleeds Management Services Liam Erwin	/2023
BCUHB Liz Lloyd	/2023
Powell Dobson Rhodri Davies	/2023
Ramboll Nick Holt	/2023

### Revision Record

Rev	Date	Revision Details	Revised by
0	22/08/2023		GD

**This plan must be available to everyone on site upon request.**

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## Appendix A – Logistics and Phasing Plans

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## 1.0 Environmental Records

Details of the documents that need to be held on site are listed below.

All Key Performance Indicator Information will need to be recorded on BAM SMaRT

Environmental Records <sup>1</sup>	Action by	File Ref:
Construction Environmental Management Plan (CEMP)	GD	15
Resource Management Plan (RMP)	GD	50-05 BAM SMaRT
Environmental Permit / Waste Management Licence / Exemptions, Carrier Registrations [off-site]	GD	BAM SMaRT
Environmental Permit / Exemption Certificate [on-site]	GD	50-05
Waste Transfer Notes	GD	BAM SMaRT
Street cleaning & septic tank duty of care information	GD	50-05
Energy supply arrangements (type of supply, supplier, MPAN, MPRN, account number(s))	tba	BAM SMaRT
Key Performance Indicator information (pollution incidents, energy use, mains water use, waste production, timber sustainability, environmental toolbox talks)	GD	50-05 BAM SMaRT
Method Statements and Risk Assessments	GD	50-10
COSHH Assessments	GD	50-10
Site Incident Response Plans	GD	50-05
Regional Sustainability Advisor Visit Reports	RB (Ruth Beavers)	BAM SMaRT/ BIM360 Field
Section 60 / 80 Notices	N/A	50-05
Section 61 Consents	N/A	50-05
Part B Authorisations	RB	50-05
Trade Effluent Consent	RB	50-05
Controlled Water Discharge Permit	RB	50-05
Other Consents (Archaeological, Hedge Removal, Tree Removal, etc.)	RB	50-05
BREEAM	SW	60

<sup>1</sup> This list is not exhaustive and not all of the documents may need to be obtained. See the Pre-commencement checklist, [bam/ep/construction/5.2](#), and procedures for details of the documents that will need to be retained.

## 2.0 Contractual Obligations

Insert any contractual, client, or planning authority environmental obligations, e.g. restricted working hours, BREEAM rating, timber chain of custody policy, etc.

- BREEAM Rating; Excellent
- ALL new timber / wood based products are to be from FSC or PEFC Chain of Custody sources
- Site working hours 08-00hrs to 18-00hrs Mon-Fri. 08-00hrs to 13-00hrs Sat with no works carried out on Sunday's or Bank Holidays

## 3.0 Project Specific Environmental Aspects

List all environmental Aspects (areas that will impact on the environment) identified from the Environmental Pre-commencement checklist

- Client requirements
- Planning restrictions / requirements
- Sustainable material procurement (including timber)
- Waste management (Refer to Resource Management Plan)
- Resource use
- Nuisance
- Contaminated land
- Earthworks
- Emergency procedures
- Hazardous chemicals (including fuel)
- Recycling waste on site (aggregates)
- Transport
- Local watercourses (including groundwater)
- Ecological issues / tree protection
- Water discharge / abstraction
- Concrete
- Maintaining clean roads
- Training & Awareness

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## 4.0 Project Specific Environmental Controls

Targets set out below are the BAM Construction minimum requirements on each project. Where more stringent targets have been set, e.g. through BREEAM, these should also be inserted.

### 4.1 Construction Targets

Explain how the site is going to measure its performance against the Environmental Targets for Construction. Include details of the KPIs to be measured. Example Targets are included below.

1	Site to register with the Considerate Constructors Scheme and target minimum score of 35 ( <i>40 BREEAM exemplary level performance</i> ) out of 50 with a minimum of 7 in each category.
2	Target zero pollution incidents by following this plan.
3	Measure Energy use as follows: <ul style="list-style-type: none"> <li>BAM Fuel use (in litres) and bottled Gas/LPG (in Kg) to be recorded on BAM SMaRT from delivery tickets.</li> <li>Subcontractors to copy their delivery tickets for fuel oil, bottled gas, etc. to BAM for inclusion on BAM SMaRT.</li> <li>Energy supply details to be logged on BAM SMaRT indicating ownership of supply (BAM/Client), Supplier, MPAN, MPRN and account details where relevant.</li> <li>Automatic Meter Reading (AMR) Electricity (and where relevant Gas) meter(s) to be installed at main supply point/entry point to site, with usage (obtained from AMR report) recorded monthly (in kWh) on BAM SMaRT.</li> <li>Target maximum CO<sub>2</sub> emissions of (3.5) tonnes /£1 million.</li> </ul>
4	Water use readings (in m <sup>3</sup> ) from the meter installed at the entry point to the site are also to be recorded on BAM SMaRT. <ul style="list-style-type: none"> <li>Target maximum water use of (85) m<sup>3</sup> /£1 million.</li> </ul>
5	Waste production, and percentage of waste diverted from landfill, is to be monitored on BAM SMaRT. <ul style="list-style-type: none"> <li>Log all BAM Waste Transfer Notes (WTN) and waste destinations.</li> <li>Subcontractors to copy all WTN to BAM. BAM to record on BAM SMaRT.</li> <li>Target maximum Construction (skip) waste production of (25) tonnes /£1 million.</li> </ul>
6	The Resource Management Plan includes details of the waste to be segregated for recycling on site. <ul style="list-style-type: none"> <li>Target to divert at least (80) % of all waste removed from site away from landfill.</li> </ul>
7	All new timber and wood based products are to be from FSC or PEFC Chain of Custody sources. Details of all deliveries will be recorded on BAM SMaRT.
8	Environmental Toolbox Talks are to be carried out at least once a month, and be recorded on the Toolbox Talk Record. All environmental risks are to be included in site induction.
9	The Construction Environmental Management Plan and Resource Management Plan are to be reviewed on a quarterly basis.
10	Produce at least one environmental case study
11	All CAT 1 subcontractors to be active members of the Supply Chain Sustainability School
12	Install an EV charging point, or the site confirms that (delete this text and replace with one of the following caveats) <ul style="list-style-type: none"> <li>There is insufficient capacity renewable electricity supply</li> <li>There is no logistically sensible parking spot for an EV point</li> </ul>

	<ul style="list-style-type: none"> <li>Public transport is the main mode of transport for employees, subcontractors and visitors.</li> <li>The project has less than 3 months activity left after a charging point is installed.</li> </ul>
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Explain how the site is going to control and reduce the impact of the Environmental Hazards (Aspects) listed in section 5.0.

## 4.2 Ecology, Archaeology, and Rights of Way

The following measures will be employed to protect the ecology on the site:

- All mature trees that are to be retained are to be protected in accordance with BS 5837. No work may be carried out within the fenced areas without prior approval of a method statement. No mechanical excavation will be allowed within the fenced areas. No materials to be stored in protection zones.
- If any Japanese knotweed is encountered, work within 7m of the plant will be stopped, the area cordoned off and the local environmental regulator will be contacted to confirm the presence of Japanese Knotweed. Further project specific controls will be implemented if required.
- If protected species are identified after work begins, or it is suspected that a protected species may be present, work will be stopped when it is safe to do so and access restricted to the affected area. The Species Protection Officer of the relevant authority [Natural Resources Wales](#) will be contacted to carry out a site survey to confirm presence of a protected species. Any advice on the preservation or relocation of the species will be followed as required.
- If any finds suspected of being of archaeological or historic interest are uncovered the following action will be taken:
  - Cease all work within the area immediately
  - Protect the area by fencing or other means
  - Contact the LPA and local authority archaeologist. Contact details for the local authority archaeologist can be found at: [www.algao.org.uk](http://www.algao.org.uk)
  - Depending on the find it may be necessary to obtain Scheduled Ancient Monument consent before continuing with the work
- If human skeletal remains or evidence of a burial ground are uncovered, the Police and the Coroner will be contacted in addition to the local authority archaeologist.
- Finds regarded as treasure (rare coins and artefacts) will not be removed from site without consent.
- (BREEAM statement for Land Use and Ecology Credits)** The nominated Biodiversity Champion is Gareth Davies. Who has the authority to influence site activities and ensure that detrimental impacts on site biodiversity are minimised in line with the recommendations of a Suitably Qualified Ecologist (SQA). **A formal letter of appointment is to be saved as BREEAM Evidence.**

Insert additional site specific controls here

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## 4.3 Materials Management and Responsible Sourcing

The following materials management measures will be employed:

- All hazardous materials will be kept within a locked storage area and access to these materials will be restricted to those who have viewed the COSHH assessment for the particular material.
- Other materials are to be stored in designated storage areas as agreed with the Site Management.

This project is committed to BAM's responsible sourcing policy, and is committed to:

- Considering the impact on natural resources when choosing goods and materials
- Promoting the application of 'Life Cycle Thinking' when considering specifications during the design, specification and construction process to reduce the impact of buildings over their whole life
- Minimising the use of materials with a hazardous content and promoting the use of materials which can improve the health of building users
- Procuring all new timber and wood based products (for temporary and permanent use) from certified legal and sustainable sources. This includes Grown in Britain (GiB), Forest Stewardship Council (FSC), and Programme for the Endorsement of Forest Certification (PEFC). Chain of Custody evidence is required to confirm compliance
- Insisting that our subcontractors have an Environmental Policy and work to BAM's environmental procedures to ensure compliance with relevant environmental protection laws and regulations
- Encouraging our supply chain to implement or to be working towards a UKAS accredited third-party certified Environmental Management System
- Encouraging our supply chain to become active members of the Supply Chain Sustainability School
- Supporting and giving preference to procuring products which are able to demonstrate compliance with a recognised responsible sourcing scheme, certified by a third party, such as BES 6001 or Cradle to Cradle
- Supporting and giving preference to waste management contractors that hold PAS402 certification
- Eliminating excessive packaging, with a particular focus on single-use plastics, without having a negative impact on the delivered goods

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## 4.4 Oil, Fuel and Liquid Chemical Storage

The storage of all BAM and Subcontractor oil containers with a capacity of 200ltrs or more will comply with the requirements of the Control of Pollution (Oil Storage) regulations. A Site Incident Response Plan will be produced where quantities exceed 200ltrs. The filling of BAM bulk storage tanks will be supervised by Gareth Davies. Only authorised personnel will be issued with a key to the bulk storage tanks for refuelling plant. When refuelling, the operator is to remain in attendance at all times.

- All personnel are to make themselves aware of the Site Incidence Response Plan (SIRP) (405-406) which will be displayed in a prominent position. The Project Sustainability Manager is to be notified of all spillages, however minor.
- At least one BAM specification spill kit will be available on site, at the location detailed on the SIRP.
- Although equipment (like a funnel) will be used to prevent drips, a plant nappy (or drip tray) will be available when refuelling plant and equipment on site to prevent contamination as a result of minor spills and drips.
- Subcontractor method statements will include the provision of spill kits for activities that could result in a spill, leak or hose burst.
- Oils and other chemicals, in containers with a capacity of less than 200ltrs, will be stored within a locked store on a secondary containment system. Only authorised personnel will be issued with a key to this store.
- Place containers of fuel smaller than 200 litres on plant nappies when in use on site. Return the containers to their secondary containment system when they are no longer needed, at least at the end of every day.
- Oil storage will be set up so that rainwater does not accumulate in impermeable drip trays / bunds
- If oil is stored outdoors and rainwater collects in drip trays or bunds, any oil from the water will be removed with an oil only absorbent pad. Used pads will be disposed of as hazardous waste. (There are also proprietary cleaning systems available for example the PIG® Outdoor Oily Water Filter Bucket).
- The location of Subcontractors' oil storage areas and procedures must be agreed with BAM Site Management prior to any deliveries. No storage will be permitted within an area designated as a Source Protection Zone, within 10m of a watercourse or within 50m of a well or borehole.
- All hazardous materials will be kept within a locked storage area

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## 4.5 Nuisance Prevention

The following measures are to be implemented to reduce the nuisance to neighbours, and to ensure they have an appropriate amount of involvement with the project:

- Site working hours will be 08:00 to 18:00hrs Monday to Friday, and 08:00hrs to 13:00hrs on Saturday. No work is to be carried out on Sundays or Bank Holidays.
- Send out a client approved newsletter before the start of the project, introducing the project team and giving a brief outline of the project, and thereafter at intervals of (insert interval) months. The newsletter will include the name and telephone number of the Project Sustainability Manager. ([Site Newsletter Template](#))
- The Local Authority's Environmental Health Officer will be kept informed of all upcoming activities that may impact on the local residents.
- All compliments, comments and complaints will be recorded. The Project Sustainability Manager will take immediate action on receiving a complaint, and respond to any complaint by the end of the next working day. A senior member of the project team will verify that the corrective action has been effective.
- All plant and machinery will be switched off when not in use.
- A road sweeper will be employed to keep all roadways on and adjacent to the site clear of mud and debris.
- Weekly Checks of the perimeter hoarding and surrounding areas to ensure compliance and good presentation of a tidy environment
- Regular Dialogue with staff and operatives to ensure interface with the hospital staff and general public does not cause nuisance

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## 4.6 Water Pollution Prevention Measures

The following measures are to be put in place to ensure there are no pollution incidents:

- Oil and liquid chemicals are to be stored and handled as described in the Oil, Fuel and Chemical Storage section of this plan.
- A Site Incident Response Plan will be produced where quantities exceed 200ltrs.
- Plant nappies and drip trays will be used to prevent leaks from plant and vehicles from contaminating land.
- For larger pieces of equipment an impermeable area with controlled drainage will be used to prevent environmental incidents. This area will be located well away from controlled waters and surface water drains.
- Machinery should be inspected and evidence recorded on the Work Equipment Inspection Form. Additionally all leaks are to be reported for immediate action.
- Generators with external fuel tanks shall be operated in such a way so a hose burst will not result in an incident
- No waste water is to be pumped to any Controlled Waters or to any Foul or Surface Water Drains.
- An impervious concrete wash out area, consisting of (site to insert method of containing concrete washout. This could be a polythene lined skip, polythene lined pit, or another method of containment), is to be constructed at the exit to the site. This is the only area where concrete wagons are permitted to wash out. The resulting waste water will be allowed to evaporate wherever possible. Where the water needs to be disposed of, it will be neutralised with (site to insert neutralisation method, e.g. citric acid / Siltbuster unit, and disposal method, e.g. via the foul sewer (for which a trade effluent consent has been obtained)).
- A vegetation buffer next to the watercourse will be left during the groundworks phase.
- All surface water drains and watercourses will be protected using cut-off ditches or earth bunds, both at least 10 metres from the watercourse.
- Dust fencing will be erected to prevent dust from blowing into the watercourse.
- As a precaution an oil only marine boom will be installed to catch any oil or fuel in the event of an incident.
- Before disposing of significant volumes of contaminated water a test for contaminants will be undertaken and the water disposed as hazardous (special) waste if required.
- (Insert additional site specific controls here).

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## 4.7 Contaminated Land

- Describe how the spread of contaminants will be eliminated (or delete)
  - Wheel wash
  - Damping down
  - Provide bunds, cut off ditches, or other means to control surface water
  - Install specific arrangements to control ground water movement and flow
  - Separate out contaminated materials and store safely.
  - Store the contaminated materials in a particular way, for example to prevent contaminants leaching into the ground or into a controlled water.
  - Monitor the atmosphere at the workplace and site boundaries for both dust levels and contaminants in the dust.
- Describe how ground and surface water will be disposed of if it is contaminated or is likely to become contaminated.
  - Formal discharge consent from local water authority or environment agency
- If any suspected contaminated ground is encountered during the works, this is to be reported to the site management.

## 4.8 Other control measures

In addition to the above controls the following will be implemented on this site:

- Insert additional site specific controls here

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## 4.9 Training

The following measures will be employed to ensure the Environmental Aspects and Controls are communicated to the relevant site personnel.

- Control measures noted above, along with details of the Resource Management Plan will be communicated to all Site Operatives at their initial Site Induction.
- An Environmental Notice Board in the site canteen will contain the following information:
  - BAM Environmental Policy Statement.
  - Relevant Environment Posters.
  - The latest relevant BAM Environmental Bulletin.
  - Site Incident Response Plan (SIRP) for oil.
  - Toolbox talks and/or other information relevant to the project.
  - Performance against, energy, water and waste targets
- Environmental Toolbox Talks relevant to site activities will be conducted once per month. Ecology toolbox talks will be undertaken based on the findings and recommendations for protection of ecological features highlighted within the Suitably Qualified Ecologist's report.
- Insert additional site specific controls here

## 4.10 Emergency Procedures

A Site Incident Response Plan is to be displayed at all storage locations where 200 litres or more of a possibly polluting substance is to be stored.

Complete the plan to include the additional emergency procedures that may be required due to project specific hazards and display at all storage locations.

## 4.11 Resource Management Plan

A Resource Management Plan (RMP), which complies with the requirements of the Site Waste Management Plan Regulations where they apply, has been drawn up.

The RMP has been produced to ensure that resource efficiency measures have been taken and that all waste from this site is to be managed appropriately and dealt with in accordance with Section 34 of the Environmental Protection Act 1990 (Waste Duty of Care) and the Environmental Protection (Duty of Care) Regulations

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## APPENDIX A - Logistics and Phasing Plans

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NHS  
WALES  
GIG  
CYMRU  
Bwrdd Iechyd Prifysgo  
Betsi Cadwaladr  
University Health Board

## Site Plan

G Flint

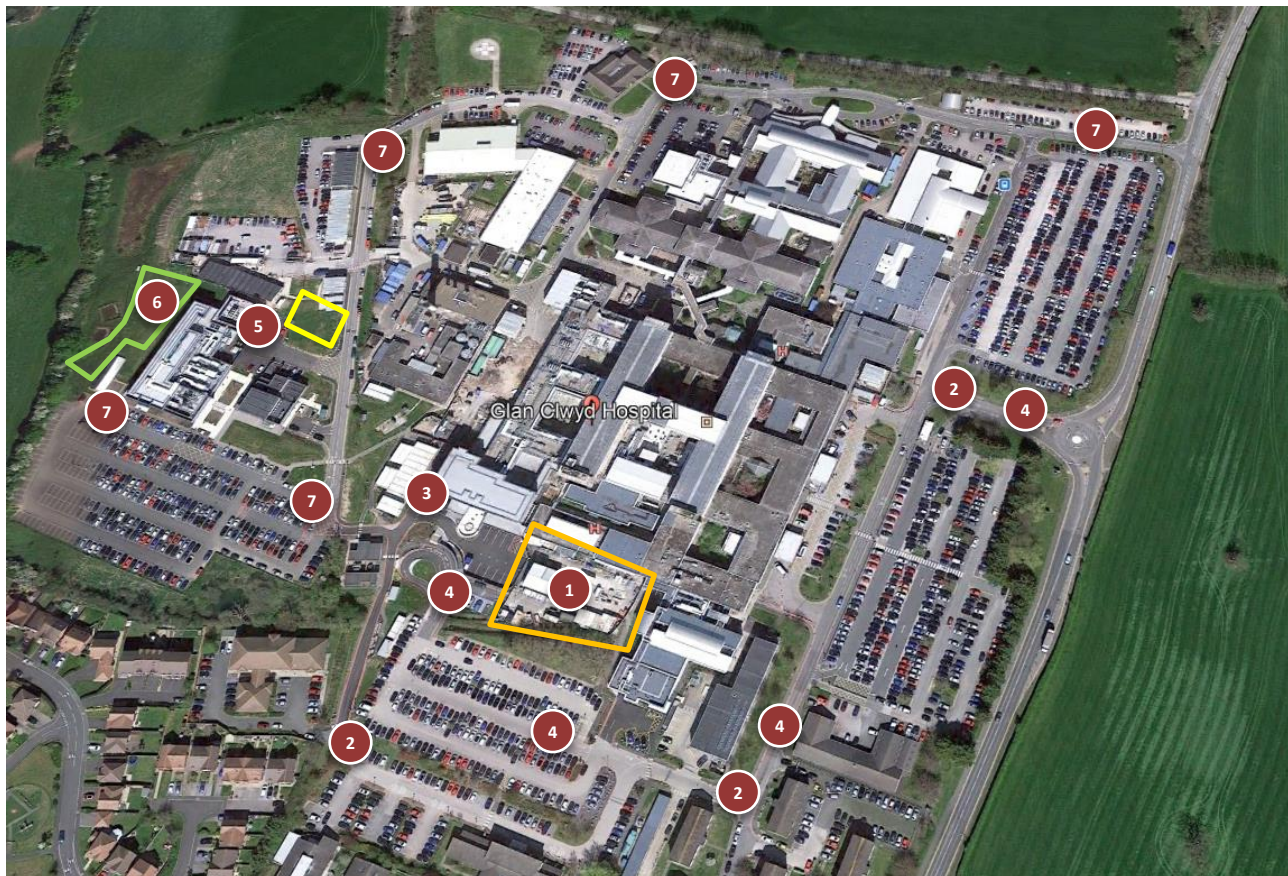
Date  
09 May 2023

Drawing Number  
**SL 01**

Revision







- 1 NMC construction site and compound.
- 2 Blue light route to Emergency Department unaffected by construction works.
- 3 Emergency Department area unaffected by construction works
- 4 Contractors access route to work areas.
- 5 BAM site accommodation – shared with AOPMHU BAM site accommodation
- 6 Contractors parking – shared with AOPMHU contractor parking
- 7 Contractors access route to parking and accommodation



NHS  
WALES  
Betsi Cadwaladr  
University Health Board  
CYMRU

## Site Establishment

G Flint

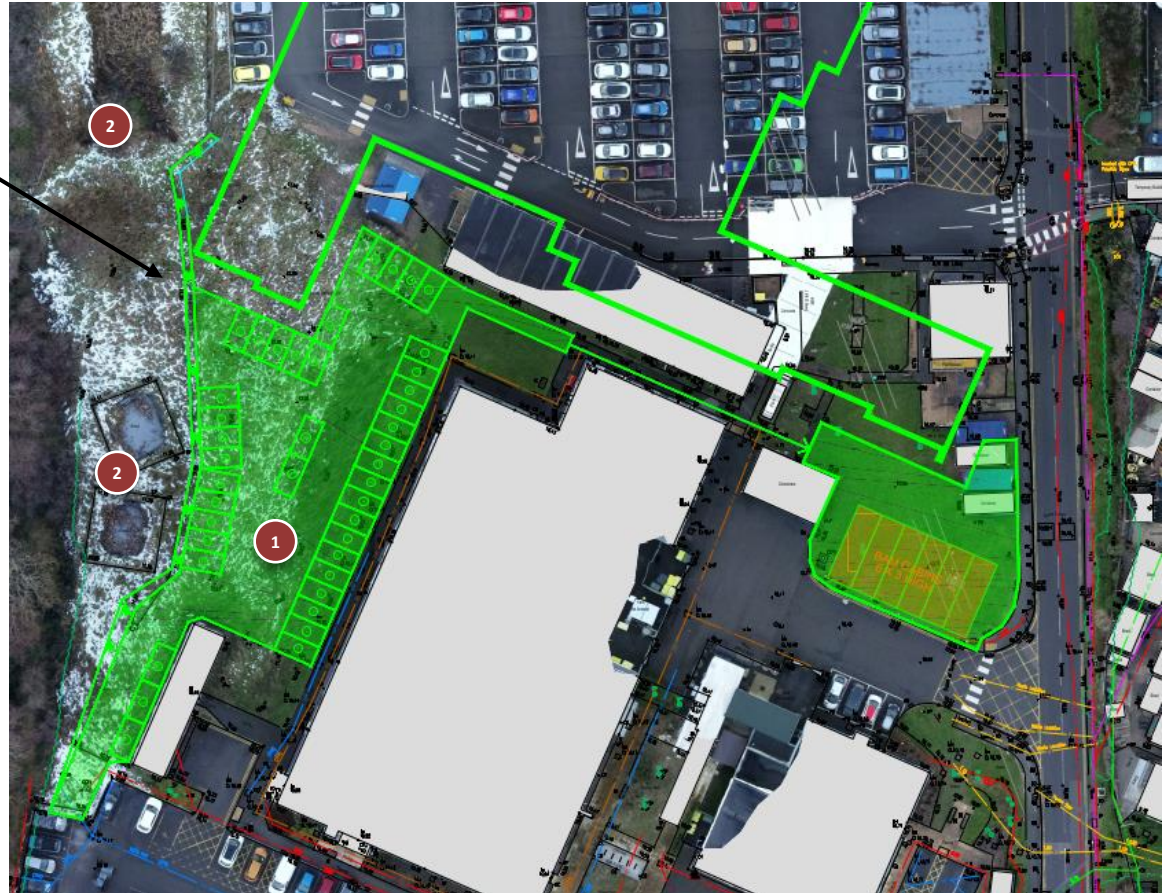
Date  
09 May 2023

Drawing Number  
SL 02

Revision







1

Temporary contractor parking provision for circa 45 vehicles

2

NRW License and newt protection measures required for temporary car park works



NHS  
WALES  
GIG  
CYMRU  
Bwrdd Iechyd Prifysgo  
Betsi Cadwaladr  
University Health Board

## Site Establishment

G Flint

Date  
09 May 2023

Drawing Number  
**SL 03**

Revision







- — — Existing blue light ambulance route maintained. Mitigation measures to avoid any potential impact from construction vehicles to be developed in FBC stage
- — — Construction vehicle access route
- — — Access route to contractor parking
- — — Pedestrian access route for contractors from welfare to site



All existing public vehicle and pedestrian access routes maintained.  
Public pedestrian routes in close proximity to construction traffic to be protected with temporary barriers with designated crossing points to ensure safe segregation



NHS  
WALES  
GIG  
CYMRU  
Bwrdd Iechyd Prifysgo  
Betsi Cadwaladr  
University Health Board

## Traffic Management – Outline Plan

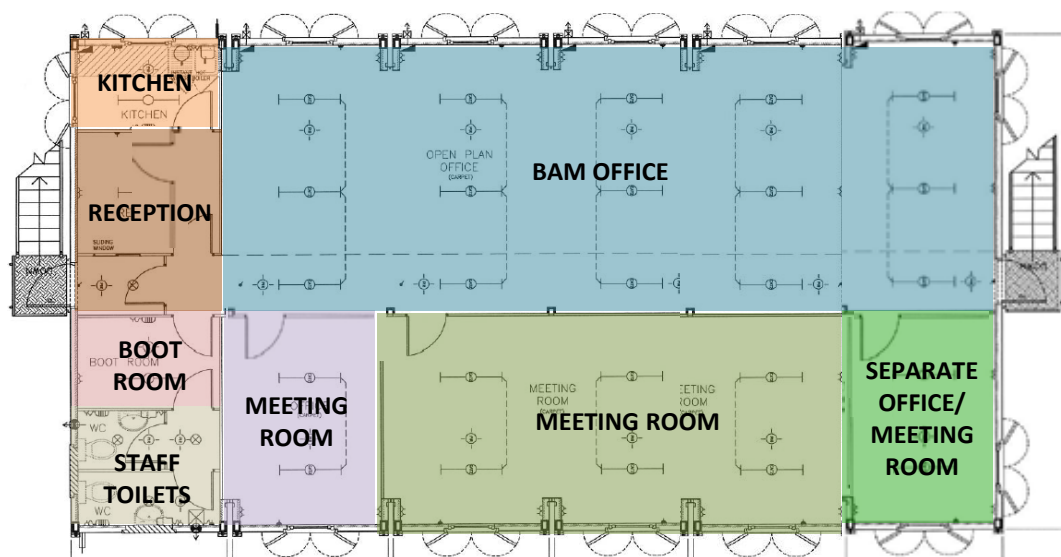
G Flint

Date  
09 May 2023

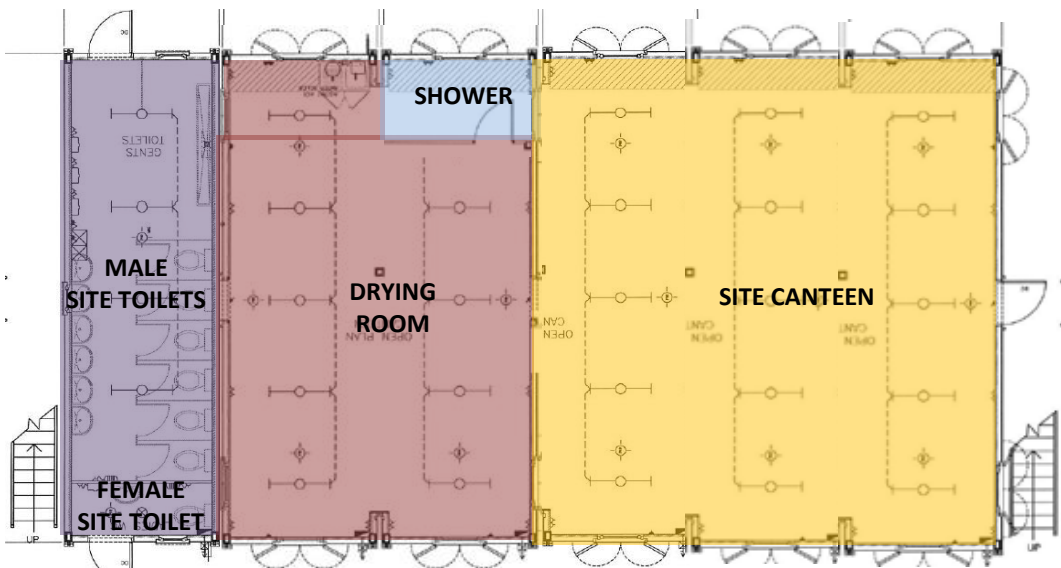
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**TM 01**

Revision  
**1**

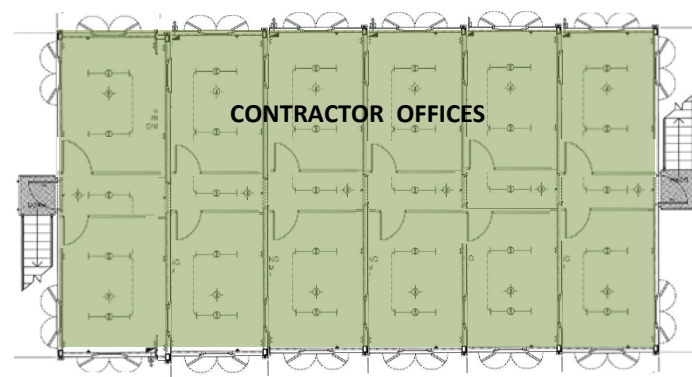
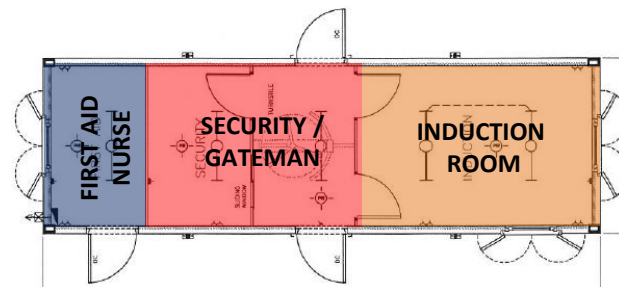




Second Floor = BAM offices and meeting rooms



Ground Floor = welfare



First Floor = sub-contractor offices

Indicative cabin layout –  
subject to change



NHS  
WALES  
GIG  
CYMRU  
Bwrdd Iechyd Prifysgo  
Betsi Cadwaladr  
University Health Board

Site Accommodation – Indicative Layout  
(Shared with AOPMHU project)

Prepared By  
G Flint

Date  
09 May 2023

Drawing Number  
SA 01

Revision



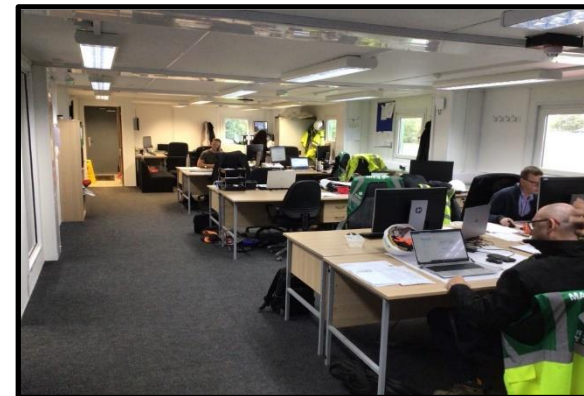




Example BAM Site Accommodation



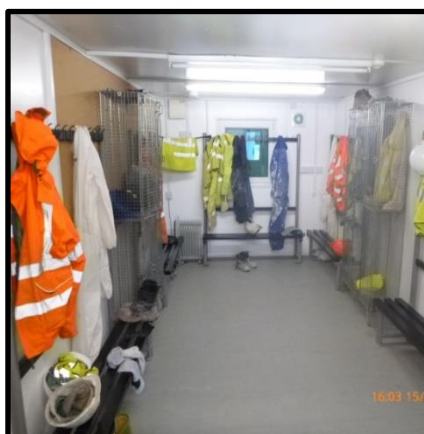
Example Site Canteen



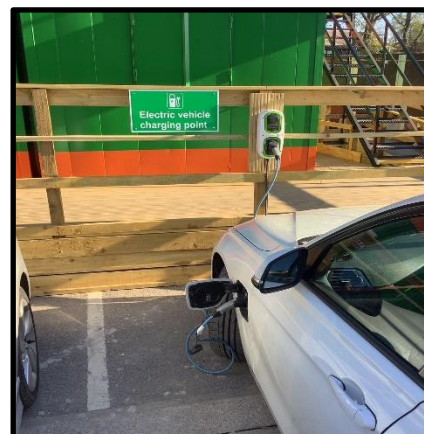
Example BAM Site Office



Example biometric site access control turnstiles



Example Site Changing and Drying Room with lockers



Example electric vehicle charging points for site staff



Example Site Toilets



NHS  
WALES  
GIG  
CYMRU  
Bwrdd Iechyd Prifysgo  
Betsi Cadwaladr  
University Health Board

## Site Accommodation – Indicative Proposals

Prepared By  
G Flint

Drawing Number

Date  
09 May 2023

Revision





2.4m high solid panel perimeter hoardings supported off kentledge blocks. Heras fencing used for short duration interface works and around access gates for improved visibility.

#### Deliveries:

- BAM Gateman will control vehicle site access between 7am and 5:30pm
- Gateman to bank all vehicles in and out of site using the one-way system
- Gates kept closed at all times when not in use
- Delivery scheduling system in place to avoid multiple deliveries arriving at the same time and prevent congestion on public roads
- All vehicle loading and unloading to be done within the site perimeter
- Radio communication between BAM Gateman and supply chain Managers to advise when delivery arrives and is directed to the unloading point



After hours site security provided by monitored CCTV and voice tannoy



Road sweeper used to keep site entrance and access routes clean



Tree protection to BS5837:2012

Concrete wash out area to be established with licensed disposal

MMC considerations to reduce carbon footprint

Designated fuel storage area to be established

Pre-start ecology surveys for roosting bats and nesting birds

Water butts for rain water harvesting within the site compound.

Damping down used to control dust during earthworks and demolition



Skip and recycling area within compound



Boot washing facilities



COSHH stores to be utilised for hazardous material storage



Drip trays and plant nappies used under risk equipment to control risk of leaks or spillage



Spill kit stations available on site and at fuel storage locations



Newt protection measures

Managed works involving storage of waste

Material reuse area to be set up

Material storage areas to be well maintained to prevent damage and wastage

Noise monitoring to ensure minimal disruption

Water vole protection measures

All timber utilised on site to be from sustainable sources and PFC accredited



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## General Environmental Protection Measures

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