



Jones

Construction Environmental Management Plan (CEMP) / SAB Methodology

52 Units Eaglebush, Neath

July 2021

Contract No:

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CONTENTS

Section	Topic
1.0	Introduction
2.0	Legislation , Policies and Plans
3.0	Site Location & Project Description
4.0	Construction Programme
5.0	Roles & Responsibilities
6.0	Information for Contractors and Visitors
7.0	Ecology
7.1	Bats
7.4	Birds
7.5	Trees & Woodlands
8.0	Air Quality
9.0	Waste
10.0	Water Use
11.0	Pollution Prevention & Hazardous Material Storage
12.0	Construction Lighting
13.0	Noise & Vibration
14.0	Housekeeping & Security
15.0	Incident Response
16.0	Internal Communications

1.0 Introduction

- 1.01 The aim of the Construction Environmental Management Plan (CEMP) is to set out the responsibilities regarding compliance with legislation and to implement any mitigation measures.
- 1.02 This CEMP details management measures to minimise environmental impact from the construction phase of the development.
- 1.03 Further, it provides a framework within which the measures will be implemented throughout the project.
- 1.04 This document has been developed to avoid, minimise, and mitigate against any construction effects on the environment and surrounding community. It should be considered a living document with reviews being undertaken at set intervals and new information added as appropriate.
- 1.05 For the purposes of this document, the working area is defined as any area where there will be a requirement for temporary or permanent works to facilitate the construction of the development. This includes areas required for access, temporary construction, and temporary storage areas.

2.0 Legislation, Policies and Plans

- 2.01 The proposed scheme consists of the construction of 52 housing units with associated access, car parking, foul drainage, sustainable surface water drainage with open swales and infrastructure works. Prior to start of works there are some sensitive tree clearance and demolitions, both of which have ecological considerations. Appendix 1 includes a outline construction sequence and methodology.
- 2.02 The CEMP is required to encompass environmental controls when required with due consideration to environmental legislation and to satisfactorily demonstrate our pollution control, wildlife and tree protection proposals to SAB and Planning Authority.
- 2.03 The CEMP provides the framework for which commitments made can be realised. The CEMP outlines Jones Brothers approach to environmental management throughout the construction phases with the primary aim of reducing any adverse impacts from construction on local sensitive receptors.
- 2.04 The following international, national and local legislation and planning policies relating to nature conservation and biodiversity are considered of relevance to the current proposals as outlined in the Hawkeswood Ecology Preliminary Ecology Report 5th July 2019.
- **National Planning Policy**
 - **Technical Advice Note 5 (2016)**
 - **The Environment (Wales) Act 2016**
 - **Neath Port Talbot Biodiversity Partnership**

Proposed Scheme

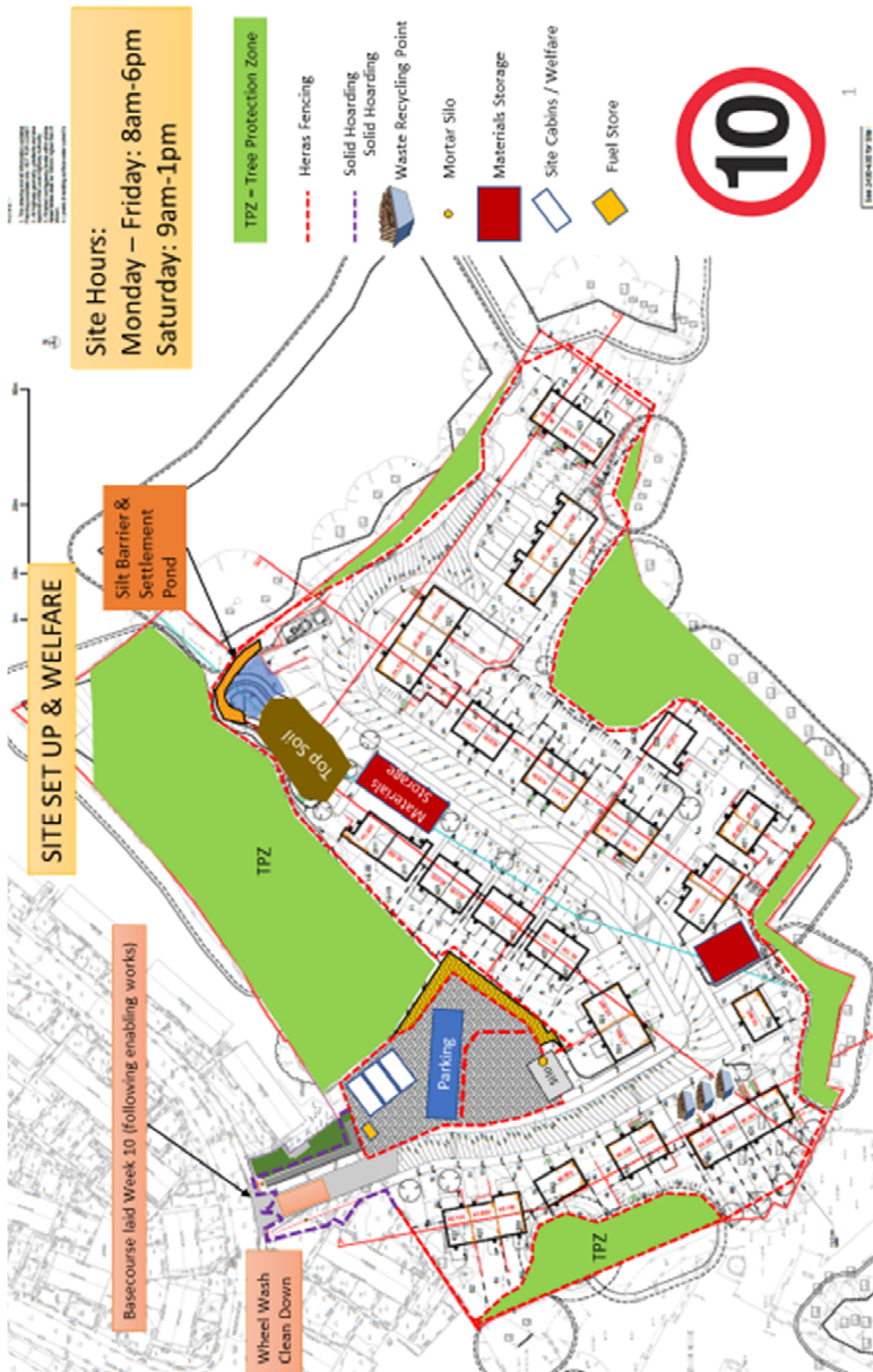


- 3.03 As the site is close to a residential area the site hours of work are as follows:
8:00- 18:00 Monday to Friday
9:00 – 13:00 Saturday (when required)

No construction will take place on Sundays and Bank Holiday

- 3.04 During the construction period, it may be necessary in exceptional circumstances to work outside the prescribed working hours. Should this occur, the hours and duration of these works would be subject to consultation and Section 61.
- 3.05 Please see Site Set Up Plan Overleaf (to be reviewed as construction progresses.) Site cabins and compound have been located at site entrance and in a location that they should not have to be moved until the latter stages of the job. The site layout has been developed to consider the various environmental aspects of the project:
- Site pollution control of silt, dust, mud, noise, chemicals and fuel.
 - Tree protection
 - Waste management
 - Ecological protection
 - Parking for contractors
 - Site security
 - Traffic management
 - Welfare arrangements for operatives

Site Set Up



4.0 Construction Programme

4.01 The detailed Construction Programme will be available for review in the site office.

4.02 The key dates presented in the programme are as follows.

Key Dates	Date
Tree Clearance & Bat Boxes	November 21 - December 21
Demolitions & Entrance Dormation	December 21- January 22
Set Up Main Site Compound	February 22
Start of Construction	December 21
Completion	July 23

5.0 Roles and Responsibilities

Project Manager

- 5.01 The Contracts Manager is responsible for:
- Ensuring that the CEMP is developed & held on site and that it is implemented throughout all phases of the project. Ensuring the CEMP details are updated as and when relevant information is provided by the stakeholders associated with each section of the CEMP.
 - Maintaining the CEMP and ensuring that all contractors and visitors comply with it.
 - Ensuring that environmental issues identified within the Pre-Construction Information and the pre-construction site surveys and relevant information gathered from agencies, local councils etc. are addressed.
 - Producing environmental project specific controls for all significant risks identified and implementing control measures to minimise the risk of damage to the environment.
 - Communicating the CEMP and other related document to employees, contractors and client representative
 - The Project Manager shall nominate and appoint an experienced Ecology Consultant to monitor Bat Mitigation measures and other biodiversity considerations such as nesting birds.

Contractors and Visitors

- 5.02 Contractors and visitors to the project will be responsible for:
- Ensuring that the control measures identified from the environmental surveys are implemented as they are relevant to their work/visit.
 - Ensuring that the project management team are notified of any non-conformance of control measures or environmental incident where the environment has been put at risk.

Site Manager –

5.03 The Site Manager is responsible to:

- Ensure the site and all stored materials and chemicals are safe and secure.
- Fuel Stores are bunded and spill kits are available
- Dust is controlled
- Adjoining roads are maintained clean and free of mud and silt
- Adjacent water courses and storm drains are protected from silt run off
- Ensure the F10 notice is displayed; Principal Contractor Sign, and signage indicating where and whom visitors should report to are clearly displayed.
- Ensure the site is kept in a tidy and orderly fashion and waste will be managed in conjunction with the company procedure as applicable.
- Control access and egress arrangements so those leaving the site in the event of a pollution or spillage incident may do so safely.
- There are First Aid Facilities and appropriately trained First Aid staffs, spill kits are available and appropriately trained staff.

Ensure all those that work on site:

- Receive JBHL Site Induction including briefing on environmental issues pertinent to the project and relevant toolbox talks.
- Understand and obey the Site Rules
- Are made aware of the emergency egress arrangements. Muster points, First Aid facilities and First Aiders, spill and clean up procedures
- Read and understand the site hazard board
- Have current certification for activities as required
- Are aware of all environmental matters which arise onsite

Ensuring work is carried out:

- In a safe manner
- In accordance with any manufacturer's instructions etc. Good standards of workmanship.
- Ensure site staff are working in accordance with agreed Risk Assessments and Method Statements (RAMS) particularly where activities have the potential to cause environmental harm.
- Site Manager to complete the site waste management plan and ensure it is followed.
- Ensuring that the CEMP is implemented throughout all phases of the project.

Monitoring HSEQ issues by:

- Carrying out daily checks on site to ensure the site is secure and tidy
- Weekly checks and "toolbox talks" carried and recorded. Weekly site audits.
- Consulting workers on the effectiveness of measures to reduce the risk to the environment, reviewing and improving conditions or methods/procedures where appropriate.
- Keeping records of and reporting any incidents and close calls (near misses)

As environmental champion the Site Manager shall ensure work is carried out;

- In accordance with legislation & consents, objectives, targets and the Construction Environmental Management plan with regards to any Environmental activities on site.
- Ensure site staff operates in accordance with agreed Risk Assessments and Method Statement (RAMS) and in accordance with JBHL induction and toolbox talk training with regards to environmental risk.

Monitor/Report Environmental Issues by:

- Ensuring compliance with Environmental legislation & consents, objectives, targets and the Construction Environmental Management Plan
- Carrying out Inspections, Audits and Non-conformance
- Responsible for delivering environmental training
- Environmental performance data reporting
- Ensure work is carried out in accordance with the Environmental Statement
- Compliance with environmental legislation, consents, objectives
- Targets and other environmental commitments

6.0 Information for Contractors and Visitors

6.01 All contractors and visitors to the site will be made aware of the Environmental policy and the controls applicable to their presence and activities on site including but not limited to:

- Method statements
- Risk Assessments
- Site Induction which include Environment briefing
- Toolbox talks

6.02 The Projects Manager will be responsible for monitoring communications between all relevant parties to the project ensuring that all environmental matters to the project are discussed and managed and observation of the communications will be documented in the weekly site meetings and sent by e-mail. In addition, a copy of all correspondence will be held in this file.

6.03 Relevant site layout and location plans/CDM drawing detailing the location and construction of the site compound, storage locations and car parking are to be displayed on an information board at the site entrance.

7.0 Ecology

Desktop and Field surveys of the site have been undertaken and Hawkeswood Ecology have issued a biodiversity statement to accompany the SAB Application and an amended Report July 21, following more detailed bat surveys. All habitats within the proposed works area and immediately adjacent to the proposed scheme footprint were noted, and the potential for protected or otherwise notable species was assessed with mitigation and control measures outlined for the demolition and construction works.

7.1 Bats

The bat survey concluded that there are no bat roosts on site and trees to be removed that may be suitable for roosts can be removed under supervision of a qualified ecologist outside of hibernation season.

Boundary treelines are used by foraging bats and most boundary trees and hedgerows are being retained and tree protective measures implemented during construction.

- Bat Boxes will be fitted in selected new properties to offer increase in roosting options on the site
- Prior to site clearance works and tree felling the licenced bat ecologist will give a Bat Toolbox Talk to all operatives and site management.
- The on-site ecologist will make a final check of high-risk (bat) areas through supervised felling of the five trees to be removed.
- Tree removal works will be timed to avoid the hibernation period and will be undertaken in late September 2021.

7.4 Birds

The treeline to the boundary are considered suitable habitat for breeding birds. The tree and vegetation clearance necessary for the works is scheduled to take place outside of bird nesting season over the winter of 2021/22. New bird boxes will be incorporated into the final design of the houses.

7.5 Trees & Woodland

All trees on site have been subject to an Arboricultural Impact Assessment, a Tree Protection Plan and Arboricultural Method Statement prepared by Arboricultural Technical Services Ltd in June 21. The recommendations of this report are summarised in the below.

The site has some Arboricultural constraints that need to be considered in the development design phase. A small number of trees are identified to be removed to facilitate the construction of the proposed development design or due to their poor condition. Only 5 trees are required to be removed to facilitate the construction of the development design, with the remaining trees recommended for removal due to their poor condition. The removal of the moderate quality tree group (B Category = G9 – 4 Horse chestnut) can be mitigated for by suitable compensatory tree planting and surrounding practical woodland management (i.e. invasive species removal, woodland path creation, native hedgerow planting around the woodland boundary etc.).

This proposed development design has aimed to retain a high proportion of the higher value trees (A + B Category) that form part of the site whilst sustainably using it for residential development. Of note is the communal garden area around the high value Oak Tree (T200). This amenity area will provide the required space around this tree to ensure its future health is protected whilst providing a high value public amenity/landscape area to the development.

The proposal will not cause a long-term adverse impact onto the local amenity of the area through tree loss. Mitigative tree, hedgerow and shrub planting will be required for the loss of the trees on this site through a combination of different diverse tree/shrub species and varied nursery aged stock.

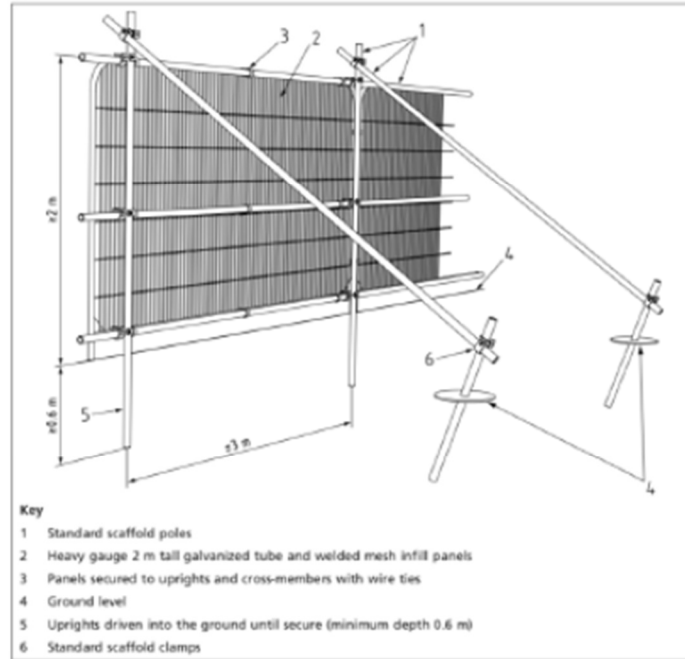
The construction of the proposed development whilst complying to the tree protection scheme as detailed in section 6 will ensure that no significant long term adverse Arboricultural impact occurs onto the health of any retained trees on or adjacent to this site or to the long-term amenity of the area.

- All tree works must be carried out prior to the commencement of construction works, including any access pruning needed to allow the passage of construction vehicles.
- Heras fencing as shown below will be erected as marked on the Tree Protection Plan (OVERLEAF) and in line with the Site Set Up Plan in Section 3.
- The fenced off area will be designated as the Tree Protection Zone (TPZ). All fencing must be in place before construction works begin and must not be moved or removed until all construction works have finished.
- Works within the TPZ are restricted as follows:
 - No excavations to be carried out unless agreed as part of the planning permission.
 - No vehicle access.
 - No fires to be lit within the TPZ or within 10 metres of the crown of a tree to be retained.
 - No storage of construction materials or spoil within the TPZ.
 - No mixing of cement or discharge of contaminants such as fuel within the TPZ.
 - Soil levels within the TPZ must not be altered unless agreed as part of the planning permission.

- No signs or lighting to be attached to trees to be retained.
- This document is intended as a reference point for all site operatives and a copy will remain with the site manager for the duration of the development. A laminated Tree Protection Plan must be kept in the site office.

Tree Protection Fencing

Type 1- recommendation taken from Figure 2 of BS 5837, to be installed in areas of intensive construction activity.



Tree Protection Plan



8.0 Air Quality

- 8.01 It is recognised that a key concern for the local community and the surrounding areas will be any disturbance to air quality caused by construction activities and also by traffic generated during construction stages associated with the proposed scheme. A construction traffic management plan will outline mitigation measures during the construction phase. Our site management will ensure all contractors and material suppliers are safely implementing the CTMP. All sub-contractors, operatives and suppliers will be made aware of the plan. Access to the site will be from Meadow Road.

In addition, the following traffic management principals should be observed:

- To avoid construction traffic congestion and nuisance to the surrounding area all suppliers and contractors are to be made aware of traffic routes.
- School movement times will be avoided as far as practicable being a residential area.
- No site deliveries will be accepted before 8am or after 6pm Monday to Friday.
- The site entrance will be maintained and kept clean and clear. A wheel washing facility will be used on site for vehicles exiting the site and along with a road sweeper in operation when required to ensure no mud is left on Meadow Road.
- Hard Standing will be laid early on in the contract as practicable (See Appendix 1)
- All materials will be unloaded within the site boundary to minimise congestion.
- All delivers will be made on rigid wagons where possible to reduce the risk of vehicle congestion.
- Any wagons involved in the removal of sub soil material “muck away” will be sheeted before leaving site.
- Engines of all vehicles, mobile plant and fixed plant on site are not left running unnecessarily
- Use low emission vehicles and plant fitted with catalysts, diesel particulate filters or similar devices.
- Using ultra low sulphur fuels in plant and vehicles where possible
- Plant will be well maintained and routine servicing of plant and vehicles to be completed in accordance with manufactures recommendations
- Avoiding the use of diesel or petrol-powered generators and using mains electricity or battery powered equipment where available

- 8.02 A list of Plant to be used is provided below

- Earth Moving Equipment
- Dozer
- Tracked Loader
- Hydraulic Excavator
- Telehandler Forklift
- Roller
- Road Paver
- Hauling Equipment
- Tippers
- Small mobile cranes
- Concrete wagons
- Mixers
- Dumpers

- 8.03 Only trained, certified, competent operatives will be allowed to operate the plant machinery. A record of all operative's certificates should be kept in the site office.
- 8.04 All plant should come to site with a current and up to date record of service and an annual inspection sheet. An onsite weekly inspection will be carried out by the Site Manager of all operated plant and recorded. All plant maintenance is to take place in the site compound only. Refuelling of all plant is to take place in the compound designated area and drip trays are to be employed during the fuelling process.
- 8.05 **Management of Dust** – The application of standard dust control measures included in the British Research Establishment guidance (Building Research Establishment 2003) are normal working practice on all well managed construction sites in the UK. Standard measures will be applied during the construction phase to mitigate dust.
- i. Staff will ensure the site is monitored for levels of surface dust. In dry weather dust, build up will be dampened down with hosepipes and a water tanker to minimise contamination to the surrounding areas. Particular care will be taken during the demolition stage where handheld hoses will be used to direct water in the required areas.
 - ii. Soft strip will be undertaken first with doors and windows in place to contain dust as long as practical.
 - iii. We will record all dust and air quality complaints, identifying cause(s); respond appropriately to reduce emissions in a timely manner, and record the measures taken.
 - iv. Record any exceptional incidents that cause dust and/or air emissions, either on or offsite, and the action taken to resolve the situation in the log book.
 - v. The access road into and out of the site will be monitored for excessive dust build up. Should surface dust build up the road will be dampened down and swept.
 - vi. Bonfires and burning of waste material on site is prohibited

9.0 Construction Site Waste

- 9.01 It is our policy that all construction projects will comply with the current and applicable waste regulations.
- 9.02 The Construction Site Waste Management Plan (SWMP) will be completed and maintained on site by the Project/Site Manager. It should be made available to all personnel on site as appropriate.

Construction and Waste Management

- 9.03 The principal types of material to be disposed of will be aggregate, blacktop, contaminated topsoil, subsoil and vegetation, which will be, removed via sheeted muck away wagons to a licensed tip. Waste Acceptance Criteria tests will be undertaken for all excavated materials leaving the site to ensure it is suitably classified and directed to the correct licenced tip.
- 9.04 In addition to excavated material, quantities of other waste types will be generated during construction of the proposed development.
- 9.05 Quantities of general construction and demolition wastes are made up of waste such as wood, packaging, metals, plastics, bricks, blocks, canteen waste, hazardous waste (e.g. Oils, paints and adhesives), site clearance and residual waste, which are generated during the construction phase.

- 9.06 A review of these wastes including their respective European Waste Catalogue (EWC) Codes are outlined below:

EWC Code	Waste Description
17.01.07	Concrete, bricks, tiles and ceramics
17.02.01/02/03	Wood, glass, plastic
17.03.01/02	Bituminous mixtures, coal tar and tarred products
17.04.07	Metal
17.05.03	Soil (inc. excavated soils from contaminated sites), stones and dredging soil
17.06.05	Insulation materials and asbestos containing construction materials
17.08.02	Gypsum-based construction materials
17.09.04	Other construction and demolition waste
16.02.13/14	WEEE
16.06.04/01	Batteries
13.07.01	Liquid Fuels
17.05.03	Soils and stones containing hazardous substances
17.05.04	Soils and stones other than those mentioned in 17.05.03

- 9.07 The Waste Hierarchy which should be implemented on site are as follows:



- Prevention/Reduction
- Re-use: Products and material can sometimes be used again, for the same or different purpose
- Recycling and composting- resources can often be recovered from waste
- Energy recovery- Value can also be recovered by generating energy from waste
- Disposal- Only if none of the above options offer an appropriate solution should waste be disposed of.

Site Management Plan (SWMP)

- 9.08 A SWMP should identify the personnel and their roles and responsibilities. This includes maintaining records of waste transfers. The appointed site manager should also ensure compliance within any permits and record keeping.

- Only transfer controlled waste to an “authorised person” (Waste Collection Authority, the holder of an Environmental Permit, Registered Water Carrier or Waste Disposal Authority)
- Ensure that non-hazardous waste is transferred under a Waste transfer Note which must be retained for two years.
- Hazardous waste moved under a waste consignment note that provides a clear description of the waste material. The consignment note must be retained for three years.
- The waste is the responsibility of the company until it has been fully recovered or finally disposed of.

Waste Segregation

- 9.09 Wherever possible, different types of waste should be segregated as they are produced to allow for correct disposal. Each type must be stored separately and securely to prevent pollution and cross-contamination and each waste container should be clearly labelled.



- 9.010 Waste Electrical and Electronic Equipment (WEEE) includes battery powered items and must be recycled by an authorised recycling centre. Some WEEE can be considered hazardous and must be moved under hazardous waste such as fluorescent tubes and Lithium batteries.

Re-use

- 9.011 Possibilities for re-use of clean non-hazardous excavation material as infill on the site or in landscaping works will be considered following appropriate testing to ensure material is suitable for its proposed end use.
- 9.012 In the event of excavation material which may not be re-used being found, the sub-contractor will endeavour to send material for recovery or recycling so far as it reasonably practicable. The sub-contractor will ensure that any off-site interim storage facilities for excavated material have the appropriate waste licences or waste facility permits in place.

Material Management

- 9.013 The amount of waste material on site will be reduced as far as reasonably practicable, through waste-minimisation, re-use and recycling. This shall be implemented by the following measures;
- Storage- material shelf life is not exceeded, damage and contamination is prevented including loss, theft and vandalism.
 - Delivery – Damage during unloading, delivery to the correct location on site, acceptance of materials and components only in accordance with the order.
 - Handling – Materials and components are handled using correct methods in minimal fashion.
 - Protection – Damage is avoided by provision of temporary protection where applicable.

Waste Auditing

- 9.014 We will record the quantity in tonnes and types of waste and materials leaving the development site during the construction phase. The name, address and authorisation details of all facilities and locations to which and materials from the construction phase are delivered will be recorded along with the quantity of waste in tonnes to each facility. Records will show material which is recovered and disposed of.

Waste Types

Excavated clay, soil and stones

- 9.015 This will be loaded directly to vehicles and removed by sheeted wagon from site unless it can be used as fill on the proposed scheme if deemed fit for reuse.

Concrete

- 9.016 Waste is to be sent back to the supplier for re-use. Where this is not possible, the concrete will be removed from site and recycled for construction use. A designated area will be set up on site as a concrete wash out area and protected accordingly.

Metals

- 9.017 One of the primary sources of metal waste is rebar and this will be reduced by ordering made to measure rebar from the manufacturer and detailed scheduling of all Reinforced Concrete (RC) structural elements. Skips may be provided and when full should be sent to a metals recycling facility.

Timber

- 9.018 Any pallets will be returned to the supplier for re-use. Off cuts and trimmings will be used in formwork where at all possible. Any remaining timber waste will be placed in a skip for recycling or use within a Community Wood Recycling Scheme
- 9.019 Treatment of timber with chemicals and the over use of nails will be minimised and avoided as this will make it difficult to reuse/recycle the timber afterwards. The utilisation of reclaimed timber products will also be investigated.

Packaging and Plastic

- 9.020 Double handling will be avoided by segregating packaging wastes immediately after unwrapping. It is intended that where possible materials with recycled packaging will be purchased. Waste packaging will be segregated and stored in separate containers, preferably covered for collection and/or returned to the supplier.

Blocks, Bricks and Tiles

- 9.021 The most likely wastes products will be from off-cuts, trimmings and waste arising from breakages. Every effort will be made to use broken bricks and off cuts. Final quantities of these wastes will be stockpiled (possibly crushed and/or screened) and used at the site as subbase material for roads, hardstanding etc.

Hazardous Wastes & Contaminated Ground

- 9.022 Any hazardous wastes that are identified during the course of the works will be investigated and a Remediation Strategy will be agreed with the LPA, Building Control and the Structural Insurers for the Homes. Hazardous waste will be removed and kept separate from other construction and demolition waste materials to avoid cross contamination. Specific method statements detailing the necessary mitigation measures required during excavation, handling, transportation, and disposal of hazardous waste encountered on the site would be prepared as required in accordance with a detailed Remediation Strategy.

Receptor pathways for future occupants will be addressed in any Remediation Plans.

9.023 Japanese Knotweed

There is no Japanese Knotweed on site.

Hazardous Liquids

- 9.024 Oils, paint, bitumen adhesives and chemicals will be kept in a separate container storage area which will be locked when not in use. Lids will be kept on containers to avoid spillage or waste by evaporation. These will be stored in a containment tray with a capacity to contain 110% of the volume of the largest container.
- 9.025 Fuels and chemicals will be stored in double skinned containers or within a bund i.e. an impervious structure with the capacity to contain 110% of the volume of the largest tank stored within it. All containers will be carefully labelled. Spill kits will be available on site adjacent to fuel stores.

Canteen Waste

- 9.026 Staff canteens have the potential to generate food waste and packaging waste. Designated receptacles will be provided at the canteen to allow for the segregation and storage of individual waste streams. Those will include receptacles for food waste (e.g. brown bin for waste foods, peelings etc.) dry recyclables (e.g. green bin for packaging, plastics, metals, wood, paper, cardboard, tetra pack etc.) and residual bin (e.g. black bin for mixed food and packaging waste). Separate receptacles for the recyclable fractions may be provided such as plastics, metals, glass.

Other Wastes (Residual)

- 9.027 This waste is normally made up of residual non-recyclable waste such as soiled paper, cloth, cardboard or plastics as well as canteen waste to include food as above and general waste found on the sites including plastic bottles, bags, cans etc. Given the heterogeneous nature of this material it is most important that residual waste is kept separate from the other waste streams to avoid contamination. This material will be stored in a dedicated container in the Waste Segregation Area.
- 9.028 Container size and collection frequency will be assessed with the waste management contractors as works proceed. All residual wastes will be dispatched to a suitably licenced facility for disposal. Other construction and demolition waste material will be collected in receptacles with mixed construction and demolition waste materials for subsequent separation and disposal at a segregation facility

10.0 Water Consumption

- 10.01 Effective construction management can deliver major savings in water use and the associated costs of energy, water supply and wastewater treatment. This can be achieved without compromising the performance and user acceptability of the project.
- 10.02 Typically, the use of water will take place in the following areas.
- 10.03 Dust suppression
- Vehicular / Demolition dust suppression
 - Stockpiles of soil
- 10.04 Cleaning
- Road sweepers and wheel washing
 - Boot wash
 - High pressure washing
- 10.05 Domestic and Welfare Facilities
- Toilets
 - Food preparation
 - Canteens
 - Offices
 - Drinking water
- 10.06 Construction
- Mortar mixing
 - Crushing operations
 - Block work & brickwork
 - Screeding
 - Plastering
- 10.07 The project will ensure all areas of site water consumption are quantified.
- Splitting welfare and “site-based” water consumption
 - Record site water consumption on a regular basis for review
 - Regular meter readings should be taken from all meters, sub-meters and metered standpipes (weekly is recommended); this will help identify potential leaks or areas of excessive use.
- 10.08 Reduce the risk of uncontrolled water use such as using push fittings and non flush urinals.
- 10.09 Minimise the risk of leakage_ensuring valves and overflows are visible for early detection of water loss and easy access for maintenance.
- 10.10 Create a culture that changes attitude and behaviour to accepting ownership of water efficiency is fundamental to improving the use of eater in an efficient manner.
- 10.11 Good housekeeping (e.g reporting/repairing leaks, turning off taps which are not in use, and generally using water in an efficient manner) can assist the site reduce its overall water use. The provision of information on appropriate use of fittings and appliances; awareness raising of the costs and environmental importance of water efficiency via Tool Box Talks, guidance on processes for identifying and reporting leakage/poorly-performing fittings, method for providing feedback to building occupants on water.

11.0 Pollution Prevention and Hazardous Material Storage

- 11.01 Chemicals and hazardous materials such as fuels and lubricants are to be stored on site during the construction phase of the project.
- 11.02 These include but are not limited to:
- Fuels
 - Oils
 - Lubricants
 - Paint and coating
 - Adhesives and resins
 - Solvents
 - Compressed gases
 - Cements and binders
- 11.03 Measures will be developed, implemented, maintained and monitored in order to comply with the Water Resources Act (1991) section 85 and associated regulations.
- 11.04 The site layout plan (available from the site manager) shows the storage location of the bunded fuel store and the store for small volume packed chemicals and materials.
- 11.05 The following list shows measures that will be put in place to prevent pollution and would conform to the best practice policy proposed by Natural Resources Wales (NRW) via the Pollution Prevention Guidelines (PPGs):
- i. The handling, use and storage of hazardous material to be undertaken in line with the EA's Pollution Prevention Guidelines (e.g. PPG2 Above Ground Oil Storage Tanks);
 - ii. Adequately bunded and secure areas with impervious walls and floor for the temporary storage of fuel, oil and chemicals on site during construction. The fuelling up of plant will take place 30m away from any adjacent watercourses
 - iii. Drip trays to collect leaks from diesel pumps or from hard standing plant;



- iv. Oil interceptor(s) fitted to all temporary discharge points and for discharge from any temporary oil storage/refuelling areas
- v. Development of pollution control procedures in line with Natural Resources Wales Pollution Prevention Guidelines, and appropriate training for all construction staff
- vi. Provision of spill containment equipment such as absorbent material onsite.

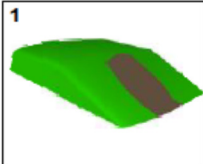


11.06 Surface Water Management – The perceived risk to surface water in the form of silt will be managed throughout the project. Our Approach:

- The project has been split into three zones, top soil strip and imported granular fill will be undertaken progressively to ensure the site is capped as soon as practicable to minimise any soil erosion.
- There is about 12000m³ of imported granular fill that will assist with site drainage and slowing any run off during construction.
- A Silt Fence and settlement pond will be established early in the project at the low end of site and inspected regularly for silt build up.
- Wheel wash jetting facilities will be provided for the vehicles moving from the Site at the exit point. Silty water from wheel wash facilities will be filtered to ground on site through a gravel medium to prevent unacceptable levels of suspended solids entering nearby surface water bodies.
- Ultra Drain Guards will be placed on gullies adjacent to the site entrance off West Link to reduce the risk of any oil or sediment entering surface water drains.

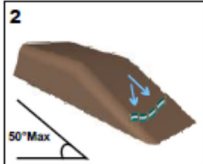
Silt Fence

Hy-Tex Terrastop™ - Silt Fences for Stormwater Run-Off Control



1

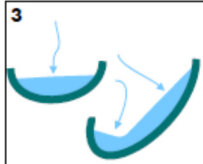
- Find where erosion may occur.
- Look for areas where soil has been disturbed or vegetation removed.



2

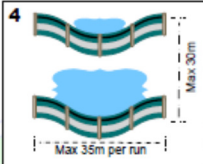
- Maximum 50° slope angle
- Not suitable for channels or ditches

Use Ultra Erosion Guards for steeper slopes



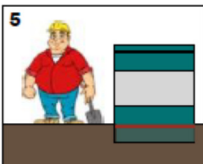
3

- Check where water is running
- Position fence central and at right angles to flow
- Curve fence ends up slope to form 'smiles' or 'J' shapes so water ponds behind fence



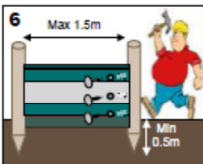
4

- Maximum 35m fence runs
- Maximum 30m between fence rows
- Add extra fences above and to the side for larger areas



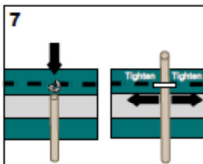
5

- Dig 100mm trench or use a trenching machine.
- Bury fence up to the red line.
- Make sure backfill is on upslope side of fence.
- Firmly compact.



6

- Position posts on downslope side of fence
- Max 1.50m post spacing
- Min 0.50m in ground.
- Secure with 3 nails and washers per post or use cable ties
- Post size minimum 1.20m long and 50mm diameter



7

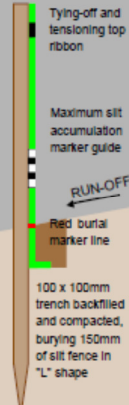
- Tension top edge by looping ribbon band over post.
- Add additional bracing posts for poor ground conditions



8

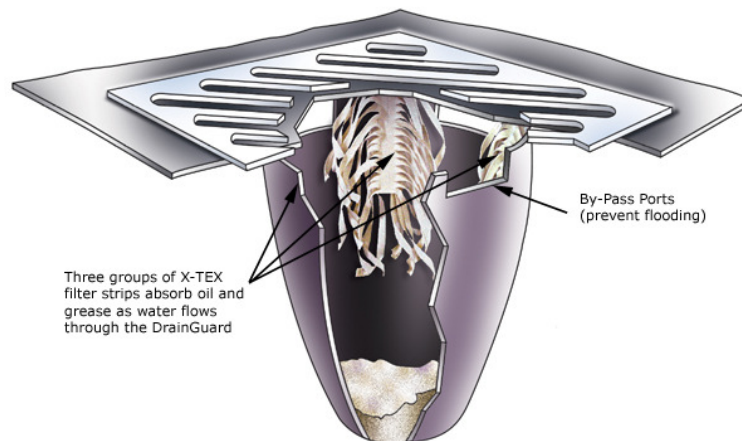
- Regularly check site
- Reassess for new areas of erosion and add extra fences as needed
- Repair any damage.
- Remove trapped silt when reaches top of white band or install additional fences.

Terrastop Silt Fence Installation Guidelines



- Tying-off and tensioning top ribbon
- Maximum silt accumulation marker guide
- Red burial marker line
- 100 x 100mm trench backfilled and compacted, burying 150mm of silt fence in "L" shape

Drain Guard Silt Protection



12.0 Construction Lighting

- 12.01 In determining the lighting arrangement on site, consideration will be given to residents and other sensitive receptors that may experience a nuisance by light.
- 12.02 Where appropriate, measures will be implemented to reduce obtrusive light.
- 12.03 Where possible a daylight only construction schedule will be adopted to minimise adverse lighting. It is unavoidable that construction work may require work during the hours of darkness in consideration of shorter daylight availability during winter months.
- 12.04 Where appropriate the following measures will be considered for implementation
- Dim or switch off lights where it is safe to do so
 - Use specifically designed equipment
 - Position lights sensibly away from hedgerows to maintain a dark corridor for foraging and commuting bats.
- 12.05 No construction will be carried out at night.

13.0 Noise & Vibration

- 13.01 Noise and vibration statutory nuisance are controlled under the Environmental Protection Act 1990
- 13.02 The potential noise disturbance from the site may result from vehicle movements and plant operating on site.
- 13.03 Before works on site are commenced, all contractors should make available for inspection a method statement (in accordance with the principle described in BS 5228:2009: Part 2: Code of practice for noise and vibration control on construction and open site) stating precisely the type of plant to be used and the proposed noise control methods.
- 13.04 The contractors will also be required to comply with other relevant provisions of the Control of Pollution Act 1974. The contractor should also comply with the recommendations set out

in BS 5228:1997 AMD 1 Code of practice for noise control on construction and demolition sites.

13.05 Muffling should be in accordance with the recommendations set out in BS 5228:1997. Code of practice for noise control on construction and demolition sites.:

- Compressors should be fitted with properly lined and sealed acoustic covers, which should be kept closed whenever in use
- Pneumatic percussion tools should be fitted with mufflers or silencers or the type recommended by the manufacturers
- Machines in intermittent use should be shut down in the intervening periods between work, or throttled down to a minimum
- Care should be taken when loading or unloading vehicles or dismantling scaffolding or moving materials etc. to reduce impact noise

13.06 The contractor will follow the best practicable means to reduce the noise effect on the local community.

- i. Materials will be handled with care e.g. material such as scaffolding and steelwork will be placed rather than dropped
- ii. Drop heights of materials from lorries and other plant will be kept to a minimum
- iii. Fixed and semi-fixed ancillary plant such as generators, compressors and pumps liable to create noise and/or vibration whilst in operation will, as far as reasonably practicable, be located away from sensitive receptors.
- iv. The use of barriers to absorb and/or deflect noise away from the noise sensitive areas will be deployed if required.
- v. All plant used on site, paying particular attention to the integrity of silencers and acoustic enclosures will be maintained in good and efficient working order and operated such that noise emissions are minimised as far as reasonably practicable.
- vi. As far as reasonably practicable, any plant, equipment or items fitted with noise control equipment found to be defective should not be operated until repairs.
- vii. Where reasonably practicable, fixed terms of construction plant should be electrically powered in preference to diesel or petrol driven.
- viii. Vehicles and mechanical plant, where reasonably practicable, will be fitted with effective exhaust silencers and will be maintained in good working order and operated in a manner such that noise emissions are controlled and limited as far as reasonably practicable.
- ix. Machines in intermittent use should be shut down or throttled down to a minimum during periods between work.

13.07 Risk Assessments and Method Statements (RAMS) from contractors will be scrutinised and authorised before work commences to ensure the requirements above are understood, factored into working methods and adhered to.

14.0 Housekeeping and Security

14.01 The site compound plan and the material storage plan highlight key areas such as;

- Main office & welfare facility's
- Tool stores
- Material store
- Waste skips

14.02 Security fencing consisting of a Heras type fence shall be provided.

14.03 Pollution Prevention Guidelines by Environment Agency set out basic environmental management guidance regarding housekeeping and will be used to set up stores etc.

PPG 6: Construction and Demolition Sites:

Section 4 Materials storage, stockpiles & exposed ground.

- Must prevent stockpiles on exposed ground from generating pollution as water run-off or dust
- Locate stockpiles away from watercourses and on level ground to prevent any run-off from entering drains, ditches or watercourses
- Contaminated material must be stockpiled on an impermeable surface, in a bunded area, at least 10m from a watercourse.

Section 9 Chemicals and hazardous substances

- Store all chemicals and hazardous substances away from watercourses and drains in a contained, bunded area on an impermeable surface
- Store all chemicals and hazardous substances away from areas where there is a risk of damage from impact or collision e.g. site traffic
- Ensure all chemicals and hazardous substances are labelled, containers are sealed when not in use and inspected regularly and fit for purpose
- Dispose of any damaged/old containers in line with the duty of care requirements, these may be considered hazardous waste
- Train staff in use of spill kits/emergency procedure
- Ensure there is a designated “responsible person” on site at all times
- Lock storage facilities when not in use

14.04 Risk assessments and method Statements (RAMS) from contractors will be scrutinised and authorised before work commences to ensure the requirements above are understood, factored into working methods and adhered to.

15.0 Incident Response

15.01 All environmental incidents should be reported directly to the Contracts Manager and as soon as reasonably practicable

15.02 An environmental incident can be:

- i. A fuel or chemical spillage onto ground, into drains or a watercourse
- ii. Damage to the habitat of protected species of nesting birds
- iii. Damage to protected species, either plants or animals
- iv. Incidents involving waste, such as fly-tipping or the illegal transfer of waste

16.0 Internal Communication & Training

16.01 The CEMP will be distributed to the project team, including subcontractors, to ensure that the environmental requirements are communicated effectively. Key activities and environmental sensitive operations will also be briefed to staff and subcontractors. Project, client and company environmental policies shall be displayed on site.

- 16.02 A schedule of meetings will be developed to include weekly Safety, Health and Environment meetings, where any issues or incidents will be raised for the attention of the client, along with proposed remedial action and additional control if required. An environmental register must be signed and updated to confirm toolbox talks, training and weekly meetings by the environmental team.
- 16.03 During the construction phase, internal communication will include reporting on the following: Inspections, audits and non-conformance. Environmental performance data including any incidents, near misses and progress on reaching targets. Group HSEQ and the account director will be informed of any visits by external bodies and the outcome or feedback from them.
- 16.04 Site staff will be competent to perform tasks that have potential to cause environmental impact. Competence is defined in terms of appropriate education, training and experience. Where project specific training is required, training will be appropriate to the role and seniority of staff.
- 16.05 Environmental awareness and training shall be achieved by:
- All managers and supervisors being briefed on the CEMP. All sub-staff and operators are to undergo an environmental induction and tool box talks and the CEMP will be signed and updated on the Environmental Register
 - Site inductions, including relevant environmental issues, such as waste management, working near watercourses, noise & dust management and ecological risk;
 - Emergency preparedness and response briefings, including communication and reporting of incidents, use of spill kits and other equipment, learning lessons
 - Method statement and risk assessment briefings including reference to environmental risk;
 - Toolbox talks to cover specific task related matters of environmental risk
 - Key project specific environmental issues and briefings
- 16.06 Meetings provide the Site Manager and the team an opportunity to exchange information and receive immediate feedback.

Appendix 1

Construction Methodology and Site Set Up