



Construction Environmental Management Plan (CEMP)

Park Avenue, Royston, Barnsley

Table of Contents

- 1 Introduction
- 2 CEMP overview
- 3 Roles and responsibilities
- 4 Environmental management
 - 4.1 Overall project management actions
 - 4.2 Dust

1 Introduction

D Noble Ltd, Noble House, Perseverance Street, Castleford, WF10 1LD is to construct 84 no. dwellings

This Construction Environmental Management Plan (CEMP) is for the construction phase of the development, and sets out the intended methods of effectively managing potential environmental impacts arising from the construction.

The responsibility for implementation of the CEMP lies with the Principal Contractor D Noble Ltd and it shall be implemented and controlled by the Site Manager who shall work in conjunction with key personnel (Managing Director, contractors, suppliers, etc.) to ensure it is implemented. In order to ensure that the plan remains relevant it will be the responsibility of the Site Manager to take ownership of the CEMP and ensure its relevance to activities being undertaken on site in light of any changes from the initial scope of the plan, this requires its regular revision and updating as necessary. Any revisions or updates shall be subject to agreement in writing with the LPA.

2 CEMP Overview

This CEMP identifies the project management structure roles and responsibilities with regard to managing and reporting on the environmental impact of the construction phase. An Environmental Impact Assessment (EIA) was undertaken during the planning process which identified and assessed the aspects of construction that could have an environmental impact. All proposed mitigation measures described in the EIA will be applied and are specifically described in the applicable sections of the CEMP.

The overall environmental objectives that will be applied to the project are:

- All practicable steps shall be taken to minimise the environmental effects of construction works.
- All activities shall be conducted in accordance with the CEMP, relevant legislation, Codes of Practices, Guidelines, and any local environmental procedures.
- Environmental licenses, permits and consents and other statutory requirements are to be obtained prior to works commencing, and fully complied with.
- All staff (including sub-contractors) shall be aware of the environmental issues relevant to the Project through the provision of site specific information on the environmental impacts of construction and the mitigation measures to be applied during inductions, briefings and tool box talks.
- Regularly reviewing of the environmental requirements of the project and ensuring that environmental controls remain adequate throughout the duration of the project.

3 Roles and Responsibilities

This section describes the environmental roles and responsibilities of key members of the project team and provides contact details for the relevant personnel. The Principal Contractor shall assign individuals to each of the roles and responsibilities outlined below.

Managing Director

- To lead by example and champion all areas of environmental management.
- Ensure that appropriate resources are in place to effectively implement the CEMP and deliver all legal requirements.

Site Manager

- To lead by example and champion all areas of environmental management.
- Ensure that appropriate resources are in place to effectively implement the CEMP and deliver all legal requirements.
- Review the CEMP throughout the construction process to ensure it remains relevant and effective in identifying and managing environmental risks.
- Report to and agree in writing with the LPA any amendments to the CEMP.
- Ensure that all legal requirements are identified and met.
- Implement the use of an accurate Site Waste Management Plan (SWMP) and ensure its applicability to the site operations.
- Ensure that the site is safe and that hazards are identified and secured.
- Undertake (or nominate others) to undertake audits.
- Monitor performance of the project against statutory requirements, objectives and targets.
- Ensure that all legal requirements are identified and met.
- Ensure the accurate reporting of resource usage e.g. energy and water.
- Ensure that all documentation referencing environmental procedures and policy are relevant and up-to-date and included within the CEMP.
- Manage all necessary documentation to demonstrate compliance with appropriate legislation for the required period.
- Identify necessary levels of environmental competence in staff and ensure necessary training is delivered to personal.
- Manage investigation and resolution of complaints in accordance with the Complaints Handling Protocol.
- Ensure correct procedures are followed in case of an environmental incident.

Construction Supervisors

- Ensure that the CEMP and associated documents and control methods are effectively implemented on site on a day to day basis.
- Fully investigate and act on any environmental incidents and report findings to the Site Manager.
- Conduct and document weekly environmental inspections.
- Ensure that environmentally orientated briefings and “Toolbox Talks” are being delivered to the site workforce.
- Implement and maintain environmental controls on site.
- Ensure action is taken on any spills/incidents that occur on site.
- Report any activity that has potential to have an environmental effect immediately to the site manager.

Site Staff & Sub-Contractors

- Compliance with direction given in the Site Induction.
- Proactively approach environmental issues whilst on site.
- Site staff should ensure they are fully aware of the environmental procedures in place and if they have any questions they should be directed towards the Site Manager.
- Ensure all construction activities are carried out in line with the procedures detailed in the CEMP.
- Report any environmental incident to the Site Manager.

Contact Details

During the preliminary works (Stage 1) phase contact can be made with the construction site on the following numbers:

- Mike Haigh 07734 980532

During the main construction works (Stage 2) phase contact can be made with the construction site as follows:

- Phone: Mike Haigh 07734 980532
- Email: mike.haigh@dnobleltd.co.uk

Contact can also be made by email with the following persons:

Role Name: Chris Noble

Managing Director

Site Manager Mike Haigh 07734 980532

Training

All site personnel with environmental responsibilities shall be suitably trained and qualified. Where it is indicated that additional specific training requirements are needed, it is the responsibility of the site management to ensure these needs are met at the earliest possible opportunity.

The induction given to all site personnel shall include a general overview of site specific environmental issues, as well as details of how these issues shall be managed. All appropriate site personnel shall undertake environmental awareness training and if supplementary training is needed over the course of the works it will be provided as necessary.

Detailed information shall be communicated to personnel by means of regular Environmental Briefings and Toolbox Talks covering topics relating to specific site activities. These shall be given to all site personnel at a period of no less than fortnightly.

Environmental Bulletins and Newsflashes shall be clearly displayed in all mess / office areas. Any actions relating to these shall be implemented immediately, and all site personnel made fully aware of any changes.

4 Environmental Management

The site shall implement a project specific Environmental Management System (EMS) complying with BS EN ISO 14001. The EMS shall be monitored and audited by appropriate personnel throughout the duration of the works. An audit schedule shall be created which includes both internal and external EMS and legal compliance audits. Any system failures shall be documented and appropriate corrective actions issued and implemented.

An environmental impact assessment has been undertaken for the project during the planning process. All identified risks are addressed within this document. However, should any additional risks be identified, other than those outlined in this report, supplementary management plans shall be put into place.

The construction of the facility is anticipated to take approximately 30 months and will involve a phased construction programme involving a number of main construction activities. A set of phasing diagrams are included in attachment 12 which illustrate the sequence of construction and the areas of the site in which work will be carried out during the various main construction phases .

Pre-Phase/Activity planning

During the initial planning of each phase of construction and prior to the commencement of the relevant phase the activities likely to cause environmental impacts will be identified and the most suitable mitigation measures selected from those identified generally in this CEMP for the specific activities will be incorporated within the relevant phase activity method statement .

These mitigation activities will be communicated to and agreed with the LPA no later than 2 weeks prior to the start of the relevant phase of the construction.

The following subsections outline the processes and methods to be implemented on site to ensure all environmental risks are identified and sufficient mitigation measures are put in place to reduce environmental impacts associated with the works.

4.1 Overall Project Management Actions

All environmental documentation shall be kept on site at all times and be available for inspection by internal and external auditors and regulators, as well as the client and management. Site personnel shall be made aware immediately if any significant changes in work procedures are implemented.

Relevant documentation shall include the following:

- Site Weekly Checklist
- Impacts and Aspects Matrix
- Environmental Risk Assessment
- Construction Environmental Management Plan
- Pollution Prevention Plan including emergency response
- Training and Responsibilities Matrix

Weekly environmental inspections shall take place on site by the construction supervisor. The findings of these inspections and any associated actions shall be appropriately documented on the Weekly Checklist.

Site management shall meet as necessary with the LPA to review activities on site and the potential environmental impacts and mitigation measures relevant to those activities that will be implemented.

To ensure that mitigation methods and measures are applied, appropriate training and management procedures will be implemented in accordance with Building Research Establishment's (BRE): The Pollution control Guide: Part 1 – Pre-project planning and effective management.

The BRE guidance makes the following recommendations: “Before the start of any project, appropriate training on how to control pollution emissions should be given to all personnel

expected to be present on site. This training should include;

- The benefits of reducing pollution to health and environment,
- The benefits of minimising disruption from complaints and enforcement actions,
- Methods to minimise the generation of pollution,
- Actions plans on what should be done if emissions breach any limits that have been set for the particular site,
- Individual responsibilities and management procedures,
- The importance of effective communication between relevant personnel at all levels.

4.2 Dust

The boundary to the site has a range of residential properties which are noted as sensitive receptors. The potential receptors:-

Potential dust sources during the construction phases of the development works:

- Site clearance
- Ground excavation, piling and earthworks
- On site earth moving operations, site levelling, cut and fill etc.
- Vehicle movements over haul roads (especially unpaved)
- Vehicle movements on site during dry periods
- Re-suspension of particulates from construction vehicle movements on site,
- Wind blowing across the site during dry periods
- Stockpiling of excavated materials
- Cutting, grinding and drilling operations
- Accidental spillage and loss of load from vehicles carrying loose material
- Deep excavations
- Tipping
- Earthworks

The generation of dust nuisance requires consideration of additional factors such as:

- Prevailing wind (speed, direction)
- Prevailing climate, including rainfall
- Location of sensitive receptors (including residential and commercial properties, habitats and watercourses)

Potential impacts

Background information

The Environmental Protection Act lists the emission of dust from industrial, trade or business premises in sufficient quantity to be prejudicial to health or a nuisance as a statutory nuisance. Dust which is raised by site operations may be carried to nearby residential areas and if present in sufficient quantities has the potential to cause a nuisance by settling on clean surfaces.

There are no UK statutory or recommended levels of dust deposition that constitute a statutory nuisance; whether or not a nuisance exists is determined in the first instance by the professional judgement of the environmental health officer.

Dust contains particles in the range of sizes. The finer fraction of dust particle range is more likely to become airborne and to travel beyond the boundary of a site.

The fine particles which comprise dust can become suspended and entrained in air and, as such they can disperse from a source. They will progressively fall out of the air stream; in fact most dust settles out close to the source. Fugitive dust is that which escapes from the immediate vicinity of the source and may affect the area surrounding the site.

Particulate dust emissions from construction works associated with the development have the potential to impact upon local residents, and on-site workers during the works. Dust which is raised by onsite operations may be carried to nearby residential areas, if present in

sufficient quantities. Concerns have been raised by the inhalation of dust particles and the possible health effects this may have. This has the potential to impact upon local residents and on-site workers.

Where mud from a development site is allowed to spread onto local roads, it can form a secondary source of dust. The mechanical action of wheels on the road surface material will reduce the particle sizes by crushing and the potential for emission of dust from these roads can be quite high. As vehicles pass along the road, dust is re-suspended into the turbulent air stream both beneath and behind the vehicle and this can become entrained into a moving air flow. The erosive action of road traffic depends on the number and size of wheels, the vehicle speeds and the moisture content of the surface material.

Good environmental practices as described below will be used to control these dust emissions, and mitigate against any nuisance problems arising.

Monitoring programme

On-going monitoring shall be undertaken by the construction supervisors on a regular basis, both on and off site for visible signs of dust emissions and deposition originating from the site to ensure the adequacy of the mitigation measures being employed. On site daily monitoring of dust emissions will be undertaken for each construction activity which is deemed to pose a risk, with records maintained.

The monitoring programme will record:

- Date
- Activity/Location
- Weather Conditions
- Wind Direction and Speed
- Dust suppression method(s) implemented

Excessively windy conditions can increase the propagation of dust. The local weather forecast will be taken into account as part of the monitoring procedure. These conditions will be noted and the activities which have an increased risk of causing dust nuisance (e.g excavations and earthworks) during windy conditions will be restricted or the mitigation level increased.

Construction supervisors will assess if the weather conditions are appropriate for the types of activities being undertaken.

Any complaints in relation to fugitive dust will be logged and appropriate action taken by site management in accordance with the Complaints Protocol (Planning Condition 56) to ensure any further potential for complaint is minimised. Logs of any complaints will be made available to the LPA.

Mitigation Techniques

Mitigation measures will be implemented to ensure effective control of dust emissions from the construction works. These are industry best practices. The best practices are proven, well established, techniques to mitigate nuisance dust emissions.

The mitigation measures proposed in this plan are based on guidance provided by the following documents;

- The BRE Guidance Document, controlling particles, vapour and noise pollution from construction sites.
- London Best Practice Guidance, The control of dust and emissions from construction and demolition.

General mitigation techniques for the various construction activities will include:

Activity Mitigation measures

Construction Traffic

- All construction traffic shall follow specifically designated routes
- Speed limits shall be put into place on site for all vehicular movements
- All vehicles carrying loose material shall be covered

- Wheel wash facility shall be used for vehicles leaving site
- Highways
- Where necessary, use of road sweepers shall be incorporated to ensure highways remain clear of dust and mud
- Road edges and pathways shall be swept by hand and damped down as necessary
- Stockpiles
- To be damped down enclosed or covered as appropriate.
- To be sealed or sprayed with chemical bonding agents as required
- Location of stockpiles away from any sensitive receptors wherever possible

Dust

Suppression

- Mobile bowsers to be deployed on site at regular intervals as necessary.
- Monitoring and mitigation activity to be increased during significantly dry and windy

Activity Mitigation measures

periods

- Where necessary, use of enclosures to be considered to ensure reduction in dust migration
- Deliveries of significantly dusty materials to be sprayed to reduce dust potential
- All cutting and grinding operations to be conducted in ways to reduce risk of dust migration (wet cutting techniques etc.)

There will be a complete prohibition on the burning of any materials on the site during construction.

Mitigation equipment will be readily available on site from the commencement of the works. These will include sheeting, and damping equipment; such as, tractor bowsers, road sweepers etc.

Where processes are intrinsically dusty and alternative processes exist which are less dusty, these will be implemented. Prefabricated components and construction will be used wherever possible to minimise the need for on-site construction which may cause the emission of dust. Suitable control procedures for minimising dust during the various construction phases

The scale of the preliminary works, (Stage 1), is minor in comparison to the main construction

works (Stage 2) Stage 1 provides the enabling packages to ensure the Main Construction works can be undertaken without logistical restrictions.

These elements will incorporate small scale earthworks. The fence will be erected manually without the need for craneage.

All sensitive receptors are a consideration during these works. However as a result of the scale of the operations required the nuisance potential is reduced with smaller scale plant, smaller work areas and a reduced frequency/duration of relevant activities.

Earthworks and piling

Excavations, loading and unloading of materials on-site and stockpiling of materials have the potential to be a major contributor to dust emissions. During excavation, previously stable surfaces are disrupted and exposed to the wind. As these materials are generally dry they can easily become suspended by the wind or mechanical disturbance and readily become airborne in significant quantities.

Surfaces will be disturbed as little as possible and where necessary stabilised as soon as possible after disturbance by damping down with water sprays to minimise dust emission and re-suspension.

Where the construction logistics on site allows stockpiles will be located away from areas of the site close to the sensitive receptors. All stockpiles will be treated with water sprays to prevent dusting or covered correctly with secured tarpaulins where necessary.

Reinforced concrete structures (Main construction months 2 to 13)

The fabrication and construction process will involve the construction of reinforced concrete (RC) foundations and structures. There is potential for the emission of dust in both open and enclosed areas during the RC construction stage and mitigation methods are necessary to reduce these.

Off site fabrication and construction will be used wherever possible. If this is not possible, the fabrication processes will be undertaken away from sensitive receptor areas.

Dust suppression methods will be implemented by using fixed enclosures or equipment with water sprays, local exhaust ventilation or particle extraction/minimisation systems.

Mixing of concrete will occur off site and be directly delivered to the required area of the construction site. On site batching will not be used. Any small scale mixing requirements will be undertaken in shielded areas away from sensitive receptors.

Dry sweeping will be avoided and damp sweeping using a fine mist will be used. Washing and damping down will be implemented as required.

Materials handling (throughout the construction period)

A wide range of materials will be handled during the construction phases of the development and the handling of these materials has the potential to create dust emissions. Generally the use of dry or powdery material on site will be minimised. The following precautions will be implemented to minimise dust emissions arising from materials handling;

- Material drop heights will be minimised,
- Damping down will be used to reduce dust emissions. In dry, hot weather damping down frequency will be increased,
- Steep sided stockpiles or mounds or those with sharp changes in shape will be avoided, Heights of stockpiles will be restricted to mitigate airborne dust potential.
- Wherever possible stockpiled materials will be kept away from the site boundary and sensitive receptor locations and damped down, enclosed or securely sheeted as appropriate.
- Wind barriers will be used to protect stock piled loose material and skips will be enclosed or covered, Lorries will be covered and closed tankers will be used for transporting dry and fine powdery materials,
- Materials delivered to site will be left wrapped until needed,
- Methods and equipment will be in place in case of spillages. The site will be regularly inspected for spillages and wet handling methods for cleaning up spillages such as cement powder will be used.

Site, Access and Public roads (throughout the construction period)

During development it will be necessary to construct access and site roads to accommodate vehicle and plant movements on the site and for delivery of required materials.

Unpaved site roads can greatly contribute to dust emissions, especially in dry or windy conditions therefore compacted hard surfaces will be used wherever possible, even if the routes are only temporary. Traffic on site roads located close to sensitive receptor locations will be kept to a minimum where construction requirements allow.

Vehicle movements and behaviour on site will be controlled by appropriate signage and compliance will be monitored by construction site supervisors. Vehicles will be restricted to a minimum commensurate with the construction requirements and speeds will be limited to 5mph on un-surfaced roads and 10 mph on properly surfaced and maintained roads. This will contribute to the reduction in the re-suspension of dust as a result of the movement of vehicles.

Site roads will be inspected regularly and kept in a compacted condition using static sprinklers, bowsers, low emission additives and binders if necessary. The access road to the main construction site will be cleaned daily during the working week and more frequently if necessary using a mechanical road sweeper. Edges of the access road and footpaths will be cleaned with a hand broom and controlled damping.

Damping down techniques used to minimise the re-suspension of dust into the air can also cause the build up of mud and dirt on roads which is picked up by vehicle wheels. Therefore

wheel washing techniques and rumble grids will be implemented, before vehicles enter public highways, to prevent the transportation of mud and dirt off site.

During the preliminary works simultaneous activities will be taking place in a number of locations both inside and outside the naval base and therefore multiple wheel wash facilities will be established in this period. Due to the short term nature of these works these facilities will take the form of a manually operated high pressure jet wash located in the positions indicated on the drawing included in Vehicles leaving the construction areas will be inspected at the wheelwash points and thoroughly cleaned as required.

During the main construction works a permanent wheel wash facility with bunded enclosure will be installed on the access road at the exit point of the main site in the position indicated on the drawing included in attachment 8. The wheel wash will be the same as or of a similar standard.

Asbestos

The main risk from asbestos in soils is the potential to liberate fibres into the air, as a result of attrition of cement products and or disturbance of the soil, and which may subsequently be inhaled. Post development, in those areas of the site covered by hardstanding, the risk to human health will be negligible since the hardstanding will present a barrier to the liberation of airborne particulates including asbestos fibres. However, there may be a potential increased risk during construction related activities such as piling where significant ground disturbance may take place.

Although the available information does not suggest the widespread presence of asbestos containing material within the fill deposits at the site, occasional asbestos containing material has been identified which if disturbed may have the potential to liberate asbestos fibres into the air and will therefore need to be appropriately managed. The following protocol for managing asbestos containing material (ACM) that may be encountered at the Site during will be adopted:

- All pile arisings comprising of fill materials should be subject to routine damping down as piling progresses.
- A person competent in identifying all types of ACM should be present on Site at all times to inspect pile arisings.
- Any arisings where ACMs are identified should be separated, damped down further and covered by plastic sheeting or similar.
- The management of arisings in this way should be maintained until the material can be removed from site for appropriate disposal.
- If ACMs are encountered, air monitoring should be undertaken in the immediate vicinity of and downwind of the works. The air monitoring should be maintained during ongoing works whilst a source of ACMs is present on site in order to demonstrate the effectiveness of the control measures, such as damping down and covering, being employed.

It will be necessary for an appropriate asbestos air monitoring contractor to be retained who can attend the site to undertake air monitoring, as detailed above at short notice should ACMs be identified.

Site specific procedures will put in place to identify testing regimes and what to do in the event of asbestos being found. This will vary on the type of asbestos found and its condition as to the level of decontamination, segregation, remediation etc. Specialist advice will be obtained to complete such a procedure

If asbestos is identified during excavation works then activities will stop in the area, and the area quarantined whilst a specialist is employed to clear the contamination.

The most effective control of the harmful particles is by means of dust control. If asbestos is in the ground then it is usually wet or bound up with mud / soil / organic material etc. therefore, the risk is reduced. The best practice control measures already outlined will ensure this risk is minimised.

Selected site personnel will be trained in asbestos awareness and will be able to identify the material if encountered. If this event is realised the element of work affected will be suspended and the area segregated prior to the necessary remediation strategy being implemented.

Mitigating exposure of on-site workers

Whilst it is important to minimise the impacts of the works on local residents and other sensitive receptors, it is also necessary to consider the effects of exposure to dust on site workers during the various construction phases.

Training will be provided for all on-site workers regarding suppression of pollution emissions and minimising exposure to potentially harmful emissions. Appropriate PPE will be worn as determined by the risk assessment for the relevant activity.

Workers will at all times reduce their exposure to emissions. Excessive time will not be spent by one person on one activity which is inherently dusty.

Wherever equipment is being used within enclosed spaces, ventilation or particle extraction systems will be used at all times.