

2026

re:shape

Outline Construction Environmental Management Plan

Ashley Park



Ashley Park

Outline Construction Environmental Management Plan

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REPORT

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Appendix A - Mitigation Measures

1 Introduction

- 1.1 Tetra Tech has been instructed by Re:Shape T Ltd (hereafter referred to as “The Applicant”) to provide an outline Construction Environmental Management Plan (oCEMP) as part of the planning application to redevelop the Former Ashley House site, Ashley Road, Tottenham Hale, Haringey, N17 9LZ.
- 1.2 The proposed development provides residential accommodation (Class C3) and shared living accommodation (Sui Generis) alongside commercial and community uses.

Table 1.1: Development and Construction Information

Site Location	Former Ashley House site, Ashley Road, Tottenham Hale, Haringey, N17 9LZ
Name and Contact Information of Individual Responsible for Preparing the CEMP	Jamie Connors Tetra Tech Consulting Limited T: +44 207 2803438 E: jamie.connors@tetrattech.com
Site Contact Details (in hours)	TBA
Site Contact Details (out of hours)	Contact Name & Number: [TBA]
Hours of Operation	08:00 – 18:00 Monday - Friday 08:00 – 13:00 Saturday No Sunday / Bank Holiday working
Scope and Size of Development	<i>Full planning permission for a phased mixed-use development comprising: (i) enabling works and operations; (ii) residential development (Use Class C3) including affordable housing; (iii) shared living accommodation (Sui Generis), (iv) commercial and community floorspace (Use Classes E and F2); and (v) site-wide and/or phase-specific access, servicing, public realm, blue-badge parking, cycle parking, open space, hard and soft landscaping, utilities, plant and all other associated works.</i> The Site is located at former Ashley House site, Ashley Road, Tottenham Hale, London Borough of Haringey, N17 9LZ and the Site covers an area of 0.716 hectares.

Purpose and Structure of the CEMP

- 1.3 The aim of this outline CEMP is to provide environmental mitigation, monitoring and management framework, setting out a series of actions and measures to be implemented in the run up to, and during the construction phases in order to avoid, remedy or mitigate the potential environmental impacts arising from the works during the construction phases.
- 1.4 The framework captures the commitments and measures identified within technical reports which accompany the planning application and incorporates the measures consistent with best practice and industry guidance, to manage potential effects on the environment. In doing so, this document provides a ‘continuous link’ between available best practice, guidance and design scheme, through to the construction of the project and its implementation.

- 1.5 The outline CEMP adopts the following structure:
- **Section 2 (Site and Sensitive Receptors):** presents a description of the existing Site and surrounding area and identifies potential issues and constraints with the construction works. An outline of the potential sensitive receptors to be affected by the construction works is also provided;
 - **Section 3 (Construction Works Overview):** Outline of the roles and responsibilities during construction works, and indicative stages of works (i.e. timing and duration).
 - **Section 4 (Description of the Construction Works):** Information on the activities involved in the establishment and management of the site, as well as overview of the enabling works. Details are presented relating traffic management and deliveries, materials storage and waste management (including hazardous waste);
 - **Section 5 (Site Management and Administration):** Information on the administration of the CEMP file, including staff training, contractor procurement and site health and safety. Community liaison and communication is also addressed;
 - **Section 6 (Environmental Mitigation Overview):** Identification of potentially sensitive receptors, key environmental issues, management of environmental risks and reducing impacts;
 - **Section 7 (Monitoring, Auditing and Reporting):** Procedures for recording and reporting monitoring and audit results, action for non-compliance;
 - **Section 8 (Commitment to Environmental Best Practice):** Overview of commitment to adopting measures consistent with best practice and industry guidance into the working methods; and
 - **Section 9 (Summary).**

Site Context

- 1.6 The Site is located on Ashley Road, Tottenham Hale, N17 9LZ. It extends to 0.716 hectares and is rectangular in shape.
- 1.7 The Site is located approximately 150m north west of Tottenham Hale underground and railway station, which provides connections to Walthamstow Central and Brixton. Surrounding land uses are predominantly residential comprising multiple apartment buildings with commercial units on the ground/lower floors. There are also areas of open space and recreational facilities. The Site Application boundary is shown in Figure 1.
- 1.8 The Site Application boundary is shown in Figure 1.

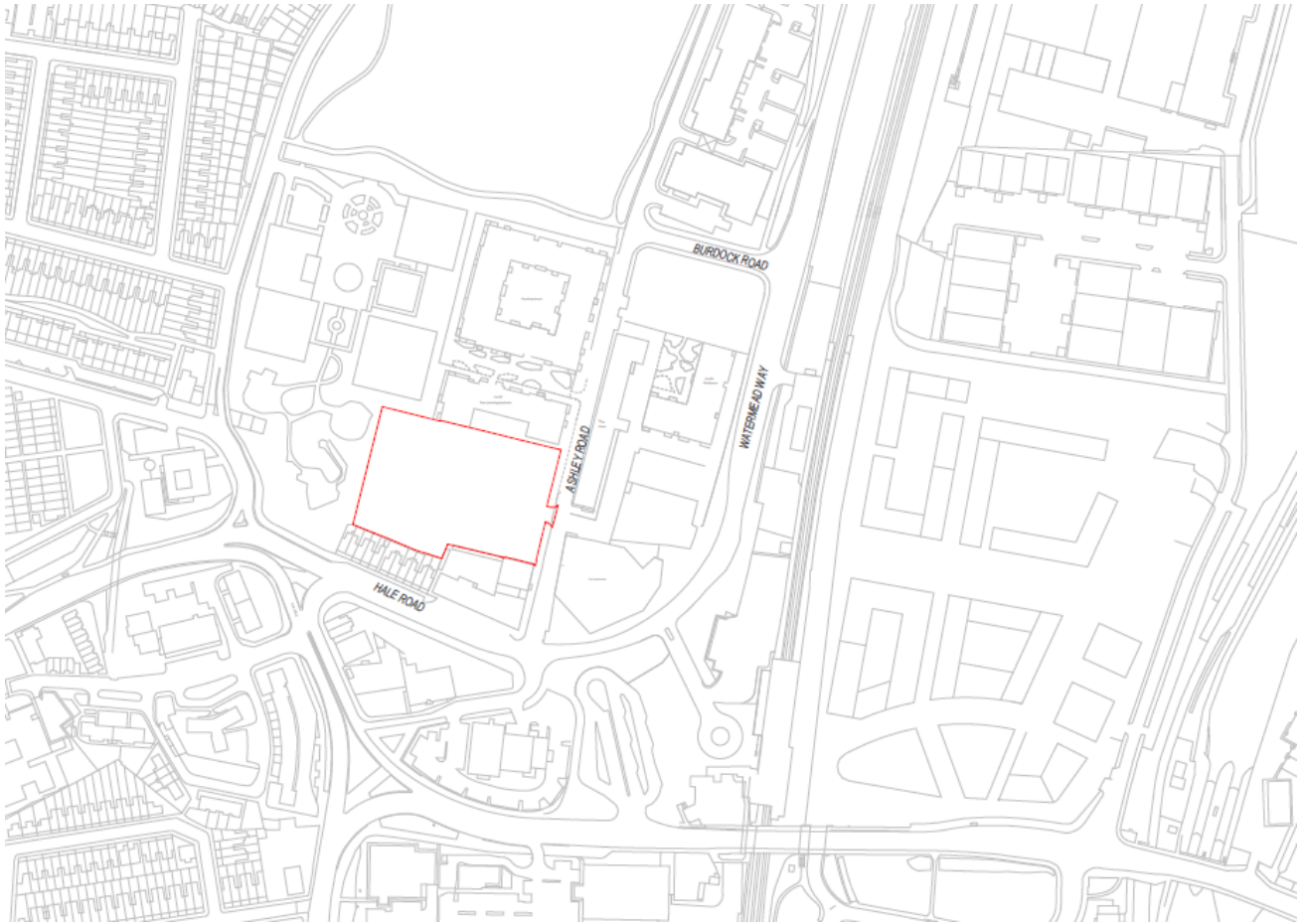


Figure 1: Site Location

2 Site and Sensitive Receptors

Existing Site and Surrounding Area

- 2.1 The Proposed Development is located at former Ashley House site, Ashley Road, Tottenham Hale, London Borough of Haringey, N17 9LZ. The Site is rectangular in shape bordering Ashley road on east, residential dwellings to the north and south and open green area to the west. The Site currently comprises vacant brownfield land: the former buildings of Ashley House were demolished in August 2023.
- 2.2 The Site is located approximately 150m north west of Tottenham Hale underground and railway station, which provides connections to Walthamstow Central and Brixton. Surrounding land uses are predominantly residential comprising multiple apartment buildings with commercial units on the ground/lower floors. There are also areas of open space and recreational facilities.

Local Access Including Highway, Public Transport, Cycling and Walking

Highways and Carriageways

- 2.3 Access to the site for vehicles and pedestrians is from Ashley Road which features a one way vehicle access. There is Park View Road and Hale Road to the west and south of the site.

Footways

- 2.4 The Site has good pedestrian accessibility to surrounding retail, employment, leisure and public transport nodes. There are also designated cycle lanes along Ashley Road and the wider network.

London Underground

- 2.5 The closest station is located approximately 150m north west of Tottenham Hale underground and railway station, which provides connections to Walthamstow Central and Brixton.

Bus Services

- 2.6 Local bus routes 76, 123, 230 and N73 are available via the nearest bus stops to the site located on Monument Way (about 100m south west).
- 2.7 Local bus routes adjacent to Tottenham Hale Retail Park (200m south) also served by 41, N41 and W4.

Potential Issues / Constraints during Construction

- 2.8 Construction sequencing will have to be closely co-ordinated, and monitoring procedures will have to be implemented to ensure that adjacent stakeholder properties are not affected by the construction process.

Potential Effects and Sensitive Receptors

- 2.9 A summary of the potential environmental effects likely to arise during the construction works, and a summary of the likely sensitive receptors to be considered is presented in Table 2.1 below. Proposed measures to mitigate the potential environmental effects are also included with reference to the framework of mitigation measures provided within Appendix A. as the existing site comprises a vacant brownfield land, with the previous existing buildings having been demolished in August 2023, no demolition related environmental effects are considered.
- 2.10 The list outlined in Table 2.1 relating to the works will be reviewed and updated where necessary throughout the construction phase.

Table 2.1: Sensitive Receptors

Topic	Potential Environmental Effect from Works	Likely Sensitive Receptors	Mitigation Reference (section within mitigation framework, Appendix A)
Transport	- Construction traffic increasing congestion on local road network; - Increase in proportion of HGVs on local road network; and - Disruption and safety to road network users.	- Major roads in local area (traffic congestion); - Pedestrians; and - Cyclists	- General Activities (A); - Traffic and Transport (J); - Air Quality (L); - Waste Management (E); and - Health and Safety (B) - Coordination of construction with adjacent development sites (contribution will be agreed with the council to assist with this).
Air Quality	- Dust arising from construction activities (e.g. excavations); - Dust from exposed ground surface, stockpiles; - Loaded HGV traffic as dust source (including transfer of mud / material by vehicles onto local road network); - Emissions from construction vehicles; and - Emissions from onsite plant.	- Air Quality Management Area; - Closest residential properties; - Local businesses; - Pedestrians; and - Cyclists	- General Activities (A); and - Air Quality (L).
Noise and Vibration	- Noise arising from construction works / activities / plant causing nuisance; - Increase in noise levels generated by increase in road traffic from construction vehicles; - Increased vibration from HGVs; and	- Closest residential properties; - Pedestrians; and - Local businesses	- General Activities (A); - Noise and Vibration (I); - Health and Safety (B); and - Community Liaison (C)

Topic	Potential Environmental Effect from Works	Likely Sensitive Receptors	Mitigation Reference (section within mitigation framework, Appendix A)
	Increased vibration levels from construction activity (i.e. piling)		
Water Resources and Flood Risk	- Damage to existing water supply utility; - Damage to existing drainage utility; - Increase in surface water run-off from site; - Increased pressure / flooding on local drainage network; - Increased water consumption; - Disturbance and potential for pollution to local surface water bodies	- Surface water bodies; - Existing utility infrastructure (water supply, storm / foul water drainage);	- General Activities (A); - Water Management (K); - Sustainability (H)
Ground Conditions / Contamination	- Potential exposure to hazardous material and contaminated land; - Creation of preferential pathways and mobilisation of contamination; - Pollution to land, air and water; - Human health exposure; - Contaminated dust arising from excavations and construction works.	- Site workers / contractors; - General public; - Surface waterways; - Shallow groundwater	- General Activities (A); - Ground Conditions (G); - Utilities (F); - Water Management (K); - Health and Safety (B)

3 Construction Works Overview

Site Management – Roles and Responsibilities

- 3.1 An effective CEMP relies on each of the roles and responsibilities being clearly defined and unambiguous. The successful implementation of the CEMP and management of the environmental impacts is reliant on clear definition and understanding of requirements among Project Team staff. An outline of the key roles and responsibilities are listed below in Table 3.1.

Table 3.1: Project Team Staff Role and Responsibilities

Developer	Responsible for appointment / allocation of the Principal Contractor, Project Manager and Project Manager, and holds overall responsibility for the activities on site and implementation of the CEMP.
Project Director / Manager	The Project Manager is responsible for directing the Principal Contractor on the project, and include: • Lead responsibility on contractual appointments and budget matters; • Check that the Principal Contractor has allocated sufficient resources to allow delivery of the CEMP and direct as required; • Assign specific requirements / duties to compliment members of the project team; • Co-ordinate communication with key stakeholders and other third parties as required; • Review findings of the monitoring programme, and direct Principal Contractor / Project Manager as required.
Principal Contractor (PC)	• Responsible for the day-to-day management of the construction activities on site, ensuring the activities adhere to the actions set out in the CEMP, including: • Ensuring that the construction activities are carried out in compliance with the CEMP; • Checking the qualifications and competence of the contractors / subcontractors for appointment; • Ensure environmental awareness training for all workers, including an introduction for all site workers / contractors to support the implementation of the CEMP; • Observing the construction activities to ensure that they are undertaken in accordance with the contract; • Monitor the performance of contractors / sub-contractors and provide direction as necessary; • Monitoring (co-ordinate with Project Manager) the construction programme to ensure CEMP actions are integrated into it; • With the Project Manager, undertaking a monthly audit of the CEMP; • Undertaking corrective actions in the event of breaches of the CEMP.
Site Manager(s)	• Lead responsibility for the practical construction of the development, including day to day co-ordination of the contractors; and • Co-ordinate with the Project Manager and Principal Contractor for management of the construction activities.

Developer	Responsible for appointment / allocation of the Principal Contractor, Project Manager and Project Manager, and holds overall responsibility for the activities on site and implementation of the CEMP.
Project Manager	• Co-ordinate monitoring and reporting of the CEMP implementation, through liaison with the Principal Contractor and other parties as appropriate, to ensure that the works are implemented in accord with the commitments in the CEMP, including: • Checking that the CEMP is audited and reported back to the client on a monthly basis; • Reviewing complementary plans and procedures to ensure they are compliant with the CEMP; • Monitor the Principal Contractor to ensure that all relevant legal consents, licences etc. are in place in advance of the relevant works commencing, and that all requirements are adhered to; • Co-ordinating the technical and environmental specialists as part of the implementation of the monitoring regime to monitor and record the impacts arising from the construction activities; • Acting as the first point of contact for any environmental issues encountered by the Principal Contractor – investigate all environmental incidents, and ensure they are recorded and reported, with corrective / preventative actions are undertaken; • Contribute to communication on environmental matters between project team and relevant consultees / stakeholders; • Co-ordinate the CEMP review process; and • Ensure that the objectives of the CEMP are being achieved and are not contrary to any relevant legal requirements.
Health and Safety Officer	Responsible for managing health and safety of workers / contractors during construction, including: • Acting as the first point of contact for any health and safety issues encountered by the Principal Contractor – investigate all health and safety incidents, and ensure they are recorded and reported, with corrective / preventative actions are undertaken; and • Ensure health and safety awareness training for all workers, including and induction for all site workers / contractors.
Contractor / Sub-contractor	• Individual contracts will incorporate relevant requirements in respect of environmental control – a commitment to responsibilities within the CEMP will be a contractual obligation for trade contractors; • Work to agreed plans, methods and procedures to minimise environmental impacts; • Understand the importance of avoiding pollution on-site, including noise and dust, and how to respond in the event of an incident to avoid or limit environmental impact; • Report all incidents immediately to their line manager; • Monitor the work for potential environmental risks and alert their line manager if any are observed.

Stages of Development

- 3.2 A Principal Contractor (PC) is to be appointed to lead construction works. The development programme would be set out by the PC. The key elements of delivery would be:
- a. Stage 1 - Groundworks/Foundations;

b. Stage 2 – Frame and Building Fit Out.

3.3 Specific details on these enabling and construction stages together with a programme of works are to be set out by the PC in later versions of this CEMP.

3.4 The types of plant required for construction activity are indicated below in Table 3.2. Details of the exact type, make and number of plants required will be confirmed and assessed following procurement of contractors and methods statements received.

Table 3.2: Types of Plant Equipment Required by Construction Activity

Phase of Development	Plant
Construction	• Excavator • D3T – 5T dumpers • Petrol Cut off Saws (Small Plant) • Piling Rig (Non-Road Mobile Machinery Plant) • Grab Wagons and 8 wheel wagons for disposal of arisings • Bar Banding machine (Small Plant) • Petrol Floor Saw (Small Plant) • Twin Drum Roller (Non-Road Mobile Machinery Plant) • Plate Compactor (Small Plant) • 2" Petrol / Diesel Poker (Small Plant) • Vibrating Screed Rail (Small Plant) • Petrol Generator (Small Plant) • 110V Drills (Small Plant) • Battery Operated hand tools (Small Plant)

Other Construction Sites within the Surrounding Area

3.5 The developer and appointed contractor will consult with London Borough of Haringey and other contractors' developers in the area to minimise disruption. This will need to be undertaken prior to construction to ensure that the correct construction sites are identified. It is then proposed that collaboration with other neighbouring sites and London Borough of Haringey will take place prior to the start of construction set out in this plan.

4 Description of Construction Works

Site Establishment and Management

Project Office Set-Up

- 4.1 The welfare facilities, project offices and vehicle parking area are all to be located within the site demise. The position and arrangement of facilities are to be designed on appointment of a works contractor and following pre-construction meetings. Project offices will allow adequate space for all staff and visitors.
- 4.2 The Main Security point will be located at the main site access point from the estate road into the site boundary and will remain during the contract works.
- 4.3 A pedestrian access route on-site will be segregated from the vehicle access into the working areas. The internal pedestrian route is to be demarked using Heras fencing and will follow the perimeter hoarding in either direction.
- 4.4 All access points into and out of the site will be managed at all times ensuring that the main gate and haul road remain clear and unobstructed at all times. This is in the event of an emergency, when a potential emergency vehicle may need to access the site.
- 4.5 All communications on site will be via 2-way radios. All plant operators will be prohibited from the use of mobile phones whilst operating machinery.

Hours of Work

- 4.6 It is proposed that the standard working hours for all works on site will be:
 - 08.00 – 18.00 Monday to Friday; and
 - 08.00 – 13.00 Saturdays; and
 - No working normally undertaken on Sundays or Bank Holidays.
- 4.7 These hours will be strictly adhered to unless or in the event of:
 - An emergency demands continuation of works on the grounds of safety;
 - Minor internal works, silent in nature, are being carried out within the confines of the building envelope; and
 - Completion of an operation that would otherwise cause greater interference with the environment / general public if left unfinished.
- 4.8 It is recognised that approval from London Borough of Haringey would likely be required for any works that need to be undertaken outside these permitted hours, and that the Council may vary these hours where the works are in close proximity to sensitive businesses or residential properties.
- 4.9 Should noisy work outside of these hours be required, this would be subject to a separate approval from the Council.

Parking of Vehicles of Site Operatives and Visitors

- 4.10 An Allocated area of parking space will be provided on site or in the proximity of the site for vehicles of site operatives and visitors.
- 4.11 Specific details are to be set out by the PC in later versions of this CEMP.

Site Security

- 4.12 Only authorised personnel will be permitted on site. All visitors will be required to enter through the main site access and report to the Construction Manager/Site Manager. All visitors will be required to sign in and out to ensure that site management are aware of the number of people on site in the event of an emergency.
- 4.13 Visitors will be required to undergo induction training, wear the necessary PPE i.e. safety helmet, hi-visibility attire, safety footwear and will be accompanied by a representative on site at all times.
- 4.14 The construction site will be checked on a regular basis to ensure that it is maintained in good condition and remains secure. All entrance and exit gates into the site will be secure at all times and the keys positioned adjacent to them to allow personnel to safely evacuate in the event of an emergency.
- 4.15 Banksmen will aid construction vehicles in entering and exiting designated set-down areas. All mobile plant/equipment will be parked safely and locked within a designated area to prevent tampering, and keys to all plant/equipment will be kept in a secured location.
- 4.16 The construction areas will be physically segregated using timber hoarding. Security when the Site is not manned will take place through the use of CCTV directly connected to the security company via an ISDN line.
- 4.17 A Site Risk Assessment will be produced which will detail how security will be managed on the site. Any person identifying unauthorised personnel on site should contact the Site Manager who will take appropriate action and ensure the unauthorised person leaves the site safely.

Lighting

- 4.18 Lighting on construction sites, whether natural or artificial, is essential to health and safety. Poor lighting can represent significant risks to staff members which can result in accident and injury; the quicker and easier it is to see a hazard the better the likelihood of avoiding it. As outlined within Section 35 of The CDM Regulations (2015), the development site must be provided with suitable and sufficient lighting, which must be, so far as is reasonably practicable, by natural light. This relates to both the construction site as well as the approach and traffic route to the development site.
- 4.19 Site lighting will be at the minimum luminosity necessary to enable the safety and security of the construction site. Where appropriate, lighting to site boundaries will be provided and illumination will be sufficient to provide a safe route, albeit no public access to the Site will be permitted. Where appropriate, lighting will be activated by motion sensors to prevent unnecessary usage. It will comply with the Institute of Lighting Professionals' Guidance notes for the reduction of obtrusive light.
- 4.20 In determining any temporary construction lighting arrangements for the site, due consideration will be given by the PC to sensitive receptors that may experience a nuisance by the light, including wildlife. General control measures for the use of lighting on site are outlined below:
- Temporary site lighting when used adjacent to residential areas must be fixed with a noise screen to keep noise levels to a minimum;
 - As far as is practical, lighting must be directed away from residential properties; and
 - Lighting should always be positioned to prevent glare.

Traffic Management and Deliveries

Site Access for Loading and Unloading of Plant and Materials

- 4.21 Access from the J31 estate road will be used for entry and exit of vehicles involved with loading and unloading of plant and materials.

Traffic Management and Deliveries for Construction Works

- 4.22 The site will introduce and manage strict control measures. During the procurement of trade packages, a Construction Logistics Plan will be issued which will include access routes to and from the site, restrictions regarding timings to reduce congestion and the type and size of vehicle. This site logistics plan will be communicated to all and shared with the local residential and business community. The site entrances will be manned by trained traffic marshals and all vehicles entering the site will receive clear instruction and guidance throughout their time on site. All vehicles leaving the site will be cleaned to avoid transfer of debris to the highway.

Site Access for Construction Vehicles

- 4.23 Access routes to and from the site to be used by heavy goods vehicles (HGVs), for deliveries of material to the site and for the removal of wastes, would be agreed with the Council prior to initiation of construction works.
- 4.24 It is expected that access will be via the existing openings, controlled by hoarding gates and controlled by the contractor.
- 4.25 Vehicles routes to the site for construction vehicles will be developed with consideration of risk and sensitive receptors and road restrictions.
- 4.26 CPCS qualified Banksman and Traffic Marshalls will be employed throughout the project. The Banksman will be responsible for the safe movement and guidance of plant and vehicles on the site and the site access. The Traffic Marshall will be responsible for the safe management of the pedestrians, cyclists, and other vehicles while construction vehicles manoeuvre into and out of the site entrance.
- 4.27 A copy of the route plans will be available to all construction vehicles to ensure drivers are fully briefed on the required route to take. The suppliers will be made aware that these routes are always required to be followed unless agreed or alternate diversions are in place.
- 4.28 Deliveries to the site would be controlled by the material controller to avoid congestion of the surrounding roads. The material controller will produce a rolling weekly programme of deliveries and a draft of this programme will be presented and discussed at weekly progress meetings to smooth out conflicts.
- 4.29 The hours of operation for the site will be 08:00 to 18:00, Monday to Friday, and 08:00 to 13:00 on Saturdays. The site will not be in operation for construction on Sundays or Bank Holidays. It is therefore requested that deliveries could be accepted between 8am and 6pm Monday to Friday, but with the commitment that deliveries would be minimised between 8am and 9am and also between 3pm to 5pm on weekdays and between 8am and 1pm on Saturday, but deliveries would be timed to avoid network conditions. Deliveries will be timed to avoid network conditions and school and nursery trips. Re-timing out of peak time will aid the operational efficiency of the construction site and the neighbouring area.
- 4.30 It is considered that there would be minimal impact on noise nuisance from construction vehicles travelling to/from the site due to the site's proximity to the highway network.

- 4.31 Availability of storage for materials will also be limited with all deliveries on a “just in time” basis and drivers will be instructed to turn off their vehicles whilst being offloaded.

Management of Operating Large Vehicles

- 4.32 All contractors and sub-contractors operating large vehicles over 3.5 tonnes must meet all the following conditions:
- All drivers must have undertaken cycle awareness training such as the Safe Urban Driver module or similar;
 - All vehicles associated with the construction of the development must:
 - Have site guards fitted, unless it can be demonstrated to the reasonable satisfaction of the employer that the lorry will not perform the function of which it was built, if site guards are fitted;
 - Have a close proximity warning system fitted comprising of a front mounted, rear facing CCTV camera, a close proximity sensor, an in-cab warning device (visual or audible) and an external warning device to make the road user in close proximity aware of the driver’s planned manoeuvre;
 - Have a Class VI mirror; and
 - Bear prominent signage on the rear of the vehicle to warn cyclists of the dangers of passing the vehicle on the inside.
- 4.33 The jet washing facility will be located at the access junction as vehicles exit the site. It will be installed and controlled by the Principal Contractor until the work is completed. Temporary drainage will be required on site at the jet wash location to prevent dirty water and arisings washed on to the road / footpath. A sump will be used to minimise the risk of oils or other contaminants entering the drainage system and watercourse.
- 4.34 Despite these measures, it is possible that some minor residual materials may end up on surrounding roads. To ensure this is swiftly cleaned, during the high-risk periods, a street sweeper will be deployed as and when required by the Site Management.
- 4.35 All operatives will be made aware of the requirements during site induction and task briefing.

Waste Management – General Requirements

- 4.36 The project will be registered with the Environment Agency in relation to waste. Registration details will be issued to all contractors. The Waste Removal Contractor will be made responsible for the removal of all waste from the site and will comply with the Duty of Care requirements. It is the joint responsibility between the Principal Contractor and the Client to ensure that waste produced onsite is disposed of in accordance with legislation. Records of all waste materials and their removal will be maintained in accordance with Statutory Legislation and records kept on site. These include ensuring waste is transported by registered carriers, disposal to appropriately licensed sites and maintenance of appropriate waste transfer documentation.
- 4.37 The generation of construction waste will, as the first priority, be avoided. Any packaging used for transporting of construction materials delivered to Site will be sent back with the delivery vehicle whenever practicable. If waste is generated on-site, it will be sent for reuse and recovery in preference to disposal. Where practical, spoil and surplus construction material or clean concrete arising from the works on site will be reused. Any suitable stone found on-site may be crushed and used as sub-base.

- 4.38 Waste for final disposal will be transported by Licensed Waste Carriers to local sites which operate in accordance with the appropriate Waste Management Licenses issued by the EA. Under the Duty of Care Regulations, the receiving site must be authorised to accept the type and quantity of waste generated. Transport of wastes will be minimised by the selection of local licensed sites where available. The only exception to this principle may be for the disposal of hazardous wastes (contaminated soil) where suitable landfill or other disposal sites may only be found further afield.
- 4.39 No disposal of waste by open burning/bonfires will be permitted on-site.
- 4.40 All relevant contractors will be required to investigate opportunities to minimise and reduce waste generation, such as;
- Agreements with material suppliers to reduce the amount of packaging or to participate in a packaging take-back scheme;
 - Implementation of a 'just in time' material delivery system to avoid materials being stockpiled, which increases the risk of their damage and disposal as waste;
 - Attention to material quantity requirements to avoid over-ordering and generation of waste materials;
 - Segregation of waste at source where practical;
 - Re-use of materials on-site wherever feasible. The Government has set broad targets of the use of reclaimed aggregate, and in keeping with current guidelines and relevant legislation, contractors will be required to maximise the proportion of materials recycled; and
 - Re-use and recycling of materials off-site where re-use on-site is not practical (e.g. through use of an off-site waste segregation facility and re-sale for direct re-use or reprocessing).
- 4.41 Materials and waste will be stored in appropriate conditions to prevent damage or contamination of storage areas. All hazardous materials including chemicals, cleaning agents, solvents and solvent containing products will be properly sealed in containers at the end of each day, prior to storage in appropriately protected and bunded storage areas. Containers should be sited away from drains or unsurfaced areas and should be regularly maintained and inspected for damage.
- 4.42 All contractors will be required to make due allowance for all plant and labour, and to control and dispose of waste that they create to skips provided. Waste will be removed from Site using skips. Non-hazardous waste will be segregated on site during construction into basic categories:
- General & Office waste;
 - Concrete;
 - Brick;
 - Plasterboard;
 - Metal; and
 - Specialist (Oil, Paint, Aerosol etc.)
- 4.43 The Principal Contractor will audit waste carriers and disposal facilities and maintain documentary evidence that these requirements are being met, including a register of waste carriers, disposal sites (including transfer stations) and relevant licencing details for each waste stream. Waste contractors who remove waste will be registered with the Environment Agency.

- 4.44 The minimisation of waste and the increased use of recycled materials form an intrinsic key to resource protection. The Waste Regulations 2011 includes the Waste Hierarchy, which is a framework for sustainable waste management setting out the preferential treatment of waste, as below shows.

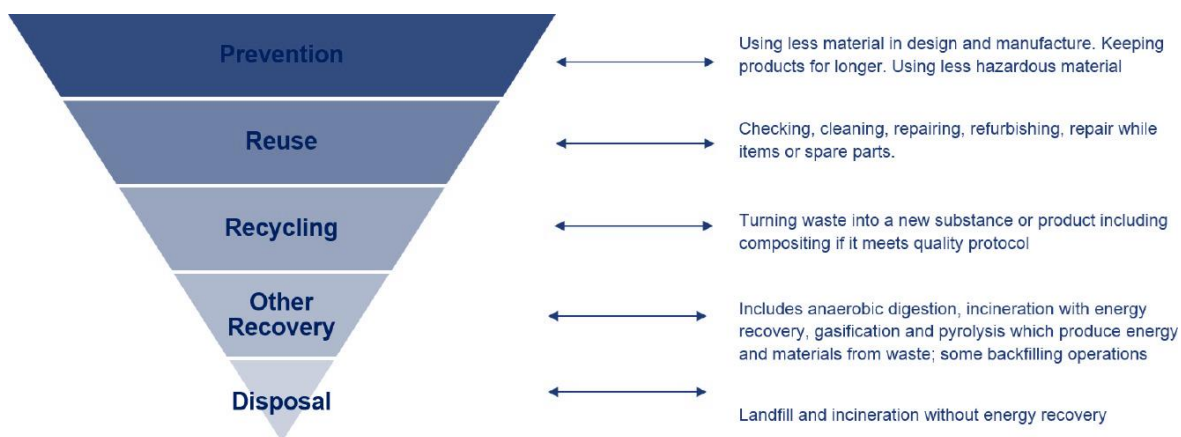


Figure 4.1. Waste Management Hierarchy

- 4.45 Waste Hierarchy principles to be implemented during the construction of the proposed development are:

- Waste will be, as far as possible, prevented or reduced at source;
- Where waste cannot be prevented, waste materials or products should be reused directly or refurbished and then reused on site;
- Waste materials should be recycled or reprocessed into a form that allows them to be reclaimed as a secondary raw material and reused on site; and
- If waste cannot be prevented, reclaimed or recovered, it will be disposed of in a controlled manner at a licensed facility.

Contamination and Hazardous Material

- 4.46 An Emergency Preparedness Plan (EPP) will set out any procedures to deal with contamination if any issues were to arise. All the workers on-site will be made aware of potential contamination issues on the site and will use best practice techniques during all construction activities. The operation of construction vehicles and the handling, use, and storage of hazardous materials will be undertaken in accordance with best practice and will also include the following:
- Construction vehicles and plant will be regularly maintained and supplied with spill kits and drip trays to reduce the risk of hydrocarbon contamination;
 - The handling, use, and storage of hazardous materials will be undertaken in line with the current best practice;
 - Adequate bunded and secure areas are to be provided for the temporary storage of fuel, oil and chemicals, as far away from drainage/watercourse as possible; and
 - Provision of spill containment equipment such as absorbent material on site.
- 4.47 The Principal Contractor will designate a Site Spillage Team (SST) who will take appropriate actions in the event of a significant fuel or hydrocarbon spillage.
- 4.48 A member of staff will be nominated to control and monitor the Control of Substances Hazardous to Health (COSHH) system, in compliance with the COSHH Regulations 2002.

Suppliers must send data sheets for every hazardous substance to the site. The assessment information sheet is completed in conjunction with Supervisors and Safety Managers who then brief staff members who will be using the substance, on its safe use, disposal and any emergency procedures. Written records of these briefings will be kept in a COSHH file held on the site.

- 4.49 Any new substances hazardous to health brought on to the site will have suitable arrangements made for their safe storage, use and disposal.

5 Site Management and Administration

The CEMP File

- 5.1 The on-going management and completion of the CEMP actions need to be documented and kept on file for record management. Audits of the CEMP will be logged in the file, which will be kept at the site compound, available for viewing.
- 5.2 The CEMP File will include:
- Copy of the latest version of the CEMP;
 - Details of the appointed roles and relevant contact details for external stakeholders (i.e. London Borough of Haringey, Environment Agency etc.);
 - Monitoring and Audit information; and
 - Complaints Register.
- 5.3 The CEMP will be held and maintained electronically, with the latest revisions identified with a document reference.

Staff Induction and Training

- 5.4 Contractual arrangements will require all contractors to provide suitably qualified staff to manage and execute works for which they are responsible. The Principal Contractor will require that all employees demonstrate an appropriate awareness of local sensitivities, expected code of conduct, working knowledge of the legislation, codes of practice, and guidance relevant to the activities in which they are engaged.
- 5.5 A training regime shall be implemented to ensure that all staff members, including sub-contractor's personnel, receive focused environmental training to ensure their competence in carrying out their duties on the project.

Site Induction

- 5.6 The Principal Contractor will operate induction schemes for all personnel to ensure that they are aware of their individual responsibility to comply with the CEMP. The Principal Contractor will be responsible for identifying the training needs of his/her personnel and will ensure that appropriate training is provided. Training will include information on local considerations and expectations on site behaviour, "toolbox talks" for site operatives to maintain an appropriate level of awareness on safety, health and environmental topics and to advise employees of changing circumstances as work progresses. Records will be kept of attendance.
- 5.7 The general site induction shall be developed to introduce all site personnel to the environmental issues connected with the development, important environmental controls associated with the day-to-day operation e.g., boundary control, housekeeping, waste management, and the emergency procedures. A full register of induction attendance shall be maintained on site.
- 5.8 **Responsibility:** Construction Manager
- 5.9 **Action:** Develop general site induction to include environmental issues and ensure induction records are maintained.

Toolbox Talks and Method Statement Briefings

- 5.10 Toolbox talks, and method statement briefings will be given as the work proceeds and will cover the environmental controls related to specific activities undertaken during the works for example air quality, ways to minimise noise, vibration and dust on site, contaminated land, waste, water and light pollution matters etc. A full register of toolbox talks and method statement briefing attendance shall be maintained on site. A toolbox talk will be undertaken daily, depending on the daily activities and tasks.
- 5.11 **Responsibility:** Construction Manager
- 5.12 **Action:** Regularly assess site activities and ensure relevant training requirements are met. Develop and deliver specialised toolbox talks as required to ensure site activities are carried out in accordance with CEMP.

Emergency Procedures and Incident Reports

- 5.13 An Emergency Preparedness Plan (EPP) will be created, reviewed and updated regularly by the Principal Contractor and Project Team. The EPP will be an up-to-date document containing information on the location and volumes of hazardous substances on site, the location of spill response equipment, the location of sensitive receptors (e.g. live drainage systems and watercourses) and the incident response procedure to be followed.
- 5.14 The EPP will contain emergency phone numbers and the method of notifying London Borough of Haringey and other statutory authorities.
- 5.15 All staff will be made aware of the emergency procedure protocol set in place. In the event of any incidents, the Principal Contractor, Environmental Health and Safety Team will be notified as well as the developer. Additionally, London Borough of Haringey's Pollution Team and any other interested bodies will be notified as required.

Training Records

- 5.16 All training records will be maintained and filed on site. The records shall include the content of the courses (induction and toolbox training), record of attendance and schedule of review.

Staff Training

- 5.17 The raising of environmental awareness is an important consideration for the implementation of the CEMP. All staff will undergo environmental awareness training as part of the induction and future updates as necessary. A training plan that identifies the requirements for all personnel allocated with environmental responsibilities will be produced and be contained within all relevant documents for all construction activities. Awareness and appreciation for the contents and purpose of the CEMP will be a priority during the training and induction process.
- 5.18 Line managers and supervisors will ensure that all personnel engaged in activities that may have an impact on the environment are competent to carry out their duties or, where necessary, arrange for suitable training to be undertaken, before commencement of the associated construction activity.
- 5.19 To ensure compliance, trade contractors will have contractual obligations to adhere to requirements for environmental control, based on good working practice, such as careful programming, resource conservation, adhering to health and safety regulations and quality procedures.

- 5.20 All contractors involved with the construction phase, include trade contractors and site management, will be committed to adopt the agreed best practice and environmentally sound methods. The trade contractors will be required to demonstrate how they will meet the targets of the CEMP and how the potential impacts will be offset, reduced or minimised.
- 5.21 Health, Safety and Environmental requirements will be made clear in the procurement process and the Principal Contractor will be responsible for quality assurance, corrective action and disciplinary procedures for non-compliance. In addition, the Principal Contractor will hold informal 'Toolbox Talks' as necessary, to promote safe working and environmental responsibility.

Supply Chain Procurement

- 5.22 Where relevant, the requirements of the CEMP will be included within the supply chain orders/ The Developer will also seek to use local suppliers and subcontractors on the development.

Local Employment

- 5.23 Where feasible, the Developer will aim to employ local labour and apprentices to work on the development.

Health and Safety

- 5.24 The safety of the general public, site workers and visitors to the site will be the uppermost guiding factor to all operations carried out on site.

PPE

- 5.25 Suitable and sufficient PPE is to be used and worn in accordance with site rules. Contractors are responsible for providing their own PPE and ensuring it is maintained in good order.

Housekeeping

- 5.26 All contractors will be responsible for maintaining their access / egress and work areas clear of waste material and other obstructions in order to prevent slips, trips and falls. Where contractors fail to clear up or keep their workplaces free from hazards, they may face disciplinary action and financial penalties.

Preventing Falls

- 5.27 All contractors must ensure their activities involving work at height (including the offloading / loading of delivery vehicles) will be in accordance with the Work at Height Regulations 2005 by ensuring that:
- All work at height is properly planned and organised.
 - All work at height will take account of weather conditions.
 - All involved in work at height will be trained and competent.
 - The place where work at height is carried out will be safe.
 - Equipment for work at height will be the most suitable and regularly inspected.

- The risks involved with fragile surfaces will be properly controlled.
- The risks of falling objects will be properly controlled.

- 5.28 The use of step ladders and ladders will not be permitted for use as working platforms unless the contractors risk assessment justifies their use in preference to safer systems such as tower scaffolds, podiums and mobile elevated work platforms.
- 5.29 All work at height equipment must be of an approved industrial standard. Domestic standard equipment, milk crates and other improvised access equipment are not permitted.
- 5.30 Contractors must never remove collective fall protection measures without proper authorisation (e.g. handrails, scaffold boards etc), doing so is a serious offence and could attract disciplinary action.

Scaffolding

- 5.31 All scaffolding is to be erected by Construction Industry Scaffolders Record Scheme accredited scaffolders to the relevant industry standards and comply with the current developer's scaffold standard.

Control of Lifting Operations

- 5.32 All lifting operations must be properly planned and supervised by a competent person and carried out in a safe manner. The level of planning required will vary and depend on the complexity of the lifting operation and the type of equipment to be used. The location, the environment, the load to be lifted and the specific operations to be carried out are amongst the matters to be considered.
- 5.33 All crane lifting operations to be planned and carried out by competent persons: either the 'Employing Organisation' or by a 'contracted lift', where the crane hire company carry out the planning and supervision of the lifting operations. In all cases, the lifting operation will be planned by an Appointed Person.
- 5.34 A 'Permit to Lift' must be obtained by the Contractor for mobile crane lifts and signed by all involved in the lifting operation before the lift can take place. A breach of permit conditions is a serious offence and could attract disciplinary action.
- 5.35 The Permit should be used to help control lifting operations involving a mobile elevating work platform.
- 5.36 The Permit may be used for using a HIAB (lorry mounted crane) and concrete pump dependant on location and circumstances.

Plant and Equipment Maintenance

- 5.37 Contractors providing or hiring plant, machinery and/or equipment shall ensure they comply with the requirements of Provision and Use of Work Equipment Regulations 1998 and the Lifting Operations and Lifting Equipment Regulations 1998.
- Equipment will be regularly inspected (the expectation is for weekly checks of all equipment).
 - Maintenance and servicing will be carried out in accordance with the manufacturer/supplier.
 - All plant, machinery and equipment must only be used in the manner for which they were designed.

- Records of thorough examination certificates, tests, inspections, servicing and operators training certificates will be held in and/or details recorded in the Site Register or held in the contractor's own documentation and made available for inspection on site.

Staff and Contractors

- 5.38 The approach of safety first is passed down the supply chain, where all operatives on site must present a CSCS card and complete an on-site induction before beginning work on the site. Appropriate PPE must be worn at all times and entry to the site will not be permitted if operatives arrive to site without this. A full set of site rules will be displayed on site and explained during inductions.
- 5.39 Each member of the team will be expected to fully comply with the requirements of the CPHS, current regulations and site rules. Failure to comply would lead to removal from site and in the case of repeat or serious breaches, permanent exclusion from site.
- 5.40 The Site Manager will carry out a recorded weekly inspection; and this will be reinforced by a monthly audit by senior site management. The Developer's Health and Safety team will visit and audit the site at regular intervals.

General Public

- 5.41 Throughout the initial phases of the construction programme, the development site will remain closed to the general public. Control and safety of the general public at the access point will be managed by trained personnel, if required.
- 5.42 Measures to safeguard visitors to the site and segregate them from ongoing construction operations will be implemented. A defined pedestrian and plant access will be established and maintained. Safe and unobstructed routes to operational buildings will be provided. Clear visitor routes will be defined through the use of appropriate signage. Where possible, construction traffic movements will be segregated from visitor traffic and pedestrian routes.

Community Liaison, Communication and Complaints

- 5.43 In line with good environmental practice, the CEMP file will be available at the site compound. The documents within the file will be available to view by regulatory bodies on request.

External Organisations

- 5.44 It is best practice to ensure a good working relationship with the relevant authorities and statutory and non-statutory bodies, including the local planning, environmental protection, waste and highway authorities, and the Environment Agency.
- 5.45 There will be regular and proactive liaison with London Borough of Haringey and other third parties as appropriate on environmental issues and throughout the project implementation. The Project Team / Principal Contractor should determine whether there are any works which may benefit from early discussion.

Public Liaison

Communication During Works

- 5.46 In order to keep the general public informed about the development, appropriate signage and information boards will be displayed on site hoardings. This will include contact details

for the site and general construction information. A clear point of contact will also be provided to deal with any queries and provide immediate responses to any issues raised; it is also proposed that periodic meetings will be held on site to explain the works anticipated for the forthcoming month and how these impact upon neighbours.

- 5.47 The principal contractor will ensure that the neighbouring properties are fully aware of what and when we are carrying out works and how this may affect them. It will be ensured that there will be good lines of communication for neighbours and the community in the local area to have their questions and concerns answered in a timely manner. Community Liaison Officers (CLOs) will be appointed to maintain engagement between the Site manager, Council, relevant stakeholders and local residents. The contact details for the CLOs will be included in letters sent to neighbouring properties, in addition to being displayed on boards near the entrance to the site.
- 5.48 Appointed community liaison representatives, working with local authorities, will endeavour to seek as many potential opportunities/avenues to explore as possible, thus maximising opportunities to deliver community enrichment. Through extensive engagement and liaison, maintain relationships with local residents, businesses and institutions will be established and maintained, cultivating a positive culture surrounding the project. This will benefit the area, as well as strengthen the public image of the Developer and the Council in relation to the development.

Key Roles for Communication

- 5.49 The Project Manager will liaise with neighbours and a contact number will be provided for dealing with any queries.
- 5.50 The Project Director will attend community meetings with the residents, so that any concerns can be voiced, and agreement reached, on action to be taken to tackle those concerns where practical.
- 5.51 Outside of normal working hours, site security staff will act as the main point of contact via a dedicated phone number. Security will alert the Principal Contractor (or representative) if necessary.

Complaints

- 5.52 The Community Liaison Officer will periodically patrol the local area surrounding site to talk to local people to ask if they have any concerns regarding the construction works, any complaints or suggestions that need to be passed to the head office and to also inform whoever is interested on the site works. All complaints will be dealt with as an individual case, with no prejudice against those who report them.
- 5.53 A formal complaints procedure will be developed; the Construction Manager will be responsible for receiving, recording and responding to external complaints.
- 5.54 The Construction Manager will have their telephone number displayed for quick response to complaints. The complaints will be logged, together with a record of the responses and action taken.
- 5.55 **Responsibility:** Construction Manager
- 5.56 **Action:** Log complaints, conduct investigation, develop any corrective action, produce written response to complaints and generate monthly report of complaints received.
- 5.57 In the event of out of hours incidents, there will be a duty point of contact who will be responsible for answering and responding to any calls. This emergency number will be clearly displayed on the site hoarding.

- 5.58 All complaints received by the named individual from any source regarding the site or company will be logged, recorded and categorised as one of the following: Noise, Dirt and Dust; Parking; Safety; Inconsiderate Behaviour; Road Conditions and Vehicle Movements; Environmental Concerns; Pedestrian Access Obstruction; Property Damage; Site Lighting; Working Hours; and Other. The Construction Manager will have designated staff trained to deal with any type of complaint.
- 5.59 If the complaint does not relate to an issue covered by the CEMP (e.g. planning issues), the complainant will be assisted by the appropriate team. The Construction Manager will maintain a designated complaints/ incidents logbook or register cover:
- The nature of the complaint;
 - The cause; and where appropriate; and
 - The remedial action taken.
- 5.60 The Construction Manager will investigate and respond to the complaint and be kept as 'active' status until such a time as it is appropriately resolved.
- 5.61 Any complaints registered will be reported to the appropriate contact at the Council on a monthly basis, in accordance with the CEMP auditing procedure.
- 5.62 If the Construction Manager does not deal with a complaint in a satisfactory manner, the complaint will be passed to the Contractor, who will refer the matter to the construction company's head office contact. In the event that the response is still unsatisfactory, and the contact is not a director, then the complaint will be taken to company director level.

6 Environmental Mitigation Overview

- 6.1 For each category below, a series of mitigation measures are provided within a mitigation framework (see Appendix A), outlining the methods, activities and responsibilities on site during the construction phase, derived from the commitments referred within the supporting technical environmental reports supporting the application and industry standards and best practice. This is so that the potential impacts arising from the construction activities can be avoided or mitigated to an appropriate level of impact. The measures are translated into a framework of actions to be undertaken and will identify the key roles and responsibilities for implementing those actions.
- 6.2 The framework presented in Appendix A relating to the works will be reviewed and updated where necessary throughout the construction phase. The Project Manager shall work with the Council to review this CEMP if problems arise in relation to the construction of the development.
- 6.3 The schedule of mitigation measures has been divided into the following categories:
- **General Activities** – Site Establishment: outlines a series of site establishment measures, including hours of operation, boundary treatment and contact details relating to the management of the site;
 - **Health and Safety**: requires a set of actions to be undertaken to prevent accidents or injury to operators working on site;
 - **Community Liaison**: identified actions to maintain contact and establish good relations with the local community;
 - **Lighting**: addresses measures to mitigate the impact of the provision of artificial lighting during construction;
 - **Waste**: refers to the management of waste;
 - **Utilities**: addresses a series of actions to prevent damage of the existing sub- surface utilities;
 - **Ground Conditions**: identifies mitigation measures to prevent contaminants entering the ground, or contaminated ground being dispersed;
 - **Sustainability**: outlines a series of best practice measures in order to reduce the impact of construction activities on the environment;
 - **Noise and Vibration**: outlines the measures to be implemented during the construction phase to reduce the impact of noise on nearby sensitive receptors;
 - **Traffic and Transport**: Outlines a series of mitigation measures for the management of deliveries to the site, as well as catering for the associated impacts that the development is likely to have on the surrounding local road network;
 - **Water Management**: Identifies a series of mitigation measures and actions to prevent contaminants entering the existing environment and potentially pollute water bodies;
 - **Air Quality**: outlines the measures to be implemented during the construction phase to reduce the impact of dust and vehicle emissions on nearby sensitive receptors; and
 - **Tree Protection**: Outlines a series of best practice measures to prevent disturbance or permanent damage to trees.

7 Monitoring, Auditing and Reporting

Monitoring

- 7.1 Monitoring of the works will ensure the overall environmental performance of the development is of a high standard.
- 7.2 A minimum of monthly health and safety monitoring visits and audits will be undertaken until construction is completed. The frequency of the visits and audits will be changed based on the nature of the works. This monitoring will be undertaken by the Contractor's Project Health and Safety Auditor and will be carried out on an unannounced basis. Monitoring of construction activities will ensure that they are in accord with legislative and best practice environmental actions and requirements, and that agreed mitigation measures are also being implemented.
- 7.3 The Project Manager will hold the responsibility for maintaining a register of all environmental monitoring, which should be made available for inspection on request.

Air Quality Monitoring

- 7.4 In addition to dust mitigation measures (Appendix A), daily inspections should be carried out throughout the day in order to identify potential sources of dust within the site boundary with the potential to affect neighbouring sites. Further information regarding monitoring and management procedures are set out in Appendix A.
- 7.5 In accordance with the guidance outlined in the Institute of Air Quality Management "*Guidance on Monitoring in the Vicinity of Demolition and Construction Sites (2018)*", a recommended site action level of 190 µg/m³ for PM₁₀ will be adhered to. Any dust levels above this set action level and the construction site will cease immediately. A summary of the dust levels guidance to be used to demonstrate the worst-case in dust levels is provided in Table 7.1 below.

Table 7.1: Alert Levels of PM₁₀ and PM_{2.5} Monitoring

Alert Level	Time Period	PM ₁₀ Maximum Permissible 15-minute average (µg/m ³)	PM _{2.5} Maximum Permissible 15-minute average (µg/m ³)
Red (at this level all works to cease immediately, investigate cause of exceedance and use alternative methods where appropriate)	15-minute average	> 190 µg/m ³	> 48 µg/m ³
Amber (continual monitoring and investigation of alternative methods where appropriate)	Two consecutive 15-minute averages	< 80 µg/m ³	> 38 µg/m ³
Green (early warning/no action required)	15-minute average	> 80 µg/m ³	> 38 µg/m ³

- 7.6 A regular report of dust monitoring levels and any exceedances above the prescribed levels outlined in Table 7.1 will be provided to the Council.
- 7.7 In addition to suspended particulate matter monitoring, the Site Manager will make daily inspections at the site boundary to ensure that visible dust is not leaving the site.

- 7.8 The results of the inspections will be recorded in a site log. The prevailing weather conditions and the activities undertaken at the time of the inspection will also be recorded in the site log.
- 7.9 Measures relating to a watching brief and discovery strategy for asbestos contamination during construction works will be included in the Risk Assessment Method Statement (RAMS), to be read during site induction by all operatives. Mitigation measures which minimise dust and air- fibre monitoring on site will be employed.

Noise and Vibration Monitoring

- 7.10 Continuous noise and vibration monitoring will be undertaken during the construction phases that will likely produce high levels of noise such as ground works. Mitigation measures applied to minimise the impact from vibration during construction phases will include:
- Minimise opening and closing of site access gates through good coordination of deliveries and vehicle movements;
 - Maximise the screening effect of buildings and temporary stockpiles through programming / phasing of works;
 - Site hoarding to be built and maintained to maximise the reduction in noise levels to sensitive buildings and land uses;
 - Limit material and plant loading and unloading to normal working hours;
 - Fit all required plant and equipment with appropriate mufflers or silencers of the type recommended by the manufacturer;
 - Vibratory compaction equipment shall be used in a mode which minimises the incident vibration at nearby residential and other sensitive properties; and
 - Carry out noise and vibration monitoring at the start of any new phase of works, to check source sound and vibration emission data from plant on-site and following any complaints.
- 7.11 The operation most likely to give rise to vibration during the construction phase is likely to be the piling works. It may be prudent to install vibration-monitoring equipment during this particular phase of work so that any complaints can be dealt with effectively, by demonstrating that works fall within accepted industry criteria.
- 7.12 A regular report of noise and vibration monitoring levels and any exceedances of the site action levels will be provided to London Borough of Haringey.

Noise and Vibration Monitoring Regime

- 7.13 Noise and vibration monitoring will be undertaken during key construction stages and results reported detailing monitoring levels and any exceedances. Warning levels will be inputted into the Noise Monitors to allow the Site Manager and other staff to know when dangerous levels of noise are being reached. This will be communicated with a traffic light system/ with green being good to carry on, amber reaching the trigger level and caution proceeding and red levels to stop works and to reconsider methods.
- 7.14 The primary methodology for the noise and vibration impacts associated with the construction of the scheme will be assessed based on the guidance in BS 5228-1 and BS 5228-2.
- 7.15 BS 5228-1 sets out the techniques to predict the likely noise impacts from construction and open site works, based on detailed information on the type and number of plant being used, their location and the length of time they are in operation. The standard provides

methods for determining the significance of construction noise levels considering the change in the existing noise level brought about by the construction work, based on the ABC method which is presented in Table 7.2 below.

Table 7.2: Threshold of Potential Significant Noise Impacts at Dwellings

Assessment Category and Threshold Value Period	Threshold Value, in Decibels (dB) (LAeq1T)		
	Category AA	Category BB	Category CC
Night time (23:00-07:00)	45	50	55
Evenings (19:00-23:00) and weekends	55	60	65
Daytime (07:00-19:00) and Saturdays (07:00-13:00)	65	70	75

Note 1: A potential significant impact is indicated if the L_{Aeq1T} noise level arising from the site exceeds the threshold level for the category appropriate to the ambient noise level.

Note 2: If the ambient noise level exceeds the Category C threshold values given in the table i.e. the ambient noise level is higher than the above values), then a potential significant impact is indicated if the total $L_{Aeq,T}$ noise level for the period increases by more than 3 dB due to site noise.

Note 3: Applied to residential receptors only

A) Category A: threshold values to use when ambient noise levels (when rounded to the nearest 5 dB) are less than these values

B) Category B: threshold values to use when ambient noise levels (when rounded to the nearest 5 dB) are the same as Category A values.

C) Category C: threshold values to use when ambient noise levels (when rounded to the nearest 5 dB) are higher than Category A values.

Source: BS 5228-1, Table E.1

- 7.16 BS 5228-2 provides recommendations for basic methods of vibration control relating to construction and open sites. The document presents guidance on the significance of vibration impacts in terms of human response, as outlined in Table 7.3. For assessment of construction vibration levels are given in terms of the Peak Particle Velocity (PPV).

Table 7.3: Guidance on Impacts of Vibration Levels Perceptible to Humans

Vibration Level (PPV)	Impact
0.14 mm/s	Vibration might be just perceptible in the most sensitive situations for most vibration frequencies associated with construction. At lower frequencies, people are less sensitive to vibration
0.3 mm/s	Vibration might be just perceptible in residential environments
1.0mm/s	It is likely that vibration of this level in residential environments will cause complaint, but can be tolerated if prior warning and explanation has been given to residents
10 mm/s	Vibration is likely to be intolerable for any more than a very brief exposure to this level

Source: BS 5228-2, Table B.2

- 7.17 The document also presents guidance on the significance of vibration impacts in terms of structural response, and this is outlined in Table 7.4 below.

Table 7.4: Guidance on the Significance of Vibration Impacts in Terms of Structural Response

Building Type	Peak Component Particle Velocity in Frequency Range of Predominant Pulse	
	4 Hz to 15 Hz	15 Hz and above
Reinforced or framed structures industry and heavy commercial buildings	50 mm/s at 4Hz and above	50 mm/s at 4 Hz and above
Unreinforced or light framed structures	15 mm/s at 4 Hz increasing at 20 mm/s at 15 Hz	20 mm/s at 15 Hz increasing to 50 mm/s at 40 Hz and above
Residential or light commercial buildings		

Note 1: Values referred to are at the base of the building

Note 2: At frequencies below 4 Hz, a maximum displacement of 0.6 mm (zero to peak) is not exceeded

Note: BS 5228-2, Table B.2

- 7.18 BS 6472-1 provides guidance on predicting the human response to vibration in buildings within the frequency range of 0.5 Hz to 80 Hz. The document states that the human response to vibration within buildings is best evaluated using the Vibration Dose Value (VDV). The VDV can be used to estimate the probability of adverse comment which might be expected from human beings experiencing vibration in buildings.
- 7.19 VDV is measured over a 16 hour daytime period (07:00-23:00 or 8 hour night time period (23:00- 07:00)). Table 7.5 below provides vibration dose value ranges which might result in various probabilities of adverse comment within residential buildings.

Table 7.5: VDV Ranges Which Might Result in Various Probabilities of Adverse Comment within Residential Buildings

Place & Time	Low Probability of Adverse Comment (ms-1.75)	Adverse Comment Possible (ms-1.75)	Adverse Comment Possible (ms-1.75)
Residential Buildings (16hour day)	0.2 to 0.4	0.4 to 0.8	0.8 to 1.6
Residential Buildings (8hour day)	0.1 to 0.2	0.2 to 0.4	0.4 to 0.8

Source: BS 6472-1, Table 1

- 7.20 Any exceedances of noise and vibration levels above a set criterion will be escalated to the site manager and then to the lead contact for the CEMP, and action will be taken immediately to reduce the noise and vibration levels.
- 7.21 To reduce any exceedances of noise and vibration levels caused by construction works, the site manager will review the works at hand and cease construction for a required time if needed, and will advise that concurrent works are not done at the same time and spread out over the day.

Audit

- 7.22 The CEMP will be audited on a monthly basis by the Project Manager. Periodic auditing of the CEMP will ensure the identified environmental risks are being safeguarded against and the commitments and requirements are being delivered.
- 7.23 This audit will involve the Project Manager and the Principal Contractor reviewing the site observation and monitoring records.
- 7.24 The aim of the audit will be to:
- Assess the effectiveness of the mitigation measures;
 - Identify any shortcomings in the actions;
 - Check compliance with legislation and consent requirements; and
 - Specify any further action needed to safeguard the environment.
- 7.25 A CEMP progress report can provide updates and a record of the compliance with the environmental commitments outline within the CEMP, including relevant legal consents and licences.

Management Structure

- 7.26 The Construction (Design and Management) Regulations 2015 (CDM Regulations) came into force on 6th of April 2015, replacing CDM 2007. As per the requirements of the CDM Regulations, a Principal Designer and Principal Contractor must be appointed prior to the commencement of works on site or carry out these duties in respect of the CDM Regulations themselves.
- 7.27 Responsibility for all environmental issues relating to the development of the Site rests with the Principal Contractor and the Principal Designer. Individual responsibilities will be divulged throughout the management team relating to the co-ordination of inspection, monitoring or reporting. Such individual responsibilities are outlined below.

- 7.28 The Principal Contractor will have the central role in managing Safety, Health, Environment and Quality (SHEQ) issues during construction of the development. The Principal Contractor and all sub-contractors will have to implement the environmental control measures set out within this CEMP.

Non-Compliance and Corrective Action

Measures within the Mitigation Schedule

- 7.29 In the event of non-compliance of CEMP actions, the Project Manager and / or Principal Contractor can request corrective action to make amends and to ensure construction activities are in accordance with legislative and best practice environmental actions and requirements and agreed mitigation measures. This will be issued to the relevant contractor via a CEMP Corrective Note, starting with what action is needed.
- 7.30 Any breaches of legislation requirements will be immediately acted upon, including ceasing activity (if deemed necessary).

Incident Reporting and Corrective Actions

- 7.31 All incidents including actual or potential (near miss) for injury, or damage to equipment, property or the environment will be reported to the Project Manager or Construction Manager as soon as practicable after the occurrence. Regardless of how minor the incident appears, it will be reported. An "Incident Investigation Report" will be completed within 18 hours of the incident. Prompt reporting will allow an immediate investigation to take place and prevent similar situations occurring.
- 7.32 The reporting of hazards is the responsibility of all staff and if a hazard or a safety problem is identified, it will be brought to the attention of the Construction Manager immediately who will investigate and rectify the situation as soon as practicable.

Results of the Monitoring

- 7.33 Scheduled monitoring of environmental performance and formal compliance auditing will be conducted throughout the construction activities. This will enable the overall effectiveness of established environmental measures and compliance procedures to be assessed and allow areas of underperformance to be identified so corrective actions can be taken to strengthen environmental safeguards or improve outcomes.
- 7.34 The monitoring programme proposed under this CEMP includes daily event and monthly based inspections.

Daily Inspections

- 7.35 Routine daily visual inspections will be carried out on all construction activities and work areas in order to check compliance with this CEMP and regulatory conditions. The results of these inspections shall be recorded on a Daily Site Environmental Form (DSEF).

Event Based Inspections

- 7.36 Event based checks shall be conducted by the Project Manager/Construction Manager and Project Manager following any significant event such as rainfall of sufficient quantity to generate run off, high winds, the receipt of an environmental complaint, issue of a non-compliance report or any exceedance in monitoring results. Event based checks should be recorded on a separate inspection form detailing the reasons, observations, findings and outcomes of the inspection which should then be attached to the DSEF.

Monthly Reporting

- 7.37 A monthly environmental monitoring report shall be prepared and submitted for review to the Project Team. The report shall include a summary of environmental issues and actions during the period to ensure compliance with the CEMP, including details of any action item requests, complaints received, incidents and associated investigations and corrective actions, and environmental inductions and awareness training provided during the period.

8 Environmental Reports, Industry Guidance and Best Practice

Planning Application – Technical Reports

- 8.1 This document has been prepared in support of the forthcoming planning application to redevelop the Former Ashley House site, Ashley Road, Tottenham Hale, Haringey, N17 9LZ.
- 8.2 Works on site will be expected to incorporate the appropriate pollution prevention mitigation measures consistent with best practice and industry guidance. Key references to be adopted include:
- The Control of Dust and Emissions from Construction and Demolition – Best Practice Guidance (July 2014)
 - Control of Pollution Act 1974 (CoPA) – Provision to Control Noise
 - Section 61 of the CoPA allows a legally binding agreement with the local authority to limit noise levels at the boundary of the construction site, providing the best practicable means of preventing, reducing minimising noise.
- 8.3 The project will be registered under the ‘Considerate Constructors Scheme’ and will target to exceed the Considerate Constructors minimum requirements and comply with the Code of Considerate Practice, as outlined below:
- **Considerate:** All work is to be carried out with positive consideration to the needs of traders and businesses, site personnel and visitors, and the general public. Special attention is to be given to the needs of those with sight, hearing and mobility difficulties.
 - **Environment:** Be aware of the environmental impact of your site and minimise as far as possible the effects of noise light and air pollution. Efforts should be made to select and use local resources wherever possible. Attention should be paid to waste management, reusing and recycling materials where possible.
 - **Cleanliness:** The working site is to be kept clean and in good order at all times, Site facilities, offices, toilets and drying rooms should always be maintained to a good standard. Surplus materials and rubbish should not be allowed to accumulate on the site or spill over into the surroundings. Dirt and dust from construction operations should be kept to a minimum.
 - **Good Neighbour:** General information regarding the scheme should be provided for all neighbours affected by the work. Full and regular communication with neighbours, including adjacent residents, trader and businesses, regarding programming and site activities should be maintained from pre-start to completion.
 - **Respectful:** Respectable and safe standards of dress should be maintained at all times. Lewd or derogatory behaviour and language should not be tolerated under threat of severe disciplinary action. Pride in the management and appearance of the site and the surrounding environment is to be shown at all times. Operatives should be instructed in dealing with the general public.
 - **Safe:** Construction operations and site vehicle movements are to be carried out with care and consideration for the safety of site personnel, visitors and the general public. No building activity should be a security risk to others.
 - **Responsible:** Ensure that everyone associated with the site understands, implements and complies with this code.

- **Accountable:** The Considerate Contractors Scheme poster is to be displayed where clearly visible to the general public. A site's contact details should be obvious to anyone affected by its activities.

9 Summary

- 9.1 Tetra Tech has been instructed by Re:Shape T Ltd to provide an outline Construction Environmental Management Plan (oCEMP) as part of the planning application to redevelop the Former Ashley House site, Ashley Road, Tottenham Hale, Haringey, N17 9LZ.
- 9.2 A summary of the potential environmental effects likely to arise during the construction works, and a summary of the likely sensitive receptors to be considered has been presented in this outline CEMP. Proposed measures to mitigate the potential environmental effects are also included with reference to the framework of mitigation measures.
- 9.3 An outline of the key roles and responsibilities of the Project Team staff have been outlined in this outline CEMP.
- 9.4 The construction site management and administration regime has been set out within the outline CEMP, detailing staff induction and training, supply chain procurement, local employment, health and safety, community liaison, communication and complaints.

Appendices

Appendix A - Mitigation Measures

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A. General Activities – Site Establishment

Objective

- Prevent or minimise impacts of construction activities; and
- Prevent disturbance to the local community.

Ref	Objective	Action / Measure Monitoring / Audit Requirement	Responsible	Notes
1	Redevelopment will be registered with the national Considerate Constructor Scheme (CCS).	• Redevelopment registered with the CCS before works commence on site. • Toolbox talks to contractors prior to commencing work on site	Principal Contractor	• The construction team will aim to achieve the highest standards for recognition at national level. • The project will support and participate in local Considerate Constructor Schemes or similar initiatives.
2	The site will operate between: Monday – Friday 08:00 – 18:00; and Saturday 08:00 – 13:00.	• Contractor method statements outline the approach and detail for achieving measures • Toolbox talks to contractors prior to commencing work on site • All complaints recorded within central database are investigated and responded to within agreed timeframes. • Inform public / stakeholders in accord with communication strategy.	Principal Contractor	• It is therefore requested that deliveries could be accepted between 08:00 and 18:00 Monday to Friday, but with the commitment that deliveries would be minimised between 8am and 9am and also between 3pm to 5pm with the majority of the deliveries times for between 9.30am and 3pm, Monday to Saturday. • Deliveries will be timed to avoid network conditions and school and nursery trips. • Re-timing out of peak time will aid the operational efficiency of the construction site and the neighbouring area.
3	The site boundaries will be secured by hoardings.	• Hoarding erected before construction works commence on site and in accord with approved details (site hoarding strategy). • Hoarding maintained for duration of the works.	Principal Contractor	• Hoardings should provide a 2.4m high barrier from ground level. Where hoardings are located across ground the top edge should slope evenly and bottom adjusted as required to achieve 2.4m. • Details are to be specified by the contractor and agreed with the design team prior to construction on site.
4	All site personnel will be fully trained before entering site.	• All appointed contractors reviewed / assessed for minimum training / qualifications as part of procurement process.	Principal Contractor/ Contractor	• Trade Contractors to provide training records.

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5	Trained and responsible supervisor on-site during working times to maintain logbook and carry out Site inspections.	• All appointed supervisors suitably experienced. • Regular site inspections during works.	Principal Contractor	
6	Deviation from approved method statements will be permitted only with prior approval from the Principal Contractor and other relevant parties (i.e. statutory authorities).	• Toolbox talk to all staff prior to commencing work on site. • All Method Statements / Plans (and subsequent amendments) approved by Principal Contractor only.	Principal Contractor/ Contractor	• This will be facilitated by formal review before any deviation is undertaken. • Deviations from approved method statements - consult with the LPA / relevant statutory authorities re process. • Protocol for approval dependent on detail, size, scale and likely impact of the deviation sought.

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B. Health and Safety

Objective

- Prevent accidents or injury on site.

Ref	Objective	Action / Measure Monitoring / Audit Requirement	Responsible	Notes
1	During construction, the development site will remain closed to unauthorised personal / the general public.	• Toolbox talk to all staff prior to commencing work on site. • No members of the public located within unauthorised areas. • Public not involved in accidents or injured.	Principal Contractor/ Contractor	• Refer to Chapter 5 of CEMP. • Access will be controlled by competent personnel / supervisor.
2	A fully designed and developed scaffold scheme will be implemented.	• Contractor method statements outline the approach and detail for achieving measures. • Toolbox talks to contractors prior to commencing work on site.	Principal Contractor/ Contractor	• All working along scaffolding to be undertaken in accord with National Access and Scaffolding Confederation (NASC) Safety Guidance. • NASC SG4:15 Preventing falls in scaffolding. • Prior to commencement of the works, the scaffolds will be inspected.
3	A Construction Phase Health & Safety Plan will be developed.	• Construction Phase Health & Safety Plan prepared and approved before works commence on site. • Contractor method statements include health and safety assessments / requirements. • Toolbox talks to contractors prior to commencing work on site.	Principal Contractor	• Refer to Chapter 5 of CEMP. • Construction Phase Health & Safety Plan regularly updated.
4	All operators hold a Construction Skills Certification Scheme (CSCS) card.	• All operators on site have valid CSCS card. • All operators completed on-site induction before commencing works.	Principal Contractor/ Contractor	• Entry to site will not be permitted if operatives arrive to site without this.
5	All accidents and incidents must be reported to the Health and Safety Advisor immediately.	• Reports of accidents / incidents are reported within 5 hours of event. • Toolbox talks to staff / contractors prior to commencing work on site.	Principal Contractor/ Contractor	• Refer to Chapter 5 CEMP. • Trade Contractor coordination meetings and daily inspections. • Incident must be reported to construction site management team.

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6	Appropriate personal protective equipment (PPE) must be worn at all times	- Contractor method statements include health and safety assessments / requirements. - Toolbox talks to contractors prior to commencing work on site.	Principal Contractor/ Contractor	- Refer to Chapter 5 CEMP. - As part of the requirements set out within the health and safety documentation. - PPE equipment determined from the associated workplace / activity hazards and risks identified. - It is a requirement that all operatives wear high visibility clothing in the vicinity of moving vehicle areas.
7	All mechanical handling equipment will have an audible reversing alarm.	- Contractor method statements include health and safety assessments / requirements - Toolbox talks to contractors prior to commencing work on site. - Regular inspections of equipment to ensure - appropriate working.	Contractor	- Any reversing alarms will need to take into consideration any restrictions on noise due to surrounding residential streets. - Use of reversing alarms will be restricted to the core delivery hours of 08:00- 18:00 to avoid unsociable hours when the impact of the noise from the reversing alarm would be the greatest. - The internal site layout and site compound will be designed to allow construction vehicles to travel in forward gear and minimize the requirement to reverse. - Construction vehicles will not be required to reverse on the public highway - network. However, if the situation arises when this is required, then a banksman will be used and the reversing alarm will be turned off to minimize noise nuisance
8	Fitted flashing lights are to be used where appropriate.	- Contractor method statements include health and safety assessments / requirements. - Toolbox talks to contractors prior to commencing work on site. - Regular inspections of equipment to ensure appropriate working.	Contractor	Any defective equipment will be documented and actioned as soon as reasonably practicable.

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9	A banksman / suitable trained personnel must accompany all reversing vehicle.	• Contractor method statements include health and safety assessments / requirements. • Toolbox talks to contractors prior to commencing work on site.	Contractor	• The clothing should be orange and have the word "Banksman" on the back.
10	Drivers of site vehicles will be required to demonstrate that they hold valid appropriate certification, applicable to the type of plant or equipment that they are operating.	• Contractor method statements include health and safety assessments / requirements. • Toolbox talks to contractors prior to commencing work on site.	Principal Contractor/ Contractor	• A register of certification will be kept and maintained by the Construction Management Team. • Method statements to be produced to illustrate how vehicles will be safely unloaded.
11	Clearly designated areas for storage, servicing, delivery vehicle parking and preassembly / fabrication.	• Designated areas determined and laid out before relevant works commence. • Regular inspection to ensure appropriate utilisation of designated areas.	Principal Contractor	

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C. Community Liaison

Objective

- Maintain good relations with the local community.

Ref	Objective	Action / Measure Monitoring / Audit Requirement	Responsible	Notes
1	Appoint the Neighbourhood Liaison Officer.	• A Neighbourhood Liaison Officer is appointed before works commence.	Project Manager	• Refer to Chapter 5 CEMP. • Neighborhood Liaison Officer will be named representative for the contact with the community.
2	Appoint a dedicated point of contact for during normal working hours and after hours.	• Notice board with contact details is visible from the outside site. • Inform public / stakeholders in accord with communication strategy.	Principal Contractor	• Refer to Chapter 5 CEMP. • Notice board to be maintained during entire period of construction works.
3	A Construction Working Group will be established.	• Details of a Construction Working Group will be set up before works commence	Principal Contractor	• Refer to Chapter 5 CEMP. • Set up to address the concerns of surrounding residents.

D. Lighting

Objective

- Prevent disturbance to the local community; and
- Maintain site security.

Ref	Objective	Action / Measure Monitoring / Audit Requirement	Responsible	Notes
1	Lighting on site during the works will be managed to prevent / minimise light spillage to the surrounding area.	• Artificial lighting operated and managed in accordance with industry guidelines. • All complaints recorded within central database are investigated and responded to within agreed timeframes.	Contractors	• Construction contractors are required to employ the methods suggested in the Institution of Lighting Engineers' guidance notes for the reduction of light pollution and the provisions of BS 5489 and Code of Construction Practice for the Design of Road Lighting. • Artificial Site lighting for construction works will be sensitivity positioned and directed, from residential buildings.
2	Appropriate lighting will be in place to balance the need for public safety / safe passage, without causing shadows or excessive light pollution /	• Artificial lighting operated and managed in accordance with industry guidelines	Principal Contractor/ Contractor	• It is assumed lighting impacts on surrounding residential areas will be minimal.

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visual intrusion to adjacent properties or land.

E. Waste

Objective

- Minimise the production of waste; and
- Avoid unnecessary waste to the environment.

Ref	Objective	Action / Measure Monitoring / Audit Requirement	Responsible	Notes
1	Measures will be put in place to minimise the quantity of materials ordered and used.	• Contractor method statements outline the approach and detail for achieving measures. • Regular site inspections to identify wasteful practices.	Contractor	• Refer to Chapter 4 CEMP.

F. Utilities

Objective

- Prevent damage to utility systems;
- Prevent uncontrolled release of contaminants;
- Avoid accidents or injury to site workers; and
- Prevent accidents or injury to visitors accessing the site.

Ref	Objective	Action / Measure Monitoring / Audit Requirement	Responsible	Notes
1	All existing live services will be disconnected prior to works commencing.	• Regular inspections to identify that markings for utilities maintained during the works. • Toolbox talks to contractors prior to commencing work on site.	Principal Contractor	
2	Any damage to existing drainage networks will be immediately repaired.	• Measures to repair damage to utility infrastructure in place within 24 hours.	Contractor	

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G. Ground Conditions

Objective

- Prevent pollution to the existing environment.

Ref	Objective	Action / Measure Monitoring / Audit Requirement	Responsible	Notes
1	An emergency Spillage Action Plan will be produced to ensure spillages and leakages are immediately contained.	• Contractor method statements outline the approach and detail for achieving measures.	Principal Contractor	• Site staff will have read and understood, and on-site provisions will be made to contain a serious spill or leak through the use of booms, bunding and absorbent material.
2	Stockpiling of grossly contaminated soils should be avoided, where possible. Where necessary, stockpiles will be covered when not in use, placed on impermeable sheeting / hardstanding.	• Regular inspections of site and adjacent areas to ensure appropriate measures are being implemented • Contractor method statements outline the approach and detail for achieving measures.	Contractor	• Stockpiles be covered when not in use. • Stockpiles placed sheeting / hardstanding.
3	In the event that contamination is discovered during construction, work will stop immediately, and measures will be taken to prevent further disturbance and mobilisation of contaminants, until the contamination can be treated <i>in-situ</i> or removed for off-site disposal.	• Toolbox talk to all contractors prior to commencing work on site. • Contractor method statements outline the approach and detail for achieving measures.	Contractor	

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H. Sustainability

Objective

- Reduce the impact of construction activities on the environment.

Ref	Objective	Action / Measure Monitoring / Audit Requirement	Responsible	Notes
1	All relevant contractors will be required to investigate approaches to minimise and reduce the use of energy, such as: Use of alternatives to diesel / petrol powered equipment (where possible) e.g. electric or battery powered equipment for example electric traffic lights, electric pallet trucks, electric hoists and forklifts. The incorporation of sources of renewable energy to offset the use of main utilities. Selection and specification of energy efficient plant and equipment.	• Contractor method statements outline the approach and detail for achieving measures. • Toolbox talks to all contractors prior to commencing work on site.	Principal Contractor/ Contractor	• When employing contractors, sufficient information should be included within tenders, contracts and pre-start meetings to cover pollution prevention, sustainable materials, training and monitoring and reporting.
2	All relevant contractors will be required to investigate approaches to minimise and reduce the use of water, such as: Implementation of staff-based initiatives such as turning off taps, plant and equipment when not in use both onsite and within site offices. Use of recycling water systems such as wheel washes, site toilets hand wash. Use of a rainwater harvesting system for use in equipment and vehicle washing.	• Contractor method statements outline the approach and detail for achieving measures. • Toolbox talks to all contractors prior to commencing work on site.	Principal Contractor/ Contractor	• When employing contractors, sufficient information should be included within tenders, contracts and pre-start meetings to cover pollution prevention, sustainable materials, training and monitoring and reporting.
3	Construction contractor's vehicles will adopt 'green fleet management practices'.	• Contractor method statements outline the approach and detail for achieving measures.	Principal Contractor/ Contractor	• Contractor method statements should identify measures to improve vehicle efficiency and reduce CO2 emissions. Measures could include: use of fuel monitoring equipment in vehicles;

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eco- driver training; accreditation with FORS (Freight Operator Recognition Scheme) or SAFED (Safe and Fuel Efficient Driving); and use low carbon vehicles (i.e. hybrid electric, electric, and bio-methane).

4	Implementation of staff-based initiatives such as turning off taps, plant and equipment when not in use both on-site and within site offices; reducing paper consumption within the office, including double-sided printing and photocopying.	• Toolbox talk to all staff prior to commencing work on site.	Principal Contractor
5	The energy and water consumption of the project throughout the construction programme will be monitored, either through sub-metering or utility bills, to allow comparison against best practice benchmarks.	• Contractor method statements outline the approach and detail for achieving measures. • Before works commence, strategy identified for recording consumption (i.e. installation of meter). • Periodic monitor of consumption readings. • Review and analyse utility consumption regularly against agreed benchmarks. • Toolbox talks to all contractors prior to commencing work on site.	Principal Contractor

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I. Noise and Vibration

Objective

- Reduce the noise impact arising from construction activities; and
- Maintain good relations with the local community.

Ref	Objective	Action / Measure Monitoring / Audit Requirement	Responsible	Notes
1	Consideration will be given within each construction process to selecting plant and equipment that keeps noise to as low a level as possible. Where possible non-percussion tool / attachments will be used to avoid noise or vibration to adjoining properties and local community.	• Regular check of works program and site inspections to ensure planning of plant and equipment are optimally located to minimise noise where able.	Principal Contractor/ Contractor	• Undertake in accord with best practice. • As far as reasonably practicable, plant or equipment liable to create noise and / or vibration will be located away from sensitive receptors. Barriers will be used whenever possible. • A review of the positioning of the dominant plant and equipment items to maximise screening between close receptors and the machinery. • This will be reviewed once a contractor is appointed.
2	All trade contractors to demonstrate familiarisation with current noise legislation and British Standards (BS) such as BS 5228 (Parts 1 and 2).	• Toolbox talks to contractors prior to commencing work on site. • Contractor method statements outline the approach and detail for achieving measures.	Principal Contractor/ Contractor	• Relevant standards will form a prerequisite of their appointment. • When employing contractors, sufficient information should be included within tenders, contracts and pre-start meetings to cover noise prevention, training and monitoring and reporting. • Undertake in accord with best practice. • This will be reviewed once a contractor is appointed.
3	Use of solid hoarding.	• Hoarding in place before works commence and maintained for duration of works.	Contractor	• Undertake in accord with best practice • This will be reviewed once a contractor is appointed.
4	Use of temporary acoustic barriers where appropriate and other noise containment measures such as screens, sheeting and acoustic hoardings at the construction site boundary to minimise noise breakout	• Contractor method statements outline the approach and detail for achieving measures. • Measures to reduce noise emissions are in place and maintained for the duration		• This will be reviewed once a contractor is appointed.

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	and reduce noise levels at the potentially affected receptors.	of the works, in accord with the method statement.		
5	Hydraulic construction to be used in preference to impact techniques.	Contractor method statements outline the approach and detail for achieving measures.	Contractor	- Undertake in accord with best practice. - This will be reviewed once a contractor is appointed.
6	Regular maintenance and servicing of vehicles, equipment and plant.	- Contractor method statements outline the approach and detail for achieving measures. - Copies of appropriate certification are provided for all plant and equipment.		Refer Plant / Equipment certification requirement.
7	All plant and equipment to be used for the works is to be properly maintained, silenced (where appropriate), and operated to prevent excessive noise and switched off when not in use and where practicable.	- Contractor method statements outline the approach and detail for achieving measures. - Regular site inspections to monitor Copies of appropriate certification are provided for all plant and equipment.	Contractor	- Refer Plant / Equipment certification requirement. - Adequate lubrication to all plant / equipment (i.e. cranes, working platforms) to control unnecessary noise. - Undertake in accord with best practice.
8	Plant to be certified to meet relevant current legislation and Noise and Vibration Control on Construction and Open Sites (BS 5228) Standards.	- Toolbox talks to contractors prior to commencing work on site. - Contractor method statements outline the approach and detail for achieving measures.	Contractor	When employing contractors, sufficient information should be included within tenders, contracts and pre-start meetings to cover noise prevention, training and monitoring and reporting.
9	Loading and unloading of vehicles, dismantling of equipment such as scaffolding or moving equipment or materials around site is to be conducted in such a manner as to minimise noise generation and, where practical, away from noise sensitive areas.	- Toolbox talks to contractors prior to commencing work on site. - Contractor method statements outline the approach and detail for achieving measures. - Regular site inspections to monitor activities in accord with method statement to minimise noise where able.	Contractor	Undertake in accord with best practice.
10	Complaints about noise or incidences where action levels are exceeded are to be reported to the Principal Contractor and immediately investigated.	- Action Levels are set before works commence. - Consultation / convey information with stakeholders / general public.	Principal Contractor	Provision of a Complaints Register.

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J. Traffic and Transport

Objective

- Minimise impacts to surrounding road network;
- Avoid and reduce disturbance to the local community;
- Avoid adverse traffic impacts; and
- Prevent accidents or incidents to workers and visitors to the site.

Ref	Objective	Action / Measure Monitoring / Audit Requirement	Responsible	Notes
1	Personnel will be encouraged to access the site by foot, cycle or public transport.	• Toolbox talks to contractors prior to commencing work on site. • Facilities to implement alternative modes of transport in place before works commence.	Contractor	• Construction staff Travel Plan to be implemented and developed in line with the Construction Management Plan Proposal will be tabled for using in-site parking initially and then revert to the Construction Staff Travel Plan.
2	Sub-contractors will be asked to book deliveries a minimum of 24 hours ahead.	• Toolbox talks to contractors prior to commencing work on site. • Regular review of works program and logistics to manage traffic movement.	Contractor	• Refer to measures under Chapter 4 of the CEMP • When drivers approach the site, they will be required to call ahead the duty gateman • / banksman to be given permission to proceed to the site. • If, any reason, the gateman / banksman advises a driver not to proceed to the site (e.g. if there is no available space on site), the driver will be instructed to wait off site.
3	Loading and unloading will be via the local estate road.	• Regular review of works program and logistics to manage traffic movement • Regular inspections of surrounding public highway.	Contractor	• Refer to measures under Chapter 4 of CEMP.
4	A detailed Traffic and Pedestrian Management Plan will be developed and updated as necessary (detailed logistics planning and delivery programming).	• Traffic and Pedestrian Management Plan in place before works commence.	Principal Contractor	• Refer to measures under Chapter 4 of CEMP • Produced as an element of the Construction Phase Health & Safety Plan. • This will include drawings, maps and written text detailing the preferred delivery vehicle approaches to the site along with procedures for controlling vehicles and pedestrians on the site itself.

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- The Traffic and Pedestrian Management Plan will confirm all relevant standards and legislative H&S requirements.

5	A delivery / collection policy will be developed (to be included within the Traffic and Pedestrian Management Plan).	• Traffic and Pedestrian Management Plan in place before works commence.	Principal Contractor	• Refer to measures under Chapter 4 of CEMP • This policy will include the following as a minimum: – Permitted hours for deliveries/collections/access to the site; – Arrangements for deliveries/collections outside of permitted hours, including licence applications; – Access routes and storage areas; – Queuing / temporary holding point areas and arrangements; and – Code of Conduct and PPE requirements for delivery/collection drivers. • The hours of operation for the site will be 08:00 to 18:00, Monday to Friday, and 08:00 to 13:00 on Saturdays (on specific requirement). The site will not be in operation for construction on Sundays or Bank Holidays. It is therefore requested that deliveries could be accepted between 08:00 and 18:00 Monday to Friday, but with the commitment that deliveries would be minimised between 8am and 9am and also between 3pm to 5pm with the majority of the deliveries times for between 9.30am and 3pm, Monday to Saturday. • Deliveries will be timed to avoid network conditions and school and nursery trips. • Re-timing out of peak time will aid the operational efficiency of the construction site and the neighbouring area.
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6	The Traffic and Pedestrian Management Plan will identify pedestrian routes through and around the site.	Traffic and Pedestrian Management Plan in place before works commence.	Principal Contractor	Refer to measures under Chapter 4 of CEMP.
7	The Traffic and Pedestrian Management Plan will be issued to all contractors and suppliers as part of their site induction and order documentation	- Toolbox talks to contractors prior to commencing work on site - Contractor method statements outline the approach and detail for achieving measures	Principal Contractor	Refer to measures under Chapter 4 of CEMP.
8	Times and routes for external deliveries will be attached to material orders and subcontractor orders and specifically identified to Trade Contractor Principals at Pre-Contract Meetings.	- Toolbox talks to contractors prior to commencing work on site. - Regular review of works program and logistics to manage traffic movement.	Principal Contractor	Refer to measures under Chapter 4 of CEMP.
9	A jet washing facility will be located at the exit point.	- Regular review of works program / logistics for co-ordinating wheel wash facilities at site exit points - Designated area / layout / drainage arrangements at site exit points finalised prior to works commencing. - Vehicles inspected when leaving the site to ensure mud / debris deposits removed.	Principal Contractor	Refer to measures under Chapter 4 of CEMP.
10	All traffic routes will be kept clean, tidy and even prevent displacement of loads.	- Regular inspections of access roads / haul routes for mud / debris. - Frequency of inspections determined from review of works program (i.e. increases in traffic) and weather (i.e. drier weather).	Principal Contractor	Any waste deposited on the roads will be removed immediately. If necessary, a street sweeper will be deployed as and when required by the Site Management.
11	Contractors will be issued with a project route map and delivery schedule that they must pass on to their delivery drivers.	- Toolbox talk to all contractors prior to commencing work on site. - Contractor method statements outline the approach and detail for achieving measures.	Principal Contractor	Refer to measures under Chapter 4 of CEMP.
12	Consultation with the highway authorities on any required road	Regular review of works program and logistics.	Principal Contractor	Refer to measures under Chapter 4 of CEMP.

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	closures and diversions throughout the duration of works.	• Consultation / convey information in accord with consultation strategy.		
13	Alternative temporary diversion routes for pedestrians and cyclists will be identified and agreed with the highway authorities.	• Regular review of works program and logistics • Consultation / convey information in accord with consultation strategy.	Contractor	• Refer to measures under Chapter 4 of CEMP.
14	Waste storage and pickup will occur within the site boundary.	• Regular review of works program and logistics. • Regular inspections to ensure waste storage and pickup maintained within designated area within the site boundary.	Contractor	•
15	Operators of large vehicles during the construction phase must be subject to appropriate safety measures to prevent harm or injury to cyclists.	• Contractor method statements outline the approach and detail for achieving measures. • Toolbox talks to contractors prior to commencing work on site. • Regular inspections of vehicles to ensure measures in place.	Principal Contractor/ Contractor	• Refer to measures under Chapter 4 of CEMP.

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K. Water Management

Objective

- Prevent pollution to the highway network;
- Prevent pollution to the existing environment; and
- Avoid contamination of the existing environment.

Ref	Objective	Action / Measure Monitoring / Audit Requirement	Responsible	Notes
1	Temporary drainage arrangements will be required on site at the jet wash location to prevent dirty water and arising's being washed onto the road/footpath.	• Regular review of works program / logistics for co-ordinating wheel wash facilities at site exit points. • Designated area / layout / drainage arrangements at site exit points finalised prior to works commencing. • Vehicles inspected when leaving the site to ensure mud / debris deposits removed.	Principal Contractor	
2	A sump will be used to minimise the risk of oils or other contaminants entering the drainage system/watercourse.	• On site drain infrastructure installed prior to works commencing. • On site drain infrastructure in accord with arrangements agreed with Thames Water Utilities Limited (TWUL).	Contractor	
3	Any water which may have come into contact with contaminated materials, will be disposed of in accordance with the Water Resources Act (1991) and other legislation, and to the satisfaction of the Environment Agency or TWUL	• Contractor method statements outline the approach and detail for achieving measures. • Works undertaken and monitored in accord with mitigation / remediation strategy. • On site drain infrastructure in accord with arrangements agreed with TWUL. / EA.	Principal Contractor	
4	Waste water / foul water (i.e. on-site sanitary facilities, sediment laden water from excavations, washing down / wheel wash facilities) during construction to be drained via existing TWUL combined drains.	• On site drain infrastructure installed prior to works commencing. • On site drain infrastructure in accord with arrangements agreed with TWUL.	Principal Contractor	

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5	The contractor will implement control measures during piling.	Contractor method statements outline the approach and detail for achieving measures.	Contractor	
6	Sediment traps will be installed on all surface water drains surrounding the site. Surface drainage, ground water seepage and any dewatering of the site is to pass through a settlement tank prior to entering the foul water sewer.	- Regular inspections of drainage infrastructure - On site drain infrastructure installed prior to works commencing. - On site drain infrastructure in accord with arrangements agreed with TWUL.	Contractor	
7	Liquids from oil sumps / drains will be stored in bunded containers and disposed of appropriately.	- Toolbox talks to contractors prior to commencing work on site. - Designated area / layout / storage arrangements finalised prior to works commencing. - Regular inspections to monitor measures and identify hazardous materials stored within designated locations. - On site infrastructure in accord with arrangements agreed with TWUL / EA.	Contractor	All liquids and soils of a potentially hazardous nature (for example, diesel fuels, oils, and solvents) are to be stored on surfaced areas, with bunding.
8	Pollution control measures will be implemented by the contractor where required and spillage containment will be present on site at all times.	- Toolbox talks to all contractors prior to commencing work on site. - Contractor method statements outline the approach and detail for achieving measures.	Contractor	When employing contractors, sufficient information should be included within tenders, contracts and pre-start meetings to cover pollution prevention, training and monitoring and reporting.
9	Refuelling and delivery areas will be located away from surface water drains.	- Contractor method statements outline the approach and detail for achieving measures. - Toolbox talks to contractors prior to commencing work on site. - Regular inspections to review and remediate location of plant / machinery	Contractor	

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relative to the drainage system and potential contamination risk.

10	Disposal of water from brushing and water spraying of heavily-used site hard surfaces and wheel / body washing facilities will be through existing foul sewerage connections subject to agreement with TWUL.	• Designated areas / layout / drainage arrangements finalised prior to works commencing. • Contractor method statements outline the approach and detail for achieving measures. • Toolbox talks to contractors prior to commencing work on site. • Regular inspections to review and remediate location of plant / machinery relative to the drainage system and potential contamination risk. • On site infrastructure in accord with arrangements agreed with TWUL / EA.	Contractor
11	Site access points will be regularly cleaned to prevent build-up of dust and mud.	• Contractor method statements outline the approach and detail for achieving measures • Toolbox talks to contractors prior to commencing work on site • Regular inspections to review and remediate location of plant / machinery relative to the drainage system and potential contamination risk	Contractor
12	Properly contained wheel wash facilities will be used where required, to isolate sediment-rich runoff.	• Regular review of works program / Logistics Plan for co-ordinating wheel wash facilities at site exit points. • Designated area / layout / drainage arrangements at site exit points finalised prior to works commencing. • Vehicles inspected when leaving the site to ensure mud / debris deposits removed.	Contractor

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13	Plant and machinery will be kept away from drains / water sources and will have drip trays installed beneath oil tanks / engines / gearboxes / hydraulics, which will be checked and emptied regularly via a licensed waste disposal operator.	• Designated areas / layout / drainage arrangements finalised prior to works commencing. • Contractor method statements outline the approach and detail for achieving measures. • Toolbox talks to contractors prior to commencing work on site. • Regular inspections to review and remediate location of plant / machinery relative to the drainage system and potential contamination risk.	Contractor
14	Should the mixing of concrete be undertaken on site, the mixing and handling of wet concrete will be undertaken in designated and properly managed areas.	• Designated areas / layout / finalised prior to works commencing. • Contractor method statements outline the approach and detail for achieving measures. • Toolbox talks to contractors prior to commencing work on site. • Regular inspections to review and remediate location of plant / machinery relative to the drainage system and potential contamination risk.	Contractor
15	A designated area will be used for any washing down or equipment cleaning associated with concrete or cementing processes with contaminated waters directed into the foul drainage connection, subject to agreement with TWUL.	• Designated areas / layout / drainage arrangements finalised prior to works commencing. • Contractor method statements outline the approach and detail for achieving measures. • Toolbox talks to contractors prior to commencing work on site. • Regular inspections to review and remediate location of plant / machinery relative to the drainage system and potential contamination risk.	Principal Contractor

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L. Air Quality

Objective

- Prevent or minimise dust emissions during construction;
- Minimise impact of engine emissions on air quality;
- Prevent degradation of air quality on the surrounding environment; and
- Manage and minimise dust emissions during construction.

Ref	Objective	Action / Measure Monitoring / Audit Requirement	Responsible	Notes
1	Site personal shall be trained in dust mitigation.	• Contractor method statements outline the approach and detail for achieving measures. • Toolbox talks to contractors prior to commencing work on site.	Principal Contractor / Contractor	
2	Daily dust inspections.	• Toolbox talks to contractors prior to commencing work on site.	Principal Contractor	
3	Erect solid barriers to site boundary.	• Hoarding erected before construction works commence on site and in accord with approved details (site hoarding strategy). • Hoarding maintained for duration of the works.	Contractor	• Undertake in accord with best practice.
4	Hard surface Site haul routes.	• Hard surface routes in place before works commence.	Principal Contractor	• Inspect internal haul routes for integrity and instigate necessary repairs to the surface as soon as reasonably practicable.
5	Site layout will be planned – machinery and dust causing activities located away from sensitive receptors or mitigated where possible.	• Regular review of works program to ensure planning of plant and equipment are optimally located to minimise impacts where able. • Regular site inspections to ensure machinery and dust causing activities are optimally located and mitigated in accord with method statement to minimise impacts where able.	Principal Contractor	• Plant and vehicles shall be located away from the closest receptors or house in closed environments where possible. • Undertake in accord with best practice. • Review and monitor in accord with: – The control of dust and emissions from construction and demolition: Best Practice Guidance.

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6	Store materials with the potential to produce dust away from site boundaries.	- Regular inspections, especially during / following dry weather events. - Toolbox talks to contractors prior to commencing work on site.	Contractor	
7	Use of water as dust suppressant where applicable to prevent dust becoming airborne.	- Water used as a dust suppressant during construction. - Regular inspections, especially during / following dry weather events.	Contractor	- Dust emissions would be controlled at the working face and loading away area by a fine water spray. - Ensure that dust control and suppression measures are identified and implemented as required and appropriate. - The quantity of water emitted by the sprays would be controlled to prevent any flooding at ground floor level. - Use a dust suppression unit (mobile directional spray units); operators will be tasked with dampening down the areas of stock piles and the crushing machine by the use the water suppression unit using the adjustable spray nozzle to control flow. - Undertake in accord with best practice.
8	Use of methods of dust suppression, other than by using water.	Regular inspections, especially during / following dry weather events.	Contractor	- On tool extraction systems (LEV's, Vacuums) should always be used if they can be. - Dust bags can help where an LEV cannot be attached to a tool. - Cutting zones with adequate ventilation. - Exclusion zones to protect others. - PPE, dust masks to FFP3 standard. Face fitting training is required.
8	Material likely to cause dust impacts (i.e. excavation / debris piles) would be sprayed with water, or sheeted / sealed to control dust nuisance.	- Regular inspections, especially during / following dry weather events. - Toolbox talks to contractors prior to commencing work on site.	Contractor	Any loose materials bought onto the site shall be protected by appropriate covering.
9	Earth movement will be controlled to reduce the risk of Site run-off of water or mud.	- Toolbox talks to contractors prior to commencing work on site. - Regular inspections to identify and remedy excavated / exposed earth.	Contractor	

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10	Exposed earth / stockpiles will be covered when not in use or kept securely sheeted.	• Toolbox talks to contractors prior to commencing work on site. • Regular inspections to identify and remedy excavated / exposed earth.	Contractor	
11	Effective vehicle cleaning and specific fixed wheel washing on leaving site.	• Regular review of works program / logistics for co-ordinating wheel wash facilities at site exit points. • Designated area / layout / drainage arrangements at site exit points finalised prior to works commencing. • Vehicles inspected when leaving the site to ensure mud / debris deposits removed.	Contractor	• Use of wheel wash facilities near the site exit. Fit wheel washes with rumble grids to dislodge accumulated dust and mud prior to leaving the site to avoid carrying dust or mud off the site. • Water associated with wheel wash facilities will be safely disposed of. • Undertake in accord with best practice. • Review and monitor in accord with The control of dust and emissions from construction and demolition: Best Practice Guidance.
12	Access roads / haul routes / site will be regularly cleaned and damped down with water.	• Regular inspections of access roads / haul routes for mud / debris. • Use of Street Sweepers around surrounding highway networks. • Frequency of inspections determined from review of works program (i.e. increases in traffic) and weather (i.e. drier weather).	Contractor	• Street Sweepers will be brought in under contract, to ensure that surrounding public roads, site roads, runways and other accesses are clear of mud/debris/dust tracked out by construction vehicles. • The site shall be dampened down during the working day and again at the end of the day to reduce the amount that is re-suspended by dust. • Using wet sweeping methods, especially during dry periods.
13	Switching off of plant and vehicle engines when not in use.	• Contractor method statements outline the approach and detail for achieving measures • Regular site inspections to monitor.	Contractor	• Machines not in use will be shut down or throttled down to a minimum.
14	Vehicle movements will be kept to a minimum. Vehicle speeds within the site will be limited.	• Regular inspections of vehicle movements. • Toolbox talks to contractors prior to commencing work on site.	Principal Contractor / Contractor	• A maximum speed limit of 5-10 mph will apply on site for the safety of the workforce and to minimise disturbance from noise and dust.
15	All loads entering and leaving site are to be covered / fully sheeted.	• Vehicles checked when leaving the site.	Contractor	• Undertake in accord with best practice. • Review and monitor in accord with:

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		- Contractor method statements outline the approach and detail for achieving measures. - Toolbox talks to all contractors prior to commencing work on site.		GLA (July 2014) The control of dust and emissions from construction and demolition: Best Practice Guidance
16	Provide easily cleaned hard standing for vehicles and clean using wet sweeping methods.	- Contractor method statements outline the approach and detail for achieving measures - Regular inspections to check that activities are being undertaken in accord with method statements and appropriate mitigation measures are being implemented. - Toolbox talks to all contractors prior to commencing work on site.	Contractor	- Including damping down / cleaning of haul routes. - Undertake in accord with best practice. - Review and monitor in accord with: - The control of dust and emissions from construction and demolition: Best Practice Guidance.
17	Use enclosed chutes and covered skips.	- Contractor method statements outline the approach and detail for achieving measures. - Regular inspections to check that activities are being undertaken in accord with method statements and appropriate mitigation measures are being implemented. - Toolbox talks to all contractors prior to commencing work on site.	Contractor	- Undertake in accord with best practice. - Review and monitor in accord with: - The control of dust and emissions from construction and demolition: Best Practice Guidance.
18	Vehicle emissions would be minimised through: - the use of catalytic converters; - the regular maintenance of vehicle engines; - All vehicles to switch off engines when not in use (no idling vehicles).	- Contractor method statements outline the approach and detail for achieving measures. - Copies of appropriate certification are provided for all vehicles. - Regular site inspections of vehicles.	Contractor	- Undertake in accord with best practice. - Review and monitor in accord with: - The control of dust and emissions from construction and demolition: Best Practice Guidance.
19	Vehicle compliance with emission standards for on-road vehicles.	- Contractor method statements outline the approach and detail for achieving measures. - Copies of appropriate certification are provided for all vehicles.	Principal Contractor / Contractor	All construction vehicles shall comply with the Euro 4 emissions standard and where possible use low emissions fuels and alternative technology.

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		Regular site inspections of vehicles.		
20	Electrically powered plant will be preferred over diesel or petrol driven.	- Contractor method statements outline the approach and detail for achieving measures. - Regular site inspections to ensure plant and equipment are optimally located and mitigated in accord with method statement to minimise emissions.	Principal Contractor / Contractor	
21	All Non Road Mobile Machinery (NRMM) to use Ultra Low Sulphur Diesel (ULSD) where available and be fitted with appropriate approved exhaust after-treatment.	- Contractor method statements outline the approach and detail for achieving measures. - Copies of appropriate certification are provided for all vehicles.	Contractor	- Low emission plant fitted with catalysts, diesel particulate filters or similar devices shall be used. - Approved exhaust after-treatment – list managed by the Energy Saving Trust. - Review and monitor in accord with: - The control of dust and emissions from construction and demolition: Best Practice Guidance
22	Plant shall be well maintained, with routine servicing of plant and NRMM to be completed in accordance with manufacturer's recommendations.	- Contractor method statements outline the approach and detail for achieving measures. - Copies of appropriate certification are provided for all vehicles.	Contractor	- Review and monitor in accord with: - The control of dust and emissions from construction and demolition: Best Practice Guidance
23	Ensure concrete crusher or concrete batcher has permit to operate.	Copies of appropriate certification are provided for all plant and equipment.	Contractor	Ensure mobile crushing and screening plant and cement batching plant which are regulated under the Local Air Pollution Prevention and Control regime operate in compliance with a Part B Permit. This shall be submitted to the local authority before operation.
24	No bonfires	Toolbox talks to contractors prior to commencing work on site.	Contractor	

N. Tree Protection

Objective

- Reduce damage / disturbance to existing trees on site / neighbouring properties.

Ref	Objective	Action / Measure	Monitoring / Audit Requirement	Responsible	Notes
1	Contractor must satisfy themselves that all necessary permissions from the local planning authority or tree owners are in place before undertaking works on the trees.	• Contractor method statements outline the approach and detail for achieving measures.		Arboriculture Contractor	
2	Effective protective fencing for trees to be retained, erected as close as possible to the Root Protection Area (RPA) boundary before any other work starts on site. It must be maintained until all work is completed, except final soft landscaping.	• Fencing erected before construction works commence on site and in accord with approved details. • Fencing maintained for duration of the works.		Principal Contractor	• BS5837 defines a tree's Root Protection Area as a disc of soil 1m deep required to maintain long-term health a full-canopied tree of a given stem size, usually 12 x stem diameter (i.e. an idealised circle). Rooting areas are never symmetrical, but ideally there should be no ground disturbance within the RPA zone. • At the discretion of an arboriculturalist, the RPA can be offset if work is proposed on one side only and the tree can root in the opposite direction. • It is not appropriate to rely on the reduced RPA where potential disturbance extends halfway or more around the tree.
3	Any soak-away system must be designed so that it does not add to, or decrease, ground water in trees' rooting zones.	• Contractor method statements outline the approach and detail for achieving measures. • Regular inspections of works program to manage areas.		Contractor	• Existing systems should be used where possible to minimise change in trees' root zones.
4	Service trenches within RPA of any retained trees should be avoided. If it cannot be prevented, Hand digging or trench-less systems must be used.	• Contractor method statements outline the approach and detail for achieving measures. • Regular inspections of works program to manage areas.		Contractor	• Use an air-spade to reveal roots.
5	Retained trees should be re-inspected on completion of each phase of the works, and design and implementation of appropriate remedial work.	• Contractor method statements outline the approach and detail for achieving measures. • Regular inspections of works program to manage areas.		Arboriculture contractor. / Principal Contractor	• This inspection would reveal the need for remedial tree work for the following reasons:- – To rectify damage occurring during construction (regrettable but possible), – to allow additional clearance,

- *Or complete tree removal if trees were considered too close for safe retention.*



