



DOC: DRAFT CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN

ISSUE: 01

DATE: SEPTEMBER 2022

BY: KELTBRAY DEVELOPMENTS LTD

ISSUE

Revision	Date	Originator	Checker	Approver	Description
01	22.09.22	A. Burnside		A. Burnside	First Draft

Please Note:

1. This document is issued for the specific purposes of supporting a planning application in relation to the proposals within, and should not be relied upon in its current form for any other purposes.
2. After planning permission, once a Principal Contractor appointment has been finalised, there will be additional revisions which will provide further site specific details with the benefit of:
 - a. Planning approval and associated conditions
 - b. Further site inspections by the Principal Contractor
 - c. Engagement with the key supply chain members and sub-contractors
 - d. Design progression from the professional team

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1.0 CONTACTS & ABBREVIATIONS

Project Contacts	
Local Police	101
Emergency Services	999
Environmental Regulator Incident Hotline	0800 80 70 60
British Waterways Board	0800 47 999 47
Thames Water	0845 9200 800
Emergency Electricity UKPN	0800 783 886
National Gas Emergency Service	0800 111 999
Local Authority – Hillingdon Council: Environmental	01895 556000
Internal Contacts	
Operations Director – Anthony Walsh	078 9027 9324
Senior Project Manager – Gareth Acres	075 9086 1880
Site Manager – William Hawkins	077 1848 5372
Environmental Manager – Stephen Skalecki	074 6490 3534
Environmental Air Quality Monitoring – TBC	TBC
Environmental Advisor – TBC	TBC

Abbreviations	The abbreviations listed below apply to this document:
Best Practicable Means (BPM)	In this expression “practicable” means reasonably practicable having regard among other things to local conditions and circumstances, to the current state of technical knowledge and to the financial implications
CEEQUAL	Civil Engineering Environmental Quality Assessment
Consent (discharge)	A statutory document issued by the Environment Agency under Schedule 10 of the Water Resources Act 1991 or the Scottish Environment Protection Agency under the Control of Pollution Act 1974 to indicate any limits and conditions on the discharge of an effluent to controlled water.
COPA	Control of Pollution Act 1974
PM	Project Manager
dB (A)	Decibel aura - sound pressure level that corresponds to the frequency response of the human ear.
EA	Environment Agency (England and Wales)
SEPA	Scottish Environment Protection Agency
NIEA	Northern Ireland Environmental Agency
NRW	Natural Resources Wales
EHD	Local Environmental Health Department for a Unitary Authority area.
EHO	Environmental Health Officer
ESMP	Environmental and Social Management Plan
EMS	Environmental Management System to EN ISO 14001

Environmental Aspect	Element of an organisations activities or products or services that can interact with the environment
Environmental Impact	Any change to the environment, whether adverse or beneficial, wholly or partially resulting from an organisations environmental aspects
Reasonably Practicable	Weighing the risk of an environmental impact against the cost and time associated with the mitigation measures needed to control it. Each case will be judged on its own merits.
SAC	Special Area for Conservation
PC	Principal Contractor
LBoH	London Borough of Hillingdon
Client	Wolfe Commercial Properties Southbank Limited
Ambient Noise	Noise in a given situation at a given time, usually composed of sound from many sources near and far, but excluding site noise
Background Noise	A-weighted sound pressure level of the residual noise at the assessment position that is exceeded for 90% of a given time interval, T measured using time waiting, F, and quoted to the nearest whole number in decibels
Noise Sensitive Premises (NSPs)	Any occupied premises outside a site used as a dwelling (including gardens), places of worship, educational establishment, hospital or similar institution, or any other property likely to be adversely affected by an increase in noise level.
dB (A)	A-weighted decibels are an expression of the relative loudness of sounds in air as perceived by the human ear.
EA	Environment Agency
EHO	Environmental Health Officer
EMP	Environmental Management Plan
EMS	Environmental Management System to EN ISO 14001
Environmental aspect	Element of an organisations activities or products or services that can interact with the environment
Environmental impact	Any change to the environment, whether adverse or beneficial, wholly or partially resulting from an organisations environmental aspects
SAC	Special Area for Conservation
Section 60 notice	Issued under the Control of Pollution Act 1974 to control noise pollution and nuisance. If issued the conditions must be complied with until revoked or successfully appealed against
Section 61 consent	Issued under the Control of Pollution Act 1974 to permit noise on site.
Sustainable development	“Development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (from the Brundtland Report).
CoCP	Code of Construction Practice
CoPA	Control of Pollution Act 1974

2.0 BACKGROUND

2.1 Introduction

This preliminary Construction Environmental Management Plan (CEMP) has been prepared to support the development of an industrial shed and yard scheme on the former Merck Sharp & Dohme (MSD) site off Breakspear Road South (hereafter referred to as the 'site'). This document describes procedures and operative methods to improve environmental performance of the project pursuant to Keltbray Developments Ltd.'s (hereafter referred to as Keltbray) Environmental Policy and the requirements of EMS ISO 14001: 2015.

At this early stage, the CEMP identifies potential risks and necessary mitigation measures to reduce or prevent harm upon the environment and nearby sensitive receptors during the construction phase of the development. This CEMP should be read in conjunction with the outline Construction Logistics Plan (CLP), which includes both the demolition and construction stage logistics details. Both the CEMP and TMP will be further developed into a more detailed Construction Management Plan (CMP) once the appointment of a Principal Contractor is completed, and a detailed construction programme has been developed. The approved CEMP shall be adhered to throughout the construction phase, unless otherwise agreed to in writing with the London Borough of Hillingdon (LBoH).

The intent is to provide a framework, in line with Hillingdon Council's 'Technical Guidance for Demolition and Construction', within which the environmental aspects of the works will be managed. It identifies and summarises particular issues relevant to the works to be undertaken on site and contains a set of procedures for each environmental issue.

2.2 Purpose and Scope

This document has been produced using the experience of the applicant and their professional advisors based on the typical construction methods developed for contractual strategies that are considered applicable for a development of this type. The overarching purpose of this CEMP is to specify the principles and detailed measures to minimise and mitigate the environmental effects of the construction activities associated with the development of the site. It will also ensure that construction activities cause minimum disruption to the local residents and members of the public by achieving a safe and secure working environment. More specifically the CEMP aims to:

- Ensure that relevant mitigation measures set out in the technical reports as submitted in support of the planning application are implemented throughout the construction phase
- Take into account relevant planning policy as appropriate
- Ensure that relevant legislation, government and industry standards, and construction industry codes of practice and best practice standards are complied with
- Encourage environmental best practice and promote continuous improvement.

Detailed operational documentation will be produced to suit the programme of works and will detail the management and delivery of a safe and innovative project while minimising the environmental impact from the works. The following operational documents will be produced to ensure the precise implementation of the contents described within this CEMP:

- Demolition and Construction Logistics Plan (CLP)
- Remediation Strategy as completed by Johnson Poole and Bloomer
- Site Waste Management Plan
- Section 61 Application (if appropriate)
- Noise, Dust and Vibration Management Plan

- Task Specific Method Statements

Given the volume of construction work in the immediate vicinity due to HS2, and the short-term cumulative impact on the local residents, liaison with the neighbours and local Ickenham Residents Association by Keltbray will continue throughout the project, and particular attention will be paid to ensure that residents immediately adjacent to Breakspear Road South are kept informed of the progress and future works on the project.

3.0 THE LOCATION

3.1 Site Location

The site is located in the LBoH, in the settlement of Ickenham, to the north of the A40 and Sakeleys Roundabout. It is accessed via Breakspear Road South, north of the Chiltern Line railway bridge, with the body of the site spreading west from Breakspear Road South towards Harvil Road (the Site). The site was previously utilised by a veterinary sciences business MSD as offices, animal testing, storage, and vaccine development.

3.2 Location Context

The site is located within an area semi-rural in nature, within the London Greenbelt and on the eastern edge of the Colne Valley Regional Park. To the north of the site there are areas of open space, utilised mostly as private farmland to Newyears Green Lane which is a country-lane facilitating a number of waste transfer and recycling businesses with large industrial buildings and open storage spaces.

Beyond Newyears Green Lane is the proposed HS2 Northern Sustainable Placement Area which is proposed to accommodate the creation of two mounds of approximately 18m and 16m in height from the existing levels, and associated sustainable drainage works. The need for these mounds come from the material excavated from the Copthall Tunnel works.

Approximately 400m east of the site is the Ruislip Public Golf Course which lies between the site and the Ruislip and Ickenham residential areas.

To the south adjacent to the site is the proposed Copthall Tunnel which forms part of the new HS2 rail line, along with the Gatehead Embankment. As part of the proposed works, the two new bridges will be constructed to carry the HS2 line at a suitable level over both the River Pinn and the Breakspear Road South. The Breakspear Road South underbridge will provide a clearance of 5.7m. This proposed development will raise the existing levels of adjacent land significantly, with new planting to provide substantial shielding of the subject site from residential area of Ickenham in the southeast.

The existing Chiltern Line railway which connects London Marylebone to Birmingham Snow Hill will remain to the south of the Copthall Tunnel works.

Further to the south is open space between the subject site and the nearest residential area. This is the proposed Southern Sustainable Placement Area which will again consist of two mounds – the northern mound will increase existing ground levels by 3m to 65m (AOD), and the southern mound will raise existing levels by 5m to 60m (AOD), to be accompanied by associated wet grasslands and drainage basins.

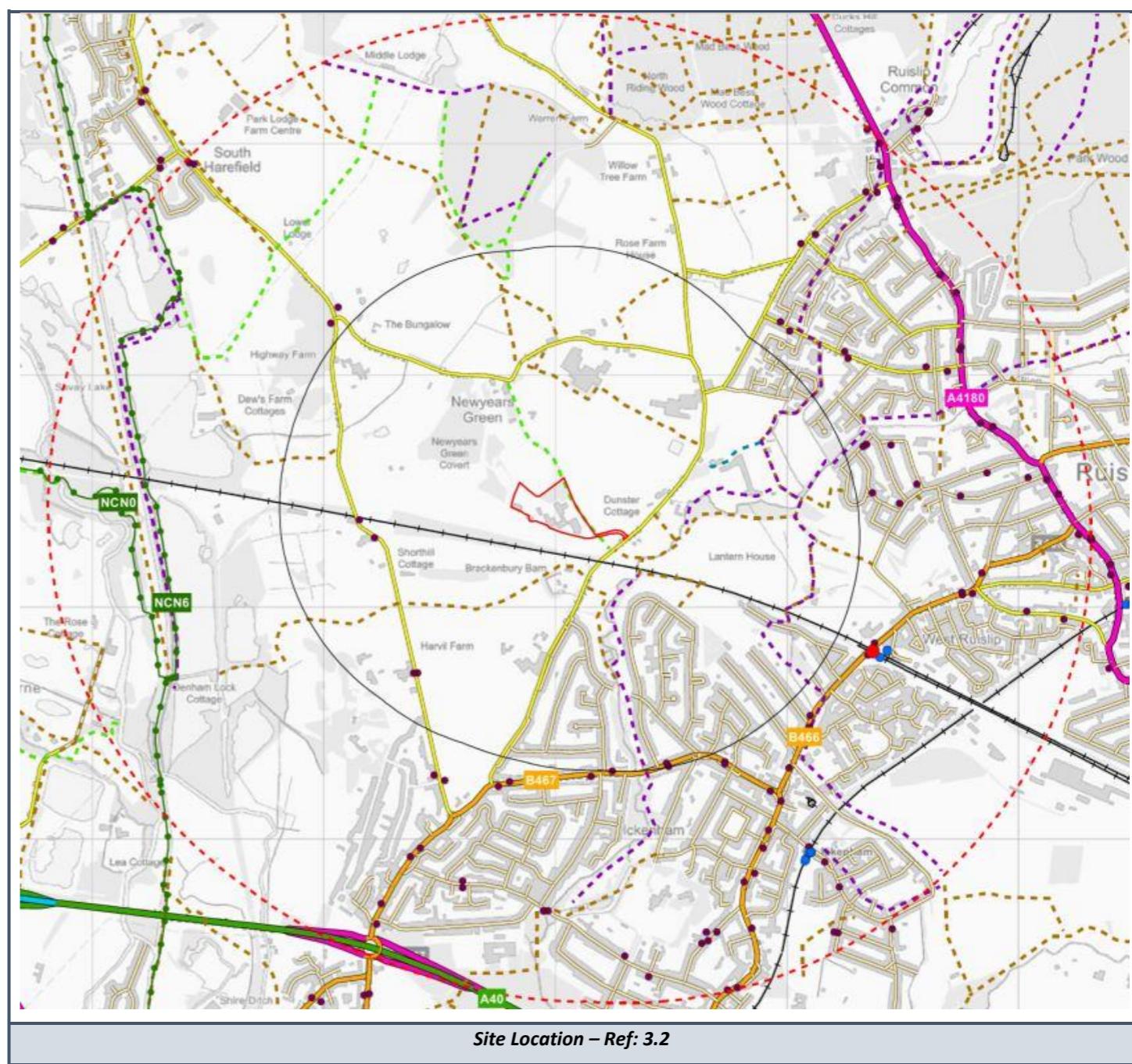
To the west of the site is significant open space which forms part of HS2's Copthall Tunnel works to the Harvil Road, which proposes significant changes in the current landscaping to a max. of 73m (AOD). Additional ecological mitigation works have or will be carried out by HS2 which includes a number of ponds and improved habitat planting.

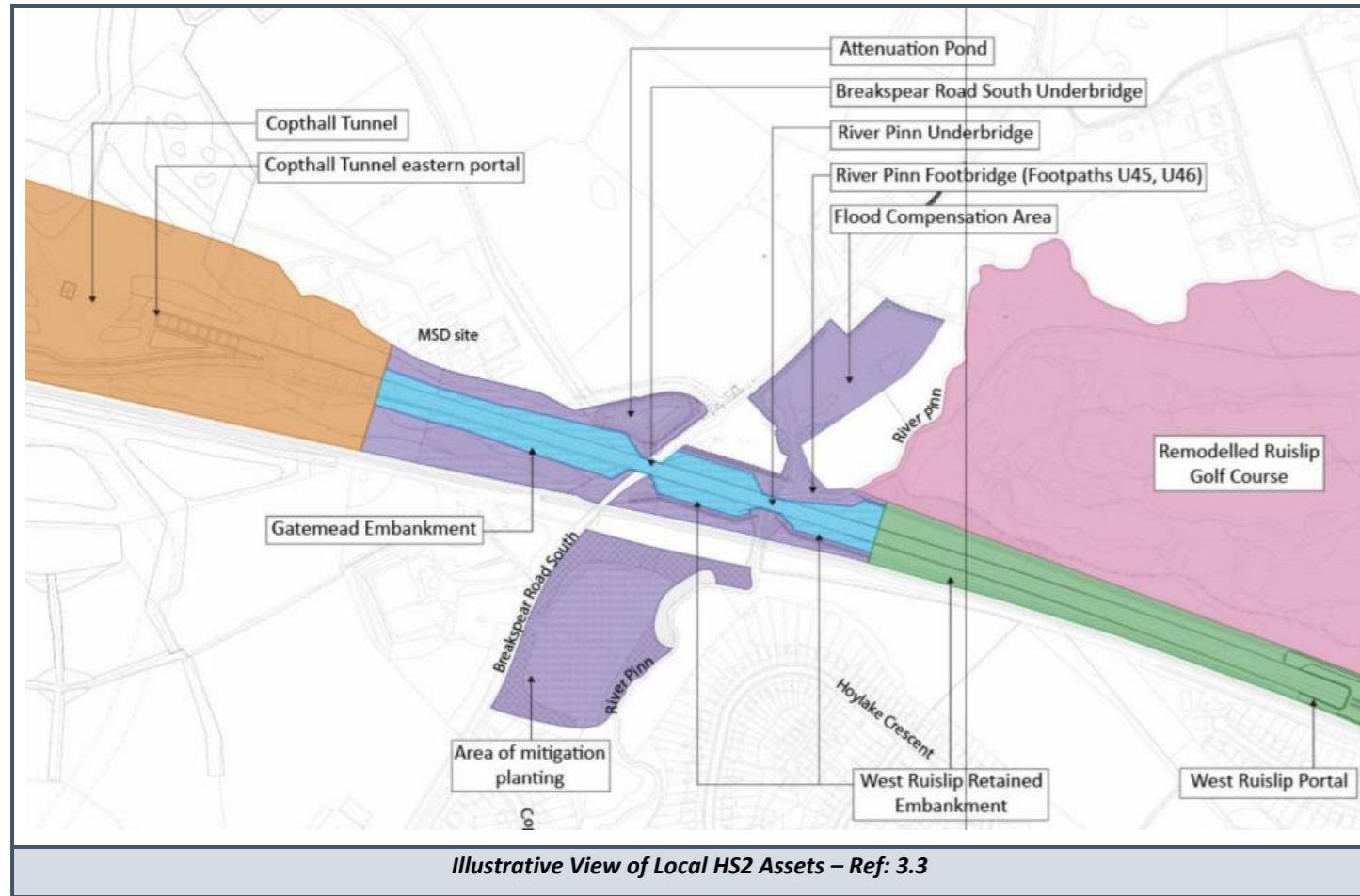
3.3 Local HS2 Assets

There are a number of HS2 assets and applications within the immediate vicinity of the site made under Schedule 17, including:

- The Gatehead Embankment;
- Which includes the River Pinn and Breakspear Road South underbridges;
- The River Pinn Flood Compensation Area;

- Which includes an attenuation adjacent to the access road of the subject site, flood compensation areas and mitigation planting;
- The West Ruislip Portal and Retained Embankment;
- The Remodelled Ruislip Golf Course;
- The Copthall Tunnel;
- The Ruislip Northern Sustainable Placement Area;
- The Ruislip Southern Sustainable Placement Area; and
- The Realignment of Harvil Road.





4.0 THE PROPOSED WORKS

4.1 The Proposals

The proposed redevelopment includes the retention of an existing building on the western boundary of the Site to be utilised as an office, with the remaining buildings to be demolished and new industrial warehouse style buildings to be constructed along with associated yard spaces adjacent. Additional ancillary works include a new access road, sustainable drainage systems and extensive landscaping and ecological improvements across the Site (the Proposals).

4.2 Pre-Construction Surveys

A number of surveys have been commissioned as part of both the site due diligence exercises and as part of the planning application for the Proposals, including:

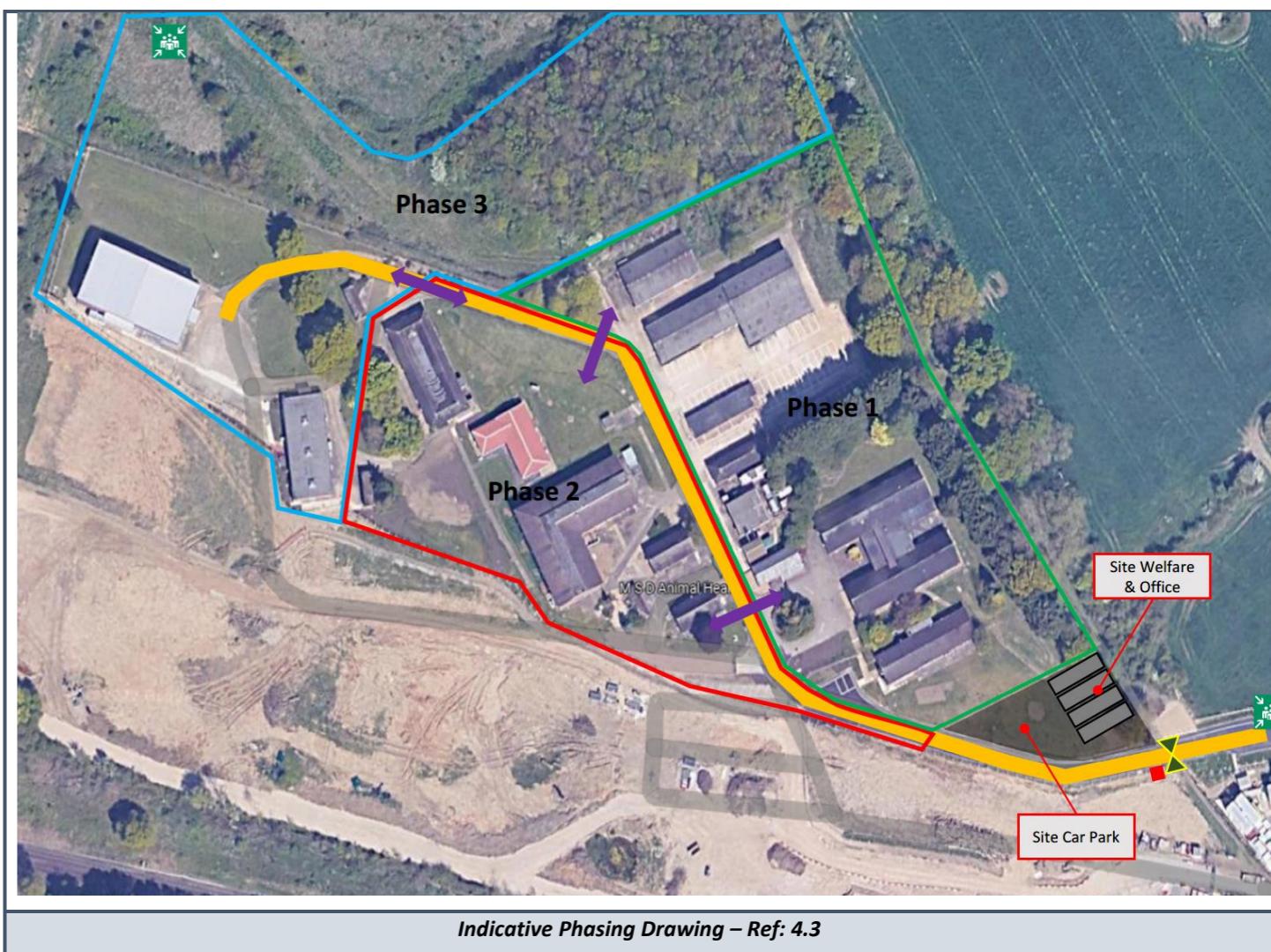
- Topographical and Drainage CCTV surveys
- Tree Surveys
- Bat & Retile Surveys
- Contaminated Land Surveys
- Pre-Demolition & Refurbishment Asbestos Surveys
- Archaeological Desk-Based Assessment

The findings from these surveys will result in a number of control measures being implemented to minimise the construction's adverse impact to the environment. A number of these technical surveys will be submitted in support of the planning application.

4.3 Construction Phases

The main works of the Proposals are envisaged to be split into the following stages:

Phase 0	Preparation	This will include all site hoarding, security and the set-up of the necessary welfare facilities, along with service isolations and diversions as necessary.
Phase 1	Right Side	The first construction phase will be to the right side of the access road (North / North East), including the majority of the access road.
Phase 2	Left Side	This second phase is to the left of the access road (South West / South).
Phase 3	West Side	The office building (the retained building) will be the final phase of the construction works, along with the decanting of all welfare facilities, final connections of the remaining attenuation pond, and all landscaping planting and finishing works.



4.4 Construction Activities & Responsibilities

4.4.1 Programme of Works

It is anticipated that the programme of the works will be roughly 40 weeks (i.e. 9 months), to include:

- Site establishment
- Asbestos and hazmat remediation
- Service terminations and diversions
- Internal soft strip
- Structural demolition of existing buildings (except the retained building)
- Cut and fill of existing ground to new formation
- Installation of new drainage and below ground services
- Construct new roadways and hard standings
- Construction new buildings
- Erect new boundary fencing
- Refurbishment of retained building
- Landscaping improvement works

4.4.2 Working Hours

The standard working hours will be 08:00 – 18:00 Monday to Friday and 08:00 – 13:00 Saturday in line with LBoH's Technical Guidance for Construction and Demolition Projects. Out of hours working will be avoided where possible and none will take place unless discussed and agreed with relevant parties of LBoH in advance.

4.4.3 Plant Utilised

Below is a list of Plant which is anticipated to be utilised during construction of the Proposals:

- Excavators to 50T
- Articulated dump trucks
- Piling rigs
- Cranes
- Generators
- Compactors
- Crushers
- Screeners
- Various small equipment

4.4.4 Key Responsibilities

The below / adjacent table illustrates the key responsibilities from key entities associated with delivering the Proposals. This table will be readdressed in the more detailed Construction Management Plan prior to commencement of the construction phase.

Entity	Responsibilities
Keltbray	<p>Responsibility for the enabling and construction activities and holds overall responsibility for the activities on site and implementation of the CEMP. Key responsibilities include:</p> <ul style="list-style-type: none"> - Ensuring that the works are carried out in accordance with the CEMP and contract documentation, including the implementation of mitigation and management measures, environmental monitoring, and environmental auditing - Ensuring the appointed specialist contractors / sub-contractors are appropriately qualified and competent. - Ensure environmental awareness training for all workers, including an induction for all site workers / contractors which includes environmental elements pertaining to the implementation of the CEMP; - Monitor the performance of specialist contractors / sub-contractors and provide direction as necessary; - Liaise regularly with the Environmental Manager; - Complete a monthly audit of the CEMP and report findings, with follow up on identified actions as required - Undertaking corrective actions in the event of breaches of the CEMP or applicable environmental legislation. - Ensuring that resources are appropriately allocated to allow for the inclusion of the actions included in the CEMP for the duration of the project. - Responsible for the actions of management of specialist contractors / sub-contractors associated with the enabling and construction works and ensuring that they appropriately comply with the requirements of the CEMP.
Project Manager	<p>To manage works effectively and in line with legal and contractual requirements, including any additional agreements for the project made with the relevant Council. It is also the project manager's responsibility to communicate all applicable requirements on to contractors.</p>
Environmental Manager / Advisor	<p>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. Key responsibilities include:</p> <ul style="list-style-type: none"> - Undertake environmental monitoring and reporting as specified in the CEMP; - Undertaking environmental audits in conjunction with the Principal Contractor as specified in the CEMP. Reporting of audit findings is to occur on a monthly basis. - Regularly review the CEMP to ensure it accurately reflects the enabling and construction works occurring on site, at a frequency of no less than six months (unless significant changes to the enabling and construction methodology occurs); - Ensure that all relevant environmental consents, licences, permits etc. are in place prior to the commencement of the relevant works. Ensure the requirements of these permits are included in the CEMP and are adhered to;

	<ul style="list-style-type: none"> - Act as the first point of contact for environmental issues associated with the Proposed Development; Undertake environmental training (including toolbox talks) as required, to ensure that enabling and construction staff are aware of the environmental requirements; - Ensure that the objectives of the CEMP are being achieved - Engage with the Principal Contractor on environmental issues identified during the enabling and construction works, and issue Corrective Notices where required. Follow-up on such notices is to be undertaken in conjunction with the Principal Contractor to ensure non-compliances have been appropriately rectified.
Site Manager	Responsible for ensuring control measures are implemented and in the event of an incident the project / duty manager will direct mitigation activities whilst ensuring the safety of anyone likely to be affected. To report all incidents and close calls.
Sub-Contractors	<p>Work to agreed plans, methods and procedures to minimise environmental impacts;</p> <ul style="list-style-type: none"> - Commit to undertaking works associated with the Project in accordance with the CEMP - Undertake the site induction training - Report all environmental incidents immediately to their line manager - Monitor the work place for potential environmental risks and alert their line manager if any are observed.
Neighbour Relations Officer	<p>Compile and distribute regular newsletters giving information on forthcoming site activities</p> <ul style="list-style-type: none"> - Chair regular liaison meeting with local stakeholders - Maintain complaints register with records of corrective actions
All Employees	<p>All site staff are responsible for adhering to the requirements of the procedures outlined in this Construction Environmental Management Plan, ensuring that legislative requirements and good environmental practice are met within their job function; and</p> <p>As part of the site induction, all site staff must be made aware of the importance of maintaining good relations with the local community and neighbours and the sensitive location of the Site as a whole.</p>

4.4.5 Considerate Constructors Code of Construction Practice

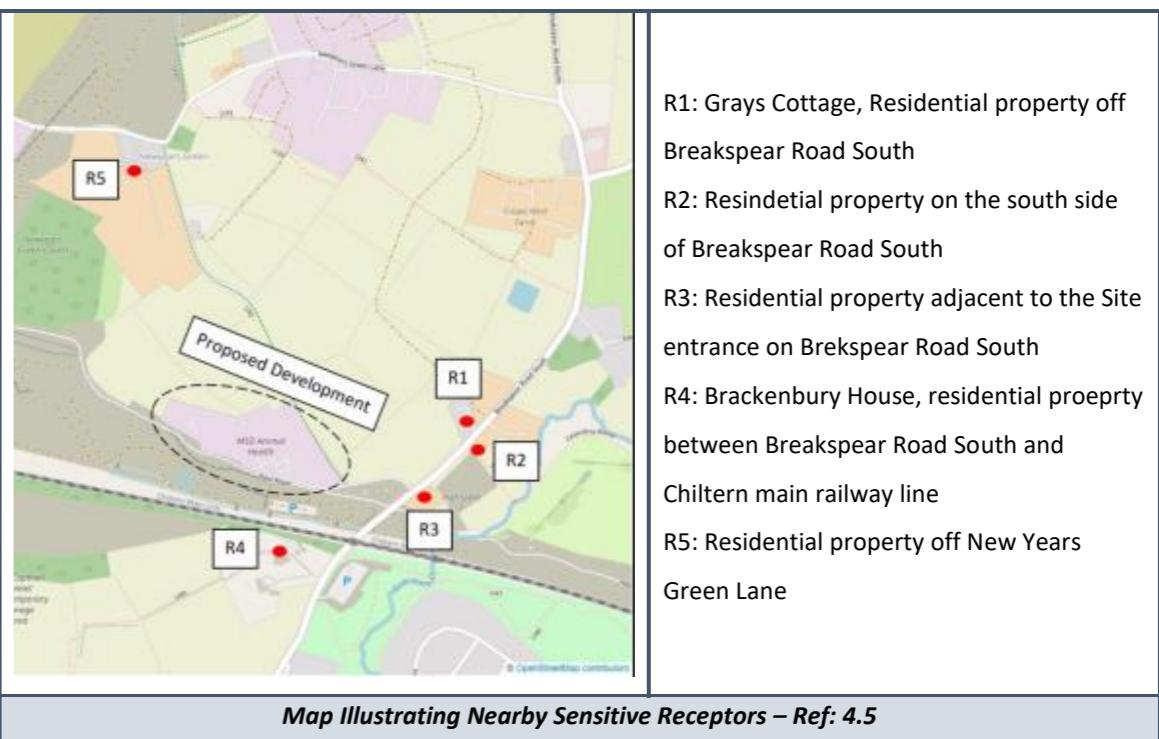
The Principal Contractor will be required to register with the Considerate Constructors Scheme, and they and all sub-contractors will be required to comply with the Scheme. The Scheme commits those contractors registered to be considerate and good neighbours, as well as clean, respectful, safe, environmentally conscious, responsible and accountable.

The Considerate Constructors Code of Construction Practice scheme is independently audited by the Considerate Constructors Scheme and points are awarded depending upon the level of compliance.

4.5 General Site Management

4.5.1 Air Quality

This procedure addresses the general site management practices that should be employed throughout all stages of the Proposals to ensure the safe and compliant operation of the Site. The Considerate Constructors Scheme requires consideration of surrounding receptors in the general operation of a Site. These sensitive receptors include:



Map Illustrating Nearby Sensitive Receptors – Ref: 4.5

An air quality assessment was completed by a third party consultant in September 2022 to accompany the planning application for the Proposals. This air quality assessment provides an assessment of the following key aspects with the construction and operational phases of the Proposals:

- Nuisance, impact upon health and/or loss of amenity caused by construction dust on sensitive receptors
- Changes in pollutant concentrations caused by the proposed development
- Air quality neutral in line with London planning policy requirements

The site is not located within an AQMA, the Hillingdon AQMA is situated approximately 90m south of the site. A qualitative assessment of construction dust effects has been undertaken for the site. The assessment has considered construction and operational air quality effects from road traffic emissions as a result of the site with consideration to sensitive receptors using an atmospheric dispersion model. Concentrations of nitrogen dioxide and particulate matter have been considered during this assessment as these are the key pollutants of concern associated with construction and operation of the site. Air Quality (England) Regulations 2000 as amended, Air Quality Strategy 2007, EU Directive 2008/50/EEC on ambient air quality and cleaner air for Europe, as transposed into UK Law as well as other applicable legislation were taken into consideration to evaluate the air quality assessment results.

The construction phase activities are predicted to have a 'low to medium risk' in terms of dust soiling at sensitive receptors and 'low risk' for PM10 effects without mitigation. Increased concentrations of nitrogen dioxide have been identified during the construction

phase. Control measures during construction will include but not be limited to the overall measures listed in the Air Quality Assessment Report

4.5.1.1 Mitigation

Best practice mitigation measures should be introduced to reduce the risk to negligible and should include techniques such as those outlined in IAQM and GLA guidance. For general mitigation measures refer to the Air Quality Assessment Report accompanying the planning application.

Keltbray shall keep occupiers within the identified sensitive receptors and other stakeholders updated via regular newsletters which will advise them of the forthcoming works and will highlight the potential 'noisy works' so they will be aware of any forthcoming works that may be disruptive.

Based on construction noise, dust and vibration levels, mitigation measures will be planned and implemented, not only to minimise the effects on the adjacent neighbours, but through a 'continuous-automated' environmental monitoring system for noise, dust and vibration our objectives are:

- To enable and assist client and project team delivery in evaluating the efficiency of mitigation measures by implementing BPM;
- To enable an understanding on how the measured levels are compared with agreed criteria values and how they are communicated; and
- To document and continually report on monitoring requirements, both for demonstrating compliance on a regular basis, and in response to recorded exceedance or complaint.

Operating Vehicles / Machinery and Sustainable Travel

- Ensure all on-road vehicles comply with the requirements of the London Low Emissions Zone and London NRMM standards and log all machinery online using the GLA NRMM register
- Ensure all vehicles switch off engines when stationary – no idling vehicles
- Avoid the use of diesel or petrol powered generators and use mains electricity or battery powered equipment where practicable
- Impose and signpost a maximum speed limit
- Produce a CLP to manage the sustainable delivery of goods and materials

Demolition

- Buildings to be sprayed with water to suppress dust and other particulates becoming airborne
- Skips and vehicles removing material from site to be covered and secured
- Shielding of sensitive ecological and residential receptors

Excavations & Earthworks

- Topsoil to be stripped before works begin to limit the amount of dust becoming airborne during excavations.
- Drop heights from excavators to vehicles removing material from site to be kept to a minimum.
- Ensure all excavated material is compacted following deposition where not being landscaped.
- Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable.
- Use Hessian, mulches or tackifiers where it is not possible to re-vegetate or cover topsoil, as soon as practicable.

Construction

- Machinery and dust-causing construction activities to be located away from sensitive receptors, with hoarding/fencing used in these areas.
- Vehicles and plant to be switched off when not in use.
- Dust extractors and water spray to suppress dust to be used wherever possible when activities are likely to result in dust and particulates becoming airborne.
- Erect solid screens or barriers around dusty activities or the application site boundary that are at least as high as any stockpiles on site.
- Avoid site runoff of water or mud. A record of any site run off should be kept and actions to prevent reoccurrence.
- Record all dust and air quality complaints, identify causes, and take appropriate action and record measures to reduce emissions.
- Make the complaints log available to local authority when asked.
- Record any exceptional incidents that cause dust and air quality pollutant emissions, either on or off the site, and the action taken to resolve the situation is recorded in the logbook.
- Carry out regular on and off-site inspections, especially where receptors are to monitor dust and record inspection results. An inspection log should be made available to the local authority when asked.
- Avoid scabbling (roughening of concrete surfaces) if possible.
- Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate additional control measures are in place.

Track Out (the transport of dust and dirt onto the public road network)

- Use water-assisted dust sweeper(s) on the access and local roads, to remove, as necessary, any material trackout out of the site. This may require the sweeper being continuously in use.
- Avoid dry sweeping of large areas.
- Ensure vehicles entering and leaving the site are covered to prevent escape of materials during transport.
- Inspect on-site haul routes for integrity and repair where required.
- Record all inspections of haul routes and any subsequent action in a site log book.
- Implement a wheel washing system.
- Ensure there is an adequate area of hard surfaced road between the wheel wash facility and the site exit, wherever site size and layout permits.
- Access gates to be located at least 10m from receptors where possible.

4.5.2 Noise & Vibration

A Noise and Vibration Impact Assessment report has also been produced by a consultancy firm to support the planning application for the Proposals. This report presents an assessment of potential noise and vibration impacts that are expected to arise during the construction and operational phases of the Proposals.

Keltbray and their contractors will, as far as reasonably practicable, seek to control noise and vibration levels so that nearby sensitive receptors are protected from excessive or prolonged noise and vibration associated with construction activities at the site, as identified in this application. Best Practicable Means (BPM) are defined under Section 72 of the Control of Pollution Act 1974 as those measures which are "reasonably practicable having regard among other things to local conditions and circumstances, to the current state of

technical knowledge and to financial implications". Keltbray and their contractors will apply BPM to all activities to minimise the effects of noise and vibration and comply with the requirements of LB of Hillingdon.

The Site Management Team shall employ best practice and consider the timing, duration, and phasing of construction activities to reduce to a minimum any disturbance to sensitive receptors were reasonably practicable.

4.5.2.1 General Measures

Where practicable, the control measures set out in BS 5228:2009+A1:2014 Part 1 and 2, Sections 8 will be implemented [British Standard Institution BS 5228 Code of Practice for noise and vibration control on construction and open sites - Part 1: Noise, 2009+A1:2014 and Part2: Vibration, 2009+A1:2014].

Measures to be employed as a matter of course include:

- Employing only modern, quiet and well-maintained equipment (all equipment will comply with EC Directive 2000/14/EC, UK Statutory Instrument 2001/1701 and BS 5228); any plant, equipment, or items fitted with noise control equipment found to be defective will not be operated until repaired
- Careful planning of the sequence of work in order to minimise the transfer of noise/vibration to neighbours
- Where reasonably practicable, fixed items of construction plant will be electrically powered from the mains supply in preference to being diesel or petrol driven
- Use of screws and drills rather than nails for fixing hoardings
- Careful handling of materials and waste such as lowering rather than dropping items
- Loading/unloading material into vehicles within designated areas only
- Taking care when erecting or striking scaffolds to avoid impact noise from banging steel
- Avoidance of unnecessary noise (such as engines idling between operations, shouting, loud radios or excessive revving of engines) by effective site management
- Vehicles and mechanical plant utilised on the work sites for any activity associated with the construction works will be fitted with effective exhaust silencers and shall be maintained in good working order and operated in a manner such that noise emissions are controlled and limited as far as reasonably practicable
- All staff will receive a site induction and toolbox talks on the effects of noise and vibration as a nuisance and way to minimise noise and vibration at the source
- Sub-contractors and suppliers will be made aware of the environmental constraints of the site and made to follow the necessary procedures to minimise noise and vibration levels
- Staff will be supervised to prevent any unnecessary noise such as shouting or banging at all times
- Signs will be displayed within the site to raise awareness and to stress the importance of noise and vibration control and its impact on the local residence

4.5.2.2 Reversing Alarms / Moving Plant Safety Alarms

As far as reasonably practicable, noise from reversing / warning alarms will be controlled and limited. This will be managed through the following hierarchy of techniques:

The layout of the work site will be designed to limit and where reasonably practicable, avoid the need for the reversing of vehicles. Keltbray and their contractors will ensure that drivers are familiar with the layouts of the work sites

Alarms incorporating one or more of the features listed below or any other comparable system will be used where reasonably practicable:

- Use of broadband (non-tonal) signals
- Self-adjusting output sounders
- Flashing warning lights

Alarms are set to the minimum output noise level required for safety compliance.

4.5.2.3 Site Specific Measures

The following measures will be applied:

- Proposed plant to be located away from nearby sensitive receptors where reasonably practicable
- Limit the use of noisy plant or vehicles and switch off vehicle engines when not in use
- Lighting towers will be battery or electrical mains powered to eliminate the requirement for additional generator noise sources within work areas
- Ongoing local stakeholder consultation to effectively disseminate information regarding works and construction activities
- BPM will be reviewed and updated throughout the works in response to any complaints received.
- All operatives on site will be trained to ensure that noise minimisation and BPM are implemented at all times. Works will be checked regularly by site engineers to ensure that all works carried out are employing BPM at all times and, where necessary, corrective actions implemented.
- Employees must show consideration to the sensitive receptors, including residential neighbours, and must not generate unnecessary noise when walking to and from the site, or when leaving and arriving at work. This will be communicated through the Site Induction, Start of Shift Briefings and Toolbox Talks with supervision on site at all times.

4.5.3 Site Establishment & Security

Site establishment is the preparation of the Site to carry out the works in a safe and secure manner with consideration given to ensure that appropriate welfare facilities and working environment are provided for the work force. Site establishment is also key in mitigating risks to the safety and general comfort of members of the public, local residents, pedestrians, road users and local businesses.

The working area will be secured and the general public will be separated from the works by the continued use of the site fencing to the external perimeter (this will be inspected and repaired if necessary). Any additional hoarding line, gate positions and vehicle cross overs will be agreed in advance with LBoH.

The activity commences following possession of the site and during this stage of the works the following activities will be undertaken:

- Set up site welfare, stores and offices in suitable locations as agreed with the Client. This will include
 - o Toilets
 - o Washrooms
 - o Canteen
 - o Drying/changing areas
 - o As the site works progress these facilities may need to be set up within existing buildings where suitable or relocated within the Site to suit ongoing activities. Initial cabin positions are located as per the accompanying Site layout.

- Erection of the full height 2.4M hoarding where required and new entrance gates (again if required), with the final position of the gates to be agreed with LBoH.

Provision of 24.7 site security at all times and access to the Site being maintained and manned

4.5.4 Pedestrian Management and Safety Management

Keltbray will ensure that the public walkways around the Site are kept clear at all times and that signage is provided. There will be a separate, segregated green route or pedestrians to access the site and welfare facilities set up as soon as possible, and maintained throughout the works.

Visitors will only be allowed to enter the project via designated pedestrian access gates and a dedicated segregated green route footpath to the main site offices. There will also be mandatory visitor specific inductions unless being accompanied by a member of the site team.

4.5.5 Site Lighting

All site lighting would project into the Site. Lighting in areas adjacent to sensitive receptors, particularly residential properties and ecological habitat areas will be minimised, and where necessary, restricted to working hours, by using a timer on the lighting circuit which would prevent lights operating within these times.

Outside of working hours the security lighting associated with the CCTV system only would be connected to passive infrared detectors which would limit activation to breaches of perimeter hoardings only. Where light glare may cause a nuisance, lights would be positioned to ensure no light spill beyond the Site boundary, with light shields fitted to ensure nuisance glare is mitigated.

Site lighting would be kept to a minimum, taking into account the needs for site health and safety and security and would be elevated on poles to maximise light spread per light within the Site boundary, which in turn would minimise the number of lights required.

4.5.6 Protection of Existing Installations

Communicated has commenced with SSEN in relation to their existing assets within the Site boundary. These will be protected and access maintained 24/7 until any decommissioning / upgrades and relocations if necessary are commenced.

4.5.7 Tower and Mobile Crane

Tower and mobile crane activities are planned for in the delivery of these Proposals. Materials will be offloaded and accessed to and from the work-fronts via tower carnage. The carnage is largely required (in the works phases) for removal of the precast concrete balustrade to the perimeter floors.

Other lifting requirements may include roof plant removal, lifting of scaffolding to high level work zones and the lighting of demolition plan level by level which will be carried out by mobile cranes. All tower cranes will be fitted with an electronic crane zoning system to ensure no over-sailing of the project boundary.

4.5.8 Staff Training

As part of the induction process for all staff working on-site, the Principal Contractor will provide Toolbox Talks to all contractors on environmental topics including spill control, Archaeology, Water Pollution, Dust, Waste Management and Storage, Noise and Vibration and General Ecology. This will raise awareness of Environmental issues on the project.

4.5.9 Emergency Planning & Response

Keltbray will ensure Emergency procedures are in place, including emergency pollution controls to enable a quick response.

- Emergency phone numbers and the method of notifying the LBL, UKPN, TfL and statutory authorities. Contact numbers for the key staff of the contractor will also be included.
- Keltbray will display a 'contact board' on the hoarding identifying key personnel with contact addresses and telephone numbers, so that members of the public know who to contact in the event of a report or query.
- London Fire and Emergency Planning Authority (LFEPA) requirements for the provision of site access points.
- Keltbray will produce a Site Fire plan, including management controls to prevent fires. This will further include a plan to reduce fire risk during the course of the works.

The emergency contact numbers are located at the front of this CEMP and will be displayed in suitable locations throughout the Site.

4.5.10 Emergency Procedures

Keltbray will investigate all environmental incidents at the earliest opportunity in order to identify the basic causes. Subcontractors will report any environmental incidents immediately to the Keltbray Project Manager.

Keltbray is committed to ensuring the protection of the environment and in particular the protection of watercourses from accidental leakage of oil/diesel/brake fluid/petrol from tracked machines and road vehicles.

In the event of oil or any other spillage the following action will be taken:

Immediately advise your Supervisor or if out of hours the On Call Manager

- The exact location of the spillage
- The substance involved in the spillage
- An estimate of the quantity involved
- Details of the vehicle, plant involved
- Whether any watercourses, protected sites and/or sewers are, or are likely to be, affected

Details of how to respond to these incidents are included in the Initial Environmental Incident Response Procedure. Spill kits will be available at designated areas around site.

Additionally Keltbray will:

- Make every effort to contain the spillage with the use of spill kits or other means if available.
- Make suitable arrangements to reduce the risk of spillage at re-fuelling points e.g. drip trays, 'bunded' tanks.
- Ensure Fire Extinguishers, as applicable, will be available to reduce the risk of fire.

5.0 RESOURCE MANAGEMENT

This procedure relates to the minimisation of energy and water use, and is closely related to the requirements of BREEAM. This procedure should be adhered to throughout all phases of the development. Monthly energy and water usage figures and targets would be recorded and displayed graphically on site. The following measures would be employed in relation to all energy and water consumption during the construction works:

- Low energy lighting with fluorescent bulbs would be used wherever possible.

- Where timers are fitted to the heater circuits, they would be set to turn off at 18:00hrs and come back on at 08:00hrs, except for the drying room and reception where the heaters would be set to a lower setting when not in use.
- External flood lighting would be minimised and all lights would be switched off overnight except those required for night-time security;
- Plant would be kept maintained and switched off when not in use;
- Energy and water sources would be metered where possible;
- Thermostats would be fitted to heaters within the Site accommodation and welfare facilities;
- Appliances would be fitted with timers or energy saving settings wherever possible and should be switched off when not in use; and
- Hosepipes would be turned off when not in use.

6.0 TRANSPORT MANAGEMENT AND SITE LOGISTICS

This procedure applies to the management of vehicles accessing the Site during the construction works and vehicle circulation within the Site. The traffic manager appointed by the Principal Contractor would be responsible for ensuring that drivers adhere to this procedure, through implementation of a Construction Logistics Plan to be agreed with LBoH.

The potential impacts as a result of construction traffic are:

- Congestion on the local road network resulting from vehicle routing and/or queuing to access the Site; and
- Pedestrian safety.

6.1 Procedure

A Traffic Management Plan will be produced detailing the arrangements which will be implemented to manage Vehicular and Pedestrian Movements for the duration of the works. Construction vehicles will access and egress via Breakspear Road South.

Where possible, vehicle movement areas within the Site would comprise hardstanding to minimise the transfer of mud onto the highway. However, vehicles leaving the Site would ensure that they are clean and, if necessary, pressure washing of the wheels will be carried out. Vehicles will not park outside the Site boundary at any time of the day or night unless specifically in advance with LBoH.

Road sweeping measures would be employed by Keltbray as necessary to ensure that local public highways are kept clean and free from debris. During construction, material deliveries to the Site would be carefully phased to suit the Construction Programme. The Principal Contractor would coordinate all deliveries or collections to/ from the Site.

Dedicated access gates for pedestrians and vehicles would be provided, which would be manned by Keltbray's traffic management team to ensure pedestrian safety during arrival or departure of construction vehicles. All vehicles would be regularly maintained in accordance with the manufacturer's specifications. Keltbray will ensure that all vehicles comply to the Safe Lorry Scheme 2015, and that non-compliant vehicles are turned away.

- CLOCS – Keltbray will ensure the Construction Logistics and Community Safety standards for all delivery vehicles are complied with.
- FORS – Keltbray will ensure FORS Bronze as a minimum contractual requirement. Were the sub-contractor only has Bronze accreditation, written assurance will be sought from the contractor that all vehicles over 3.5t are equipped with additional safety equipment (as per CLOCS Standard P13), and that all drivers servicing the site will have undertaken approved additional training

Prior to starting works on site a Construction Logistics Plan (CL&TMP) will be agreed with LBoH. The plan includes predicted numbers of vehicle site movements, traffic routes / direction and controls on the local feeder roads and communication with local stakeholders and sensitive neighbouring properties.

This will be updated on a regular basis to reflect the changing access requirements and route availability. This will take into account current legislation, Police, Fire Authority and HSE Guidance, Local Authority Transport Schemes and neighbourhood Lorry Restrictions. The Traffic Management and Construction Logistics Plan will be reviewed and updated in line with the demolition works programme.

When machinery needs to enter roads, appropriate supervision will be provided to control the flow of pedestrian and vehicular traffic. Traffic Marshals will be used during the movement of heavy plant. The CLP document includes a section with all the relevant information required for vehicle operators to understand the access and egress strategy for the site.

All traffic arriving at or departing from the Site will adopt the principles set out below:

- HGV drivers will be required to hold valid certificates and to have undergone the relevant safety training. Keltbray are committed to ensuring that all regular and frequent HGV class drivers attending site have attended the Safer Urban Driving Training (SUDT) course. Site records will be kept detailing all SUDT courses attended and training expiry dates.
- Construction vehicles will travel on main roads and will avoid using residential roads as far as practicable.
- 'Just in time' booked arrival slots will be used for construction vehicles removing spoil so as to avoid undue concentration of site vehicles.
- Default penalties relating to construction vehicles not complying with the agreed delivery slots and vehicle routes will be enforced and repeat non-conformance will result in vehicles / operators being banned.
- All vehicles shall be fully laden before leaving site to reduce vehicle movements.
- All vehicles shall be regularly maintained in accordance with the manufacturer's specifications.
- Keltbray and our subcontractors operating frequent and regular HGV trips to site will have a minimum FORS Silver Level accreditation or similar registered haulage contractors and we commit to use haulage contractors whose heavy vehicles meet Direct Vision Standard 2-star rating as a minimum.
- All vehicles will turn within the site in order to minimise disruption to other road users.
- Provision has been made to ensure that the loading of vehicles can be carried out on site rather than on adjacent roads.
- All HGV movements at site entrances will be managed by a competent traffic marshal at all times.
- No idling of vehicles will take place on the approach to access gates or within the site.
- Cleaning of wheels as necessary by controlled water jet.
- Regular wet cleaning of hard-surfaced roads used to enter site with sweeper vehicle as required.
- No adjacent car parking or loading bay suspensions is required.

The parking of site vehicles on footways and double parking will be prohibited. Limited parking for plant maintenance vehicles, delivery vehicles etc. will be available on site. There will be no provision of a dedicated area on the site for workforce private vehicles (other than cycles / motorcycles). Estimates of demolition traffic generation reach a peak level of 30 HGVs per day.

6.2 Road Closures / Abnormal Loads

Movements of large or abnormal loads (none anticipated) will be addressed in advance with London Borough of Hillingdon council, other relevant highway authorities and the Police in order to ensure compliance with regulations and advance notification for neighbours and to ensure designated routes will be complied with. We confirm that the use of articulated lorries will be minimised as far as practicable.

Traffic will be managed in such a way that inconvenience to the public is limited wherever practical. All diverted or replaced rights of way will be notified in advance and where appropriate, temporary routes will be provided.

6.3 Vehicle Access & Egress

The local highways surrounding the site will be kept clear of site debris throughout the works using suitable jet wash facilities on site and regular road sweeping. Routes for works traffic involved in the delivery/removal of equipment and materials to and from the site will be agreed with necessary authorities prior to demolition commencing.

The number of Heavy Goods Vehicles (HGV) required to service the site will fluctuate according to the works on site. Keltbray anticipate a maximum of 50 vehicles a day at peak times, however as an average over the duration of the demolition, the number of vehicles will be approximately 20 per day. This number will be much lower during the first weeks of the programme of works.

6.4 Public Access & Highways (inc. Cycle Safety)

The local highways surrounding the site will be kept clear of site debris throughout the works using suitable jet wash facilities on site and regular road sweeping.

The site is ideally located for public transport with the nearest Bermondsey train and tube stations located less than 200 metres walk of the site. The surrounding roads are served directly by bus.

- Our Keltbray vehicle fleet is fitted with the latest in cyclist protection systems which includes early warning audible and visual warnings to cyclists along with multiple camera coverage around the vehicle to assist the drivers in identifying the proximity of cyclists to their vehicles
- All of the Keltbray fleet drivers undergo specific cyclist awareness training as part of their TfL urban driver training in addition to their standard requirements

In addition Keltbray have teamed up with Inroads Partnership which is a not-for-profit organisation offering cycle safety awareness events to the private and public sectors. Staffed by Metropolitan Police Traffic Officers and backed by Keltbray, the aim is to help cyclists to be safer around HGV vehicles, by giving them the opportunity to sit in the driver's seat so they can appreciate just what the driver can – and can't – see.

To enhance the cycle safety training days we have teamed up with "havebike" to offer participants the option of having their bikes checked over by the experts. A team of mechanics will put the bikes through a 12-point safety check, advising on any safety or maintenance issues they find. Workshops and open days are carried out throughout the year in conjunction with Local Authorities and the Metropolitan Police in order to provide cyclists with training and information.

Our haulage drivers are trained in a suit of schemes including:

- Driver Certificate of Professional Competence (CPC) Training
- TfL Safer Urban Driving Training / Crossrail Driver Training
- Cyclist Awareness Training



FORS and CLOCS Certificates – Ref: 6.4

The key principle of the traffic management plan is to ensure the safety of all personnel including drivers & pedestrians both on and off site. This means that separate dedicated routes will be established for vehicles and pedestrians. The onsite traffic flow will change through the course of the demolition and enabling works. Wherever practicable one way systems will be used, with designated areas for unloading and turning and should reversing be required then vehicles will be banked at all times.

Vehicles and pedestrians will be segregated at site entrances by means of physical barriers. Site operatives will be required to wear high visibility clothing. Plant operators and drivers will be required to hold valid certificates and will undergo safety training.

All pedestrian routes will be clearly defined utilising temporary fencing and pedestrian route signage where necessary. Pedestrian crossover routes will have appropriate warning signs displayed, e.g. give way signs, vehicles crossing etc.

All site operatives will be given a specific site induction, and briefed with reference to the use of designated pedestrian access ways and crossover points. All HGVs will be fitted with on-vehicle cyclist warning and detection measures; warning signs displayed, e.g. give way signs, vehicles crossing etc.



7.0 MATERIAL PROCUREMENT, STORAGE & HANDLING

This procedure applies to the procurement of timber and other materials used in construction, and the storage and handling of all materials, with the exception of waste, which is addressed separately. All staff are responsible for complying with the requirements of the procedure. Relevant legislation and guidance includes:

- Environmental Protection Act 1990
- Water Resources Act 1991
- A Green Guide to Specification, Building Research Establishment

7.1 Procurement

Construction materials would be responsibly sourced wherever possible i.e. suppliers should hold a certified Environmental Management System for both the extraction of the raw materials e.g. stone, clay, aggregate etc. and the process stage. Materials should in preference be sourced locally.

The Green Guide ranks materials and components based on Life Cycle Assessments (LCA), using BRE's Environmental Profiles Methodology 2008. The elements covered include the Roof, External walls, Windows, Upper floors, Ground floor, Insulation, and Landscaping.

Keltbray would provide evidence of traceability and responsible sourcing for the major building materials. This would be demonstrated through the provision of third party Certificate such as ISO 14001 and BES 6001.

7.2 Storage

All raw materials would be appropriately stored on site to minimise damage by vehicles, weather, or theft. Secure storage would be provided for items of high value, materials which are hazardous or which are easily damaged.

Packaging would be retained on goods until the materials are required. Once removed, packaging materials would be stored and returned to the supplier for re-use/ recycling wherever possible. Covered storage would be used for cement and other materials. Sheeting would be used to cover friable boards and building blocks during storage and regular site inspection for spillage of cement and other powders would be carried out by the principal contractor.

Goods would be delivered on an “as needed/ just in time” basis to reduce stockpiling on site, damage from vehicles and other causes of wastage.

7.3 Documentation

Chain of custody certificate for sustainability-sourced timber used during the works should be maintained in a designated file.

8.0 WASTE REDUCTION

This procedure applies to the minimisation, storage and disposal of all wastes generated during the construction works. It is also concerned with the establishment of procedures for complying with statutory and good practice requirements for waste management. The Principal Contractor is responsible for ensuring that the relevant documentation is completed and held on site. In addition, all staff are responsible for adhering to the requirements of the procedure.

8.1 Procedure

Waste materials would be identified and sorted into separate key waste groups with monthly reports demonstrating the type and amount of waste generated. A site specific Site Waste Management Plan must be prepared by the Principal Contractor. Waste generated, reused and recycled must be reported to the Client on a monthly basis.

Waste Reduction

Over ordering of materials would be avoided, and deliveries of materials would be arranged for the appropriate stage of construction. The Principal Contractor would investigate ways to reduce waste produced, for example through supplier take back schemes and use of pre-fabricated elements. Packaging from raw materials would only be removed immediately prior to use, to avoid damage to the materials and waste generation.

Recycling

Materials to be recycled would be sorted on site and stored in an appropriate container or stockpile ready for collection. The amount of waste reused, recycled or sent to landfill would be recorded and compared with the above targets for waste re-use and recycling.

Waste Disposal

Waste would be segregated into recyclable, inert, non-hazardous or hazardous waste and retained in clearly labelled stockpiles, skips or drums in designated areas.

All waste removed from the Site (including recyclable waste) would be taken to a licensed or exempt waste disposal facility by a registered waste carrier. The Principal Contractor would ensure that all waste carriers and waste disposal facilities are licensed. Non-hazardous waste would be covered by a Waste Transfer Note. The Transfer Note would include an accurate description of the type, quantity and containment of waste, the European Waste Catalogue Number and details of the waste carrier. Sufficient information would be provided to ensure that the waste disposal operator is aware of any potential hazards of the substance. All documentation would be retained for a minimum of 2 years and be available for inspection.

Should Hazardous waste be produced, the Principal Contractor would inform the Environment Agency and obtain a Premises Code. A Hazardous Waste Consignment Note is required for disposal of hazardous waste and copies of the certification would be retained for a minimum of 3 years.

Waste Storage

All waste would be stored in an appropriate container to prevent escape of material and the Site would be left in a clean and tidy condition at the end of each day. More frequent cleaning would be carried out around canteens and toilets. Food waste would be collected regularly to avoid attracting vermin to the Site.

All roads, pavements, construction equipment, temporary structures, materials and machines would be kept clean and tidy at all times with litter and waste removed promptly. On completion of the works, each contractor would clear away, and move from the Site, all plant, surplus materials, waste and temporary works.

When leaving the Site, appropriate measures would be taken to prevent waste escaping onto the public highways, for example containers would be secured and open skips would be covered by sheeting.

8.2 Documentation

The following documentation must be completed and held on Site by the Principal Contractor in a designated file:

- Site Waste Management Plan including details of targets for waste minimisation and recycling;
- Waste Transfer Notes;
- Hazardous Waste Consignment Notes; and
- Waste Carrier's Registration Licences.

9.0 WASTE MANAGEMENT

The disposal of waste generated during works will be managed to maximise the environmental and development benefits from the use of surplus material and to reduce adverse effects of disposal. In general, the principles of the waste management hierarchy which favours waste minimisation, re-use and recycling over disposal to landfill will be implemented in line with the ICE Demolition Protocol and relevant to the planning conditions.

Opportunities will be investigated to maximise recycling of demolition, materials. Soft strip materials will be initially segregated on site and further segregated at a waste transfer station into appropriate waste streams to maximise opportunity for re-use.

Asbestos containing materials will be assessed in advance of demolition works commencing, and all asbestos removed to a licensed facility.

Where possible and as the works allow, Keltbray will retain all inert material arisings onsite to be processed for reuse in the future development works, which will have the additional benefit of reducing lorry movements to and from site and associated carbon emissions.

To ensure compliance with legislative requirements, only Environment Agency licensed waste hauliers, waste management contractors and landfill sites will be used. Transfer notes will be retained and will fully describe the waste in terms of type, quantity and containment in accordance with relevant regulations. Information regarding the type and quantity of material returned to the supplier and the contractor or contractors will also hold copies of all waste documentation.

Materials stored on site for disposal (e.g. spoil arising) will be subject to the provisions of the duty of care, and may require a waste management permit. Where this is identified the permit or any exemption will be managed.

Suitable protection measures will be incorporated in the design of the waste management area to prevent pollution, and regular inspections carried out to ensure that stored waste is covered by present accidental spillage and from being blown away. When leaving site, vehicles will be sheeted/covered to prevent any escape of materials onto public highway.

Waste materials from site accommodations and surrounding areas will be cleared on a daily basis and removed to a closed skip within the Main Compound. No build-up of combustible materials will be permitted. All waste materials to be removed from site, by each subcontractor responsible, on a regular basis.

9.1 Site Waste Management Plan (SWMP)

The SWMP (Site Waste Management Plan) defines the projects waste management and disposal strategy. Whilst no longer a legal requirement following the changes to the legislation in December 2013 Keltbray will have produced a SWMP for Ickenham Yard.

Project for the purpose of audit trail of information that the plan will provide during the course of the project.

These documents will include the following details:

- Targets for recycled material
- A scheme for recycling/disposing of waste
- Segregating material on site (considering safety and time/space constraints) will ensure waste can be safely stored or removed from site to a predetermined specialised waste facility, as applicable.
- Ensure careful use of water in dust suppression
- Use of 'Best Practicable Means' for all operations to keep the environmental impacts of the works to a minimum
- The waste streams, EWC category, and quantities (in tonnes) that will be generated by the works;
- Waste Hierarchy as stated on Waste (England and Wales) Regulation 2011
- The proposed method of storage, handling and transportation of waste;
- The means of disposal and the relevant consents and licensing conditions in compliance with statutory requirements;
- The reporting and monitoring procedures.

A general waste skip will always be provided in the site compound. Additional skips / bins for individual waste streams will also be provided to match current work activities. These skips will include:

- Wood
- Concrete
- Cable
- Metals
- Plasterboard
- COSHH.

This initial waste stream segregation will be followed by a similar process for the bulk clearance from site with the collection vehicles taking "waste by type" to our recycling / disposal facilities off-site by our in-house fleet as appropriate. The material clearance process and performances will be fully monitored and controlled under the Site Waste Management Plan.

9.2 Scheme for Recycling / Disposing of Waste

BREEAM scoring/points can be achieved during demolition phase by implementing a robust regime for reuse and recycle of arising materials and using only FSC timber materials.

For demolition projects, simply using demolition best practice can maximise recovery of demolition material and minimise waste to landfill. The scheme for recycling and disposal of waste will follow the key stages below:

- Carrying out a pre-demolition audit to establish the strategy
- Produce, issued and review "Site Waste Management Plan" and communicate this document to all personnel.
- Plan the site layout to establish processing and storage zones
- Records of material reuse on or off site and recycling rates shall be kept and compared against set targets

A waste hierarchy approach will be utilised towards managing waste during the construction of the Proposals:

Prevention > Preparing for Reuse > Recycling > Other Recovery > Disposal

Redundant equipment will be offered to the client to allow for reuse as spares where possible, or responsibly disposed of through authorised routes.

The scheme will also record responsibilities for waste management on site, compliance with the "Duty of Care", Environmental Protection Act 1990, and any training or awareness raising measures undertaken and reviews undertaken. It will also provide environmental KPI's which will be used to demonstrate performance levels against specified targets.

The evidence of material recovery will be used in evidence toward environmental building assessments such as the Code for Sustainable Homes.

9.3 Hazardous Waste

Since April 2016 the site no longer needs to be registered as a Hazardous waste producer with the Environment Agency. Hazardous wastes will be segregated and stored separately from other waste fractions to avoid contamination and risk to the environment and personnel and removed from site appropriately.



Waste Segregation – Ref: 9.3

10.0 CONTROL OF EMISSIONS TO AIR

This procedure applies to the management of emissions to air during the development works. All staff are responsible for complying with the requirements of the procedure. Dust nuisance occurs more readily during prolonged dry weather and especially in strong winds. Consequently, good site management includes the ability to respond quickly to such conditions. This procedure applies to the management of emissions to air during the works. All staff are responsible for complying with the requirements of the procedure.

10.1 Potential Impacts

There are two principal sources of emissions from Construction Sites: larger particles which settle out as dust; and emissions arising from plant operating on construction sites and from vehicles going to and from the Site. These latter emissions have the potential to contribute to local levels of air pollution, particularly Nitrogen Dioxide (NO₂) and particulates measuring 10µm or less (PM10). Potential impacts are therefore as follows:

- Nuisance from dust deposition onto surfaces such as clothes, cars or windows; and
- Impact on sensitive individuals from dust inhalation and air pollution.

10.2 Relevant Legislation and Guidance

- National Planning Policy Framework, 2012;
- Environmental Protection Act 1990;

- Control of Substances Hazardous to Health Regulations 1994;
- Control of Pollution Act 1974;
- Clean Air Act 1993;
- The Health and Safety at Work Act 1974;
- Air Quality Standards Regulations 2010;
- The Air Quality (England) (Amendment) Regulations 2002; and
- BRE "Controlling particles, vapour and noise pollution from construction sites" 2003.

10.3 Procedures

Guidance from the BRE states that the most effective mitigation technique for dust control is to prevent dust from becoming airborne, since it is difficult to suppress after this stage. Good site management would therefore include the ability to respond quickly to such conditions by employing such techniques as damping down (i.e. using a spray hose to deliver a fine spray) of stockpiles and sheeting of lorries. Specific mitigation measures to be employed on site by the Contractor to minimise disruption or nuisance to neighbouring occupiers are given below:

Keltbray will use dust mitigation measures, to ensure the minimum adverse impact on the neighbours surrounding the site. We will comply with current guidance and best practice including The Mayor's SPG: 'The Control of Dust and Emissions During Construction and Demolition' and the Institute of Air Quality Management's 'Guidance on the Assessment of Dust from Demolition and Construction' and 'Guidance on Air Quality Monitoring in the Vicinity of Demolition and Construction Sites'.

Handling and storage areas will be sited as far away as is reasonably and practically possible from public areas. Handling and storage areas will be actively managed and fine, dry material will be stored inside enclosed shield/coverings or within a central storage areas. Any storage areas that are not enclosed will be covered / sheeted. Prolonged storage of debris on site will be avoided. Vehicles carrying dusty materials into or out of the site shall be sheeted down to prevent any escape of materials.

Keltbray will take all practicable steps to minimise the risk of air pollution. Road vehicle exhaust emissions are the main source of air pollution in the UK, and the main pollutants are nitrogen dioxide (NO₂) and small particles known as PM10. Plant and equipment is serviced regularly to ensure good working order, all plant to comply with NRMM regulations – Stage IIIB emission standard for the Central Activity Zone progressing to Stage IV by the 1st September 2020 transition date. DPF filters are fitted where applicable.

10.4 Mitigation Measures for Dust and Air Quality

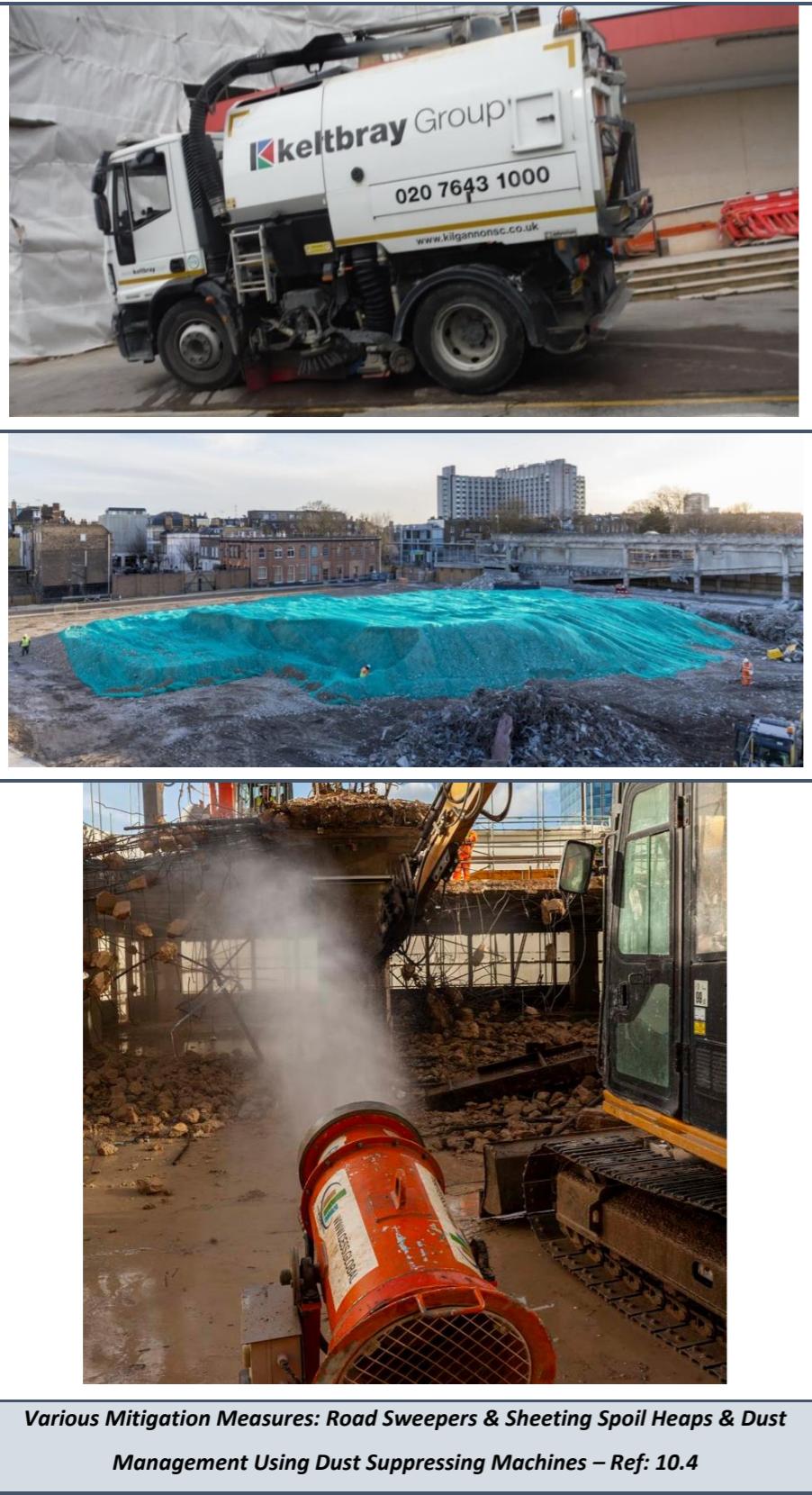
Construction plant and vehicle movements can be a significant source of dust and air quality; Dust and emissions from the works will be controlled through careful pre-project planning and effective site management. The following control measures and good management practices will be employed:

- Site plant and equipment will be kept in good repair and maintained in accordance with the manufacturers specifications. Allowing for economic constraints, the plant will be selected on the basis of which has the least potential for dust
- Plant will not be left running when not in use
- Plant with dust arrestment equipment will be used where practical
- Enclosures will be erected around major plant items as appropriate and where practical.
- Wheel washing facilities on site to prevent mud from operations being transported on to adjacent public roads
- Regular cleaning of hard surfaced site entrance roads
- Ensuring that dusty materials are transported appropriately (e.g. sheeting of vehicles carrying spoil and other dusty materials)

- Confinement of vehicles to designated haul routes within the site
- Restricting vehicle speeds on haul roads and other unsurfaced areas on the site;
- Hoarding and gates to prevent dust breakout
- Burning materials on site will be prohibited
- Loading and unloading will only be permitted in designated areas
- Provision of water sprays and wind/dust fences where possible, particularly in dust sensitive locations, for example, during demolition works. Water spraying and/or screening will be undertaken prior to and during works
- Stockpiles of granular material will be sheeted and/or treated using "H2OTurboFlow" or similar to prevent dust raising that may cause risk to health or nuisance to the public
- No engine idling of road vehicles, small plant or generators
- Delivery of materials and other equipment kept to a minimum
- Monitoring and Recording Monthly CO₂ emission generated by site activities, waste removal and associated works.
- Use of new, modern efficient plant and machinery
- Plant fitted with dust particle filters (DPFs)
- Plant and equipment is serviced regularly to ensure good working order, all plant to comply with NRMM regulations – Stage IIIB emission standard for the Central Activity Zone progressing to Stage IV by the 1st September 2020 transition date. DPF filters are fitted where applicable.

Dust control will be best achieved at source, and if possible activities will be carried out in a manner so as to preclude dust generation. Dust levels will be controlled and, if required, consent sought from the relevant local authority under the Control of Pollution Act 1974, Environmental Protection Act 1990 and local policy guidelines, to ensure that the Development is operated in a way which is not detrimental to the amenity of local residents.

If dust is generated, steps will initially be taken to protect workers in the vicinity who shall, as a minimum, be issued with dust masks. Dust suppression measures will be carried out to ensure that dust nuisance affecting neighbouring properties is minimised.



11.0 NOISE AND VIBRATION

This procedure applies to the management of noise and vibration during the construction works. All staff are responsible for complying with the requirements of the procedure. The Considerate Constructors Scheme states that the noise of plant, vehicles and radios should be kept down; noise including that from loading of skips should be suppressed using baffles or sound-deadening quilt and the use of radios should be moderated, with the volume maintained at a reasonable level. Current ambient noise levels are generally

dominated by traffic noise and vehicles entering and leaving car-parks. Ambient vibration levels within and around the Site are due primarily to nearby movements of vehicles and pedestrians but are low and insignificant.

Potential impacts include:

- Disturbance to nearby plots and HS2 site from site activities; and
- Effects of noise, dust and vibration from heavy goods vehicles transporting materials to and from the Site during construction.
- An application for Section 61 Consent has been submitted to and approved by London Borough of Hillingdon council for demolition and associated works taking place at the Site
- A Section 61 Consent may be applied for to London Borough of Hillingdon in case it is required.
- Keltbray actively instigates and invests in the use of quieter machines, and the best location for static plant and equipment to minimise noise. We aim to meet with the client and Local Authority Environmental Health Officers to discuss works and means of further noise reduction in the event there is concern that noise will reach unreasonable levels.
- The project delivery team, via the client will actively communicate with neighbours in writing, regarding the work taking place when noise levels are expected to be significant, as may be the case on similar project. A copy of letters will be sent to Environmental Health Officers and other stakeholders.
- Keltbray will implement techniques that allow exceedance noise sources and locations to be identified very quickly, using both recordings and correlation techniques, to determine if the exceedance is generated by the work on the IBM site. This will ensure that there are no delays or misidentifications of noise issues.
- Whilst it is unlikely that vibration will be an issue due to separation between the buildings, it is possible under unusual circumstances such as culverts or pipelines. If detected, then vibration testing will be implemented to zone any risk areas on the site so that mitigation can be implemented to prevent a recurrence.
- Keltbray actively invests in the use of quieter machines, and the best location for static plant and equipment to minimise any disturbance.

11.1 Mitigation Measures for Noise and Vibration

Noise monitoring and mitigation measures will be in line with the 'Noise, Dust and Vibration Monitoring Proposal' document and BS 5228-1:2009+A1:2014 'Code of practice for noise and vibration control on construction and open sites'

Keltbray will use the following noise and vibration mitigation measures at this project, to ensure the minimum adverse impact on the neighbours surrounding the site:

- Careful selection of demolition techniques and plant to minimise source noise levels,
- Use of electric and electro-hydraulic plant and equipment where possible,
- Use of non-percussive tools where possible,
- Unnecessary revving of engines will be avoided and equipment switched off when not in use,
- Internal haul routes will be kept well maintained,
- Drop heights of materials will be minimised,
- Plant and vehicles will be sequentially started up rather than all together,
- As far as reasonably practical, sources of significant noise will be enclosed,
- Care will be taken to position site equipment away from noise sensitive areas.
- Regular and effective maintenance by trained personnel will be undertaken to keep plant and equipment working to manufacturers specifications; and

- Screening e.g. Noise barriers and blinds will be used as appropriate; internal works will be performed within enclosed facades as far as possible.
- Scaffolding erected for demolition will also be encapsulated with Monarflex acoustic scaffold sheeting to minimise noise, for any scaffolding servicing areas above 2 storeys in height.

11.2 Environmental Monitoring Approach

A baseline Monitoring for (Noise, Dust and Vibration) will be carried out on the surrounding site elevation prior to demolition works commencing on site. Further monitoring will commence as agreed and instructed by client and the principal contractor in liaison with Hillingdon EHO at this project.

Monitoring will be undertaken throughout the Piling and Substructure works period to enable proactive management of dust. Wind speed and direction will be incorporated as part of the monitoring regime. There will also be on-going liaison with Hillingdon Environmental Department regarding the works control measures set in place regarding dust related issues.

The environmental monitoring to be implemented at this project will be real-time 24 hours. Reporting and detailed monitoring regime has to be agreed via Section 61 application in full compliance with relevant Technical and Noise Control Guidance.

Details of demolition activities, prediction levels/assessments will be discussed and pre-agreed with London Borough of Hillingdon Council, both prior to and during Piling and substructure works and set out in a Noise, Dust and Vibration Monitoring Procedure (NDVMP) and as per Section 61 consent.

Plant used on site will be registered and compliant with the Non Road Mobile Machinery Regulations for London.

12.0 ECOLOGY AND WATER RESOURCES

Keltbray will comply with statutory requirements and clients instructions in respect of the preservation of nature conservation areas and protected species. Any disturbance to such areas or species will be minimised. All appropriate licences or consents will be obtained prior to commencing works.

In the event any ecological mitigation is required, details will be submitted in the form of a method statement to the Project Manager for acceptance prior to implementation.

In the event of any unanticipated ecological discoveries, including nesting birds Keltbray will cease works immediately and inform the Project Manager. Works will not continue until further instruction from the Project Manager has been obtained.

Where applicable a biodiversity calculator will be used to assess biodiversity units prior to a project commencing, with the aim to ensure no net loss of biodiversity.

Works will be arranged in such a way to ensure that any interference with drains, spring and watercourse is prevented or minimised at this project. In the event of working on or near a drain, preventative and protective measures will be put in place to ensure no damage is caused and continual flow. This may include installation of a diversionary route whilst works are carried out. All such drains etc. will be put back as they were found once site works are complete or a permanent alternative is installed due to our work operations.

Any unknown drains, springs or watercourse discovered during work operations will be protected in the same way and put back 'like for like' upon completion of the works.

Keltbray will not knowingly lower the quality of any surface or ground water and the company shall comply with all relevant environmental legislation associated with the scope of works.

Substances (Fuels, Oils, and Chemicals etc.) will generally be stored at the main Depot in a secured 'bunded' facility. Storage of such materials on site only be done so in accordance with the COSHH assessment, and will be kept to a minimum.

A Pollution Incident Response Plan (PIRP) will be produced for the works.

13.0 ARCHAEOLOGY AND BUILT HERITAGE

Keltbray shall ensure all the correct permissions and consents are in place before allowing work to commence and will ensure that the appropriate archaeology desk based assessments and field evaluation have been carried out. Watching brief will be maintained during reduction of the basement level.

In the event of any discovery of archaeological remains during the life of the contract, works will cease immediately and Keltbray will inform client.

14.0 NEIGHBOUR AND COMMUNITY LIAISON AND MANAGEMENT OF COMPLAINTS

This procedure addresses neighbour and community liaison during the redevelopment works. The Principal Contractor are responsible for ensuring compliance with the procedure. In addition, all staff are responsible for adhering to its requirements.

The Considerate Constructors Code of Construction Practice states the importance of the consideration of the needs of local people, businesses and visitors.

14.1 Liaison Procedure

Prior to commencement of the construction works, all neighbouring occupiers, would be contacted Liaison, to explain the activities to be undertaken, the duration of the works and the working hours. The Liaison Manager would also be introduced as the main point of contact and a contact telephone number provided.

In accordance with the Considerate Constructors Scheme, a clean, presentable company sign board with relevant telephone number would be maintained. A respectable standard of dress code would be maintained and inappropriate behaviour, such as "wolf whistling", would be addressed in the site induction.

The Principal Contractor would ensure that standards are being adhered to. The site reception would be clearly signed and staff present in reception should be able to direct unexpected visitors to an appropriate member of staff. During the works, communication with neighbours would occur through newsletters and maintained notice boards.

Neighbours would also be specifically informed about any abnormal work, noisy work or road closures proposed. All licenses issued by the LBoH would be displayed prominently on hoardings, scaffolds, gantries or fences. The timing of deliveries to adjacent buildings would be considered to avoid conflict with construction vehicles.

The Principal Contractor will further correspond with London Borough of Hillingdon environmental protection officer and planning enforcement officer on a regular basis to discuss site activities and issues arising.

The project delivery team, via the client will communicate with neighbours in writing, regarding the work taking place and when noise, dust or vibration levels are expected to be significant, as may be the case on similar project. A copy of letters will be sent to Environmental Health Officers and other stakeholders. See appendix II for a list of local stakeholders.

Occupiers of nearby properties/businesses/community groups will be informed in advance of works taking place, including: the start date, estimated duration and nature of the project, details of contact names and numbers of appropriate site personnel.

Keltbray will maintain a complaints reporting procedure during the works. All complaints will be:

- Recorded
- Investigated
- Closed out – with record of any action required

14.2 Complaints Procedure

In the event of a complaint from a neighbour or a member of the public in relation to any activity, it must be recorded by the Liaison Manager in a designated logbook, stating the nature of the complaint, the cause, the time and date and, where appropriate, the remedial action taken. All site workers shall immediately notify the Principal Contractor or Liaison Manager should they receive any complaints.

Should complaints about noise, dust or vibration be received, consideration should be given to monitoring.

The Liaison Manager or his representative should contact all complainants within 24 hours of receiving the complaint for further discussion and identification of a mutually acceptable resolution. Where possible, measures should be put in place to avoid recurrence of the complaint.

The project team will consult with other projects in the vicinity, especially HS2 to ensure cumulative impacts are measured and reduced as far as reasonably practicable.

14.3 Employment

The client's and contractors intention is to liaise with London Borough of Hillingdon Council and set out how the following outcomes could be achieved:

- A local training, employment and procurement strategy will be devised for the demolition of the development and submitted to London Borough of Hillingdon.
- The developer will endeavour to ensure a workforce required to deliver the contract, including both contractor and sub-contractor workforces, are from the local area
- The developer will facilitate the engagement of potential local employees by working closely with the council's Economic Development team.
- Vacancies on site, including those with sub-contractors, will be notified to the Council and any other contractor-identified local providers and employment vehicles, and candidates identified by these organisations are to have an equality of opportunity in the selection process.

15.0 SITE WORKERS

This CEMP describes the measures proposed to protect the environment and local amenity during construction. This and subsequent CMP will aim to reflect best practice in relation to the site workers and their behaviour, such as the following:

- Workers will be required to attend project site induction sessions.
- Workers will be required to conform to a code of conduct ('the code') which will set clear expectations for the behaviour of workers both on-site and when in the local community. The code of practice which describes and details the code of conduct will be aligned with the project's principles and values. The expectations may cover, but not be limited to:
 - No anti-social behaviour, discriminatory behaviour, or harassment;
 - No offensive, abusive or derogatory language either in person or over media such as email or text;
 - No property damage of any kind; and
 - Respect for local community facilities.
- The consequence for violating the code of practice may include intervening actions for minor offences or job termination for persistent or large offences. This will be made clear to the workers during the induction process.
- Supply chain partners and contractors will be required to comply with the code of practice. These bodies will be consulted in the procurement phase so ensure agreement and aligned behaviour expectations.
- These code of practice and relevant standards will be made publicly available, so the community are aware of the standard of behaviour expected the consequences for violation, and the channels through which to engage with the project team over the workforce's behaviour.
- Keltbray have a reputation for positive contributions to the local communities in which we operate, both at our fixed locations and our operational sites. These practices are in place to ensure these positive contributions continue within the Ickenham and wider Hillingdon area.

15.1 Competency & Training

Principal Contractor shall ensure that all personnel are aware of their environmental responsibilities and develop and apply a frame training program to be agreed/reviewed by Keltbray.

The Principal Contractor will identify the training needs of all on-site personnel and sub-contractors to ensure implementation of the requirements for the CEMP through site inductions, briefings and Toolbox Talks. Toolbox Talks are brief informal discussions to promote health and safety, environment and sustainability and wellbeing, which will be used to reinforce training and awareness and potential issues that have arisen on-site.

The training is required to be specialised and aligned with the demolition and construction work expected to be carried out. The Principal Contractor is responsible for ensuring the competency of all staff and ensuring that training requirements are adequately fulfilled. The training will be logged for evidence of the employee's competency.

The environmental training program of the Principal Contractor shall as a minimum cover the following subjects:

- The site environmental requirements and how to apply and monitor them on site,
- Probable effects of the project, mitigating measures applied against such effects and where measures are applied
- Procedures to be followed in case of failure to conform to environmental requirements
- Procedures for unauthorized access to site and answers to the questions from public
- How to address the unexpected environmental events
- Duties of personnel regarding environmental issues

15.2 Induction & Environmental Training

All employees, contractors and visitors to the site will be required to be aware of Keltbray's environmental policy and controls to which they should adhere to, including, but not limited to:

- Method Statements;
- Importance of the CEMP;
- Site induction and briefing; and
- Risk Assessments.
- Visitors to site will also be provided with environmental training where appropriate, including:
- Environmentally sensitive locations and receptors on site;
- Activities which may result in adverse environmental impacts, and required mitigation for these;
- Toolbox Talks; and
- Training in response to any environmental incidents and accidents as the development progresses.
- During all training, site staff should be encouraged to report any risks/incidents as soon as possible and given relevant contact information should an incident arise.
- All persons receiving induction training will be required to sign a register. A copy of site rules and induction briefing will be visible on the site notice board, along with a copy of the CEMP.

15.3 Toolbox Talks

Toolbox Talks on potential environmental issues on site are important to maintain an appropriate level of environmental awareness on site, as well as to advise on changing circumstances as the development progresses. These should be given by the Environmental Manager or Supervisor on a regular basis and when relevant to the scheme of work. Important and relevant topics which should be covered in toolbox talks could be:

- Noise minimisation;
- Spillage/contamination prevention;
- Energy saving methods; and
- Waste disposal.

16.0 ENVIRONMENTAL COMPLIANCE

16.1 Monitoring Programme

Scheduled monitoring of environmental performance will be conducted throughout the construction phase of the proposed development. Table 6.1 presents an indicative monitoring programme, subject to review following appointment of the Principal Contractor. This will enable the overall effectiveness of environmental and ecological 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 and / or improve outcomes.

Aspect	Monitoring Method	Frequency	Responsibility	Records
Noise	TBC	TBC	TBC	TBC
Air Quality	TBC	TBC	TBC	TBC
Discharge	Visual & Sampling	As Required	Site Team	Site Diary
Fuel / Chemical Storage	Visual	Weekly	Site Team	Site Diary
Waste Disposal	TBC	TBC	TBC	TBC
Emergency Spill Kits	Visual	Weekly		Site Diary

Following obtaining planning approval and formalisation of a Principal Contractor the monitoring programme will be detailed considering environmental objectives and targets.

16.2 Inspections

Regular inspections will be carried out on all construction activities and work areas in order to check compliance with this CEMP and all regulatory conditions. The results of these inspections shall be recorded as part of the Safety Health Environment and Quality (SHEQ) management plan.

16.3 Event Based Inspections

Event based checks shall be conducted by the project management team 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 similar event which occurs in the adjacent HS2 lands. The event-based checks will be recorded on a separate inspection form detailing the reasons, observations, findings, and outcomes of the inspection which should then be recorded, and actions closed out.

16.4 Monthly Reporting

A monthly environmental monitoring report will be prepared and submitted for review to the applicant and project team. This report shall include a summary of environmental uses and actions during the period to ensure compliance with the CEMP, including details of any action items requests, complaints received, incidents and associated investigations and corrective actions and environmental awareness training provided during the period.

16.5 Environmental Audits

Internal environmental audits will be carried out by the SHEQ team in order to establish compliance with all pertinent requirements. These may be supplemented by:

- Audits carried out by the client;
- Audits of sub-contractors; and

- Third party or regulatory authority audits of ourselves or our subcontractors including those carried out for quality system certification purposes.

Keltbray has established an internal audit programme as part of the Management System. Where appropriate, the results of these audits shall be used to correct and prevent recurrence of deficiencies, which affect the project. Audits will be carried out in accordance with EMS ISO 14001: 2015.

16.6 Management Review

The project team will periodically review and continually improve its environmental management system, with the objective of improving its overall environmental performance.

16.6.1 Review of the Environmental Management System

During the Environmental management review, the project team shall conduct a review of the project's environmental management system. This review will cover the environmental aspects of activities that are within the scope of the environmental management system. This review may include:

- Results of internal audits and evaluations of compliance with applicable legal and other requirements
- Communication from external interested parties, including complaints
- Status of corrective and preventive actions
- Changing circumstances, including results of the evaluation of environmental aspects from planned or new developments
- Changes in applicable statutory legislation, procedures, and other requirements
- Lessons learned from emergency situations and incidents

Outputs from the review of the environmental management system shall include decisions on the system's suitability, adequacy and effectiveness and the identification of improvement priorities.

16.6.2 Continuous Improvement

Continuous improvement is a key attribute of an effective environmental management on site. This is accomplished through the achievement of environmental objectives and targets and the overall enhancement of the environmental management on site.

Where opportunities for improvement are identified, they will be evaluated to determine what actions should be taken. The actions for improvement will be planned, and changes to the Environmental and Social Management Plan implemented in accordance with those plans.

17.0 ENVIRONMENTAL ASPECTS AND IMPACT ASSESSMENT

Environmental aspects and impacts have been identified as part of this CEMP and captured within the Project's Environmental Risk Assessment (Appendix B). The Environmental Risk Assessment has been carried out to identify the key environmental risks associated with the proposed construction activities detailed in Section 2.2.

A risk management approach is used to determine the severity and likelihood of each risk's impact on the environment in relation to general, air quality, noise and vibration, archaeology and cultural heritage, contaminated land, landscape and visual amenity, ecology, material use, waste, water and sustainability. Where medium and / or high risks were encountered, mitigation measures and actions have been recommended and residual post mitigation risk assessed.

General control measures to reduce the likelihood of an environmental incident or nuisance occurring are set out within Section 8.0. Control measures in relation to specific environmental topics, to minimise the potential impacts associated with the construction works are outlined in Section 9.0.

APPENDIX A: SITE LAYOUT



APPENDIX B: ENVIRONMENTAL RISK REGISTER

An Environmental Risk Register has been compiled below, identifying key environmental issues/risks and appropriate mitigation measures for these risks. The scoring criteria outlined within the table below has been used to assess the probability of the risk, based on severity.

Again, once the appointment of a Principal Contractor has been formalised and additional detailed design commenced, this table will be updated to better reflect the working environment on the site.

Severity	Probability				
	Highly Unlikely	Unlikely	Possible	Likely	Certain
Severe:					
Causes, or could cause, permanent long-term, environmental damage.					
Breach of legislation resulting in fine/prosecution.					
Major:					
Causes, or could cause, environmental damage.					
Damage is not permanent or is medium term.					
Breach of legislation resulting in fine/reportable.					
Moderate:					
Causes, or could cause, environmental damage.					
Damage is short term or repairable.					
Breach of legislation.					
Minor:					
Could cause environmental change.					
Change is recoverable or self-recovering.					
No lasting impact					
Breach of guidance/best practice.					
Insignificant /positive:					
Can cause environmental change					
Effect is negligible					
Result in positive environmental effect					

Reference	Aspect	Issue/Risk	Potential Environmental Impact	Rating	Mitigation Measures Proposed	Residual Rating
01	Traffic	Use of public roads by heavy construction vehicles	Noise, air quality and vibration nuisance effects to local road users and residents and potential damage to road surfaces and flora and fauna on verges		Ensure all vehicle movements adhere to the Traffic Management Plan, with delivery hours specified to control volume of traffic at certain times	
			Increased exhaust emissions from higher volumes of traffic		Ensure construction traffic routes are designed and adhered to so as to not effect sensitive receptors such as to listed buildings and structures through excessive vibration	
			Soil and dirt spread onto local roads, dirtying it, and potentially becoming hazardous for other road users		Ensure open-bed vehicles carrying large amounts of materials are covered or sheeted Ensure all vehicles attending site/being used on site are serviced regularly to minimise adverse impacts relating to air quality and emissions Wheel washing facilities to be used when leaving the site onto the public highway. Use of a road sweeper where not appropriate	
02	Demolition	Improper management of demolition works may result in dangerous particulates becoming airborne and excess noise	Risk of asbestos fibres becoming airborne during demolition of existing buildings, which are particularly harmful to human health		Where asbestos is identified on site, works will be undertaken in compliance with relevant Health and Safety legislation and the approved method of works.	
			Noise and vibration effects from demolition may disturb local residents and lead to potential complaints		Restrict construction working hours to 08:00 to 18:00 Monday to Friday and adhered to at all times Where effects may be experienced, ensure local residents are made aware in advance as to when demolition works will be taking place	
03	Contamination	Incorrect storage and use of site chemicals, oils, and fuels	Pollution of surface water and groundwater		Materials classified as 'COSHH' to be stored in an appropriate locked storage facility on site	
			Damage to biodiversity or other ecological receptors		Drip trays to be used during refuelling, with spill kits nearby in case of spillage	
			Prosecution/fines		Workforce to receive training on how to use spills kits and briefed on the relevant procedures in place	
04	Nuisance (Noise and vibration)	Increase in noise from construction activities, including plant and equipment, resulting in an increase in noise and vibration effects on local residents	Disturbance to local residents and businesses, leading to potential complaints		Restrict construction working hours to 08:00 to 18:00 Monday to Friday and adhered to at all times All deliveries/vehicle movements to be managed using the Traffic Management Plan. Routes to be planned and considered to not impact upon sensitive receptors	
			Exceedance or breach of noise limit/licences and approved working hours		Works to follow the Construction Noise Management Plan Plant and equipment not to be left idling and switched off when not in use All machinery to be maintained and serviced regularly to prevent excess noise	
		Construction works, activities and machinery causing adverse visual effects on local residents, businesses, or other receptors such as PROWs and roads.	Potential impact to nearby historic buildings or structures particularly susceptible to increased levels of vibration			
			Excess lighting on site resulting in disturbance to people's homes and lives with lack of sleep			
05	Nuisance (visual intrusion)	Construction works, activities and machinery causing adverse visual effects on local residents, businesses, or other receptors such as PROWs and roads.	Construction works and associated activities causing visual disturbance to the public, leading to potential complaints		Stockpiles to be kept low to reduce visual intrusion Any lighting used during the works must face away from residential property	
			Potential blocking of sunlight into homes or other areas, impacting people's quality of life		Restrict construction working hours to as illustrated in this CEMP and adhered to at all times Works to be kept tidy and inspected on a regular basis by the site manager	
06	Nuisance (Air Quality)	Creation of dust and particulate matter from construction activities	Effect on human health as a result of respiratory problems and cause a nuisance, leading to complaints.		Dust suppression and shielding (extraction).	

Reference	Aspect	Issue/Risk	Potential Environmental Impact	Rating	Mitigation Measures Proposed	Residual Rating
			Potential impact on ecological receptors, resulting in loss of biodiversity, habitats, and species from contamination.	Yellow	Vehicle inspections and regular servicing to minimise excess particulates Traffic Management Plan (reduce traffic movements). Review construction methodology	Green
07	Stockpiles	Improper management of stockpiles leading to potential pollution of watercourses (surface and groundwater), air pollution and erosion from run-off.	Water run-off from stockpiled materials has potential to result in contamination to surface water/groundwater and a subsequent deterioration in water quality Compacting of soils as a result of heavy stockpiles may have an impact on its quality. Large stockpiles having a visual impact if too high	Red	Precautions taken in terms of storage and proximity to water drains Any surface water and contaminated water to be separated and disposed of in accordance with the relevant legislation and SWMP Do not store near site boundaries to prevent such material leaving site Establish a maximum height of stockpiles to reduce impact on local visual receptors Review chemical and physical characteristics of material to explore re-use opportunities	Yellow
08	Heritage	Unexpected discovery of archaeological and other historic assets during site excavations	Potential damage to unexpected archaeological finds Likelihood of delayed works	Yellow	If any heritage assets are identified during any excavations, work must immediately cease and assets reported Consult a heritage specialist before excavations and immediately upon any discovery of any heritage assets	Green
09	Energy	Increased energy usage required for construction activities	Increased carbon emissions contributing to climate change	Red	Use of energy efficient lighting and plant (where powered by electricity) Consideration of renewable energy sources Ensure any electrical items/plant are powered down when not in use	Yellow