DRAFT CONSTRUCTION MANAGEMENT PLAN

In respect of

BARRIE HOUSE
LONDON
NW8 7QH

On behalf of

Kaleminster Ltd

December 2017

Our Ref: JCG23433

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QUALITY MANAGEMENT

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CONTENTS

1 INTRODUCTION

1.1 This Draft Construction Management Plan (CMP) has been prepared to support a detailed planning application for the redevelopment of Barrie House, 29 St Edmund's Terrace, in the London Borough of Camden (LBC). The planning application is supported by various stand-alone reports including an Arboricultural Report and Sustainability Statement.

1.2 The purpose of this CMP is to specify the overarching principles and detailed measures to minimise and mitigate the environmental effects of the works associated with redevelopment of the site. More specifically, the CMP aims to:

- Ensure that relevant mitigation measures are implemented during all works and stages of development;
- Take into account relevant planning policy, such as the Mayor of London's Sustainable Design and Construction Supplementary Planning Guidance (SPG) (2014);
- Satisfy LBC's Minimum Requirements for Building / Construction / Demolition Sites; and
- Ensure that relevant legislation, Government and construction industry codes of practice and best practice standards are complied with.

1.3 The CMP details the environmental controls and safety procedures that will need to be adhered to during construction of the development, thereby providing a tool to ensure the successful management of potential adverse effects as a result of the construction activities. It sets out roles and responsibilities for the management of these controls and procedures, although it should be noted that until a Contractor is appointed this document should be treated as draft.

1.4 LBC's Minimum Requirements for Building / Construction / Demolition Sites states that the CMP should provide full details on:

i. *"How these operations are intended to be carried out and its timescale from starting date to its completion.*
ii. *Mitigation measures to be incorporated during the works to prevent noise and vibration, disturbances, creation of dust nuisance and prevention of rodent spreading out from the site.*
iii. *Evidence regarding staff having been trained on BS 5228:2009.*
iv. *Prediction of noise and vibration levels (including 3D modelling) throughout the proposed works; action to be taken in case exceedances over the predicted levels.*
v. *Monitoring of noise, vibration and dust levels.*
vi. *Abatement techniques to prevent noise, vibration and dust nuisances.*

vii. *Pest Control job receipts.*

viii. *Community liaison.*

ix. *Complaints Register - this should contain, if possible, complainant's details, date and time of complaints made, causes of complaint, action taken to resolve the complaint, date and time of action taken to resolve the complaint, reasons for any unresolved complaint.*

x. *An incident logbook shall be on site and all incidents shall be recorded stating date time and worker/s involved and action taken. (e.g. equipment operations started at 07:30 hours by ….. and the action taken measures incorporated to prevent recurrence of similar event)".*

1.5 These requirements have been addressed in this draft CMP where possible albeit in the absence of an appointed Contractor, some details will need to be confirmed at a later date and in the final iteration of this CMP.

1.6 The CMP includes the following:

- Description of the proposed development scheme, as well as the site context, identifying receptors that could be affected by the construction works;
- Outline of the site preparation, enabling, demolition and construction programme;
- Description of the main construction works, including site preparation, enabling, demolition, piling and construction;
- Identification of anticipated construction plant used in each phase of the works;
- Outline of the waste management procedures to be adopted;
- The responsibilities for managing, implementing and monitoring the CMP;
- Training to be provided and site rules;
- Communication, including external reporting and community relations;
- General construction requirements; and
- A description of the potential environmental impacts and required measures for avoiding or minimising these impacts.

1.7 Demolition at the site shall not commence until such a time as the CMP has been approved in writing by the LBC, to ensure environmental effects during demolition and construction are mitigated and controlled appropriately. The approved CMP shall be adhered to throughout the construction period unless otherwise agreed in writing by the LBC.

1.8 Any changes and/or improvements to the CMP will be made by the appointed Contractor in consultation with LBC.

2 PROPOSED DEVELOPMENT AND SITE CONTEXT

Scheme Description

2.1 The development proposals involve the demolition of the existing two-storey porter's lodge and parking area immediately north of Barrie House and construction of a four-storey extension to Barrie House over the basement, ground, 1st, 2nd and 3rd floors to comprise 9 residential units. Ten off-street parking spaces would be brought forward to replace the spaces lost from the existing car park.

2.2 The existing residents of Barrie House will remain resident for the duration for the works.

2.3 Details of the development are provided in the planning application documents, in particular the Design and Access Statement produced by Marek Wojciechowski Architects.

Site and Surroundings

2.4 The site is located in the London Borough of Camden in a residential area between Primrose Hill to north and Regent's Park to the south.

2.5 The property currently comprises an eight storey residential block with a private parking area and porters lodge to the north as shown in Figure 2.1. Vehicular access to the site is from Broxwood Way to the west. The site covers an approximate area of 0.2 ha.

Figure 2.1: View of Barrie House and adjacent Porters Lodge from Broxwood Way

2.6 The site is bounded by the following land uses, as illustrated in Figure 2.2 below:

- The Kingsland residential estate to the north;

- Regent Heights, a seven storey residential block to the east;
- St Edmunds Terrace to the south, beyond which is Parkwood Point, a six storey residential block; and
- Broxwood Way to the west, beyond which are additional residential blocks.

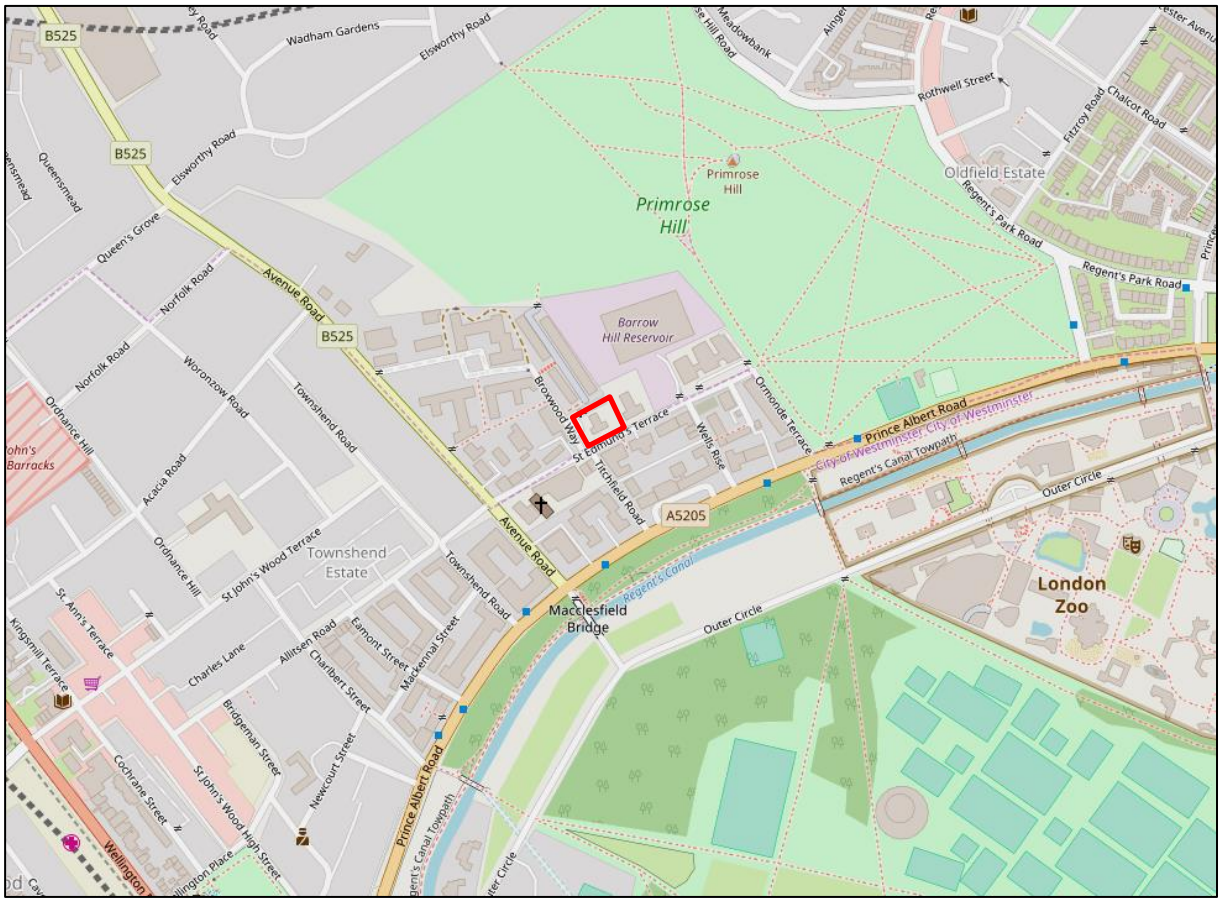
Figure 2.2: Site Location

2.7 Additional residential receptors in the wider area include those on St Edmunds Way, Broxwood Way and Titchfield Road. Barrow Hill Reservoir, a covered reservoir, is located immediately north east of the site boundary

2.8 A plan showing the wider site surroundings is provided in Figure 2.3 below.

2.9 There are no Listed Buildings in the immediate vicinity of the site, the nearest being 25 Avenue Road, approximately 200m to the west. Primrose Hill. A Grade II Registered Park and Garden is located approximately 120m north of the site and Regent's Park, a Grade I Registered Park and Garden, is located approximately 140m to the south. The site is not located in a Conservation Area or Archaeological Priority Area.

Figure 2.3: Wider Surrounding Area



3 CONSTRUCTION PROGRAMME AND ACTIVITIES

Construction Programme

3.1 It is anticipated that development will be constructed in a single phase, which will commence in Q2 of 2018 and be completed over a 14 month programme.

Overview of construction activities

3.2 Prior to the main demolition and construction works commencing, site preparation and enabling works will be required, including establishing:

- Site hoarding and security;
- Material delivery and off-loading areas;
- Welfare facilities and site logistics; and
- Access arrangements and vehicle routing.

3.3 Any security lighting will be positioned and operated to ensure no issues of nuisance are created for the existing residents. Any surface or near surface obstructions will be removed and utilities and services will be disconnected or diverted.

3.4 The main sequence of construction activities is outlined below.

- Site set-up;
- Erection of scaffolding;
- Demolition;
- Piling;
- Excavation;
- Ground works;
- Concrete structure and frame;
- Cavity Construction;
- Roofing and closing up; and
- Internal fit out and external works, including landscaping.

Use of Construction Plant

3.5 Consideration has been given to the types of plant that are likely to be used during the demolition and construction works. An indicative list of large plant and equipment that are likely to be used at various stages of construction is as follows:

- Dozer/Tracked Excavator/ Backhoe;
- Trucks/Tipper Truck;
- Hoists;
- Screening Plant;
- Breaker/Pavement Breaker;
- Grader;
- Vibratory Compactor/Hammer;
- Roller;

- Piling Rig;
- Concrete Pumps & Mixer;
- Compressors/Generators; and
- Mobile Floodlighting.

4 CMP RESPONSIBILITIES

Management Structure

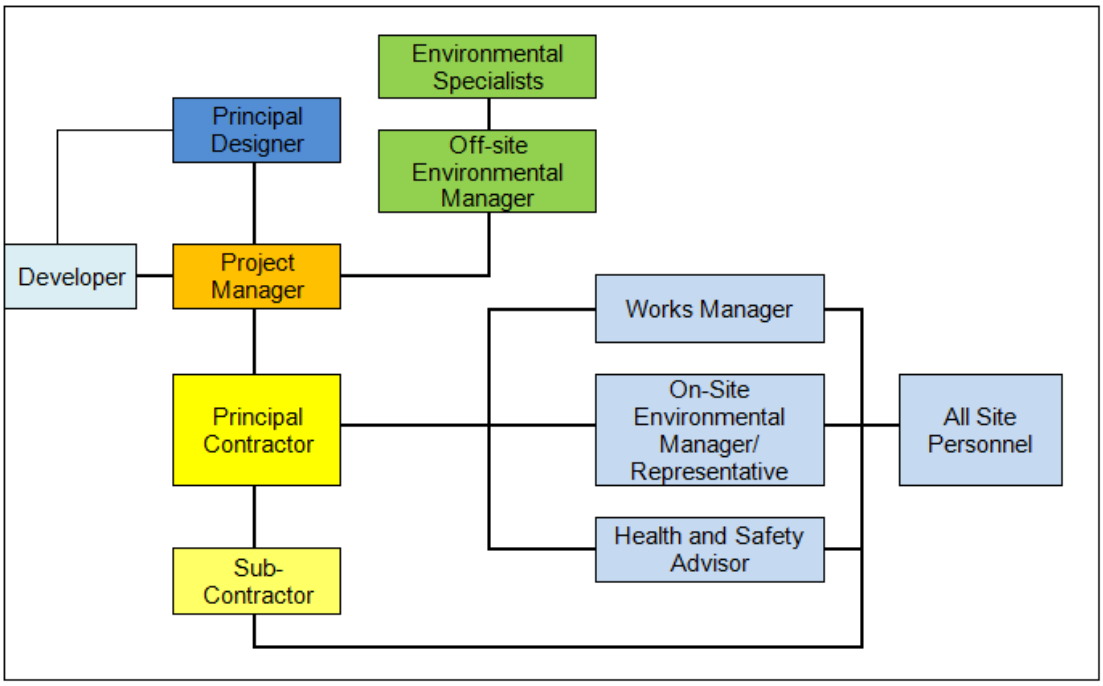
4.1 The Construction (Design and Management) Regulations 2015 (CDM Regulations) came into force on 6th of April 2015, replacing CDM 2007. Under the CDM Regulations, the Developer must appoint a Principal Designer and Principal Contractor prior to the commencement of works on site, or carry out these duties in respect of the CDM Regulations themselves.

4.2 Responsibility for all environmental issues relating to the development of the site rests with the Developer, the Principal Designer and Principal Contractor. Individual responsibilities will be divulged throughout the management team relating to the co-ordination of inspection, monitoring or reporting. Such individual responsibilities are outlined below.

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

4.4 An organogram of the proposed management and reporting structure is provided in Figure 4.1 below.

Figure 4.1: CMP Team Organogram



Individual Responsibilities

4.5 The duties of the Principal Designer, Project Manager, Construction Manager, Works Manager, Environmental Manager and other personnel are detailed below:

Principal Designer (can be the Developer)

- Review and approve the CMP
- Submit CMP to LBC for approval
- Assign appropriate resources to construction activities
- Undertake regular site inspections which will include compliance with environmental requirements

Project Manager (can also be Principal Designer)

- Allocate appropriate project resources to deal with environmental issues
- Ensure that the CMP is effectively established and implemented throughout the project
- Review and approve environmental action plans
- Designate representative responsible for environmental issues

Works Manager (part of Principal Contractor team)

- Understand the major environmental constraints and implications for the project
- Ensure that the need for compliance with environmental issues is communicated to the rest of the project team and sub-contractors
- Act on findings of internal and external audits
- Ensure complaints are being addressed and responded to
- Ensure appropriate pollution response provision is made
- Report to Senior Management (Principal Designer/Project Manager) on any environmental breaches
- Implement and maintain the operation of the CMP

On-Site Environmental Manager (part of Principal Contractor team, may be same person as Works Manager)

- Comply with the CMP
- Understand the environmental issues associated with the project
- Maintain and review the environmental risk register
- Co-ordinate and maintain consultation with LBC, local residents and other interested parties on environmental issues including complaints process
- Maintain the complaints log
- Ensure environmental audits are carried out and pursue any corrective actions
- Report on environmental incidents to Senior Management and Environmental Regulators as required
- Co-ordinate with the Project Manager and undertake regular reviews of the CMP during the project to ensure its continued effectiveness throughout construction activities

- Co-ordinate environmental awareness training and ensure relevant responsibilities are included within site induction

Health and Safety Advisor (note: could be same as Environmental Manager)

- Undertake regular site inspections
- Carry out audits within at regular intervals defined in this CMP
- Provide advice and support to Project Management Team

Off-site Environmental Manager

- Provide further support and advice for project team
- Aid in the management and selection of specialist environmental resources
- Ensure that the Project Management Team, Principal Contractor, and any subcontractors manage environmental issues in accordance with CMP

Environmental Specialists

- Relevant specialists will be employed, if necessary, during the project to undertake specialist monitoring (e.g. for noise and vibration), undertake surveys and advise the construction staff.

Collective Responsibilities

Project Management Team (outlined above) plus Works Manager, Sub-Agents, Quantity Surveyors, Site Engineers, Section Foremen, and Sub-contractors

- Comply with the CMP
- Maintain CMP document control system
- Implement the requirements of the CMP and its supporting documents on site
- Report immediately to Environmental Manager on any environmental incidents
- Ensure site personnel are aware of their environmental obligations and have undergone site environmental awareness training
- Implement the action necessary to resolve non-compliance issues
- All subcontractors should comply with the CMP, its operational control and procedures while on site

All Personnel – to be communicated during induction

- Comply with all operational controls and working procedures implemented by this CMP
- Undergo environmental awareness training
- Report to supervisor immediately on any environmental incidents
- Suggest potential modifications and improvements to CMP or the operational controls it develops

5 TRAINING, SITE RULES AND COMMUNICATION

Training

5.1 Contractual arrangements will require all contractors to provide suitably qualified staff to manage and execute works for which they are responsible. The Principal Contactor will require that all employees demonstrate an appropriate awareness of local sensitivities, expected code of conduct, working knowledge of the legislation, codes of practice, and guidance relevant to the activities in which they are engaged.

5.2 A training regime shall be implemented to ensure that all staff members, including sub-contractor's personnel, receive focused environmental training to ensure their competence in carrying out their duties on the project.

Site Induction

5.3 The Principal Contractor will operate induction schemes for all personnel to ensure that they are aware of their individual responsibility to comply with the CMP. The Principal Contractor will be responsible for identifying the training needs of his/her personnel and will ensure that appropriate training is provided. Training will include information on local considerations and the Client's expectations on site behaviour, "toolbox talks" for site operatives to maintain an appropriate level of awareness on safety, health and environmental topics and to advise employees of changing circumstances as work progresses. Records will be kept of attendance.

5.4 The general site induction shall be developed to introduce all site personnel to the environmental issues connected with the development, important environmental controls associated with the day to day operation e.g., boundary control, housekeeping, waste management, and the emergency procedures. A full register of induction attendance shall be maintained on site.

Responsibility: Environmental Manager

Action: Develop general site induction to include environmental issues and ensure induction records are maintained.

Toolbox Talks and Method Statement Briefings

5.5 Toolbox talks and method statement briefings will be given as the work proceeds and will cover the environmental controls related to specific activities undertaken during the works for example refuelling, hazardous waste removal, spill response etc. A full register of toolbox talks and method statement briefing attendance shall be maintained on site.

Responsibility: Environmental Manager

Action: Regularly assess site activities and ensure relevant training requirements are met. Develop and deliver specialised toolbox talks as required to ensure site activities are carried out in accordance with CMP.

Emergency Procedures and Incident Reports

5.6 Procedures will be implemented to respond to any emergency incidents which may occur on site. In order to ensure that compliance with the requirements of the relevant legislation and to avoid or mitigate against any significant environmental impacts, an Emergency Preparedness Plan (EPP) will be developed by the Principal Contractor.

5.7 All staff will be trained and made aware of the EPP set in place. In the event of any incident the Principal Contractor's Environmental Manager and Health and Safety Advisor will be notified as well as the Developer. Additionally, LBC and any other interested bodies will be notified as required.

Training Records

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

Site Rules

5.9 The site rules shall be developed to include environmental controls wherever applicable. Site rules should be displayed in all on-site offices and welfare facilities.

5.10 An initial list of 'Site Rules' to be implemented on site is provided below, these will be updated and developed further by the Principal Contractor:

- All personnel visiting or working on site must complete induction training prior to accessing the site;
- All plant/equipment used during the construction activities must be compliant with the Provision and Use of Work Equipment Regulations 1998 (PUWER), maintenance and relevant certificates must be retained on site;
- All substances to be used or handled on site must have the Control of Substances Hazardous to Health (COSHH) assessment available on site for staff members to consult;
- At the end of each working day all means of access, e.g. steps, ladders left in position must be secured/removed to prevent unauthorised persons (especially children) accessing the site and hazardous areas;
- Smoking is prohibited on site, except in designated areas, and the possession or use of alcohol and drugs is prohibited;
- Site welfare facilities must be maintained for the duration of the works;
- Standard Personal Protective Equipment (PPE) is required on site at all times, as well as additional Protective Equipment as required for specific works;
- Use of audio equipment is not permitted on site, except in designated areas;
- All staff members must work to their safety method statements and abide by all safety signs at all times;
- All Principal Contractor and sub-contractors staff members must conduct themselves and perform their duties on site in a safe manner;

- All plant and equipment must be checked prior to use, defects or problems must be reported, and where necessary, plant or equipment removed from site;
- All work areas must have clear, well maintained signage;
- Appropriate firefighting equipment to be maintained on site;
- All waste materials must be collected and removed from site at regular intervals;
- No fires are permitted on site;
- A qualified First Aider/ Emergency First Aider to be present on site at all times; and
- Acts of threat or violence will not be tolerated and any offender will be removed and permanently excluded from the site.

  Responsibility: Construction Manager/Environmental Manager

  Action: Ensure relevant environmental controls are clearly communicated in the site.

On Site Communication

5.11 A full contact list containing names, job titles and contact numbers of the project team members, shall be produced and maintained. This should include the Environmental Manager. On site communication will be provided by mobile telephone or two way radio.

Community relations

Statutory Authorities and Interested Parties

5.12 The Construction Manager in conjunction with the Developer and with the support of the Environment Manager or any appointed specialists will be responsible for the liaison on environmental matters with statutory and non-statutory authorities.

5.13 Consultation will be established and maintained with a number of regulatory bodies with regard to the environmental aspects of this project. These will include:

- LBC;
- Health and Safety Executive; and
- Emergency Services.

  Responsibility: Construction Manager / Environmental Manager

  Action: Establish and maintain consultation with LBC and other interested parties about the status of the project, potential impacts, mitigation measures, predicted time scales of activities etc.

Local Community Engagement

5.14 The Principal Contractor will commit to providing community relations personnel, who will be the first line of response to resolve issues of concern or complaints. Reasonable steps will

be taken to engage with local community groups and residents prior to and during construction (such as through the use of newsletters and fliers). Existing occupiers of Barrie House and other neighbouring properties will be informed in advance of works taking place and as works progress. Information to be disseminated will include: location of planned works; type of works; duration; anticipated effects of the works; contact details for enquiries; and complaints procedure.

5.15 Site boards outlining information on the project and forthcoming works will be erected at the entrance to the site. Site contact numbers will be displayed as appropriate, along with the complaints procedure.

5.16 All Contact Boards shall include the following materials:

- The title 'Contact Board'
- Name of the main contractor, address and person to whom correspondence should be addressed.
- Name of the site manager.
- Month and year of completion of works.
- Names and telephone numbers of staff who can take immediate action, so that contact can be made at any time.

  Responsibility: <u>Principal Contractor</u>

  Action: Establish and maintain consultation with local residents, and other interested parties about the status of the project, potential impacts, mitigation measures and predicted time scales of activities.

Complaints Management

5.17 A formal complaints procedure will be developed; the Construction Manager will be responsible for receiving, recording and responding to external complaints.

5.18 The Construction Manager will have his telephone number displayed for quick response to complaints. A staffed telephone enquiry line will be maintained at all times when site works are in progress to deal with enquiries and complaints from the local community. The telephone number (and any changes to it) shall be publicised widely in the local area and notified to LBC's Noise and Licensing Enforcement Team.

5.19 The complaints will be logged in a complaints register, together with a record of the responses and action taken.

- **Responsibility: <u>Construction Manager</u>**
- **Action:** Log complaints, conduct investigation, develop any corrective action, produce written response to complaints and generate monthly report of complaints received.

6 GENERAL CONSTRUCTION REQUIREMENTS

Hours of Work

6.1 The standard working hours for all construction activities will be:

- 08.00 – 18.00 Monday to Friday; and
- 08.00 – 13.00 Saturdays.

6.2 No works will be undertaken on Sundays or Public Bank Holidays.

6.3 These hours will be strictly adhered to unless or in the event of:

- An emergency demands continuation of works on the grounds of safety;
- Minor internal works are being carried out within the confines of the building envelope; and
- Completion of an operation that would otherwise cause greater interference with the environment /general public if left unfinished.

6.4 No continuous 24-hour activities are envisaged for works and any necessary working outside of standard working hours will be agreed in advance with LBC and will be subject to reasonable notice.

Access

6.5 In advance of works commencing, routing of the construction traffic will be agreed with LBC and all detailed traffic related issues will be dealt with within Construction Logistics Plan (CLP).

6.6 Vehicular access for construction traffic will be via the existing access to the west of the site, from Broxwood Way.

6.7 The type and number of vehicles generated during the demolition and construction period will vary according to the different stages of construction programme, and the type and intensity of work being undertaken at the different stages. HGV movements will be restricted as far as reasonably possible so as to avoid peak traffic flow periods (i.e. from 08h00-09h00 and 17h00-18h00).

6.8 The Contractor will maintain an up-to-date log of all drivers that will include a written undertaking from them to adhere to use of the approved routes for construction traffic.

6.9 Directional signage will be implemented to ensure that construction traffic utilises designated routes to minimise the effect on the surrounding road network and will form part of the CLP.

6.10 All construction traffic entering and leaving the site will be closely controlled and during delivery times, traffic marshals will be positioned appropriately to control and record entry and exit movements.

6.11 The existing residents of Barrie House will be provided with safe and secure pedestrian access throughout the duration of the works which will be separated from the works and other access routes.

Security On-site

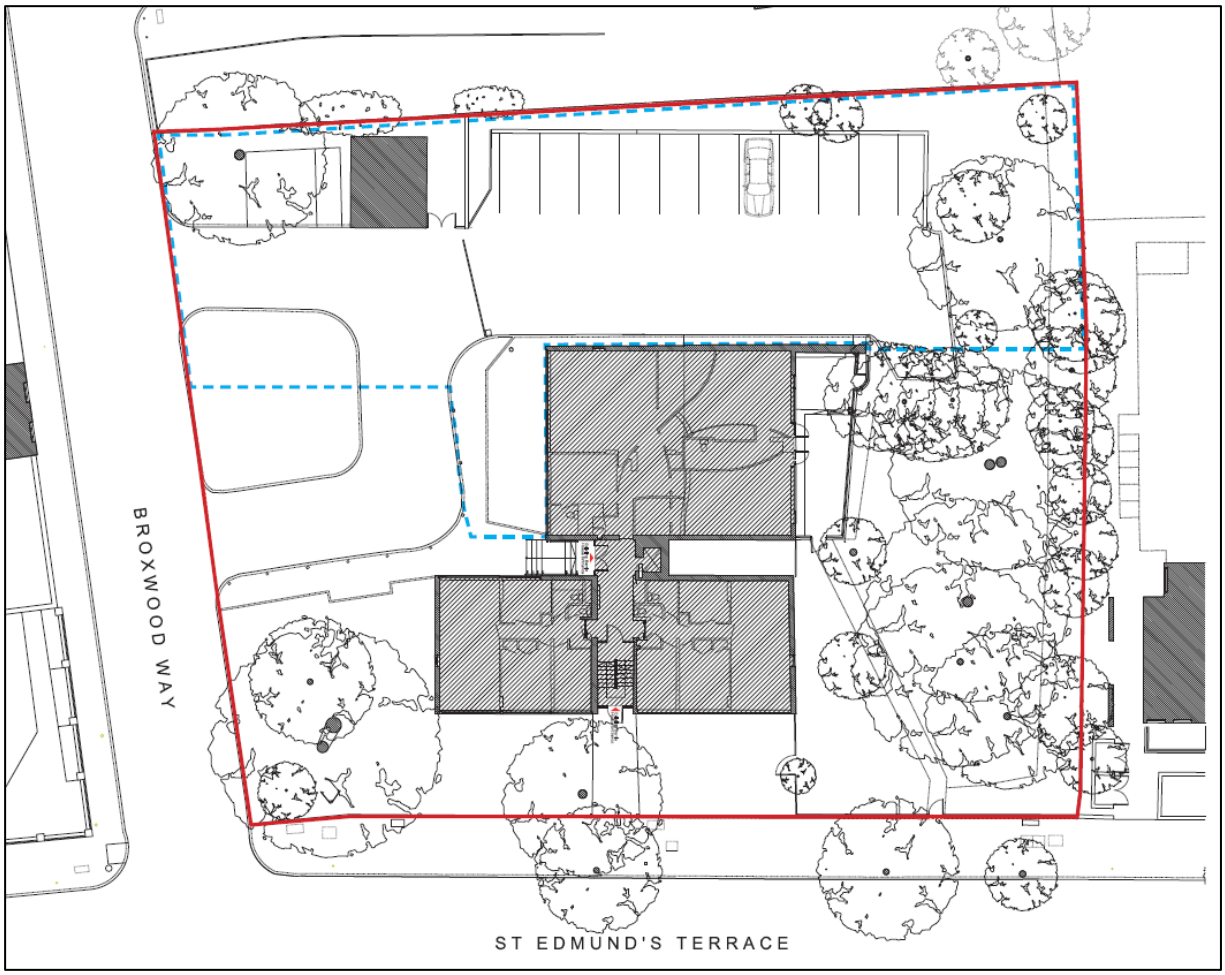
6.12 Only authorised personnel will be permitted on site. All visitors will be required to enter through the main entrance and report to the Construction Manager/Site Manager. All visitors will be required to sign in and out to ensure that site management are aware of the number of people on site in the event of an emergency.

6.13 Visitors will be required to undergo induction training, wear the necessary PPE i.e. safety helmet, hi-visibility attire, safety footwear and will be accompanied by a representative on site at all times.

6.14 Banksmen will aid construction vehicles in entering and exiting the site. All mobile plant/equipment will be parked safely and locked within a designated area to prevent tampering, and keys to all plant/equipment will be kept in a secured location.

6.15 The site boundary will be surrounded by hoarding as illustrated in Figure 3.1. Hoarding will be a minimum of 2.4m high and comprise solid panels of plywood or a similar material.

Figure 6.1: Proposed location of site hoarding



Lighting

6.16 Lighting on construction sites, whether natural or artificial, is essential to health and safety. Poor lighting can represent significant risks to staff members which can result in accident and injury, the quicker and easier it is to see a hazard the better the likelihood of avoiding it.

6.17 As outlined within Section 35 of The CDM Regulations (2015), the development site must be provided with suitable and sufficient lighting, which must be, so far as is reasonably practicable, by natural light. This relates to both the construction site as well as the approach and traffic route to the development site.

6.18 Site lighting will be at the minimum luminosity necessary to enable the safety and security of the construction site. Where appropriate, lighting to site boundaries will be provided and illumination will be sufficient to provide a safe route for the passing public. In particular, precautions will be taken to avoid shadows cast by the site hoarding on surrounding footpaths, roads and amenity areas.

6.19 Where appropriate, lighting will be activated by motion sensors to prevent unnecessary usage. It will comply with the Institute of Lighting Professionals' Guidance notes for the reduction of obtrusive light.

6.20 In determining any temporary construction lighting arrangements for the site, due consideration will be given by the Principal Contractor to residents and other sensitive receptors that may experience a nuisance by the light.

6.21 General control measures for the use of lighting on site are outlined below:

- Temporary site lighting when used adjacent to residential areas must be fixed with a noise screen to keep noise levels to a minimum;
- As far as is practical, lighting must be directed away from the surrounding residential properties; and,
- Lighting should always be positioned to prevent glare.

Vermin Control and Pest Control

6.22 The site is in an urban area, surrounded by residential land uses. There is therefore potential for an insect, bird or rodent infestation to occur on site. In order to minimise the potential for a rodent problem, the following control measures will be implemented:

- Access to the site from exposed drainage should be prevented;
- Ensure that rubbish or spoil is not left long enough on site to allow rodents to establish themselves above ground;
- Welfare facilities will be cleaned daily and maintained in a good condition. It is expected that the users behave appropriately towards the facilities;
- A suitable number of toilet facilities will be located around the site;

- All food and drink is to be consumed within an enclosed area or off the construction site;
- All food and drink will be disposed of in a lidded container and emptied on a weekly basis; and
- Any pest infestation of the construction site will be notified to LBC as soon as is practicable.

6.23 Twenty-eight days prior any building works are being carried out, a method statement on how the destruction/dispersion of rodents will be controlled during the demolition and construction works will be submitted to LBC. The method statement will include details on how existing/new drainage will be sealed during the construction process.

7 ENVIRONMENTAL CONTROL MEASURES BY TOPIC

7.1 The following sections of the CMP describes the general mitigation control measures to be implemented throughout development, on a topic by topic basis, to ensure the protection of the environment from potential adverse effects from the development.

Traffic and Pedestrian Access

7.2 In order to reduce the impact of construction traffic, a Construction Logistics Plan (CLP) will be submitted to and approved by LBC prior to the commencement of any works on site. This could be secured by condition attached to the grant of planning permission.

7.3 The principal aim of the CLP would be to ensure that construction works are organised and delivered in a manner that safeguards the highway impact, highway safety and amenity to the area surrounding the assessment site.

7.4 The CLP would provide details regarding:

- Site Operations;
- Operative Staff and Traffic Generation;
- Traffic Management – HGV routing strategy;
- Delivery of Plant and Materials; and
- Contractor Staff Parking.

7.5 All loading, unloading and deliveries of materials and plant to the site and removal of waste should, where possible be carried out within normal site working hours. Any early morning or evening deliveries must have approval from the LBC.

7.6 In addition to the CLP, positive action would also be taken to reduce the number of HGVs entering and exiting the site. These would include:

- Balancing the earthworks as far as possible to minimise the import and export of spoil material;
- 'Backloading' vehicle operation, where site delivery vehicles are utilised to remove waste materials from the site as part of the same trip; and
- Practical re-use of any aggregates on site and recycling of materials.

7.7 Measures to be adopted to reduce traffic and transportation effects include:

- Construction staff would be encouraged to utilise public transport to travel to and from the site;
- Agreed access and egress routes on the site will be observed at all times;
- Fire and emergency access routes will be kept free from obstruction at all times;
- Footpaths and roads will always be kept clear of obstructions, including parked cars;

- Materials will not be stored on or near roadways, paths or other areas where they may constitute a hazard;
- Banksmen will be employed to assist in traffic movements to ensure pedestrian safety and minimal disturbance to other traffic;
- The sheeting of loads will ensure that any material which is removed from the site is secure;
- Safe routes to separate pedestrians from construction plant and vehicles will be established as soon as practicable;
- Safe pedestrian access to Barrie House for existing residents, segregated from the works, will be maintained at all times;
- Vehicles not fitted with an audible reversing alarm/flashing beacon will have a banksmen present when reversing or carrying out difficult manoeuvres on site and in the loading area;
- Safety signs will be clearly posted to make personnel on and around the site aware of traffic hazards; and
- Drivers must obey the site traffic management system including speed restrictions.

Noise and Vibration

7.8 Best practicable means (BPM) will be applied during construction works to minimise noise and vibration at neighbouring residential properties and other sensitive receptors. BPM are defined in Section 72 of the Control of Pollution Act 1974 and Section 79 of the Environmental Protection Act 1990 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*".

7.9 The effects of noise and vibration from construction will be controlled by introducing management and monitoring processes to ensure that BPM are planned and employed.

7.10 All works must comply with BS 5228: Noise and Vibration Control and the construction and Open Sites Part 1: Noise and Part 2: Vibration. In order to ensure compliance with BS 5228 it is expected that noise monitoring will be required, at a level to be agreed with LBC.

7.11 The main Contractor shall carry out prediction of noise and vibration levels before any work is carried out on site. Where the measured noise levels are more than 3 dB (A) above the predicted noise levels, or in the event of a noise-related complaint, an investigation shall be carried out to ascertain the cause of the exceedance or complaint and to check that BPM are being used.

7.12 Vibration monitoring may also be required due to the proximity of adjacent residents, both on and off site, to ensure that levels do not exceed those which may cause structural damage to adjoining buildings.

7.13 The following measures will be adopted to reduce noise and vibration during the works:

- Vehicle engines and plant will be switched off between operations and when not in use;
- Pneumatic tools will be fitted with silencers or mufflers when in use close to sensitive receptors;
- Low impact techniques will be adopted where possible such as hydraulic crushing plant during demolition (e.g. munchers, nibblers etc);
- Generators and compressors will be silenced or screened as appropriate (e.g. when in use close to sensitive receptors);
- All vehicles and mechanical plant shall be maintained in good and efficient working order;
- Engine covers will be kept closed when machines are in use and idling;
- Care will be taken when erecting or striking scaffolds to avoid impact noise from banging steel;
- Plant which is known to emit noise strongly in one direction will be orientated in such a way that noise is directed away from sensitive areas wherever possible;
- Careful handling of materials and waste to minimise dropping from heights;
- Rubble chutes used for removal of debris will have a rubble mat positioned at the base to cushion debris as it fails reducing the noise and vibration;
- Shouting and raised voices shall be kept to a minimum. Use of radios is to be restricted except where two-way radios are required for reasons of safety and communication;
- A minimum of 2.4 metre impervious hoarding will be erected around the site, where feasible and practicable, and will continue to be maintained throughout the works;
- A site inspection will be undertaken daily to identify and rectify any issues which may increase noise and/or vibration; and
- Toolbox talks will instruct workers on noise and vibration issues.

Water Resources

7.14 Implementation of an appropriate temporary drainage system will be required in order to minimise the potential risk of increased sediment affecting the surrounding areas during construction activities on site. Construction activities may adversely affect the quality of surface water or ground water as a result of contaminated runoff from, or spillages on the construction site. The Principal Contractor will take precautions during works to protect the entire drainage system and nearby watercourses and groundwater from siltation or pollution.

7.15 Construction activities, including the storage and handling of materials on site will be in accordance with the EA Pollution Prevention Guidance (PPG) documents, in particular:

- PPG 2: Above ground oil storage tanks;
- PPG 3: Use and design of oil separators in surface water drainage systems

- PPG 4: Disposal of sewage where no mains drainage is available.
- PPG 6: Working at construction and demolition sites;
- PPG 7: Refuelling facilities; and
- PPG 26: Drums and intermediate bulk containers.

7.16 The following mitigation measures will be implemented, where applicable, to protect the water environment and surface water quality during all construction activities:

- All tanks will be adequately bunded to prevent spillages and drip trays will be used under stationary plant. Bunds or drum pallets will be covered, where possible, to prevent the accumulation of rainwater;
- During refuelling activities, spill kits will be on hand to address any minor incidents during these activities;
- To minimise the risk of ground contamination all plant operators will be required to clean up any small fuel or oil spillage immediately;
- Wastewater generated from construction activities such as dewatering excavations should be disposed of in accordance with relevant legislation and should not be discharged directly to surface or foul drains without appropriate licences in place;
- Existing and new surface water drains will be kept clear of silt build-up; and
- Roads and hard surfaces will be kept clean, to prevent a build-up of mud and sediment.

7.17 As referred to earlier in this CMP, an Emergency Preparedness Plan (EPP) will be created, reviewed and updated regularly by the Principal Contractor and Project Team. The EPP will be an up-to-date document containing information on the location and volumes of hazardous substances on site, the location of spill response equipment, the location of sensitive receptors (e.g. live drainage systems and watercourses) and the incident response procedure to be followed. All staff will be trained and made aware of the EPP set in place. In the event of any incident the Environmental Manager will be notified. Additionally, the LBC Environmental Health Officer and any other interested bodies will be notified. The Principal Contractor will designate a Site Spillage Team (SST) who will take appropriate actions in the event of a significant fuel or hydrocarbon spillage.

7.18 With regard to site drainage and temporary and permanent connections to sewers, all redundant sewer communication pipe work must be sealed off at the sewer. All retained sewer communication pipes should be tested and a CCTV survey carried out to ensure they are suitable for use

Ground Conditions, Contamination and Hazardous Material

7.19 The EPP will set out any procedures to deal with contamination if any issues were to arise. Therefore, all the workers on-site will be made aware of potential contamination issues on the site and will use best practice techniques during all construction activities. The operation of construction vehicles and the handling, use and storage of hazardous materials will be undertaken as follows:

- Construction vehicles and plant will be regularly maintained and supplied with spill kits and drip trays to reduce the risk of hydrocarbon contamination;
- Refuelling would be undertaken in specified areas. Drip trays will be installed to collect leaks from diesel pumps;
- The handling, use and storage of hazardous materials will be undertaken in line with the current best practice;
- Adequate bunded and secure areas are to be provided for the temporary storage of fuel, oil and chemicals, as far away from drainage as possible; and
- Provision of spill containment equipment such as absorbent material on site.

7.20 A member of staff will be nominated to control and monitor the Control of Substances Hazardous to Health (COSHH) system. Suppliers must send data sheets for every hazardous substance to the site. The assessment information sheet is completed in conjunction with Supervisors and Safety Managers who then brief staff members who will be using the substance, on its safe use, disposal and any emergency procedures. Written records of these briefings will be kept in the COSHH file held on the site.

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

Dust and air quality

7.22 The contractor will be required to control and limit dust, air quality, odour and exhaust emissions during the construction works as far as reasonably practicable and in accordance with BPM. This will include reference to publications on best practice including the following:

- *Guidance on the Assessment of the Impacts of Construction on Air Quality and the Determination of their Significance*, Institute of Air Quality Management, January 2014 (IAQM 2014);
- *Air Quality Monitoring in the Vicinity of Demolition and Construction Sites*, Institute of Air Quality Management, November 2012 (IAQM 2012); and
- *The Control of Dust and Emissions during Construction and Demolition:* Supplementary Planning Guidance, Greater London Authority, July 2014.

7.23 A number of mitigation methods will be implemented to minimise the nuisance and impact arising from dust which are outlined below.

Site management:

- Contractors will be instructed to use all reasonable means available to keep dust to a minimum, especially during dry weather conditions;
- Wind speed and direction must be taken into account when organising on site operations;
- The use of damping down equipment must be employed where dust may be generated to control dust at source. Water runoff from dust suppression activities will be controlled;
- Bins and skips will either be located in an enclosed area or covered and sheeted;

- Daily on-site and off-site inspections will be undertaken to monitor dust;
- All dust and air quality complaints will be recorded, identifying cause(s) and taking appropriate measures to reduce emissions in a timely manner and record the measures taken;
- Dust site inspections will be undertaken regularly, particularly in hot and windy conditions; and
- Records will be made of any exceptional incidents that cause dust and/or air emissions, both on- or off-site and action taken to resolve the situation in the log book.

Site maintenance:

- As far as possible, fully enclose site or specific operations where there is a high potential for dust production and the site is active for an extensive period;
- Avoid site runoff of water or mud;
- Burning of any material is prohibited anywhere on-site;
- Remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site; and
- All vehicles carrying loose or potentially dusty materials to and from the site will be covered.

Construction:

- Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques, such as water sprays or local extraction;
- An adequate water supply should be provided on site for effective dust suppression, using non-potable water where possible and appropriate;
- Use enclosed chutes and conveyors and covered skips; and
- Avoid the use of diesel or petrol powered generators and use mains electricity or battery powered equipment where practicable.

7.24 Measures will also be implemented to limit emissions from construction plant and vehicles. These are described in the traffic and transport section above and will also include the following, as appropriate:

- Operation of construction plant in accordance with the manufacturer's written recommendations;
- Vehicle engines and plant will be switched off and secured when not in use;
- Construction vehicles to conform to the current EU emissions standards;
- Vehicle and construction plant exhausts to be directed away from the ground and positioned at a height to facilitate appropriate dispersal of exhaust emissions;
- The enclosure, shielding or provision of filters on plant likely to generate excessive quantities of dust beyond the site boundaries;

- The use of diesel or petrol-powered generators will be reduced by using mains electricity or battery-powered equipment where reasonably practicable; and
- Vehicle, plant and equipment maintenance records will be kept on site and reviewed regularly.

Visual Impact

7.25 Appropriate controls will be put in place to protect nearby visual receptors, namely local residents and commercial receptors. These include:

- Screening of the construction site with 2.4m high (minimum) protective barriers where feasible;
- Construction lighting will be positioned and operated to minimise visual intrusion and nuisance;
- A survey plan showing areas of existing trees and vegetation within the construction site to be retained (and protected) and those to be removed will be produced;
- Avoidance of unnecessary tree and vegetation removal and protection of existing trees in accordance with *BS 5837, Trees in relation to design, demolition and construction. Recommendations*; and
- Stockpiles and mounds will be kept away from sensitive receptors and will be enclosed or securely sheeted where appropriate.

8 MATERIALS AND RESOURCE USE AND WASTE MANAGEMENT

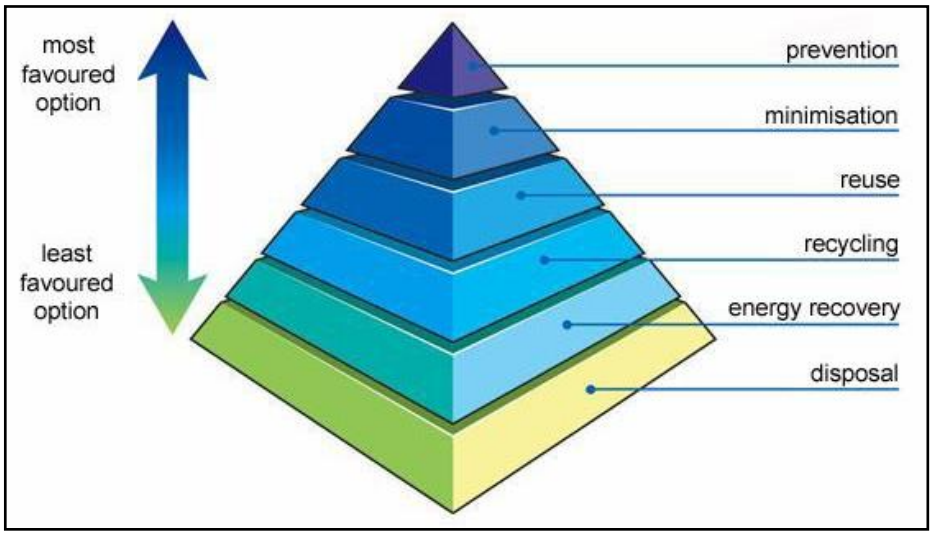
8.1 The Site Waste Management Plan Regulations (2008) were repealed on the 1st of December 2013 by The Environmental Noise, Site Waste Management Plans and Spreadable Fats etc. (Revocations and Amendments) Regulations 2013.

8.2 The SWMP Regulations (2008) aim was to make the construction industry more sustainable by ensuring that those responsible for development projects are aware of the waste being produced so that it can be reduced. Although no longer required by legislation, it is recognised that an SWMP or Construction Waste Management Plan (CWMP) would support the identification of actions to minimise construction waste from the redevelopment of the site being sent to landfills.

8.3 Prior to commencement of the works, a SWMP or CWMP will be prepared by the Principal Contractor. Generally, the disposal of all waste or other materials removed from the site will be in accordance with the Site Waste Management Plans Regulations 2008 and requirements of the Environment Agency (EA), COPA, 1974, Environment Act 1995, Special Waste Regulations 1996, the Duty of Care Regulations 1991; and Environmental Permit requirements.

8.4 In general and in accordance with the principles of the Government's "Waste Strategy 2000", and the Site Waste Management Plans Regulations 2008, a principal aim during demolition and construction will be to reduce the amount of waste generated and exported from site. This approach complies with the waste hierarchy (illustrated in Figure 8.1) whereby the intention is first to minimise, then to treat at source or compact and, finally, to dispose of off-site as necessary.

Figure 8.1: Waste Management Hierarchy



8.5 The generation of construction waste will, as the first priority, be avoided. Any packaging used for transporting of construction materials delivered to site will be sent back with the

delivery vehicle whenever practicable. If waste is generated on-site, it will be sent for reuse and recovery in preference to disposal. Where practical, spoil, demolition materials, prunings and surplus construction material or clean concrete arising from the works on site will be reused. Any suitable stone found on-site may be crushed and used as sub-base for roads and buildings.

8.6 Waste produced during all construction activities on site will be subject to the 'Duty of Care' under the Environmental Protection Act (1990). It is the joint responsibility between the Principal Contractor and the Developer to ensure that waste produced onsite is disposed of in accordance with legislation.

8.7 Waste for final disposal will be transported by Licensed Waste Carriers to local sites which operate in accordance with the appropriate Waste Management Licenses issued by the EA. Under the Duty of Care Regulations, the receiving site must be authorised to accept the type and quantity of waste generated. Transport of wastes will be minimised by the selection of local licensed sites where available. The only exception to this principle may be for the disposal of hazardous wastes (contaminated soil) where suitable landfill or other disposal sites may only be found further afield. No disposal of waste by open burning will be permitted on-site.

8.8 The Principal Contractor will audit waste carriers and disposal facilities and maintain documentary evidence that these requirements are being met. A register of waste carriers, disposal sites (including transfer stations) and relevant licensing details will be produced and maintained on site.

8.9 All relevant contractors will be required to investigate opportunities to minimise and reduce waste generation, such as;

- Agreements with material suppliers to reduce the amount of packaging or to participate in a packaging take-back scheme;
- Implementation of a 'just in time' material delivery system to avoid materials being stockpiled, which increases the risk of their damage and disposal as waste;
- Attention to material quantity requirements to avoid over-ordering and generation of waste materials;
- Segregation of waste at source where practical;
- Re-use of materials on-site wherever feasible. The Government has set broad targets of the use of reclaimed aggregate, and in keeping with current guidelines and relevant legislation, contractors will be required to maximise the proportion of materials recycled; and
- Re-use and recycling of materials off-site where re-use on-site is not practical (e.g. through use of an off-site waste segregation facility and re-sale for direct re-use or reprocessing).

8.10 Materials and waste will be stored in appropriate conditions to prevent damage or contamination of storage areas. All hazardous materials including chemicals, cleaning agents, solvents and solvent containing products will be properly sealed in containers at the end of each day, prior to storage in appropriately protected and bunded storage areas.

Containers should be sited away from drains or unsurfaced areas and should be regularly maintained and inspected for damage.

8.11 Waste will be sorted into different waste types such as timber, copper, metal, paints, plasterboard etc and either disposed of into larger skips, or if suitable, placed into a compactor to reduce the volume of the waste before it is taken off-site.

9 AUDITING MONITORING AND REVIEW

Environmental Monitoring Programme

9.1 Scheduled monitoring of environmental performance and formal compliance auditing will be conducted throughout the construction activities. This will enable the overall effectiveness of established environmental measures and compliance procedures to be assessed, and allow areas of underperformance to be identified so corrective actions can to be taken to strengthen environmental safeguards or improve outcomes.

9.2 The monitoring programme proposed under this CMP includes daily, event and monthly based inspections.

Daily Inspections

9.3 Routine daily visual inspections will be carried out on all construction activities and work areas in order to check compliance with this CMP and regulatory conditions. The results of these inspections shall be recorded on a Daily Site Environmental Form (DSEF). An example of such a form has been provided in Appendix A.

Event Based Inspections

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

Monthly Reporting

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

Incident Reporting and Corrective Actions

9.6 All incidents including actual or potential (near miss) for injury, or damage to equipment, property or the environment will be reported to the Project Manager or Construction Manger as soon as practicable after the occurrence. Regardless of how minor the incident appears, it will be reported. An “Incident Investigation Report” will be completed within 18 hours of the incident. Prompt reporting will allow an immediate investigation to take place and prevent similar situations occurring.

9.7 The reporting of hazards is the responsibility of all staff and if a hazard or a safety problem is identified, it will be brought to the attention of the Construction Manager immediately who will investigate and rectify the situation as soon as practicable.

CMP Review

9.8 The Developer, Principal Designer and Principal Contractor will ensure that controls outlined in this CMP are properly implemented and regularly monitored to ensure their effectiveness. Changes to the controls will be instigated if they are not achieving their objectives. The CMP shall be revised and refined in consultation with the LBC, as required, to ensure it remains consistent with environmental regulatory requirements and conditions of planning approval.

APPENDIX A: EXAMPLE DAILY SITE ENVIRONMENTAL FORM

To be completed daily by the Construction Manager / Environmental Manager and retained on site within the Environmental File for submission with the Monthly Environmental Report.

Date Action	Mon	Tue	Wed	Thu	Fri	Sat	Week Ending / / Comments
Noise and Vibration							
Traffic/Transportation							
Dust/Air Quality							
Archaeology							
Ecology							
Water Resources							
Ground Conditions, Contamination and Hazardous Material							
Soil and Water Management							
Sediment Controls							
Off Site Disposal							
Roads clean of dirt/mud							
Stockpiles							
Waste Management: Hazardous Waste							
Asbestos							
Hydrocarbon							
Other							
Waste Management: Non-hazardous Waste							
Soil							
Steel							
Demo Waste							
General							
Weather							
Rain (mm)							
Wind max (km/hr)							
Other							
Maximum Trip							
Complaints Received							
Refuelling							
Other (as required)							
Additional Comments:							

Environmental Manager/Site Manager	**Construction Manager/Project Manager**
Name:	**Name:**
Sign:	**Sign:**
Date:	**Date:**