DRAFT CONSTRUCTION MANAGEMENT PLAN

HAMPSTEAD HEATH PONDS

LONDON

NW5 1QR

1.1 INTRODUCTION

This framework CEMP has been produced by C6 Projects for the proposed safety, access and security improvement works to the men's, ladies and mixed bathing ponds on Hampstead Heath.

The CEMP has been designed to include details of monitoring and mitigation measures to control the potential environmental impacts during the construction phase. It also includes procedures for handling and investigating complaints.

1.2 SUMMARY OF PROJECT

The proposal is for the following:

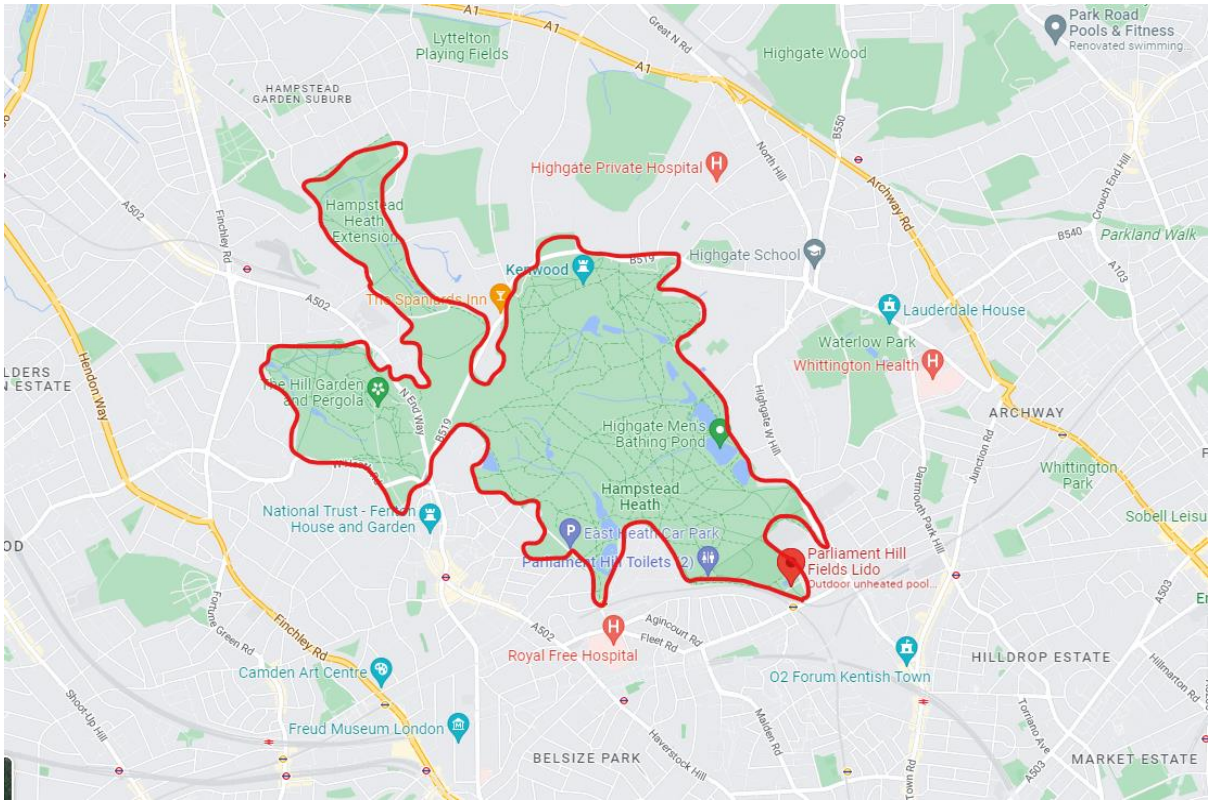
> *"Improvement and refurbishment works at Hampstead Heath Swimming Ponds (Mixed, Mens and Ladies) including enhanced disabled access provision, extension to changing facilities and storage areas, replacement of windows to lifeguard offices, alterations to hardstanding and access gates and fences.*

1.3 SITE DESCRIPTION

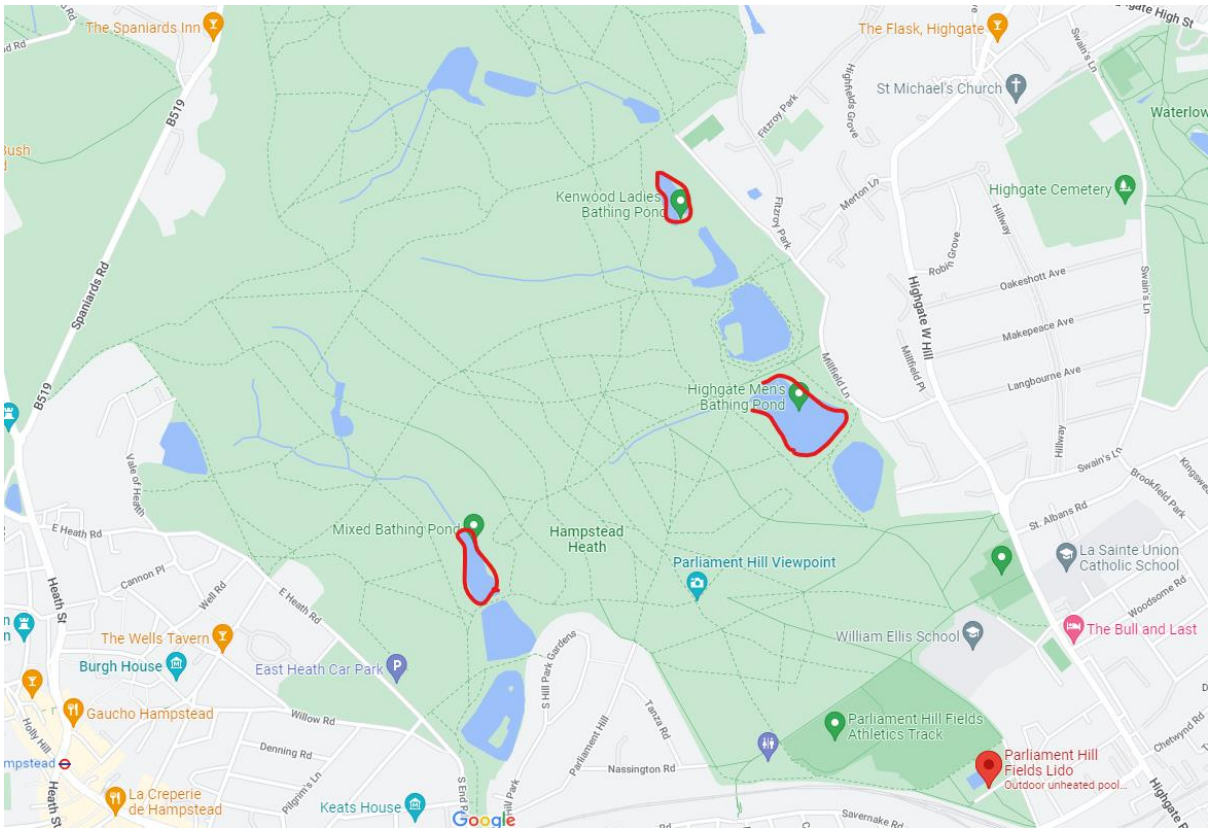
Hampstead Heath Ponds are a series of some 30 bodies of water on or adjacent to Hampstead Heath covering an area of approximately 43 acres. The 3 sites within Hampstead Heath that works will be completed to will be the men's, ladies and mixed ponds.

The site has a number of access points surrounding the heath including car parking facilities adjacent to the Parliament Hill Fields Lido Building.

The application site is located within the London Borough of Camden. The site is surrounded on three sides (North, South, East and West) by land in the ownership of City of London. Residential areas are located to the perimeter of Hampstead Heath however not directly near the proposed locations of works. The nearest railway line is located to the south and west of the site namely being Hampstead Heath and Gospel Oak stations. The Site boundary is shown below.



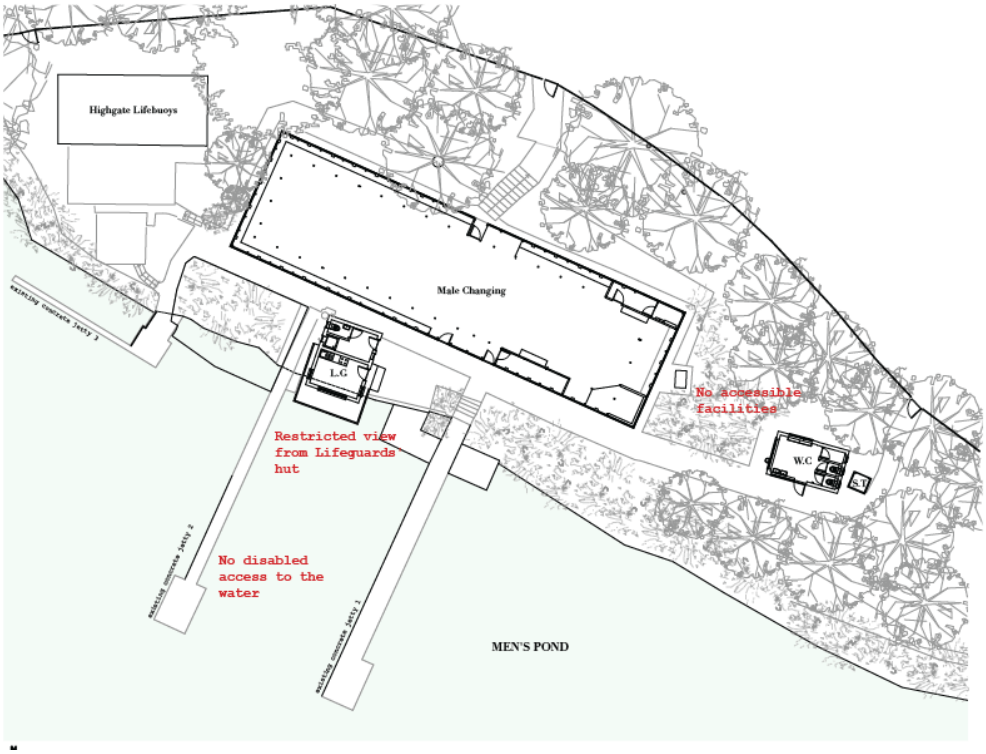
Site Location Plan



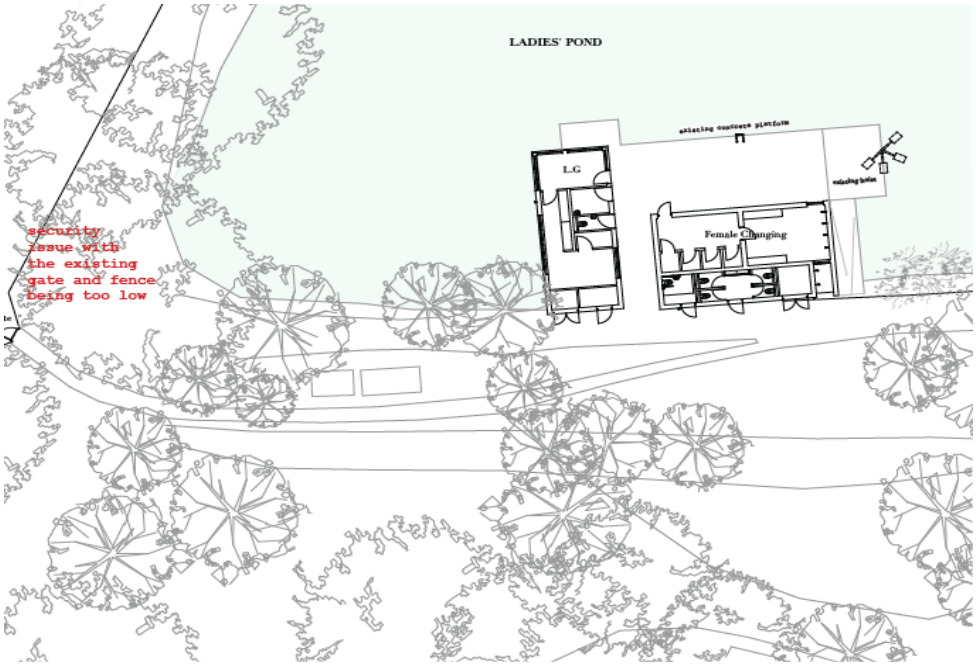
Site Redline Plan

Proposed Plans

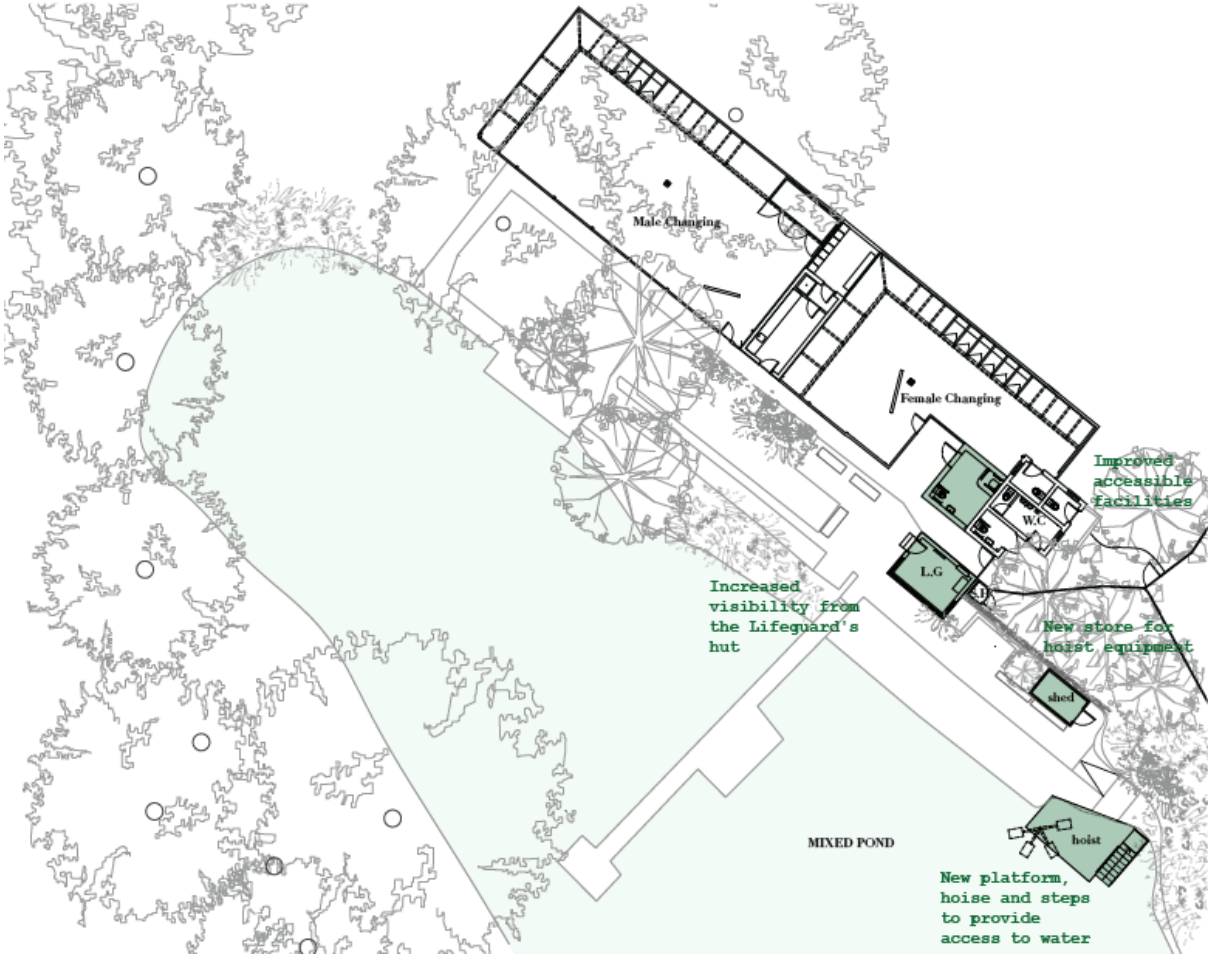
Men's Pond



Ladies Pond



Mixed Ponds


Male Changing
Female Changing
Improved accessible facilities
W.C
L.G
Increased visibility from the Lifeguard's hut
New store for hoist equipment
shed
MIXED POND
hoist
New platform, hoise and steps to provide access to water

2.1 GENERAL ARRANGEMENTS AND RESPONSIBILITIES

The Client (CoL)

The Client will ensure that all contracts, including sub-contracts, in connection with the development acknowledge the CEMP and adherence to the requirements set out in the CEMP, including any revisions to the document subsequent to the making of the contract.

Principal Contractor (TBC)

The Principal Contractor shall prepare a diagram which shows the project's organisation chart for the construction phase.

This diagram shall show all lines of communication between the Principal Contractor, the Project Manager, the Client's Team and the Regulatory Authorities. It should demonstrate how environmental information will be disseminated to all levels of staff involved in the project.

The Principal Contractor will comply with all elements of this CEMP and shall be responsible for:

- Communicating the requirements of the CEMP to any sub-contractors;
- Liaising with all project team members on environmental issues;
- Maintaining an up-to-date register of legislation and meeting legislative requirements;
- Maintaining a register of actions carried out; and,
- Liaison with the London Borough of Camden (LBC) and General Public. Site Manager (TBC)

It is envisaged that the Client's appointed Project Manager shall be responsible for ensuring the delivery to the Client, of the environmental requirements of the contract.

It will be a requirement that they conform to ISO014001 and will also be responsible for implementing and maintaining the CEMP and monitoring the performance of sub-contractors. This will include participating in communication with LBC and other third parties as required. The Site Manager will also be responsible for ensuring that all staff

on site receive the necessary health and safety and environmental induction prior to starting work on site.

Sub-Contractors

All contractors are responsible for leading the work of their particular discipline on the project. They are responsible for ensuring that the requirements of the CEMP are communicated to all site workers.

A senior manager of the site staff will be made the main point of contact regarding the CEMP matters and report all incidents immediately to the Site Manager. This role includes inducting site personnel on the requirements of the CEMP and making staff aware of it prior to commencing any work on site.

2.2 KEY CONTACTS

The following people will act as the key contact for the development works which are carried out and they will be the main point of contact for any complaints which are received during the programme of works:

- Client – Edwin Birch – City of London
- Project Manger – Sean Coyne – C6 Projects
- Lead Architect / CDM Principle Designer – Zoe Polya-Vitry - Zoe Polya-Vitry
- Cost Consultant – Adam Marsden – Academy Consulting
- M&E – Sanjiv Sodha – SS&A
- Structural – Mike Hutchison – Momentum Engineering
- Planning – Paul O Neil – Metropolis

2.3 COMPLAINTS PROCEDURE

Good relations with people living and working in the vicinity of site operations are of paramount importance. Early establishment and maintenance of these relations throughout the carrying out of site operations, will go some way towards minimising potential disruption to neighbours. Therefore, businesses and residents located within proximity to the Site shall be notified of the works. This should include a summary of

the proposed phasing and details of the proposed operating hours outlined in Section 3 below. In addition, a contact telephone number should be provided in the event of complaints from the public and a procedure adopted to respond to such complaints.

The Principal Contractor shall provide clear and prominent signage at the main access point to the Site warning that construction works are in progress and that the Site is hazardous. Signs shall identify the potential hazards associated with the proposed construction works and shall include emergency telephone numbers and other relevant contact details.

The appointed Principal contractor will act as key contacts for the development works which are carried out and they will be the main point of contact for any complaints which are received during the programme of work. The complaints procedure is as follows:

- Contact details and site information will be provided at site entrance so that the general public can report any concern to the Site Manager via email or by phone. An out-of-hours number will also be provided for emergencies;
- If a site-based comment/complaint is received, then it is the responsibility of the Site Manger to provide an initial response. In case of emergencies, the response by the Site Manager to the emergency will be immediate;

- In other cases, the response to the complaint will be as soon as practical via Principal Contractor's appointed relations consultant; and,

- If the complaint is not resolved to the satisfaction of the complainant, then it will be escalated to an appropriate individual within the Principal Contractor's management team.

2.4 TRAINING, AWARENESS, COMPETENCE AND COMMUNICATION

Training, awareness and competence are an essential component of environmental management on construction sites. The training procedure shall be developed by the Principal Contractor at subsequent stages. It is expected that this will address:

- Site induction training;
- Specialist environmental training; and,
- Toolbox talks.

2.5 PROCEDURE FOR MANAGEMENT, EMERGENCY AND INCIDENT REPORTING

The appointed Principal Contractor shall have procedures in place to deal with incidents involving environmental issues relating to site works.

All incidents shall be recorded and reported to Project Manager as soon as practicable and at least within 24 hours of the incident occurring, and if appropriate, reported to the Environment Agency (EA). A follow-up report shall also be produced providing details of all relevant information.

Environmental incidents shall be reported to the EA and the Statutory Authorities as required. In line with the following requirement:

‘When reporting an incident, the following information must be included (when reporting out of hours, only brief personal/incident details should be left on the answer phone service and the remainder captured during normal working hours)’:

- Name, job title and contact telephone number of the manager/person reporting;

- Operational Depot/Business Department/Directorate;

- The name of the operative or member of public involved in the accident or incident;

- Employee status: direct labour or contact labour;

- Operative job title and the type of work activity being undertaken at the time of the incident;

- The relevant Manager/First Line Report;

- The date and time of when the incident occurred;

- A brief factual description of what happened (do not speculate or make assumptions). For security related incidents, this should include any items stolen (with an estimate of the cost), crime reference numbers and police details; and,

- Details of actions already taken to safeguard individuals and the public.

A follow-up report should also be produced providing details of all relevant information.

3.1 RECOMMENDATIONS

The working hours for all construction activities, where reasonably practical, will be limited to the following times (excluding public holidays), unless otherwise agreed in writing by LBC:

- Monday to Friday: 8:00am to 6:00pm; and,
- Saturdays: 9:00am to 1:00pm (no working on Sundays and/or Bank Holidays).

These hours will be followed unless otherwise agreed in writing by LBC. Outside the above periods the following working is permitted:

- Emergency works; and,
- Works which do not cause noise that is audible at the boundary of the Order limits.

Any emergency works carried out must be notified to LBC within 72 hours of their commencement.

4.1 REQUIREMENTS

This section specifically deals with:

- Storage and management of plant and materials (including loading and unloading);
- The spaces for and management of the parking of site operatives and visitors' vehicles; and,
- A construction workers compound.

4.2 BASELINE

Men's Pond

The main access to the Site would be via Millfield Lane and then down a gravel access path running adjacent to the men's pond. The location of a contractor's compound will be confirmed once a contractor has been selected however it should be as close to the men's ponds as practical.

Ladies Pond

The main access point to the site would be via Millfield Lane / Fitzroy Park. This would allow entry onto Hampstead Heath where the contractor would be able to gain access to the ladies' pond via a gravel access path. The location of a contractor's compound will be confirmed once a contractor has been selected however it should be as close to the ladies' ponds as practical.

Mixed Pond

The main access point to the site would be via East Heath Road / East Heath Carpark. This would allow entry onto Hampstead Heath where the contractor would be able to gain access to the mixed pond via a gravel access path. The location of a contractor's compound will be confirmed once a contractor has been selected however it should be as close to the mixed pond as practical.

4.3 RECOMMENDATIONS

The establishment of a construction workers compound area within the Site is required to prevent and minimise the disruption to residents as far as practicable.

Prior to the commencement of works on Site the Principal Contractor will submit plans and agree in writing with LBC a designated holding and loading / unloading area for construction vehicles.

There will be area's provided on the Site for contractors to use private vehicles to access the Site (Parliament Hill Car Park and East Heath Car Park) however all workers will beencouraged to use public transport. The surrounding streets are all restricted parking for permit holders only and therefore there will be no opportunity for contractors to park locally reinforcing the need for them to use public transport.

The construction workers compound will provide an area for storage of plant and materials and welfare facilities separate from construction.

Appropriate security fencing or hoardings will be provided around the perimeter of the compound. Fence type and construction will depend on factors such as the level of security required, the likelihood of intruders, and the degree of visual impact.

5.1 REQUIREMENTS

This section specifically deals with:

- Traffic access and routing

5.2 BASELINE

The main access to the Site would be via Millfield Lane (men's and ladies ponds) and East Heath Road for the mixed pond.

The immediate roads surrounding the site are residential although the A5 and A502 are in close proximity to the site.

5.3 RECOMMENDATIONS

The contractor must agree the principles and routes for material haulage to and from the Site with the Local Highways Authority and Highways Agency, as appropriate. Should it become apparent at any point during the construction works that an

alternative access is required, details of this change would be submitted and agreed in writing with LBC prior to making these changes.

Appropriate access to the Site is required to prevent the likelihood of accidents occurring and to minimise the disruption to local residents and other road users as far as possible.

The Principal Contractor should set out specific measures in a Construction Management Traffic Plan (CMTP) which should detail measures such as:

- The contractor will operate a traffic management system across the Site, which will be related to all personnel during induction;
- The general Site speed limit will be limited to 5mph;
- The provision of temporary signalling should be considered where vehicle access to the Site is likely to cause congestion or the potential disruption;
- The contractor shall agree a strategy of localised lane closures and/or diversion routes and if required these should be minimised and localised as far as is practicable;
- The movement of construction vehicles should be limited to non-peak hours where possible to limit any disruption to the local highway network;
- All construction traffic entering and leaving the Site shall be closely controlled and HGVs making deliveries to the Site or removing construction material etc, shall avoid prohibited routes;
- Prohibited routes for HGV traffic will be determined by the Principal Contractor;
- Vehicles must be loaded and unloaded clear of the public highway; and,
- The site labour force shall be encouraged use public transport and other sustainable modes of transport.

Access routes through Site will be maintained clear to enable unrestricted access to foot / vehicular traffic, including the Emergency Services in the event of an emergency.

Emergency escape routes will be designated prior to commencement of work. All persons visiting the Site shall be logged in and out.

The contractor will also operate a traffic management system across the Site, which is relayed to all personnel during induction and will include:

- Deliveries will report to the Site office and all delivery drivers will sign in and out on completion of delivery;

- Banksmen will be present during reversing operations, where operator's view is obscured. Flashing beacons will be fitted to all on site vehicles and plant; and,

- Plant is to be fitted with traverse alarms to ensure safe manoeuvring.

6.1 REQUIREMENTS

This section specifically deals with:

- Measures to prevent the deposition of debris on the public highway.

6.2 BASELINE

The Road's leading to the Site (Millfield Lane (men's and ladies ponds) and East Heath Road for the mixed pond) are subject to standard Council maintenance and will be periodically cleaned.

6.3 RECOMMENDATIONS

Recommendations for suppression of dust and dirt are also covered in Section 8 of this CEMP, however, a summary of these measures are also provided below.

Wheel wash facilities will be provided at the Site access point to ensure that vehicles are appropriately cleaned prior to accessing public highways. The type of wheel washing facilities should be appropriate to the types of vehicles being used on the Site

and the amount of mud and debris likely to be on the vehicles. However, as a minimum the wheel washing facilities should comprise a manually operated high pressure jet wash.

The specific locations and types of wheel washes to be used on the Site should be submitted and agreed with LBC at least four weeks prior to commencement of works on Site.

All vehicles leaving the Site should be subject to a visual inspection before accessing the public highways to ensure that the level of dust/mud/debris on the vehicles has been minimised insofar as is practical.

It will be the responsibility of the Principal Contractor to undertake a daily inspection of the adjoining highways and deploy road sweepers if mud and debris is deposited on adjoining highways. The specific areas that must be regularly inspected and cleaned should be agreed with the local highway authority, but as a minimum it should include the sections of Millfield Lane (men's and ladies' ponds) and East Heath Road for the mixed pond.

All road surfaces affected shall be swept clean upon completion of the works. All road surfaces affected shall be swept clean upon completion of the works.

7.1 REQUIREMENTS

This section specifically deals with:

- Fencing for the duration of construction works; and,
- Construction lighting.

7.2 BASELINE

The land use surrounding the Site's is predominantly contained within Hampstead Heath.

7.3 RECOMMENDATIONS

Fencing

Site Boundary Fencing

The Site boundary will be demarcated with appropriate fencing to establish the extent of the working areas. Fencing is likely to comprise steel pins and barrier fence or palisade fence which will be removed upon completion of the works to that area.

Any office and welfare buildings shall be located within a secure compound.

The Site compound and maintenance compound (fuel storage and filling area) will be set within the secured compound.

The exact details on type and location of site hoardings will be determined by the Principal Contractor.

Protective Fencing

Protective fencing and warning signs will be provided to prevent construction vehicles and personnel accessing the more ecologically sensitive areas during the works. All areas of fencing are to be maintained in good order for the period of works. Within each demarcated area there is to be:

- No spoil, vehicles, temporary structures or equipment;
- Ground levels shall not be lowered nor raised; and,
- No services shall be laid out.

Tree Protection Fencing

Where trees are to be retained, tree protection fencing will be provided in order to prevent damage to trees and their roots. It will be constructed in accordance with BS5837.

The fencing is to consist of a framework of vertical and horizontal scaffolding poles, with bracing to resist impacts. Vertical poles are to be driven firmly into the ground, depths dependant on ground conditions. Heras type weldmesh fencing is to be firmly fixed to the framework to prevent access. Notices are to be firmly fixed to the fencing with 'Protected Area Keep Out' or similar words.

Temporary lighting

The construction works will generally be carried out within daylight hours within the permitted working hours; as such the requirement for temporary construction lighting should be limited by this as far as is practical.

However, there may be occasions where temporary lighting is required for occasional night time working or during the darker winter months and therefore the following recommendations are made:

- The use of construction lighting outside normal working hours should be limited and kept to the minimum necessary for workforce, public safety and/or security;

- No artificial lighting should be placed in locations where it will cause light spillage on habitat corridors which are likely to be used by wildlife;

- Any temporary lighting used should be installed such that illumination is minimised and directional so that it is focussed on the specific location/s where it is required; and,

- Any temporary lighting should be switched off at all times when not required.

8.1 REQUIREMENTS

This section specifically deals with:

- Measures to control dust and emissions associated with construction traffic.

8.2 BASELINE

The Site is located in an area which is predominantly Hampstead Heath related therefore control of dust and emissions is imperative to protecting the health of local residents and the local community. The primary influence on air quality is expected to derive from vehicle emissions using the road network in the wider area.

8.3 RECOMMENDATIONS

In order to prevent dust nuisance the following actions should be implemented -

- Any waste stockpiles will be damped down by water sprays and sheeted if required;
- All rubbish skips will be exchanged on a regular basis and sheeted when required;
- Vehicles shall be sheeted to prevent loss of materials off site;
- Storage locations for all materials that create dust, including soil, must be located away from the sensitive receptors adjacent to the Proposed Development, except where impractical;
- Storage locations should be aggregated where practical to avoid the creation of many stockpiles, adequately screened to prevent wind loss and damped down where practical when being handled;
- All site vehicles should have vertical exhausts to limit surface dust resuspension;
- Waste materials shall not be burnt on-site;
- Wastes must be placed in suitable containers prior to appropriate disposal; and,
- Prolonged storage of materials on site prior to use and/or disposal is to be avoided.

Given the nature of the works, the construction of the development will involve the regular use of construction vehicles, likely to use the main access to the Site. As such it is imperative that measures are put in place to minimise the dust generated by vehicular movements. These measures are outlined below:

- Vehicular movements on the construction site should be limited to speeds not exceeding 5mph. This speed will limit the potential for dust dispersion and entrainment as well as reduce the potential for accidents on the site;

- Wheel wash facilities should be provided at site access point to ensure that vehicles are appropriately cleaned prior to accessing public highways. The type of wheel washing facilities should be appropriate to the types of vehicles being used on the site and the amount of mud and debris likely to be on the vehicles. However, as a minimum the wheel washing facilities should comprise a manually operated high pressure jet wash;

- All vehicles leaving the Site should be subject to a visual inspection before accessing the public highways to ensure that the level of dust/mud/debris on the vehicles has been minimised insofar as it is practical;

- The specific location and type of wheel washes to be used on the site should be submitted and agreed with LBC at least four weeks prior to commencement of works on Site; and,

- It will be the responsibility of the Principal Contractor to undertake a daily inspection of the adjoining highways and deploy road sweepers if mud and debris is likely to be deposited on the main roads. The specific areas which should be regularly inspected and cleaned should be agreed with the local highway authority, but as a minimum it should include the access road immediately adjacent to the main Site access.

Additionally, it is also recommended that any haul roads which are created to support the main construction works should be subject to regular water spraying to ensure that

dust is suppressed. This should be carried out on at least a daily basis during extended periods of dry weather.

8.4 GENERATION OF EXHAUST EMISSIONS BY CONSTRUCTION VEHICLES AND PLANT

In order to reduce emissions generated by the construction works, the following measurements are recommended:

- Mobile plant should be located away from sensitive receptors, where practical.
- Lorries and plant with diesel engines on or off site should be well maintained in order to reduce emissions of visible smoke.
- Engines should not be left idling unnecessarily, and plant and vehicles must not be parked in a position that could give rise to nuisance from exhaust fumes.
- Site machinery and vehicles should use low-emission fuels where practicable.
- Site vehicles and plant with low exhaust emissions (e.g. with particle traps) and emission controls such as catalysts or diesel particle filters should be used.
- Contractors should take all precautions to prevent the emissions of fumes from stored fuel oils, for safety and potential nuisance reasons.

8.5 TOOLBOX TALKS

A toolbox talk will be delivered to contractors in respect to potential dust and other emissions effects.

8.6 MONITORING AND COMMUNICATIONS RECOMMENDATIONS:

The following monitoring recommendations should be adhered to and details of how these will be implemented should be submitted and agreed with LBC at least four weeks prior to commencement of works on Site.

- Records of dust and air quality complaints shall be kept, including likely causes and mitigation measures to reduce impacts if appropriate;
- Daily on-site and off-site visual inspections shall be undertaken and recorded;
- Notify local community of works hours and any specific works which are likely to generate higher levels of dust/emissions;
- Notify local community of appropriate details to make complaints if necessary;
- Inspections should be increased during dry and windy weather and/or during periods of high activity (vehicular or earthworks) which is likely to increase sources of dust and emissions; and,
- Consideration must be given to monitoring of dust soiling at nearby sensitive receptors (near residential properties etc) which should be agreed with LBC.

9.1 REQUIREMENTS

This section specifically deals with:

- Measures to control noise and vibration.

9.2 BASELINE

The Site is located in an area where noise is mainly influenced by road traffic and the railway line to the south west.

9.3 CONSTRUCTION NOISE

As detailed in Section 3, for normal daytime construction works carried out on weekdays between 08:00am to 06:00pm hours and on Saturdays between 09:00am and 1:00pm hours, the noise level measured at a noise sensitive receptor must not exceed Leq, 12-hour, 75 dB(A), wherever practicable. Where this is not practicable prior approval under section 61 of the Control of Pollution Act 1974 (a) must be obtained.

'Best Practicable Means' and the guidance provided within BS:5228 are to be employed to minimise construction impacts, including, for example:

- No deliveries should occur outside of the hours identified above unless agreed with LBC;
- Careful selection of working methods and programme must be followed;
- Where applicable, selection of quietest working equipment available;
- Where practicable, positioning equipment behind physical barriers, i.e. existing features, hoarding etc;
- Ensuring that regularly maintained and appropriately silenced equipment is used;
- Handling all materials in a manner which minimises noise, such as minimising drop heights;
- Switching all audible warning systems to the minimum setting required by the Health and Safety Executive. Reverse warning alarms should be fitted with white noise (broadband) systems;

- Where processes could give rise to significant levels of noise for extended periods of time, noise levels should be monitored regularly by a suitably qualified person with the survey results kept on file; and,
- In terms of on-site employees, appropriate actions should be undertaken with regard to the Noise at Work Regulations including the requirement for the use of ear defenders and appropriate warning notices.

Further to the above, operatives should be trained to employ appropriate techniques to keep Site noise to a minimum and should be effectively supervised to ensure that best working practice in respect of noise reduction is followed. All employees should be advised regularly of the following, as part of their training:

- The proper use and maintenance of tools and equipment;
- The positioning of machinery on Site to reduce the emission of noise to the neighbourhood and to Site personnel;
- The avoidance of unnecessary noise when carrying out manual operations and when operating plant and equipment;
- The protection of persons against noise; and,
- The operation of sound measuring equipment (selected personnel).

Measurements of construction noise must be undertaken in accordance with BS 5228:2009 – "Code of Practice for Noise and vibration control on construction and open sites" (Part 1 – Noise) at a noise sensitive receptor.

9.4 CONSTRUCTION VIBRATION

Unless otherwise agreed by LBC all construction works must comply with the guideline vibration limits below. Measurements must be undertaken at any occupied building within or outside of the Order limits within a distance of 25 metres from piling or any works likely to cause elevated levels of ground borne vibration to ensure compliance with the guideline limits. Measurements must be undertaken in accordance with BS 5228:2009 – "Code of Practice for Noise and vibration control on construction and open sites (Part 2 – Vibration)" and BS7385:1993 – "Evaluation and measurement for vibration in buildings (Part 2 – Guide to damage levels from ground-borne vibration)".

Type of Building	Peak Particle Velocity	Peak Particle Velocity
	(mms-1) – Day (07:00 to 23:00)	(mms-1) -Night (23:00 to 07:00)
Any permanently occupied residential building	1.0 – 1.5	0.5
Any occupied commercial /industrial building	2.0 – 2.5	1.0

9.5 TOOLBOX TALKS

A toolbox talk will be delivered to contractors in respect to potential noise and vibration effects.

9.6 COMPLAINTS

Complaint's procedure is outlined in Section 2.3, however, for completeness measures to deal with noise complaints are also outlined below.

Prior to the commencement of construction works at the Site a 'complaints hot-line' will be set up to allow local residents and members of the public to voice any concerns which they may have regarding the noise levels from the construction. The details of this phone number will be displayed on appropriate signage at the Site entrance. It is also recommended that a letter drop is provided to residents and any other people who could potentially be affected by the construction noise to provide details of the works and the number to the hot-line.

In the event that complaints for noise nuisance are received by LBC which considers those complaints justified, the Principal Contractor must unless otherwise agreed by LBC, at its own expense, employ a consultant approved by LBC to carry out an assessment of noise from the construction works. The assessment will be carried out to an appropriate methodology agreed in writing and the results of the assessment will be submitted to LBC within 28 days of the assessment. Those results must include a comparison of measured data with the requirements, all data which was collected for the purposes of the assessment and certificates of the measuring instrument's calibration.

10.1 REQUIREMENTS

This section specifically deals with contamination and waste.

10.2 BASELINE

The Site is located within Hampstead Heath which contain a number of large natural ponds and is therefore considered to be at a high risk of flooding.

10.3 RECOMMENDATIONS

It is recommended that the Principal Contractor puts together a response plan which should provide details of how the construction Site will be managed to reduce the likelihood of significant pollution such as contamination through oils, fuels or sediment entering the surface water drains. These measures will include:

- The Constructor's main compound will be located in a position away from any drains adjacent to the Site;
- Construction materials and/or waste will be safely stored within either bunded or hard surfaced areas as far away from drains as possible. Bunded storage areas will be located within the constructor's compound and will be provided for the duration of the works; and,
- Construction materials or plant will not be stored in any areas which are likely to be at immediate risk of flooding.
- In order to protect surface water drainage, the following mitigation measures should be adopted by the Principal Contractor:
- Construction materials should be safely stored within either bunded or hard surfaced areas. Bunded storage areas will be located within the constructor's compound and will be provided for the duration of the works.
- Any suspected soil/groundwater contamination encountered, not previously identified during investigation works, shall immediately be reported to the Client's Project Manager.
- Regular visual inspections and monitoring shall be undertaken during the construction phase to provide an early indication of any potential contamination releases.
- Pollution prevention equipment will be kept in the construction area and procedures for use put in place.

- The Contractor will be required to keep sufficient amount of spill kits on Site at all times so that one can be deployed to any part of the construction site within 15 minutes.
- Construction vehicles will only be active when required and will be regularly maintained to reduce the risk of leakage or spillage. Maintenance work will be carried out off-site or on impervious drip trays of sufficient capacity to prevent spillage of fuel and oil.
- Provision will be made to remove any suspended sediments in surface water runoff during excavation and construction works before entering any off-site drainage systems.
- Sediment traps/basins should be installed prior to any major earthworks or regarding of the land take place and additional sediment traps and/or silt fences should be installed as ground works are occurring to keep sediment contained within appropriate locations.

10.4 TOOLBOX TALKS

A toolbox talk will be delivered to contractors in respect to potential effects to pollution events.

10.5 WASTE MANAGEMENT PLAN

The Principal Contractor will be required to develop detailed method statements for key aspects of work which have a potential for environmental impact. These should encompass proposals for the control of pollution, together with emergency response plans. The Principal Contractor will be required to observe and adhere to relevant legislation and guidelines.

A Site waste management plan will be put in place prior to construction commencing. These should encompass proposals for the control of pollution, together with emergency response plans. The contractor will be required to observe and adhere to relevant legislation and guidelines.

The generation of construction waste should, as the first priority, be avoided wherever practicable. Any remaining materials will be sent to a waste transfer station to recycle, and where this is not possible, will be sent to landfill.

Any waste sent for disposal should be directed to sites which hold valid waste management licenses issued by the EA and which are authorised to accept the type and quantity of waste. Transport of wastes should be minimised by the selection of local disposal sites where available. All contractors used for transport of waste should be registered and licensed haulage contractors following ‘Duty of Care’. No disposal of waste by dumping or open burning should be permitted on site. All waste should be subject to controlled collection and storage on site.

Additional waste segregation and storage strategies include:

- Segregate different types of waste as they are generated using different skips/heaps where practical;
- Make sure storage areas are safe, secure and weatherproof; and,
- Ensure materials that have the potential to cause dust impacts are suitably located and managed to avoid dust effects.

11.1 REQUIREMENTS

This section provides recommendations for:

- Storage of fuel, oil and other chemicals, including measures to prevent pollution.

11.2 BASELINE

The Site currently comprises a number of buildings interspersed between trees.

11.3 STORAGE OF FUEL, OIL AND OTHER CHEMICALS

The Principal Contractor will be required to develop detailed method statements for key aspects of work and handling of materials/liquids which have a potential for environmental impact. These should encompass proposals for the control of pollution, together with emergency response plans. The Principal Contractor will be required to observe and adhere to relevant legislation and guidelines.

Plant and equipment will be stored in areas which are less susceptible to pollution and should be stored on a hardstanding base within the secure compound as agreed by the Principal Contractor.

Immobile plant, fuels, oils and chemicals will be stood on impervious drip trays or be secured/locked in appropriately bunded areas (at 110% of volume). Refuelling operations will be carried out within a designated construction Site compound remote from surface drainage systems. Leaking or empty drums will be removed from Site at once.

11.4 TOOLBOX TALKS

A toolbox talk will be delivered to contractors in respect to potential effects to pollution events.

11.5 EMERGENCY MEASURES AND REPORTING OF INCIDENTS

Environmental incidents shall be reported to the Client's Team and the relevant Statutory Authorities as required and anyway within 12 hours of the incident occurring.

A follow-up report shall also be produced providing details of all relevant information.

The Principal Contractor must have an accident Emergency Plan in place and the persons responsible must be contacted in the event of any significant spillage or other such incident.

The Principal Contractor shall report the discovery of deleterious materials, for example; asbestos, fuel oils, etc. The Principal Contractor should take immediate action in accordance with their procedures, to prevent further contact with the deleterious material. All hazardous discoveries shall be entered into the method statements for the relevant project. Attention must also be drawn to any specific Client or Statutory Authority requirements, which may detail actions to be taken.

12.1 REQUIREMENTS

This section provides recommendations in relation to:

- Risk assessment of potentially damaging construction activities;
- Practical measures (both physical measures and sensitive working practices) to avoid or reduce impacts during construction (may be provided as a set of method statements);
- The location and timing of sensitive works to avoid harm to biodiversity features;
- Responsible persons and lines of communication; and,
- Use of protective fences, exclusive barriers and warning signs.

12.2 BASELINE

No evidence of roosting bats or other protected species on the site was identified during the survey.

12.3 RISK ASSESSMENT OF POTENTIALLY DAMAGING CONSTRUCTION ACTIVITIES

A full risk assessment of the potentially damaging construction activities must be produced by the Principal Contractor in consultation with their ecological consultant once details of the precise method of works have been determined and informed by the most up to date ecological survey results.

All risk assessments must be undertaken by appropriately trained/qualified personnel following an approved procedure which must identify all significant environmental risks to individual ecological receptors and identify the measures which must be undertaken to remove or reduce the risk to an appropriate level.

The risk assessments must identify if any unacceptable level of residual risk remains following the implementation of the recommended control measures, so that further actions such as design changes, alternative methods or re-scheduling of works can be considered to minimise the risk to an appropriate level.

The Principal Contractor must demonstrate that these Risk Assessments are appropriate by ensuring that they are agreed with the most relevant statutory/non-statutory consultee (Local Authority Ecologist; Natural England; Environment Agency or Local Wildlife Trust).

The Principal Contractor must also implement measures to demonstrate how and when Risk Assessments are updated throughout the entire construction process to adapt to changing circumstances.

12.4 RESPONSIBLE PERSONS AND LINES OF COMMUNICATIONS

As discussed in Section 2 the Principal Contractors Project Manager will be responsible for ensuring the appropriate and successful delivery of specific ecological protection measures. However, some of these responsibilities may be delegated to other nominated people throughout the programme of construction works as appropriate:

- Client -> Project Manager -> Environmental Co-ordinator (if employed) -> Clerk of works -> Statutory/non-statutory consultees (if required).

12.5 ROLES AND RESPONSIBILITIES AND REQUIREMENTS ECOLOGICAL CLERK OF WORKS OR SIMILAR COMPETENT PERSON

The specific roles of the ecological clerk of works will be dictated by the construction programme, the timing of certain activities (i.e. vegetation removal) and the existing ecology baseline at the time of the works, however, key responsibilities are likely to include:

- Responsible for carrying out ecological surveys, providing advice to the Site manager/environmental co-ordinator and where necessary assist with the mitigation and management advice.

12.6 PRACTICAL MEASURES TO AVOID OR REDUCE IMPACTS DURING CONSTRUCTION

Many of these have been discussed elsewhere in this document, but a brief summary of recommendations is provided below:

- Good construction Site management must be implemented to avoid/minimise generation of excessive litter, dust, noise and vibration;
- Measures must be implemented to avoid / minimise potential for fuel and chemical spills. Spill kits must be provided in the event of spillage and response procedures put in place;
- Clearance of trees / vegetation should be undertaken outside of the nesting bird season, i.e. clearance should take place between October to February inclusive;
- A sensitive external lighting strategy should be implemented and works should only be undertaken during daylight hours to avoid adverse impacts on foraging and commuting bats;
- Protection of retained trees during construction using root protection fencing (in accordance with BS5837).
- A Pollution Incident Response Plan to ensure that impacts from any potential accidental spills can be reduced to a minimum;
- Work compounds and access tracks, etc. must not be located in, or adjacent to, areas that maintain habitat value;
- There shall be no storage of potentially contaminating materials in areas of hydrological and ecological sensitivity;
- Establish Site fencing by erecting to prevent access to areas outside working areas, particularly in areas adjacent to features of interest/value; and,
- Site fencing must be used to prevent access to areas outside working areas, particularly in areas adjacent to features of ecological value.

12.7 THE LOCATION AND TIMING OF SENSITIVE WORKS

It is recommended that the location and timing of sensitive works is established and factored into the construction programme prior to any works occurring on Site as this will allow sufficient time to plan in additional requirements such as the production of protected species licences or implementing appropriate mitigation without significantly impinging on the construction programme.

Examples of sensitive works relevant to the Site are provided below, however, these should be clearly established with the Project Manager, Environmental Co-ordinator and Ecological Clerk of Works prior to commencement:

- It is recommended that any vegetation clearance should take place outside the bird breeding season (late February to early August). If any clearance is necessary within the bird breeding season, then it will only take place if the areas concerned have been checked by a competent ecologist and found not to contain any breeding birds.

12.8 USE OF PROTECTIVE FENCES, EXCLUSION BARRIERS AND WARNING SIGNS

As discussed in Section 7 Site Hoardings, protective fencing will be provided to prevent construction vehicles and personnel accessing the more ecologically sensitive areas during the works. All areas of fencing are to be maintained in good order for the period of works.

Use of materials likely to be injurious to trees, such as cement, bitumen, oils, or others shall not be permitted inside the fence where contaminated fluids could come into contact with tree roots.