CONSTRUCTION MANAGEMENT PLAN

In respect of

Dayhouse Quarry, Tidenham, Chepstow

JCG25968
Dayhouse Quarry
1.0
March 2022

rpsgroup.com

Document status				
Version	**Purpose of document**	**Authored by**	**Approved by**	**Review date**
1.0	For Issue	P Raphael	T Andrews	24.03.22

Approval for issue	
T. Andrews	24 March 2022

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1 INTRODUCTION

1.1 This Construction Management Plan (CMP) has been prepared to accompany the planning application for the proposed works and upgrades to the existing Campus at the Dayhouse Quarry in Chepstow. The site is located within the administrative boundary of Forest of Dean District Council FDDC).

1.2 The CMP has been prepared to ensure environmental effects during the construction phase are mitigated and controlled appropriately.

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

- Ensure that relevant mitigation measures are implemented during all works and phases of development;
- Take into account relevant planning policy; and
- Ensure that relevant legislation, Government and industry standards, and construction industry codes of practice and best practice standards are complied with.

1.4 The CMP details the environmental controls (including the mitigation measures identified in the environmental reports which accompany the planning application) and safety procedures that will need to be adopted 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 safety procedures.

1.5 The CMP includes the following:

- Description of the proposed scheme, as well as the site context, identifying sensitive receptors that could be affected by the construction works;
- Outline of the site preparation, enabling, and construction programme and description of the main works;
- Identification of anticipated construction plant;
- Routes for construction traffic and traffic management arrangements;
- 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 and Consultation, 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.

1.6 Any changes and/or improvements to the CMP will be made in consultation with FDDC, specifically the Environmental Health Officer.

1.7 This CMP is a live document. At this planning stage, the information and controls set out in this document are based on available information and understanding on construction practices and typical mitigation. The CMP is intended to be taken forward by the future development contractor and updated where necessary.

2 PROPOSED DEVELOPMENT AND SITE CONTEXT

2.1 The site comprises a flooded quarry in Tidenham, Chepstow, that has been occupied by The National Diving and Activity Centre. The quarry and the immediate surroundings within the site boundary are shown in Figure 2.1. The site is located in the administrative district of Forest of Dean District Council (FDDC) in the county of Gloucestershire.

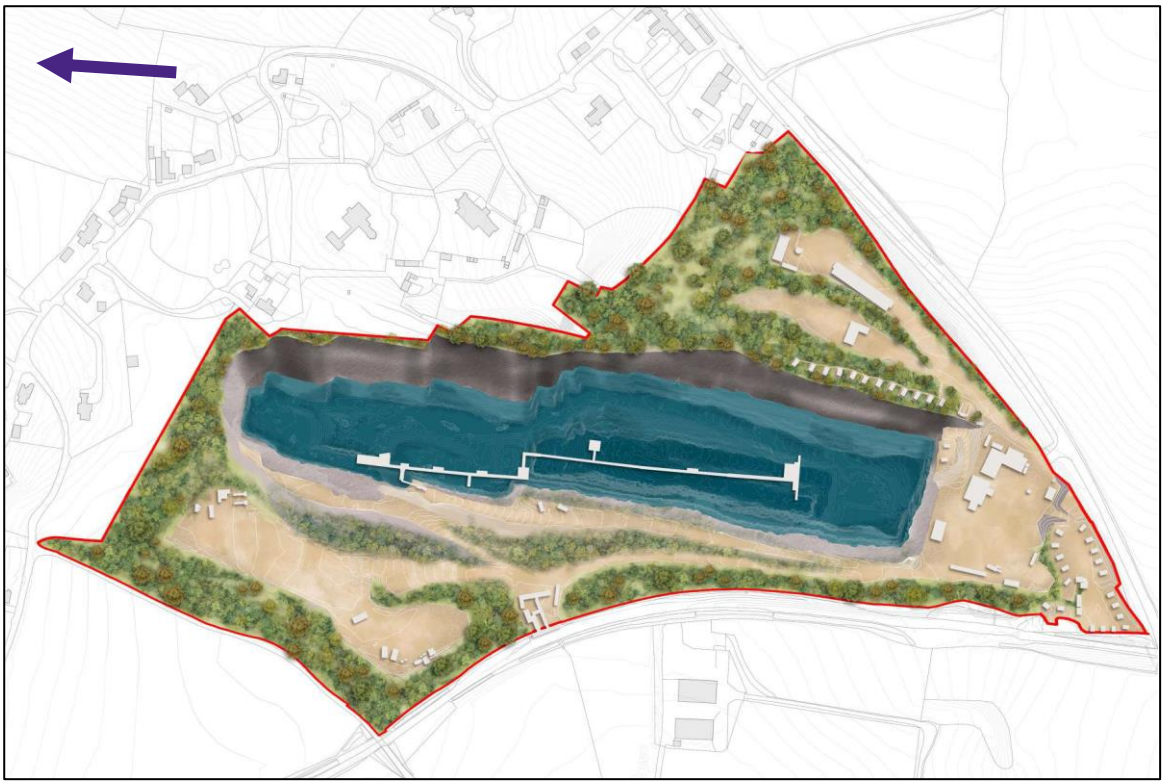
2.2 The proposed works involve improvements to the western slipway and quay, and construction of a new vertical access and associated access track on the east side of the quarry.

2.3 The sites surroundings are predominantly rural, largely comprising of agricultural fields. The small village of Tidenham is located approximately 100m to the northeast, with the majority of homes along Tidenham Lane. Day House Farm and St Mary and St Peters Church are located immediately adjacent to the eastern boundary of the site.

2.4 The quarry itself is surrounded by hardstanding and areas of woodland, as illustrated in Figure 2.1. A number of buildings are located across the site that are utilised by the diving centre. Photographs of the quarry site is provided in Figure 2.2.

2.5 The site is accessed off the A48, part of the strategic road network linking Chepstow to the south with the villages and Gloucester to the north.

Figure 2.1: Site Location (red line)



2.6 The proposed development would deliver the following four features:

- Improvements to the existing western slipway to create a c.4.5m wide haul road and separate safe walkway for use by articulated vehicles and abnormal roads. This will include regrading sections of the road, new edge protection, service channels and resurfacing;
- A new permanent concrete apron and quay on the western edge of the quarry, at the end of the proposed haul road;

- A permanent vertical access (circular staircase) from the eastern quarry cliff; and

2.7 Further details of the proposed development are provided in the planning application drawings and documentation submitted with the planning application.

Figure 2.2: Site Photos

View north over quarry from car park on top of south cliff

Existing site entrance, buildings and car park

Existing western slipway (yellow line)

3 CONSTRUCTION ACTIVITIES

Construction Programme and Activities

3.1 The development works are anticipated to take approximately 18 months, commencing in Q3 2022, subject to planning approval and will be undertaken as follows:

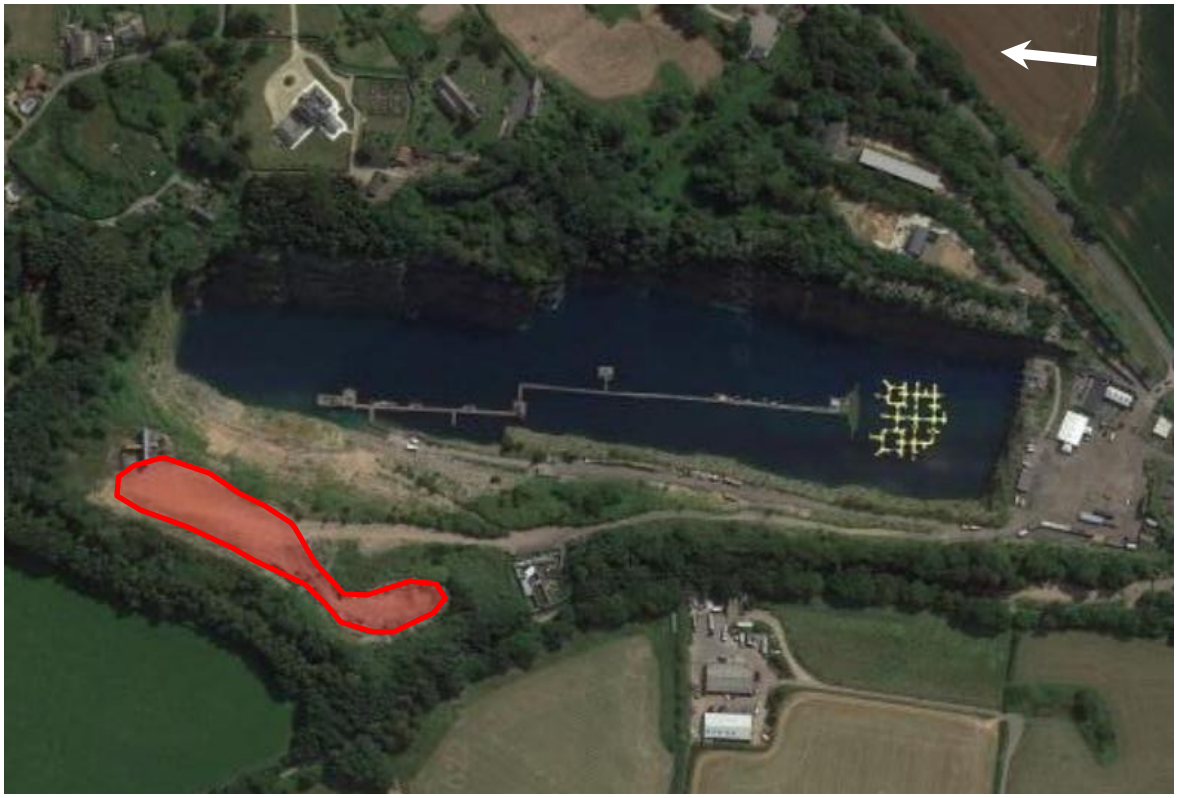
- Phase 1: Western haul road, quay and apron; and

3.2 Construction of the western haul road requires a cut and fill exercise to the existing west bank haul road to produce a more consistent grade suitable for articulated HGVs with abnormal loads.

3.3 Volumes of spoil from cut & fill have been estimated to allow determination of possible relocation around the site. It is estimated that approximately 3320m^3 of material, predominantly natural rock from the cliff face, will be excavated and stockpiled in the west of the site. The location and approximate size of the stockpile is shown in Figure 3.1. The stockpile would be located on an area of existing open compacted ground presently used material storage. The area that will be used for stockpiling is outside of any root protection areas of surrounding trees. Where feasible, this stockpiled material will be used for road build up around the site.

3.4 The site would be accessed using the main site entrance off the A86. A construction site compound will be located within the existing car park south of the quarry and adjoining the west bank haul road. Site cabins within the construction compound would likely include a container store, toilet block, kitchen and welfare block and a site office.

Figure 3.1: Indicative stockpile location



View south over stockpiling area

Use of Construction Plant

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

- Wheeled Tippers (for transport of uncrushed/crushed materials including concrete),
- Dumper trucks;
- Concrete Pump & Mixer (for foundation constructions where required),
- Graders & Bulldozers;
- Mobile Cranes;
- Scaffold; and
- Mobile Floodlighting.

3.6 All construction plant will be maintained and kept in compliance during all related activities. This includes:

- All mechanical plant will have the necessary current inspection certificates;
- All lifting equipment will have the current 6-month test certification;
- All electric tools will have current 3-month inspection certificates;
- All mobile plant will have white noise warning beacons and all-round vision devices fitted;
- Continuous monitoring is to take place to detect any defects or mechanical problems that would affect the safe use of the plant.

3.7 Copies of all certification and work equipment inspection certificates are to be kept on site.

4 GENERAL CONSTRUCTION REQUIREMENTS

Hours of Work

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

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

4.2 No continuous 24-hour activities are envisaged for works and any necessary working on Sundays or Bank Holidays will be subject to reasonable notice. Any change to working hours will be agreed in advance with FDDC.

4.3 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, silent in nature, are being carried out within the confines of the building envelope; and
- Completion of an operation that would otherwise cause greater interference with the environment /general public if left unfinished.

Site Set-up

Fencing

4.4 Heras fencing will be erected around the perimeter of the works area. The minimum height will be increased where local terrain or structures would allow the fence to be scaled by potential intruders. Advice will be sought from the Local Crime Prevention Officer of the Metropolitan Police if required.

4.5 Fencing will be lit from half an hour after sunset to half an hour before sunrise as a minimum.

Lighting

4.6 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.

4.7 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.

4.8 Nighttime construction activities are not anticipated.

4.9 The lighting will be designed to comply with the provisions of BS5489, Code of Practice for the Design of Road Lighting, where applicable. Site lighting will be provided at the minimum luminosity necessary to enable the safety and security of the construction site.

4.10 Site lighting will be kept to a necessary minimum to avoid nuisance and be positioned and directed so as not to unnecessarily intrude on the adjacent areas of woodland or other sensitive receptors.

4.11 Where practicable, lighting will be activated by motion sensors to prevent unnecessary usage; all unnecessary site lighting will be turned off and only security lighting will be maintained. All lighting will comply with the Institute of Lighting Professionals' Guidance notes for the reduction of obtrusive light. Lighting will also be designed in accordance with artificial lighting guidance produce by the Bat Conservation Trust and the ILP (Guidance Not 08/18).

Security

4.12 Only authorised personnel will be permitted on site. All visitors will be required to enter through the main site 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.

4.13 Visitors will be required to undergo induction training, wear the necessary PPE (safety helmets, gloves, eye protection, high-visibility clothing, safety footwear) and will be accompanied by a representative on site at all times.

4.14 Boundary fencing and all storage areas will be checked on a regular basis to ensure that it is maintained in good condition and remains secure. All site entrances will be secure at all times and the keys positioned adjacent to them to allow personnel to safely evacuate in the event of an emergency. All entrances will have lockable doors that will be kept closed and opened only for deliveries/collections where access will be monitored by our banksmen/traffic controllers. Any scaffolds posing the risk of being easily accessible to potential intruders will have vibration alarms fitted to ensure security to site and neighbouring buildings.

4.15 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.

Protection of existing installations

4.16 Before commencing any excavation or ground works, the Principal Contractor will complete an inspection of site conditions. The risks of damage to buildings, structures and major utilities will be identified. The Principal Contractor will commit to repairing any damage caused by enabling and construction works.

4.17 Identified risks will be included within the works Risk Assessment Method Statement (RAMS). If any risk of damage is anticipated an appropriate structural or condition survey will be undertaken prior to commencement of construction works for any buildings and infrastructure predicted to be potentially subject to ground settlement above threshold values which could possibly lead to damage.

4.18 Monitoring of ground settlement will be carried out from the start of, during and after ground intrusive works, or where specified by FDDC, to check that the recorded ground movement is within designed limits and therefore acceptable.

4.19 Any effluent encountered during the construction phase will not be discharged to surface or foul drains without the prior consent of the appropriate body. A full survey of the surrounding drainage system will be undertaken prior to work starting on site. This will include the road drains. Any related effluent consents will be held on site. The Principal Contractor will take precautions during works to protect the entire drainage system and nearby watercourses and groundwater from siltation or pollution.

4.20 The Principal Contractor will take precautions during the construction works to protect the entire drainage system from siltation or pollution, including installing any temporary drainage as required around storage areas. Wastewater generated from construction activities 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. No uncontrolled or untreated runoff water will be discharged to the quarry lake.

Emergency procedures

4.21 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 the incident response procedure to be followed.

4.22 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 FDDC Environmental Health Officer and any other interested bodies will be notified.

4.23 The EPP will contain emergency phone numbers and the method of notifying FDDC and other statutory authorities. Copies of the procedures will be issued to the Council, Local Fire Brigade, the Police, the Ambulance Service and other relevant authorities.

Contractor Accreditations

4.24 Details will be provided of contracts with all contractors to ensure that they are contributing towards reducing the number of freight trips and ensuring safer and more environmentally friendly distribution. Contractors will be selected, as far as possible, to ensure that they have the accreditations summarised below.

Considerate Constructors Scheme

4.25 Contractors will be required to register their site with the 'Considerate Constructors Scheme' administered by the Construction Confederation on behalf of the Construction Industry Board.

4.26 The scheme seeks to:

- minimise any disturbance or negative impact (in terms of noise dirt and inconvenience) sometimes caused by construction sites to the immediate neighbourhood;
- eradicate offensive behaviour and language from construction sites; and
- recognise and reward the constructor's commitment to raise standards of site management, safety and environmental awareness beyond statutory duties.

4.27 The scheme requires contractors to:

- Care about appearance;
- Respect the community;
- Protect the environment;
- Secure everyone's safety; and
- Value their workforce.

Construction Logistics and Community Safety (CLOCS)

4.28 The Principal Contractor and its sub-contractors will meet the CLOCS standard for construction logistics as set out in CLOCS' Construction Logistics Plan guidance[1].

4.29 CLOCS is a national standard that has been developed for use by the construction logistics industry. It provides a framework that enables ownership in managing road risk which can be adhered to in a consistent way by fleet operators.

4.30 The standard sets detailed minimum requirements for fleet operators, regarding:

- **Logistics Operations Requirements:**

[1] CLOCS, April 2021. Construction Logistics Planning (CLP) Guidance

- Quality transport operation; and
- Collision reporting;

- **Vehicle Requirements:**
  - Traffic routing;
  - Blind-spot minimisation;
  - Warning signage;
  - Under-run protection; and
  - Vehicle manoeuvring warnings; and
- **Driver Requirements:**
  - Training and development; and
  - Driver licencing.

4.31 The principal contractor will implement measures to ensure the safety of road users within the quarry site, including cyclists and pedestrians in the vicinity of the construction site. This will be achieved by ensuring site arrangements enable the safest vehicle movements, clear and level site access/egress, dedicated loading/unloading areas, effective delivery management systems and competent site access traffic marshals.

Fleet Operators Recognition Scheme (FORS)

4.32 The Principal Contractor shall become a member of the Fleet Operators Recognition Scheme (FORS). The Principal Contractor will also use sub-contractors who are members of the FORS scheme as far as practicable. FORS is an industry-led scheme to promote and assist van and lorry operators become safer, more efficient, and more environmentally friendly.

4.33 The FORS has three membership levels, being Bronze, Silver and Gold. Bronze members must meet the following requirements:

- Drivers and vehicle management;
- Vehicle maintenance and fleet management;
- Transport operations; and
- Assessing the performance of company policies.

4.34 Silver and Gold level members meanwhile need to provide data to enable benchmarked values to be produced per million kilometres for each type of vehicle, for:

- Fuel use;
- CO_2 and emissions;
- Vehicle incidents; and
- Penalty Charge notice and fines.

Pest Control

4.35 The works are unlikely to result in any significant insect, bird or rodent infestation. However, 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;

- Toilet facilities will be cleaned daily and maintained in a good condition. It is expected that the users behave appropriately towards the facilities; and
- All food and drink are to be consumed within an enclosed area or off the construction site.

4.36 A check sheet system will be in place to confirm regular inspections. If necessary, bait boxes and traps will be installed and managed by a specialist contractor. Any pest infestation of the construction site will be notified to FDDC as soon as is practicable

5 ACCESS AND LOGISTICS

Vehicle Access

5.1 The construction site will be accessed through the main site entrance off the A48, part of the main highway network.

5.2 The type and number of vehicles generated during the 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. However, it is anticipated that typical construction vehicles and machinery will require access to the construction site and include cranes; bulldozers, dumper trucks; concrete mixer truck, articulated and rigid HGVs.

5.3 HGV movements will be restricted as far as reasonably possible to avoid peak traffic hours (*i.e*. from 08h00-09h00 and 17h00-18h00) to minimise the impacts on the local highway network and businesses.

5.4 Deliveries will be in small batches and on a 'just-in-time' basis to minimise the number of vehicles accessing the site at any one time. All construction traffic will be closely controlled and monitored.

5.5 Directional signage will be implemented to ensure that construction traffic utilises designated routes to minimise the effect on the surrounding road network. 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.

Transport and Traffic Management

5.6 It is not anticipated that any road closures will be required as part of the works. All loading and unloading of vehicles will take place within the site boundary and there will be no stopping or queuing of vehicles on the main highway.

5.7 In order to reduce the impact of construction traffic, a Construction Logistics Plan (CLP) will be prepared 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 site.

5.8 The CLP will provide details regarding:

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

5.9 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.

5.10 Measures to be promoted and adopted to reduce impacts associated with construction traffic include:

- Agreed access and egress routes on the site will be observed at all times;

- All suppliers/removals companies will be given specific instructions to contact the Site Manager 30 minutes before the delivery is expected, so that the site access is clear and available.
- Fire and emergency access routes will be kept free from obstruction at all times;
- Footpaths and roads will always be kept clear of unnecessary obstructions;
- Materials will not be stored on or near roadways, paths or other areas where they may constitute a hazard;
- The sheeting of loads will ensure that any material which is removed from the site is secure;
- Banksmen will be employed to assist in traffic movements to ensure pedestrian safety and minimal disturbance to other traffic;
- Banksmen will always wear high visibility clothing;
- Safe routes to separate pedestrians from construction plant and vehicles will be established as soon as practicable; and
- Safety signs will be clearly posted to make personnel outside the site aware of traffic hazards.

6 COMMUNITY LIAISON AND CONSULTATION

Statutory Authorities and Interested Parties

6.1 The Principal Contractor, in conjunction with the Client and with the support of any appointed specialists, will be responsible for the liaison on environmental matters with statutory and non-statutory authorities.

6.2 Consultation will be established and maintained with a number of regulatory bodies with regard to the environmental aspects of this project. These may include but not limited to:

- Environmental Health Officer (FDDC);
- Environment Agency;
- Health and Safety Executive (regarding Asbestos); and
- Emergency Services.

Notifications and Local Community Engagement

6.3 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 the adjacent businesses prior to and during site preparation works. Neighbouring businesses will be informed in advance of works taking place. Information disseminated will include: location of planned works; type of works; duration; anticipated effects of the works; contact details for enquiries; and complaints procedure. A list of occupier's email addresses will be held (with prior approval) to provide updates electronically. This will ensure quick and frequent updates to all surrounding occupants.

6.4 Site boards outlining information on the project and forthcoming works will be erected at the entrance to the site. Site contact numbers, key personnel, contact addresses and web addresses will be displayed as appropriate, along with the complaints procedure. A 24-hour emergency hotline number will also be posted for information or reporting purposed.

6.5 Arrangements will be put in place for notifying or alerting neighbours in advance of additional unplanned noisy works.

Complaints Management

6.6 A formal complaints procedure will be developed; the Construction Manager will be responsible for receiving, recording and responding to external complaints and will have their telephone number displayed for quick response to complaints.

6.7 In the event of out of hours incidents, there will be a duty point of contact who will be responsible for answering and responding to any calls. This emergency number will be clearly displayed on signage affixed to the boundary Heras fencing.

- The Construction Manager will maintain a designated complaints/ incidents logbook or register cover:
- The nature of the complaint;
- The cause; and where appropriate,
- The response and remedial action taken.

6.8 All complaints received by the named individual from any source regarding the site or company will be logged, recorded and categorised as one of the following: Noise, Dirt and Dust; Parking; Safety; Inconsiderate Behaviour; Road Conditions and Vehicle Movements; Environmental Concerns;

Pedestrian Access Obstruction; Property Damage; Site Lighting; Working Hours; and Other. The Construction Manager will have designated staff trained to deal with any type of complaint.

6.9 The Construction Manager will investigate and respond to the complaint and be kept as 'active' status until such a time as it is appropriately resolved.

6.10 Any complaints registered will be reported to the appropriate contact at FDDC on a monthly basis, in accordance with the CMP auditing procedure.

6.11 If the Construction Manager does not deal with a complaint in a satisfactory manner, the complaint will be passed to the Client's representative, who will refer the matter to the construction company's head office contact. In the event that the response is still unsatisfactory, and the contact is not a director, then the complaint will be taken to company director level.

6.12 If the complaint does not relate to an issue covered by the CMP (e.g. planning issues), the complainant will be assisted by the appropriate team.

7 TRAINING, SITE RULES AND COMMUNICATION

Training

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

7.2 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

7.3 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.

7.4 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.

Toolbox Talks and Method Statement Briefings

7.5 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 air quality, ways to minimise noise, vibration and dust on site, contaminated land, waste, water and light pollution matters etc. A full register of toolbox talks and method statement briefing attendance shall be maintained on site. A toolbox talk will be undertaken daily, depending on the daily activities and tasks.

Emergency Procedures and Incident Reports

7.6 All staff will be made aware of the EPP set in place (see Para. 4.21). In the event of any incidents, the Principal Contractor, Environmental Health and Safety Team will be notified as well as the Client. Additionally, the FDDC Pollution Team and any other interested bodies will be notified as required.

Training Records

7.7 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

7.8 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;
- Removal of rubbish at frequent intervals, in particular food waste, leaving the site clean and tidy;
- 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.

On Site Communication

7.9 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 Client's Environmental Representatives. On site communication will be provided by mobile telephone or two-way radio where required.

8 ENVIRONMENTAL CONTROL MEASURES

8.1 The following sections of the CMP describe the general mitigation control measures to be implemented throughout the construction works on a topic by topic basis, to ensure the protection of the environment from potential adverse effects from the development. Management of traffic and transport is described in Section 4 above.

Noise and Vibration

8.2 Best practicable means (BPM) will be applied during demolition and construction works to minimise noise and vibration at these neighbouring 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*".

8.3 All construction works will comply with BS 5228[(2)] through the undertaking of daily and weekly noise monitoring by the Principal Contractor over the duration of the works. Noise and vibration levels will be continuously monitored with fixed equipment within at the site boundary at locations adjacent to the nearest neighbouring properties. Readings will be recorded and kept on site and made available for review by FDDC if requested.

8.4 'Trigger levels' for noise and vibration will be applied at site. These are limits for which noise and vibration cannot be exceeded external to the boundary fencing. The limits to be applied will be agreed with FDDC in advance of works commencing.

8.5 If the Applicant needs to make any changes to the construction method that would increase the levels of noise anticipated or if any noise generating works need to be carried out outside of the core working hours, the Applicant will apply for prior consent to carry out construction works under Section 61 of the Control of Pollution Act 1974. The application would include further details of the proposed working times, locations, methods, plant and any steps to mitigate noise for each element of the project in advance.

8.6 The following measures will be adopted to reduce noise and vibration during construction works:

- All sub-contractors will be briefed on the Section 61 consent and associated conditions for the site;
- During concrete pumping, some items of equipment will be surrounded by additional screening. Temporary noise barriers (i.e. acoustic blankets) will be used to reduce noise levels where appropriate and practicable. Such measures can be particularly appropriate for stationary or near-stationary plant such as pneumatic breakers and compressors;
- 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;
- Engine covers will be kept closed when machines are in use and idling;
- Vehicle and mechanical plant will be fitted with exhaust silencers, which will be maintained in good and efficient working order;
- Use of electrically powered fixed items of construction plant rather than diesel- or petrol-driven plant where possible;

[2] BS 5228:2009+A1:2014 Code of Practice for Noise and Vibration Control on Construction and Open Sites Part 1: Noise and Part 2 Vibration

- Pneumatic tools will be fitted with silencers or mufflers when in use close to sensitive receptors;
- Use of low impact techniques, such as construction munchers, where practicable;
- Care will be taken when erecting or striking scaffolds to avoid impact noise from banging steel. Scaffold will be fixed together with hand tools to minimise noise and vibration impacts;
- Loading and unloading of vehicles, dismantling of equipment or moving equipment or materials around the site will be conducted in such a manner as to minimise noise/vibration generation. This will include avoiding any drops from height, placing rubber mats in the base of storage containers and any chutes;
- 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;
- Heras fencing will be erected around the site;
- All sub-contractors will be required to submit full details of work programmes, plant and personnel to the Principal Contractor. All sub-contractors and personnel will be made fully aware of the requirements of relevant planning conditions and any other consent(s) and of the importance of controlling noise and vibration;
- Hydraulic construction will be used in preference to percussive techniques, where possible; and
- A daily site inspection will be undertaken to identify and rectify any issues which may increase noise and/or vibration.

Dust and air quality

8.7 During construction works, the Principal Contractor will be required to control and limit dust, air quality, odour and exhaust emissions as far as reasonably practicable and in accordance with BPM.

8.8 The main dust generating activities associated with the works are likely to be associated with the breaking-out and handling of cut material volumes, the loading of this material onto wagons and its transfer and unloading to the stockpile storage area. The stockpiled material will be largely comprised of coarse granular rock.

8.9 Mitigation measures will be implemented to minimise the nuisance and impact arising from dust produced during construction and site preparation activities and maintain suitable air quality levels. These include the following:

Site management and maintenance:

- Contractors will be instructed to use all reasonable means available to keep earthwork activities to a minimum, especially during dry weather conditions when potential for dust generation is greatest;
- Wind speed and direction must be taken into account when organising on site operations;
- Water sprays or sprinklers will be used when undertaking dust generating activities on-site, to suppress the levels of dust generated. Water runoff from dust suppression activities will be controlled;
- Dust suppression system will be fitted to all applicable equipment. Water sprays will be used during dry periods to minimise dust generation. Haulage routes between works areas and stockpiles storage areas will be wetted at all times of operation. Items will be wetted down, and wet grinders will be utilised where possible. Water supply is present at site and will be used to assist in the dampening down to control dust;
- Lorries carrying debris or waste will be properly covered to prevent spoil/dust from escaping;

- Burning of any material will be prohibited anywhere on-site;
- All waste storage containers, bins and lorries removing materials from site are to be sheeted;
- Daily on-site and off-site inspections will be undertaken to monitor dust. These will be increased in particularly hot and windy conditions;
- Deposits of dust on external parts of the plant will be cleaned off at the end of each working day in order to minimise the potential for wind entrainment.
- Record all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner and record the measures taken;
- Make the complaints log and/or daily logs available to FDDC for inspection;
- Record 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;
- 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; and
- Remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site.

Construction plant and vehicles

8.10 Measures will also be implemented to limit emissions from construction plant and vehicles. These measures will include:

- Non Road Mobile Machinery (NRMM) compliant equipment will be sourced and registered on the GLA website;
- All construction plant will be appropriately sized, vehicles and equipment will be maintained in good working order;
- Low emission vehicles will be used where possible and fit plant with catalysts filters or similar devices. Low sulphur fuels will be used where possible;
- Construction vehicles to conform to the current EU emissions standards pursuant to the EC Directive 98/69/EC (commonly known as Euro standards) of Euro 4 during any works;
- 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;
- All plant when not in use and do not need their engines to be running will be turned off. There will be no idling;
- Electrical powered equipment will be used on site instead of generators;
- Operation of construction plant in accordance with the manufacturer's written recommendations;
- Minimal drop heights and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate; and
- Vehicle, plant and equipment maintenance records will be kept on site and reviewed regularly.

Contamination and Hazardous Material

8.11 The EPP will set out any procedures to deal with contamination if any issues were to arise. All the workers on-site will be made aware of potential contamination issues on the site and will use best

practice techniques during all construction activities. The operation of construction vehicles and the handling, use, and storage of hazardous materials will be undertaken in accordance with best practice and will also include the following:

- Construction vehicles and plant will be regularly maintained and supplied with spill kits and drip trays to reduce the risk of hydrocarbon contamination;
- The handling, use, and storage of hazardous materials will be undertaken in line with the current best practice;
- Adequate bunded and secure areas are to be provided for any temporary storage of fuel, oil and chemicals; and
- Provision of spill containment equipment such as absorbent matting and emergency oil-booms.

8.12 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.

8.13 A member of staff will be nominated to control and monitor the Control of Substances Hazardous to Health (COSHH) system, in compliance with the COSHH Regulations 2002. Suppliers must send data sheets for every hazardous substance to the site. The assessment information sheet is completed in conjunction with Supervisors and Safety Managers who then brief staff members who will be using the substance, on its safe use, disposal and any emergency procedures. Written records of these briefings will be kept in a COSHH file held on the site.

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

Ecology and Arboriculture

8.15 The woodland surrounding the site, and outside of the Applicant's ownership, would be protected by Heras fencing around the site perimeter and stockpile to prevent disturbance during the construction works.

8.16 A tree survey and arboricultural impact assessment has been completed and has identified that the majority of works will be outside of Root Protection Areas (RPA).

8.17 A Construction Exclusion Zone would be established to ensure works do not encroach within the RPA. Within the Construction Exclusion Zone there must be no mechanical digging or scraping; no alteration to existing ground levels including soil stripping; no earthworks; and no handling or discharge of any chemical substance, concrete washings or of any fuels.

8.18 Site cabins, construction materials, oil, fuel and other materials will not be located / stored within the RPA for the woodland.

8.19 Light spill on to tree canopies should be avoided to prevent disturbance to birds and bats. Due consideration is to be given by the Principal Contractor for any temporary construction lighting arrangements to shield and avoid light spill onto sensitive areas.

Materials, Resource Use and Waste Management

8.20 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.

8.21 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.

8.22 Excavated spoil arising from construction of the haul road will be stockpiled on site and re-used where feasible, as discussed previously. Any suitable stone found on-site may be crushed and used as sub-base for roads or foundations of the apron.

8.23 Waste produced during construction activities on site will be subject to 'The Waste Duty of Care Practice (November 2018) which sets out practical guidance on how to meet waste duty of care requirements. It is issued under section 34(7) of the Environmental Protection Act 1990 (the EPA) in relation to the duty of care set out in Section 34(1) of that Act. It is the joint responsibility between the Principal Contractor and the Client to ensure that waste produced onsite is disposed of in accordance with legislation.

8.24 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.

8.25 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).

8.26 Waste will be sorted into different waste types such as timber, metals, 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 by a licensed waste carrier for onward treatment/disposal.

9 CMP RESPONSIBILITIES

Management Structure

9.1 The Construction (Design and Management) Regulations 2015 (CDM Regulations) came into force on 6th of April 2015, replacing CDM 2007. As per the requirements of the CDM Regulations, the Client 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.

9.2 Responsibility for all environmental issues relating to the development of the site rests with the Client, 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.

9.3 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 have to implement the environmental control measures set out within this CMP.

Individual Responsibilities

9.4 The responsibilities of key persons in relation to the works are detailed in the responsibility assignment matrix below.

Table 9.1: RACI Table

RACI R = Responsible, A = Accountable, C = Contributes, I = Informed	Principal Designer (Could be Client)	Project Manager	Principal Contractor	Environment Manager	Sub-contractors/ Environmental Specialists
Review and approve the CMP	R	A	C	C	C
Submit CMP to FDDC for approval	R	C	I	I	I
Ensure that the CMP is effectively established and implemented throughout the project	A	C	R	C	C
Implement the requirements of the CMP and its supporting documents on site	A	C	R	C	I
Review of the CMP	A	R	C	I	I
Suggest potential modifications and improvements to CMP or the operational controls it develops	C	C	R	C	I
Review and approval of procedures and for ensuring that procedures include appropriate control measures to ensure the minimisation of the site surveys and works environmental aspects	C	R	C	A	I
Ensure equipment, including sub-contractor equipment is sufficiently well maintained to minimise risk	I	C	R	C	C
Ensure that all fuel storage facilities and all machinery and plant that uses fuel is compliant with legislation	I	C	R	C	I
Understand the major environmental constraints and implications for the project	I	I	R	C	I
Provide adequate resources to deal with environmental issues	I	A	R	C	I
Review and approve environmental action plans	I	R	C	C	C
Co-ordinate environmental awareness training and ensure	A	C	R	C	I

relevant responsibilities are included within site induction					
Ensure complaints are being addressed and responded to	I	I	R	C	C
Coordinate and maintain consultation with FDDC, local residents and other interested parties on environmental issues including complaints process	I	I	C	R	C
Maintain the complaints log for Environmental issues	I	I	C	R	C
Undertake regular site inspections	A	I	R	C	C
Ensure environmental risks are evaluated and considered during all stages of the site work	I	C	R	C	C
Report all non-conformances and environmental incidents to Senior Management (Principal Designer/Project Manager)	I	C	R	C	C
Immediately report all non-conformances and environmental incidents to supervisors (Principal Contractor/ Environmental Manager)	C	C	R	C	C
Ensure environmental audits are carried out, pursue any corrective actions and provide feedback to relevant statutory bodies	A	I	C	R	C
Carry out audits at regular intervals defined in the final CMP submitted with the reserved matters application	A	I	R	C	I

10 CMP MONITORING AND REVIEW

Site Monitoring

10.1 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).

10.2 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.

Incident Reporting

10.3 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.

10.4 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

10.5 The Client, Principal Designer and Principal Contractor will ensure that controls outlined in this CMLP 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 FDDC, as required, to ensure it remains consistent with environmental regulatory requirements and conditions of planning approval.